ecs WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

13504 South Point Boulevard, Unit F, Charlotte, NC 28273 tel 704.583.2711 fax 704.583.2744 www.ecsconsult.com

January 20, 2009

Mr. Joel Jolly
Edgefield Fuel and Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

RE: Tier I Assessment
Edgefield Fuel & Convenience 3
311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 34953

Dear Mr. Jolly,

Environmental Compliance Services, Inc. (ECS) is pleased to present this proposal to provide labor, material and equipment necessary to complete the following scope of work:

Complete the Tier I Assessment in general accordance with South Carolina Department of Health and Environmental Control guidelines. ECS proposes to complete the scope of work as directed by the South Carolina Department of Health and Environmental Control for the pre-approved amount of $11,230.00. The scope of work includes costs for completion of up to 75 feet of permanent monitoring well footage, collection of soil and groundwater samples for laboratory analysis and report of findings. If any drinking water supply wells are identified within a 1,000 foot radius of the site, the department request sampling of those wells at a cost of $ 275.00 dollars per well, which will be applied toward the deductible assigned to the site. If additional footage is required to encounter groundwater, a cost of $38.00 per foot (or $43.00 per foot if rock is encountered) will be incurred beyond the proposed 75 feet. Based on previous work history performed in the area, we don't anticipate any additional drilling charges being incurred. Any additional footage charges if necessary would be applied toward the $25,000 deductible amount.

Payment terms are 1/3 of the cost due prior to the commencement of field activities and net due upon delivery of report.

Thank you for the opportunity to provide these services. If you find this proposal and the attached *Terms and Conditions* acceptable, please indicate by signing both the proposal and attached *Terms and Conditions*.

Sincerely,

Kurt Blevins
Business Development Director – SE Region

Accepted By _____

Date 1-20-09

Title President

Client Name: Joel Jolly-Edgefield Fuel & Convenience, LLC

Date:1/20/09

ENVIRONMENTAL COMPLIANCE SERVICES, INC.
AND
Mr. Joel Jolly-Edgefield Fuel & Convenience, LLC
TERMS AND CONDITIONS
EFFECTIVE January 20, 2009

Environmental Compliance Services, Inc. (ECS) and Joel Jolly-Edgefield Fuel & Convenience, PO Box 388, Edgefield, SC 29824-0388 (hereafter referred to as "the Client") agree as follows:

SECTION 1. SERVICES

ECS shall provide the Client, with the "Services" set forth in the Proposal dated January 20, 2009. The "Services" shall be performed with respect to the Property identified in the Proposal (the "Site"). The Proposal and any subsequent modification pursuant to Section 21 below shall be governed by these Terms and Conditions. The Terms and Conditions, the Proposal and any subsequent modification pursuant to Section 21 below shall be referred to as the "Agreement". ECS Services will be performed on behalf of and solely for the exclusive use of Client for the purposes set forth in the Proposal and for no other purpose. Client acknowledges that ECS' Services require decisions which are based upon judgment stemming from limited data rather than upon scientific certainties. Client, in accepting ECS' Proposal, acknowledges the inherent risks to Client and its property associated with the work described in the Proposal and with underground work in general.

SECTION 2. BILLING AND PAYMENT

Client will pay ECS for Services performed in accordance with the rates and charges set forth in the Proposal. Unless otherwise specified in the Proposal, invoices for ECS Services will be submitted on a periodic basis, or upon completion of Services, as ECS shall elect. All invoices will be paid by Client within thirty (30) days after invoice date. Invoice balances remaining unpaid for thirty (30) days after invoice date will bear interest from invoice date at 1.5 percent per month or at the maximum lawful interest rate, if such lawful rate is less than 1.5 percent per month. If Client fails to pay any invoice in full within thirty (30) days after invoice date, ECS may, at any time, and without waiving any other rights or claims against Client and without thereby incurring any liability to Client, elect to terminate the performance of Services upon ten (10) days prior written notice by ECS to Client. Notwithstanding any termination of Services by ECS for non-payment of invoices, Client shall pay ECS in full for all Services rendered by ECS to the date of termination of Services plus all interest, termination costs and expenses incurred by ECS and related to such termination. Client shall be liable to reimburse ECS for all costs and expenses of collection, including reasonable attorneys' fees. ECS' non-exercise of any rights or remedies, whether specified herein or otherwise provided by law, shall not be deemed a waiver of any such rights or remedies, nor preclude ECS from the exercise of such rights or other rights and remedies under this instrument or at law.

SECTION 3. TAXES

Services provided are quoted exclusive of all state, local and other taxes or other charges (other than income taxes payable by ECS). In the event such taxes and/or charges become applicable to ECS' Services, applications or data, Client shall pay any such applicable tax upon receipt of written notice that such tax(es) is/are due.

Client is aware that certain Services provided by ECS to Client may be subject to the provisions of local sales taxes or other federal, state or local taxes or fees. Client understands and agrees that judgments made by ECS and its resultant billings as to which Services are taxable or subject to said fees and which Services are not taxable or subject to said fees may be challenged by the appropriate federal, state or local authority upon audit of ECS. In the event that ECS resolves the audit dispute with the appropriate federal, state or local authority and ECS is required to pay additional tax, fees, penalties or interest due to the manner in which ECS initially billed the Client, ECS shall bill Client for such additional amounts; Client shall indemnify ECS for those expenses and for the cost of the defense of the audit within ten (10) days of receipt of the revised ECS billing. In no event will this give Client the right to intervene or control the dispute between ECS and the appropriate federal, state or local authority.

SECTION 4. SERVICES OF OTHERS

As necessary, ECS engages the specialized services of individual consultants, or other companies to participate in a project. When considered necessary, these firms or other consultants will be used with Client's approval. The cost of such services plus a fifteen percent (15%) service charge, unless noted otherwise, will be included in our invoice.

ECS does not undertake a guarantee or assume responsibility for the performance of the contractor(s) or companies(s) or the accuracy of their results or for any subcontractor hired by and under the specific direction of the Client.

SECTION 5. SITE DISTURBANCE

The Client understands that ECS' use of environmental assessment techniques and equipment may cause damage to or alteration of the Site or any building or utility line on the Site, as well as other items of real and personal property on the Site. The Client shall use its best and diligent efforts to provide ECS with the plans of public and private utilities which are in Client's possession and/or other agencies to assist ECS in locating any underground structures including cables, electric lines, tanks, pipes, gas lines, water mains, or other latent or subterranean structures. ECS shall exercise reasonable judgment in performing field exploration required as part of the project. Efforts will be made to minimize potential alteration of Site conditions during the project. In the event of damage, ECS shall exercise reasonable judgment in restoring the Site to comparable conditions observed prior to the project.

SECTION 6. INDEPENDENT CONTRACTOR

The parties agree that ECS 1) shall be free from direction and control by the Client, 2) performs services outside the usual course of, or places of business of, the Client and 3) is engaged in an independently established trade, occupation, profession or business wholly apart from the Client.
The relationship of ECS to Client, therefore, shall be that of independent contractor.

SECTION 7. NONHIRE OF CONTRACTOR PERSONNEL

It is hereby mutually agreed that Client will not directly or indirectly solicit for hire any employee(s) of ECS' technical staff, who is associated with efforts called for under this effort, for a period of one (1) year after completion termination of this Agreement. In the event the foregoing provision is breached, liquidated damages equal to twelve (12) months of the employee's compensation plus any legal expenses associated with the enforcement of this provision shall be paid by the Client to ECS.

SECTION 8. CUSTOM PROGRAMMING

ECS reserves the right to use, for any purpose, any programming methods, skills, and techniques acquired or used by ECS in the performance of the Services. There shall be no restraint to ECS, its employees, agents, or subcontractors in the use of the techniques and skills of computer programming and design that may be acquired in the course of performance of this Service. Client is not provided with any

rights in ECS proprietary techniques in which the Client's programs may be written. The Client acknowledges that it shall not acquire any Intellectual Property Rights under this Agreement associated with the Services provided or produced by ECS. Any Intellectual Property goodwill arising in the course of this Agreement with respect to said Services developed by ECS shall accrue solely for the benefit of ECS.

SECTION 9. UCC INAPPLICABILITY

Services and/or custom programs provided under this Agreement will not be governed by the Uniform Commercial Code (UCC) and will not be deemed "goods" within the definition of the Uniform Commercial Code.

SECTION 10. TERMINATION

This Agreement may be terminated in whole or in part in writing by either party in the event of a default consisting of substantial failure by either party to fulfill its obligations under this Agreement through no fault of the terminating party; provided that no such termination may be effected unless the defaulting party is given ten (10) days written notice of default and an opportunity to cure the default within a reasonable period. If termination is effected, Client will pay ECS all reimbursable costs which are due as of the effective date of termination, including costs incurred for software and equipment ordered in conformance with the Proposal which is to be delivered to Client and which cannot be canceled or terminated, and in addition, those reimbursable costs incurred in good faith by ECS after the effective date of termination in connection with demobilization of equipment and personnel, and with the cancellation or termination of subcontracts and purchase orders. In the case of termination of Services performed on a fixed price basis, ECS shall be compensated for Services performed as if the Services had been performed on a reimbursable basis.

SECTION 11. CONFIDENTIALITY

ECS will not intentionally divulge technical information designated in writing as "CONFIDENTIAL" and disclosed by Client to ECS other than to its employees or subcontractors with a need to know or to parties designated by Client in writing; information so marked shall be treated as "Confidential Information". Confidential Information shall not include: a) information previously known to ECS; b) information that becomes known to ECS through other means; c) information which is public knowledge; d) information which subsequently becomes public knowledge through no fault of ECS; and e) information required by law to be disclosed. Notwithstanding the limitations set forth herein, ECS may disclose Confidential Information in order to comply with laws, regulations, ordinances, court orders, governmental directives, legal obligations and professional standards of conduct regarding the reporting of findings to appropriate public agencies, and to protect against claims or liabilities arising from the performance of the Services under this Agreement. ECS shall be authorized to disclose the existence of this Agreement in any manner, where such disclosure is solely for the benefit of ECS' marketing initiatives and unrelated to the Client's "Confidential Information".

SECTION 12. STANDARD OF CARE AND WARRANTY

Services performed by ECS under this Agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. ECS' liability for failure to meet this standard shall be governed by the Indemnification and Limitation of Liability clause below. No other representation or warranty, expressed or implied, and no warranty of merchantability or fitness for purpose, or any other guarantee is included or intended in this Agreement, or in any report, opinion, document or otherwise.

SECTION 13. MUTUAL INDEMNITY AND ACKNOWLEDGMENTS

Client acknowledges that ECS has not created or contributed to the creation of any oil and/or hazardous materials, pollutants, asbestos, or other potentially dangerous substance that is now or may be in the future discovered or introduced at the Site.

Client agrees to defend, indemnify and hold harmless ECS, its subcontractors, consultants, agents, officers, directors and employees from and against any and all claims for damages and all costs, liability or expense, whether direct, indirect, economic, or consequential, including reasonable attorneys' fees, and court and arbitration costs, sustained or alleged by any person or entity based upon or arising in connection with the Services provided by ECS and including but not limited to:

1. A release of oil and/or hazardous materials or pollutants;
2. Bodily injury including death and property damage (real or personal) or any other claim of damage, expense or loss, caused by the release, removal, remediation, assessment, evaluation or investigation of oil and/or hazardous materials or pollutants;
3. Removal, assessment, evaluation or investigation of, or remedial action taken because of, the release or suspected release of oil and/or hazardous materials or pollutants;
4. Any federal, state, local or other governmental fines or penalties related to oil and/or hazardous materials or pollutants; or
5. The detection, abatement, removal, or replacement of products, materials, or processes containing asbestos.

The Client covenants that it will reimburse ECS for, or pay over to ECS, all sums of money which ECS shall pay or become liable to pay by reason of any of the foregoing, and will make such payments to ECS as soon as ECS becomes liable therefore whether or not ECS shall have paid out all or any portion of such sum.

In the event that ECS is requested or required to provide expert testimony, attend depositions or provide additional services pursuant to a judicial or administrative process involving the Client and the Site, Client shall pay ECS for such services at the same rates and charges set forth in the Proposal, rates associated with other necessary and reasonable services and attorneys fees incurred by ECS in providing such services.

ECS agrees to defend, indemnify and hold harmless the Client, its agents, employees and officers from and against any and all claims for damages and all costs liabilities or expenses, including reasonable attorney's fees, and court and arbitration costs sustained or alleged by any person or entity based upon the gross negligence of ECS, its agents, or employees arising in connection with the Services provided by ECS as set forth in the Proposal. ECS covenants that it will reimburse Client for, or pay over to Client, all sums of money which Client shall pay or become liable to pay by reason of any of the foregoing, and will make such payments to Client as soon as Client becomes liable therefore whether or not Client shall have paid out all or any portion of such sum, provided, however, that ECS is informed of such claim within thirty days of notice of claim to Client. ECS shall not be responsible to pay any cost, liability or expense related to said claim where Client fails to provide said notice prescribed under this section.

The Client agrees to inform ECS in writing of any knowledge of past or present use of oil and/or hazardous materials on the Site or introduction of oil and/or hazardous material into the environment of the Site at any time. Such written notice to ECS must take place prior to the commencement of work by ECS. The Client acknowledges that ECS may divulge that oil and/or hazardous materials are on the Site and it may not now or in the future be able to obtain insurance against the risks described in the report of ECS, such as abatement, removal, containment or other acts in any way related to oil and/or hazardous materials on the Site.

SECTION 14. LIMITATION OF LIABILITY

ECS IN THE PERFORMANCE OF THE SERVICES AS SET FORTH IN THE PROPOSAL MAKES NO REPRESENTATIONS OR WARRANTIES EXCEPT THAT IT WILL MAINTAIN A REASONABLE

STANDARD OF CARE IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING AND ENVIRONMENTAL CONSULT-ING PRACTICES. ANY LIABILITY OF ECS TO THE CLIENT ARISING OUT OF THE SERVICES INCLUDING, WITHOUT LIMITATION, LIABILITY FOR BREACH OF THIS AGREEMENT, THE PROPOSAL AND THE DOCUMENTS REFERRED TO HEREIN OR GROSSLY NEGLIGENT PERFORMANCE OF THE PROFESSIONAL AND OTHER DUTIES HEREUNDER SHALL BE LIMITED TO THE EXTENT OF ECS' INSURANCE COVERAGE AVAILABLE AT THE TIME OF SETTLEMENT OR JUDGMENT AS PRE-SENTED IN ITEM 17 HEREIN. IN NO EVENT SHALL ECS BE LIABLE TO THE CLIENT FOR ANY FURTHER DAMAGES, BE THEY DIRECT, INDIRECT, INCIDENTAL, CONSEQUEN-TIAL, THIRD PARTY OR OTHERWISE.

The Client understands and acknowledges that sampling locations and analytical parameters will be consistent with generally accepted scientific practices and ECS will use the information collected to formulate a professional opinion regarding the presence or absence of oil and/or hazardous materials on the Site. Sampling locations will be proposed to provide general coverage of the Site and potential sources of oil and/or hazardous materials and/or will be based on analytical or screening evidence of the presence of oil and/or hazardous materials. Additional analytical parameters and sampling locations may be recommended during the performance of the Services. Oil and/or hazardous materials can be present in isolated areas which can only be discovered by digging up, sampling and analyzing the entire site. Oil and/or hazardous materials may not have entered the ground water so as to become detectable due to recent release, soil conditions (clay), etc., or due to numerous other causes including but not limited to oil and/or hazardous materials' invasion of the site from off-site sources. Therefore ECS shall make no absolute determination as to the presence or absence of oil and/or hazardous materials on the entire Site as the work performed by ECS is limited in scope to the locations and media which are sampled and the analytical methodologies which are utilized.

SECTION 15. CLIENT'S DUTY TO NOTIFY ECS OF HAZARDS

Client represents and warrants that it will provide ECS with any and all information known to or suspected by Client with respect to:

1. The existence or possible existence at, on or under the Site of any oil and/or hazardous materials, pollutants or asbestos as defined in the Federal Water Pollution Control Act; the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980; The Resource Conservation and Recovery Act of 1976, or under the provisions of federal, state and local laws of similar import now or hereafter existing;
2. Any condition known to Client to exist in, on, under or in the vicinity of the Site which might present a potential safety hazard or danger to human health or the environment; or
3. Any permit, manifest, title record, or other record of compliance or non-compliance with any federal, state or local laws relating in any way, directly or indirectly, to the past or present environmental conditions at the Site.

SECTION 16. OBSERVANCE OF RULES AND REGULATIONS

The Client shall take full responsibility to report in a timely fashion to the appropriate Federal, State, County or local agencies any and all conditions existing on the Site which may or do present a danger to the public health and safety or the environment in accordance with the rules of such agencies. ECS undertakes none of the aforementioned responsibilities. Client shall defend, indemnify and hold ECS harmless from and against any and all claims, demands, liabilities and expense, including reasonable attorneys' fees, incurred by ECS and arising directly or indirectly in connection with ECS not reporting or disclosing such information under a bona fide belief or upon advice of counsel that such reporting or disclosure is not required by law or ECS' reporting or disclosing such information under a bona fide belief or upon advice of counsel that such reporting or disclosure is required by law.

SECTION 17. INSURANCE COVERAGE

A certificate of insurance is available upon request. ECS currently maintains the following insurance coverage:

(a) Workers Compensation and Employers Liability
Insurance The Client agrees to waive all right of subrogation against the Contractor. The Contractor possesses the following:

Part A-Workers Compensation: Statutory
Part B-Employers Liability:
Bodily injury by accident-
$1,000,000 each accident.
Bodily Injury by Disease-
$1,000,000 policy limit.
Bodily Injury by Disease-
$1,000,000 each employee.

(b) General Liability Insurance in which the limit of liability for injuries, including accidental death, is $1,000,000.00 for any one occurrence, $2,000,000.00 annual aggregate; and General Liability Insurance in which the limit of liability for property damage is $1,000,000.00 for any one occurrence, $2,000,000.00 annual aggregate.

(c) Automobile Liability Insurance in which the limit of liability for injuries, including accidental death, is $1,000,000.00 for any one occurrence, and Automobile Liability Insurance in which the limit of liability for property damage is $1,000,000.00 for any one occurrence.

(d) Professional and Contractors Pollution Liability in which the limits of liability is $1,000,000.00 for any one occurrence, $5,000,000.00 annual aggregate.

(e) Umbrella Liability Insurance $5,000,000.00 annual aggregate.

SECTION 18. FORCE MAJEURE

Either party shall be excused from performance of its obligations under this Agreement, other than the payment of money when due, in the event and to the extent that such performance is delayed or prevented by any cause or event beyond the reasonable control of such party including, but not limited to, any act of God or of the public enemy; war, insurrection; riot; civil disturbances; labor dispute; delay in delivery of machinery and equipment; fire; flood; washouts; storms; landslides; explosion; any embargo; or any law, act, regulation or order of any military or civil authority, including courts. Within a reasonable period of time after a party determines that an event of force majeure exists which delays or prevents the performance of its obligations under this Agreement, such party shall give the other party notice thereof, and such party shall use all reasonable efforts to eliminate such event insofar as possible with a minimum delay. Nothing herein shall require such party to submit to what it considers to be unreasonable conditions or restrictions.

SECTION 19. COMPLIANCE WITH LAWS

ECS agrees to comply with all applicable local, state and federal laws and regulations pertaining to Services under this Agreement.

SECTION 20. SUCCESSORS AND ASSIGNS

This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns. Neither party may assign its interests herein without the prior written consent of the other party, which consent will not be unreasonably withheld. No assignment shall operate to relieve the assignor of its obligations under this Agreement.

SECTION 21. ENTIRE AGREEMENT

This Agreement, the Proposal and any other agreement expressly stated to be supplementary hereto constitutes the entire understanding and agreement between the parties hereto, and cancels and supersedes all prior negotiations, representations, understandings and agreements, either written or oral, with respect to the subject matter hereof. No changes, alterations or

modifications to this Agreement shall be effective unless in writing and signed by the party to be charged.

SECTION 22. SEVERABILITY

If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby; and Client and ECS will in good faith attempt to replace any such invalid, illegal or unenforceable provision or provisions with one that is valid, legal and enforceable, and which comes as close as possible to expressing the intent of the original provision or provisions.

SECTION 23. DOCUMENTS

All reports, data, notes, calculations, estimates and other documents, data or information prepared by ECS as instruments of Service, shall remain the sole property of the Client with ECS able to keep copies for its records. To the extent permitted by law, ECS may withhold release of said information as a result of Client's failure to comply with Section 2 of these Terms and Conditions. All reports and other work prepared by ECS for Client shall be utilized solely for the intended purposes described in the Proposal. ECS will retain all pertinent records for periods of three (3) years following the submission of ECS' report to Client. Such records will be available to Client upon request at ECS' office during office hours on reasonable notice, and copies will be furnished by ECS to Client for the total cost of reproduction of the same.

SECTION 24. ARBITRATION

Subject to applicable law, any controversy or claim arising out of or relating to this Agreement, or the breach hereof, which ECS and Client are unable to resolve themselves may be finally settled by arbitration ("Arbitration") in accordance with this Section 24 and the Arbitration Rules of the American Arbitration Association ("AAA") by: (i) if the amount in controversy is less than $15,000.00, one arbitrator; or (ii) if the amount in controversy is for more than $14,999.99, or for performance or other non monetary relief, by a three-person arbitration panel.

The party seeking Arbitration shall give notice thereof and of the issues it wishes arbitrated, and they shall request the Regional Director of the AAA to propose candidates for the arbitration panel. The arbitration panel may, with the consent of ECS and Client, agree on such modifications to or exceptions from the Arbitration Rules of the AAA as the panel may deem appropriate. The award of the arbitrators shall be in writing and shall include written findings of facts to the extent the arbitration required the resolution of factual disputes.

No individual who is, or has at any time been, an officer, employee or consultant of any party shall be an arbitrator without the express written consent of both ECS and Client.
If Arbitration is agreed to by the parties, all proceedings shall be held in Springfield, Massachusetts, or such other place reasonably convenient to ECS and Client as the arbitrator shall determine. Both ECS and Client shall produce such records as the arbitrators may request.

The arbitrators shall determine a fair and equitable allocation of the fees and expenses of each party incurred in connection with any Arbitration and such allocation shall be binding upon Client and ECS.

Both Client and ECS submit to the jurisdiction of the arbitrators appointed in accordance with this Section 24. The determination of the arbitrators shall be final and binding upon the parties and may be entered in any court having jurisdiction.

Notwithstanding the provisions set forth under this Section, either party may pursue on its own volition, without the need to proceed first with Arbitration, relief with any court having jurisdiction over the subject matter.

SECTION 25. GOVERNING LAW

This Agreement shall be governed by and construed in accordance with the laws of the State of Massachusetts, excepting the choice of laws of such State. The parties irrevocably submit to the jurisdiction of the state and federal courts located in the County of Hampden, State of Massachusetts, and consent to service of process in any legal proceeding arising out of or in connection with this Agreement, by any means authorized by Massachusetts law. All claims, disputes and other matters and questions arising out of or relating to this Agreement, the breach thereof, or the Services, not resolved through Arbitration under Section 24 above, shall be submitted to a court of competent jurisdiction. In the event of any dispute, the prevailing party shall be entitled to recover all costs, expenses and fees, including without limitation, reasonable attorneys' fees and expert costs.

For Client:

Joel Jolly - President
Client Authorized Representative and Title

Signature

For ECS:

Kurt Blevins-Sales Manager SE Region
ECS Authorized Representative and Title

Kurt Blevins
Signature

D H E C

PROMOTE PROTECT PROSPER

JAN 15 2009

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

Re: Tier I Assessment Directive
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 34953; MWA # UMW-22408
Release Reported December 31, 2008
UST Release Investigation Report received January 6, 2009
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Program has reviewed the referenced report for this site and has determined that a Tier I Assessment is necessary. The Tier I assessment document and appendices may be obtained from our website at http://www.scdhec.gov/environment/lwm/html/ust_guidance_docs.htm.

Our records indicate that a contractor has not been selected to perform assessment activities at this facility. Please indicate your choice of contractor on the enclosed Owner/Operator Information Sheet. The enclosed form should be completed and returned to the Program to my attention within **fifteen days** of the date of this letter. A list of certified South Carolina contractors is enclosed for your reference.

The Program has pre-approved a total of $11,230.00 for implementation of the Tier I Assessment. The total includes costs for completion of up to 75 feet of permanent monitoring well footage. Additional monitoring well footage can be billed at the SUPERB allowable rate of $38 per foot provided that the cost is pre-approved by the Program. Please note that in addition to the sample analyses required in the Tier I Guidance Document, all initial assessment activities are now required to include analyses for lead and EDB as directed in the October 10, 2003 SUPERB Allowable Costs Document. Also, if any drinking water wells are located within 1000 feet of the UST system, a water sample shall be obtained from the well(s) and analyzed for the appropriate parameters.

According to Program records, the release at the facility was reported to SCDHEC on December 31, 2008. In accordance with Section 44-2-40(D) of the SUPERB Act, you are responsible for the first $25,000 of site rehabilitation costs. To insure that expenditures made toward rehabilitation apply to the $25,000 deductible if the referenced release becomes qualified, the Program has pre-approved costs for sampling the existing monitoring well network and assigned cost agreement number 34953 for tracking. By law, the SUPERB Account cannot compensate any costs that are not pre-approved.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Program by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

UST DOCKET

The assessment report and invoice are due within sixty (60) days from the date of this letter. If the invoice is not submitted within one hundred and twenty (120) days from the date of this letter, monies

allocated to pay for the work will be uncommitted. This means that invoices for the scope of work submitted after the 120-day deadline will not be processed for payment until all other committed funds are paid or monies become available.

Implementation of the Tier I Assessment may proceed immediately upon receipt of this correspondence. Approval to install three permanent monitoring wells is enclosed. Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, and report preparation must be satisfied. Also note that only EPA Method 8260B will be accepted for analysis of volatile organic hydrocarbons except EDB must be analyzed under EPA Method 8011 for the lower detection limit. Any site rehabilitation activity associated with the UST release must be performed by a SCDHEC-certified site rehabilitation contractor as required by R.61-98.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit # 12175. If you have any questions concerning this correspondence, please call at (803) 896-6633. I can also be reached by email at ridglect@dhec.sc.gov or by fax at (803) 896-6245.

Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved cost agreement
Monitoring well approval
Owner/Operator Lead Information form
Certified contractors list

cc: Technical file (w/enc)

D H E C

PROMOTE PROTECT PROSPER

Promoting and protecting the health of the public and the environment

Monitoring Well Approval

Approval is hereby granted to: Edgefield Fuel & Convenience, LLC
Facility: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
County: Edgefield

This approval is for the installation of three (3) groundwater monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.

2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.

3. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f

4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

5. If any of the information provided to the Department changes, notification to Cathleen Ridgley the project manager (tel: (803) 896-6633 or e-mail: ridglect@scdhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.

6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.

7. Departmental approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: January 8, 2009 **Approval #: UMW-22408**

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Assessment Section
Division of Assessment and Corrective Action
Bureau of Land and Waste Management

Approved Cost Agreement 34953

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3
RIDGLECT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
20 TIER I						
			TIER I	1.0000	11,230.00	11,230.00

Total Amount 11,230.00

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of the UST Permit # 12175, I would like to use the contractor or person(s)* listed below and request that they represent me for:

☐ Tier I Assessment
☐ All future assessment scopes. **

Name of Contractor/Person(s) _____

Address _____

_____

_____

Telephone Number _____

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

*indicate if the person listed is your own employee

** if you would like the contractor to perform all future assessment activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.

2. FINANCIAL OR FAMILIAL RELATIONSHIP

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above? _____ Yes _____ No (please initial)

Financial Relationship: A connection or association through a material interest of sources of income which exceed five percent of annual gross income from a business entity.

Familial Relationship: A connection or association by family or relatives, in which a family member or relative has a material interest. Family or relatives include: father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, grandchild, great grandchild, step grandparent, step great grandparent, step grandchild, step great grandchild, or fiancée.

3. PAYMENT

The first $25,000.00 in eligible site rehabilitation costs will be applied against the applicable SUPERB deductible, upon submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment.

For eligible costs exceeding the $25,000.00 deductible, you can pay the contractor and, upon the submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment, be compensated from the SUPERB Account, or have payment issued directly from the SUPERB Account to the contractor. (check one)

_____ For eligible costs exceeding the deductible, I request that payment be made to me after I have paid the contractor.

_____ For eligible costs exceeding the deductible, I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Department regardless of payment option.)

Underground Storage Tank Owner/Operator Signature _____

Date _____

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of the UST Permit # 12175, I would like to use the contractor or person(s)* listed below and request that they represent me for:

☐ Tier I Assessment
☐ All future assessment scopes. **

Name of Contractor/Person(s) _____

Address _____

_____

_____

Telephone Number _____

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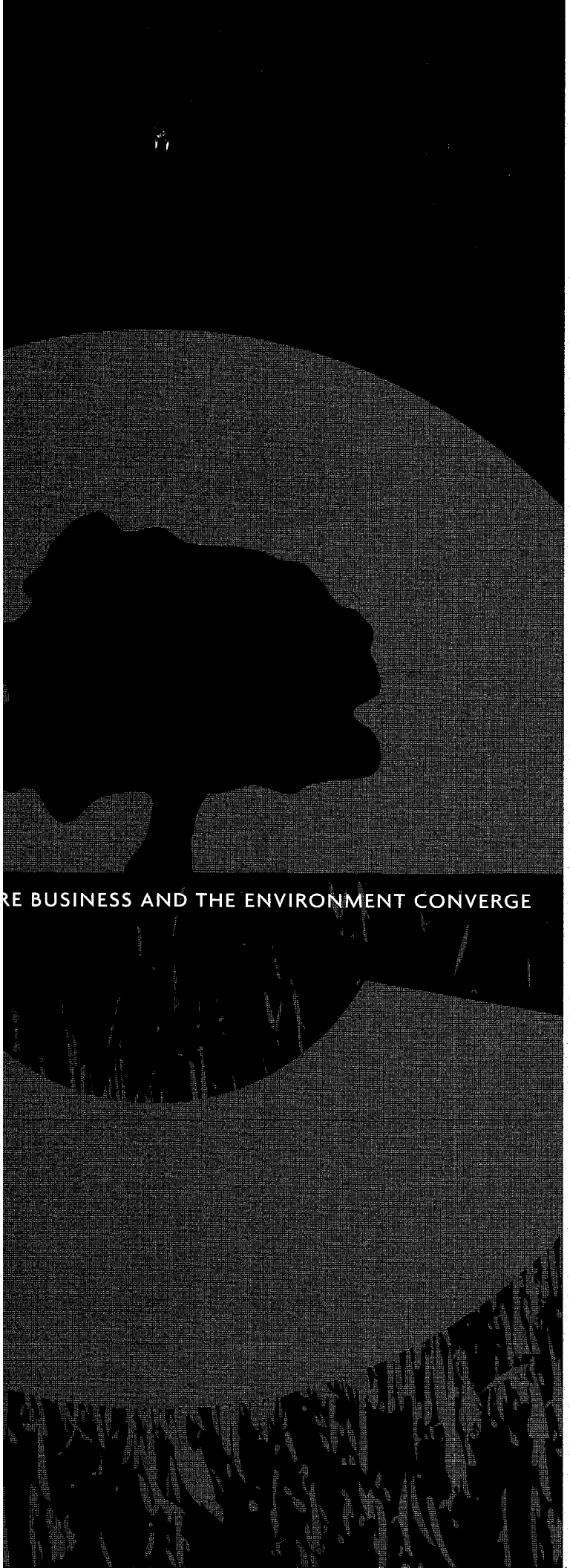
(Note: all costs must receive prior financial approval from the Department regardless of payment option.)

Underground Storage Tank Owner/Operator Signature _____

Date _____



ecs

PROGRAM

TIER I ASSESSMENT REPORT

**EDGEFIELD FUEL &
CONVENIENCE 3
EDGEFIELD, SOUTH CAROLINA**

12/15
UST
DOCKET
3T

Prepared for:
Edgefield Fuel & Convenience, LLC
P.O. Box 388
Edgefield, SC 29824

Project No. 14-211651
March 30, 2009

Prepared by:
ECS
13504 South Point Boulevard, Unit F
Charlotte, NC 28273
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

TIER I ASSESSMENT REPORT OF FINDINGS

I. INTRODUCTION

A. Owner/Operator Information
Name: Edgefield Fuel & Convenience, LLC c/o Mr. Joel Jolly
Address: P.O. Box 388, Edgefield, SC 29824
Telephone Number: (803) 637-1900

B. Property Owner Information
Name: Mr. Joel Jolly
Address: P.O. Box 388, Edgefield, SC 29824
Telephone Number: (803) 637-1900

C. Contractor Information
Name: Environmental Compliance Services, Inc.
Address: 13504 South Point Blvd., Unit F, Charlotte, NC 28273
Telephone Number: (704) 583-2711

D. Site Information (UST No. 12175)
Name: Edgefield Fuel & Convenience 3
Address: 311 Main Street, Edgefield, SC

Description of Adjacent Land Use: Commercial
Predicted Future Land Use: General Commercial

Site History
Date Release Reported to SCDHEC: 12/31/2008
Estimated Quantity of Product Released: Unknown
Cause of Release: Unknown

Other releases at this site? Yes **No**
If yes, date release reported to SCDHEC: N/A
Status of release: N/A
No further action date: N/A

II. SITE CHARACTERISTICS

A. Site Geography
The area surrounding the site was developed with commercial properties, and the site was located within the Town of Edgefield, South Carolina. The topography of the area around the site was generally characterized by gently rolling features. Precipitation, primarily in the form of rain, averaged approximately 45 inches per year, with the majority of the annual total occurring within the winter months. The ground surface at the site was covered with asphalt and concrete, and surface water at the site would appear to drain towards the east.
Mean Elevation of Site: Approximately 512 feet above National Geodetic Vertical Datum (NGVD).

Additional Comments: N/A

B. Exposure Analysis

Describe all potential receptors and preferred pathways within a 1,000-foot radius of the site.

Description of Receptor	Distance/Direction from Site
N/A	N/A

Additional Comments: N/A

C. Utilities Survey

List the utilities on-site, and adjacent to the site within a 250-foot radius, that could serve as exposure points or ingestion pathways.

Utility	On-site or Distance/Direction from Site	Depth to Utility
Water Line	On-site, eastern side of property	Unknown
Electrical Line	Along eastern side of property beneath sidewalk (off-site), and along the northern edge of site	Unknown
Telephone Line	Northeastern corner of property	Unknown
Sanitary Sewer Line	From east side of main building south to Main St.	Unknown
Storm Drain Line	Off-site, immediately to the east (see Figure 3)	Unknown

Additional Comments: Additional utilities on-site are not considered exposure points and include underground gas and electrical lines, water lines, and above ground electrical lines.

D. Site Geology
Provide a brief description of the regional geology and hydrogeology.

The area is located in the Carolina Terrane of the Piedmont Physiographic Province. The Carolina Terrane consists of upper Precambrian to Cambrian greenschist facies metasedimentary and metavolcanic rocks intruded by numerous granitic and gabbroic plutons ranging in age from 265 to 650 million years. A mantle of residual soil and saprolite typically overlies the crystalline rocks of the Carolina Terrane. The thickness of the mantle ranges from approximately six to 60 feet, although it may be absent in places and thicker than 60 feet in others. The surface layers are composed chiefly of sandy clay. The clay content of most saprolites typically ranges from 10 to 25 percent, with some containing as little as three percent and others as much as 70%.

The mantle that covers the underlying fractured bedrock in most places provides an intergranular medium through which recharge into, and discharge of water from, the fractured rocks commonly occurs. As a result, groundwater flow occurs within a composite two-media system. The top of the system is the water table surface, which is typically located within the saprolite. The fractured bedrock generally grades downward into unfractured rock below a depth of approximately 300 feet. The base of the groundwater system is therefore indistinct.

Provide a brief description of the site specific geology and stratigraphy.

The surface material at the site was primarily asphalt and concrete ranging from four to six inches in thickness. Native soils observed below the thin layer of fill material at the site were generally characterized as tan to brown, clayey, silty, fine to medium-grained sand to the termination of the borehole. The clay content varied, with most observed clay occurring near the ground surface. This same soil type was encountered in each of the completed eight soil borings and three groundwater monitoring wells.

Based on the sieve analyses, the site was underlain at shallow depths by clayey silty sand. The percentages of sand, silt and clay in a soil sample collected from SB-2 (MW-1) at a depth of 20 feet were 64.1%, 24.5%, and 11.4%, respectively . The depths to groundwater in monitoring wells at the site ranged from 23.68 feet (MW-1, adjusted for 1.55 feet of free product) to 24.55 feet (MW-2). Based on data obtained March 4, 2009, groundwater flow beneath the site was toward the southwest.

E. Soil Boring Data

Drilling Date(s): March 3, 2009
Provide a brief justification for the location of the soil borings.

The USTs were located on the east side of the site, and two pump islands were aligned north-south immediately adjacent to one another. The northernmost pump island was located immediately adjacent to the south side of the UST area (**Figure 2**).

SB-1 – west side of UST area
SB-2/MW-1 – Northeast corner of UST area
SB-3 – East side of northern dispenser island
SB-4 – East side of southern dispenser island
SB-5 – Southern end of dispenser islands
SB-6 - West side of southern dispenser island
SB-7 - West side of northern dispenser island
SB-8/MW-2 – Background location at southwestern corner of site.

Piping and Dispenser Area Borings:

Borehole: SB-3 Sampling Date: 03/3/09
Sample Depth: 10 feet

Sampling Interval (feet)	Field Screening Results (ppm)	Lithology	Soil Conditions
2	167	Brown Silty Clay	Dry
4	120	Tan Sandy Silt	Dry
6	150	Tan Sandy Silt	Dry
8	162	Tan Clayey Silty Sand	Dry
10	382	Tan Clayey Silty Sand	Dry

Borehole: SB-4
Sample Depth: 10 feet
Sampling Date: 03/3/09

Sampling Interval (feet)	Field Screening Results (ppm)	Lithology	Soil Conditions
2	14.3	Red/Brown Silty Clay	Dry
4	47.8	Tan Sandy Silt	Dry
6	64.3	Tan Sandy Silt	Dry
8	66.1	Tan Clayey Silty Sand	Dry
10	85.9	Tan Clayey Silty Sand	Dry

Borehole: SB-5
Sample Depth: 10 feet
Sampling Date: 03/3/09

Sampling Interval (feet)	Field Screening Results (ppm)	Lithology	Soil Conditions
2	6.2	Red/Brown Silty Clay	Dry
4	93.4	Brown Sandy Silt	Dry
6	40.6	Brown Sandy Silt	Dry
8	79.7	Brown Sandy Silt	Dry
10	176	Brown Sandy Silt	Dry

Borehole: SB-6
Sample Depth: 10 feet
Sampling Date: 03/3/09

Sampling Interval (feet)	Field Screening Results (ppm)	Lithology	Soil Conditions
2	1.6	Red/Brown Silty Clay	Dry
4	116	Red/Brown Sandy Silt	Dry
6	114	Red/Brown Sandy Silt	Dry
8	166	Red/Brown Sandy Silt	Dry
10	429	Red/Brown Sandy Silt	Dry

Borehole: SB-7
Sample Depth: 10 feet
Sampling Date: 03/3/09

Sampling Interval (feet)	Field Screening Results (ppm)	Lithology	Soil Conditions
2	119	Red/Brown Silty Clay	Dry
4	859	Red/Brown Silty Clay	Dry
6	308	Red/Brown Silty Clay	Dry
8	278	Brown Silt	Dry
10	1062	Tan Clayey Silty Sand	Dry

UST Area Borings:

Borehole: SB-1
Sample Depth: 20 feet
Sampling Date: 03/3/09

Sampling Interval (feet)	Field Screening Results (ppm)	Lithology	Soil Conditions
5	621	Tan Clayey Silty Sand	Dry
10	818	Tan Clayey Silty Sand	Dry
15	1938	Tan Sandy Silt	Dry
20	1759	Tan Silt	Dry
25	3159	Tan/Brown Silt, Little Mica	Moist

Borehole: SB-2 / MW-1
Sample Depth: 20 feet
Sampling Date: 03/3/09

Sampling Interval (feet)	Field Screening Results (ppm)	Lithology	Soil Conditions
5	1172	Tan Silty Sand	Dry
10	1131	Tan Silty Sand	Dry
15	1742	Tan Silty Sand	Dry
20	1791	Tan Clayey Silty Sand	Dry
25	2993	Tan Clayey Silty Sand	Moist

Background Boring:

Borehole: SB-8/MW-2
Sample Depth: 10 feet
Sampling Date: 03/3/09

Sampling Interval (feet)	Field Screening Results (ppm)	Lithology	Soil Conditions
2	0	Red/Brown Silty Clay	Dry
4	0	Red/Brown Silty Clay	Dry
6	11.8	Tan/Brown Sandy Silt	Dry
8	13.1	Tan/Brown Sandy Silt	Dry
10	15.6	Tan/Brown Silty Sand	Dry

Soil Analytical Data (mg/kg):

COC	RBSL[1] (sandy soil)	SB-1 (20')	SB-2 (20')	SB-3 (10')	SB-4 (10')	SB-5 (10')	SB-6 (10')	SB-7 (10')	SB-8 (10')
Benzene	0.007	<16.300[2]	**15.800**[3]	**0.0507**	**0.103**	**0.0132**	**0.0360**	**1.450**	NR[4]
Toluene	1.450	**73.100**	**59.900**	0.0395	0.335	0.0267	0.0171	**6.600**	NR
Ethylbenzene	1.150	**31.100**	**28.900**	<0.0055	0.0342	<0.0054	0.0178	0.896	NR
Total Xylenes	14.500	**138.800**	**141.600**	0.0143	0.1337	0.0152	0.0630	3.650	NR
MTBE	N/A	<16.300	6.660	0.220	0.0101	<0.0054	<0.0054	0.655	NR
Naphthalene	0.036	**16.500**	**13.300**	<0.0055	<0.0094	<0.0054	0.0114	**0.872**	NR
Lead	N/A	11.7	6.5	19.5	20.7	20.9	20.7	13.5	NR
Benzo(a) anthracene	0.066	<0.434	<0.386	<0.400	<0.394	<0.391	<0.397	<0.398	NR
Benzo(b) fluoranthene	0.066	<0.434	<0.386	<0.400	<0.394	<0.391	<0.397	<0.398	NR
Benzo(k) fluoranthene	0.066	<0.434	<0.386	<0.400	<0.394	<0.391	<0.397	<0.398	NR
Chrysene	0.066	<0.434	<0.386	<0.400	<0.394	<0.391	<0.397	<0.398	NR
Dibenzo(a,h) anthracene	0.066	<0.434	<0.386	<0.400	<0.394	<0.391	<0.397	<0.398	NR
TPH DRO[5] mg/kg	N/A	NR	360	NR	NR	NR	NR	NR	NR
TOC[6] (background boring)	N/A	NR	NR	NR	NR	NR	NR	NR	1630

Notes:
1. May 2001 Risk-Based Screening Levels.
2. Less than the laboratory method reporting limit
3. Numbers in Bold exceed RBSL
4. Analyses Not Requested.
5. TPH DRO – Total Petroleum Hydrocarbons-Diesel Range Organics, EPA Method 8015c
6. TOC – Total Organic Carbon analysis (EPA Method 9060 Modified)

Discuss the horizontal and vertical extent of COC in soil.

Based on the results of the Tier I soil assessment activities, it appears that additional soil assessment should be performed at the site. During drilling activities, PID readings above 1000ppm were encountered within boreholes SB-1, SB-2, and SB-7. The laboratory tests reported CoC concentrations above the RBSLs for sandy soil in samples collected from either 10 feet or 20 feet below the ground surface in soil borings SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, and SB-7. The CoCs reported were primarily volatile compounds.

F. Chemicals of Concern – Groundwater

Well Installation Information

Well No.	Installation Date	Development Date	Sampling Date
MW-1	3/3/09	3/3/09	3/4/09
MW-2	3/3/09	3/3/09	3/4/09
MW-3	3/3/09	3/3/09	3/4/09

There were no previous wells associated with this site.

Soil Analytical Data – Monitoring Wells

Soil boring SB-8 was completed as background monitoring well MW-2 of which a soil sample was collected and analyzed for total organic carbon (TOC). Please refer to the table containing soil analytical data for the results of soil analyses.

Summary of Monitoring Well and Groundwater Data (feet, 12/17/04)

Well Identification	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	Free Product	Screened Interval
MW-1	98.51	23.68	75.99*	1.55 ft	20-35
MW-2	100.42	24.55	75.87	NA**	19-34
MW-3	100.44	24.38	76.06	NA	19-34

*Groundwater elevation adjusted for free product using a density of 0.75 g/cc for petroleum
**Not Applicable as no free product was measured

Dissolved Oxygen Measurements (mg/L)

Parameter	MW-1	MW-2	MW-3
Dissolved Oxygen	Free Prod.	5.10	7.13

Groundwater Analytical Data[1]

COC in µg/L	RBSL[2]	MW-1	MW-2	MW-3
Free Product Thickness	----	1.55 ft	N/A[3]	N/A
Benzene	5	Free Prod.	**4,970**[4]	**7.9**
Toluene	1,000	Free Prod	**7,470**	33.9
Ethylbenzene	700	Free Prod	**1,020**	<5.0[5]
Total Xylenes	10,000	Free Prod	4,400	12.8
MTBE	40	Free Prod	**183**	<5.0
Naphthalene	25	Free Prod	**142**	<5.0
Benzo (a) anthracene	10	Free Prod	<12.2	<13.3
Benzo(b)fluoranthene	10	Free Prod	<12.2	<13.3
Benzo (k) fluoranthene	10	Free Prod	<12.2	<13.3
Chrysene	10	Free Prod	<12.2	<13.3
Dibenzo(a,h)anthracene	10	Free Prod	<12.2	<13.3
Ferrous Iron in mg/L	----	Free Prod	<0.50	<0.50
Lead	15	Free Prod	<5.0	<5.0
EDB	0.05	Free Prod	**0.46**	<0.019
Nitrate mg/L	----	Free Prod	2.4	2.2
Sulfate mg/L	----	Free Prod	19	25
Methane	----	Free Prod	<10.0	<10.0
CO2 mg/L	----	Free Prod	142	101

Notes:
1. Analyses for BTEX and naphthalene by EPA Method 8260B with Method 5035/8015B ; analyses for PAHs by EPA Method 8270C; NO_3^-, SO_4^{-2}, CO_2, and Fe^{+2} concentrations reported in mg/L; all other concentrations reported in µg/L.
2. May 2001 RBSLs in µg/L.
3. Not Applicable.
4. Concentrations in bold face type exceeded the RBSLs.
5. Less than the reporting limit specified in the laboratory report.

Additional Comments: N/A

G. **Aquifer Characteristics:** Unconfined
Hydraulic Conductivity: 2.018 x 10^{-4} cm/second to 2.566 x 10^{-4} cm/second (0.57 to 0.726 feet/day)
Hydraulic Gradient: 0.002 ft/ft towards the southwest (3 point problem with elevation adjusted for free product in MW-1)
Effective Porosity: 0.2
Estimated Seepage Velocity: 0.0057 feet/day to 0.00726 feet/day (2.08 ft/yr to 2.65 ft/yr)

III TIER I EVALUATION

A. Current Land Use
Identify any potential receptors or human exposure pathways (e.g. basements, contaminated soils from UST closures, etc.) within a 1,000-foot radius for current land use.

Media (for exposure)	Exposure Route	Pathway Selected for Evaluation (Yes/No)	Exposure Point or Reason for Non-selection	Data Requirements (If pathway selected)
Air	Inhalation Explosion Hazard	Yes **No** Yes **No**	No potential exposure point unless soil excavation occurs. Site capped.	N/A
Groundwater	Ingestion Dermal Contact Volatile Inhalation	Yes **No** Yes **No** Yes **No**	The closest Water Supply Well (1) was located approx. 900 feet from the source area.	N/A
Surface Water	Ingestion Dermal Contact Volatile Inhalation	Yes **No** Yes **No** Yes **No**	Surface water features were not identified within a 1,000-foot radius of the source area.	N/A
Surficial Soil	Ingestion Dermal Contact Volatile Inhalation Leaching to Groundwater	Yes **No** Yes **No** Yes **No** **Yes** No	Source area is covered with asphalt and concrete. Exposure could result only if cap breached through excavation. Groundwater has been affected by the release. 1.55 feet of free product in MW-1.	Soil leachability model.
Subsurface Soil	Ingestion Dermal Contact Volatile Inhalation Leaching to Groundwater	Yes **No** Yes **No** Yes **No** **Yes** No	Source area is covered with asphalt and concrete. Exposure could result only if cap breached through excavation. Groundwater has been affected by the release. 1.55 feet of free product in MW-1.	Soil leachability model.

B. Future Land Use
Identify any potential receptors or human exposure pathways (e.g. basements, contaminated soils from UST closures, etc.) within a 1,000-foot radius for future land use.

Media (for exposure)	Exposure Route	Pathway Selected for Evaluation (Yes/No)	Exposure Point or Reason for Non-selection	Data Requirements (IF pathway selected)
Air	Inhalation Explosion Hazard	Yes **No** Yes **No**	Potential exposure point if soil is excavated.	N/A
Groundwater	Ingestion Dermal Contact Volatile Inhalation	**Yes** No **Yes** No **Yes** No	Water supply wells are a potential exposure point if installed within a 500 foot radius of the source area.	Groundwater Monitoring
Surface Water	Ingestion Dermal Contact Volatile Inhalation	Yes **No** Yes **No** Yes **No**	Surface water features were not identified within a 1,000-foot radius of the source area.	N/A
Surficial Soil	Ingestion Dermal Contact Volatile Inhalation Leaching to Groundwater	Yes **No** Yes **No** Yes **No** **Yes** No	Source area is covered with asphalt and concrete. Exposure could result only if cap breached through excavation. Groundwater has been affected by the release. 1.55 feet of free product in MW-1.	Engineering controls Soil leachability model.
Subsurface Soil	Ingestion Dermal Contact Volatile Inhalation Leaching to Groundwater	Yes **No** Yes **No** Yes **No** **Yes** No	Source area is covered with asphalt and concrete. Exposure could result only if cap breached through excavation. Groundwater has been affected by the release. 1.55 feet of free product in MW-1	Engineering controls Soil leachability model.

Recommendations for Further Action:

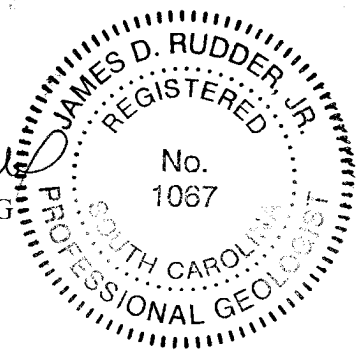
Concentrations of CoCs exceeding the RBSLs were reported in soil and groundwater at the site. A free product thickness of 1.55 feet was measured in shallow well MW-1. Tier II assessment activities should be conducted to determine the horizontal and vertical extent of petroleum hydrocarbon concentrations exceeding RBSL in site groundwater. A series of AFVRs should be implemented to remove free product measured in well MW-1.

If you have any questions or require additional information, please contact the undersigned at rhutchins@ecsconsult.com or jrudder@ecsconsult.com, or at (704) 583-2711.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, INC.

Randy Hutchins
Project Manager

James D. Rudder, Jr., PG
SC License No. 1067



Enclosures

cc: Mr. Joel Jolly
file F:\Projects\14-211651 Edgefield Fuel 3\Tier I 2009\Report\TIER I Assessment Report

Attachments:

Figures

Figure 1: Site Locus
Figure 2: Site Vicinity Map
Figure 3: Site Plan
Figure 4: Soil Quality Map 3/3/09
Figure 5: Groundwater Elevation Map 3/4/09
Figure 6: Groundwater Quality Map 3/4/09

Table

Table 1: Summary of Adjacent Property Owners and Addresses

Appendices

Appendix A: Surveyed Site Map
Appendix B: Boring Logs
Appendix C: Well Construction Records
Appendix D: Groundwater Sampling Data Sheets
Appendix E: Laboratory Reports – Soil and Groundwater Samples
Appendix F: Investigation Derived Waste Manifest
Appendix G: Slug Test Data

TABLES

TABLE 1
Summary of Adjacent Property Owners and Addresses
Edgefield Fule & Convenience 3
311 Main Street, Edgefield, SC

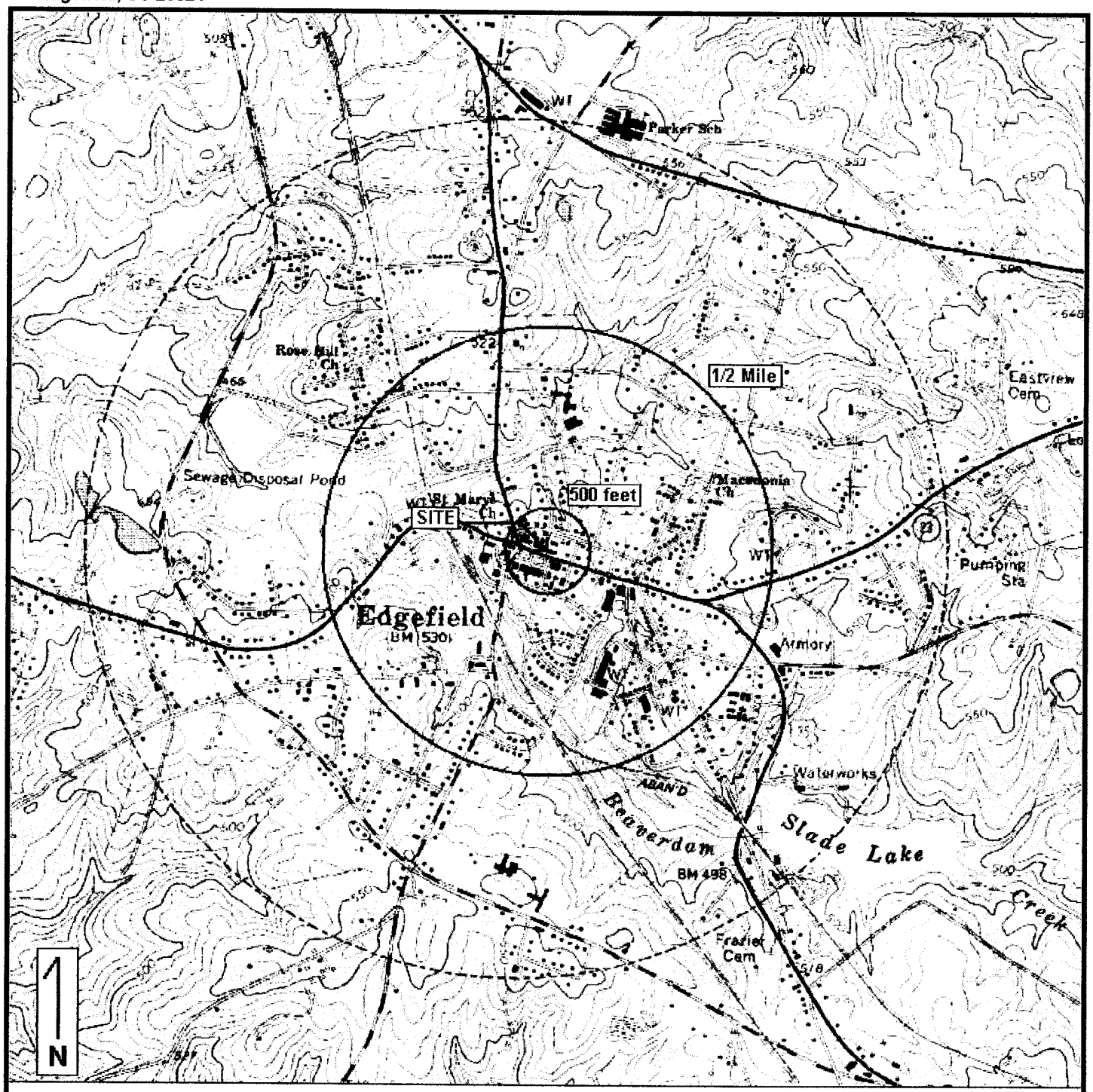
Parcel	Owner	Property Address	Location
137-07-05-051-000	Edgefield Properties, Inc. - Dialysis Cntr.	Main Street	Southwest of Site
137-07-05-026-000	Edgefield County Historical Society	Main & Bacon Streets	East of Site
137-07-05-022-000	Edgefield Properties, Inc.	Main Street	Southwest of Site
137-07-05-008-000	Bettis C. Rainsford - Rescue Squad	Simpkins Street	North of Site
137-07-05-006-000	Carolina First Bank	Main Street	West of Site
137-07-05-005-000	Patricia Y. Anderson - SCE&G Office	Main Street	South of Site
137-07-05-09-000	Southern Bell Telephone	Simpkins Street	Northwest of Site
137-07-05-007-000	Edgefield Fule and Convenience, LLC	311 Main Street	SITE

FIGURES

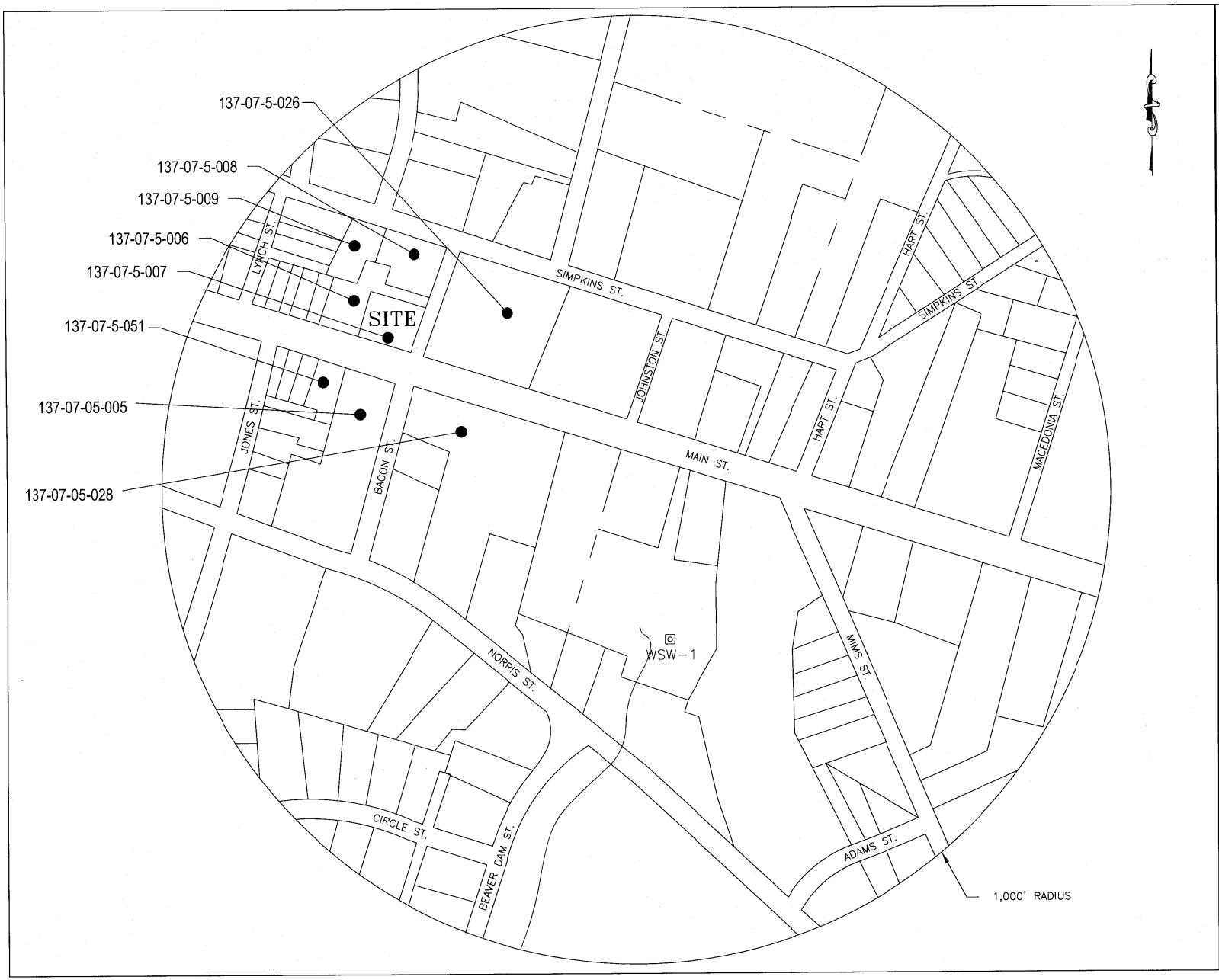
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

137-07-5-34 TAX MAP PARCEL I.D. NUMBER

PROPERTY LINE

WATER SUPPLY WELL

BEAVERDAM CREEK

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

ecs

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

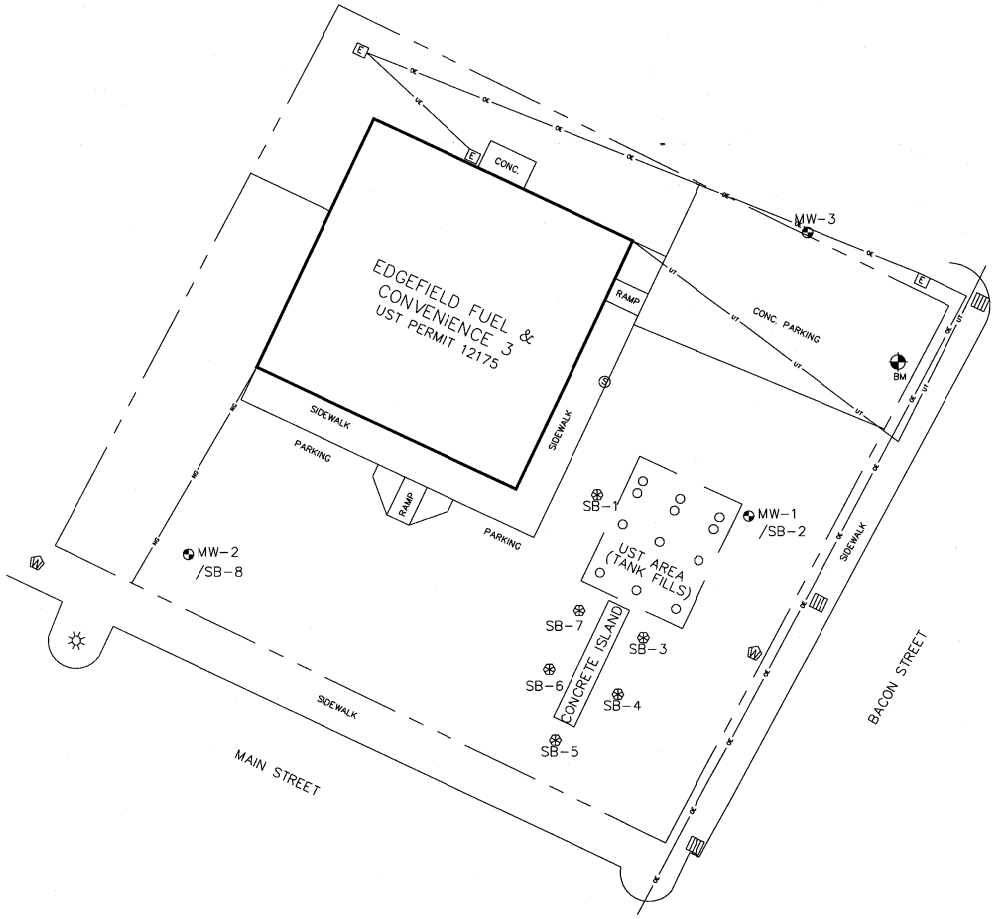
TITLE:
Site Vicinity Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 200 0 100 200

COMPUTER CADFILE:

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	**DATE:**	**JOB NO.:**	**FIGURE NO.:**
1"=200'	3/30/09	14-211651	2



Legend

- Property Line
- Buried AT&T Line
- Natural Gas Line
- Overhead Electric Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Water Meter
- Electric Box/Meter
- Light Pole
- SB-1: Soil Boring
- MW-1: Shallow (Water Table) Monitoring Well
- BM: Benchmark is an "X" Inscribed in the concrete Assumed Elev. = 99.50'

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

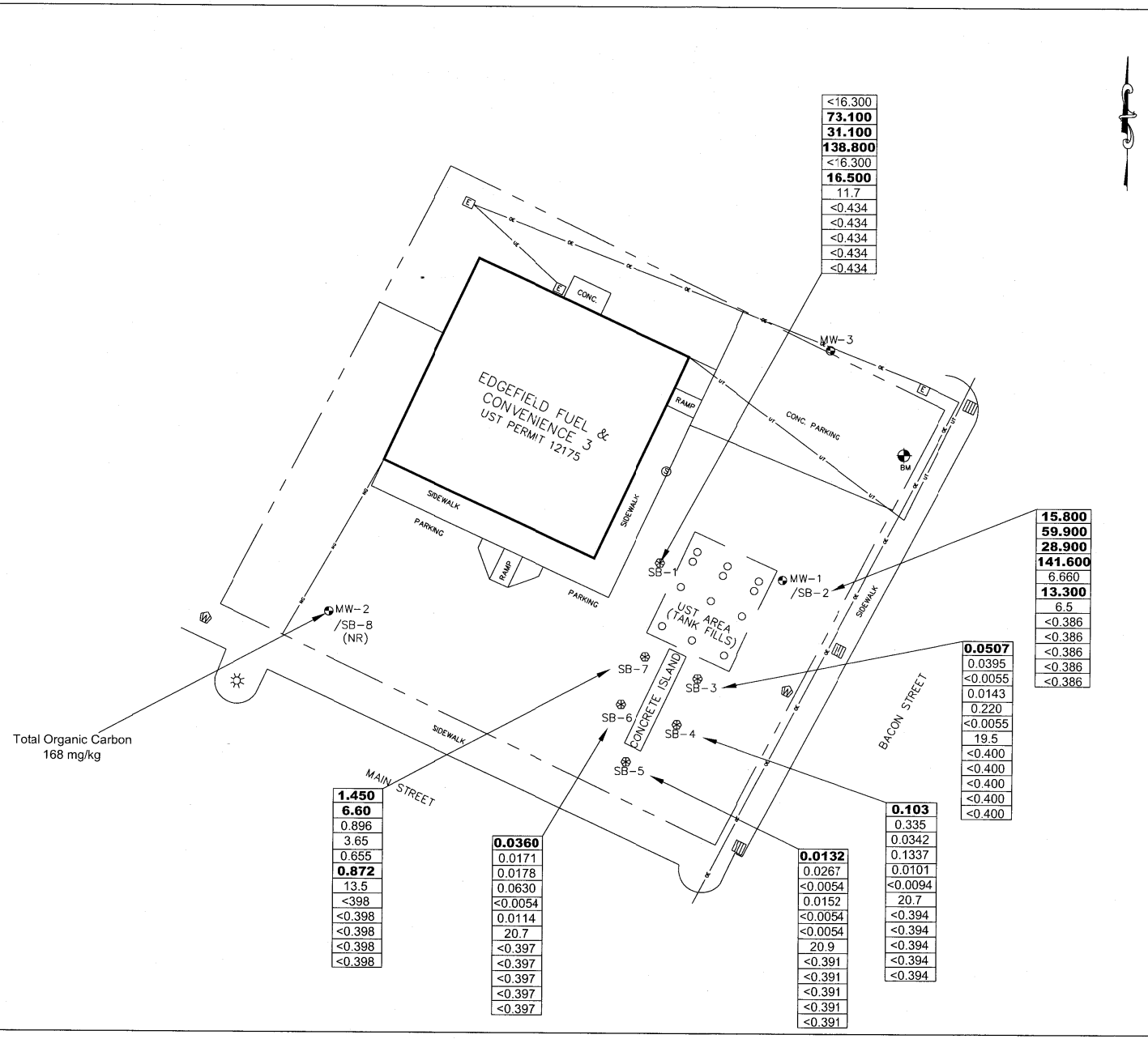
TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 20 0 10 20

COMPUTER CADFILE :

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=20'	3/30/09	14-211651	3



Legend

- Property Line
- Buried AT&T Line
- Natural Gas Line
- Overhead Electric Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Water Meter
- Electric Box/Meter
- Light Pole
- SB-1: Soil Boring
- MW-1: Shallow (Water Table) Monitoring Well
- BM: Benchmark is an "X" Inscribed in the concrete Assumed Elev. = 99.50'

0.007	Benzene
1.45	Toluene
1.15	Ethylbenzene
14.5	Total Xylenes
NA	MTBE
0.036	Naphthalene
NA	Lead
0.066	Benzo(a)anthracene
0.066	Benzo(b)fluoranthene
0.066	Benzo(k)fluoranthene
0.066	Chrysene
0.066	Dibenzo(a,h)anthracene

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L).

Above concentrations represent May 2001 Risk-Based Screening Levels; Concentrations in **bold** face type exceeded the RBSL.

NR - Analyses Not Requested.

<1.0 - Less than the reporting limit specified in the laboratory report.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

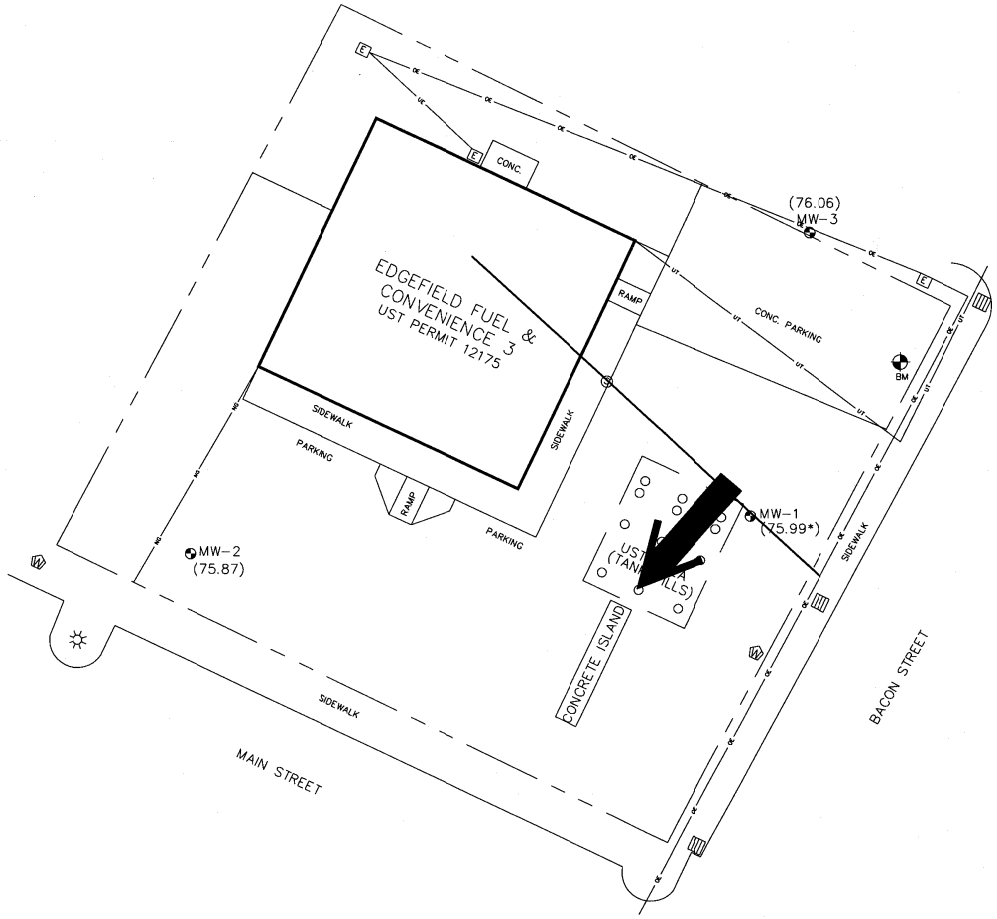
TITLE: Soil Quality Map 3/3/09

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 20 0 10 20

COMPUTER CADFILE:

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=20'	3/30/09	14-211651	4



Legend

- Property Line
- Buried AT&T Line
- Natural Gas Line
- Overhead Electric Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Water Meter
- Electric Box/Meter
- Light Pole
- SB-1 Soil Boring
- MW-1 Shallow (Water Table) Monitoring Well
- BM: Benchmark is an "X" Inscribed in the concrete Assumed Elev. = 99.50'
- (73.71) Groundwater Elevation (ft)
- 90.00 Water Table Contour (Dashed where inferred)
- Flow Direction Indicator From 3-Point Problem

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Groundwater elevations are relative to a temporary benchmark with an assumed datum of 99.50 feet.

Groundwater Elevations are based on measurements made on March 4, 2009.

Water table contours, and flow directions assume homogeneous, isotropic aquifer conditions, and horizontal flow.

Fluctuations in the level of the water table may occure due to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

*Groundwater Elevation corrected using estimated density of 0.75g/cm³ for Petroleum Product.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

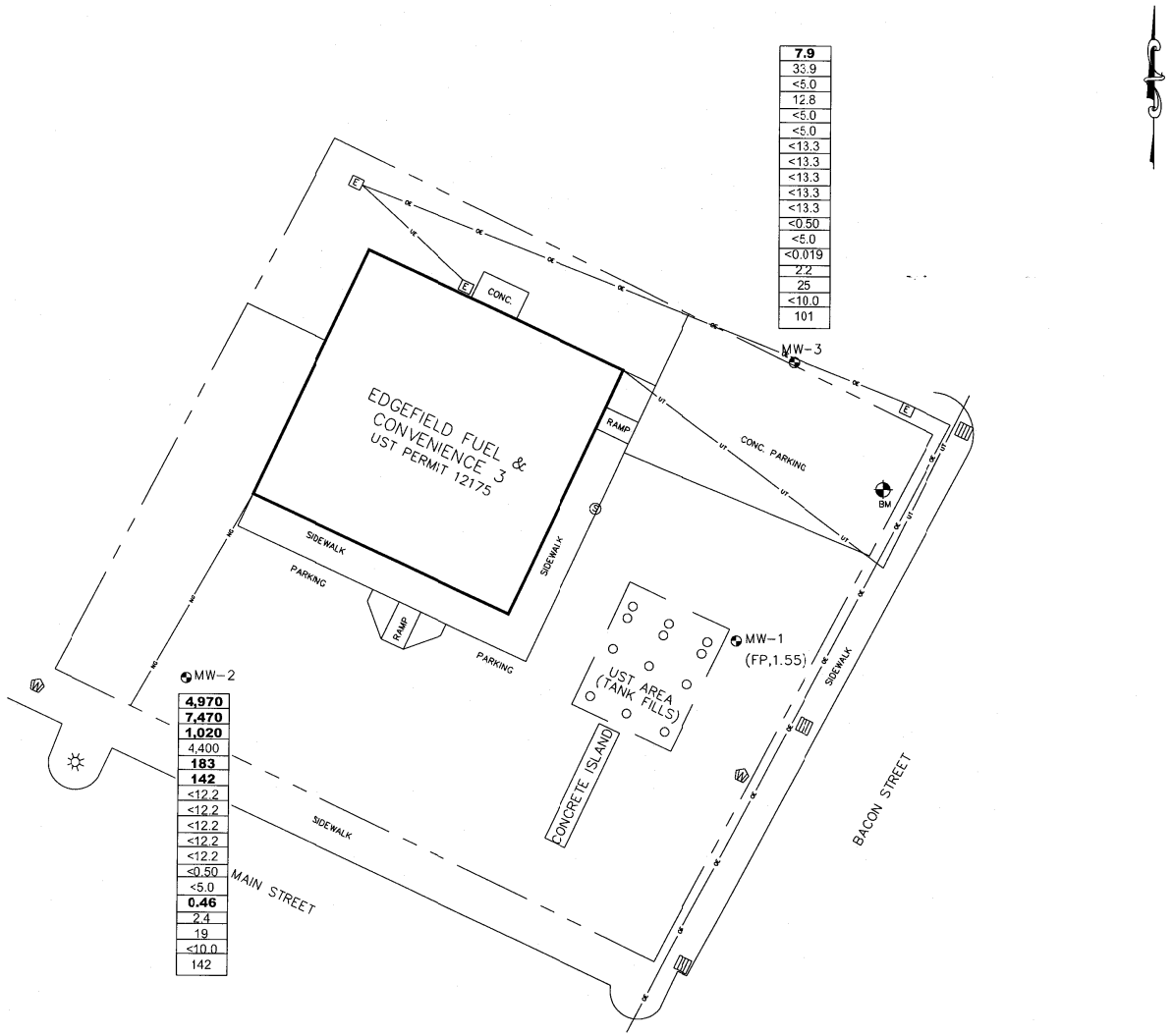
TITLE:
Groundwater Elevation Map 3/4/09

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 20 0 10 20

COMPUTER CADFILE :

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=20'	3/30/09	14-211651	5



Legend

- Property Line
- Buried AT&T Line
- Natural Gas Line
- Overhead Electric Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Water Meter
- Electric Box/Meter
- Light Pole
- SB-1 Soil Boring
- MW-1 Shallow (Water Table) Monitoring Well
- BM: Benchmark is an "X" Inscribed in the concrete Assumed Elev. = 99.50'

5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	MTBE
25	Naphthalene
10	Benzo(a)anthracene
10	Benzo(b)fluoranthene
10	Benzo(k)fluoranthene
10	Chrysene
10	Dibenzo(a,h)anthracene
--	Ferrous Iron
15	Lead
0.05	EDB
--	Nitrate
--	Sulfate
--	Methane
--	CO2

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L) except Ferrous Iron, Nitrate and Sulfate are measured in milligrams per liter (mg/L).

Above concentrations represent May 2001 Risk-Based Screening Levels; Concentrations in **bold** face type exceeded the RBSL.

FP - Free Product; thickness in feet.

<1.0 - Less than the reporting limit specified in the laboratory report.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Groundwater Quality Map 3/4/09

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 20 0 10 20

COMPUTER CADFILE :

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=20'	3/30/09	14-211651	6

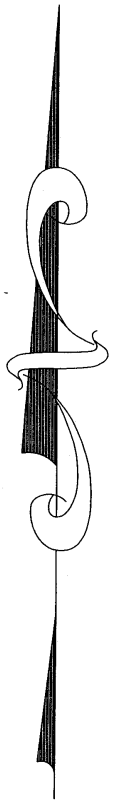
APPENDIX A

SOUTH CAROLINA STATE SURVEY

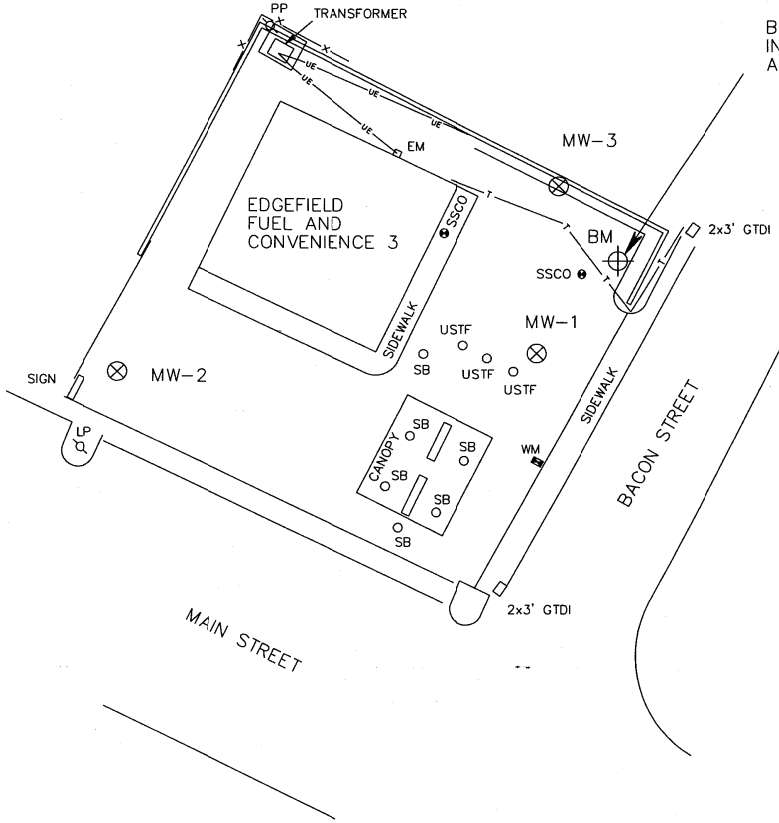
MONITOR WELLS		
WELL	TOL ELEV.	TOC ELEV.
MW-1	98.77	98.51
MW-2	100.86	100.42
MW-3	100.84	100.44

LEGEND AND ABBREVIATIONS:

- MW = MONITORING WELL
- BM = BENCHMARK
- SB = SOIL BORE
- SSCO = SANITARY SEWER CLEAN OUT
- WM = WATER METER
- LP = LIGHT POLE
- PP = POWER POLE
- USTF = UNDERGROUND STORAGE TANK FILL
- GTDI = GRATE TOP DROP INLET
- SIGN = SIGN
- EM = ELECTRIC METER
- —UE— = UNDERGROUND ELECTRIC LINE
- —X— = WOOD FENCE LINE
- —T— = UNDERGROUND TELEPHONE LINE



SC STATE PLANE



BENCHMARK IS AN "X"
INSCRIBED IN CONCRETE
ASSUMED ELEV.= 99.50'

SOUTH CAROLINA
REGISTERED
LAND
SURVEYOR
No. 14811
JAY S. JOSHI

SOUTH CAROLINA
CONSTRUCTION
SUPPORT SERVICES
No. C02425
CERTIFICATE OF AUTHORIZATION

COMPREHENSIVE SITE SKETCH OF

EDGEFIELD FUEL AND CONVENIENCE 3

311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY, SC
UST PERMIT #12175

PREPARED FOR

ECS

GRAPHIC SCALE 1"=30'

0 30 60 90

NOTE:
NOT FOR THE PURPOSE OF RECORDATION AT COUNTY COURTHOUSE OR THE CONVEYANCE OF PROPERTY. A COMPLETE AND CLOSED BOUNDARY WAS NOT PERFORMED ON THESE PARCELS.

NOTE:
I HEREBY CERTIFY THAT THE FIELD WORK, CALCULATIONS, AND DRAFTING WERE DONE UNDER MY DIRECT SUPERVISION.

JAY S. JOSHI PLS # 14811
8009 SUMTER HWY, SUITE 101, COLUMBIA, SC, 29209 803-776-9909

DATE: MARCH 10, 2009 JOB #030509A

APPENDIX B

BORING LOGS

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: EDGEFIELD Fuel Job No.: 14-21165/
Location: EDGEFIELD S.C

BORING NO. SB-1

DRILLED BY: GEX (Johnny / Mac) WATER LEVEL (drilling): DATE:
LOGGED BY: Phil WATER LEVEL (stabilized): DATE:
CHECKED BY: START DATE: 3/3/09 END DATE: 3/3

RIB (PPM) LOGGED FROM MACRO TUBES

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						CONCRETE FILL	
						BROWN/TAN SANDY SILT CLAY DRY	
							4
621	5					LIGHT TAN C/M SAND DRY	
818	10						
							13
1938	15					TAN SANDY SILT DRY	
							17
						TAN SILT DRY	
1759	20						
							21
						TAN/BROWN SILT W/MICA	
							24
3155	25					SAME MOIST	25
						SB-1 STOPPED AT 25'	

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: Edgefield Road
Location: Edgefield SC

Job No.: 14-211651

BORING NO. SB-2/MW-1

DRILLED BY: GEX (Johnny) 6620
LOGGED BY: Phil
CHECKED BY:

WATER LEVEL (drilling): DATE:
WATER LEVEL (stabilized): DATE:
START DATE: 3/3 END DATE: 3/3

PID (PPM) Logged From MACRO tube

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						Concrete 1ft	1
						Brown/Red silty clay Dry	
							4
1172	5					Tan silty sand	
1131	10						
1742	15						
							17
						Brown Tan silty sand clay	
1791	20						
							22
						Tan/Grey silty sand clay	24
2993	25					Moist	25
							35
						BTW 35', Sch 40 PVC 2" w/ 15' screen, sand to 18' Bentonite to 16', grout to surface, flush mount manhole	

FIELD BORING LOG

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: Edgefield Fuel Job No.: 14-21165T
Location: Edgefield SC

BORING NO. SB-3

DRILLED BY: Gex (Johnny) 6620 WATER LEVEL (drilling): DATE:
LOGGED BY: Phil WATER LEVEL (stabilized): DATE:
CHECKED BY: START DATE: 3/7 END DATE: 3/8

PID (PPM) LOGGED FROM MACRO TUB)

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						Concrete / Fill	
167	2					Brown silty clay	
120	4					TAN / BROWN SANDY SILT	3
150	6						
162	8					TAN / BROWN silty sand mix	6
382	10						
						BT @ 10'	10

FIELD BORING LOG

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: Edgefield Fuel
Location: Edgefield SC

Job No.: 14-211651

BORING NO. SB-4

DRILLED BY: GEK (Johnny) 6620
LOGGED BY: PMH
CHECKED BY:

WATER LEVEL (drilling): DATE:
WATER LEVEL (stabilized): DATE:
START DATE: 3/3 END DATE: 3/3

PID (PPM) LOGGED FROM MACRO TUBES

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						CONCRETE/FILL	1
14.3	2					RED/BROWN silty CLAY	
47.8	4						3
						TAN/BROWN sandy SILT	
64.3	6						6
66.1	8					TAN SAND M/C	
55.9	10						10
						BT @ 10'	

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: Edgefield Fuel Job No.: 14-211651
Location: Edgefield SC

BORING NO. SB-5

DRILLED BY: GEX (Johnny) 6625 WATER LEVEL (drilling): DATE:
LOGGED BY: PJH WATER LEVEL (stabilized): DATE:
CHECKED BY: START DATE: 3/3 END DATE: 3/3

PID (PPM) LOGGED FROM MACRO TUBE

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						Concrete / Fill	1
6.2	2					Red/Brown silty clay	3
93.4	4					Brown sandy silt	
40.6	6						
79.7	8						
176	10						
						BT @ 10'	

FIELD BORING LOG

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: EDGEFIELD Fuel Job No.: 14-211651
Location: Edgefield SC

BORING NO. SB-6

DRILLED BY: GEX (Johnny) 6620 WATER LEVEL (drilling): DATE:
LOGGED BY: Phil WATER LEVEL (stabilized): DATE:
CHECKED BY: START DATE: 3/3 END DATE: 3/3

PID (PPM) LOGGED FROM MACRO TUBE

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						Concrete / Fill	1
1.6	2					Red / Brown silty clay Dry	3
1.6	4					Red / Brown Sandy Silt	
1.4	6						
1.6	8						
4.29	10						10
						BTD 10'	

FIELD BORING LOG

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: Edgecombe Diesel Fuel
Location: Edgecombe St

Job No.: 14-211651

BORING NO. SB-7

DRILLED BY: Gex (Johnny) 6620
LOGGED BY: PH
CHECKED BY:

WATER LEVEL (drilling):
WATER LEVEL (stabilized):
START DATE: 3/3

DATE:
DATE:
END DATE: 3/3

PID (ppm) LOGGED FROM MACRO TUBE)

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						Concrete / FILL	1
119	2					BLACK / RED / BROWN SILTY CLAY	
859	4						3
						RED / BROWN SILTY CLAY	
308	6						6
278	8					BROWN SILT	
1062	10						8
						BROWN / TAN SILTY SAND	
							10
						BTD 10'	

FIELD BORING LOG

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: EDGEFIELD Fuel Job No.: 14-211651
Location: Edgefield SC

BORING NO. SB-8/MW-2

DRILLED BY: GEX (JOHNNY) 6620 WATER LEVEL (drilling): DATE:
LOGGED BY: Phil WATER LEVEL (stabilized): DATE:
CHECKED BY: START DATE: 3/3 END DATE: 3/3

PID (PPM) LOGGED FROM MACRO CORES

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						Concrete / asphalt	1
0	2					Red/Brown silty clay	
0	4						4
						TAN/Brown sandy silt	
11.8	6						
13.1	8						
							9
15.6	10					TAN/Brown silty sand	
						SB stopped at 10	
							25
						SAND moist	
						BTW 35' sch 40 2" PVC w/ 15' screen, sand to 18', Bentonite to 16', Grout to surface FLUSH MOUNT MANHOLE	

FIELD BORING LOG

Environmental Compliance Services, Inc.
Charlotte, North Carolina

SHEET: 1 OF: 1

Job Name: Edgefield Fuel
Location: Edgefield SC

Job No.: 14-211651

BORING NO. MW-3

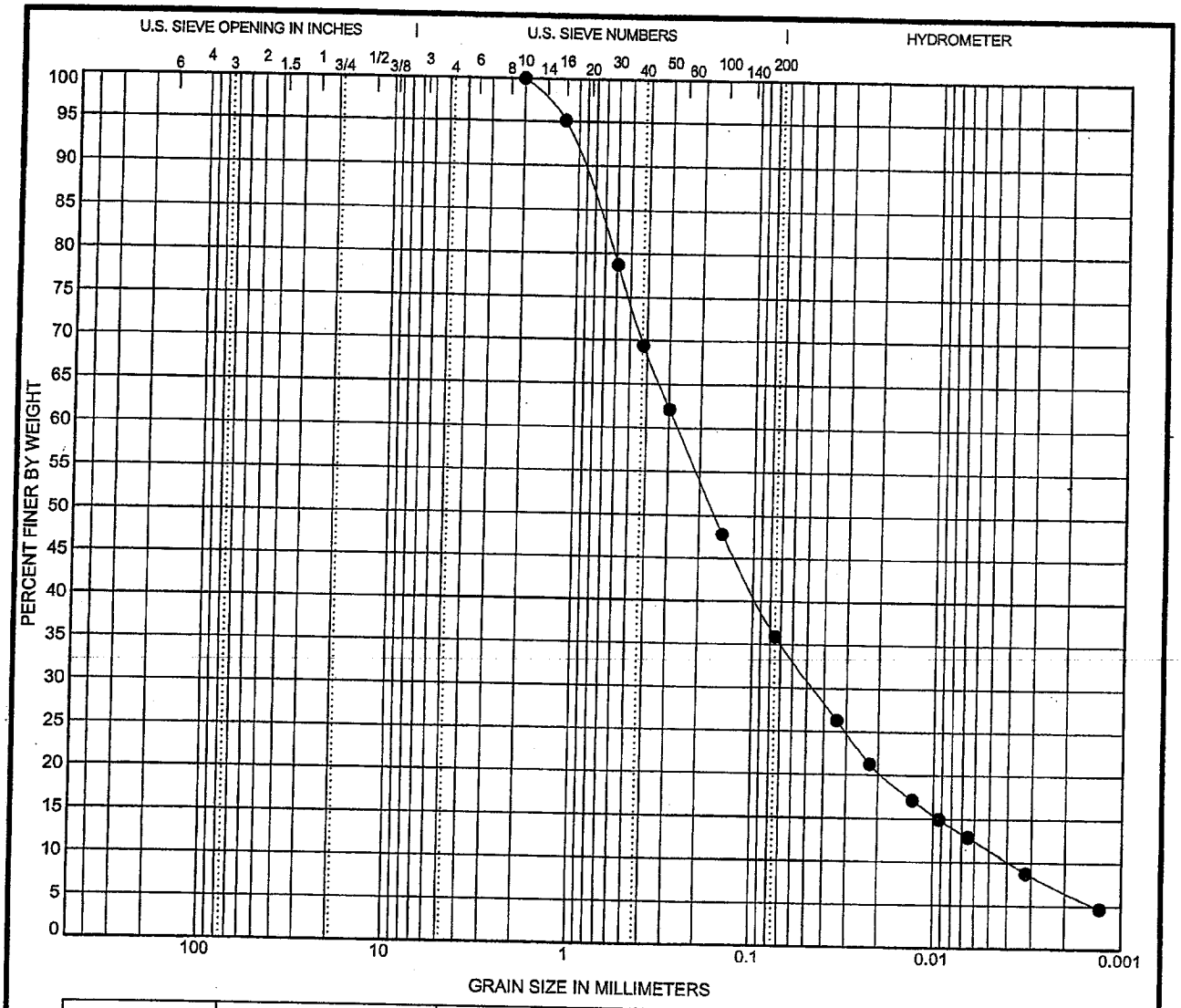
DRILLED BY: GGC (Johnny) 6626
LOGGED BY: Phil
CHECKED BY:

WATER LEVEL (drilling):
WATER LEVEL (stabilized):
START DATE: 3/3

DATE:
DATE:
END DATE: 3/3

PIh (PIM) LOGGED FROM AUGERS

OVM	FT	BLOWCOUNT			N	CLASSIFICATION AND DESCRIPTION	FT
						GRASS / TOPSOIL	1
						TAN/BROWN SILTY CLAY	
							5
						TAN BROWN SILTY SAND	
							25
						SAME MW-2	
							35
						BTW 35' sch 40 .2" PVC w/ 15' screen, sand to 18', Bentonite to 16' grout to surface	



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	23	0.0	Tan Slight White Silty SAND				2.01	68.16

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	23	0.0	2	0.268	0.046	0.004	0.0	64.1	24.5	11.4

psi

GRAIN SIZE DISTRIBUTION

Client: Pace Analytical
Project: Edgefield Fuel 2 Conv W.O. #9239246-002
Location: SB-2 20
Number: 451-90006-23

US GRAIN SIZE 451-90006.GPJ PSI CORP.GDT 3/13/09

APPENDIX C

WELL CONSTRUCTION RECORDS

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONVENIENCE
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN TOPSOIL	1.0	1.0
RED SANDY CLAY	5.0	6.0
LIGHT TAN SAND	8.0	14.0
ORANGE SAND	21.0	35.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-1 BENTONITE SEAL FROM 14.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 03/03/09
35.0 ft. Date Completed: 03/03/09

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 20.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 24.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 35.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 14.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Well Driller Date: 03/12/09

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONVENIENCE
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE	0.5	0.5
GRAVEL	0.5	1.0
RED SANDY CLAY	5.0	6.0
LIGHT TAN SAND	8.0	14.0
ORANGE SAND	21.0	35.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-2 BENTONITE SEAL FROM 14.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 35.0 ft. Date Started: 03/03/09 Date Completed: 03/03/09

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 20.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 24.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 35.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 14.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ (Well Driller) Date: 03/12/09

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONVENIENCE
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE	0.5	0.5
GRAVEL	0.5	1.0
RED SANDY CLAY	5.0	6.0
LIGHT TAN SAND	8.0	14.0
ORANGE SAND	21.0	35.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-3 BENTONITE SEAL FROM 14.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 03/03/09
35.0 ft. Date Completed: 03/03/09

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 20.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 24.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 35.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 14.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
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20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ (Well Driller) Date: 03/12/09

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

APPENDIX D

GROUNDWATER SAMPLING DATA SHEETS

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name Edgefield Fuel & Convience Location Edgefield, SC

Project No. 14-211651 Date 3/4/09

Measured By P. Pike Weather Sunny, 50's

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Well Depth (feet)	Volume Purged (gallons)
MW-1	22.13	23.68	1.55	-----	35.00	0
MW-2	-----	24.55	-----	-----	34.05	4.65
MW-3	-----	24.38	-----	-----	34.00	4.7

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 03/04/09
Field Personnel Phil Pike
General Weather Conditions Sunny
Ambient Air Temperature 50 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter U-22 Conductivity Meter YSI 556 MPS
serial no. 406012 serial no.
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Phil P	3/5/09 7:55am	Prism	3/5/09 7:55am
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-1**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 35.00 ft.
Depth to GW(DGW) 23.68 ft.

Length of Water Column (LWC=TWD-DGW) 11.32 ft.

1Csg. Vol. (LWC*C)= 11.32 X 0.163 = 1.85 gal.
3Csg. Volume = 3x 1.85 = 5.54 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.0 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (umhos/cm)								
Dissolved Oxygen (mg/L)								
Turbidity								

*Subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks Product in well, did not sample

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 03/04/09
Field Personnel Phil Pike
General Weather Conditions Sunny
Ambient Air Temperature 50 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter U-22 Conductivity Meter YSI 556 MPS
serial no. 406012 serial no.
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Phil P	3/5/09 7:55am	Pace	3/5/09 7:55am
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-2**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 34.05 ft.
Depth to GW(DGW) 24.55 ft.

Length of Water Column (LWC=TWD-DGW) 9.50 ft.

1Csg. Vol. (LWC*C)= 9.50 X 0.163 = 1.55 gal.
3Csg. Volume = 3x 1.55 = 4.65 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.7 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.55	1.55	1.55				
Time (military)	9:25	9:30	9:35	9:40				10:15
pH (s.u.)	5.63	5.98	5.92	5.83				5.80
O.R.P. (mV)	260.0	266	263	278				252.0
Temperature (°C)	18.0	19.0	20.1	19.9				18.7
Specific Cond. (umhos/cm)	346.0	436	405	367				426
Dissolved Oxygen (mg/L)	8.31	7.66	7.90	7.37				5.10
Turbidity NTU	124.00	-5.00	493.00	274.00				-5

Remarks

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 03/04/09
Field Personnel Phil Pike
General Weather Conditions Sunny
Ambient Air Temperature 50 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter U-22 Conductivity Meter YSI 556 MPS
serial no. 406012 serial no.
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Phil P	3/5/09 7:55am	Prism	3/5/09 7:55am
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-3**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 34.00 ft.
Depth to GW(DGW) 24.38 ft.

Length of Water Column (LWC=TWD-DGW) 9.62 ft.

1Csg. Vol. (LWC*C)= 9.62 X 0.163 = 1.57 gal.
3Csg. Volume = 3x 1.57 = 4.70 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.7 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.57	1.57	1.57				0.00
Time (military)	9:00	9:05	9:10	9:15				11:00
pH (s.u.)	5.84	5.57	5.69	5.63				5.73
O.R.P. (mV)	297.0	275	272	273				263.0
Temperature (°C)	17.3	18.2	18.9	19.0				18.7
Specific Cond. (umhos/cm)	220.0	143	145	147				166
Dissolved Oxygen (mg/L)	7.51	6.74	7.25	7.13				7.13
Turbidity NTU	59.50	-5.00	-5.00	-5.00				-5

Remarks Non purge well

APPENDIX E

LABORATORY REPORTS – SOIL AND GROUNDWATER SAMPLES

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

March 17, 2009

Randal Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28217

RE: Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Dear Randal Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on March 05, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

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CERTIFICATIONS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Minnesota Certification IDs
Wisconsin Certification #: 999407970
Alaska Certification #: UST-078
Tennessee Certification #: 02818
Pennsylvania Certification #: 68-00563
Oregon Certification #: MN200001
North Dakota Certification #: R-036
North Carolina Certification #: 530
New York Certification #: 11647
New Jersey Certification #: MN-002
Montana Certification #: MT CERT0092
Minnesota Certification #: 027-053-137
Maine Certification #: 2007029
Louisiana Certification #: LA080009
Louisiana Certification #: 03086
Kansas Certification #: E-10167
Iowa Certification #: 368
Illinois Certification #: 200011
Florida/NELAP Certification #: E87605
California Certification #: 01155CA
Arizona Certification #: AZ-0014
Washington Certification #: C754

Green Bay Certification IDs
Wisconsin DATCP Certification #: 105-444
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
South Carolina Certification #: 83006001
North Dakota Certification #: R-200
North Dakota Certification #: R-150
North Carolina Certification #: 503
North Carolina Certification #: 503
New York Certification #: 11888
New York Certification #: 11887
Minnesota Certification #: 055-999-334
Minnesota Certification #: 055-999-334
Louisiana Certification #: 04169
Louisiana Certification #: 04168
Kentucky Certification #: 83
Kentucky Certification #: 82
Illinois Certification #: 200051
Illinois Certification #: 200050
Florida/NELAP Certification #: E87951
Florida/NELAP Certification #: E87948

Charlotte Certification IDs
West Virginia Certification #: 357
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
Connecticut Certification #: PH-0104
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
North Carolina Wastewater Certification #: 12

Asheville Certification IDs
West Virginia Certification #: 356
Virginia Certification #: 00072
Connecticut Certification #: PH-0106
Florida/NELAP Certification #: E87648
Tennessee Certification #: 2980
South Carolina Certification #: 99030001
South Carolina Bioassay Certification #: 99030002
Pennsylvania Certification #: 68-03578
North Carolina Wastewater Certification #: 40
North Carolina Drinking Water Certification #: 37712
North Carolina Bioassay Certification #: 9
New Jersey Certification #: NC011
Massachusetts Certification #: M-NC030
Louisiana/LELAP Certification #: 03095

Eden Certification IDs
North Carolina Wastewater Certification #: 633
Virginia Drinking Water Certification #: 00424
North Carolina Drinking Water Certification #: 37738

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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9239246001	SB-1 -20	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	DLK	11	PASI-C
		EPA 8270	BET	21	PASI-C
9239246002	SB-2 20	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	DLK	11	PASI-C
		EPA 8270	BET	21	PASI-C
9239246003	SB-3 10	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	DLK	11	PASI-C
		EPA 8270	BET	21	PASI-C
9239246004	SB-4 10	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	DLK	11	PASI-C
		EPA 8270	BET	21	PASI-C
9239246005	SB-5 10	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	SHB	1	PASI-A
		EPA 8260	DLK	11	PASI-C
		EPA 8270	BET	21	PASI-C
9239246006	SB-6 10	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	SHB	1	PASI-A
		EPA 8260	DLK	11	PASI-C
		EPA 8270	BET	21	PASI-C
9239246007	SB-7 10	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	SHB	1	PASI-A
		EPA 8260	DLK	11	PASI-C
		EPA 8270	BET	21	PASI-C
9239246008	SB-8 10	EPA 9060 Modified	CCR	3	PASI-G
9239246009	MW-2	EPA 353.2	DMN	1	PASI-A
		EPA 6010	SHB	1	PASI-A
		EPA 8011	CAH	2	PASI-C
		EPA 8260	PPM	12	PASI-C
		EPA 8270	BET	21	PASI-C
		EPA 9040	TEE	1	PASI-A
		RSK 175	LCW	1	PASI-M
		SM 2320B	TEE	1	PASI-A

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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9239246010	MW-3	SM 3500-Fe D#4	JMW	1	PASI-A
		SM 4500-CO2 D	JMW	1	PASI-A
		EPA 353.2	DMN	1	PASI-A
		EPA 6010	SHB	1	PASI-A
		EPA 8011	CAH	2	PASI-C
		EPA 8260	PPM	12	PASI-C
		EPA 8270	BET	21	PASI-C
		EPA 9040	TEE	1	PASI-A
		RSK 175	LCW	1	PASI-M
		SM 2320B	TEE	1	PASI-A
		SM 3500-Fe D#4	JMW	1	PASI-A
		SM 4500-CO2 D	JMW	1	PASI-A

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Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: SB-1 -20 **Lab ID: 9239246001** Collected: 03/03/09 15:45 Received: 03/05/09 07:55 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**11.7**	mg/kg	2.6	5	03/06/09 12:30	03/10/09 01:00	7439-92-1	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	83-32-9	
Acenaphthylene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	208-96-8	
Anthracene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	120-12-7	
Benzo(a)anthracene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	56-55-3	
Benzo(a)pyrene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	207-08-9	
Chrysene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	53-70-3	
Fluoranthene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	206-44-0	
Fluorene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	193-39-5	
1-Methylnaphthalene	**4700**	ug/kg	4340	10	03/06/09 22:48	03/11/09 10:33	90-12-0	
2-Methylnaphthalene	**8500**	ug/kg	4340	10	03/06/09 22:48	03/11/09 10:33	91-57-6	
Naphthalene	**12400**	ug/kg	4340	10	03/06/09 22:48	03/11/09 10:33	91-20-3	
Phenanthrene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	85-01-8	
Pyrene	ND	ug/kg	434	1	03/06/09 22:48	03/09/09 20:08	129-00-0	
Nitrobenzene-d5 (S)	52	%	30-150	1	03/06/09 22:48	03/09/09 20:08	4165-60-0	
2-Fluorobiphenyl (S)	62	%	46-120	1	03/06/09 22:48	03/09/09 20:08	321-60-8	
Terphenyl-d14 (S)	68	%	38-108	1	03/06/09 22:48	03/09/09 20:08	1718-51-0	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Benzene	ND	ug/kg	16300	2500		03/11/09 15:10	71-43-2	
Ethylbenzene	**31100**	ug/kg	16300	2500		03/11/09 15:10	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	16300	2500		03/11/09 15:10	1634-04-4	
Naphthalene	**16500**	ug/kg	16300	2500		03/11/09 15:10	91-20-3	
Toluene	**73100**	ug/kg	16300	2500		03/11/09 15:10	108-88-3	
m&p-Xylene	**98300**	ug/kg	32500	2500		03/11/09 15:10	1330-20-7	
o-Xylene	**40500**	ug/kg	16300	2500		03/11/09 15:10	95-47-6	
Dibromofluoromethane (S)	103	%	79-116	2500		03/11/09 15:10	1868-53-7	
Toluene-d8 (S)	101	%	88-110	2500		03/11/09 15:10	2037-26-5	
4-Bromofluorobenzene (S)	96	%	74-115	2500		03/11/09 15:10	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	69-121	2500		03/11/09 15:10	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**24.0**	%	0.10	1		03/06/09 09:16		

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: SB-2 20 **Lab ID: 9239246002** Collected: 03/03/09 15:30 Received: 03/05/09 07:55 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**6.5**	mg/kg	2.3	5	03/06/09 12:30	03/10/09 01:04	7439-92-1	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	83-32-9	
Acenaphthylene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	208-96-8	
Anthracene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	120-12-7	
Benzo(a)anthracene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	56-55-3	
Benzo(a)pyrene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	207-08-9	
Chrysene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	53-70-3	
Fluoranthene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	206-44-0	
Fluorene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	193-39-5	
1-Methylnaphthalene	**2140**	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	90-12-0	
2-Methylnaphthalene	**3700**	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	91-57-6	
Naphthalene	**4200**	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	91-20-3	
Phenanthrene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	85-01-8	
Pyrene	ND	ug/kg	386	1	03/06/09 22:48	03/09/09 20:30	129-00-0	
Nitrobenzene-d5 (S)	44	%	30-150	1	03/06/09 22:48	03/09/09 20:30	4165-60-0	
2-Fluorobiphenyl (S)	41	%	46-120	1	03/06/09 22:48	03/09/09 20:30	321-60-8	1g
Terphenyl-d14 (S)	40	%	38-108	1	03/06/09 22:48	03/09/09 20:30	1718-51-0	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Benzene	**15800**	ug/kg	569	100		03/10/09 20:06	71-43-2	
Ethylbenzene	**28900**	ug/kg	7120	1250		03/11/09 15:28	100-41-4	
Methyl-tert-butyl ether	**6660**	ug/kg	569	100		03/10/09 20:06	1634-04-4	
Naphthalene	**13300**	ug/kg	7120	1250		03/11/09 15:28	91-20-3	
Toluene	**59900**	ug/kg	7120	1250		03/11/09 15:28	108-88-3	
m&p-Xylene	**99400**	ug/kg	14200	1250		03/11/09 15:28	1330-20-7	
o-Xylene	**42200**	ug/kg	7120	1250		03/11/09 15:28	95-47-6	
Dibromofluoromethane (S)	96	%	79-116	100		03/10/09 20:06	1868-53-7	
Toluene-d8 (S)	91	%	88-110	100		03/10/09 20:06	2037-26-5	
4-Bromofluorobenzene (S)	108	%	74-115	100		03/10/09 20:06	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	69-121	100		03/10/09 20:06	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**14.6**	%	0.10	1		03/06/09 09:16		

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: SB-3 10 **Lab ID: 9239246003** Collected: 03/03/09 14:00 Received: 03/05/09 07:55 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**19.5**	mg/kg	2.9	5	03/06/09 12:30	03/10/09 01:08	7439-92-1	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	83-32-9	
Acenaphthylene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	208-96-8	
Anthracene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	120-12-7	
Benzo(a)anthracene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	56-55-3	
Benzo(a)pyrene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	207-08-9	
Chrysene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	53-70-3	
Fluoranthene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	206-44-0	
Fluorene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	193-39-5	
1-Methylnaphthalene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	90-12-0	
2-Methylnaphthalene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	91-57-6	
Naphthalene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	91-20-3	
Phenanthrene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	85-01-8	
Pyrene	ND	ug/kg	400	1	03/06/09 22:48	03/09/09 20:52	129-00-0	
Nitrobenzene-d5 (S)	39	%	30-150	1	03/06/09 22:48	03/09/09 20:52	4165-60-0	
2-Fluorobiphenyl (S)	32	%	46-120	1	03/06/09 22:48	03/09/09 20:52	321-60-8	1g
Terphenyl-d14 (S)	40	%	38-108	1	03/06/09 22:48	03/09/09 20:52	1718-51-0	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Benzene	**50.7**	ug/kg	5.5	1		03/10/09 14:55	71-43-2	
Ethylbenzene	ND	ug/kg	5.5	1		03/10/09 14:55	100-41-4	
Methyl-tert-butyl ether	**220**	ug/kg	5.5	1		03/10/09 14:55	1634-04-4	E
Naphthalene	ND	ug/kg	5.5	1		03/10/09 14:55	91-20-3	
Toluene	**39.5**	ug/kg	5.5	1		03/10/09 14:55	108-88-3	
m&p-Xylene	**14.3**	ug/kg	11.0	1		03/10/09 14:55	1330-20-7	
o-Xylene	ND	ug/kg	5.5	1		03/10/09 14:55	95-47-6	
Dibromofluoromethane (S)	99	%	79-116	1		03/10/09 14:55	1868-53-7	
Toluene-d8 (S)	101	%	88-110	1		03/10/09 14:55	2037-26-5	
4-Bromofluorobenzene (S)	95	%	74-115	1		03/10/09 14:55	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	69-121	1		03/10/09 14:55	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**17.5**	%	0.10	1		03/06/09 09:16		

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: SB-4 10 **Lab ID: 9239246004** Collected: 03/03/09 14:15 Received: 03/05/09 07:55 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**20.7**	mg/kg	2.5	5	03/06/09 12:30	03/10/09 01:11	7439-92-1	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	83-32-9	
Acenaphthylene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	208-96-8	
Anthracene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	120-12-7	
Benzo(a)anthracene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	56-55-3	
Benzo(a)pyrene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	207-08-9	
Chrysene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	53-70-3	
Fluoranthene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	206-44-0	
Fluorene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	193-39-5	
1-Methylnaphthalene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	90-12-0	
2-Methylnaphthalene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	91-57-6	
Naphthalene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	91-20-3	
Phenanthrene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	85-01-8	
Pyrene	ND	ug/kg	394	1	03/06/09 22:48	03/09/09 21:14	129-00-0	
Nitrobenzene-d5 (S)	35	%	30-150	1	03/06/09 22:48	03/09/09 21:14	4165-60-0	
2-Fluorobiphenyl (S)	29	%	46-120	1	03/06/09 22:48	03/09/09 21:14	321-60-8	1g
Terphenyl-d14 (S)	69	%	38-108	1	03/06/09 22:48	03/09/09 21:14	1718-51-0	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Benzene	**103**	ug/kg	9.4	1		03/10/09 15:13	71-43-2	
Ethylbenzene	**34.2**	ug/kg	9.4	1		03/10/09 15:13	100-41-4	
Methyl-tert-butyl ether	**10.1**	ug/kg	9.4	1		03/10/09 15:13	1634-04-4	
Naphthalene	ND	ug/kg	9.4	1		03/10/09 15:13	91-20-3	
Toluene	**335**	ug/kg	9.4	1		03/10/09 15:13	108-88-3	
m&p-Xylene	**99.9**	ug/kg	18.7	1		03/10/09 15:13	1330-20-7	
o-Xylene	**33.8**	ug/kg	9.4	1		03/10/09 15:13	95-47-6	
Dibromofluoromethane (S)	96	%	79-116	1		03/10/09 15:13	1868-53-7	
Toluene-d8 (S)	99	%	88-110	1		03/10/09 15:13	2037-26-5	
4-Bromofluorobenzene (S)	96	%	74-115	1		03/10/09 15:13	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	69-121	1		03/10/09 15:13	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**16.3**	%	0.10	1		03/06/09 09:16		

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: SB-5 10 **Lab ID: 9239246005** Collected: 03/03/09 14:30 Received: 03/05/09 07:55 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**20.9**	mg/kg	0.52	1	03/06/09 12:30	03/09/09 12:28	7439-92-1	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	83-32-9	
Acenaphthylene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	208-96-8	
Anthracene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	120-12-7	
Benzo(a)anthracene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	56-55-3	
Benzo(a)pyrene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	207-08-9	
Chrysene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	53-70-3	
Fluoranthene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	206-44-0	
Fluorene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	193-39-5	
1-Methylnaphthalene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	90-12-0	
2-Methylnaphthalene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	91-57-6	
Naphthalene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	91-20-3	
Phenanthrene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	85-01-8	
Pyrene	ND	ug/kg	391	1	03/06/09 22:48	03/09/09 21:36	129-00-0	
Nitrobenzene-d5 (S)	67	%	30-150	1	03/06/09 22:48	03/09/09 21:36	4165-60-0	
2-Fluorobiphenyl (S)	57	%	46-120	1	03/06/09 22:48	03/09/09 21:36	321-60-8	
Terphenyl-d14 (S)	78	%	38-108	1	03/06/09 22:48	03/09/09 21:36	1718-51-0	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Benzene	**13.2**	ug/kg	5.4	1		03/10/09 17:03	71-43-2	
Ethylbenzene	ND	ug/kg	5.4	1		03/10/09 17:03	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.4	1		03/10/09 17:03	1634-04-4	
Naphthalene	ND	ug/kg	5.4	1		03/10/09 17:03	91-20-3	
Toluene	**26.7**	ug/kg	5.4	1		03/10/09 17:03	108-88-3	
m&p-Xylene	**15.2**	ug/kg	10.9	1		03/10/09 17:03	1330-20-7	
o-Xylene	ND	ug/kg	5.4	1		03/10/09 17:03	95-47-6	
Dibromofluoromethane (S)	100	%	79-116	1		03/10/09 17:03	1868-53-7	
Toluene-d8 (S)	105	%	88-110	1		03/10/09 17:03	2037-26-5	
4-Bromofluorobenzene (S)	96	%	74-115	1		03/10/09 17:03	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	69-121	1		03/10/09 17:03	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**15.6**	%	0.10	1		03/06/09 09:16		

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: SB-6 10 **Lab ID: 9239246006** Collected: 03/03/09 14:45 Received: 03/05/09 07:55 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**20.7**	mg/kg	0.46	1	03/06/09 12:30	03/09/09 12:32	7439-92-1	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	83-32-9	
Acenaphthylene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	208-96-8	
Anthracene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	120-12-7	
Benzo(a)anthracene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	56-55-3	
Benzo(a)pyrene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	207-08-9	
Chrysene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	53-70-3	
Fluoranthene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	206-44-0	
Fluorene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	193-39-5	
1-Methylnaphthalene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	90-12-0	
2-Methylnaphthalene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	91-57-6	
Naphthalene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	91-20-3	
Phenanthrene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	85-01-8	
Pyrene	ND	ug/kg	397	1	03/06/09 22:48	03/09/09 21:58	129-00-0	
Nitrobenzene-d5 (S)	62	%	30-150	1	03/06/09 22:48	03/09/09 21:58	4165-60-0	
2-Fluorobiphenyl (S)	51	%	46-120	1	03/06/09 22:48	03/09/09 21:58	321-60-8	
Terphenyl-d14 (S)	66	%	38-108	1	03/06/09 22:48	03/09/09 21:58	1718-51-0	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Benzene	**36.0**	ug/kg	5.4	1		03/10/09 17:39	71-43-2	
Ethylbenzene	**17.8**	ug/kg	5.4	1		03/10/09 17:39	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.4	1		03/10/09 17:39	1634-04-4	
Naphthalene	**11.4**	ug/kg	5.4	1		03/10/09 17:39	91-20-3	
Toluene	**17.1**	ug/kg	5.4	1		03/10/09 17:39	108-88-3	
m&p-Xylene	**53.4**	ug/kg	10.7	1		03/10/09 17:39	1330-20-7	
o-Xylene	**9.6**	ug/kg	5.4	1		03/10/09 17:39	95-47-6	
Dibromofluoromethane (S)	98	%	79-116	1		03/10/09 17:39	1868-53-7	
Toluene-d8 (S)	103	%	88-110	1		03/10/09 17:39	2037-26-5	
4-Bromofluorobenzene (S)	97	%	74-115	1		03/10/09 17:39	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	69-121	1		03/10/09 17:39	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**16.9**	%	0.10	1		03/06/09 09:17		

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: SB-7 10 **Lab ID: 9239246007** Collected: 03/03/09 15:00 Received: 03/05/09 07:55 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**13.5**	mg/kg	0.59	1	03/06/09 12:30	03/09/09 12:36	7439-92-1	
8270 MSSV Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	83-32-9	
Acenaphthylene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	208-96-8	
Anthracene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	120-12-7	
Benzo(a)anthracene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	56-55-3	
Benzo(a)pyrene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	207-08-9	
Chrysene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	53-70-3	
Fluoranthene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	206-44-0	
Fluorene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	193-39-5	
1-Methylnaphthalene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	90-12-0	
2-Methylnaphthalene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	91-57-6	
Naphthalene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	91-20-3	
Phenanthrene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	85-01-8	
Pyrene	ND	ug/kg	398	1	03/06/09 22:48	03/09/09 22:20	129-00-0	
Nitrobenzene-d5 (S)	41	%	30-150	1	03/06/09 22:48	03/09/09 22:20	4165-60-0	
2-Fluorobiphenyl (S)	33	%	46-120	1	03/06/09 22:48	03/09/09 22:20	321-60-8	1g
Terphenyl-d14 (S)	45	%	38-108	1	03/06/09 22:48	03/09/09 22:20	1718-51-0	
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Benzene	**1450**	ug/kg	442	50		03/10/09 19:11	71-43-2	
Ethylbenzene	**896**	ug/kg	442	50		03/10/09 19:11	100-41-4	
Methyl-tert-butyl ether	**655**	ug/kg	442	50		03/10/09 19:11	1634-04-4	
Naphthalene	**872**	ug/kg	442	50		03/10/09 19:11	91-20-3	
Toluene	**6600**	ug/kg	442	50		03/10/09 19:11	108-88-3	
m&p-Xylene	**2620**	ug/kg	883	50		03/10/09 19:11	1330-20-7	
o-Xylene	**1030**	ug/kg	442	50		03/10/09 19:11	95-47-6	
Dibromofluoromethane (S)	111	%	79-116	50		03/10/09 19:11	1868-53-7	
Toluene-d8 (S)	108	%	88-110	50		03/10/09 19:11	2037-26-5	
4-Bromofluorobenzene (S)	102	%	74-115	50		03/10/09 19:11	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	69-121	50		03/10/09 19:11	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**17.0**	%	0.10	1		03/06/09 09:17		

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: SB-8 10 **Lab ID: 9239246008** Collected: 03/03/09 15:15 Received: 03/05/09 07:55 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Total Organic Carbon	Analytical Method: EPA 9060 Modified							
Total Organic Carbon	**1630**	mg/kg	498	1		03/11/09 16:14	7440-44-0	
Total Organic Carbon	**873**	mg/kg	505	1		03/11/09 16:23	7440-44-0	
Mean Total Organic Carbon	**1260**	mg/kg	501	1		03/11/09 16:23	7440-44-0	M0

Sample: MW-2 **Lab ID: 9239246009** Collected: 03/04/09 10:15 Received: 03/05/09 07:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175							
Methane	ND	ug/L	10.0	1		03/16/09 19:14	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	**0.46**	ug/L	0.019	1	03/12/09 15:21	03/13/09 08:15	106-93-4	C3
1-Chloro-2-bromopropane (S)	86	%	60-140	1	03/12/09 15:21	03/13/09 08:15	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	5.0	1	03/09/09 09:30	03/10/09 19:13	7439-92-1	
8270 MSSV PAH SPE	Analytical Method: EPA 8270 Preparation Method: EPA 3535							
Acenaphthene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	83-32-9	
Acenaphthylene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	208-96-8	
Anthracene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	120-12-7	
Benzo(a)anthracene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	56-55-3	
Benzo(a)pyrene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	207-08-9	
Chrysene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	53-70-3	
Fluoranthene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	206-44-0	
Fluorene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	193-39-5	
1-Methylnaphthalene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	90-12-0	
2-Methylnaphthalene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	91-57-6	
Naphthalene	**30.1**	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	91-20-3	
Phenanthrene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	85-01-8	
Pyrene	ND	ug/L	12.2	1	03/06/09 18:45	03/12/09 13:10	129-00-0	
Nitrobenzene-d5 (S)	44	%	10-120	1	03/06/09 18:45	03/12/09 13:10	4165-60-0	
2-Fluorobiphenyl (S)	35	%	10-120	1	03/06/09 18:45	03/12/09 13:10	321-60-8	
Terphenyl-d14 (S)	46	%	10-116	1	03/06/09 18:45	03/12/09 13:10	1718-51-0	
8260 MSV	Analytical Method: EPA 8260							
Benzene	**4970**	ug/L	250	50		03/10/09 17:20	71-43-2	
1,2-Dichloroethane	ND	ug/L	50.0	10		03/10/09 06:29	107-06-2	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: MW-2 **Lab ID: 9239246009** Collected: 03/04/09 10:15 Received: 03/05/09 07:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260							
Ethylbenzene	**1020**	ug/L	50.0	10		03/10/09 06:29	100-41-4	
Methyl-tert-butyl ether	**183**	ug/L	50.0	10		03/10/09 06:29	1634-04-4	
Naphthalene	**142**	ug/L	50.0	10		03/10/09 06:29	91-20-3	
Toluene	**7470**	ug/L	250	50		03/10/09 17:20	108-88-3	
m&p-Xylene	**3050**	ug/L	100	10		03/10/09 06:29	1330-20-7	
o-Xylene	**1350**	ug/L	50.0	10		03/10/09 06:29	95-47-6	
4-Bromofluorobenzene (S)	105	%	87-109	10		03/10/09 06:29	460-00-4	
Dibromofluoromethane (S)	98	%	85-115	10		03/10/09 06:29	1868-53-7	
1,2-Dichloroethane-d4 (S)	94	%	79-120	10		03/10/09 06:29	17060-07-0	
Toluene-d8 (S)	101	%	70-120	10		03/10/09 06:29	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**41.7**	mg/L	5.0	1		03/10/09 18:05		
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4							
Iron, Ferrous	ND	mg/L	0.50	1		03/09/09 11:20		H1
9040 pH	Analytical Method: EPA 9040							
pH	**5.8**	Std. Units	0.10	1		03/06/09 17:50		H6
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**2.4**	mg/L	0.10	1		03/05/09 22:15		
Carbon Dioxide Calculation	Analytical Method: SM 4500-CO2 D							
Carbon dioxide	**142**	mg/L	5.0	1		03/16/09 12:45	124-38-9	

Sample: MW-3 **Lab ID: 9239246010** Collected: 03/04/09 11:00 Received: 03/05/09 07:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175							
Methane	ND	ug/L	10.0	1		03/16/09 19:40	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011							
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	1	03/12/09 15:21	03/13/09 08:31	106-93-4	
1-Chloro-2-bromopropane (S)	100	%	60-140	1	03/12/09 15:21	03/13/09 08:31	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	ug/L	5.0	1	03/09/09 09:30	03/10/09 19:17	7439-92-1	
8270 MSSV PAH SPE	Analytical Method: EPA 8270 Preparation Method: EPA 3535							
Acenaphthene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	83-32-9	
Acenaphthylene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	208-96-8	
Anthracene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	120-12-7	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: MW-3 **Lab ID: 9239246010** Collected: 03/04/09 11:00 Received: 03/05/09 07:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH SPE	Analytical Method: EPA 8270 Preparation Method: EPA 3535							
Benzo(a)anthracene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	207-08-9	
Chrysene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	53-70-3	
Fluoranthene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	206-44-0	
Fluorene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	193-39-5	
1-Methylnaphthalene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	90-12-0	
2-Methylnaphthalene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	91-57-6	
Naphthalene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	91-20-3	
Phenanthrene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	85-01-8	
Pyrene	ND	ug/L	13.3	1	03/06/09 18:45	03/12/09 13:32	129-00-0	
Nitrobenzene-d5 (S)	58	%	10-120	1	03/06/09 18:45	03/12/09 13:32	4165-60-0	
2-Fluorobiphenyl (S)	57	%	10-120	1	03/06/09 18:45	03/12/09 13:32	321-60-8	
Terphenyl-d14 (S)	77	%	10-116	1	03/06/09 18:45	03/12/09 13:32	1718-51-0	
8260 MSV	Analytical Method: EPA 8260							
Benzene	**7.9**	ug/L	5.0	1		03/10/09 06:47	71-43-2	
1,2-Dichloroethane	ND	ug/L	5.0	1		03/10/09 06:47	107-06-2	
Ethylbenzene	ND	ug/L	5.0	1		03/10/09 06:47	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	1		03/10/09 06:47	1634-04-4	
Naphthalene	ND	ug/L	5.0	1		03/10/09 06:47	91-20-3	
Toluene	**33.9**	ug/L	5.0	1		03/10/09 06:47	108-88-3	
m&p-Xylene	**12.8**	ug/L	10.0	1		03/10/09 06:47	1330-20-7	
o-Xylene	ND	ug/L	5.0	1		03/10/09 06:47	95-47-6	
4-Bromofluorobenzene (S)	98	%	87-109	1		03/10/09 06:47	460-00-4	
Dibromofluoromethane (S)	96	%	85-115	1		03/10/09 06:47	1868-53-7	
1,2-Dichloroethane-d4 (S)	95	%	79-120	1		03/10/09 06:47	17060-07-0	
Toluene-d8 (S)	102	%	70-120	1		03/10/09 06:47	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**25.0**	mg/L	5.0	1		03/10/09 18:05		
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4							
Iron, Ferrous	ND	mg/L	0.50	1		03/09/09 11:22		H1
9040 pH	Analytical Method: EPA 9040							
pH	**5.8**	Std. Units	0.10	1		03/06/09 17:50		H6
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2							
Nitrogen, Nitrate	**2.2**	mg/L	0.10	1		03/05/09 22:15		

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Sample: MW-3 **Lab ID: 9239246010** Collected: 03/04/09 11:00 Received: 03/05/09 07:55 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Carbon Dioxide Calculation	Analytical Method: SM 4500-CO2 D							
Carbon dioxide	**101**	mg/L	5.0	1		03/16/09 12:45	124-38-9	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: WETA/3366
QC Batch Method: EPA 9060 Modified
Analysis Method: EPA 9060 Modified
Analysis Description: 9060 TOC Average
Associated Lab Samples: 9239246008

METHOD BLANK: 133878
Matrix: Solid
Associated Lab Samples: 9239246008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/kg	ND	250	03/11/09 15:47	

LABORATORY CONTROL SAMPLE: 133879

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/kg	1000	1060	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 133880 133881

Parameter	Units	9239246008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mean Total Organic Carbon	mg/kg	1260	993	980	1380	1530	12	28	50-150	10	M0

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: PMST/2315 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 9239246001, 9239246002, 9239246003, 9239246004, 9239246005, 9239246006, 9239246007

SAMPLE DUPLICATE: 245832

Parameter	Units	9239296001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	21.1	23.1	9	

SAMPLE DUPLICATE: 245833

Parameter	Units	9239249002 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	27.5	28.3	3	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: OEXT/6088 Analysis Method: EPA 8270
QC Batch Method: EPA 3546 Analysis Description: 8270 Solid MSSV Microwave
Associated Lab Samples: 9239246001, 9239246002, 9239246003, 9239246004, 9239246005, 9239246006, 9239246007

METHOD BLANK: 246191 Matrix: Solid
Associated Lab Samples: 9239246001, 9239246002, 9239246003, 9239246004, 9239246005, 9239246006, 9239246007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	330	03/09/09 17:11	
2-Methylnaphthalene	ug/kg	ND	330	03/09/09 17:11	
Acenaphthene	ug/kg	ND	330	03/09/09 17:11	
Acenaphthylene	ug/kg	ND	330	03/09/09 17:11	
Anthracene	ug/kg	ND	330	03/09/09 17:11	
Benzo(a)anthracene	ug/kg	ND	330	03/09/09 17:11	
Benzo(a)pyrene	ug/kg	ND	330	03/09/09 17:11	
Benzo(b)fluoranthene	ug/kg	ND	330	03/09/09 17:11	
Benzo(g,h,i)perylene	ug/kg	ND	330	03/09/09 17:11	
Benzo(k)fluoranthene	ug/kg	ND	330	03/09/09 17:11	
Chrysene	ug/kg	ND	330	03/09/09 17:11	
Dibenz(a,h)anthracene	ug/kg	ND	330	03/09/09 17:11	
Fluoranthene	ug/kg	ND	330	03/09/09 17:11	
Fluorene	ug/kg	ND	330	03/09/09 17:11	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330	03/09/09 17:11	
Naphthalene	ug/kg	ND	330	03/09/09 17:11	
Phenanthrene	ug/kg	ND	330	03/09/09 17:11	
Pyrene	ug/kg	ND	330	03/09/09 17:11	
2-Fluorobiphenyl (S)	%	73	46-120	03/09/09 17:11	
Nitrobenzene-d5 (S)	%	88	30-150	03/09/09 17:11	
Terphenyl-d14 (S)	%	95	38-108	03/09/09 17:11	

LABORATORY CONTROL SAMPLE: 246192

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	1670	1450	87	50-150	
2-Methylnaphthalene	ug/kg	1670	1190	72	50-150	
Acenaphthene	ug/kg	1670	1400	84	50-150	
Acenaphthylene	ug/kg	1670	1550	93	50-150	
Anthracene	ug/kg	1670	1610	96	50-150	
Benzo(a)anthracene	ug/kg	1670	1560	93	50-150	
Benzo(a)pyrene	ug/kg	1670	1710	102	50-150	
Benzo(b)fluoranthene	ug/kg	1670	1650	99	50-150	
Benzo(g,h,i)perylene	ug/kg	1670	1330	80	24-117	
Benzo(k)fluoranthene	ug/kg	1670	1700	102	50-150	
Chrysene	ug/kg	1670	1480	89	50-150	
Dibenz(a,h)anthracene	ug/kg	1670	1550	93	17-128	
Fluoranthene	ug/kg	1670	1520	91	50-150	
Fluorene	ug/kg	1670	1450	87	50-150	
Indeno(1,2,3-cd)pyrene	ug/kg	1670	1510	91	19-128	
Naphthalene	ug/kg	1670	1350	81	50-150	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

LABORATORY CONTROL SAMPLE: 246192

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/kg	1670	1620	97	50-150	
Pyrene	ug/kg	1670	1460	88	50-150	
2-Fluorobiphenyl (S)	%			80	46-120	
Nitrobenzene-d5 (S)	%			90	30-150	
Terphenyl-d14 (S)	%			83	38-108	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 246193 246194

Parameter	Units	9239249002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1-Methylnaphthalene	ug/kg	ND	2300	2300	1650	1590	72	69	50-150	4	
2-Methylnaphthalene	ug/kg	ND	2300	2300	1410	1350	61	59	50-150	4	
Acenaphthene	ug/kg	ND	2300	2300	1800	1610	78	70	50-150	11	
Acenaphthylene	ug/kg	ND	2300	2300	2010	1800	88	78	50-150	11	
Anthracene	ug/kg	ND	2300	2300	1990	1770	86	77	50-150	11	
Benzo(a)anthracene	ug/kg	ND	2300	2300	1830	1580	79	69	50-150	15	
Benzo(a)pyrene	ug/kg	ND	2300	2300	1940	1770	84	77	50-150	9	
Benzo(b)fluoranthene	ug/kg	ND	2300	2300	1950	1860	85	81	50-150	5	
Benzo(g,h,i)perylene	ug/kg	ND	2300	2300	1160	1210	51	53	50-150	4	
Benzo(k)fluoranthene	ug/kg	ND	2300	2300	1840	1550	80	67	50-150	17	
Chrysene	ug/kg	ND	2300	2300	1730	1570	75	68	50-150	9	
Dibenz(a,h)anthracene	ug/kg	ND	2300	2300	1440	1200	63	52	50-150	18	
Fluoranthene	ug/kg	ND	2300	2300	1890	1670	82	73	50-150	12	
Fluorene	ug/kg	ND	2300	2300	1870	1680	81	73	50-150	11	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	2300	2300	1350	1190	59	52	50-150	12	
Naphthalene	ug/kg	ND	2300	2300	1670	1560	73	68	50-150	7	
Phenanthrene	ug/kg	ND	2300	2300	2160	1870	94	81	50-150	15	
Pyrene	ug/kg	ND	2300	2300	1890	1690	82	73	50-150	11	
2-Fluorobiphenyl (S)	%						72	66	46-120		
Nitrobenzene-d5 (S)	%						80	74	30-150		
Terphenyl-d14 (S)	%						69	68	38-108		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: WET/7489
QC Batch Method: SM 3500-Fe D#4
Analysis Method: SM 3500-Fe D#4
Analysis Description: Iron, Ferrous
Associated Lab Samples: 9239246009, 9239246010

METHOD BLANK: 246842 Matrix: Water
Associated Lab Samples: 9239246009, 9239246010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.50	03/09/09 11:18	

LABORATORY CONTROL SAMPLE: 246843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	1.5	1.6	106	90-110	

SAMPLE DUPLICATE: 246844

Parameter	Units	9239246009 Result	Dup Result	RPD	Qualifiers
Iron, Ferrous	mg/L	ND	ND		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: WETA/4601
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 9239246009, 9239246010

METHOD BLANK: 245849
Matrix: Water
Associated Lab Samples: 9239246009, 9239246010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	03/05/09 22:15	

LABORATORY CONTROL SAMPLE: 245850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE SAMPLE: 245851

Parameter	Units	9239246009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	2.4	5	7.6	105	90-110	

SAMPLE DUPLICATE: 245852

Parameter	Units	9239313001 Result	Dup Result	RPD	Qualifiers
Nitrogen, Nitrate	mg/L	292	294	.5	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: WET/7480
QC Batch Method: EPA 9040
Analysis Method: EPA 9040
Analysis Description: 9040 pH
Associated Lab Samples: 9239246009, 9239246010

SAMPLE DUPLICATE: 246360

Parameter	Units	9239011002 Result	Dup Result	RPD	Qualifiers
pH	Std. Units	7.4	7.4	0	H6

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: OEXT/6126
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9239246009, 9239246010

METHOD BLANK: 248027 Matrix: Water
Associated Lab Samples: 9239246009, 9239246010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	03/13/09 04:14	
1-Chloro-2-bromopropane (S)	%	103	60-140	03/13/09 04:14	

LABORATORY CONTROL SAMPLE & LCSD: 248028 248029

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.29	0.27	0.29	94	100	60-140	6	20	
1-Chloro-2-bromopropane (S)	%				105	103	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 248030 248031

Parameter	Units	9239424012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.27	.27	0.31	0.30	112	108	60-140	4	
1-Chloro-2-bromopropane (S)	%						108	100	60-140		

SAMPLE DUPLICATE: 248032

Parameter	Units	9239424014 Result	Dup Result	RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		
1-Chloro-2-bromopropane (S)	%		94	4	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: MSV/6350
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV
Associated Lab Samples: 9239246009, 9239246010

METHOD BLANK: 247016 Matrix: Water
Associated Lab Samples: 9239246009, 9239246010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	03/10/09 01:01	
Benzene	ug/L	ND	5.0	03/10/09 01:01	
Ethylbenzene	ug/L	ND	5.0	03/10/09 01:01	
m&p-Xylene	ug/L	ND	10.0	03/10/09 01:01	
Methyl-tert-butyl ether	ug/L	ND	5.0	03/10/09 01:01	
Naphthalene	ug/L	ND	5.0	03/10/09 01:01	
o-Xylene	ug/L	ND	5.0	03/10/09 01:01	
Toluene	ug/L	ND	5.0	03/10/09 01:01	
1,2-Dichloroethane-d4 (S)	%	93	79-120	03/10/09 01:01	
4-Bromofluorobenzene (S)	%	103	87-109	03/10/09 01:01	
Dibromofluoromethane (S)	%	96	85-115	03/10/09 01:01	
Toluene-d8 (S)	%	100	70-120	03/10/09 01:01	

LABORATORY CONTROL SAMPLE: 247017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	52.1	104	72-126	
Benzene	ug/L	50	53.4	107	78-128	
Ethylbenzene	ug/L	50	50.5	101	80-127	
m&p-Xylene	ug/L	100	99.5	99	82-127	
Methyl-tert-butyl ether	ug/L	50	56.4	113	71-130	
Naphthalene	ug/L	50	57.9	116	52-136	
o-Xylene	ug/L	50	49.9	100	83-124	
Toluene	ug/L	50	51.7	103	76-126	
1,2-Dichloroethane-d4 (S)	%			93	79-120	
4-Bromofluorobenzene (S)	%			106	87-109	
Dibromofluoromethane (S)	%			100	85-115	
Toluene-d8 (S)	%			101	70-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 247104 247105

Parameter	Units	9239260051 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Benzene	ug/L	129	50	50	179	182	100	106	74-136	2	
Toluene	ug/L	ND	50	50	35.7	43.4	71	87	73-131	19	M0
1,2-Dichloroethane-d4 (S)	%						93	92	79-120		
4-Bromofluorobenzene (S)	%						99	103	87-109		
Dibromofluoromethane (S)	%						95	99	85-115		
Toluene-d8 (S)	%						100	100	70-120		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: MPRP/3929
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 9239246009, 9239246010

METHOD BLANK: 246809 Matrix: Water
Associated Lab Samples: 9239246009, 9239246010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	03/10/09 17:44	

LABORATORY CONTROL SAMPLE: 246810

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	422	84	80-120	

MATRIX SPIKE SAMPLE: 246811

Parameter	Units	9239201002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	41.7	500	463	84	75-125	

SAMPLE DUPLICATE: 246812

Parameter	Units	9239201003 Result	Dup Result	RPD	Qualifiers
Lead	ug/L	14.6	14.2	3	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: OEXT/6083
QC Batch Method: EPA 3535
Analysis Method: EPA 8270
Analysis Description: 8270 Water PAH MSSV
Associated Lab Samples: 9239246009, 9239246010

METHOD BLANK: 245991
Matrix: Water
Associated Lab Samples: 9239246009, 9239246010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/L	ND	10.0	03/12/09 10:58	
2-Methylnaphthalene	ug/L	ND	10.0	03/12/09 10:58	
Acenaphthene	ug/L	ND	10.0	03/12/09 10:58	
Acenaphthylene	ug/L	ND	10.0	03/12/09 10:58	
Anthracene	ug/L	ND	10.0	03/12/09 10:58	
Benzo(a)anthracene	ug/L	ND	10.0	03/12/09 10:58	
Benzo(a)pyrene	ug/L	ND	10.0	03/12/09 10:58	
Benzo(b)fluoranthene	ug/L	ND	10.0	03/12/09 10:58	
Benzo(g,h,i)perylene	ug/L	ND	10.0	03/12/09 10:58	
Benzo(k)fluoranthene	ug/L	ND	10.0	03/12/09 10:58	
Chrysene	ug/L	ND	10.0	03/12/09 10:58	
Dibenz(a,h)anthracene	ug/L	ND	10.0	03/12/09 10:58	
Fluoranthene	ug/L	ND	10.0	03/12/09 10:58	
Fluorene	ug/L	ND	10.0	03/12/09 10:58	
Indeno(1,2,3-cd)pyrene	ug/L	ND	10.0	03/12/09 10:58	
Naphthalene	ug/L	ND	10.0	03/12/09 10:58	
Phenanthrene	ug/L	ND	10.0	03/12/09 10:58	
Pyrene	ug/L	ND	10.0	03/12/09 10:58	
2-Fluorobiphenyl (S)	%	52	10-120	03/12/09 10:58	
Nitrobenzene-d5 (S)	%	59	10-120	03/12/09 10:58	
Terphenyl-d14 (S)	%	63	10-116	03/12/09 10:58	

LABORATORY CONTROL SAMPLE: 245992

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/L	50	27.2	54	29-108	
2-Methylnaphthalene	ug/L	50	24.0	48	30-104	
Acenaphthene	ug/L	50	28.7	57	39-109	
Acenaphthylene	ug/L	50	31.8	64	41-109	
Anthracene	ug/L	50	29.0	58	45-114	
Benzo(a)anthracene	ug/L	50	28.3	57	45-109	
Benzo(a)pyrene	ug/L	50	29.2	58	47-117	
Benzo(b)fluoranthene	ug/L	50	29.0	58	32-113	
Benzo(g,h,i)perylene	ug/L	50	24.1	48	10-149	
Benzo(k)fluoranthene	ug/L	50	26.1	52	41-104	
Chrysene	ug/L	50	26.1	52	35-116	
Dibenz(a,h)anthracene	ug/L	50	25.4	51	13-139	
Fluoranthene	ug/L	50	28.2	56	43-110	
Fluorene	ug/L	50	30.2	60	40-111	
Indeno(1,2,3-cd)pyrene	ug/L	50	25.8	52	17-135	
Naphthalene	ug/L	50	24.6	49	26-120	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

LABORATORY CONTROL SAMPLE: 245992

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	50	30.4	61	45-110	
Pyrene	ug/L	50	30.8	62	38-114	
2-Fluorobiphenyl (S)	%			54	10-120	
Nitrobenzene-d5 (S)	%			43	10-120	
Terphenyl-d14 (S)	%			56	10-116	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 245993 245994

Parameter	Units	9239249005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1-Methylnaphthalene	ug/L	ND	111	111	73.9	76.1	62	64	29-108	3	
2-Methylnaphthalene	ug/L	ND	111	111	66.7	69.4	55	58	30-104	4	
Acenaphthene	ug/L	ND	111	111	72.3	74.9	65	67	17-104	3	
Acenaphthylene	ug/L	ND	111	111	81.2	84.2	73	76	10-200	4	
Anthracene	ug/L	ND	111	111	75.3	86.9	68	78	10-150	14	
Benzo(a)anthracene	ug/L	ND	111	111	75.6	86.1	68	78	10-172	13	
Benzo(a)pyrene	ug/L	ND	111	111	77.4	89.2	70	80	10-173	14	
Benzo(b)fluoranthene	ug/L	ND	111	111	75.0	85.4	67	77	10-200	13	
Benzo(g,h,i)perylene	ug/L	ND	111	111	65.8	64.5	59	58	10-120	2	
Benzo(k)fluoranthene	ug/L	ND	111	111	67.8	78.3	61	70	10-145	14	
Chrysene	ug/L	ND	111	111	69.0	80.5	62	72	10-146	15	
Dibenz(a,h)anthracene	ug/L	ND	111	111	72.1	77.1	65	69	10-120	7	
Fluoranthene	ug/L	ND	111	111	74.5	80.4	67	72	20-120	8	
Fluorene	ug/L	ND	111	111	74.7	78.5	67	71	10-109	5	
Indeno(1,2,3-cd)pyrene	ug/L	ND	111	111	70.8	75.1	64	68	11-120	6	
Naphthalene	ug/L	19.7	111	111	84.3	83.3	58	57	10-120	1	
Phenanthrene	ug/L	ND	111	111	80.5	86.6	72	78	10-145	7	
Pyrene	ug/L	ND	111	111	76.9	89.3	69	80	13-114	15	
2-Fluorobiphenyl (S)	%						64	65	10-120		
Nitrobenzene-d5 (S)	%						67	65	10-120		
Terphenyl-d14 (S)	%						62	72	10-116		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: WET/7503 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 9239246009, 9239246010

METHOD BLANK: 247592 Matrix: Water
Associated Lab Samples: 9239246009, 9239246010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	ND	5.0	03/10/09 18:04	

LABORATORY CONTROL SAMPLE: 247593

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	50.0	100	90-110	

SAMPLE DUPLICATE: 247594

Parameter	Units	9239246009 Result	Dup Result	RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	41.7	41.7	0	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: MSV/6364
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9239246002

METHOD BLANK: 247394
Matrix: Solid
Associated Lab Samples: 9239246002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	03/10/09 11:33	
Ethylbenzene	ug/kg	ND	5.0	03/10/09 11:33	
m&p-Xylene	ug/kg	ND	10.0	03/10/09 11:33	
Methyl-tert-butyl ether	ug/kg	ND	5.0	03/10/09 11:33	
Naphthalene	ug/kg	ND	5.0	03/10/09 11:33	
o-Xylene	ug/kg	ND	5.0	03/10/09 11:33	
Toluene	ug/kg	ND	5.0	03/10/09 11:33	
1,2-Dichloroethane-d4 (S)	%	99	69-121	03/10/09 11:33	
4-Bromofluorobenzene (S)	%	94	74-115	03/10/09 11:33	
Dibromofluoromethane (S)	%	99	79-116	03/10/09 11:33	
Toluene-d8 (S)	%	101	88-110	03/10/09 11:33	

LABORATORY CONTROL SAMPLE: 247395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	50.4	101	71-140	
Ethylbenzene	ug/kg	50	51.1	102	69-141	
m&p-Xylene	ug/kg	100	102	102	72-138	
Methyl-tert-butyl ether	ug/kg	50	52.2	104	2-138	
Naphthalene	ug/kg	50	59.1	118	61-138	
o-Xylene	ug/kg	50	49.7	99	74-137	
Toluene	ug/kg	50	49.4	99	69-139	
1,2-Dichloroethane-d4 (S)	%			96	69-121	
4-Bromofluorobenzene (S)	%			100	74-115	
Dibromofluoromethane (S)	%			98	79-116	
Toluene-d8 (S)	%			98	88-110	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: MSV/6363 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9239246001, 9239246003, 9239246004, 9239246005, 9239246006, 9239246007

METHOD BLANK: 247392 Matrix: Solid
Associated Lab Samples: 9239246001, 9239246003, 9239246004, 9239246005, 9239246006, 9239246007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	03/10/09 11:52	
Ethylbenzene	ug/kg	ND	5.0	03/10/09 11:52	
m&p-Xylene	ug/kg	ND	10.0	03/10/09 11:52	
Methyl-tert-butyl ether	ug/kg	ND	5.0	03/10/09 11:52	
Naphthalene	ug/kg	ND	5.0	03/10/09 11:52	
o-Xylene	ug/kg	ND	5.0	03/10/09 11:52	
Toluene	ug/kg	ND	5.0	03/10/09 11:52	
1,2-Dichloroethane-d4 (S)	%	99	69-121	03/10/09 11:52	
4-Bromofluorobenzene (S)	%	94	74-115	03/10/09 11:52	
Dibromofluoromethane (S)	%	100	79-116	03/10/09 11:52	
Toluene-d8 (S)	%	102	88-110	03/10/09 11:52	

LABORATORY CONTROL SAMPLE: 247393

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	46.7	93	71-140	
Ethylbenzene	ug/kg	50	46.6	93	69-141	
m&p-Xylene	ug/kg	100	92.6	93	72-138	
Methyl-tert-butyl ether	ug/kg	50	48.0	96	2-138	
Naphthalene	ug/kg	50	53.1	106	61-138	
o-Xylene	ug/kg	50	44.7	89	74-137	
Toluene	ug/kg	50	45.5	91	69-139	
1,2-Dichloroethane-d4 (S)	%			96	69-121	
4-Bromofluorobenzene (S)	%			100	74-115	
Dibromofluoromethane (S)	%			97	79-116	
Toluene-d8 (S)	%			99	88-110	

MATRIX SPIKE SAMPLE: 247892

Parameter	Units	9239297001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	ND	55.2	46.1	83	46-143	
Toluene	ug/kg	ND	55.2	45.3	82	38-145	
1,2-Dichloroethane-d4 (S)	%				95	69-121	
4-Bromofluorobenzene (S)	%				99	74-115	
Dibromofluoromethane (S)	%				100	79-116	
Toluene-d8 (S)	%				101	88-110	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

SAMPLE DUPLICATE: 247893

Parameter	Units	9239389008 Result	Dup Result	RPD	Qualifiers
Benzene	ug/kg	ND	3.5J		
Ethylbenzene	ug/kg	ND	ND		
m&p-Xylene	ug/kg	ND	ND		
Methyl-tert-butyl ether	ug/kg	ND	ND		
Naphthalene	ug/kg	ND	ND		
o-Xylene	ug/kg	ND	ND		
Toluene	ug/kg	ND	4.8J		
1,2-Dichloroethane-d4 (S)	%	102	99	14	
4-Bromofluorobenzene (S)	%	93	94	9	
Dibromofluoromethane (S)	%	100	100	11	
Toluene-d8 (S)	%	104	102	13	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: AIR/8249 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 9239246009, 9239246010

METHOD BLANK: 594087 Matrix: Water
Associated Lab Samples: 9239246009, 9239246010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methane	ug/L	ND	10.0	03/16/09 15:50	

LABORATORY CONTROL SAMPLE & LCSD: 594088 594089

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Methane	ug/L	60.7	79.0	83.4	130	137	70-130	5	30	CH

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

QC Batch: MPRP/3925 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 9239246001, 9239246002, 9239246003, 9239246004, 9239246005, 9239246006, 9239246007

METHOD BLANK: 245996 Matrix: Solid
Associated Lab Samples: 9239246001, 9239246002, 9239246003, 9239246004, 9239246005, 9239246006, 9239246007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	ND	0.50	03/09/09 11:05	

LABORATORY CONTROL SAMPLE: 245997

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	50	47.7	95	80-120	

MATRIX SPIKE SAMPLE: 245998

Parameter	Units	9239119001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	ND	43.9	39.0	89	75-125	

SAMPLE DUPLICATE: 245999

Parameter	Units	9239119002 Result	Dup Result	RPD	Qualifiers
Lead	mg/kg	ND	ND		

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QUALIFIERS

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-G	Pace Analytical Services - Green Bay
PASI-M	Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

1g	Base/neutral surrogate recovery outside of control limits. The data was accepted based on valid recovery of the 2 remaining base/neutral surrogates.
C3	Relative percent difference between results from each column was greater than 40%. The higher of the two results was reported.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the EPA method holding time.
H6	Analysis initiated more than 15 minutes after sample collection.
M0	Matrix spike recovery was outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9239246008	SB-8 10	EPA 9060 Modified	WETA/3366		
9239246008	SB-8 10	EPA 9060 Modified	WETA/3367		
9239246001	SB-1 -20	ASTM D2974-87	PMST/2315		
9239246002	SB-2 20	ASTM D2974-87	PMST/2315		
9239246003	SB-3 10	ASTM D2974-87	PMST/2315		
9239246004	SB-4 10	ASTM D2974-87	PMST/2315		
9239246005	SB-5 10	ASTM D2974-87	PMST/2315		
9239246006	SB-6 10	ASTM D2974-87	PMST/2315		
9239246007	SB-7 10	ASTM D2974-87	PMST/2315		
9239246009	MW-2	EPA 353.2	WETA/4601		
9239246010	MW-3	EPA 353.2	WETA/4601		
9239246009	MW-2	EPA 3535	OEXT/6083	EPA 8270	MSSV/2547
9239246010	MW-3	EPA 3535	OEXT/6083	EPA 8270	MSSV/2547
9239246001	SB-1 -20	EPA 3050	MPRP/3925	EPA 6010	ICP/3672
9239246002	SB-2 20	EPA 3050	MPRP/3925	EPA 6010	ICP/3672
9239246003	SB-3 10	EPA 3050	MPRP/3925	EPA 6010	ICP/3672
9239246004	SB-4 10	EPA 3050	MPRP/3925	EPA 6010	ICP/3672
9239246005	SB-5 10	EPA 3050	MPRP/3925	EPA 6010	ICP/3672
9239246006	SB-6 10	EPA 3050	MPRP/3925	EPA 6010	ICP/3672
9239246007	SB-7 10	EPA 3050	MPRP/3925	EPA 6010	ICP/3672
9239246001	SB-1 -20	EPA 3546	OEXT/6088	EPA 8270	MSSV/2538
9239246002	SB-2 20	EPA 3546	OEXT/6088	EPA 8270	MSSV/2538
9239246003	SB-3 10	EPA 3546	OEXT/6088	EPA 8270	MSSV/2538
9239246004	SB-4 10	EPA 3546	OEXT/6088	EPA 8270	MSSV/2538
9239246005	SB-5 10	EPA 3546	OEXT/6088	EPA 8270	MSSV/2538
9239246006	SB-6 10	EPA 3546	OEXT/6088	EPA 8270	MSSV/2538
9239246007	SB-7 10	EPA 3546	OEXT/6088	EPA 8270	MSSV/2538
9239246009	MW-2	EPA 9040	WET/7480		
9239246010	MW-3	EPA 9040	WET/7480		
9239246009	MW-2	EPA 3010	MPRP/3929	EPA 6010	ICP/3676
9239246010	MW-3	EPA 3010	MPRP/3929	EPA 6010	ICP/3676
9239246009	MW-2	SM 3500-Fe D#4	WET/7489		
9239246010	MW-3	SM 3500-Fe D#4	WET/7489		
9239246009	MW-2	EPA 8260	MSV/6350		
9239246010	MW-3	EPA 8260	MSV/6350		
9239246001	SB-1 -20	EPA 8260	MSV/6363		
9239246003	SB-3 10	EPA 8260	MSV/6363		
9239246004	SB-4 10	EPA 8260	MSV/6363		
9239246005	SB-5 10	EPA 8260	MSV/6363		
9239246006	SB-6 10	EPA 8260	MSV/6363		
9239246007	SB-7 10	EPA 8260	MSV/6363		
9239246002	SB-2 20	EPA 8260	MSV/6364		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGEFIELD FUEL 2 CONV
Pace Project No.: 9239246

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9239246009	**MW-2**	SM 2320B	WET/7503		
9239246010	**MW-3**	SM 2320B	WET/7503		
9239246009	**MW-2**	EPA 8011	OEXT/6126	EPA 8011	GCSV/4934
9239246010	**MW-3**	EPA 8011	OEXT/6126	EPA 8011	GCSV/4934
9239246009	**MW-2**	SM 4500-CO2 D	WETA/4649		
9239246010	**MW-3**	SM 4500-CO2 D	WETA/4649		
9239246009	**MW-2**	RSK 175	AIR/8249		
9239246010	**MW-3**	RSK 175	AIR/8249		

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

March 13, 2009

Kevin Herring
Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville NC 28078

TEL: (704) 875-9092
FAX: (704) 875-9091

RE: 9239246

Dear Kevin Herring:

Order No: 0903412

Analytical Environmental Services, Inc. received 2 samples on March 6, 2009 10:45 am for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/08-06/30/09.
-AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 08/01/09.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

James Forrest
Project Manager

0903412

Chain of Custody

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Workorder: 9239246 **Workorder Name:** EDGEFIELD FUEL 2 CONV **Results Requested** 3/12/2009

Report / Invoice To	Subcontract To
Kevin Herring Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092 Email: kevin.herring@pacelabs.com	AES P.O. CHS05344

Item	Sample ID	Collected Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						Requested Analysis: SO4												LAB USE ONLY
1	MW-2	3/4/2009 10:15	9239246009	Water	1						—												
2	MW-3	3/4/2009 11:00	9239246010	Water																			
3																							
4																							
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	3/5/09 1700	[signature]	3/6/9
2				
3				
4				
5				

Comments: 10:45 [signature]

Page 2 of 6

Analytical Environmental Services, Inc **Date:** 13-Mar-09

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-2
Project:	9239246	**Collection Date:**	3/4/2009 10:15:00 AM
Lab ID:	0903412-001	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN		**SW9056**			**(SW9056)**			
Sulfate	19	10		mg/L	R144007	10	03/12/2009 10:45	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 13-Mar-09

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-3
Project:	9239246	**Collection Date:**	3/4/2009 11:00:00 AM
Lab ID:	0903412-002	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN		**SW9056**			**(SW9056)**			
Sulfate	25	1.0		mg/L	R144007	1	03/12/2009 10:59	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client PACE Work Order Number 0903412

Checklist completed by Signature 3/6/09 Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.1°C Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted ✓ Yes __ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by AS

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

CLIENT: Pace Analytical Services, Inc.
Work Order: 0903412
Project: 9239246

ANALYTICAL QC SUMMARY REPORT

TestCode: 9056_NO SHORTHLD_

Sample ID **MB-R144007**	SampType: **MBLK**	TestCode: **9056_NO SH**	Units: **mg/L**	Prep Date:		RunNo: **144007**					
Client ID:	Batch ID: **R144007**	TestNo: **SW9056**		Analysis Date: **3/11/2009**		SeqNo: **2953219**					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	BRL	1.0	0	0	0	0	0	0	0		

Sample ID **LCS-R144007**	SampType: **LCS**	TestCode: **9056_NO SH**	Units: **mg/L**	Prep Date:		RunNo: **144007**					
Client ID:	Batch ID: **R144007**	TestNo: **SW9056**		Analysis Date: **3/11/2009**		SeqNo: **2953217**					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	26.11	1.0	25	0.08732	104	90	110	0	0		

Sample ID **0903688-001BMS**	SampType: **MS**	TestCode: **9056_NO SH**	Units: **mg/L**	Prep Date:		RunNo: **144007**					
Client ID:	Batch ID: **R144007**	TestNo: **SW9056**		Analysis Date: **3/11/2009**		SeqNo: **2953222**					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	27.22	1.0	25	0.2314	108	90	110	0	0		

Sample ID **0903688-007AMS**	SampType: **MS**	TestCode: **9056_NO SH**	Units: **mg/L**	Prep Date:		RunNo: **144007**					
Client ID:	Batch ID: **R144007**	TestNo: **SW9056**		Analysis Date: **3/12/2009**		SeqNo: **2953262**					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	35.89	1.0	25	9.931	104	90	110	0	0		

Sample ID **0903688-001BMSD**	SampType: **MSD**	TestCode: **9056_NO SH**	Units: **mg/L**	Prep Date:		RunNo: **144007**					
Client ID:	Batch ID: **R144007**	TestNo: **SW9056**		Analysis Date: **3/11/2009**		SeqNo: **2953224**					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	27.44	1.0	25	0.2314	109	90	110	27.22	0.786	20	

Qualifiers:

<	Less than Result value	>	Greater than Result value	B	Analyte detected in the associated Method Blank
BRL	Below Reporting Limit	E	Estimated value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

ASI

ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

Pace Analytical Services Inc. - Huntersv
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Mr. Kevin Herring

March 12, 2009

Report No.: ASC0204
Client ID: SB-2-20/9239246002
Date/Time Sampled: 3/3/2009 3:30:00PM
Matrix: Solid

Lab Number ID: ASC0204-01
Date/Time Received: 3/6/2009 9:25:00AM

Analyte	Result	RL	Units	Method	Qual.	DF	Preparation Date	Analytical Date	Batch	Init.
General Chemistry										
% Solids	85.8	0.04	% by Weight	SOP Moisture		1	3/10/09 12:40	3/10/09 12:40	A903259	MZF
Organics										
Diesel Range Organics	360	8.2	mg/kg dry	EPA 8015C	S-04	1	3/10/09 9:00	3/11/09 22:57	A903257	JRS
Surrogate: n-Decane	*198 %*	*10-109*		*EPA 8015C*	*S-04*		*3/10/09 9:00*	*3/11/09 22:57*	*A903257*	
Surrogate: n-Octacosane	*72 %*	*10-138*		*EPA 8015C*			*3/10/09 9:00*	*3/11/09 22:57*	*A903257*	

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Attention: Mr. Kevin Herring

March 12, 2009

Report No.: ASC0204

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A903259 - % Solids										
Duplicate (A903259-DUP1)		**Source: ASC0078-03**		Prepared & Analyzed: 03/10/09						
% Solids	85.4	0.04	% by Weight		85.0			0.4	12	

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March 12, 2009

Report No.: ASC0204

Organics - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A903257 - EPA 3550B										
Blank (A903257-BLK1)				Prepared: 03/10/09 Analyzed: 03/11/09						
Diesel Range Organics	ND	7.0	mg/kg wet							
Surrogate: n-Decane	*25.0*		*mg/kg wet*	*33.135*		*75*	*10-109*			
Surrogate: n-Octacosane	*23.7*		*mg/kg wet*	*33.135*		*71*	*10-138*			
LCS (A903257-BS1)				Prepared: 03/10/09 Analyzed: 03/11/09						
Diesel Range Organics	37	7.0	mg/kg wet	33.278		112	36-129			
Surrogate: n-Decane	*26.5*		*mg/kg wet*	*33.278*		*80*	*10-109*			
Surrogate: n-Octacosane	*26.3*		*mg/kg wet*	*33.278*		*79*	*10-138*			
Matrix Spike (A903257-MS1)		**Source: ASC0204-01**		Prepared: 03/10/09 Analyzed: 03/11/09						
Diesel Range Organics	ND	8.1	mg/kg dry	38.679	360	NR	10-152			QM-02
Surrogate: n-Decane	*76.2*		*mg/kg dry*	*38.679*		*197*	*10-109*			*S-04*
Surrogate: n-Octacosane	*29.6*		*mg/kg dry*	*38.679*		*76*	*10-138*			
Matrix Spike Dup (A903257-MSD1)		**Source: ASC0204-01**		Prepared: 03/10/09 Analyzed: 03/11/09						
Diesel Range Organics	ND	8.1	mg/kg dry	38.717	360	NR	10-152		52	QM-02
Surrogate: n-Decane	*83.8*		*mg/kg dry*	*38.717*		*216*	*10-109*			*S-04*
Surrogate: n-Octacosane	*29.9*		*mg/kg dry*	*38.717*		*77*	*10-138*			

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Huntersville NC, 28078
Attention: Mr. Kevin Herring

March 12, 2009

Laboratory Certifications

Code	Description	Number	Expires
NELAC	NELAC (Drinking Water, Non-Potable Water, Solids)	E87315	06/30/2009

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Attention: Mr. Kevin Herring

March 12, 2009

Legend

Definition of Laboratory Terms

ND - None Detected at the Reporting Limit
TIC - Tentatively Identified Compound
CFU - Colony Forming Units
SOP - Method run per ASI Standard Operating Procedure
RL - Reporting Limit
DF - Dilution Factor
* - Analyte not included in the NELAC list of certified analytes.

Sample Information

N-Nitrosodiphenylamine breaks down to diphenylamine in the GCMS; both analytes are reported as N-Nitrososdiphenylamine. ASI is not NELAC certified for diphenylamine.

Phthalic acid and phthalic anhydride are reported as dimethyl phthalate

Maleic acid and maleic anhydride are reported as dimethyl malate

1,2-Diphenylhydrazine breaks down to azobenzene in the GCMS; both analytes are reported as azobenzene

Definition of Qualifiers

S-04 The surrogate recovery for this sample is outside of established control limits due to a suspected sample matrix effect.

QM-02 The spike recovery is outside acceptance limits due to insignificant spike amount as compared to sample concentration.

Note: Unless otherwise noted, all results are reported on an as received basis.

ANALYTICAL SERVICES, INC.

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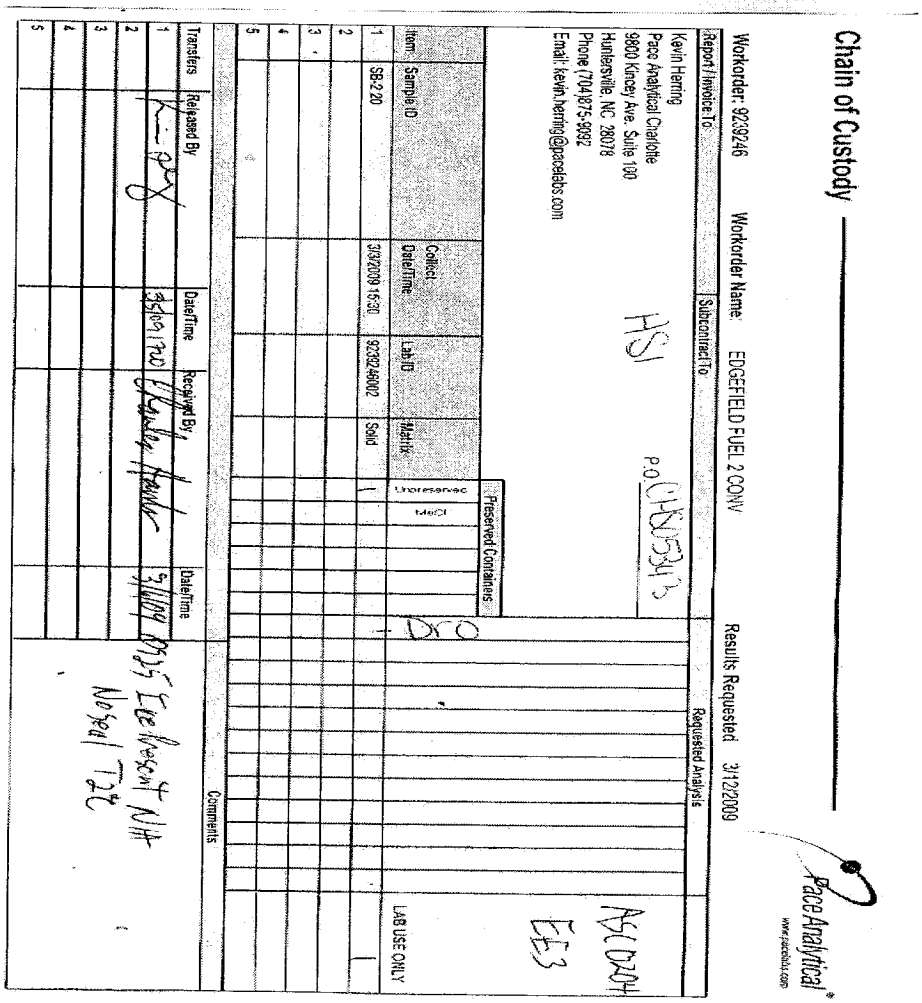
9800 Kincey Avenue
Huntersville NC, 28078
Attention: Mr. Kevin Herring

March 12, 2009



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ANALYTICAL SERVICES, INC.

Environmental Monitoring & Laboratory Analysis
110 Technology Parkway, Norcross, GA 30092
(770) 734-4200 FAX (770) 734-4201

LOG-IN CHECKLIST

Printed: 3/12/2009 5:45:51PM

Attn: Mr. Kevin Herring

Client: Pace Analytical Services Inc. - Huntersville
Project: Edgefield Fuel 2 Conv
Date Received: 03/06/09 09:25

Work Order: ASC0204
Logged In By: Charles Hawks

NPDES:

OBSERVATIONS

#Samples: 1 **#Containers:** 1

Minimum Temp(C): 2.0 **Maximum Temp(C):** 2.0 **Custody Seal(s):**

CHECKLIST ITEMS

COC included with Samples	YES
Sample Container(s) Intact	YES
Chain of Custody Complete	YES
Sample Container(s) Match COC	YES
Custody seal Intact	NO
Temperature in Compliance	YES
Sufficient Sample Volume for Analysis	YES
Zero Headspace Maintained for VOA Analyses	YES
Samples labeled preserved (If Applicable)	YES
Samples received within Allowable Hold Times	YES
Samples Received on Ice	YES
Preservation Confirmed	YES

APPENDIX F

INVESTIGATION DERIVED WASTE MANIFEST

AT/Karl-C Hutchinson

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number: SCSQG	2. Page 1 of: 1	3. Emergency Response Phone	4. Waste Tracking Number: TGT1304

5. Generator's Name and Mailing Address
Edgefield Shell & Convenience #2
311 Main Street
Edgefield, SC 29824
Generator's Phone: 843-649-5575
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: TransGlobal Trucking — U.S. EPA ID Number: SCR000075515

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Global Environmental Assurance, Inc
320 Winningham Rd
St. George, SC 29477
U.S. EPA ID Number: SCR000075515
Facility's Phone: 843-563-8916-16

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
	1. Waste Soil Nonhazardous, PAL1953LF	3	Dm	165	P
	2. Waste Water Nonhazardous, PAL1954LF	1	Dm	55	G
	3.				
	4.				

13. Special Handling Instructions and Additional Information
9(1)Waste Soil PAL1953LF
9(2)Waste Water PAL1954LF
127Q18928palm

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: Casey Cain, Agent — Signature: Casey Cain, Agent — Month 3 Day 29 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Andy Jones — Signature — Month 3 Day 29 Year 09
Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
17b. Alternate Facility (or Generator) — Manifest Reference Number: — U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) — Month Day Year

Pending QIC

18. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Jimmy Belivieau — Signature — Month 3 Day 30 Year 09

-NHM-C-C-11

1-DESIGNATED FACILITY TO DESTINATION

GENERATOR — TRANSPORTER INT'L — DESIGNATED FACILITY

APPENDIX G

SLUG TEST DATA

SUMMARY of SLUG TEST ANALYSES

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID #: 12175 COUNTY: Edgefield

FACILITY NAME: Edgefield Fuel & Convenience 3

Slug Data

See
Appendix G Table _____ Figure _____ for a list of all data measurements.
(water level logs, etc.) (Complete as appropriate).

Water Level Recovery Data was measured by InSitu MiniTroll
(Hermit Data Logger, Manually with Water Level Indicator, etc.) (List Method)

Complete the following table for each well tested.
COMPLETE A SECOND SHEET IF MORE THAN FOUR WELLS ARE TESTED.

Slug Test Conducted in well(s) Number	MW-2	MW-3		
Initial Rise/Drawdown in well (feet)	2.122	1.855		
Radius of Well Casing (feet)	0.083	0.083		
Effective Radius of Well (feet)	0.42	0.42		
Static Saturated Aquifer Thickness (feet)	100	100.00		
Length of Well Screen (feet)	15	15		
Static Height of Water Column in Well (feet)	9.50	9.62		

Calculations

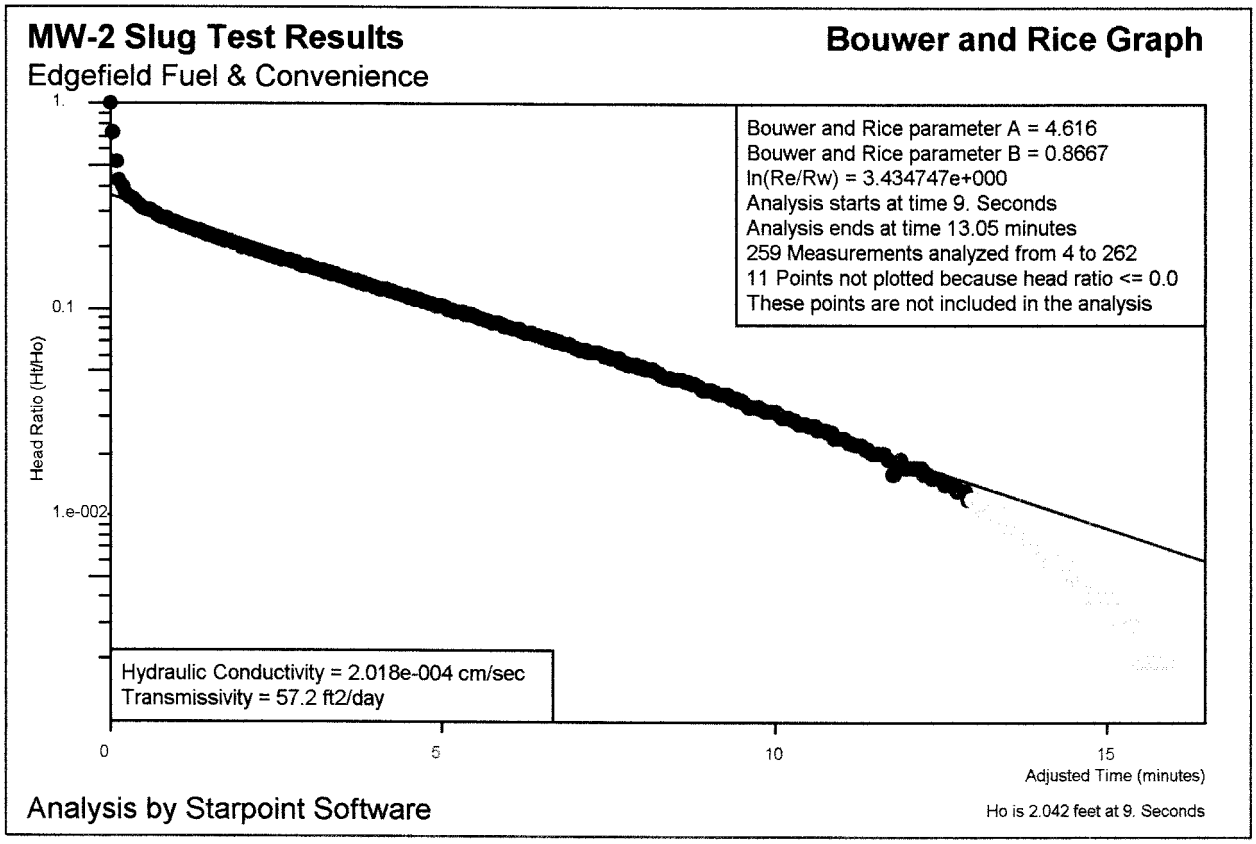
See
Appendix g Table _____ Figure _____ for calculations. (Complete as appropriate).
The method for aquifer calculations was Bouwer-Rice (I.e. Bouwer-Rice, Cooper, etc.)
Calculated values by well were as follows:

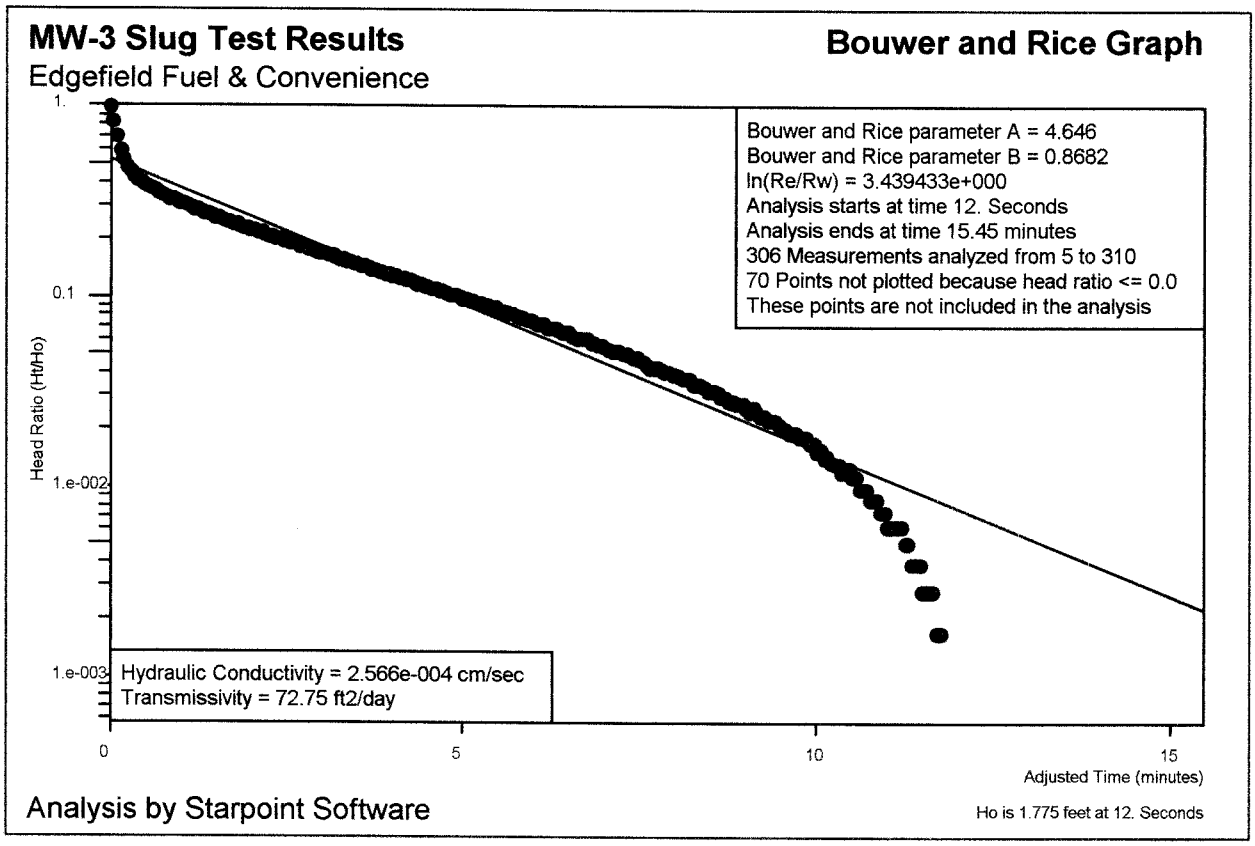
Slug Test Conducted in well(s) number	MW-2	MW-3		
Hydraulic Conductivity (ft/day)	0.6007	0.7357		

Thickness of the aquifer used to calculate hydraulic conductivity was 100.00 feet.
The aquifer is _____ confined _____ semi-confined X water table.

The estimated seepage velocity is 2.19 to 2.7 feet/year based on
a hydraulic conductivity of 0.6007 ft/day and 0.7357 ft/day a hydraulic gradient of 0.002ft/ft and
a porosity of 20 per cent for a silty fine sand with some clay soil (list type).

SUMMARY of SLUG TEST


MW-2 Slug Test Results
Bouwer and Rice Graph
Edgefield Fuel & Convenience
Bouwer and Rice parameter A = 4.616
Bouwer and Rice parameter B = 0.8667
ln(Re/Rw) = 3.434747e+000
Analysis starts at time 9. Seconds
Analysis ends at time 13.05 minutes
259 Measurements analyzed from 4 to 262
11 Points not plotted because head ratio <= 0.0
These points are not included in the analysis
Head Ratio (Ht/Ho)
1.
0.1
1.e-002
Hydraulic Conductivity = 2.018e-004 cm/sec
Transmissivity = 57.2 ft2/day
0
5
10
15
Adjusted Time (minutes)
Analysis by Starpoint Software
Ho is 2.042 feet at 9. Seconds


MW-3 Slug Test Results
Bouwer and Rice Graph
Edgefield Fuel & Convenience
Bouwer and Rice parameter A = 4.646
Bouwer and Rice parameter B = 0.8682
ln(Re/Rw) = 3.439433e+000
Analysis starts at time 12. Seconds
Analysis ends at time 15.45 minutes
306 Measurements analyzed from 5 to 310
70 Points not plotted because head ratio <= 0.0
These points are not included in the analysis
Head Ratio (Ht/Ho)
1.
0.1
1.e-002
1.e-003
Hydraulic Conductivity = 2.566e-004 cm/sec
Transmissivity = 72.75 ft2/day
0
5
10
15
Adjusted Time (minutes)
Analysis by Starpoint Software
Ho is 1.775 feet at 12. Seconds

In-Situ Inc. MiniTroll Pro

Report generated: 3/23/2009 9:13:33
Report from file: F:\WinSitu\Win-Situ\Data\SN08508 1999-01-02 233304 Edgefiel
DataMgr Version 3.71

Serial number: 8508
Firmware Version 3.09
Unit name:

Test name: Edgefield MW-2

Test defined on: 1/2/1999 23:29:13
Test started on: 1/2/1999 23:33:04
Test stopped on: 1/2/1999 23:49:34
Test extracted on: N/A

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 330

TOTAL DATA SAMPLES 330

Channel number [1]
Measurement type: Temperature
Channel name:

Channel number [2]
Measurement type: Pressure
Channel name: pressure
Sensor Range: 30 PSI.
Specific gravity: 1
Mode: TOC
User-defined reference: 0 Feet H2O
Referenced on: test start
Pressure head at reference: 8.282 Feet H2O

Date	Time	ET (min)	Chan[1] Celsius	Chan[2] Feet H2O
1/2/1999	23:33:04	0	21.62	0
1/2/1999	23:33:07	0.05	21.62	0
1/2/1999	23:33:10	0.1	21.62	0
1/2/1999	23:33:13	0.15	21.62	2.122
1/2/1999	23:33:16	0.2	21.64	1.56
1/2/1999	23:33:19	0.25	21.64	1.157
1/2/1999	23:33:22	0.3	21.64	0.959
1/2/1999	23:33:25	0.35	21.64	0.884
1/2/1999	23:33:28	0.4	21.64	0.838
1/2/1999	23:33:31	0.45	21.64	0.807

1/2/1999	23:33:34	0.5	21.64	0.782
1/2/1999	23:33:37	0.55	21.64	0.761
1/2/1999	23:33:40	0.6	21.64	0.742
1/2/1999	23:33:43	0.65	21.64	0.726
1/2/1999	23:33:46	0.7	21.64	0.711
1/2/1999	23:33:49	0.75	21.64	0.699
1/2/1999	23:33:52	0.8	21.65	0.687
1/2/1999	23:33:55	0.85	21.65	0.676
1/2/1999	23:33:58	0.9	21.65	0.666
1/2/1999	23:34:01	0.95	21.65	0.655
1/2/1999	23:34:04	1	21.65	0.647
1/2/1999	23:34:07	1.05	21.65	0.637
1/2/1999	23:34:10	1.1	21.65	0.628
1/2/1999	23:34:13	1.15	21.65	0.62
1/2/1999	23:34:16	1.2	21.65	0.611
1/2/1999	23:34:19	1.25	21.65	0.605
1/2/1999	23:34:22	1.3	21.65	0.597
1/2/1999	23:34:25	1.35	21.65	0.591
1/2/1999	23:34:28	1.4	21.65	0.582
1/2/1999	23:34:31	1.45	21.65	0.576
1/2/1999	23:34:34	1.5	21.65	0.57
1/2/1999	23:34:37	1.55	21.65	0.564
1/2/1999	23:34:40	1.6	21.66	0.558
1/2/1999	23:34:43	1.65	21.65	0.551
1/2/1999	23:34:46	1.7	21.66	0.545
1/2/1999	23:34:49	1.75	21.66	0.539
1/2/1999	23:34:52	1.8	21.66	0.533
1/2/1999	23:34:55	1.85	21.66	0.528
1/2/1999	23:34:58	1.9	21.66	0.522
1/2/1999	23:35:01	1.95	21.66	0.516
1/2/1999	23:35:04	2	21.66	0.512
1/2/1999	23:35:07	2.05	21.66	0.506
1/2/1999	23:35:10	2.1	21.66	0.501
1/2/1999	23:35:13	2.15	21.66	0.495
1/2/1999	23:35:16	2.2	21.66	0.491
1/2/1999	23:35:19	2.25	21.66	0.485
1/2/1999	23:35:22	2.3	21.66	0.481
1/2/1999	23:35:25	2.35	21.66	0.476
1/2/1999	23:35:28	2.4	21.66	0.472
1/2/1999	23:35:31	2.45	21.66	0.466
1/2/1999	23:35:34	2.5	21.66	0.462
1/2/1999	23:35:37	2.55	21.66	0.458
1/2/1999	23:35:40	2.6	21.66	0.453
1/2/1999	23:35:43	2.65	21.66	0.449
1/2/1999	23:35:46	2.7	21.66	0.445
1/2/1999	23:35:49	2.75	21.67	0.439
1/2/1999	23:35:52	2.8	21.67	0.435
1/2/1999	23:35:55	2.85	21.66	0.433
1/2/1999	23:35:58	2.9	21.67	0.429
1/2/1999	23:36:01	2.95	21.67	0.425
1/2/1999	23:36:04	3	21.67	0.42
1/2/1999	23:36:07	3.05	21.67	0.416

1/2/1999	23:36:10	3.1	21.67	0.412
1/2/1999	23:36:13	3.15	21.67	0.41
1/2/1999	23:36:16	3.2	21.67	0.406
1/2/1999	23:36:19	3.25	21.67	0.402
1/2/1999	23:36:22	3.3	21.67	0.4
1/2/1999	23:36:25	3.35	21.67	0.395
1/2/1999	23:36:28	3.4	21.67	0.391
1/2/1999	23:36:31	3.45	21.67	0.389
1/2/1999	23:36:34	3.5	21.67	0.385
1/2/1999	23:36:37	3.55	21.67	0.381
1/2/1999	23:36:40	3.6	21.67	0.377
1/2/1999	23:36:43	3.65	21.67	0.375
1/2/1999	23:36:46	3.7	21.67	0.37
1/2/1999	23:36:49	3.75	21.67	0.368
1/2/1999	23:36:52	3.8	21.67	0.364
1/2/1999	23:36:55	3.85	21.67	0.362
1/2/1999	23:36:58	3.9	21.67	0.358
1/2/1999	23:37:01	3.95	21.67	0.356
1/2/1999	23:37:04	4	21.67	0.352
1/2/1999	23:37:07	4.05	21.67	0.35
1/2/1999	23:37:10	4.1	21.67	0.345
1/2/1999	23:37:13	4.15	21.67	0.341
1/2/1999	23:37:16	4.2	21.67	0.339
1/2/1999	23:37:19	4.25	21.67	0.337
1/2/1999	23:37:22	4.3	21.67	0.337
1/2/1999	23:37:25	4.35	21.67	0.333
1/2/1999	23:37:28	4.4	21.67	0.329
1/2/1999	23:37:31	4.45	21.67	0.327
1/2/1999	23:37:34	4.5	21.67	0.325
1/2/1999	23:37:37	4.55	21.67	0.32
1/2/1999	23:37:40	4.6	21.67	0.318
1/2/1999	23:37:43	4.65	21.67	0.316
1/2/1999	23:37:46	4.7	21.67	0.312
1/2/1999	23:37:49	4.75	21.67	0.31
1/2/1999	23:37:52	4.8	21.67	0.308
1/2/1999	23:37:55	4.85	21.67	0.306
1/2/1999	23:37:58	4.9	21.67	0.302
1/2/1999	23:38:01	4.95	21.67	0.3
1/2/1999	23:38:04	5	21.67	0.298
1/2/1999	23:38:07	5.05	21.67	0.295
1/2/1999	23:38:10	5.1	21.67	0.293
1/2/1999	23:38:13	5.15	21.67	0.291
1/2/1999	23:38:16	5.2	21.67	0.289
1/2/1999	23:38:19	5.25	21.67	0.285
1/2/1999	23:38:22	5.3	21.67	0.285
1/2/1999	23:38:25	5.35	21.67	0.281
1/2/1999	23:38:28	5.4	21.67	0.281
1/2/1999	23:38:31	5.45	21.67	0.279
1/2/1999	23:38:34	5.5	21.67	0.275
1/2/1999	23:38:37	5.55	21.67	0.273
1/2/1999	23:38:40	5.6	21.67	0.273
1/2/1999	23:38:43	5.65	21.67	0.268

1/2/1999	23:38:46	5.7	21.67	0.266
1/2/1999	23:38:49	5.75	21.67	0.264
1/2/1999	23:38:52	5.8	21.67	0.262
1/2/1999	23:38:55	5.85	21.67	0.262
1/2/1999	23:38:58	5.9	21.67	0.258
1/2/1999	23:39:01	5.95	21.67	0.256
1/2/1999	23:39:04	6	21.67	0.256
1/2/1999	23:39:07	6.05	21.67	0.252
1/2/1999	23:39:10	6.1	21.67	0.25
1/2/1999	23:39:13	6.15	21.67	0.25
1/2/1999	23:39:16	6.2	21.67	0.245
1/2/1999	23:39:19	6.25	21.67	0.245
1/2/1999	23:39:22	6.3	21.67	0.243
1/2/1999	23:39:25	6.35	21.67	0.241
1/2/1999	23:39:28	6.4	21.67	0.239
1/2/1999	23:39:31	6.45	21.67	0.237
1/2/1999	23:39:34	6.5	21.69	0.237
1/2/1999	23:39:37	6.55	21.69	0.235
1/2/1999	23:39:40	6.6	21.69	0.233
1/2/1999	23:39:43	6.65	21.69	0.231
1/2/1999	23:39:46	6.7	21.69	0.229
1/2/1999	23:39:49	6.75	21.69	0.227
1/2/1999	23:39:52	6.8	21.69	0.227
1/2/1999	23:39:55	6.85	21.69	0.223
1/2/1999	23:39:58	6.9	21.69	0.223
1/2/1999	23:40:01	6.95	21.69	0.221
1/2/1999	23:40:04	7	21.69	0.219
1/2/1999	23:40:07	7.05	21.69	0.219
1/2/1999	23:40:10	7.1	21.69	0.217
1/2/1999	23:40:13	7.15	21.69	0.215
1/2/1999	23:40:16	7.2	21.69	0.212
1/2/1999	23:40:19	7.25	21.69	0.212
1/2/1999	23:40:22	7.3	21.69	0.21
1/2/1999	23:40:25	7.35	21.69	0.208
1/2/1999	23:40:28	7.4	21.69	0.206
1/2/1999	23:40:31	7.45	21.69	0.206
1/2/1999	23:40:34	7.5	21.69	0.206
1/2/1999	23:40:37	7.55	21.69	0.204
1/2/1999	23:40:40	7.6	21.69	0.202
1/2/1999	23:40:43	7.65	21.69	0.202
1/2/1999	23:40:46	7.7	21.69	0.2
1/2/1999	23:40:49	7.75	21.69	0.198
1/2/1999	23:40:52	7.8	21.69	0.198
1/2/1999	23:40:55	7.85	21.69	0.194
1/2/1999	23:40:58	7.9	21.69	0.194
1/2/1999	23:41:01	7.95	21.69	0.192
1/2/1999	23:41:04	8	21.69	0.192
1/2/1999	23:41:07	8.05	21.69	0.19
1/2/1999	23:41:10	8.1	21.69	0.187
1/2/1999	23:41:13	8.15	21.69	0.187
1/2/1999	23:41:16	8.2	21.69	0.185
1/2/1999	23:41:19	8.25	21.69	0.185

1/2/1999	23:41:22	8.3	21.69	0.185
1/2/1999	23:41:25	8.35	21.69	0.183
1/2/1999	23:41:28	8.4	21.69	0.181
1/2/1999	23:41:31	8.45	21.69	0.179
1/2/1999	23:41:34	8.5	21.69	0.177
1/2/1999	23:41:37	8.55	21.69	0.177
1/2/1999	23:41:40	8.6	21.69	0.175
1/2/1999	23:41:43	8.65	21.69	0.175
1/2/1999	23:41:46	8.7	21.69	0.173
1/2/1999	23:41:49	8.75	21.7	0.173
1/2/1999	23:41:52	8.8	21.69	0.171
1/2/1999	23:41:55	8.85	21.69	0.171
1/2/1999	23:41:58	8.9	21.69	0.169
1/2/1999	23:42:01	8.95	21.69	0.169
1/2/1999	23:42:04	9	21.69	0.167
1/2/1999	23:42:07	9.05	21.69	0.164
1/2/1999	23:42:10	9.1	21.69	0.164
1/2/1999	23:42:13	9.15	21.69	0.164
1/2/1999	23:42:16	9.2	21.69	0.164
1/2/1999	23:42:19	9.25	21.69	0.162
1/2/1999	23:42:22	9.3	21.69	0.16
1/2/1999	23:42:25	9.35	21.69	0.16
1/2/1999	23:42:28	9.4	21.7	0.159
1/2/1999	23:42:31	9.45	21.7	0.159
1/2/1999	23:42:34	9.5	21.69	0.156
1/2/1999	23:42:37	9.55	21.69	0.156
1/2/1999	23:42:40	9.6	21.7	0.154
1/2/1999	23:42:43	9.65	21.7	0.154
1/2/1999	23:42:46	9.7	21.7	0.152
1/2/1999	23:42:49	9.75	21.7	0.15
1/2/1999	23:42:52	9.8	21.69	0.15
1/2/1999	23:42:55	9.85	21.69	0.15
1/2/1999	23:42:58	9.9	21.7	0.15
1/2/1999	23:43:01	9.95	21.7	0.148
1/2/1999	23:43:04	10	21.7	0.146
1/2/1999	23:43:07	10.05	21.7	0.146
1/2/1999	23:43:10	10.1	21.7	0.146
1/2/1999	23:43:13	10.15	21.7	0.146
1/2/1999	23:43:16	10.2	21.7	0.144
1/2/1999	23:43:19	10.25	21.7	0.142
1/2/1999	23:43:22	10.3	21.7	0.142
1/2/1999	23:43:25	10.35	21.7	0.142
1/2/1999	23:43:28	10.4	21.7	0.14
1/2/1999	23:43:31	10.45	21.7	0.14
1/2/1999	23:43:34	10.5	21.7	0.138
1/2/1999	23:43:37	10.55	21.7	0.138
1/2/1999	23:43:40	10.6	21.7	0.138
1/2/1999	23:43:43	10.65	21.7	0.136
1/2/1999	23:43:46	10.7	21.7	0.136
1/2/1999	23:43:49	10.75	21.7	0.136
1/2/1999	23:43:52	10.8	21.7	0.134
1/2/1999	23:43:55	10.85	21.7	0.134

1/2/1999	23:43:58	10.9	21.7	0.134
1/2/1999	23:44:01	10.95	21.7	0.132
1/2/1999	23:44:04	11	21.7	0.132
1/2/1999	23:44:07	11.05	21.7	0.129
1/2/1999	23:44:10	11.1	21.7	0.129
1/2/1999	23:44:13	11.15	21.7	0.129
1/2/1999	23:44:16	11.2	21.7	0.129
1/2/1999	23:44:19	11.25	21.7	0.127
1/2/1999	23:44:22	11.3	21.7	0.127
1/2/1999	23:44:25	11.35	21.7	0.125
1/2/1999	23:44:28	11.4	21.7	0.125
1/2/1999	23:44:31	11.45	21.7	0.125
1/2/1999	23:44:34	11.5	21.7	0.123
1/2/1999	23:44:37	11.55	21.7	0.123
1/2/1999	23:44:40	11.6	21.7	0.121
1/2/1999	23:44:43	11.65	21.7	0.121
1/2/1999	23:44:46	11.7	21.7	0.121
1/2/1999	23:44:49	11.75	21.7	0.121
1/2/1999	23:44:52	11.8	21.7	0.121
1/2/1999	23:44:55	11.85	21.7	0.119
1/2/1999	23:44:58	11.9	21.7	0.113
1/2/1999	23:45:01	11.95	21.7	0.113
1/2/1999	23:45:04	12	21.7	0.117
1/2/1999	23:45:07	12.05	21.7	0.119
1/2/1999	23:45:10	12.1	21.7	0.115
1/2/1999	23:45:13	12.15	21.7	0.115
1/2/1999	23:45:16	12.2	21.7	0.115
1/2/1999	23:45:19	12.25	21.7	0.115
1/2/1999	23:45:22	12.3	21.7	0.115
1/2/1999	23:45:25	12.35	21.7	0.115
1/2/1999	23:45:28	12.4	21.7	0.113
1/2/1999	23:45:31	12.45	21.7	0.113
1/2/1999	23:45:34	12.5	21.7	0.111
1/2/1999	23:45:37	12.55	21.7	0.111
1/2/1999	23:45:40	12.6	21.71	0.111
1/2/1999	23:45:43	12.65	21.7	0.111
1/2/1999	23:45:46	12.7	21.7	0.109
1/2/1999	23:45:49	12.75	21.7	0.109
1/2/1999	23:45:52	12.8	21.7	0.109
1/2/1999	23:45:55	12.85	21.7	0.109
1/2/1999	23:45:58	12.9	21.71	0.107
1/2/1999	23:46:01	12.95	21.71	0.107
1/2/1999	23:46:04	13	21.7	0.107
1/2/1999	23:46:07	13.05	21.71	0.105
1/2/1999	23:46:10	13.1	21.71	0.105
1/2/1999	23:46:13	13.15	21.71	0.105
1/2/1999	23:46:16	13.2	21.71	0.105
1/2/1999	23:46:19	13.25	21.7	0.102
1/2/1999	23:46:22	13.3	21.71	0.103
1/2/1999	23:46:25	13.35	21.71	0.103
1/2/1999	23:46:28	13.4	21.71	0.101
1/2/1999	23:46:31	13.45	21.71	0.103

1/2/1999	23:46:34	13.5	21.71	0.101
1/2/1999	23:46:37	13.55	21.7	0.1
1/2/1999	23:46:40	13.6	21.71	0.101
1/2/1999	23:46:43	13.65	21.7	0.098
1/2/1999	23:46:46	13.7	21.71	0.099
1/2/1999	23:46:49	13.75	21.71	0.099
1/2/1999	23:46:52	13.8	21.71	0.099
1/2/1999	23:46:55	13.85	21.71	0.096
1/2/1999	23:46:58	13.9	21.71	0.096
1/2/1999	23:47:01	13.95	21.71	0.096
1/2/1999	23:47:04	14	21.71	0.096
1/2/1999	23:47:07	14.05	21.71	0.096
1/2/1999	23:47:10	14.1	21.71	0.094
1/2/1999	23:47:13	14.15	21.71	0.094
1/2/1999	23:47:16	14.2	21.71	0.094
1/2/1999	23:47:19	14.25	21.71	0.092
1/2/1999	23:47:22	14.3	21.71	0.094
1/2/1999	23:47:25	14.35	21.71	0.094
1/2/1999	23:47:28	14.4	21.71	0.092
1/2/1999	23:47:31	14.45	21.71	0.092
1/2/1999	23:47:34	14.5	21.71	0.092
1/2/1999	23:47:37	14.55	21.71	0.092
1/2/1999	23:47:40	14.6	21.71	0.09
1/2/1999	23:47:43	14.65	21.71	0.09
1/2/1999	23:47:46	14.7	21.71	0.09
1/2/1999	23:47:49	14.75	21.71	0.09
1/2/1999	23:47:52	14.8	21.71	0.09
1/2/1999	23:47:55	14.85	21.71	0.09
1/2/1999	23:47:58	14.9	21.71	0.088
1/2/1999	23:48:01	14.95	21.71	0.088
1/2/1999	23:48:04	15	21.71	0.088
1/2/1999	23:48:07	15.05	21.71	0.088
1/2/1999	23:48:10	15.1	21.71	0.088
1/2/1999	23:48:13	15.15	21.71	0.086
1/2/1999	23:48:16	15.2	21.71	0.086
1/2/1999	23:48:19	15.25	21.71	0.088
1/2/1999	23:48:22	15.3	21.71	0.086
1/2/1999	23:48:25	15.35	21.71	0.086
1/2/1999	23:48:28	15.4	21.71	0.086
1/2/1999	23:48:31	15.45	21.71	0.086
1/2/1999	23:48:34	15.5	21.71	0.086
1/2/1999	23:48:37	15.55	21.71	0.086
1/2/1999	23:48:40	15.6	21.71	0.084
1/2/1999	23:48:43	15.65	21.71	0.084
1/2/1999	23:48:46	15.7	21.71	0.084
1/2/1999	23:48:49	15.75	21.71	0.084
1/2/1999	23:48:52	15.8	21.71	0.082
1/2/1999	23:48:55	15.85	21.71	0.084
1/2/1999	23:48:58	15.9	21.71	0.082
1/2/1999	23:49:01	15.95	21.71	0.082
1/2/1999	23:49:04	16	21.71	0.084
1/2/1999	23:49:07	16.05	21.71	0.084

1/2/1999	23:49:10	16.1	21.71	0.082
1/2/1999	23:49:13	16.15	21.71	0.082
1/2/1999	23:49:16	16.2	21.71	0.082
1/2/1999	23:49:19	16.25	21.71	0.08
1/2/1999	23:49:22	16.3	21.71	0.08
1/2/1999	23:49:25	16.35	21.71	0.08
1/2/1999	23:49:28	16.4	21.71	0.08
1/2/1999	23:49:31	16.45	21.71	0.08

ld MW-2.bin

In-Situ Inc. MiniTroll Pro

Report generated: 3/23/2009 9:13:03
Report from file: F:\WinSitu\Win-Situ\Data\SN08508 1999-01-02 225930 Edgefield I
DataMgr Version 3.71

Serial number: 8508
Firmware Version 3.09
Unit name:

Test name: Edgefield MW-3

Test defined on: 1/2/1999 22:45:02
Test started on: 1/2/1999 22:59:30
Test stopped on: 1/2/1999 23:15:00
Test extracted on: N/A

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 310

TOTAL DATA SAMPLES 310

Channel number [1]
Measurement type: Temperature
Channel name:

Channel number [2]
Measurement type: Pressure
Channel name: pressure
Sensor Range: 30 PSI.
Specific gravity: 1
Mode: TOC
User-defined reference: 0 Feet H2O
Referenced on: test start
Pressure head at reference: 8.504 Feet H2O

Date	Time	ET (min)	Chan[1] Celsius	Chan[2] Feet H2O
1/2/1999	22:59:30	0	21.17	0
1/2/1999	22:59:33	0.05	21.17	-0.002
1/2/1999	22:59:36	0.1	21.17	-0.002
1/2/1999	22:59:39	0.15	21.17	1.586
1/2/1999	22:59:42	0.2	21.17	1.855
1/2/1999	22:59:45	0.25	21.17	1.547
1/2/1999	22:59:48	0.3	21.17	1.307
1/2/1999	22:59:51	0.35	21.17	1.115
1/2/1999	22:59:54	0.4	21.17	1.005
1/2/1999	22:59:57	0.45	21.17	0.932

1/2/1999	23:00:00	0.5	21.18	0.88
1/2/1999	23:00:03	0.55	21.17	0.84
1/2/1999	23:00:06	0.6	21.18	0.811
1/2/1999	23:00:09	0.65	21.18	0.786
1/2/1999	23:00:12	0.7	21.18	0.765
1/2/1999	23:00:15	0.75	21.18	0.745
1/2/1999	23:00:18	0.8	21.18	0.728
1/2/1999	23:00:21	0.85	21.18	0.713
1/2/1999	23:00:24	0.9	21.18	0.699
1/2/1999	23:00:27	0.95	21.18	0.686
1/2/1999	23:00:30	1	21.18	0.674
1/2/1999	23:00:33	1.05	21.18	0.661
1/2/1999	23:00:36	1.1	21.18	0.651
1/2/1999	23:00:39	1.15	21.18	0.64
1/2/1999	23:00:42	1.2	21.18	0.63
1/2/1999	23:00:45	1.25	21.18	0.622
1/2/1999	23:00:48	1.3	21.18	0.611
1/2/1999	23:00:51	1.35	21.18	0.601
1/2/1999	23:00:54	1.4	21.18	0.592
1/2/1999	23:00:57	1.45	21.18	0.584
1/2/1999	23:01:00	1.5	21.18	0.574
1/2/1999	23:01:03	1.55	21.18	0.565
1/2/1999	23:01:06	1.6	21.18	0.557
1/2/1999	23:01:09	1.65	21.2	0.551
1/2/1999	23:01:12	1.7	21.2	0.543
1/2/1999	23:01:15	1.75	21.2	0.534
1/2/1999	23:01:18	1.8	21.2	0.528
1/2/1999	23:01:21	1.85	21.2	0.522
1/2/1999	23:01:24	1.9	21.2	0.516
1/2/1999	23:01:27	1.95	21.2	0.509
1/2/1999	23:01:30	2	21.2	0.501
1/2/1999	23:01:33	2.05	21.2	0.495
1/2/1999	23:01:36	2.1	21.2	0.489
1/2/1999	23:01:39	2.15	21.2	0.484
1/2/1999	23:01:42	2.2	21.2	0.478
1/2/1999	23:01:45	2.25	21.2	0.472
1/2/1999	23:01:48	2.3	21.2	0.466
1/2/1999	23:01:51	2.35	21.2	0.461
1/2/1999	23:01:54	2.4	21.2	0.455
1/2/1999	23:01:57	2.45	21.2	0.449
1/2/1999	23:02:00	2.5	21.2	0.445
1/2/1999	23:02:03	2.55	21.2	0.439
1/2/1999	23:02:06	2.6	21.2	0.434
1/2/1999	23:02:09	2.65	21.2	0.428
1/2/1999	23:02:12	2.7	21.2	0.424
1/2/1999	23:02:15	2.75	21.2	0.42
1/2/1999	23:02:18	2.8	21.2	0.416
1/2/1999	23:02:21	2.85	21.2	0.409
1/2/1999	23:02:24	2.9	21.2	0.405
1/2/1999	23:02:27	2.95	21.2	0.399
1/2/1999	23:02:30	3	21.2	0.395
1/2/1999	23:02:33	3.05	21.2	0.393

1/2/1999	23:02:36	3.1	21.2	0.388
1/2/1999	23:02:39	3.15	21.2	0.382
1/2/1999	23:02:42	3.2	21.2	0.38
1/2/1999	23:02:45	3.25	21.2	0.376
1/2/1999	23:02:48	3.3	21.2	0.37
1/2/1999	23:02:51	3.35	21.2	0.368
1/2/1999	23:02:54	3.4	21.2	0.363
1/2/1999	23:02:57	3.45	21.2	0.359
1/2/1999	23:03:00	3.5	21.2	0.355
1/2/1999	23:03:03	3.55	21.2	0.351
1/2/1999	23:03:06	3.6	21.2	0.347
1/2/1999	23:03:09	3.65	21.2	0.343
1/2/1999	23:03:12	3.7	21.2	0.341
1/2/1999	23:03:15	3.75	21.2	0.336
1/2/1999	23:03:18	3.8	21.2	0.334
1/2/1999	23:03:21	3.85	21.21	0.33
1/2/1999	23:03:24	3.9	21.2	0.326
1/2/1999	23:03:27	3.95	21.2	0.324
1/2/1999	23:03:30	4	21.2	0.32
1/2/1999	23:03:33	4.05	21.2	0.316
1/2/1999	23:03:36	4.1	21.2	0.313
1/2/1999	23:03:39	4.15	21.21	0.31
1/2/1999	23:03:42	4.2	21.2	0.307
1/2/1999	23:03:45	4.25	21.21	0.305
1/2/1999	23:03:48	4.3	21.21	0.301
1/2/1999	23:03:51	4.35	21.21	0.299
1/2/1999	23:03:54	4.4	21.21	0.295
1/2/1999	23:03:57	4.45	21.21	0.293
1/2/1999	23:04:00	4.5	21.2	0.288
1/2/1999	23:04:03	4.55	21.21	0.287
1/2/1999	23:04:06	4.6	21.21	0.283
1/2/1999	23:04:09	4.65	21.21	0.28
1/2/1999	23:04:12	4.7	21.2	0.278
1/2/1999	23:04:15	4.75	21.21	0.274
1/2/1999	23:04:18	4.8	21.21	0.274
1/2/1999	23:04:21	4.85	21.21	0.27
1/2/1999	23:04:24	4.9	21.21	0.268
1/2/1999	23:04:27	4.95	21.21	0.264
1/2/1999	23:04:30	5	21.21	0.262
1/2/1999	23:04:33	5.05	21.21	0.26
1/2/1999	23:04:36	5.1	21.21	0.258
1/2/1999	23:04:39	5.15	21.21	0.255
1/2/1999	23:04:42	5.2	21.21	0.251
1/2/1999	23:04:45	5.25	21.21	0.251
1/2/1999	23:04:48	5.3	21.21	0.249
1/2/1999	23:04:51	5.35	21.21	0.245
1/2/1999	23:04:54	5.4	21.21	0.243
1/2/1999	23:04:57	5.45	21.21	0.241
1/2/1999	23:05:00	5.5	21.21	0.237
1/2/1999	23:05:03	5.55	21.21	0.237
1/2/1999	23:05:06	5.6	21.21	0.235
1/2/1999	23:05:09	5.65	21.21	0.233

1/2/1999	23:05:12	5.7	21.21	0.23
1/2/1999	23:05:15	5.75	21.21	0.228
1/2/1999	23:05:18	5.8	21.21	0.226
1/2/1999	23:05:21	5.85	21.21	0.222
1/2/1999	23:05:24	5.9	21.21	0.222
1/2/1999	23:05:27	5.95	21.21	0.22
1/2/1999	23:05:30	6	21.21	0.218
1/2/1999	23:05:33	6.05	21.21	0.216
1/2/1999	23:05:36	6.1	21.21	0.214
1/2/1999	23:05:39	6.15	21.21	0.212
1/2/1999	23:05:42	6.2	21.21	0.21
1/2/1999	23:05:45	6.25	21.21	0.208
1/2/1999	23:05:48	6.3	21.21	0.205
1/2/1999	23:05:51	6.35	21.21	0.205
1/2/1999	23:05:54	6.4	21.21	0.201
1/2/1999	23:05:57	6.45	21.21	0.201
1/2/1999	23:06:00	6.5	21.21	0.199
1/2/1999	23:06:03	6.55	21.21	0.197
1/2/1999	23:06:06	6.6	21.21	0.195
1/2/1999	23:06:09	6.65	21.21	0.193
1/2/1999	23:06:12	6.7	21.21	0.193
1/2/1999	23:06:15	6.75	21.21	0.189
1/2/1999	23:06:18	6.8	21.21	0.187
1/2/1999	23:06:21	6.85	21.21	0.187
1/2/1999	23:06:24	6.9	21.21	0.185
1/2/1999	23:06:27	6.95	21.21	0.185
1/2/1999	23:06:30	7	21.21	0.182
1/2/1999	23:06:33	7.05	21.21	0.18
1/2/1999	23:06:36	7.1	21.21	0.178
1/2/1999	23:06:39	7.15	21.21	0.178
1/2/1999	23:06:42	7.2	21.21	0.176
1/2/1999	23:06:45	7.25	21.21	0.174
1/2/1999	23:06:48	7.3	21.21	0.172
1/2/1999	23:06:51	7.35	21.21	0.172
1/2/1999	23:06:54	7.4	21.21	0.17
1/2/1999	23:06:57	7.45	21.21	0.168
1/2/1999	23:07:00	7.5	21.21	0.168
1/2/1999	23:07:03	7.55	21.21	0.166
1/2/1999	23:07:06	7.6	21.21	0.164
1/2/1999	23:07:09	7.65	21.21	0.164
1/2/1999	23:07:12	7.7	21.21	0.162
1/2/1999	23:07:15	7.75	21.21	0.16
1/2/1999	23:07:18	7.8	21.21	0.157
1/2/1999	23:07:21	7.85	21.21	0.155
1/2/1999	23:07:24	7.9	21.21	0.155
1/2/1999	23:07:27	7.95	21.21	0.155
1/2/1999	23:07:30	8	21.21	0.153
1/2/1999	23:07:33	8.05	21.21	0.151
1/2/1999	23:07:36	8.1	21.21	0.151
1/2/1999	23:07:39	8.15	21.21	0.149
1/2/1999	23:07:42	8.2	21.21	0.149
1/2/1999	23:07:45	8.25	21.21	0.147

1/2/1999	23:07:48	8.3	21.21	0.145
1/2/1999	23:07:51	8.35	21.21	0.145
1/2/1999	23:07:54	8.4	21.21	0.145
1/2/1999	23:07:57	8.45	21.21	0.141
1/2/1999	23:08:00	8.5	21.21	0.141
1/2/1999	23:08:03	8.55	21.21	0.141
1/2/1999	23:08:06	8.6	21.21	0.139
1/2/1999	23:08:09	8.65	21.21	0.137
1/2/1999	23:08:12	8.7	21.21	0.137
1/2/1999	23:08:15	8.75	21.21	0.137
1/2/1999	23:08:18	8.8	21.21	0.135
1/2/1999	23:08:21	8.85	21.21	0.132
1/2/1999	23:08:24	8.9	21.21	0.132
1/2/1999	23:08:27	8.95	21.21	0.13
1/2/1999	23:08:30	9	21.21	0.13
1/2/1999	23:08:33	9.05	21.21	0.128
1/2/1999	23:08:36	9.1	21.21	0.128
1/2/1999	23:08:39	9.15	21.21	0.128
1/2/1999	23:08:42	9.2	21.21	0.126
1/2/1999	23:08:45	9.25	21.21	0.124
1/2/1999	23:08:48	9.3	21.21	0.126
1/2/1999	23:08:51	9.35	21.21	0.124
1/2/1999	23:08:54	9.4	21.21	0.122
1/2/1999	23:08:57	9.45	21.21	0.122
1/2/1999	23:09:00	9.5	21.21	0.12
1/2/1999	23:09:03	9.55	21.21	0.12
1/2/1999	23:09:06	9.6	21.21	0.12
1/2/1999	23:09:09	9.65	21.21	0.118
1/2/1999	23:09:12	9.7	21.21	0.116
1/2/1999	23:09:15	9.75	21.21	0.116
1/2/1999	23:09:18	9.8	21.21	0.114
1/2/1999	23:09:21	9.85	21.22	0.114
1/2/1999	23:09:24	9.9	21.22	0.114
1/2/1999	23:09:27	9.95	21.22	0.112
1/2/1999	23:09:30	10	21.21	0.112
1/2/1999	23:09:33	10.05	21.21	0.112
1/2/1999	23:09:36	10.1	21.21	0.11
1/2/1999	23:09:39	10.15	21.21	0.11
1/2/1999	23:09:42	10.2	21.21	0.107
1/2/1999	23:09:45	10.25	21.22	0.108
1/2/1999	23:09:48	10.3	21.21	0.105
1/2/1999	23:09:51	10.35	21.22	0.106
1/2/1999	23:09:54	10.4	21.22	0.104
1/2/1999	23:09:57	10.45	21.21	0.103
1/2/1999	23:10:00	10.5	21.21	0.103
1/2/1999	23:10:03	10.55	21.21	0.101
1/2/1999	23:10:06	10.6	21.21	0.101
1/2/1999	23:10:09	10.65	21.22	0.102
1/2/1999	23:10:12	10.7	21.22	0.1
1/2/1999	23:10:15	10.75	21.22	0.1
1/2/1999	23:10:18	10.8	21.22	0.097
1/2/1999	23:10:21	10.85	21.22	0.097

1/2/1999	23:10:24	10.9	21.22	0.097
1/2/1999	23:10:27	10.95	21.22	0.095
1/2/1999	23:10:30	11	21.22	0.095
1/2/1999	23:10:33	11.05	21.22	0.095
1/2/1999	23:10:36	11.1	21.22	0.093
1/2/1999	23:10:39	11.15	21.22	0.093
1/2/1999	23:10:42	11.2	21.22	0.091
1/2/1999	23:10:45	11.25	21.22	0.091
1/2/1999	23:10:48	11.3	21.22	0.091
1/2/1999	23:10:51	11.35	21.22	0.091
1/2/1999	23:10:54	11.4	21.22	0.091
1/2/1999	23:10:57	11.45	21.22	0.089
1/2/1999	23:11:00	11.5	21.22	0.089
1/2/1999	23:11:03	11.55	21.22	0.087
1/2/1999	23:11:06	11.6	21.22	0.087
1/2/1999	23:11:09	11.65	21.22	0.087
1/2/1999	23:11:12	11.7	21.22	0.085
1/2/1999	23:11:15	11.75	21.22	0.085
1/2/1999	23:11:18	11.8	21.22	0.085
1/2/1999	23:11:21	11.85	21.22	0.085
1/2/1999	23:11:24	11.9	21.22	0.083
1/2/1999	23:11:27	11.95	21.22	0.083
1/2/1999	23:11:30	12	21.22	0.081
1/2/1999	23:11:33	12.05	21.22	0.081
1/2/1999	23:11:36	12.1	21.22	0.081
1/2/1999	23:11:39	12.15	21.22	0.079
1/2/1999	23:11:42	12.2	21.22	0.079
1/2/1999	23:11:45	12.25	21.22	0.079
1/2/1999	23:11:48	12.3	21.22	0.079
1/2/1999	23:11:51	12.35	21.22	0.079
1/2/1999	23:11:54	12.4	21.22	0.077
1/2/1999	23:11:57	12.45	21.22	0.077
1/2/1999	23:12:00	12.5	21.22	0.077
1/2/1999	23:12:03	12.55	21.22	0.074
1/2/1999	23:12:06	12.6	21.22	0.074
1/2/1999	23:12:09	12.65	21.22	0.074
1/2/1999	23:12:12	12.7	21.22	0.074
1/2/1999	23:12:15	12.75	21.22	0.072
1/2/1999	23:12:18	12.8	21.22	0.072
1/2/1999	23:12:21	12.85	21.22	0.072
1/2/1999	23:12:24	12.9	21.22	0.072
1/2/1999	23:12:27	12.95	21.22	0.07
1/2/1999	23:12:30	13	21.22	0.07
1/2/1999	23:12:33	13.05	21.22	0.068
1/2/1999	23:12:36	13.1	21.22	0.068
1/2/1999	23:12:39	13.15	21.22	0.068
1/2/1999	23:12:42	13.2	21.22	0.068
1/2/1999	23:12:45	13.25	21.22	0.066
1/2/1999	23:12:48	13.3	21.22	0.066
1/2/1999	23:12:51	13.35	21.22	0.066
1/2/1999	23:12:54	13.4	21.22	0.066
1/2/1999	23:12:57	13.45	21.22	0.066

1/2/1999	23:13:00	13.5	21.22	0.066
1/2/1999	23:13:03	13.55	21.22	0.064
1/2/1999	23:13:06	13.6	21.22	0.064
1/2/1999	23:13:09	13.65	21.22	0.064
1/2/1999	23:13:12	13.7	21.22	0.062
1/2/1999	23:13:15	13.75	21.22	0.062
1/2/1999	23:13:18	13.8	21.22	0.062
1/2/1999	23:13:21	13.85	21.22	0.062
1/2/1999	23:13:24	13.9	21.22	0.062
1/2/1999	23:13:27	13.95	21.22	0.06
1/2/1999	23:13:30	14	21.22	0.06
1/2/1999	23:13:33	14.05	21.22	0.06
1/2/1999	23:13:36	14.1	21.22	0.06
1/2/1999	23:13:39	14.15	21.22	0.058
1/2/1999	23:13:42	14.2	21.22	0.058
1/2/1999	23:13:45	14.25	21.22	0.058
1/2/1999	23:13:48	14.3	21.22	0.058
1/2/1999	23:13:51	14.35	21.22	0.056
1/2/1999	23:13:54	14.4	21.22	0.058
1/2/1999	23:13:57	14.45	21.22	0.056
1/2/1999	23:14:00	14.5	21.22	0.056
1/2/1999	23:14:03	14.55	21.22	0.056
1/2/1999	23:14:06	14.6	21.22	0.054
1/2/1999	23:14:09	14.65	21.22	0.052
1/2/1999	23:14:12	14.7	21.22	0.054
1/2/1999	23:14:15	14.75	21.22	0.054
1/2/1999	23:14:18	14.8	21.22	0.052
1/2/1999	23:14:21	14.85	21.22	0.052
1/2/1999	23:14:24	14.9	21.22	0.052
1/2/1999	23:14:27	14.95	21.22	0.052
1/2/1999	23:14:30	15	21.22	0.049
1/2/1999	23:14:33	15.05	21.22	0.049
1/2/1999	23:14:36	15.1	21.22	0.049
1/2/1999	23:14:39	15.15	21.22	0.049
1/2/1999	23:14:42	15.2	21.22	0.049
1/2/1999	23:14:45	15.25	21.22	0.047
1/2/1999	23:14:48	15.3	21.22	0.049
1/2/1999	23:14:51	15.35	21.22	0.047
1/2/1999	23:14:54	15.4	21.22	0.047
1/2/1999	23:14:57	15.45	21.22	0.047

MW-3 .bin

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

MAY 15 2009

Re: Tier II Assessment Plan Directive
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175
Release reported December 31, 2008
Tier I Assessment report received April 16, 2009
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control has reviewed the report submitted on your behalf by Environmental Compliance Services, Inc. We agree with your contractor that the petroleum plume is not defined horizontally or vertically.

Funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account will soon be available for necessary assessment activities once the $25,000 deductible has been met. **Please have your contractor complete and submit an Assessment Component Cost Agreement form and Assessment Plan to define the chemicals of concern (CoC).** The Tier II assessment forms may be obtained from the UST website at http://www.scdhec.gov. Every component may not be necessary to complete the above scope of work. The SUPERB allowable cost for each component is included on the Assessment Component Cost Agreement form. **An Aggressive Fluid & Vapor Recovery (AFVR) event on monitoring well MW-1 is to be included in the plan. Note: approval from the Program must be issued before work begins.**

On all correspondence or inquiries regarding this project, please reference UST permit # 12175. If you have any questions, please contact me at (803) 896-6633,by email at ridglect@dhec.sc.gov, or by fax (803) 896-6245 if you have questions.

Sincerely,

Cathleen Ridgley, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Environmental Compliance Services, Inc., P O Box 3528, Fort Mill, SC 29708
Technical File

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UST
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WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

June 3, 2009

13504 South Point Boulevard, Unit F, Charlotte, NC 28273 tel 704.583.2711 fax 704.583.2744 www.ecsconsult.com

SCDHEC/UST Program
Bureau of Land & Waste Mgmt.
2600 Bull Street
Columbia, SC 29201

Attention: Ms. Cathleen Ridgley, Hydrogeologist

Subject: Tier II Plan
Edgefield Fuel & Convenience 3
UST Permit No. 12175
311 Main Street, Edgefield, SC
ECS Project No. 14-211651

Dear Ms. Ridgley:

Please find the attached Tier II Plan for the Edgefield Fuel & Convenience 3 site located at 311 Main Street in Edgefield, South Carolina. This plan includes one AFVR (aggressive fluid vapor recovery) event in groundwater monitoring well MW-1. MW-1 was found to contain 1.55 feet of free product on March 4, 2009.

This plan also includes construction of nine shallow groundwater monitoring wells to approximate depths of 35 feet each, and each would be preceded by collection of a screening groundwater sample in each proposed well location. Two telescoping wells are proposed for construction to depths of 75 feet each.

Please contact us at 704.583-2711 if you have any questions or comments. We can also be contacted at rhutchins@ecsconsult.com.

Regards,

Randall Hutchins
Project Manager

James D. Rudder, Jr., PG
SC License No. 1067

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Tier II Assessment Plan
Underground Storage Tank Program

UST Permit #: 12175 County: Edgefield Facility Name: Edgefield Fuel & Convenience 3

Facility Address: 311 Main Street City: Edgefield State: SC Zipcode: 29824

Responsible Party: Edgefield Fuel & Convenience, LLC Address: P.O. Box 388

City: Edgefield State: South Carolina Zipcode: 29824

No. USTs: 3 3,000 gallon USTs Removed? (date: MM/DD/YYYY) Replaced? (date: MM/DD/YYYY)

Current use of facility/property:

Convenience store with retail gasoline sales

Current property owner name: Mr. Joel Jolly Address: P.O. Box 388

City: Edgefield State: SC Zipcode: 29824

Field Screening Methodology

Specify the field screening methodology to be used. The use of field screening methods to optimize the number and location of permanent wells is required.

Field screening will consist of borings completed using a GeoProbe. Groundwater samples will be collected from each boring. Each groundwater sample will be laboratory-analyzed for BTEX, MTBE, 1,2-DCA, EDB, and naphthalene using EPA Method 8260. One screening boring will be completed at each proposed monitoring well location before initiating well construction activities.

Permanent Monitoring Wells (estimate number and total completed depth)

of shallow wells: 9 Total depth: 315

# of deep wells: 2 Total depth: 150

Comments, if warranted:

Each shallow well is proposed to be completed at a depth of 35 feet and will be constructed with 15 feet of well screen. Each telescoping well is proposed for completion at a depth of 75 feet and will be constructed with 5 feet of well screen.

An AEVR has been included in this scope to address the free product concentrations discovered in well MW-1 during completion of

Analyses

List the analytical parameters (e.g., BTEX, MTBE) and estimated number.

Screening Samples
9 groundwater samples for BTEX, MTBE, naphthalene, EDB, and 1,2-DCA

Well Samples
14 groundwater samples for BTEX, MTBE, naphthalene, EDB, 1,2-DCA, and Lead
11 groundwater samples for oxygenates, ferrous iron, nitrate, sulfate, and methane

Implementation Schedule *(Use MM/DD/YYYY format - Example 01/23/2004)*

Start up date: 06/29/2009 *(MM/DD/YYYY)* Completion date: 07/31/2009 *(MM/DD/YYYY)*

Report submittal date: 08/14/2009 *(MM/DD/YYYY)*

UST Permit #: 12175 Facility Name: Edgefield Fuel & Convenience 3

Site Maps

1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.

2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:

North arrow	Legend with facility name and address, UST Permit number, date, and a bar scale
Location of property lines	Streets or highways (indicate names and numbers)
Location of buildings	Identification of located buildings
Paved areas on or adjacent to site	Location of all present and former ASTs and USTs
Previous soil sampling locations	Underground and above ground utilities on or adjacent to site
Previous monitoring well locations	Location of any other potential receptor

Aquifer Characterization

Pump test: ☐ Slug tests: ☑ (check one and provide explanation for choice)

Slug tests are more cost effective. Three slug tests will be performed.

Small Volume Disposal Type and Method

Soil:

30 soil drums from well installation activities

Purge water:

4 purgewater drums

Additional comments:

Each shallow well is proposed to be completed at a depth of 35 feet and will be constructed with 15 feet of well screen. Each telescoping well is proposed for completion at a depth of 75 feet and will be constructed with 5 feet of well screen.

An AFVR has been included in this scope to address the free product concentrations discovered in well MW-1 during completion of the Tier I.

ASSESSMENT COMPONENT COST AGREEMENT

SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Program
State Underground Petroleum Environmental Response Bank

Facility Edgefield Fule & Convenience 3

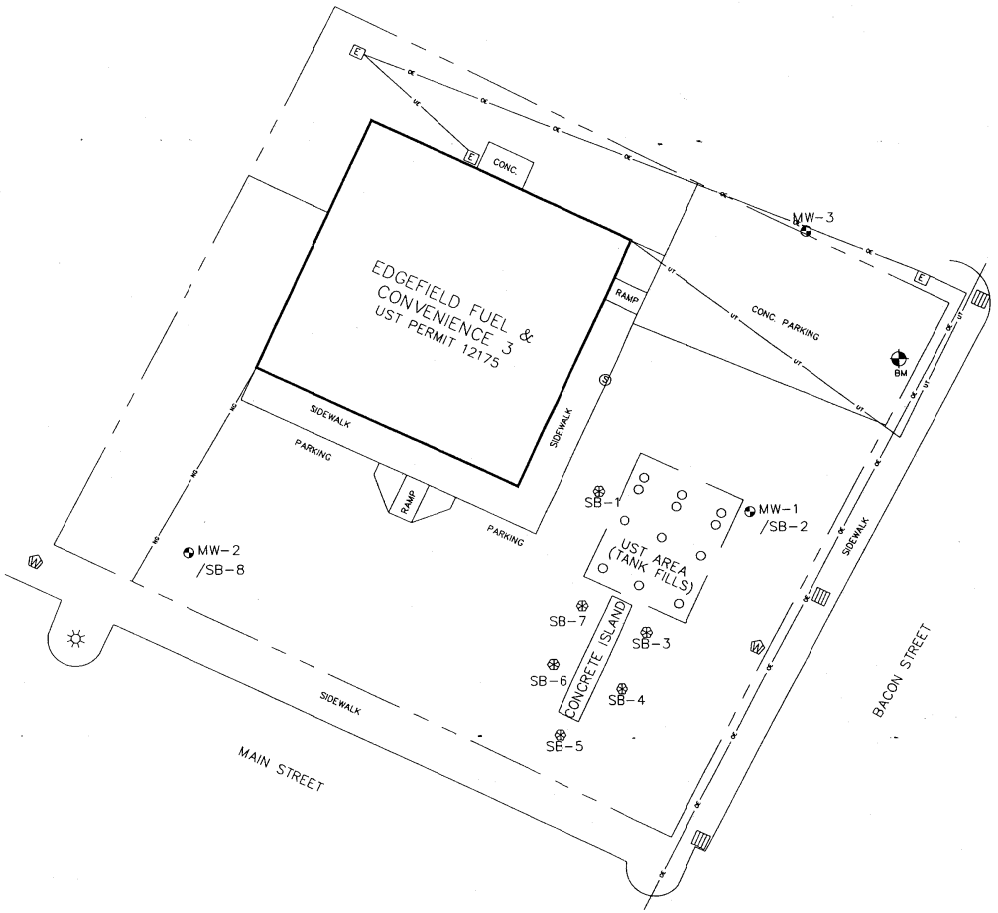
UST Permit # 12175 **CA#** _____

ITEM	QUANTITY	UNIT		UNIT PRICE	TOTAL
1 Plan*					
A. Plan Preparation	1		x	$100.00	**$100.00**
B. Tax Maps			x	$50.00	**$0.00**
2. Receptor Survey*			x	$500.00	**$0.00**
3. Comprehensive Survey			x	$1,000.00	**$0.00**
4. Mob/Demob					
A. Equipment	3		x	$550.00	**$1,650.00**
B. Personnel	6		x	$275.00	**$1,650.00**
C. Adverse Terrain Vehicle			x	$550.00	**$0.00**
5. Soil Borings (hand augered)*		feet	x	$14.00	**$0.00**
6. Soil Borings (drilled) & Field Screening	(includes collection and quantification)				
A. Standard	270	feet	x	$17.00	**$4,590.00**
B. Alternative, on-site		feet	x	$12.50	**$0.00**
C. Fractured Rock		feet	x	$27.50	**$0.00**
7. Soil Leachability Model			x	$200.00	**$0.00**
8. Abandonment* (separate from #5 and #6)		feet	x	$5.00	**$0.00**
9. Well Installation*	(includes drilling costs)				
A. Water Table (hand auger)		feet	x	$20.00	**$0.00**
B. Water Table	315	feet	x	$38.00	**$11,970.00**
C. Telescoping	150	feet	x	$58.00	**$8,700.00**
D. Rock Drilling		feet	x	$58.00	**$0.00**
E. 2" Rock Coring		feet	x	$44.10	**$0.00**
F. 4" Rock Coring		feet	x	$50.40	**$0.00**
G. Multi Sampling Ports/screen intervals		feet	x	$47.20	**$0.00**
10. Sample collection					
A. Groundwater	11	samples	x	$55.00	**$605.00**
B. Air Vapor		samples	x	$90.00	**$0.00**
C. Water Supply		samples	x	$25.00	**$0.00**
D. Groundwater No Purge	3	samples	x	$35.00	**$105.00**
E. Gauge Well Only		samples	x	$20.00	**$0.00**
F. Sample Below Product		samples	x	$50.00	**$0.00**
G. Passive Diffusion Bag		samples	x	$40.00	**$0.00**
11. Analyses-Groundwater	(See Analytical Methodology for site specific analyses)				
A. BTEX+Napth.+MTBE	23	samples	x	$100.00	**$2,300.00**
B. BTEX+Napth.+MTBE **RUSH Analysis**		samples	x	$120.00	**$0.00**
C. BTEX+Napth.+MTBE+Trimethylbenzene		samples	x	$135.00	**$0.00**
D. PAH's		samples	x	$120.00	**$0.00**
E. Lead	14	samples	x	$20.00	**$280.00**
F. EDB	23	samples	x	$55.00	**$1,265.00**
G. 8 RCRA Metals		samples	x	$140.00	**$0.00**
H.TPH (9070)		samples	x	$55.00	**$0.00**
J. BOD		samples	x	$40.00	**$0.00**
K. Nitrate	11	samples	x	$20.00	**$220.00**
L. Sulfate	11	samples	x	$20.00	**$220.00**
M. Ferrous Iron	11	samples	x	$20.00	**$220.00**
N. Methane	11	samples	x	$110.00	**$1,210.00**
O. Organic Lead		samples	x	$100.00	**$0.00**
P. 8 Oxygenates		samples	x	$85.00	**$0.00**
AA. Filtered Lead		samples	x	$46.00	**$0.00**
BB. 1,2, DCA	23	samples	x	$10.75	**$247.25**
11. Analyses-Soil					
Q. BTEX + Napth.		samples	x	$100.00	**$0.00**
R. PAH's		samples	x	$120.00	**$0.00**
S. 8 RCRA Metals		samples	x	$150.00	**$0.00**
T. TPH (9071)		samples	x	$60.00	**$0.00**

	U. TPH (3550)		samples x	$65.00	**$0.00**
	V. TPH(5035)		samples x	$65.00	**$0.00**
	W. Grain size / hydrometer		samples x	$75.00	**$0.00**
	X. Total Organic Carbon		samples x	$35.00	**$0.00**
11.	Analyses-Air				
	Y. BTEX + Naphthalene		samples x	$100.00	**$0.00**
	Z. Hydrocarbon Fuel Identification		samples x	$620.00	**$0.00**
12.	Aquifer Characterization*				
	A. Pumping Test		hours x	$120.00	**$0.00**
	B. Slug test	3	tests x	$150.00	**$450.00**
	C. Fractured Rock		tests x	$500.00	**$0.00**
13.	Free Product Recovery Rate Test*		tests x	$120.00	**$0.00**
14.	Fate & Transport Modeling				
	A. Mathematical Model		models x	$300.00	**$0.00**
	B. Computer Model		models x	$500.00	**$0.00**
15.	Risk Evaluation				
	A. Tier I		x	$300.00	**$0.00**
	B. Tier II		x	$500.00	**$0.00**
16.	Subsequent Survey*	1	x	$260.00	**$260.00**
17.	Disposal				
	A. Wastewater				
	1. Purging/Sampling	4	drums x	$90.00	**$360.00**
	2. Pumping test/AFVR	1,500	gallons x	$0.60	**$900.00**
	B. Free Product		drums x	$110.00	**$0.00**
	C. Soil (Treatment/Disposal)*	30	tons/drum x	$50.00	**$1,500.00**
18.	Miscellaneous Attach paid invoice receipts				
			x		**$0.00**
			x		**$0.00**
23.	AFVR				
	A. 8-Hour Event*	1	x	$3,000.00	**$3,000.00**
	B. Additional Hour		x	$204.00	**$0.00**
	C. Off-Gas Treatment		x	$35.00	**$0.00**
24.	Granular Activated Carbon (GAC) filter System installation/service				
	A. New GAC System Installation		x	$2,500.00	**$0.00**
	B. Refurbished GAC System Installation		x	$850.00	**$0.00**
	C. Filter Replacement/removal*		x	$450.00	**$0.00**
	D. GAC System Removal, cleaning & refurbishment		x	$450.00	**$0.00**
	E. GAC System housing		x	$450.00	**$0.00**
	F. In-line particulate filter		x	$140.00	**$0.00**
	G. Additional piping & fittings		x	$4.00	**$0.00**
25.	Well Repair				
	A. Additional Copies of Report		each x	$5.00	**$0.00**
	B. Repair 2x2 monitoring well pad		each x	$100.00	**$0.00**
	C. Repair 4x4 monitoring well pad		each x	$150.00	**$0.00**
	D. Replace well vault		each x	$225.00	**$0.00**
	E. Replace well cover and gasket		each x	$30.00	**$0.00**
	F. Replace well cover bolts		each x	$10.00	**$0.00**
	G. Replace locking well cap & lock		each x	$15.00	**$0.00**
19.	Report/Project Management and Coordination	15%	x	(SUBTOTAL) **$41,802.25**	**$6,270.34**
25.	**Total**				**$48,072.59**

DHEC 3664 (12/20/05)

*** The appropriate Mobilization cost can be added to this cost**



Legend

- Property Line
- Buried AT&T Line
- Natural Gas Line
- Overhead Electric Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Water Meter
- Electric Box/Meter
- Light Pole
- SB-1: Soil Boring
- MW-1: Shallow (Water Table) Monitoring Well
- BM: Benchmark is an "X" Inscribed in the concrete Assumed Elev. = 99.50'

General Notes:

All locations, dimensions, anc property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

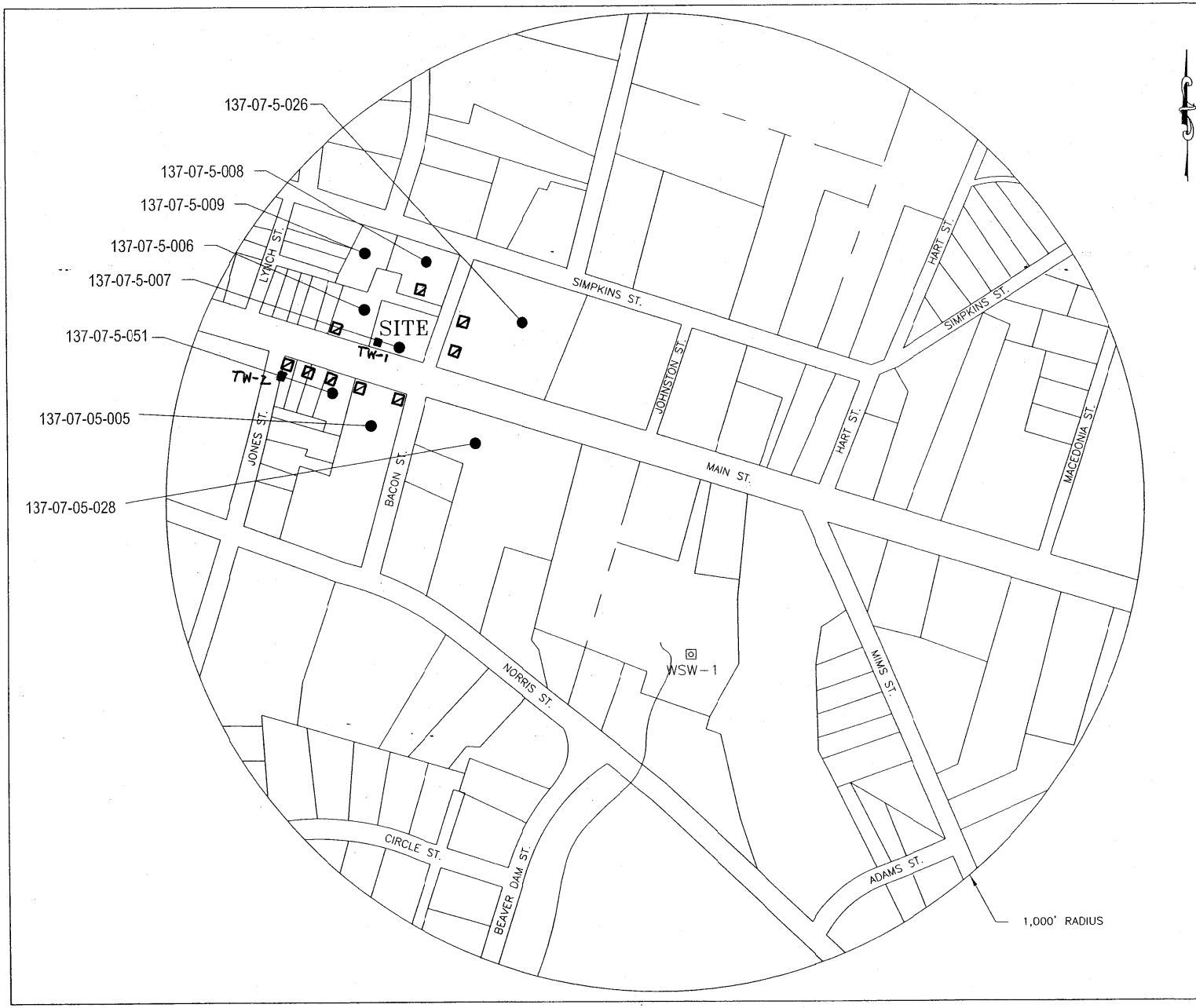
TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 20 0 10 20

COMPUTER CADFILE:

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	DATE:	JOB NO:	FIGURE NO.:
1"=20'	3/30/09	14-211651	3



Legend

137-07-5-34 TAX MAP PARCEL I.D. NUMBER

PROPERTY LINE

WATER SUPPLY WELL

BEAVERDAM CREEK

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

☒ - Proposed Screening/Well (9)

■ - Proposed Telescoping (2) Well

ecs

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Vicinity Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 200 0 100 200

COMPUTER CADFILE:

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=200'	3/30/09	14-211651	2

D H E C
PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

SEP 15 2009

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

Re: Tier II Assessment Directive
Edgefield Fuel & Convenience # 3, 311 Main Street, Edgefield, SC
UST Permit # 12175, Cost Agreement # 36403, MWA # UMW-22908
Release reported: December 31, 2008
Tier II Assessment Plan & Associated Cost Agreement received: June 5, 2009
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The UST Program has reviewed the referenced Tier II Assessment Plan and cost agreement submitted by Environmental Compliance Services, Incorporated (ECS).

Assessment activities at the site should begin immediately upon receipt of this letter. Please be aware that the February 1, 2006 State Underground Petroleum Environmental Response Bank (SUPERB) Account Allowable Costs sheet states that "If vertical and horizontal extent of chemicals of concern are not fully defined by this tier report, additional mobilizations may not be approved by the Department." **Please contact the department prior to well installation for concurrence regarding the final well locations.** No-purge sampling is required for previously installed monitoring wells (except deep wells) where the screens bracket the water table. Cost agreement # 36403 has been approved for the amount shown on the enclosed cost proposal form.

Please note the following adjustments to the submitted cost agreement:

- Personnel mobilizations were reduced from six to five.
- Field screening footage/abandonment was increased from 270 to 525 feet (15 probe points/35 feet deep each).
- The number of groundwater samples to be analyzed for BTEX, naphthalene, and MtBE was reduced from 23 to 20 (14 wells and six verification screening samples).
- The number of groundwater samples to be analyzed for EDB and 1,2-DCA was reduced from 23 to 14 (for the sampling of all monitoring wells only). Fourteen analyses for 8 oxygenates were also added.
- Eleven soil analyses for BTEX and naphthalene were added for disposal purposes (newly installed wells).
- Two grain size/hydrometer analyses were added (to be conducted from the screen interval on both a newly installed shallow and deep well).
- The number of slug tests to be conducted was reduced from three to two (to be performed in both a newly installed shallow and deep well).
- Eight hours of off-gas treatment for the AFVR event were added.

UST DOCKET

According to Program records, the release at the facility was reported to SCDHEC on December 31, 2008. Therefore, in accordance with Section 44-2-40(D) of the SUPERB Act, you are responsible for the first $25,000 of site rehabilitation costs. To insure that expenditures made toward rehabilitation apply to the $25,000 deductible, the Program has pre-approved costs for implementing the Tier II assessment and assigned Cost Agreement # 36403 for tracking. By law, the SUPERB Account cannot compensate any costs that are not pre-approved.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Program by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

The Tier II report and SUPERB invoice are due within 100 days of the date of this correspondence. Upon receipt of the report and invoice with all necessary supporting documentation, up to the amount indicated on the enclosed cost agreement will be applied towards the $25,000 deductible. Suitable supporting documentation can be a copy of a cancelled check (front and back) or notarized statement verifying payments to the contractor. Please note that if an invoice is not received within 120 days of this correspondence, the referenced cost agreement will be closed and any eligible costs will not be applied to your deductible.

The UST Program, because of unnecessary dilution, cannot make decisions if the reporting limit of individual petroleum CoC exceeds Risk-Based Screening Levels (RBSLs). Note that the Program may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The UST Program encourages the use of 'J' values as necessary so the appropriate action can be determined for a release.

Beginning in 2009, the UST Program will begin requiring that laboratories be certified through the SCDHEC Office of Environmental Laboratory Certification for the oxygenate compounds. The UST Program will require that laboratories submit the application for certification no later than December 31, 2008. Beginning April 1, 2009, the UST Program will no longer reimburse costs for oxygenate analysis for any laboratory that is not certified. Detailed information regarding the oxygenate certification can be found on the UST Guidance Documents webpage. (http://www.scdhec.gov/environment/envserv/docs/OxygenateCertification.pdf. The document can also be accessed from the UST documents page at http://www.scdhec.net/environment/ lwm/forms/). Any laboratory with questions regarding the certification requirements, should contact the Office of Environmental Laboratory Certification at (803) 896-0970.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site and scope of work, please reference UST Permit # 12175. If you have any questions concerning this correspondence, please contact me at (803) 896-6633, fax me at (803) 896-6245, or e-mail me at ridglect@dhec.sc.gov.

Sincerely,

Cathleen Ridgley, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc.: Approved Cost Agreement
Monitoring Well Approval

cc: Environmental Compliance Services, Inc., P.O. Box 3528, Fort Mill, SC 29708 (with enc)
Technical File (w/enc)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Approval

Approval is hereby granted to:	ECS, Inc
(On behalf of):	Edgefield Fuel & Convenience, LLC
Facility:	Edgefield Fuel & Convenience 3, 311 Main St., Edgefield, SC
UST Permit Number:	12175
County:	Edgefield

This approval is for the construction of 15 temporary wells, nine shallow monitoring wells, and two deep telescoping wells in accordance with the South Carolina Well Standards and Regulations R. 61-71. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.

2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.

3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.

4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Cathleen Ridgley at (803) 896-6633 or RIDGLECT@dhec.sc.gov.

5. Please provide ground-water quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) to me with the technical report.

6. Monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.

7. Monitoring wells will be abandoned, when no longer required, by or under the direct supervision of a licensed well driller certified by the State of South Carolina.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Date of Issuance: **June 10, 2009** **Approval#:UMW-22908**

Cathleen Ridgley, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

Approved Cost Agreement 36403

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3
RIDGLECT
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN					
		A PLAN PREPARATION	1.0000	100.00	100.00
04 MOB/DEMOB					
		A EQUIPMENT	3.0000	575.00	1,725.00
		B PERSONNEL	5.0000	290.00	1,450.00
06 SOIL BORINGS (DRILLED)					
		A SOIL BORINGS & FLD SCREENING	525.0000	17.00	8,925.00
08 ABANDONMENT					
		ABANDONMENT	525.0000	5.00	2,625.00
09 WELL INSTALLATION					
		B WATER TABLE (DRILLED)	315.0000	38.00	11,970.00
		C TELESCOPING	150.0000	58.00	8,700.00
10 SAMPLE COLLECTION					
		A GROUND WATER	11.0000	55.00	605.00
		D GROUNDWATER NO-PURGE	3.0000	35.00	105.00
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	20.0000	100.00	2,000.00
		BB 1,2-DCA	14.0000	10.75	150.50
		E LEAD	14.0000	20.00	280.00
		F EDB	14.0000	55.00	770.00
		K NITRATE	11.0000	20.00	220.00
		L SULFATE	11.0000	20.00	220.00
		M FERROUS IRON	11.0000	20.00	220.00
		N METHANE	11.0000	110.00	1,210.00
		P 8 OXYGENATES	14.0000	85.00	1,190.00
	SOIL SOIL	Q BTEX+NAPTH	11.0000	100.00	1,100.00
		W GRAIN SIZE/HYDROMETER	2.0000	75.00	150.00
12 AQUIFER CHARACTERIZATION					
		B SLUG TEST	2.0000	150.00	300.00
16 SUBSEQUENT SURVEY					
		SUBSEQUENT SURVEY	1.0000	260.00	260.00
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	4.0000	90.00	360.00
		A2 WASTEWATER - PUMPING TEST	1,500.0000	0.60	900.00
		C SOIL (TREATMENT/DISPOSAL)	30.0000	50.00	1,500.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	50,315.50	7,547.33
23 EFR					
		A 8 HOUR EVENT	1.0000	3,000.00	3,000.00
		C OFF GAS TREATMENT	8.0000	35.00	280.00
			Total Amount		57,862.83

ecs WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

13504 South Point Boulevard, Unit F, Charlotte, NC 28273 tel 704.583.2711 fax 704.583.2744 www.ecsconsult.com

January 11, 2010

SCDHEC
Assessment Section – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Attention: Cathleen Ridgley, Hydrogeologist

Subject: December 2009 Field Screening Results
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit 12175, CA 36403
Edgefield County
ECS Project No. 14-211651

Dear Ms. Ridgley:

Environmental Compliance Services, Inc. (ECS) has recently completed field screening activities at the Edgefield Fuel & Convenience 3 (EFC3) site, as authorized by SCDHEC's Cost Agreement number 36403 dated September 15, 2009. This letter has been prepared to forward the recent groundwater screening results and our conclusions and recommendations regarding these results.

On December 7 & 8, 2009 ECS personnel were on-site with a Geoprobe supplied and operated by Geologic Exploration, Inc. (Statesville, NC). The field activities included completion of 16 field screening points (FS-1 through FS-16) and the collection of one groundwater sample in each boring where groundwater was encountered. The locations of these 16 field screening points are depicted on the attached drawing. Groundwater was not encountered in two separate attempts at field screening point FS-1 due to borehole refusals at 19 feet and 21 feet below ground surface. Groundwater was encountered in the remaining 15 field screening points at depths which ranged between 26 feet and 28 feet below ground surface.

After sample collection, the groundwater samples were placed into an iced cooler and delivered to Pace Analytical Services, Inc. (Huntersville, NC). Pace analyzed each groundwater sample for BTEX (benzene, toluene, ethylbenzene, and total xylenes), MTBE (methyl tert-butyl ether), and naphthalene using EPA Method 8260.

The laboratory test results are shown in the attached drawing (Figure 1) and attached table (Table 1). Based on the laboratory results, and after reviewing the groundwater analytical from the Tier I report, benzene, toluene, ethylbenzene, MTBE, and naphthalene concentrations above their respective RBSL appear to be migrating toward the west from the UST basin/dispensers (source area), toward monitoring well MW-2, and further west of field screening point FS-9. Additional field screening points appear warranted further west beyond field screening point FS-9 to assist with delineation of the dissolved-petroleum hydrocarbons in groundwater. However, field screening points further west of field screening point FS-9 may be somewhat limited due to the urban area of downtown Edgefield.

Benzene concentrations above the RBSL were reported in field screening points FS-13 and FS-14, located south of the site across Main Street. Additional field screening points appear warranted further south of field screening points FS-13 and FS-14 and to the southeast across Bacon Street. The chemicals of concern (CoC) in groundwater at concentrations below the RBSLs appear to have been defined to the northwest, north, northeast, and east by field screening points FS-1 through FS-8, FS-15, and FS-16. However, the laboratory test results of groundwater samples collected from screening points and monitoring wells are known to vary.

Based on the laboratory analytical data from the December 2009 field screening points and foreseeable access limitations in downtown Edgefield, ECS proposes two additional field screening points south of field screening point FS-13 and FS-14; four additional field screening points to the southeast across the intersection of Bacon Street and Main Street; three additional field screening points further west of FS-10 along Main Street; and, three additional field screening points along Lynch Street. Provided the SCDHEC agrees to these 12 additional field screening points, ECS respectfully requests approval of these groundwater samples for certified laboratory analyses in order to assist with determining the horizontal extent of petroleum-dissolved CoC in groundwater. This request for laboratory analyses of the groundwater field screening samples appears appropriate when considering: 1) concentrations of petroleum-dissolved CoC are suspected to decrease as the distances increase away from the source area; 2) the proposed additional field screening distances are greater from the source area than those completed in December 2009; and, 3) concentrations of MTBE are typically not detected when using standard field screening instruments.

The field screening footage approved in CA 36403 was 525 feet, in which 456 feet was used to install field screening points FS-1 through FS-16. Based on an anticipated 28 feet per field screening point, and a remaining 69 feet of approved field screening, ECS requests an addendum for an additional 267 feet of field screening, one additional personnel and one additional equipment mobilization, and 12 additional groundwater analyses for BTEX+Napth+MTBE. We have forwarded these preliminary data evaluations for your review and consideration. We look forward to receiving your review comments and direction for this Tier II assessment at your earliest convenience.

Please contact the undersigned at (704)-583-2711 or by email at rhutchins@ecsconsult.com if you have any questions or require additional information.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES INC.

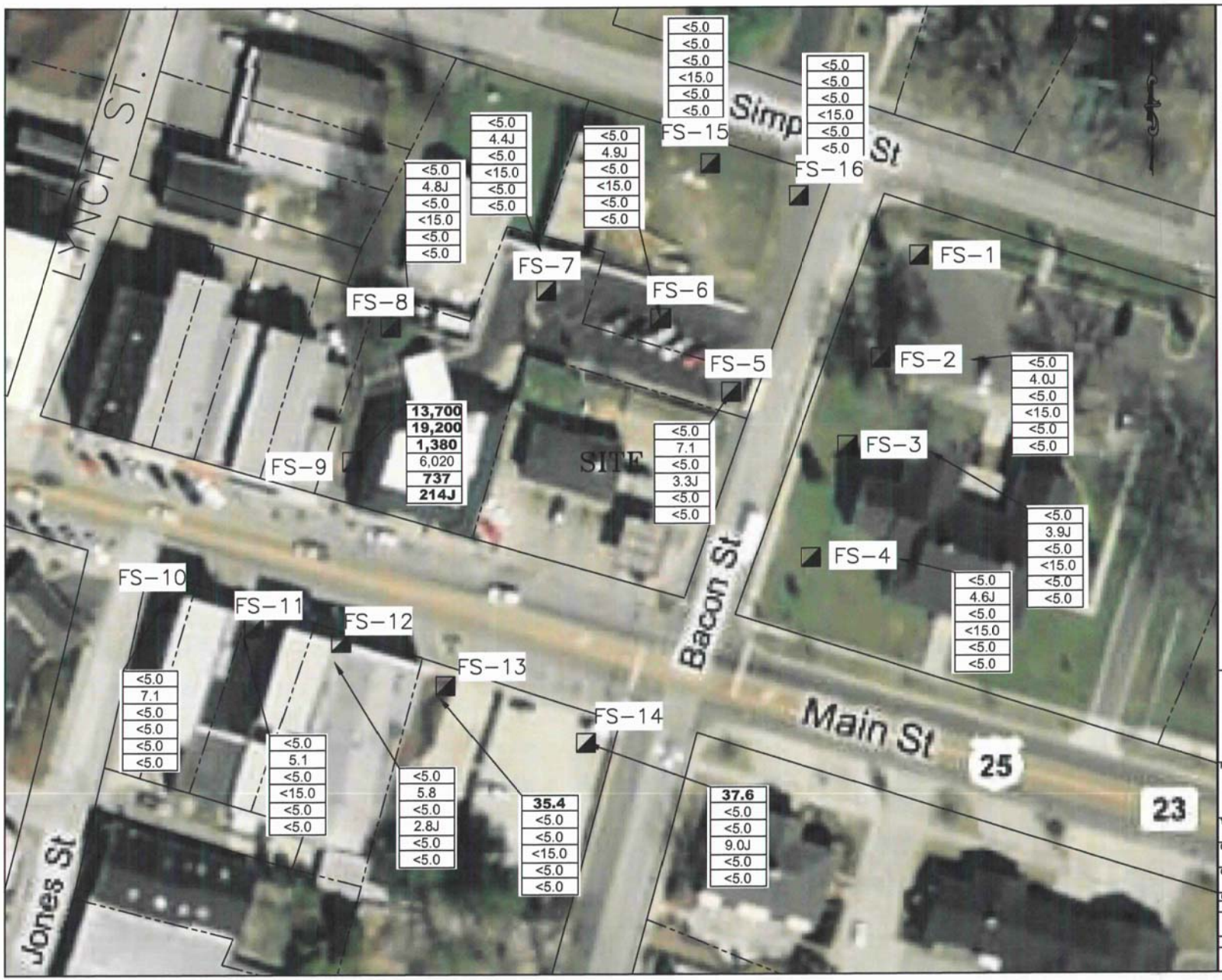
Randall Hutchins
Project Manager

James D. Rudder, Jr., PG
SC License No. 1067

JAMES D. RUDDER, JR. REGISTERED No. 1067 SOUTH CAROLINA PROFESSIONAL GEOLOGIST

Enclosures

F:\Projects\14-211651 Edgefield Fuel & Convenience 3\Tier II\Dec 2009 FS Results 01-11-10.doc



Legend

PROPERTY LINE

FIELD SCREENING LOCATION

5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	MTBE
25	Naphthalene

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Field Screening - December 2009

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 0 25 50

COMPUTER CADFILE :

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	Jan 2010	14-211651	1

TABLE 1

GROUNDWATER FIELD SCREENING RESULTS[1]

DECEMBER 7 & 8, 2009

EDGEFIELD FUEL & CONVENIENCE 3

Sample ID	Sample Date	Depth of Borehole (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)
FS-1	12/07/09	19	<5.0[2]	<5.0	<5.0	<15.0	<5.0	<5.0
FS-1	12/07/09	21	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-2	12/07/09	26	<5.0	4.0J[3]	<5.0	<15.0	<5.0	<5.0
FS-3	12/07/09	28	<5.0	3.9J	<5.0	<15.0	<5.0	<5.0
FS-4	12/07/09	28	<5.0	4.6J	<5.0	<15.0	<5.0	<5.0
FS-5	12/07/09	28	<5.0	7.1	<5.0	3.3J	<5.0	<5.0
FS-6	12/07/09	28	<5.0	4.9J	<5.0	<15.0	<5.0	<5.0
FS-7	12/07/09	28	<5.0	4.4J	<5.0	<15.0	<5.0	<5.0
FS-8	12/07/09	28	<5.0	4.8J	<5.0	<15.0	<5.0	<5.0
FS-9	12/08/09	28	**13,700**[4]	**19,200**	**1,380**	6,020	**737**	**214J**
FS-10	12/08/09	28	<5.0	7.1	<5.0	<15.0	<5.0	<5.0
FS-11	12/08/09	28	<5.0	5.1	<5.0	<15.0	<5.0	<5.0
FS-12	12/08/09	28	<5.0	5.8	<5.0	2.8J	<5.0	<5.0
FS-13	12/08/09	28	**35.4**	<5.0	<5.0	<15.0	<5.0	<5.0
FS-14	12/08/09	28	**37.6**	<5.0	<5.0	9.0J	<5.0	<5.0
FS-15	12/08/09	27	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-16	12/08/09	27	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
		RBSL[5]	5	1,000	700	10,000	40	25

Notes:

1. Analyses for BTEX compounds, MTBE, and naphthalene by EPA Method 8260.
2. Less than the reporting limit specified in the laboratory report.
3. J value represents an estimated concentration between the method detection limit and the reporting limit.
4. Concentrations in bold face type exceeded the May 2001 RBSLs.
5. May 2001 Risk-Based Screening Level.

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(704)875-9092

December 21, 2009

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on December 11, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Charlotte Certification IDs

Connecticut Certification #: PH-0104
9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Kentucky UST Certification #: 84
Louisiana/LELAP Certification #: 04034
New Jersey Certification #: NC012
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
Pennsylvania Certification #: 68-00784
South Carolina Certification #: 990060001
South Carolina Drinking Water Cert. #: 990060003
Tennessee Certification #: 04010
Virginia Certification #: 00213
West Virginia Certification #: 357
Florida/NELAP Certification #: E87627

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SAMPLE SUMMARY

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9259412001	FS-2	Water	12/07/09 13:15	12/11/09 15:15
9259412002	FS-3	Water	12/07/09 13:40	12/11/09 15:15
9259412003	FS-4	Water	12/07/09 14:10	12/11/09 15:15
9259412004	FS-5	Water	12/07/09 15:10	12/11/09 15:15
9259412005	FS-6	Water	12/07/09 16:00	12/11/09 15:15
9259412006	FS-7	Water	12/07/09 16:20	12/11/09 15:15
9259412007	FS-8	Water	12/07/09 16:50	12/11/09 15:15
9259412008	FS-9	Water	12/08/09 09:20	12/11/09 15:15
9259412009	FS-10	Water	12/08/09 10:15	12/11/09 15:15
9259412010	FS-11	Water	12/08/09 11:30	12/11/09 15:15
9259412011	FS-12	Water	12/08/09 12:50	12/11/09 15:15
9259412012	FS-13	Water	12/08/09 14:45	12/11/09 15:15
9259412013	FS-14	Water	12/08/09 15:30	12/11/09 15:15
9259412014	FS-15	Water	12/08/09 15:55	12/11/09 15:15
9259412015	FS-16	Water	12/08/09 16:40	12/11/09 15:15

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SAMPLE ANALYTE COUNT

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9259412001	FS-2	EPA 8260	KJM	11	PASI-C
9259412002	FS-3	EPA 8260	KJM	11	PASI-C
9259412003	FS-4	EPA 8260	KJM	11	PASI-C
9259412004	FS-5	EPA 8260	KJM	11	PASI-C
9259412005	FS-6	EPA 8260	KJM	11	PASI-C
9259412006	FS-7	EPA 8260	KJM	11	PASI-C
9259412007	FS-8	EPA 8260	KJM	11	PASI-C
9259412008	FS-9	EPA 8260	KJM	11	PASI-C
9259412009	FS-10	EPA 8260	KJM	11	PASI-C
9259412010	FS-11	EPA 8260	KJM	11	PASI-C
9259412011	FS-12	EPA 8260	KJM	11	PASI-C
9259412012	FS-13	EPA 8260	KJM	11	PASI-C
9259412013	FS-14	EPA 8260	KJM	11	PASI-C
9259412014	FS-15	EPA 8260	KJM	11	PASI-C
9259412015	FS-16	EPA 8260	KJM	11	PASI-C

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-2 **Lab ID: 9259412001** Collected: 12/07/09 13:15 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 17:01	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 17:01	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 17:01	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 17:01	91-20-3	
Toluene	**4.0J**	ug/L	5.0	1.8	1		12/16/09 17:01	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 17:01	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 17:01	95-47-6	
4-Bromofluorobenzene (S)	99	%	87-109		1		12/16/09 17:01	460-00-4	
Dibromofluoromethane (S)	103	%	85-115		1		12/16/09 17:01	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 17:01	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 17:01	2037-26-5	

Sample: FS-3 **Lab ID: 9259412002** Collected: 12/07/09 13:40 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 17:19	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 17:19	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 17:19	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 17:19	91-20-3	
Toluene	**3.9J**	ug/L	5.0	1.8	1		12/16/09 17:19	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 17:19	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 17:19	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109		1		12/16/09 17:19	460-00-4	
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 17:19	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	79-120		1		12/16/09 17:19	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 17:19	2037-26-5	

Sample: FS-4 **Lab ID: 9259412003** Collected: 12/07/09 14:10 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 17:37	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 17:37	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 17:37	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 17:37	91-20-3	
Toluene	**4.6J**	ug/L	5.0	1.8	1		12/16/09 17:37	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 17:37	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 17:37	95-47-6	
4-Bromofluorobenzene (S)	103	%	87-109		1		12/16/09 17:37	460-00-4	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-4 **Lab ID: 9259412003** Collected: 12/07/09 14:10 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 17:37	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	79-120		1		12/16/09 17:37	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 17:37	2037-26-5	

Sample: FS-5 **Lab ID: 9259412004** Collected: 12/07/09 15:10 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 17:55	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 17:55	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 17:55	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 17:55	91-20-3	
Toluene	**7.1**	ug/L	5.0	1.8	1		12/16/09 17:55	108-88-3	
m&p-Xylene	**3.3J**	ug/L	10.0	2.7	1		12/16/09 17:55	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 17:55	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109		1		12/16/09 17:55	460-00-4	
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 17:55	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 17:55	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 17:55	2037-26-5	

Sample: FS-6 **Lab ID: 9259412005** Collected: 12/07/09 16:00 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 18:14	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 18:14	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 18:14	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 18:14	91-20-3	
Toluene	**4.9J**	ug/L	5.0	1.8	1		12/16/09 18:14	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 18:14	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 18:14	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109		1		12/16/09 18:14	460-00-4	
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 18:14	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 18:14	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 18:14	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-7 **Lab ID: 9259412006** Collected: 12/07/09 16:20 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 18:32	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 18:32	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 18:32	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 18:32	91-20-3	
Toluene	**4.4J**	ug/L	5.0	1.8	1		12/16/09 18:32	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 18:32	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 18:32	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109		1		12/16/09 18:32	460-00-4	
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 18:32	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 18:32	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 18:32	2037-26-5	

Sample: FS-8 **Lab ID: 9259412007** Collected: 12/07/09 16:50 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 18:50	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 18:50	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 18:50	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 18:50	91-20-3	
Toluene	**4.8J**	ug/L	5.0	1.8	1		12/16/09 18:50	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 18:50	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 18:50	95-47-6	
4-Bromofluorobenzene (S)	97	%	87-109		1		12/16/09 18:50	460-00-4	
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 18:50	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 18:50	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 18:50	2037-26-5	

Sample: FS-9 **Lab ID: 9259412008** Collected: 12/08/09 09:20 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**13700**	ug/L	250	60.0	50		12/16/09 16:06	71-43-2	E
Ethylbenzene	**1380**	ug/L	250	55.0	50		12/16/09 16:06	100-41-4	
Methyl-tert-butyl ether	**737**	ug/L	250	100	50		12/16/09 16:06	1634-04-4	
Naphthalene	**214J**	ug/L	250	145	50		12/16/09 16:06	91-20-3	
Toluene	**19200**	ug/L	250	90.0	50		12/16/09 16:06	108-88-3	E
m&p-Xylene	**3880**	ug/L	500	135	50		12/16/09 16:06	1330-20-7	
o-Xylene	**2140**	ug/L	250	85.0	50		12/16/09 16:06	95-47-6	
4-Bromofluorobenzene (S)	103	%	87-109		50		12/16/09 16:06	460-00-4	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-9 **Lab ID: 9259412008** Collected: 12/08/09 09:20 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	98	%	85-115		50		12/16/09 16:06	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		50		12/16/09 16:06	17060-07-0	
Toluene-d8 (S)	101	%	70-120		50		12/16/09 16:06	2037-26-5	

Sample: FS-10 **Lab ID: 9259412009** Collected: 12/08/09 10:15 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 19:08	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 19:08	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 19:08	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 19:08	91-20-3	
Toluene	**7.1**	ug/L	5.0	1.8	1		12/16/09 19:08	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 19:08	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 19:08	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109		1		12/16/09 19:08	460-00-4	
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 19:08	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 19:08	17060-07-0	
Toluene-d8 (S)	102	%	70-120		1		12/16/09 19:08	2037-26-5	

Sample: FS-11 **Lab ID: 9259412010** Collected: 12/08/09 11:30 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 19:26	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 19:26	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 19:26	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 19:26	91-20-3	
Toluene	**5.1**	ug/L	5.0	1.8	1		12/16/09 19:26	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 19:26	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 19:26	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109		1		12/16/09 19:26	460-00-4	
Dibromofluoromethane (S)	103	%	85-115		1		12/16/09 19:26	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 19:26	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 19:26	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-12 **Lab ID: 9259412011** Collected: 12/08/09 12:50 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 19:45	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 19:45	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 19:45	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 19:45	91-20-3	
Toluene	**5.8**	ug/L	5.0	1.8	1		12/16/09 19:45	108-88-3	
m&p-Xylene	**2.8J**	ug/L	10.0	2.7	1		12/16/09 19:45	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 19:45	95-47-6	
4-Bromofluorobenzene (S)	103	%	87-109		1		12/16/09 19:45	460-00-4	
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 19:45	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 19:45	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 19:45	2037-26-5	

Sample: FS-13 **Lab ID: 9259412012** Collected: 12/08/09 14:45 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**35.4**	ug/L	5.0	1.2	1		12/16/09 20:03	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 20:03	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 20:03	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 20:03	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		12/16/09 20:03	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 20:03	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 20:03	95-47-6	
4-Bromofluorobenzene (S)	104	%	87-109		1		12/16/09 20:03	460-00-4	
Dibromofluoromethane (S)	100	%	85-115		1		12/16/09 20:03	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 20:03	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 20:03	2037-26-5	

Sample: FS-14 **Lab ID: 9259412013** Collected: 12/08/09 15:30 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**37.6**	ug/L	5.0	1.2	1		12/16/09 20:21	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 20:21	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 20:21	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 20:21	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		12/16/09 20:21	108-88-3	
m&p-Xylene	**9.0J**	ug/L	10.0	2.7	1		12/16/09 20:21	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 20:21	95-47-6	
4-Bromofluorobenzene (S)	103	%	87-109		1		12/16/09 20:21	460-00-4	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-14 **Lab ID: 9259412013** Collected: 12/08/09 15:30 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 20:21	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 20:21	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 20:21	2037-26-5	

Sample: FS-15 **Lab ID: 9259412014** Collected: 12/08/09 15:55 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 20:39	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 20:39	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 20:39	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 20:39	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		12/16/09 20:39	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 20:39	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 20:39	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109		1		12/16/09 20:39	460-00-4	
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 20:39	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 20:39	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 20:39	2037-26-5	

Sample: FS-16 **Lab ID: 9259412015** Collected: 12/08/09 16:40 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 20:58	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 20:58	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 20:58	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 20:58	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		12/16/09 20:58	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 20:58	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 20:58	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109		1		12/16/09 20:58	460-00-4	
Dibromofluoromethane (S)	99	%	85-115		1		12/16/09 20:58	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	79-120		1		12/16/09 20:58	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 20:58	2037-26-5	

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QUALITY CONTROL DATA

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

QC Batch: MSV/9309 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 9259412001, 9259412002, 9259412003, 9259412004, 9259412005, 9259412006, 9259412007, 9259412008, 9259412009, 9259412010, 9259412011, 9259412012, 9259412013, 9259412014, 9259412015

METHOD BLANK: 378513 Matrix: Water
Associated Lab Samples: 9259412001, 9259412002, 9259412003, 9259412004, 9259412005, 9259412006, 9259412007, 9259412008, 9259412009, 9259412010, 9259412011, 9259412012, 9259412013, 9259412014, 9259412015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	12/16/09 11:59	
Ethylbenzene	ug/L	ND	5.0	12/16/09 11:59	
m&p-Xylene	ug/L	ND	10.0	12/16/09 11:59	
Methyl-tert-butyl ether	ug/L	ND	5.0	12/16/09 11:59	
Naphthalene	ug/L	ND	5.0	12/16/09 11:59	
o-Xylene	ug/L	ND	5.0	12/16/09 11:59	
Toluene	ug/L	ND	5.0	12/16/09 11:59	
1,2-Dichloroethane-d4 (S)	%	99	79-120	12/16/09 11:59	
4-Bromofluorobenzene (S)	%	103	87-109	12/16/09 11:59	
Dibromofluoromethane (S)	%	101	85-115	12/16/09 11:59	
Toluene-d8 (S)	%	100	70-120	12/16/09 11:59	

LABORATORY CONTROL SAMPLE: 378514

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	54.1	108	78-128	
Ethylbenzene	ug/L	50	53.3	107	80-127	
m&p-Xylene	ug/L	100	108	108	82-127	
Methyl-tert-butyl ether	ug/L	50	55.2	110	71-130	
Naphthalene	ug/L	50	55.1	110	52-136	
o-Xylene	ug/L	50	53.4	107	83-124	
Toluene	ug/L	50	53.9	108	76-126	
1,2-Dichloroethane-d4 (S)	%			98	79-120	
4-Bromofluorobenzene (S)	%			101	87-109	
Dibromofluoromethane (S)	%			100	85-115	
Toluene-d8 (S)	%			100	70-120	

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QUALIFIERS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9259412001	FS-2	EPA 8260	MSV/9309		
9259412002	FS-3	EPA 8260	MSV/9309		
9259412003	FS-4	EPA 8260	MSV/9309		
9259412004	FS-5	EPA 8260	MSV/9309		
9259412005	FS-6	EPA 8260	MSV/9309		
9259412006	FS-7	EPA 8260	MSV/9309		
9259412007	FS-8	EPA 8260	MSV/9309		
9259412008	FS-9	EPA 8260	MSV/9309		
9259412009	FS-10	EPA 8260	MSV/9309		
9259412010	FS-11	EPA 8260	MSV/9309		
9259412011	FS-12	EPA 8260	MSV/9309		
9259412012	FS-13	EPA 8260	MSV/9309		
9259412013	FS-14	EPA 8260	MSV/9309		
9259412014	FS-15	EPA 8260	MSV/9309		
9259412015	FS-16	EPA 8260	MSV/9309		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

1333961

Section A Required Client Information:

Company: Environmental Compliance Services
Address: 12804 S. Point Blvd Unit F. Charlotte, NC 28273
Email To: RHutchins@ecsnch.com
Phone: 7045837211 Fax:
Requested Due Date/TAT: 48 hr

Section B Required Project Information:

Report To: Randy Hutchins
Copy To:
Purchase Order No.:
Project Name: Edgefield Fuel + Conv. 3
Project Number: IN-211651

Section C Invoice Information:

Attention: Christina White
Company Name: ECS
Address: 889 Silvers St, Agawam MA 01001
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 2071-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	BTEX, MNScreen	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	FS-2	WT	G			12/7	13:15						X						X		9259412 001
2	FS-3						13:40														002
3	FS-4						14:10														003
4	FS-5						15:10														004
5	FS-6						16:00														005
6	FS-7						16:20														006
7	FS-8						16:50														007
8	FS-9					12/8	9:20														008
9	FS-10						10:15														009
10	FS-11						11:30														010
11	FS-12						12:50														011
12	FS-13						14:45														012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
report J values	Ryan Byas/ECS	12/10/09	19:10	S Moody - Pace	12-11-09	13:45				
	S Moody	12-11-09	15:15	Justin Motley/Pace	12-11-09	15:15	4.3	Y	n	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Ryan Byas
SIGNATURE of SAMPLER: Ryan Byas DATE Signed (MM/DD/YY): 12/10/09

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1333962

Section A Required Client Information:

Company: Environmental compliance services
Address: 17504 S. Point Blvd Unit E.
Charlotte, NC 28273
Email To: RHutchins@ECSconsulting.com
Phone: 704 583 2711 Fax:
Requested Due Date/TAT: 48 hr

Section B Required Project Information:

Report To: Randy Hutchins
Copy To:
Purchase Order No.:
Project Name: Edgefield Fuel Conv. 3
Project Number: 14-21651

Section C Invoice Information:

Attention: Christina White
Company Name: ECS
Address: 566 Silver St, Agawam MA 01001
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: BTEX MN Screen	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	FS-14	WT	G			12/8/09	15:30		3				X							9259412 013
2	FS-15	↓	↓			↓	15:55		↓				↓							014
3	FS-16	↓	↓			↓	16:40		↓				↓							015
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
report 3 values	Ryan Byas/ECS	12/10/09	17:10	B Moody Pace	12/11-09	13:45				
	B Moody	12-11-09	15:15	Justin Motley Pace	12-11-09	1515	4.3	Y	n	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas

SIGNATURE of SAMPLER: Ryan Byas DATE Signed (MM/DD/YY): 12/10/09

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for

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13504 South Point Boulevard, Unit F, Charlotte, NC 28273 tel 704.583.2711 fax 704.583.2744 www.ecsconsult.com

March 19, 2010

SCDHEC
Assessment Section – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Attention: Cathleen Ridgley, Hydrogeologist

Subject: March 2010 Field Screening Results
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit 12175, CA 36403
Edgefield County
ECS Project No. 14-211651

Dear Ms. Ridgley:

Environmental Compliance Services, Inc. (ECS) has recently completed a second round of field screening activities at the Edgefield Fuel & Convenience 3 (EFC3) site, as authorized by SCDHEC's addendum to Cost Agreement 36403, received February 2, 2010. The second round of field screening was requested based on Chemicals of Concern (CoC) not being defined to the west, south, and southeast after the November 2009 field screening event. This letter has been prepared to forward the most recent groundwater screening results and our conclusions and recommendations regarding these results.

On March 9, 2010 ECS personnel were on-site with a Geoprobe supplied and operated by Geologic Exploration, Inc. (Statesville, NC). The field activities included completion of nine field screening points (FS-17 through FS-25) and the collection of one groundwater sample in each boring where groundwater was encountered. The locations of these nine field screening points are depicted on the attached drawing. Groundwater was in the nine field screening points at depths ranging between 25 and 28 feet below ground surface.

After sample collection, the groundwater samples were placed into an iced cooler and delivered to Pace Analytical Services, Inc. (Huntersville, NC). Pace analyzed each groundwater sample for BTEX (benzene, toluene, ethylbenzene, and total xylenes), MTBE (methyl tert-butyl ether), and naphthalene using EPA Method 8260.

The laboratory test results are shown in the attached drawing (**Figure 1**) and attached table (**Table 1**). Based on the laboratory results from the two field screening events (November 2009 and March 2010), and after reviewing the groundwater analytical from the Tier I report, benzene, toluene, ethylbenzene, MTBE, and naphthalene concentrations above their respective RBSL appear to be migrating toward the west from the UST basin/dispensers (source area), toward monitoring well MW-2, and further west of field screening point FS-9. These CoC in groundwater appear to be defined to the west by field screening points FS-10, FS-11, and FS-17 through FS-22.

During the November 2009 field screening event, benzene concentrations above the RBSL were reported in field screening points FS-13 and FS-14, located south of the site across Main Street. During the March 2010 field screening event, benzene concentrations above the RBSL were reported in field screening points FS-23 and FS-24, located southeast of the site across the intersection of Main Street and Bacon Street. Benzene and naphthalene concentrations were detected at higher concentrations southeast of the site when compared to those detected south of the site. During our installation of field screening points FS-23 through FS-25 in March 2010, ECS was informed by town locals (including an employee of the Town of Edgefield) of a previous gasoline service station located southeast of the site, at the property currently occupied by Town Hall. Field screening points FS-23 through FS-25 were installed on the property occupied by Town Hall. The CoC detected in groundwater from field screening points FS-13, FS-14, FS-23, and FS-24 may not necessarily be related to the release from the Edgefield Fuel & Convenience 3 facility.

Based on the laboratory analytical data from the November 2009 and March 2010 field screening points and limited access within downtown Edgefield, the locations of the Tier II Plan proposed shallow monitoring wells may require revision. The proposed shallow monitoring wells should be located in an area where CoC in groundwater have been delineated based on the analytical data from the field screening points. An Aggressive Fluid Vapor Recovery event will be scheduled within the next two weeks for the site. Monitoring well installations have been tentatively scheduled for April 5, 2010. We have forwarded these preliminary data evaluations for your review and consideration. We look forward to receiving your review comments and direction for well installation locations at your earliest convenience.

Please contact the undersigned at (704)-583-2711 or by email at rhutchins@ecsconsult.com if you have any questions or require additional information.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES INC.

Randall Hutchins
Project Manager

Enclosures

F:\Projects\14-211651 Edgefield Fuel & Convenience 3\Tier II\March 2010 FS Results 03-19-10.doc

Legend

PROPERTY LINE

FIELD SCREENING LOCATION

5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	MTBE
25	Naphthalene

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

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13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Field Screening – December 2009

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 0 25 50

COMPUTER CADFILE:

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KB	KB	RH	JR
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	Jan 2010	14-211651	1

TABLE 1

GROUNDWATER FIELD SCREENING RESULTS[1]

MARCH 9, 2010

EDGEFIELD FUEL & CONVENIENCE 3

Sample ID	Sample Date	Depth of Borehole (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)
FS-17	03/09/10	28	<5.0[2]	<5.0	<5.0	<15.0	<5.0	<5.0
FS-18	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-19	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-20	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-21	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-22	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-23	03/09/10	28	**28.0**[3]	106	101	355	<25.0	**59.3**
FS-24	03/09/10	28	**49.9**	10.3J[4]	56.3	154.9	26.2	18.7J
FS-25	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
		RBSL[5]	5	1,000	700	10,000	40	25

Notes:

1. Analyses for BTEX compounds, MTBE, and naphthalene by EPA Method 8260.
2. Less than the reporting limit specified in the laboratory report.
3. Concentrations in bold face type exceeded the May 2001 RBSLs.
4. J value represents an estimated concentration between the method detection limit and the reporting limit.
5. May 2001 Risk-Based Screening Level.

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Huntersville, NC 28078
(704)875-9092

March 19, 2010

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on March 10, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Charlotte Certification IDs
9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Connecticut Certification #: PH-0104
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
North Carolina Wastewater Certification #: 12
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
West Virginia Certification #: 357

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SAMPLE SUMMARY

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9265041001	FS-17	Water	03/09/10 09:40	03/10/10 16:30
9265041002	FS-18	Water	03/09/10 10:10	03/10/10 16:30
9265041003	FS-19	Water	03/09/10 10:50	03/10/10 16:30
9265041004	FS-20	Water	03/09/10 12:35	03/10/10 16:30
9265041005	FS-21	Water	03/09/10 13:10	03/10/10 16:30
9265041006	FS-22	Water	03/09/10 13:25	03/10/10 16:30
9265041007	FS-23	Water	03/09/10 14:20	03/10/10 16:30
9265041008	FS-24	Water	03/09/10 14:50	03/10/10 16:30
9265041009	FS-25	Water	03/09/10 15:20	03/10/10 16:30

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SAMPLE ANALYTE COUNT

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9265041001	**FS-17**	EPA 8260	DLK	11	PASI-C
9265041002	**FS-18**	EPA 8260	DLK	11	PASI-C
9265041003	**FS-19**	EPA 8260	DLK	11	PASI-C
9265041004	**FS-20**	EPA 8260	DLK	11	PASI-C
9265041005	**FS-21**	EPA 8260	DLK	11	PASI-C
9265041006	**FS-22**	EPA 8260	DLK	11	PASI-C
9265041007	**FS-23**	EPA 8260	DLK	11	PASI-C
9265041008	**FS-24**	EPA 8260	DLK	11	PASI-C
9265041009	**FS-25**	EPA 8260	DLK	11	PASI-C

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ANALYTICAL RESULTS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Sample: FS-17 **Lab ID: 9265041001** Collected: 03/09/10 09:40 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 08:12	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 08:12	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 08:12	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 08:12	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 08:12	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 08:12	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 08:12	95-47-6	
4-Bromofluorobenzene (S)	96	%	70-130		1		03/16/10 08:12	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		1		03/16/10 08:12	1868-53-7	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		03/16/10 08:12	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		03/16/10 08:12	2037-26-5	

Sample: FS-18 **Lab ID: 9265041002** Collected: 03/09/10 10:10 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 08:30	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 08:30	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 08:30	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 08:30	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 08:30	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 08:30	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 08:30	95-47-6	
4-Bromofluorobenzene (S)	101	%	70-130		1		03/16/10 08:30	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		03/16/10 08:30	1868-53-7	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		03/16/10 08:30	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/16/10 08:30	2037-26-5	

Sample: FS-19 **Lab ID: 9265041003** Collected: 03/09/10 10:50 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 08:49	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 08:49	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 08:49	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 08:49	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 08:49	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 08:49	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 08:49	95-47-6	
4-Bromofluorobenzene (S)	95	%	70-130		1		03/16/10 08:49	460-00-4	

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ANALYTICAL RESULTS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Sample: FS-19 **Lab ID: 9265041003** Collected: 03/09/10 10:50 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	101	%	70-130		1		03/16/10 08:49	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		03/16/10 08:49	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/16/10 08:49	2037-26-5	

Sample: FS-20 **Lab ID: 9265041004** Collected: 03/09/10 12:35 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 09:07	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 09:07	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 09:07	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 09:07	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 09:07	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 09:07	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 09:07	95-47-6	
4-Bromofluorobenzene (S)	98	%	70-130		1		03/16/10 09:07	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		03/16/10 09:07	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		03/16/10 09:07	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/16/10 09:07	2037-26-5	

Sample: FS-21 **Lab ID: 9265041005** Collected: 03/09/10 13:10 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 09:25	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 09:25	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 09:25	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 09:25	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 09:25	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 09:25	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 09:25	95-47-6	
4-Bromofluorobenzene (S)	96	%	70-130		1		03/16/10 09:25	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		1		03/16/10 09:25	1868-53-7	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		03/16/10 09:25	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/16/10 09:25	2037-26-5	

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ANALYTICAL RESULTS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Sample: FS-22 **Lab ID: 9265041006** Collected: 03/09/10 13:25 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 09:44	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 09:44	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 09:44	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 09:44	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 09:44	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 09:44	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 09:44	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		1		03/16/10 09:44	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		03/16/10 09:44	1868-53-7	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		03/16/10 09:44	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/16/10 09:44	2037-26-5	

Sample: FS-23 **Lab ID: 9265041007** Collected: 03/09/10 14:20 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**28.0**	ug/L	25.0	6.0	5		03/16/10 12:36	71-43-2	
Ethylbenzene	**101**	ug/L	25.0	5.5	5		03/16/10 12:36	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	25.0	10.0	5		03/16/10 12:36	1634-04-4	
Naphthalene	**59.3**	ug/L	25.0	14.5	5		03/16/10 12:36	91-20-3	
Toluene	**106**	ug/L	25.0	9.0	5		03/16/10 12:36	108-88-3	
m&p-Xylene	**214**	ug/L	50.0	13.5	5		03/16/10 12:36	1330-20-7	
o-Xylene	**141**	ug/L	25.0	8.5	5		03/16/10 12:36	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		5		03/16/10 12:36	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		5		03/16/10 12:36	1868-53-7	
1,2-Dichloroethane-d4 (S)	98	%	70-130		5		03/16/10 12:36	17060-07-0	
Toluene-d8 (S)	100	%	70-130		5		03/16/10 12:36	2037-26-5	

Sample: FS-24 **Lab ID: 9265041008** Collected: 03/09/10 14:50 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**49.9**	ug/L	25.0	6.0	5		03/16/10 12:57	71-43-2	D3
Ethylbenzene	**56.3**	ug/L	25.0	5.5	5		03/16/10 12:57	100-41-4	
Methyl-tert-butyl ether	**26.2**	ug/L	25.0	10.0	5		03/16/10 12:57	1634-04-4	
Naphthalene	**18.7J**	ug/L	25.0	14.5	5		03/16/10 12:57	91-20-3	
Toluene	**10.3J**	ug/L	25.0	9.0	5		03/16/10 12:57	108-88-3	
m&p-Xylene	**115**	ug/L	50.0	13.5	5		03/16/10 12:57	1330-20-7	
o-Xylene	**39.9**	ug/L	25.0	8.5	5		03/16/10 12:57	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		5		03/16/10 12:57	460-00-4	

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ANALYTICAL RESULTS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Sample: FS-24 **Lab ID: 9265041008** Collected: 03/09/10 14:50 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	99	%	70-130		5		03/16/10 12:57	1868-53-7	
1,2-Dichloroethane-d4 (S)	97	%	70-130		5		03/16/10 12:57	17060-07-0	
Toluene-d8 (S)	101	%	70-130		5		03/16/10 12:57	2037-26-5	

Sample: FS-25 **Lab ID: 9265041009** Collected: 03/09/10 15:20 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 10:02	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 10:02	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 10:02	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 10:02	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 10:02	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 10:02	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 10:02	95-47-6	
4-Bromofluorobenzene (S)	96	%	70-130		1		03/16/10 10:02	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		1		03/16/10 10:02	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		03/16/10 10:02	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		03/16/10 10:02	2037-26-5	

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QUALITY CONTROL DATA

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

QC Batch: MSV/10277 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 9265041001, 9265041002, 9265041003, 9265041004, 9265041005, 9265041006, 9265041007, 9265041008, 9265041009

METHOD BLANK: 414876 Matrix: Water
Associated Lab Samples: 9265041001, 9265041002, 9265041003, 9265041004, 9265041005, 9265041006, 9265041007, 9265041008, 9265041009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	03/16/10 10:57	
Ethylbenzene	ug/L	ND	5.0	03/16/10 10:57	
m&p-Xylene	ug/L	ND	10.0	03/16/10 10:57	
Methyl-tert-butyl ether	ug/L	ND	5.0	03/16/10 10:57	
Naphthalene	ug/L	ND	5.0	03/16/10 10:57	
o-Xylene	ug/L	ND	5.0	03/16/10 10:57	
Toluene	ug/L	ND	5.0	03/16/10 10:57	
1,2-Dichloroethane-d4 (S)	%	98	70-130	03/16/10 10:57	
4-Bromofluorobenzene (S)	%	98	70-130	03/16/10 10:57	
Dibromofluoromethane (S)	%	100	70-130	03/16/10 10:57	
Toluene-d8 (S)	%	101	70-130	03/16/10 10:57	

LABORATORY CONTROL SAMPLE: 414877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	54.9	110	70-130	
Ethylbenzene	ug/L	50	57.3	115	70-130	
m&p-Xylene	ug/L	100	118	118	70-130	
Methyl-tert-butyl ether	ug/L	50	56.3	113	70-130	
Naphthalene	ug/L	50	60.9	122	70-130	
o-Xylene	ug/L	50	61.5	123	70-130	
Toluene	ug/L	50	56.6	113	70-130	
1,2-Dichloroethane-d4 (S)	%			102	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			99	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 414878 414879

Parameter	Units	9265040001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	50	50	49.1	47.7	98	95	70-130	3	30	
Ethylbenzene	ug/L	ND	50	50	52.7	51.6	105	103	70-130	2	30	
m&p-Xylene	ug/L	ND	100	100	108	105	108	105	70-130	3	30	
Methyl-tert-butyl ether	ug/L	ND	50	50	49.0	44.7	98	89	70-130	9	30	
Naphthalene	ug/L	ND	50	50	57.6	54.1	115	108	70-130	6	30	
o-Xylene	ug/L	ND	50	50	53.5	53.2	107	106	70-130	1	30	
Toluene	ug/L	ND	50	50	50.7	49.6	101	99	70-130	2	30	

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QUALITY CONTROL DATA

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 414878 414879

Parameter	Units	9265040001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane-d4 (S)	%						103	101	70-130			
4-Bromofluorobenzene (S)	%						101	101	70-130			
Dibromofluoromethane (S)	%						101	101	70-130			
Toluene-d8 (S)	%						99	99	70-130			

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QUALIFIERS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9265041001	**FS-17**	EPA 8260	MSV/10277		
9265041002	**FS-18**	EPA 8260	MSV/10277		
9265041003	**FS-19**	EPA 8260	MSV/10277		
9265041004	**FS-20**	EPA 8260	MSV/10277		
9265041005	**FS-21**	EPA 8260	MSV/10277		
9265041006	**FS-22**	EPA 8260	MSV/10277		
9265041007	**FS-23**	EPA 8260	MSV/10277		
9265041008	**FS-24**	EPA 8260	MSV/10277		
9265041009	**FS-25**	EPA 8260	MSV/10277		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1351820

Section A — Required Client Information:

Company: Environmental Compliance Services
Address: 13504 S. Point Blvd Unit F
Charlotte, NC 28273
Email To: RHutchins@ecsCnc.com
Phone: 7045832711 Fax:
Requested Due Date/TAT: 7 Day

Section B — Required Project Information:

Report To: Randall Hutchins
Copy To:
Purchase Order No.:
Project Name: Edgefield Fuel Convenience 3
Project Number: 14-21651

Section C — Invoice Information:

Attention: Christina White
Company Name: ECS
Address: 593 S. River St Agawam MA 01001
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 2071-1 3

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D — Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	BTEX, MN Screen	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ES-17	WT	G			3/9	9:40		3				X						X		9265041
2	ES-18						10:10														001
3	ES-19						10:50														002
4	ES-20						12:35														003
5	ES-21						13:10														004
6	ES-22						13:25														005
7	ES-23						14:20														006
8	ES-24						14:50														007
9	ES-25						15:20														008
10																					009
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Report J values	Ryan Byas / ECS	3/9/10	18:50	J Moody - Pace	3-10-10	15:25	
	J Moody	3-10-10	16:30	Linda Pace	3/10/10	16:30	3.5 4.0 4.2

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas

SIGNATURE of SAMPLER: Ryan Byas DATE Signed (MM/DD/YY): 03/09/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Ies Intact °/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical

Sample Condition Upon Receipt

Client Name: Env. Compliance Project # 9265041

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other ____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other ____

Thermometer Used T060 Type of Ice: Wet Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 5.4 Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Optional	
Proj. Due Date:	N/A
Proj. Name:	N/A

Date and Initials of person examining contents: GMM 3/10/10

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: ____		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): N/A		

Client Notification/ Resolution:

Field Data Required? Y / N / N/A

Person Contacted: ____ Date/Time: ____

Comments/ Resolution: ____

Project Manager Review: RLH Date: 3/12/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

TIER II ASSESSMENT REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651
June 4, 2010

Prepared by:
ECS
PO Box 3528
Fort Mill, SC 29708-3528
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

TIER II ASSESSMENT REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

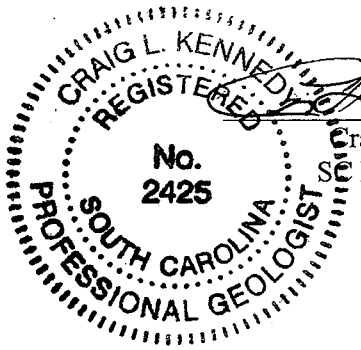
Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

June 18, 2010

Randall Hutchins
Project Manager



Craig L. Kennedy, P.G.
SC Registration No. 2425

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1.0 INTRODUCTION

This report presents the results of the assessment activities conducted at the Edgefield Fuel & Convenience 3 (EF&C 3) site between December 8, 2009 and May 20, 2010. These activities were conducted in accordance with Cost Agreement Number 36403 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated September 15, 2009, and as amended on March 25, 2010.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc.
Address: Post Office Box 3528
Fort Mill, South Carolina 29708
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 WELL DRILLER INFORMATION

Name: Johnny Burr, Brian Thomas, & Vincent Ferderle
Company Name: Geologic Exploration, Inc.
Address: 176 Commerce Boulevard
Statesville, North Carolina 28625
Certification Number: 1740, 1465, & 1930

1.6 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	Not reported

UST Permit 12175

UST #	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Premium	Unknown	Yes	Not applicable
2	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable
3	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable

No additional releases reported at the Edgefield Fuel & Convenience 3 (UST Permit 12175) facility.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of our site visits between December 2009 and May 2010 for this Tier II assessment. The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs were in use at the site during these assessment activities, these included of one 3,000-gallon premium gasoline UST and two 3,000-gallon gasoline USTs.

Historical site assessment activities reviewed in preparation of this assessment report included the Tier I assessment, conducted and reported to the SCDHEC in March 2009. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. Historical data from the Tier I assessment has been incorporated into this Tier II assessment report.

1.7 REGIONAL GEOLOGY/HYDROGEOLOGY

The area was located in the Carolina Terrane of the Piedmont Physiographic Province. The Carolina Terrane consisted of upper Precambrian to Cambrian greenschist facies metasedimentary and metavolcanic rocks intruded by numerous granitic and gabbroic plutons ranging in age from 265 to 650 million years. A mantle of residual soil and saprolite has been reported to typically overlie the crystalline rocks of the Carolina Terrane. The thickness of the mantle has ranged from approximately six to 60 feet, although it apparently has been absent in places and thicker than 60 feet in others. The surface layers reported to be composed chiefly of sandy clay. The clay content of most saprolites typically ranges from 10 to 25 percent, with some containing as little as three percent and others as much as 70%.

The mantle that covers the underlying fractured bedrock in most places has provided an intergranular medium through which recharge into, and discharge of water from, the fractured rocks commonly occur. As a result, groundwater flow has been reported to occur within a composite two-media system. The top of the system has been the water table surface, which has been typically located within the saprolite. The

fractured bedrock is expected to generally grade downward into unfractured rock below a depth of approximately 300 feet. The base of the groundwater system is therefore indistinct.

1.8 RECEPTOR SURVEY

The Edgefield Fuel & Convenience 3 site was located in a primarily business and commercial area within the town limits of Edgefield, SC (**Figure 1**). The site was bordered to the north by an access road and parking lot for the west abutting Carolina First Bank. The site was bordered to the east by Bacon Street followed by the South Carolina National Heritage Corridor Discovery Center. The site was bordered to the south by Main Street (US Highway 25) followed by a parking lot for the downtown district of Edgefield. Edgefield Town Hall was located diagonally across the cross streets of Bacon Street and Main Street.

Potable water to the site and surrounding properties was provided by the Edgefield County Water and Sewer Authority. The Edgefield County Water and Sewer Authority utilized potable water from portions of the Savannah River located within the Savannah-Salkehatchie Basin. One private water supply well was identified within a 1,000-foot radius of the site. The private water supply well was located approximately 860 feet southeast of the active site UST basin. This private water supply well located at the community college, however, was not in operation.

One wet weather drainage feature was identified approximately 1,000 feet southeast of the site. This wet weather drainage feature flowed in a general east to west direction before a turn and began flowing toward the southwest. The wet weather drainage feature drained into the Beaverdam Creek. The two closest surface water bodies identified in relation to the site were Beaverdam Creek and a tributary to Beaverdam Creek. Beaverdam Creek was located approximately 1,375 feet southwest of the site and flowed in a general northwest to southeast direction. The tributary to Beaverdam Creek was located approximately 1,380 feet northwest of the site and flowed in a general northeast to southwest direction.

Underground utility conduits marked by the utility company were present on-site and in the immediate vicinity. Utilities marked included a water meter for a municipal water line, electrical lines, and a telephone line. Additionally, a sanitary sewer cleanout for a sanitary sewer line and drop inlets for a storm drainage system were observed during our site visit. A water meter was located on the eastern side of the property. Electrical lines were marked along the eastern side of the property beneath the sidewalk and marked along the northern property limits of the site. A telephone line was marked along the northeastern portion of the site. The sewer cleanout was located on the east side of the site building. The storm drains were located along Bacon Street next to the site property limits. A natural gas line and municipal water line were marked across Main Street from the site.

A Site Vicinity Map showing surrounding properties has been included as **Figure 2**. A list of names and addresses of adjacent and/or adjoining property owners is summarized in **Table 1**. A Site Map showing the utility features and the current UST system has been included as **Figure 3**. The surveyed site maps on which **Figure 3** was based have been included in **Appendix A**.

2.0 ASSESSMENT INFORMATION

The SCDHEC directive for this assessment included completion of field screening points and monitoring well installations to monitor the migration of CoC following the Tier II Assessment Plan and subsequent addendums; soil sampling during well installations; one Aggressive Fluid/Vapor Recovery (AFVR) event to remove free product from site monitoring well MW-1; a subsequent survey; aquifer characterization via two slug tests; and a comprehensive groundwater sampling event.

2.1 SITE GEOLOGY/HYDROGEOLOGY

The site was located approximately 525 feet above mean sea level (MSL) with an approximate total site topographic relief of three feet. Storm water runoff at the site primarily drained toward the south and east. Retaining walls were observed to the north and northeast corner of the site with an approximate 6-foot grade elevation difference at the greatest point. The area around the site was generally characterized by broad ridges and gentle slopes to narrow ridges and side slopes adjacent to drainage ways. As previously discussed in **Section 1.8**, Beaverdam Creek was located approximately 1,375 feet southwest of the site and a tributary to Beaverdam Creek was located approximately 1,380 feet northwest of the site. The tributary flowed in a general northeast to southwest direction before discharging into Beavedam Creek. Beaverdam Creek flowed in a general northwest to southeast direction.

The surface at the site was generally covered by asphalt, and some smaller areas of concrete and grass. The active site USTs were covered with concrete. The boring logs provided a general characterization of the geological formations encountered at the location of each monitoring well installed during assessment activities. In general, the site subsurface was characterized by asphalt and concrete ranging from four to six inches in thickness followed by fill material consisting of ABC stone and clayey to silty sand to depths of approximately 2 feet below ground surface (bgs). Native soils (residuum), below the fill material, were characterized as tan to brown to red silty sand and silty clay to depths of 6 feet bgs. Soils encountered in the boreholes 6 feet bgs were characterized as yellow to orange and tan to gray silty sand to the termination depths of the boreholes.

Based on the sieve and hydrometer analyses, the site was underlain at shallow depths by clayey silty sand. The percentages of sand, silt and clay in a soil sample collected from SB-2 (MW-1) at a depth of 20 feet during Tier I assessment activities (March 2009) were 64.1%, 24.5%, and 11.4%, respectively. The percentages of gravel, sand, and combination of silt & clay in the soil sample collected during these Tier II activities from on-site monitoring well MW-6 at a depth of 20 feet were 0.6%, 52.2%, and 47.2%, respectively. A hydrometer analysis was not performed on the soil sample collected from monitoring well MW-6 to determine the percentages of silt and clay.

Historical and current depths to groundwater measured in shallow monitoring wells at the site ranged from 18.09 feet (MW-5 in May 2010) to 24.55 feet (MW-2 in March 2009), and averaged 21.54 feet in on-site monitoring wells over time. Historical groundwater elevation data is presented in **Table 2**. Groundwater beneath the site was historically reported to flow toward the southwest based upon a three-point problem calculation.

Slug tests were previously performed on shallow monitoring wells MW-2 and MW-3 on March 4, 2009 during Tier I activities. Hydraulic conductivities for these two shallow monitoring wells, calculated using the Bouwer and Rice method, ranged from 0.57 feet per day (ft/day) to 0.73 ft/day. Seepage velocities ranged from 2.09 feet per year (ft/yr) to 2.65 ft/yr. Slug test were also performed during these Tier II activities in monitoring wells MW-6 and MW-11. See **Section 2.2.5** for a discussion of the slug test data collected from these Tier II assessment activities. A summary of the results of historical slug test analyses is presented in **Table 3**.

2.2 ASSESSMENT ACTIVITIES

2.2.1 Field Screening

ECS traveled to the site on December 7 and 8, 2009 to collect field screening data from 17 field screening points (FS-1A, FS-1B, and FS-2 through FS-16). ECS subcontracted Geologic Exploration, Inc. who mobilized to the site with direct push technology (Geoprobe® 6620) to install these 17 field screening points. Field screening points FS-1A and FS-1B did not encounter groundwater before boring refusal at depths of 19 feet bgs and 21 feet bgs, respectively. Fifteen field screening points (FS-2 through FS-16) were installed to depths of 26 to 28 feet bgs between December 7 and 8, 2009. The locations of these field screening points were included on **Figure 4**.

Groundwater samples were collected at the termination depth of each of these 15 field screening points using a peristaltic pump and new, unused tubing lowered to the depth of the decontaminated exposed stainless steel screen in the subsurface. Groundwater samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX compounds), methyl tert-butyl ether (MTBE), and naphthalene by EPA Method 8260.

Laboratory analyses of the groundwater screening samples reported benzene, toluene, ethylbenzene, methyl tertiary butly ether (MTBE), and naphthalene concentrations above the May 2001 Risk-Based Screening Levels (RBSLs) at field screening point FS-9, and benzene concentrations above the RBSL at field screening points FS-13 and FS-14. The remaining CoC were reported below RBSLs. A summary of the December 7 and 8, 2009 groundwater screening results is presented in **Table 4**. The laboratory report for the November 2009 field screening has been included in **Appendix B**.

The field screening data was forwarded to Ms. Cathleen Ridgley (Project Manager) of the SCDHEC on January 20, 2010 for review and comment. Based on the laboratory analytical data from the December 2009 field screening points, ECS recommended additional field screening points further west beyond field screening point FS-9 to assist with delineation of the dissolved-petroleum hydrocarbons in groundwater. However, field screening points further west of field screening point FS-9 were somewhat limited due to the urban area of downtown Edgefield. In addition, field screening points appeared reasonable further south of field screening points FS-13 and FS-14 and to the southeast across Bacon Street. The chemicals of concern (CoC) in groundwater at concentrations below the RBSLs appeared to have been defined to the northwest, north, northeast, and east by field screening points FS-1 through FS-8, FS-15, and FS-16.

Ms. Ridgley approved additional field screening points further west beyond field screening point FS-9 and requested additional field screening points southeast of the site across the intersection of Bacon Street and Main Street. ECS pursued a Department of Transportation (DOT) permit application on February 1, 2010, as well as an access agreement with the adjacent property owner, the Town of Edgefield. The DOT Encroachment Permit requested was received by ECS on February 24, 2010, and the Town of Edgefield access agreement was received March 2, 2010.

ECS traveled to the site on March 9, 2010 to collect field screening data from nine field screening points (FS-17 through FS-25). Geologic Exploration, Inc. utilized their Geoprobe® 7822 to install these nine field screening points. The locations of these field screening points were included on **Figure 4**. Each of the nine field screening points was installed to depths of 28 feet bgs on March 9, 2010. Groundwater samples were collected at the termination depth of each field screening point using a peristaltic pump and new, unused tubing lowered to the depth of the

decontaminated exposed stainless steel screen in the subsurface. Groundwater samples were analyzed for BTEX, MTBE, and naphthalene by EPA Method 8260.

Laboratory analyses of the groundwater screening samples (FS-17 through FS-25) reported chemicals of concern (CoC) below the laboratory reporting limits, which were below the RBSLs, with exception to groundwater screening samples FS-23 and FS-24. Concentrations of benzene were detected above the RBSL in groundwater samples collected from FS-23 and FS-24. A concentration of naphthalene was detected above the RBSL in the groundwater sample collected from FS-23. A summary of the March 9, 2010 groundwater screening results is presented in **Table 4**. The laboratory report for the March 9, 2010 field screening has been included in **Appendix C**.

Based on the laboratory results from the two field screening events (November 2009 and March 2010), and after reviewing the groundwater analytical from the Tier I report, benzene, toluene, ethylbenzene, MTBE, and naphthalene concentrations above their respective RBSL appeared to be migrating westward from the active UST basin/dispensers, toward monitoring well MW-2, and further west of field screening point FS-9. These CoC in groundwater appeared to have been defined to the west by field screening points FS-10, FS-11, and FS-17 through FS-22.

ECS forwarded the field screening results to Ms. Cathleen Ridgley on March 22, 2010 and ECS proposed shallow monitoring wells be located in an area where CoC in groundwater have been delineated based on the analytical data from the field screening points. Ms. Ridgley acknowledged receipt of our March 2010 letter and provided a drawing with approximate locations for new proposed monitoring wells.

2.2.2 Monitoring Well Installations

Twelve shallow (water table) monitoring wells (MW-4 through MW-12, MW-14 through MW-16) were installed between April 5 and 7, 2010. Monitoring well MW-13 was installed at a later date (April 21, 2010) following the marking of utility lines (which were not marked along Bacon Street south of Main Street by April 7, 2010) and the rescheduling of a certified well driller. The locations for the 13 shallow monitoring wells were selected by the SCDHEC. Two telescoping monitoring wells were also selected by the SCDHEC and scheduled for installation, one on-site and one south-southeast of the site. However, after encountering auger refusal at a shallow depth of 34 feet at proposed telescoping monitoring well TW-1, the SCDHEC recommended abandonment of the borehole and no telescoping monitoring wells.

During well installation activities, soil samples were collected at 5-foot intervals in each boring for VOC (volatile organic compound) field screening and soil classification purposes. Soil samples were field-screened using a MiniRAE 2000 photo ionization detector (PID) calibrated using 100 parts per million (ppm) isobutylene. The soil sample above the water table from each boring (MW-4 through MW-16) exhibiting the highest PID measurement was submitted for laboratory analyses for BTEX, MTBE, and naphthalene by EPA Method 8260. Results of the soil analyses are discussed later in **Section 2.3** of this report.

Monitoring wells MW-4 through MW-6 were each completed to a depth of 29 feet bgs; monitoring wells MW-7 and MW-16 were each completed to a depth of 20 feet bgs; monitoring wells MW-8, MW-9, and MW-15 were each completed to a depth of 27 feet bgs; monitoring wells MW-10, MW-12, and MW-14 were each completed to a depth of 30 feet bgs; monitoring well MW-11 was completed to a depth of 31 feet bgs; and, monitoring well MW-13 was completed to a depth of 25 feet bgs. Each of the 13 shallow monitoring wells was constructed

with a 2-inch, schedule 40 PVC riser, and 10 feet of well screen. These 13 monitoring wells were each completed with flush-mounted traffic bearing well covers.

Monitoring well locations are shown on **Figure 3**. Boring logs for monitoring wells MW-4 through MW-16 installed in April 2010 are included in **Appendix D**. Well construction records for these monitoring wells are included in **Appendix E**. Following installation, monitoring wells MW-4 through MW-16 were developed using a decontaminated submersible pump between each replacement well until the groundwater appeared sediment free.

2.2.3 Surveying Well Locations and Top-of-Casing Elevations

ECS subcontracted Construction Support Services (Jay S. Joshi, a SC professionally licensed surveyor) to resurvey the site buildings and appurtenances, pertinent areas of the adjacent roads, ground surface elevations at the site with well locations, and the horizontal locations and vertical elevations of the ground surface and top of casing at each well location. Construction Support Services conducted their field survey on May 27, 2010. A "X" inscribed in concrete near the northeast corner of the site was established for reference as the site benchmark with an assumed elevation of 99.50 feet above mean sea level. As noted earlier the Surveyed Site Map, entitled *Comprehensive Site Sketch of Edgefield Fuel and Convenience 3*, is included in **Appendix A**.

2.2.4 AFVR Event – April 6 & 7, 2010

One AFVR event was performed on April 6 through 7, 2010 by A & D Environmental and Industrial Services (A&D) with activity monitoring provided by Aaron Williamson of ECS. Prior to the start of the event, the depths to liquid phase hydrocarbons (free product) and groundwater were measured in shallow monitoring well MW-1. Free product was detected in monitoring well MW-1 at a depth of 17.61 feet below the top of casing (TOC), and groundwater was measured at 22.24 feet TOC, yielding a free product thickness of 4.63 feet. Monitoring wells MW-3 through MW-6 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements. This AFVR event consisted of one vacuum truck extracting fluids from monitoring well MW-1 for approximately eight hours. The drop tube (also known as stinger pipe) was initially lowered to a depth of 6-inches below the free product and water interface. The depth of the stinger piping was adjusted 30-minutes into the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 21 inches of mercury at monitoring well MW-1 over the course of the event. The air velocity rates averaged 4,419 feet per minute (ft/min) from the discharge stack over the course of the event. The organic vapor concentrations recovered from monitoring well MW-1 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 626 parts per million (ppm) during the event. The exhaust stack gas temperatures averaged 194.3 degrees Fahrenheit at monitoring well MW-1.

The drop tube (also known as stinger pipe) was initially lowered to a depth of 6-inches below the free product and water interface. The depth of the stinger piping was adjusted 30-minutes into the AFVR event following low off-gas concentration readings. The stinger piping was adjusted to 20.00 feet below the TOC based on the depth to product and depth to water measurements (approximately 18.50 feet and 19.50 feet, respectively, below TOC) gauged after 30 minutes of initiating the AFVR event.

Free product was not detected immediately after the AFVR event in monitoring well MW-1. Free product was, however, detected 20 minutes after the AFVR in monitoring well MW-1 at a depth

of 20.37 feet (thickness of 0.05 feet). Measurements of depths to groundwater in monitoring well MW-1 at the conclusion of the AFVR event and 20 minutes after were 21.42 feet and 20.42 feet below TOC, respectively. A summary of free product and AFVR data collected from monitoring well MW-1 during AFVR activities is presented in **Table 5**. A summary of groundwater elevation data collected during AFVR activities is presented in **Table 6**.

The total estimated amount of petroleum products removed as a vapor, based on eight hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 8.30 pounds (1.33 gallons). Approximately 314 gallons of liquid were removed from monitoring well MW-1 during the April 6 & 7, 2010 AFVR event. Of the 314 gallons removed, a sheen was reported in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the April 6 & 7, 2010 AFVR event are included in **Appendix F**.

2.2.5 Well Gauging and Sampling

Sixteen monitoring wells (MW-1 through MW-16) were gauged for depths to free product, depths to groundwater, and total well depths (except where free product was detected) on May 10, 2010. Free product was detected in site monitoring wells MW-1 and MW-2 with free product thicknesses of 3.17 feet and 2.46 feet, respectively.

The depths to groundwater measured in the shallow monitoring wells ranged between 12.34 feet (MW-16) and 22.88 feet (MW-10). The groundwater elevations in the shallow monitoring wells, relative to a temporary benchmark ("X" in concrete) with an assumed datum of 99.50 feet above mean sea level, ranged from 75.38 feet (MW-13) to 80.67 feet (MW-16). Based on these data, the groundwater flow direction was radially from the northwest to south beneath the site. The hydraulic gradient was estimated based on the change in head hydraulic head per unit distance, calculated by using the formula $i = \frac{h_2 - h_1}{d}$, referenced from the "EPA On-line Tools for Site Assessment Calculation" website <http://www.epa.gov/athens/learn2model/part-two/onsite/gradient.htm>. In this calculation, i is the gradient, h is the hydraulic head at the up gradient monitoring well (h_1) and down gradient monitoring well (h_2), and d is the distance between the down gradient monitoring well and the up gradient monitoring well. The average horizontal hydraulic gradient was approximately 0.007 feet per foot (ft/ft) between monitoring wells MW-5 and MW-8, and MW-5 and MW-9, and between monitoring wells MW-16 and MW-8, and MW-16 and MW-9. The average horizontal hydraulic gradient was approximately 0.004 ft/ft between monitoring wells MW-5 and MW-11, and MW-5 and MW-12, and approximately 0.005 ft/ft between monitoring wells MW-16 and MW-11, and MW-16 and MW-12. The average horizontal hydraulic gradient was approximately 0.017 ft/ft between monitoring wells MW-5 and MW-13, and MW-5 and MW-14, and between monitoring wells MW-16 and MW-13, and MW-16 and MW-14. Historical Groundwater Elevation Data is presented in **Table 2**. A Groundwater Elevation Map based on the May 10, 2010 data has been included as **Figure 5**.

Thirteen monitoring wells (MW-4 through MW-16) were sampled after purging on May 10, 2010, and one monitoring well (MW-3) was sampled without purging on May 10, 2010. Monitoring well MW-3 was a pre-existing monitoring well in which the water table bracketed the screen interval and, therefore, was not scheduled for purging prior to sample collection. Monitoring wells MW-4 through MW-16 were newly installed monitoring wells and were scheduled for purging prior to sample collection. Monitoring wells MW-1 and MW-2 were not sampled due to the presence of free product.

The water samples collected from these 14 monitoring wells were analyzed for BTEX, MTBE, naphthalene, 1,2-dichloroethane (1,2-DCA), and the eight oxygenates by EPA Method 8260; ethylene dibromide (EDB) by EPA Method 8011; and total lead by EPA Method 6010. The water samples collected from the 13 newly installed monitoring wells (MW-4 through MW-16) were additionally analyzed for nitrate by EPA Method 353.2; sulfate by EPA Method 9056; ferrous iron by SM 3500-Fe D#4; and, methane by the RSK-175 standard operating procedure.

Groundwater samples were collected using new, disposable polyethylene bailers while wearing new, disposable nitrile gloves, containerized in laboratory-prepared glass bottles and plastic jars, packed on ice, and transported to Pace Analytical Services, Inc. (Huntersville, NC), a South Carolina certified laboratory. Standard chain-of-custody procedures were maintained, as documented in **Appendix G**.

2.2.6 Aquifer Characterization

Two slug tests (i.e., rising head) were performed on May 5, 2010, one in shallow monitoring well MW-6 and one in shallow monitoring well MW-11. Slug test data were collected using the In-Situ (100 psi) Level TROLL 700. Data was downloaded for interpretation using Super Slug software. The hydraulic conductivities estimated for the aquifer surrounding shallow monitoring wells MW-6 and MW-11, calculated using the Bouwer and Rice method, was 0.11 feet per day (ft/day) and 0.26 ft/day, respectively. Seepage velocity represents the apparent velocity of groundwater through the bulk of a porous medium. The horizontal seepage velocity was calculated using Darcy's Law ($V = \frac{Ki}{n_e}$) where V is the average linear flow, K is the hydraulic conductivity, i is the hydraulic gradient, n_e is the effective porosity. The estimated seepage velocities in monitoring wells MW-6 and MW-11 were 1.66 feet per year (ft/yr) and 3.81 ft/yr, respectively, based on the horizontal hydraulic gradient of 0.01 ft/ft. The horizontal hydraulic gradient was calculated from an average of the horizontal hydraulic gradients reported during the Tier II activities. Results of the slug test performed on May 10, 2010 are presented in **Table 3**. Calculations and raw data from the slug test conducted in shallow monitoring wells MW-6 and MW-11 have been included as **Appendix H**.

2.3 SOIL QUALITY

Soil samples were collected from the 13 monitoring wells installed on- and off-site in April 2010 during the Tier II activities. Soil samples from monitoring wells MW-4 through MW-6, MW-9 through MW-12, and MW-14 were collected continuously in 5-foot plastic liners (macro core tubes) using the Geoprobe® 7822DT. Soil samples from monitoring wells MW-7, MW-8, MW-15, and MW-16 were collected in 5-foot intervals (split spoons) using the Deidrich D-150. Soil samples from monitoring well MW-13 were collected continuously in 4-foot macro tubes using the Geoproble® 6620DT. Soil samples were field-screened using a MiniRae 2000 photo-ionization detector (PID), calibrated using 100 parts per million (ppm) isobutylene. The sample interval from each soil boring (above the reported groundwater table at the time of drilling) exhibiting the highest PID measurement was submitted for laboratory analyses for BTEX, MTBE, and naphthalene by EPA Method 8260.

Concentrations of benzene were reported above the May 2001 Risk-Based Screening Level (RBSL) for sandy soils in soil samples collected from monitoring wells MW-4 through MW-6 during Tier II activities. The RBSL for a sandy soil type was selected based on the predominant soil type (>50% sand) observed in the field during the Tier II assessment activities. The established RBSLs for clay-rich soils at depths of less than 10 feet would be more stringent for benzene, toluene, and total xylenes. However, using the more stringent benzene, toluene, and total xylenes values would not have changed the number of soil samples exceeding RBSLs.

Concentrations of toluene, ethylbenzene, and total xylenes were detected below the RBSLs in soil samples collected from monitoring wells MW-4 through MW-6. A concentration of total xylenes was detected below the RBSL in the soil sample collected from monitoring well MW-15. Estimated concentrations of toluene, ethylbenzene, and total xylenes were detected below their respective RBSLs in the soil sample collected from monitoring well MW-4. The estimated concentrations (identified as J values) were detectable concentrations above the adjusted method detection limit and below the adjusted reporting limit. J values were also reported for concentrations of benzene, ethylbenzene, total xylenes, and naphthalene in the soil sample collected from monitoring well MW-12. Concentrations of MTBE were detected in the soil samples collected from monitoring wells MW-4 through MW-6.

The remaining CoC were reported as not detected (below the laboratory reporting limits) in the soils samples collected for analyses during the Tier II assessment. The results of laboratory analyses of the soil samples collected during Tier I and Tier II activities are presented in **Table 7**. The soil boring locations and monitoring well locations with concentrations of CoC reported in the soil samples collected during Tier II activities are shown on **Figure 6**. The laboratory report for soil samples collected from monitoring wells MW-4 through MW-12 and MW-14 through MW-16 on April 5 & 6, 2010 have been included in **Appendix I**. The laboratory report for soil samples collected from monitoring well MW-13 on April 21, 2010 have been included in **Appendix J**.

2.4 GROUNDWATER QUALITY

Groundwater samples were analyzed from 14 site monitoring wells (MW-3 through MW-16) during the groundwater sampling event of this Tier II assessment. As noted earlier, monitoring wells MW-1 and MW-2 were not sampled due to the presence of free product. Concentrations of BTEX, MTBE, naphthalene, EDB, and total lead were detected above their respective May 2001 RBSL for groundwater during the May 10, 2010 groundwater sampling event. Concentrations of tertiary amyl alcohol (TAA), tertiary amyl methyl ether (TAME), and ethyl tertiary butyl ether (ETBE) were detected above their respective August 2008 Action Level during the May 10, 2010 groundwater sampling event.

2.4.1 Chemicals of Concern

Concentrations of benzene exceeding the RBSL was reported in groundwater samples collected from monitoring wells MW-4 through MW-6, MW-11, and MW-12. Concentrations of toluene, ethylbenzene, and total xylenes exceeding their respective RBSLs were reported in the groundwater sample collected from monitoring well MW-5. Concentrations of MTBE exceeding the RBSL were reported in groundwater samples collected from monitoring wells MW-4 through MW-6, and MW-11. Concentrations of naphthalene and EDB exceeding their respective RBSLs were reported in groundwater samples collected from monitoring wells MW-5 and MW-11. Concentrations of total lead exceeding the RBSL were reported in groundwater samples collected from monitoring wells MW-4, MW-5, MW-7 through MW-13, MW-15, and MW-16. Lead is, however, a naturally occurring mineral in the subsurface. The elevated concentrations of lead detected in the groundwater samples collected may be due to a disturbance of sediment in the water column created during the purging process.

Detectable concentrations of toluene below the RBSL were reported in groundwater samples collected from monitoring wells MW-3, MW-4, MW-6, and MW-8 through MW-12. Detectable concentrations of ethylbenzene below the RBSL were reported in groundwater samples collected from monitoring wells MW-4, MW-6, MW-11, and MW-12. Detectable concentrations of total xylenes below the RBSL were reported in groundwater samples collected from monitoring wells MW-3, MW-4, MW-6, MW-11, and MW-12. A detectable concentration of naphthalene below the RBSL was reported in the groundwater sample collected from monitoring well MW-12.

Detectable concentrations of total lead below the RBSL were reported in groundwater samples collected from monitoring wells MW-6 and MW-14.

The remaining CoC were reported as not detected (less than the laboratory reporting limits) in the groundwater samples collected for analyses during the Tier II assessment. Historical Groundwater Analytical Data for CoC is presented in **Table 8**. Estimated isoconcentration contours for benzene, toluene, ethylbenzene, total xylenes, MTBE, naphthalene, and EDB are shown on **Figures 7** through **13**. The estimated vertical extent of total CoC (sum of BTEX, MTBE, naphthalene, and EDB concentrations) in groundwater are shown on Cross Section A - A' and Cross Section B - B' as **Figures 14** and **15**, respectively. The laboratory report for groundwater samples collected on May 10, 2010 is included in **Appendix G**. Groundwater Sampling Field Data Sheets have been included in **Appendix K**.

2.4.2 Eight Oxygenates

The eight oxygenates identified by the SCDHEC include tertiary amyl alcohol (TAA), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), tertiary butyl formate (TBF), diisopropyl ether (DIPE), ethanol, ethyl tertiary butyl ether (ETBE), and 3,3-dimethyl-1-butanol. As noted earlier, three of the eight oxygenates were reported above the August 2008 Action Levels in the groundwater samples collected on May 10, 2010.

Groundwater samples collected from monitoring wells MW-4 through MW-6, and MW-11 were detected with concentrations of TAA above the Action Level. The groundwater sample collected from monitoring well MW-5 was detected with concentrations of TAME and ETBE above their respective Action Level.

A detectable concentration of TAA below the Action Level was reported in the groundwater sample collected from monitoring well MW-12. Groundwater samples collected from monitoring wells MW-4 and MW-11 were detected with concentrations of TAME below the Action Level. Groundwater samples collected from monitoring wells MW-4 and MW-12 were detected with concentrations of TBA below the Action Level. Groundwater samples collected from monitoring wells MW-5 and MW-11 were detected with concentrations of DIPE below the Action Level. The remaining groundwater samples for the eight oxygenates were reported as not detected (below laboratory reporting detection limits). Groundwater analytical data for the eight oxygenates is presented in **Table 9**. A Groundwater Quality Map for the Eight Oxygenates based on the May 10, 2010 data is included as **Figure 16**.

2.4.3 Natural Attenuation Parameters

In general, dissolved oxygen measurements in the range of 3 milligrams per liter (mg/L) to 5 mg/L may suggest that aerobic biodegradation activity could be occurring at the site and measurements of less than 1 mg/L may suggest that aerobic degradation has used freely available oxygen. During the May 10, 2010 groundwater sampling event, dissolved oxygen measurements ranged between 1.42 milligrams per liter (mg/L) in monitoring well MW-5 and 7.67 mg/L in monitoring well MW-10.

Over time, dissolved oxygen, nitrate, and sulfate can be reduced as their oxygen is used and these groups act as electron acceptors. They can become depleted within a dissolved plume if biodegradation and/or chemical oxidation is actively occurring at the site. The absence of these concentrations does not necessarily imply they were originally within the groundwater. Nitrate concentrations were reported as not detected (<0.10 mg/L, less than the laboratory reporting limit) in monitoring wells MW-12 and MW-15. Nitrate concentrations ranged between 0.15

mg/L and 4.9 mg/L in monitoring wells MW-4 through MW-7, MW-9, MW-10, MW-13, MW-14, and MW-16. Nitrate concentrations of 25.1 mg/L and 15.3 mg/L were reported in monitoring wells MW-8 and MW-11, respectively. Tier I monitoring wells MW-1 through MW-3 were not scheduled for nitrate analyses during the Tier II activities. Sulfate was reported as not detected (<1.0 mg/L, less than the laboratory reporting limit) in the groundwater sample collected from monitoring well MW-10. Sulfate concentrations of 5.8 mg/L and 9.5 mg/L were reported in monitoring wells MW-14 and MW-9. Sulfate concentrations ranged between 10 mg/L (MW-11) and 84 mg/L (MW-13) in the remaining groundwater samples collected during Tier II activities. Pre-existing monitoring wells MW-1 and MW-3 were not scheduled for sulfate analyses during this assessment.

Ferrous iron is the reduced oxidative state of iron, and can indicate active hydrocarbon degradation through aerobic microbial and oxidation-reduction processes in site groundwater. These processes could have already utilized freely available oxygen from dissolved oxygen, ferric hydroxide, nitrates, and sulfates, and the groundwater therefore may be approaching anaerobic conditions. The laboratory reported ferrous iron below laboratory reporting limits (<0.50 mg/L) in the 13 groundwater samples collected on May 10, 2010 from monitoring wells MW-4 through MW-16.

Additional microbial metabolic byproducts (such as methane) may increase in concentration within a dissolved plume. . The laboratory reported methane concentrations ranging between 15.8 micrograms per liter (µg/L) and 41.4 µg/L in on-site monitoring wells MW-4 through MW-6, and methane concentrations ranging between 16.7 µg/L and 66.0 µg/L in off-site monitoring wells MW-12, MW-14, and MW-15. The laboratory reported J value methane concentrations (concentrations between the laboratory reporting limit and the method detection limit) in groundwater samples collected from monitoring wells MW-7, MW-9 through MW-11, and MW-16. The laboratory reported methane as not detected (<10.0 µg/L) in groundwater samples collected from monitoring wells MW-8 and MW-13. Historical groundwater analytical data for natural attenuation parameters is presented in **Table 10**.

2.5 INVESTIGATIVE DERIVED WASTE

Investigative derived waste (IDW) generated during these activities was placed in 55-gallon drums for disposal by a licensed facility. A copy of the disposal manifest for 20 drums of soil generated during drilling activities and four drums of water generated during well development, decontamination, and well purging activities has been included in **Appendix L**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

- No active private water supply wells were identified within a 1,000-foot radius of the site.
- The two closest surface water bodies identified in relation to the site were Beaverdam Creek (approximately 1,375 feet southwest of the site) and a tributary to Beaverdam Creek (approximately 1,380 feet northwest of the site).
- Two separate rounds of field screening activities were conducted to assist with the placement of Tier II monitoring wells. The first round of field screening indicated high concentrations of petroleum compounds west of the site. The second round of field screening indicated no to low dissolved-phase petroleum contamination in groundwater samples collected further west and southwest of the site.
- Shallow monitoring wells (MW-4 through MW-16) were installed on- and off-site, following the SCDHEC's guidance with monitoring well locations, to assist with delineation of the dissolved-phase petroleum plume. The SCDHEC requested ECS not to install telescoping monitoring wells during the Tier II assessment.
- An 8-hour AFVR event was conducted in monitoring well MW-1 in April 2010. Free product was measured in monitoring well MW-1 with a thickness of 4.63 feet before initiating the AFVR event.
- At the conclusion of the April 2010 AFVR event, a total of 314 gallons of fluids were measured in the tank of the vacuum truck with a sheen of product. No measureable free product was detected immediately after the AFVR in monitoring well MW-1; however, free product was detected with a thickness of 1.05 feet during post-AFVR measurements (approximately 20 minutes after the AFVR event).
- Stack emission calculations for the April 2010 AFVR event indicated approximately 8.30 pounds (equivalent to 1.33 gallons) of petroleum vapors were emitted through the stack.
- During the May 10, 2010 groundwater level measurements, free product was detected in on-site monitoring wells MW-1 (located immediately adjacent to the active UST basin) and MW-2 (located to the east, across the site property). Free product thicknesses were reported at 3.17 feet in monitoring well MW-1 and 2.46 feet in monitoring well MW-2.
- Based on the May 10, 2010 groundwater level measurements, groundwater appears to flow radially northwest to south beneath the site.
- The distribution of dissolved-phase petroleum hydrocarbons in groundwater did not appear defined horizontally to the southwest of the site following a comprehensive groundwater sampling event of the site monitoring wells.

3.2 RECOMMENDATIONS

- ECS recommends the installation of additional shallow monitoring wells southwest of site monitoring well MW-11 to define the horizontal extent of CoC in the hydraulically downgradient direction.
- Additional AFVR events should be performed in monitoring wells MW-1, MW-2, and MW-5 to remove free product and to reduce high concentrations of CoC from the site.
- ECS recommends additional groundwater monitoring to establish trends for distribution of CoC and natural attenuation parameters if natural attenuation will be considered a possible remedial alternative by the SCDHEC.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience LLC for specific application to the referenced site in Edgefield County, South Carolina. The assessment was conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

TABLES

TABLE 1
ADJACENT PROPERTY OWNERS
EDGEFIELD FUEL & CONVENIENCE 3

Property Street Address	Occupant / Land Use	Tax Map Number	Distance / Direction from Site	Wells on This Property	Property Owner (Name, Address)
311 Main Street	Edgefield Fuel & Convenience 3	137-07-05-007-000	Site	MW-1 through MW-6	Edgefield Fuel & Convenience, LLC P.O. Box 388 Edgefield, SC 29824
309 Main Street	Carolina First Bank	137-07-05-006-000	Abutting to the North and West	MW-8	Carolina First Bank 516 W. Wade Hampton Blvd. Greer, SC 29650
200 Bacon Street	Old Edgefield Iron Works	137-07-05-008-000	North of site	MW-7	Bettis C. Rainsford P.O. Box 388 Edgefield, SC 29824
300 block of Main Street	Edgefield Properties	137-07-05-021-000	Southwest of site		Edgefield Properties, Inc. P.O. Box 52 Edgefield, SC 29824
300 block of Main Street	Edgefield Properties Office	137-07-05-022-000	Southwest of site		Edgefield Properties, Inc. P.O. Box 52 Edgefield, SC 29824
324 Bacon Street	Church/ Parsonage	137-07-05-024-000	South of site	MW-12	Methodist Church P.O. Box 25 Edgefield, SC 29824
405 Main Street	SC National Heritage Corridor Discovery Center	137-07-05-026-000	East of site	MW-15 and MW-16	Edgefield Historical Society P.O. Box 174 Edgefield, SC 29824
402 Main Street	Edgefield Town Hall	137-07-05-028-000	Southeast of site	MW-13 and MW-14	Town of Edgefield 400 Main Street Edgefield, SC 29824

TABLE 1 (continued)
ADJACENT PROPERTY OWNERS
EDGEFIELD FUEL & CONVENIENCE 3

Property Street Address	Occupant / Land Use	Tax Map Number	Distance / Direction from Site	Wells on This Property	Property Owner (Name, Address)
306 Main Street	Dialysis Corporation of America	137-07-05-051-000	Southwest of site		Edgefield Properties, Inc. P.O. Box 52 Edgefield, SC 29824
307 Simpkins Street	Law Office of John F. Byrd, Jr.	137-06-02-014-000	Northwest of site		John F. Byrd, Jr. P.O. Box 466 Edgefield, SC 29824

Note:
1. Adjacent/adjoining properties are identified on **Figure 2**.

TABLE 2

HISTORICAL GROUNDWATER ELEVATION DATA[1]

EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Date	Top of Casing Elevation (ft)	Depth to Free Product (ft)	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation[2] (ft)	Well Depth[3] (ft)	Well Screen Length[3] (ft)	Measured Well Depth[4] (ft)	Screened Interval[5] (ft)
MW-1	12/17/04	98.51	22.13	23.68	1.55	75.99	35	15	NM	
	05/10/10		17.83	21.00	3.17	79.89			NM	
MW-2	12/17/04	100.42	---	24.55	---	75.87	34	15	34.05	19.05-34.05
	05/10/10		20.27	22.73	2.46	79.54			33.98	
MW-3	12/17/04	100.44	---	24.38	---	76.06	34	15	34.00	19.00-34.00
	05/10/10		---	20.54	---	79.90			33.91	
MW-4	05/10/10	98.61	---	18.92	---	79.69	29	10	28.91	18.91-28.91
MW-5	05/10/10	98.05	---	18.09	---	79.96	29	10	29.04	19.04-29.04
MW-6	05/10/10	99.82	---	19.94	---	79.88	29	10	28.99	18.99-28.99
MW-7	05/10/10	93.32	---	13.51	---	79.81	20	10	20.33	10.33-20.33
MW-8	05/10/10	100.59	---	21.61	---	78.98	27	10	26.85	16.85-26.85
MW-9	05/10/10	97.55	---	18.81	---	78.74	27	10	27.03	17.03-27.03
MW-10	05/10/10	101.31	---	22.88	---	78.43	30	10	30.31	20.31-30.31
MW-11	05/10/10	101.65	---	22.16	---	79.49	31	10	31.04	21.04-31.04
MW-12	05/10/10	100.55	---	21.78	---	78.77	30	10	30.15	20.15-30.15
MW-13	05/10/10	93.20	---	17.82	---	75.38	25	10	25.20	15.20-25.20
MW-14	05/10/10	100.05	---	22.47	---	77.58	30	10	29.54	19.54-29.54
MW-15	05/10/10	98.47	---	18.81	---	79.66	27	10	26.93	16.93-26.93
MW-16	05/10/10	93.01	---	12.34	---	80.67	20	10	19.92	9.92-19.92

Notes:

1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product with an assumed density of 0.75g/cm^3, where present.
3. Based on well construction records.
4. Top of casing referenced as measuring point.
5. Based on measured well depth.

TABLE 3
HISTORICAL SLUG TEST ANALYSES AND GROUNDWATER FLOW RATES[1]
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Groundwater Measurement Date	Hydraulic Conductivity[2]				Hydraulic Gradient[2]	Effective Porosity[3]	Seepage Velocity[4]	
		cm/sec	ft/sec	ft/min	ft/day	ft/ft	(%)	ft/day	ft/year
MW-2	03/23/09	2.02E-04	6.6E-06	3.97E-04	0.57	0.002	0.20	0.006	2.09
MW-3	03/23/09	2.57E-04	8.4E-06	5.05E-04	0.73	0.002	0.20	0.007	2.65
MW-6	05/10/10	4.02E-05	1.3E-06	7.92E-05	0.11	0.010	0.25	0.005	1.66
MW-11	05/10/10	9.19E-05	3.0E-06	1.81E-04	0.26	0.010	0.25	0.010	3.81

Notes:

1. Slug tests were performed in MW-2 and MW-3 during Tier I activities on March 23, 2009; slug tests were performed in MW-6 and MW-11 during Tier II activities on May 10, 2010.
2. Average hydraulic conductivities were calculated using groundwater elevations data collected during groundwater sampling events.
3. Based on data reported during Tier I for MW-2 & MW-3. Effective porosity for MW-6 and MW-11 was calculated by percentage of soil from the 2009 and 2010 grain size distribution anaylsis and the arithmetic mean of drainable porosity from McWorter and Sunada (1977).
4. Seepage velocities (http://www.epa.gov/athens/learn2model/part-two/onsite/seepage.htm), calculated using the equation $V = Ki/ne$, where:
   K = hydraulic conductivity
   i = hydraulic gradient (feet/foot)
   n_e = effective porosity (%)

TABLE 4
GROUNDWATER FIELD SCREENING RESULTS[1]
EDGEFIELD FUEL & CONVENIENCE 3

Sample ID	Sample Date	Depth of Borehole (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)
FS-1A	12/07/09	19	Not sampled; boring refusal encountered before groundwater.					
FS-1B	12/07/09	21	Not sampled; boring refusal encountered before groundwater.					
FS-2	12/07/09	26	<5.0[2]	4.0J[3]	<5.0	<15.0	<5.0	<5.0
FS-3	12/07/09	28	<5.0	3.9J	<5.0	<15.0	<5.0	<5.0
FS-4	12/07/09	28	<5.0	4.6J	<5.0	<15.0	<5.0	<5.0
FS-5	12/07/09	28	<5.0	7.1	<5.0	3.3J	<5.0	<5.0
FS-6	12/07/09	28	<5.0	4.9J	<5.0	<15.0	<5.0	<5.0
FS-7	12/07/09	28	<5.0	4.4J	<5.0	<15.0	<5.0	<5.0
FS-8	12/07/09	28	<5.0	4.8J	<5.0	<15.0	<5.0	<5.0
FS-9	12/08/09	28	**13,700**[4]	**19,200**	**1,380**	6,020	**737**	**214J**
FS-10	12/08/09	28	<5.0	7.1	<5.0	<15.0	<5.0	<5.0
FS-11	12/08/09	28	<5.0	5.1	<5.0	<15.0	<5.0	<5.0
FS-12	12/08/09	28	<5.0	5.8	<5.0	2.8J	<5.0	<5.0
FS-13	12/08/09	28	**35.4**	<5.0	<5.0	<15.0	<5.0	<5.0
FS-14	12/08/09	28	**37.6**	<5.0	<5.0	9.0J	<5.0	<5.0
FS-15	12/08/09	27	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-16	12/08/09	27	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-17	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-18	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-19	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-20	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-21	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-22	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-23	03/09/10	28	**28.0**	106	101	355	<25.0	**59.3**
FS-24	03/09/10	28	**49.9**	10.3J	56.3	154.9	26.2	18.7J
FS-25	03/09/10	28	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
		RBSL[5]	5	1,000	700	10,000	40	25

Notes:

1. Analyses for BTEX compounds, MTBE, and naphthalene by EPA Method 8260.
2. Less than the reporting limit specified in the laboratory report.
3. J value represents an estimated concentration between the method detection limit and the reporting limit.
4. Concentrations in bold face type exceeded the May 2001 RBSLs.
5. May 2001 Risk-Based Screening Level.

TABLE 7
HISTORICAL SOIL ANALYTICAL DATA[1]
EDGEFIELD FUEL & CONVIENENCE 3

Sample ID	Sample Depth (ft)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)	Benzo(a) anthracene (mg/kg)	Benzo(b) fluoranthene (mg/kg)	Benzo(k) fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) anthracene (mg/kg)	TPH DRO (mg/kg)	TOC (mg/kg)
SB-1	20	03/03/09	<16.300[2]	**73.100**[3]	**31.100**	**138.800**	**16.500**	<16.300	11.7	<0.434	<0.434	<0.434	<0.434	<0.434	NR[4]	NR
SB-2/MW-1	20	03/03/09	**15.800**	**59.900**	**28.900**	**141.600**	**13.300**	6.660	6.5	<0.386	<0.386	<0.386	<0.386	<0.386	360	NR
SB-3	10	03/03/09	**0.0507**	0.0395	<0.0055	0.0143	<0.0055	0.220	19.5	<0.400	<0.400	<0.400	<0.400	<0.400	NR	NR
SB-4	10	03/03/09	**0.103**	0.335	0.0342	0.1337	<0.0094	0.0101	20.7	<0.394	<0.394	<0.394	<0.394	<0.394	NR	NR
SB-5	10	03/03/09	**0.0132**	0.0267	<0.0054	0.0152	<0.0054	<0.0054	20.9	<0.391	<0.391	<0.391	<0.391	<0.391	NR	NR
SB-6	10	03/03/09	**0.036**	0.0171	0.0178	0.063	0.0114	<0.0054	20.7	<0.397	<0.397	<0.397	<0.397	<0.397	NR	NR
SB-7	10	03/03/09	**1.450**	**6.600**	0.896	3.650	**0.872**	0.655	13.5	<0.398	<0.398	<0.398	<0.398	<0.398	NR	NR
SB-8/MW-2	10	03/03/09	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1,630
MW-4	20	04/06/10	**0.0346**	0.0013J[5]	0.0021J	0.0019J	<0.0026	0.0557	NR	NR	NR	NR	NR	NR	NR	NR
MW-5	10	04/06/10	**0.188**	0.191	0.0275	0.1388	<0.0054	0.0568	NR	NR	NR	NR	NR	NR	NR	NR
MW-6	20	04/06/10	**0.167**	0.149	0.0231	0.0918	<0.0047	0.0497	NR	NR	NR	NR	NR	NR	NR	NR
MW-7	10	04/06/10	<0.0050	<0.0050	<0.0050	<0.0151	<0.0050	<0.0050	NR	NR	NR	NR	NR	NR	NR	NR
MW-8	15	04/06/10	<0.0055	<0.0055	<0.0055	<0.0165	<0.0055	<0.0055	NR	NR	NR	NR	NR	NR	NR	NR
MW-9	15	04/05/10	<0.0057	<0.0057	<0.0057	<0.0170	<0.0057	<0.0057	NR	NR	NR	NR	NR	NR	NR	NR
MW-10	20	04/05/10	<0.0051	<0.0051	<0.0051	<0.0154	<0.0051	<0.0051	NR	NR	NR	NR	NR	NR	NR	NR
MW-11	20	04/05/10	<0.0053	<0.0053	<0.0053	<0.0160	<0.0053	<0.0053	NR	NR	NR	NR	NR	NR	NR	NR
MW-12	20	04/05/10	0.0040J	<0.0050	0.0049J	0.0231J	0.0022J	<0.0050	NR	NR	NR	NR	NR	NR	NR	NR
MW-13	15	04/21/10	<0.0053	<0.0053	<0.0053	<0.0160	<0.0053	<0.0053	NR	NR	NR	NR	NR	NR	NR	NR
MW-14	20	04/05/10	<0.0058	<0.0058	<0.0058	<0.0174	<0.0058	<0.0058	NR	NR	NR	NR	NR	NR	NR	NR
MW-15	10	04/05/10	<0.0049	<0.0049	<0.0049	0.0147	<0.0049	<0.0049	NR	NR	NR	NR	NR	NR	NR	NR
MW-16	10	04/05/10	<0.0050	<0.0050	<0.0050	<0.0150	<0.0050	<0.0050	NR	NR	NR	NR	NR	NR	NR	NR
	RBSL[7] (sandy)		0.007	1.450	1.150	14.500	0.036	N/A	N/A	0.066	0.066	0.066	0.066	0.066	N/A	N/A

Notes:

1. Analyses for BTEX constituents, napthalene and MTBE by EPA Method 8260, Lead by EPA Method 6010, Polycyclic Aromatic Hydrocarbons by EPA Method 8270, Total Petroleum Hydrocarbons-Diesel Range Organics by EPA Method 8015c, Total Organic Carbon by EPA Method 9060 Modified.
2. Less than the laboratory method detection limit specified in the laboratory report.
3. Concentrations in bold face type exceeded the RBSL for sandy soils.
4. Analysis not requested.
5. J value represents an estimated concentration above the adjusted method detection and below the adjusted reporting limit.
6. May 2001 Risk-Based Screening Level for sandy soils.

TABLE 8

HISTORICAL GROUNDWATER ANALYTICAL DATA[1]

CHEMICALS OF CONCERN

EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)
MW-1	03/04/09	**FP[2]**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-2	03/04/09	**4,970 [3]**	**7,470**	**1,020**	4,400	**183**	**142**	**0.46**	NR[4]	<5.0[5]
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-3	03/04/09	**7.9**	33.9	<5.0	12.8	<5.0	<5.0	<0.019	NR	<5.0
	05/10/10	<5.0	4.5J[6]	<5.0	5.7J	<5.0	<5.0	<0.020	<5.0	<5.0
MW-4	05/10/10	**411**	29.8	8.3	31.9J	**256**	<5.0	<0.020	<5.0	**17.6**
MW-5	05/10/10	**20,900**	**30,900**	**1,090**	**12,100**	**11,400**	**316**	**0.93**	<5.0	**21.7**
MW-6	05/10/10	**270**	200	20.1	213.3	**59.4**	<5.0	<0.019	<5.0	9.4
MW-7	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**59.3**
MW-8	05/10/10	<5.0	3.7J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**57.2**
MW-9	05/10/10	<5.0	3.1J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**34.4**
MW-10	05/10/10	<5.0	1.8J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**41.6**
MW-11	05/10/10	**1,820**	522	33.1	522	**125**	**31.9**	**0.097**	<5.0	**40.5**
MW-12	05/10/10	**75.7**	3.5J	9.4	34.0J	<5.0	12.0	<0.020	<5.0	**61.5**
MW-13	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.021	<5.0	**96.0**
MW-14	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	7.2
MW-15	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**128**
MW-16	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**146**
	RBSL[7]	5	1,000	700	10,000	40	25	0.05	5	15

Notes:

1. Analysis for BTEX constituents, MTBE, naphthalene, and 1,2-DCA by EPA Method 8260; analysis for EDB by Method 8011; analysis for total lead by EPA Method 6010 (2010).
2. Free Product.
3. Concentrations in bold face type exceeded the May 2001 RBSLs.
4. Analysis not requested.
5. Less than the reporting limit specified in the laboratory report.
6. Estimated value between the method detection limit and the reporting limit.
7. May 2001 Risk-Based Screening Levels.

TABLE 9
HISTORICAL GROUNDWATER ANALYTICAL DATA [1]
EIGHT OXYGENATES
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Tertiary Amyl Alcohol (TAA) (µg/L)	Tertiary Amyl Methyl Ether (TAME) (µg/L)	Tertiary Butyl Alcohol (TBA) (µg/L)	Tertiary Butyl Formate (TBF) (µg/L)	Diisopropyl Ether (DIPE) (µg/L)	Ethanol (µg/L)	Ethyl tert-Butyl Ether (ETBE) (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
MW-1	03/04/09	NR[2]	NR	NR	NR	NR	NR	NR	NR
	05/10/10	**FP[3]**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-2	03/04/09	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-3	03/04/09	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	<100[4]	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-4	05/10/10	**3,120** [5]	11.8	322	<50.0	<5.0	<200	<10.0	<100
MW-5	05/10/10	**25,300**	**1,620**	<100	<50.0	131	<200	**47.1**	<100
MW-6	05/10/10	**757**	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-7	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-8	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-9	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-10	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-11	05/10/10	**310**	100	<100	<50.0	4.7J[6]	<200	<10.0	<100
MW-12	05/10/10	157	<10.0	570	<50.0	<5.0	<200	<10.0	<100
MW-13	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-14	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-15	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-16	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	Action Levels[7]	240	128	1,400	--	150	10,000	47	--

Notes:

1. Analyses for Eight Oxygenates by EPA Method 8260.
2. Analyses not requested.
3. Free Product.
4. Less than the reporting limit specified in the laboratory report.
5. Concentrations in bold face type exceeded the Action Level.
6. Estimated value between the laboratory reporting limit and the method detection limit.
7. August 2008 Action Levels.

TABLE 10

HISTORICAL GROUNDWATER ANALYTICAL DATA[1]
NATURAL ATTENUATION PARAMETERS
EDGEFIELD FUEL & CONVIENENCE 3

Well ID.	Sample Date	Dissolved Oxygen (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Methane (µg/L)
MW-1	03/04/09	**FP[2]**	**FP**	**FP**	**FP**	**FP**
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**
MW-2	03/04/09	5.10	2.4	19	<0.50[3]	<10.0
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**
MW-3	03/04/09	7.13	2.2	25	<0.50	<10.0
	05/10/10	3.08	NR[4]	NR	NR	NR
MW-4	05/10/10	4.92	0.92	15	<0.50	41.4
MW-5	05/10/10	1.42	0.42	35	<0.50	22.5
MW-6	05/10/10	1.74	1.6	27	<0.50	15.8
MW-7	05/10/10	5.64	0.74	34	<0.50	1.2J[5]
MW-8	05/10/10	5.37	25.1	61	<0.50	<10.0
MW-9	05/10/10	4.87	0.15	9.5	<0.50	2.3J
MW-10	05/10/10	7.67	4.9	<1.0	<0.50	2.4J
MW-11	05/10/10	2.35	15.3	10	<0.50	2.0J
MW-12	05/10/10	2.15	<0.10	47	<0.50	16.7
MW-13	05/10/10	5.00	1.8	84	<0.50	<10.0
MW-14	05/10/10	3.55	1.4	5.8	<0.50	57.1
MW-15	05/10/10	2.76	<0.10	50	<0.50	66.0
MW-16	05/10/10	4.11	3.7	15	<0.50	2.8J

Notes:

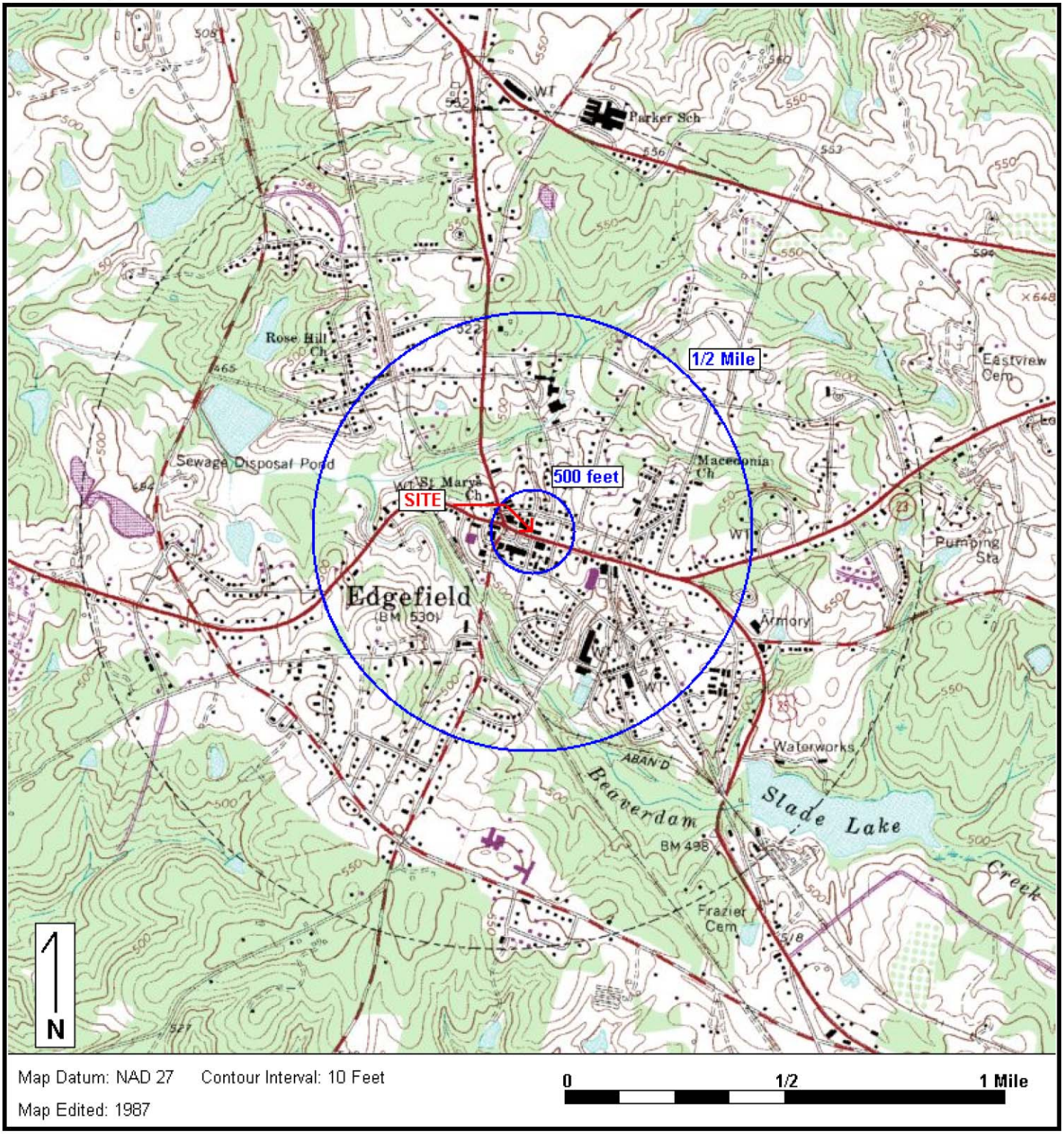
1. DO measured in-field with water quality instrument; analyses for sulfate by EPA Method 9056; analyses for nitrate by EPA Method 353.2; analyses for ferrous iron by SM 3500-Fe D#4; analyses for methane by RSK-175.
2. Free Product.
3. Less than the reporting limit specified in the laboratory report.
4. Analysis not requested.
5. Estimated value between the method detection limit and the reporting limit.

FIGURES

Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins

Legend

137-07-5-34 TAX MAP PARCEL I.D. NUMBER

PROPERTY LINE

WATER SUPPLY WELL (NOT ACTIVE)

WET WEATHER DRAINAGE FEATURE

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

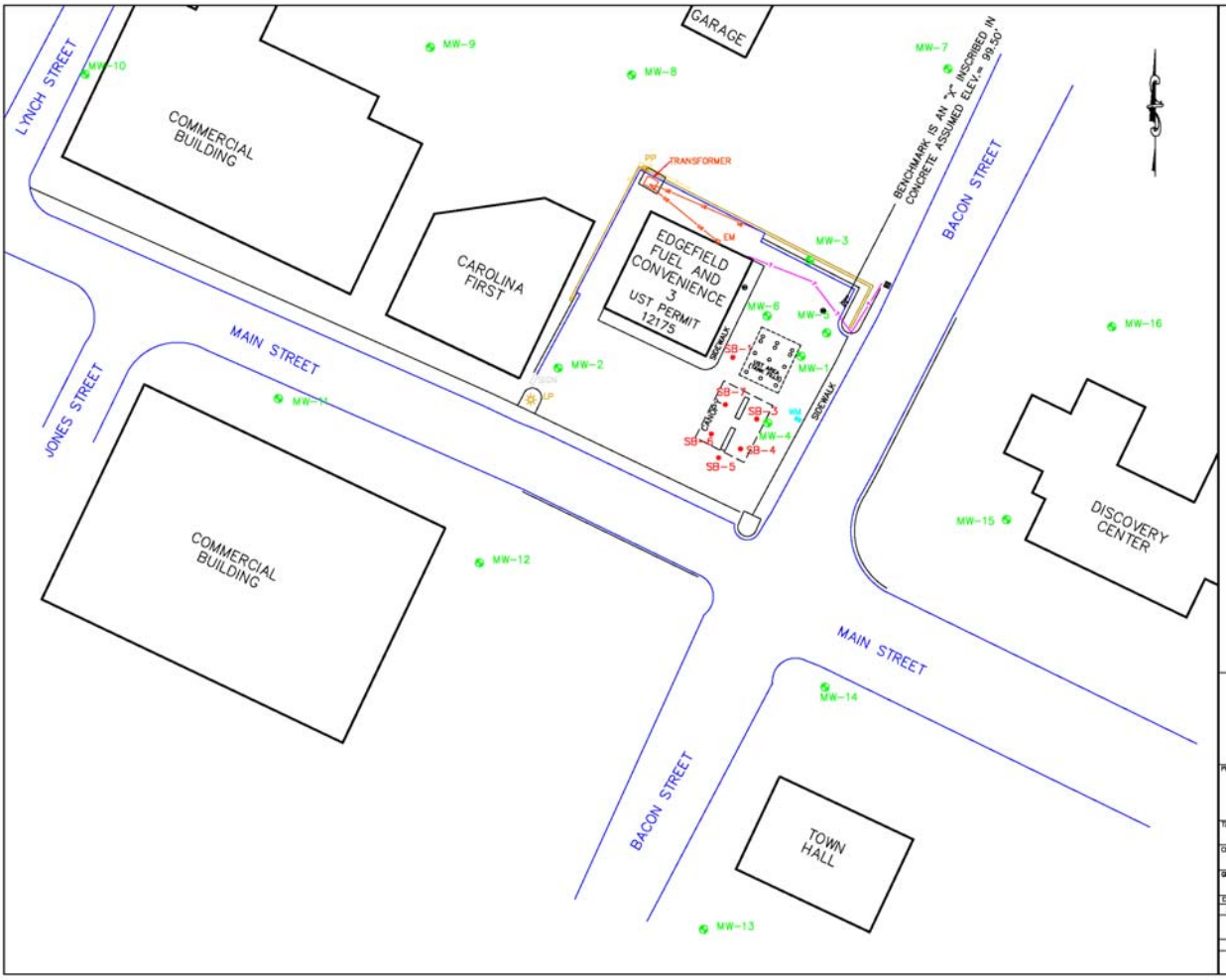
TITLE:
Site Vicinity Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 200 100 0 100 200

COMPUTER CADFILE -5-13-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=200'	6/8/10	14-211651	2



Legend

- UE — Underground Electric Line
- W — Wood Fence Line
- T — Underground Telephone Line
- SAN — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE -5-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
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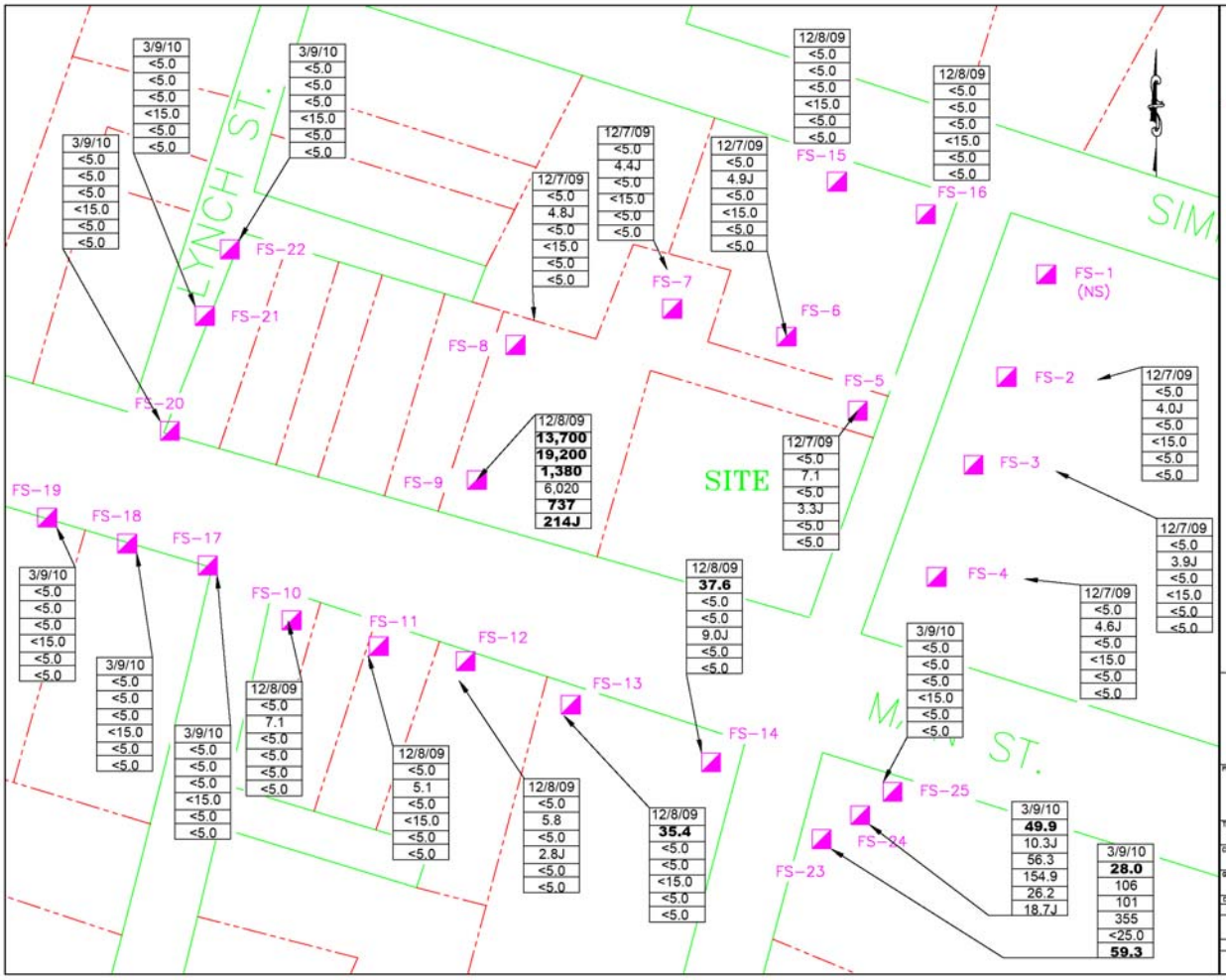

Legend

PROPERTY LINE

FIELD SCREENING LOCATION

Date	
5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	MTBE
25	Naphthalene

J-estimated concentration between method detection limit and the reporting limit.

NS-Not Sampled

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

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WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Field Screening - Dec. 2009 & Mar. 2010

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE: 0-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
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SCALE:	DATE:	JOB NO:	FIGURE NO:
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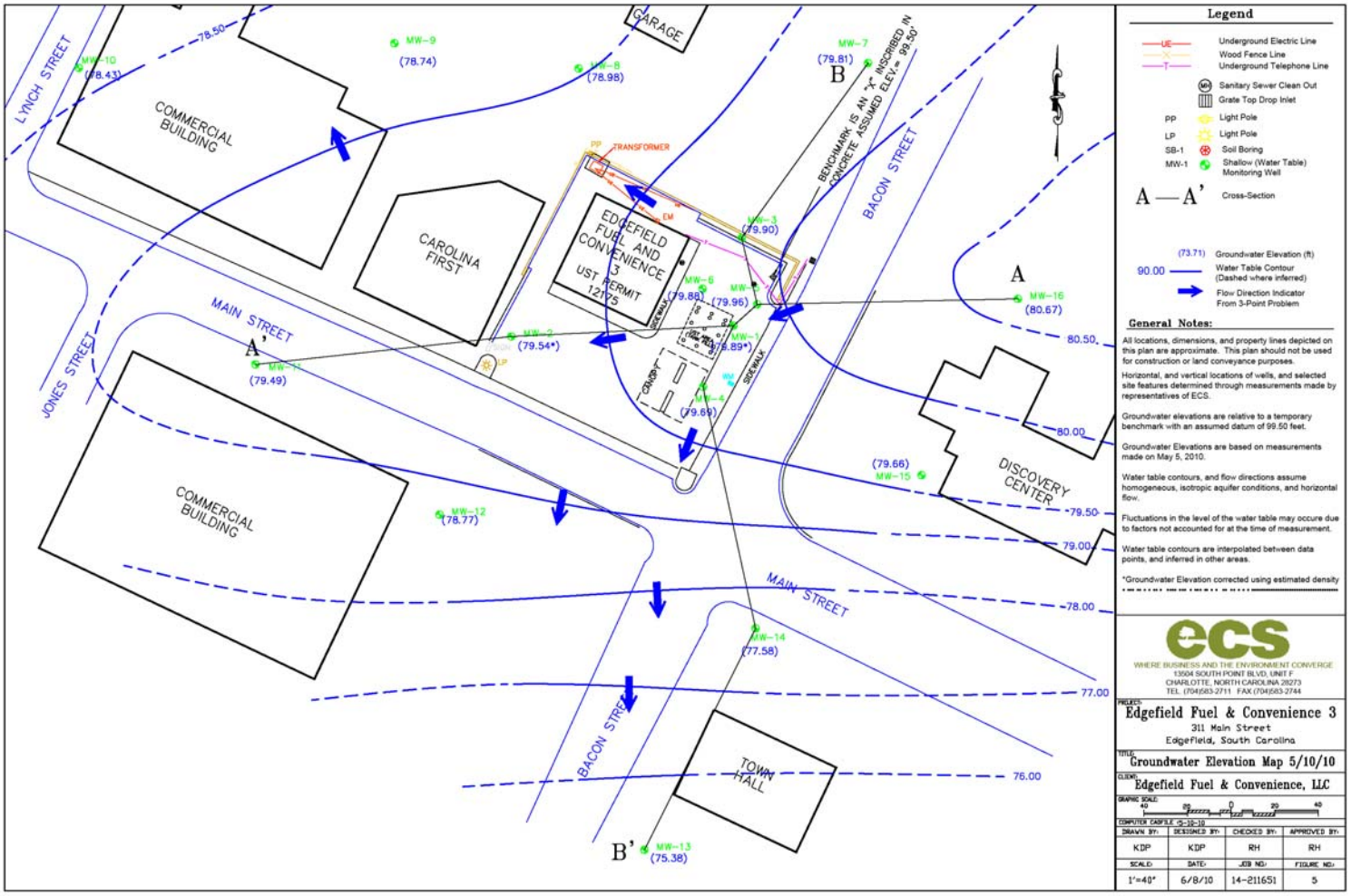

Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well
- A — A' — Cross-Section
- (73.71) — Groundwater Elevation (ft)
- 90.00 — Water Table Contour (Dashed where inferred)
- Flow Direction Indicator From 3-Point Problem

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Groundwater elevations are relative to a temporary benchmark with an assumed datum of 99.50 feet.

Groundwater Elevations are based on measurements made on May 5, 2010.

Water table contours, and flow directions assume homogeneous, isotropic aquifer conditions, and horizontal flow.

Fluctuations in the level of the water table may occure due to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

*Groundwater Elevation corrected using estimated density

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Groundwater Elevation Map 5/10/10

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE 05-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
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SCALE:	DATE:	JOB NO:	FIGURE NO:
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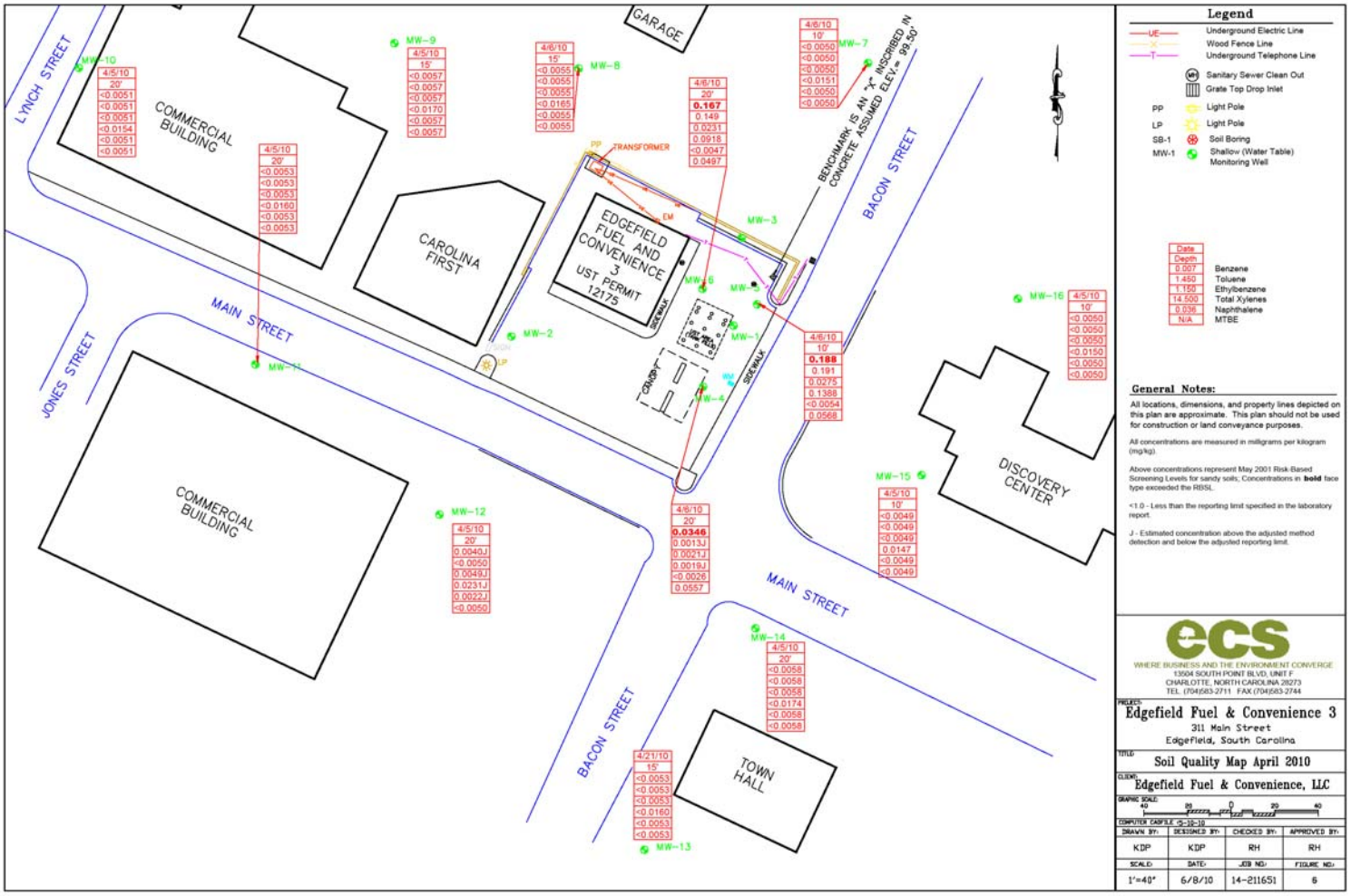

Legend

- UE — Underground Electric Line
- X — Wood Fence Line
- T — Underground Telephone Line
- SS — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well

Date Depth	
0.007	Benzene
1.450	Toluene
1.150	Ethylbenzene
14.500	Total Xylenes
0.036	Naphthalene
N/A	MTBE

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are measured in milligrams per kilogram (mg/kg).

Above concentrations represent May 2001 Risk-Based Screening Levels for sandy soils; Concentrations in **bold** face type exceeded the RBSL.

<1.0 - Less than the reporting limit specified in the laboratory report.

J - Estimated concentration above the adjusted method detection and below the adjusted reporting limit.

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WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

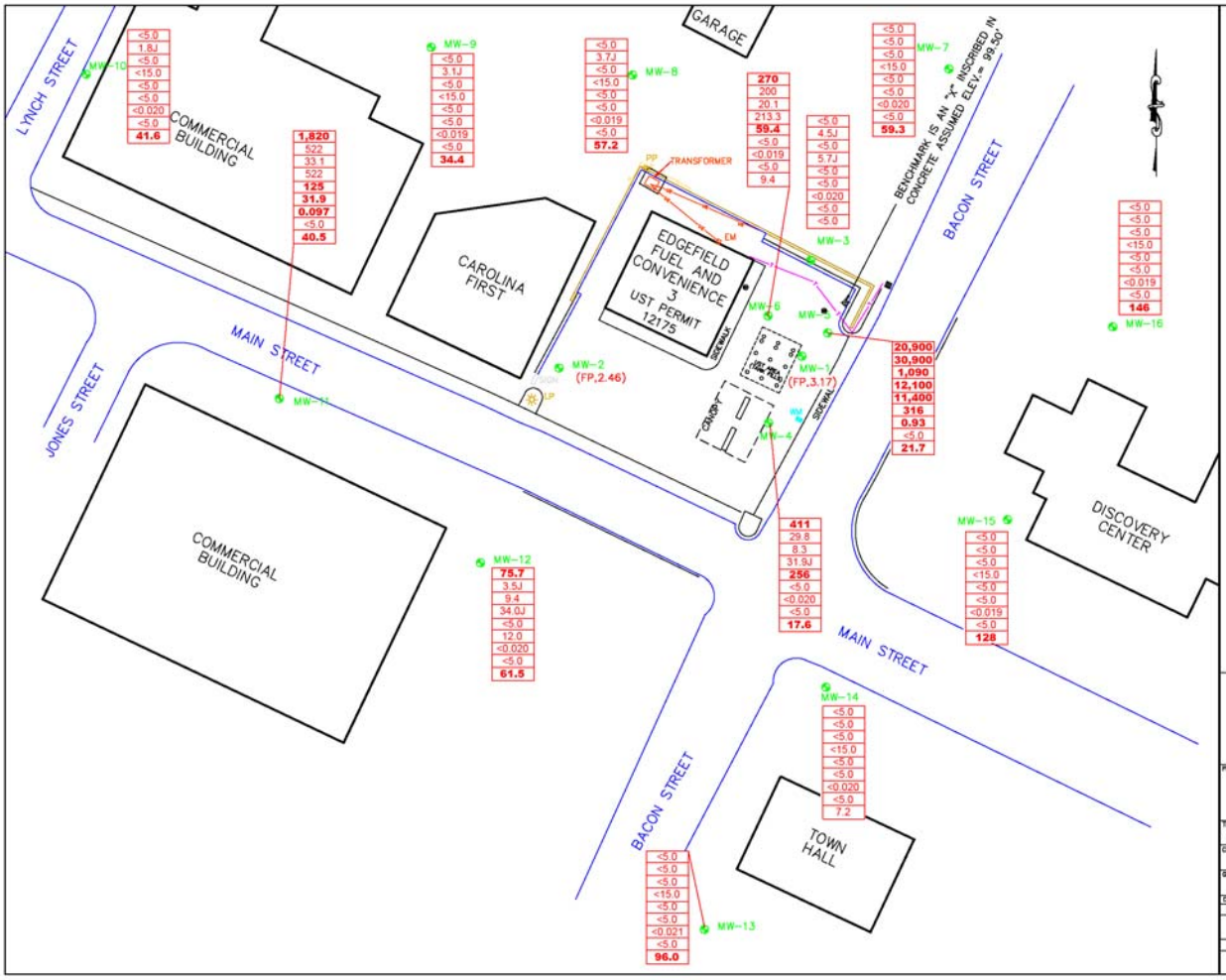
TITLE:
Soil Quality Map April 2010

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE: 5-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=40'	6/8/10	14-211651	6



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP Light Pole
- LP Light Pole
- SB-1 Soil Boring
- MW-1 Shallow (Water Table) Monitoring Well

5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	Naphthalene
25	MTBE
0.05	EDB
5	1,2-DCA
15	Total Lead

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

concentrations are measured in micrograms per liter (ug/L) except Ferrous Iron, Nitrate and Sulfate are measured in milligrams per liter (mg/L).

Above concentrations represent May 2001 Risk-Based Screening Levels; Concentrations in **bold** face type exceeded the RBSL.

FP - Free Product, thickness in feet.

<1.0 - Less than the reporting limit specified in the laboratory report.

J - Estimated value between the method detecion limit and the reported limit.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Groundwater Quality Map-CoC 5/10/10

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE G-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
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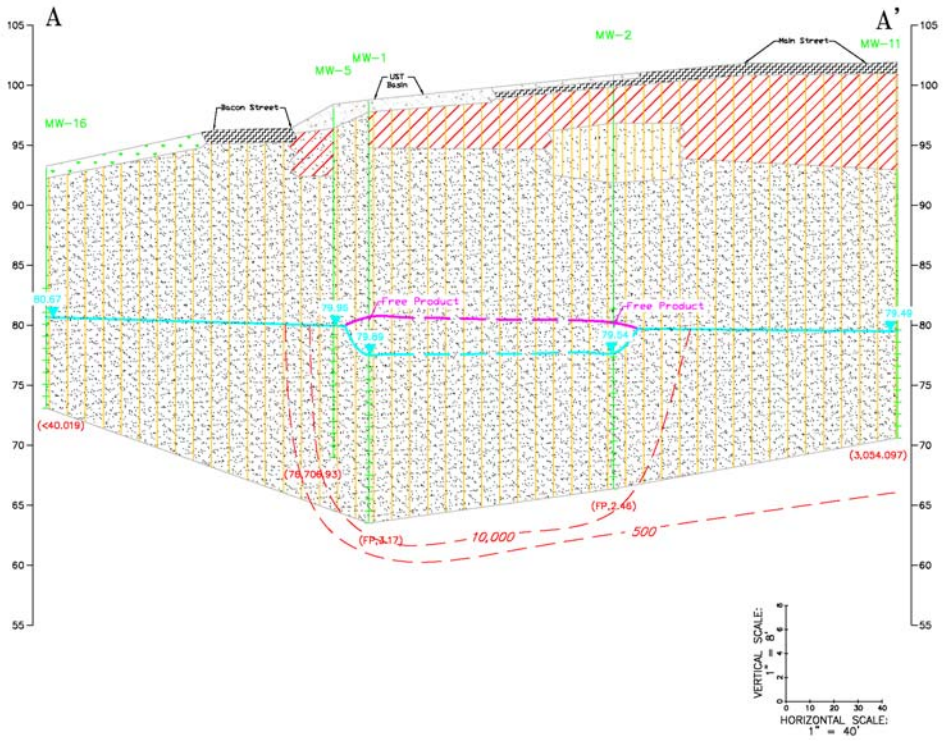


Legend

- 79.95 — Potentiometric Surface Observed 5/10/10 (ft)
- (78,706.93) — Total CoC in ug/L (Sum of BTEX, Naphthalene, MTBE, & EDB)
- 10,000 — Isoconcentration Line (ug/L)
- Grass/Topsoil
- Concrete/Fill
- Asphalt/Fill
- Silty Clay
- Sandy Silt
- Sandy Clay
- Silty Sand

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are reported in micrograms per liter (ug/L).

<45.020 – Less than the reporting limits specified in the laboratory report.

J value represents laboratory estimated value between the laboratory reporting limit and the method detection limit.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

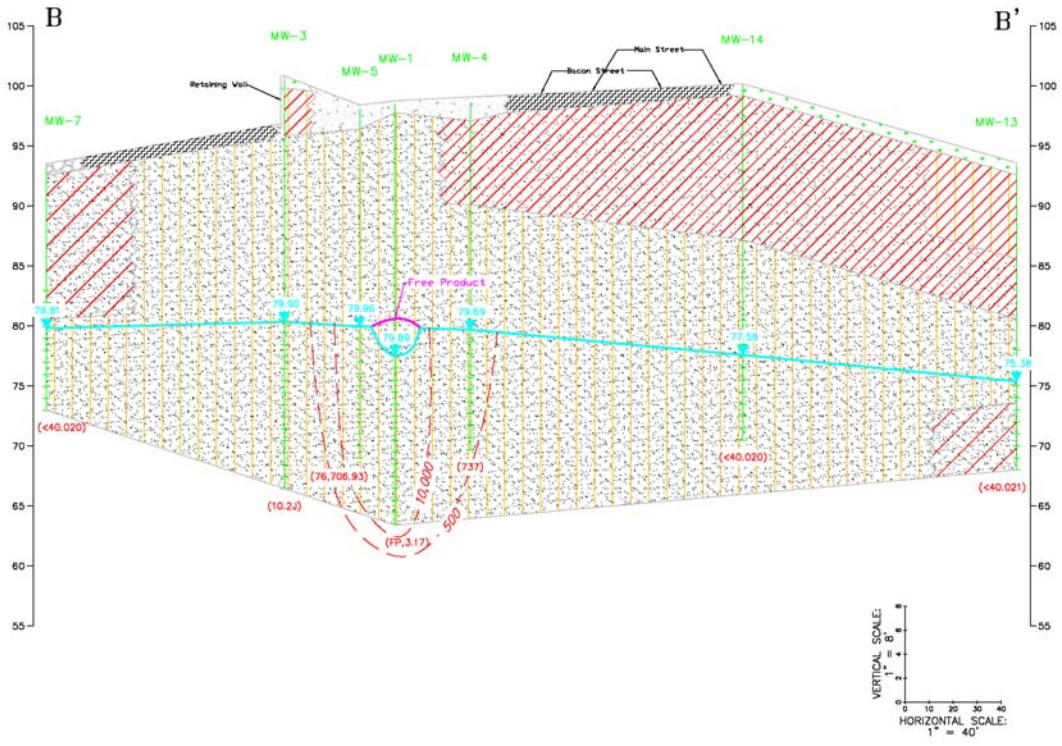
TITLE:
Cross-Section A – A'

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE: 5-12-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=40'	6/8/10	14-211651	8



Legend

- 79.95 — Potentiometric Surface Observed 5/10/10 (ft)
- (737) — Total CoC in ug/L (Sum of BTEX, Naphthalene, MTBE, & EDB)
- 10,000 — Isoconcentration Line (ug/L)
- Grass/Fill
- Concrete/Fill
- Asphalt/Fill
- Silty Clay
- Sandy Clay
- Clayey Sand
- Silty Sand

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are reported in micrograms per liter (ug/L).

<40.020 – Less than the reporting limits specified in the laboratory report.

J value represents laboratory estimated value between the laboratory reporting limit and the method detection limit.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Cross-Section B – B'

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE -5-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=40'	6/8/10	14-211651	9

Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well

240	Tert-Amyl Alcohal (TAA)
128	Tert-Amyl Methyl Ether (TAME)
1,400	Tertiary Butyl Alcohal (TBA)
--	Tert-Butyl Formate (TBF)
150	Di-isopropyl Ether (DIPE)
10,000	Ethanol
47	Ethyl tert-Butyl Ether (ETBE)
--	3,3-Dimethyl-1-butanol

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L).

Above concentrations represent August 2008 Action Level for Oxygenate Compounds; Concentrations in **bold** face type exceeded the Action Levels.

J - Estimated Value between the method detection limit and the reporting limit.

<1.0 - Less than the reporting limit specified in the laboratory report.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Groundwater Quality Map-Oxygenates 5/10/10

CLIENT: Edgefield Fuel & Convenience, LLC

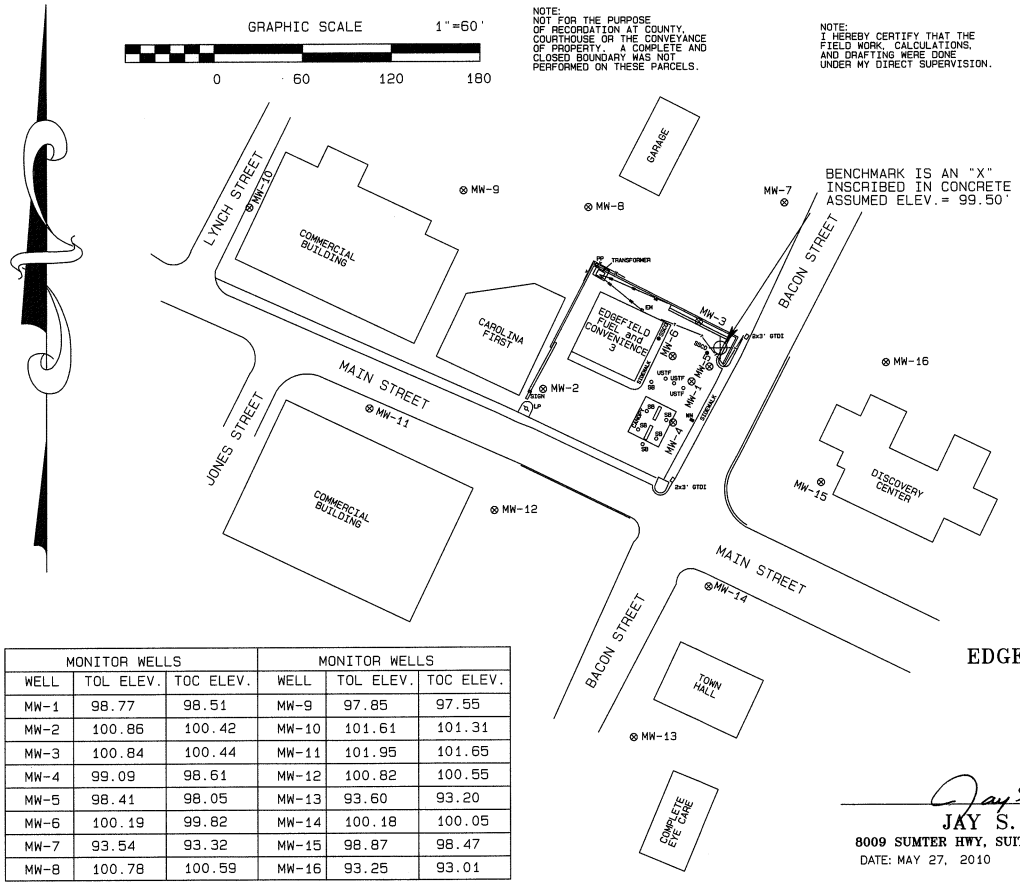
GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE: 5-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=40'	6/8/10	14-211651	10

APPENDIX A

Surveyed Site Maps



LEGEND AND ABBREVIATIONS:

⊗	MW = MONITORING WELL
⊕	BM = BENCHMARK
○	SB = SOIL BORE
●	SSCO = SANITARY SEWER CLEAN OUT
■	WM = WATER METER
○	LP = LIGHT POLE
○	PP = POWER POLE
○	USTF = UNDERGROUND STORAGE TANK FILL
□	GTDI = GRATE TOP DROP INLET
▭	SIGN = SIGN
□	EM = ELECTRIC METER
—UE—	= UNDERGROUND ELECTRIC LINE
—X—	= WOOD FENCE LINE
—T—	= UNDERGROUND TELEPHONE LINE

SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 14811 JAY S. JOSHI

SOUTH CAROLINA CONSTRUCTION SUPPORT SERVICES No. C02425 CERTIFICATE OF AUTHORIZATION

MONITOR WELLS			MONITOR WELLS		
WELL	TOL ELEV.	TOC ELEV.	WELL	TOL ELEV.	TOC ELEV.
MW-1	98.77	98.51	MW-9	97.85	97.55
MW-2	100.86	100.42	MW-10	101.61	101.31
MW-3	100.84	100.44	MW-11	101.95	101.65
MW-4	99.09	98.61	MW-12	100.82	100.55
MW-5	98.41	98.05	MW-13	93.60	93.20
MW-6	100.19	99.82	MW-14	100.18	100.05
MW-7	93.54	93.32	MW-15	98.87	98.47
MW-8	100.78	100.59	MW-16	93.25	93.01

COMPREHENSIVE SITE SKETCH OF

EDGEFIELD FUEL AND CONVENIENCE 3

311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY, SC
UST PERMIT #12175

PREPARED FOR

ECS

JAY S. JOSHI PLS # 14811
8009 SUMTER HWY, SUITE 101, COLUMBIA, SC, 29209 803-776-9909

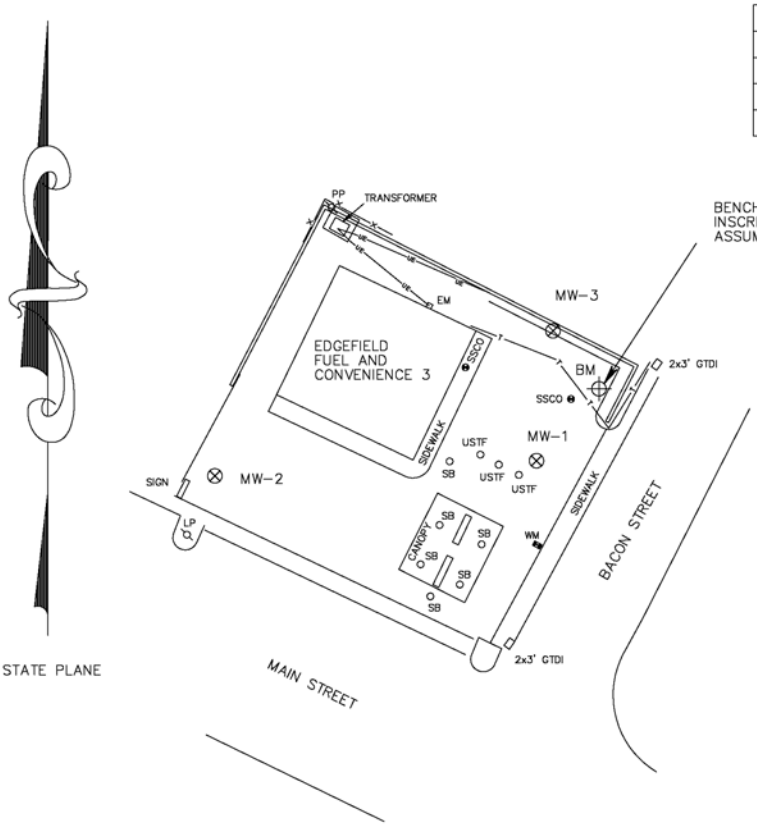
DATE: MAY 27, 2010 JOB #052010B

sub of #030509A

MONITOR WELLS		
WELL	TOL ELEV.	TOC ELEV.
MW-1	98.77	98.51
MW-2	100.86	100.42
MW-3	100.84	100.44

LEGEND AND ABBREVIATIONS:

- MW = MONITORING WELL
- BM = BENCHMARK
- SB = SOIL BORE
- SSCO = SANITARY SEWER CLEAN OUT
- WM = WATER METER
- LP = LIGHT POLE
- PP = POWER POLE
- USTF = UNDERGROUND STORAGE TANK FILL
- GTDI = GRATE TOP DROP INLET
- SIGN = SIGN
- EM = ELECTRIC METER
- —UE— = UNDERGROUND ELECTRIC LINE
- —X— = WOOD FENCE LINE
- —T— = UNDERGROUND TELEPHONE LINE



SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 14811 JAY S. JOSHI

SOUTH CAROLINA CONSTRUCTION SUPPORT SERVICES No. C02425 CERTIFICATE OF AUTHORIZATION

COMPREHENSIVE SITE SKETCH OF

EDGEFIELD FUEL AND CONVENIENCE 3

311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY, SC
UST PERMIT #12175

PREPARED FOR

ECS

GRAPHIC SCALE 1"=30'

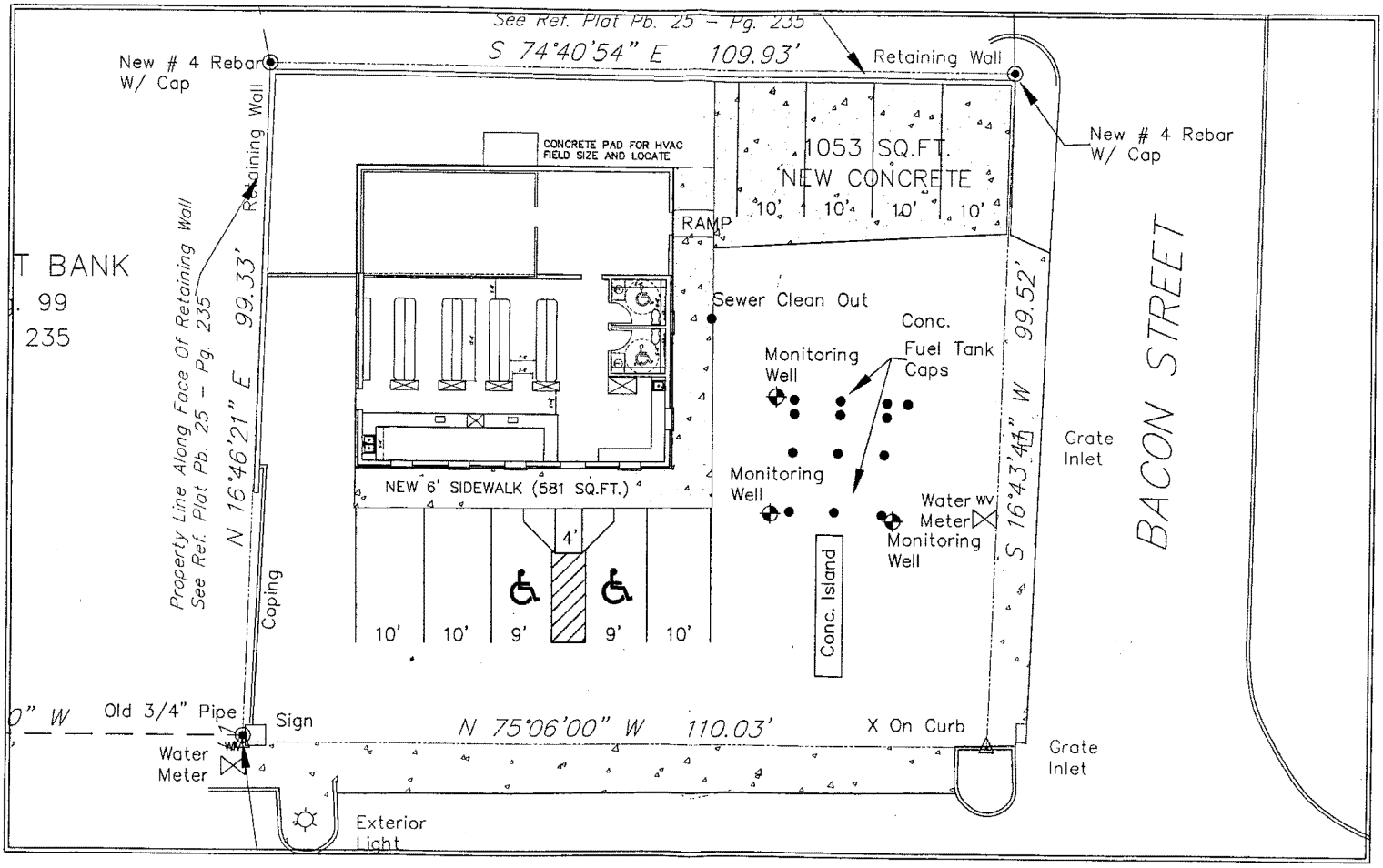
0 30 60 90

NOTE:
NOT FOR THE PURPOSE OF RECORDATION AT COUNTY, COURTHOUSE OR THE CONVEYANCE OF PROPERTY. A COMPLETE AND CLOSED BOUNDARY WAS NOT PERFORMED ON THESE PARCELS.

NOTE:
I HEREBY CERTIFY THAT THE FIELD WORK, CALCULATIONS, AND DRAFTING WERE DONE UNDER MY DIRECT SUPERVISION.

JAY S. JOSHI PLS # 14811
8009 SUMTER HWY, SUITE 101, COLUMBIA, SC, 29209 803-776-9909

DATE: MARCH 10, 2009 JOB #030509A


See Ref. Plat Pb. 25 – Pg. 235
S 74°40'54" E 109.93'
New # 4 Rebar W/ Cap
Retaining Wall
Retaining Wall
New # 4 Rebar W/ Cap
CONCRETE PAD FOR HVAC FIELD SIZE AND LOCATE
1053 SQ.FT. NEW CONCRETE
10' 10' 10' 10'
RAMP
T BANK
99
235
Property Line Along Face Of Retaining Wall See Ref. Plat Pb. 25 – Pg. 235
N 16°46'21" E 99.33'
Sewer Clean Out
Conc. Fuel Tank Caps
Monitoring Well
Monitoring Well
Water wv Meter
Monitoring Well
Conc. Island
S 16°43'41" W 99.52'
Grate Inlet
BACON STREET
NEW 6' SIDEWALK (581 SQ.FT.)
4'
10' 10' 9' 9' 10'
Coping
0" W
Old 3/4" Pipe
Sign
N 75°06'00" W 110.03'
X On Curb
Grate Inlet
Water Meter
Exterior Light

APPENDIX B

Laboratory Report – Groundwater Field Screening Samples –
December 7 & 9, 2009

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December 21, 2009

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on December 11, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Charlotte Certification IDs

Connecticut Certification #: PH-0104
9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Kentucky UST Certification #: 84
Louisiana/LELAP Certification #: 04034
New Jersey Certification #: NC012
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
Pennsylvania Certification #: 68-00784
South Carolina Certification #: 990060001
South Carolina Drinking Water Cert. #: 990060003
Tennessee Certification #: 04010
Virginia Certification #: 00213
West Virginia Certification #: 357
Florida/NELAP Certification #: E87627

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SAMPLE SUMMARY

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9259412001	**FS-2**	Water	12/07/09 13:15	12/11/09 15:15
9259412002	**FS-3**	Water	12/07/09 13:40	12/11/09 15:15
9259412003	**FS-4**	Water	12/07/09 14:10	12/11/09 15:15
9259412004	**FS-5**	Water	12/07/09 15:10	12/11/09 15:15
9259412005	**FS-6**	Water	12/07/09 16:00	12/11/09 15:15
9259412006	**FS-7**	Water	12/07/09 16:20	12/11/09 15:15
9259412007	**FS-8**	Water	12/07/09 16:50	12/11/09 15:15
9259412008	**FS-9**	Water	12/08/09 09:20	12/11/09 15:15
9259412009	**FS-10**	Water	12/08/09 10:15	12/11/09 15:15
9259412010	**FS-11**	Water	12/08/09 11:30	12/11/09 15:15
9259412011	**FS-12**	Water	12/08/09 12:50	12/11/09 15:15
9259412012	**FS-13**	Water	12/08/09 14:45	12/11/09 15:15
9259412013	**FS-14**	Water	12/08/09 15:30	12/11/09 15:15
9259412014	**FS-15**	Water	12/08/09 15:55	12/11/09 15:15
9259412015	**FS-16**	Water	12/08/09 16:40	12/11/09 15:15

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SAMPLE ANALYTE COUNT

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9259412001	**FS-2**	EPA 8260	KJM	11	PASI-C
9259412002	**FS-3**	EPA 8260	KJM	11	PASI-C
9259412003	**FS-4**	EPA 8260	KJM	11	PASI-C
9259412004	**FS-5**	EPA 8260	KJM	11	PASI-C
9259412005	**FS-6**	EPA 8260	KJM	11	PASI-C
9259412006	**FS-7**	EPA 8260	KJM	11	PASI-C
9259412007	**FS-8**	EPA 8260	KJM	11	PASI-C
9259412008	**FS-9**	EPA 8260	KJM	11	PASI-C
9259412009	**FS-10**	EPA 8260	KJM	11	PASI-C
9259412010	**FS-11**	EPA 8260	KJM	11	PASI-C
9259412011	**FS-12**	EPA 8260	KJM	11	PASI-C
9259412012	**FS-13**	EPA 8260	KJM	11	PASI-C
9259412013	**FS-14**	EPA 8260	KJM	11	PASI-C
9259412014	**FS-15**	EPA 8260	KJM	11	PASI-C
9259412015	**FS-16**	EPA 8260	KJM	11	PASI-C

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-2 **Lab ID: 9259412001** Collected: 12/07/09 13:15 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 17:01	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 17:01	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 17:01	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 17:01	91-20-3	
Toluene	**4.0J**	ug/L	5.0	1.8	1		12/16/09 17:01	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 17:01	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 17:01	95-47-6	
4-Bromofluorobenzene (S)	99	%	87-109		1		12/16/09 17:01	460-00-4	
Dibromofluoromethane (S)	103	%	85-115		1		12/16/09 17:01	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 17:01	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 17:01	2037-26-5	

Sample: FS-3 **Lab ID: 9259412002** Collected: 12/07/09 13:40 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 17:19	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 17:19	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 17:19	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 17:19	91-20-3	
Toluene	**3.9J**	ug/L	5.0	1.8	1		12/16/09 17:19	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 17:19	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 17:19	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109		1		12/16/09 17:19	460-00-4	
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 17:19	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	79-120		1		12/16/09 17:19	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 17:19	2037-26-5	

Sample: FS-4 **Lab ID: 9259412003** Collected: 12/07/09 14:10 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 17:37	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 17:37	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 17:37	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 17:37	91-20-3	
Toluene	**4.6J**	ug/L	5.0	1.8	1		12/16/09 17:37	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 17:37	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 17:37	95-47-6	
4-Bromofluorobenzene (S)	103	%	87-109		1		12/16/09 17:37	460-00-4	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-4 **Lab ID: 9259412003** Collected: 12/07/09 14:10 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 17:37	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	79-120		1		12/16/09 17:37	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 17:37	2037-26-5	

Sample: FS-5 **Lab ID: 9259412004** Collected: 12/07/09 15:10 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 17:55	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 17:55	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 17:55	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 17:55	91-20-3	
Toluene	**7.1**	ug/L	5.0	1.8	1		12/16/09 17:55	108-88-3	
m&p-Xylene	**3.3J**	ug/L	10.0	2.7	1		12/16/09 17:55	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 17:55	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109		1		12/16/09 17:55	460-00-4	
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 17:55	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 17:55	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 17:55	2037-26-5	

Sample: FS-6 **Lab ID: 9259412005** Collected: 12/07/09 16:00 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 18:14	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 18:14	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 18:14	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 18:14	91-20-3	
Toluene	**4.9J**	ug/L	5.0	1.8	1		12/16/09 18:14	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 18:14	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 18:14	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109		1		12/16/09 18:14	460-00-4	
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 18:14	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 18:14	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 18:14	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-7 **Lab ID: 9259412006** Collected: 12/07/09 16:20 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 18:32	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 18:32	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 18:32	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 18:32	91-20-3	
Toluene	**4.4J**	ug/L	5.0	1.8	1		12/16/09 18:32	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 18:32	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 18:32	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109		1		12/16/09 18:32	460-00-4	
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 18:32	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 18:32	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 18:32	2037-26-5	

Sample: FS-8 **Lab ID: 9259412007** Collected: 12/07/09 16:50 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 18:50	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 18:50	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 18:50	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 18:50	91-20-3	
Toluene	**4.8J**	ug/L	5.0	1.8	1		12/16/09 18:50	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 18:50	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 18:50	95-47-6	
4-Bromofluorobenzene (S)	97	%	87-109		1		12/16/09 18:50	460-00-4	
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 18:50	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 18:50	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 18:50	2037-26-5	

Sample: FS-9 **Lab ID: 9259412008** Collected: 12/08/09 09:20 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**13700**	ug/L	250	60.0	50		12/16/09 16:06	71-43-2	E
Ethylbenzene	**1380**	ug/L	250	55.0	50		12/16/09 16:06	100-41-4	
Methyl-tert-butyl ether	**737**	ug/L	250	100	50		12/16/09 16:06	1634-04-4	
Naphthalene	**214J**	ug/L	250	145	50		12/16/09 16:06	91-20-3	
Toluene	**19200**	ug/L	250	90.0	50		12/16/09 16:06	108-88-3	E
m&p-Xylene	**3880**	ug/L	500	135	50		12/16/09 16:06	1330-20-7	
o-Xylene	**2140**	ug/L	250	85.0	50		12/16/09 16:06	95-47-6	
4-Bromofluorobenzene (S)	103	%	87-109		50		12/16/09 16:06	460-00-4	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-9 **Lab ID: 9259412008** Collected: 12/08/09 09:20 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	98	%	85-115		50		12/16/09 16:06	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		50		12/16/09 16:06	17060-07-0	
Toluene-d8 (S)	101	%	70-120		50		12/16/09 16:06	2037-26-5	

Sample: FS-10 **Lab ID: 9259412009** Collected: 12/08/09 10:15 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 19:08	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 19:08	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 19:08	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 19:08	91-20-3	
Toluene	**7.1**	ug/L	5.0	1.8	1		12/16/09 19:08	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 19:08	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 19:08	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109		1		12/16/09 19:08	460-00-4	
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 19:08	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 19:08	17060-07-0	
Toluene-d8 (S)	102	%	70-120		1		12/16/09 19:08	2037-26-5	

Sample: FS-11 **Lab ID: 9259412010** Collected: 12/08/09 11:30 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 19:26	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 19:26	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 19:26	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 19:26	91-20-3	
Toluene	**5.1**	ug/L	5.0	1.8	1		12/16/09 19:26	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 19:26	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 19:26	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109		1		12/16/09 19:26	460-00-4	
Dibromofluoromethane (S)	103	%	85-115		1		12/16/09 19:26	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 19:26	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 19:26	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-12 **Lab ID: 9259412011** Collected: 12/08/09 12:50 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 19:45	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 19:45	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 19:45	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 19:45	91-20-3	
Toluene	**5.8**	ug/L	5.0	1.8	1		12/16/09 19:45	108-88-3	
m&p-Xylene	**2.8J**	ug/L	10.0	2.7	1		12/16/09 19:45	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 19:45	95-47-6	
4-Bromofluorobenzene (S)	103	%	87-109		1		12/16/09 19:45	460-00-4	
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 19:45	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 19:45	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 19:45	2037-26-5	

Sample: FS-13 **Lab ID: 9259412012** Collected: 12/08/09 14:45 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**35.4**	ug/L	5.0	1.2	1		12/16/09 20:03	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 20:03	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 20:03	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 20:03	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		12/16/09 20:03	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 20:03	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 20:03	95-47-6	
4-Bromofluorobenzene (S)	104	%	87-109		1		12/16/09 20:03	460-00-4	
Dibromofluoromethane (S)	100	%	85-115		1		12/16/09 20:03	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 20:03	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 20:03	2037-26-5	

Sample: FS-14 **Lab ID: 9259412013** Collected: 12/08/09 15:30 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**37.6**	ug/L	5.0	1.2	1		12/16/09 20:21	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 20:21	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 20:21	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 20:21	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		12/16/09 20:21	108-88-3	
m&p-Xylene	**9.0J**	ug/L	10.0	2.7	1		12/16/09 20:21	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 20:21	95-47-6	
4-Bromofluorobenzene (S)	103	%	87-109		1		12/16/09 20:21	460-00-4	

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ANALYTICAL RESULTS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Sample: FS-14 **Lab ID: 9259412013** Collected: 12/08/09 15:30 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	102	%	85-115		1		12/16/09 20:21	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	79-120		1		12/16/09 20:21	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 20:21	2037-26-5	

Sample: FS-15 **Lab ID: 9259412014** Collected: 12/08/09 15:55 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 20:39	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 20:39	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 20:39	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 20:39	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		12/16/09 20:39	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 20:39	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 20:39	95-47-6	
4-Bromofluorobenzene (S)	101	%	87-109		1		12/16/09 20:39	460-00-4	
Dibromofluoromethane (S)	101	%	85-115		1		12/16/09 20:39	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	79-120		1		12/16/09 20:39	17060-07-0	
Toluene-d8 (S)	101	%	70-120		1		12/16/09 20:39	2037-26-5	

Sample: FS-16 **Lab ID: 9259412015** Collected: 12/08/09 16:40 Received: 12/11/09 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		12/16/09 20:58	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		12/16/09 20:58	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		12/16/09 20:58	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		12/16/09 20:58	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		12/16/09 20:58	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		12/16/09 20:58	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		12/16/09 20:58	95-47-6	
4-Bromofluorobenzene (S)	102	%	87-109		1		12/16/09 20:58	460-00-4	
Dibromofluoromethane (S)	99	%	85-115		1		12/16/09 20:58	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	79-120		1		12/16/09 20:58	17060-07-0	
Toluene-d8 (S)	100	%	70-120		1		12/16/09 20:58	2037-26-5	

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QUALITY CONTROL DATA

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

QC Batch: MSV/9309 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 9259412001, 9259412002, 9259412003, 9259412004, 9259412005, 9259412006, 9259412007, 9259412008, 9259412009, 9259412010, 9259412011, 9259412012, 9259412013, 9259412014, 9259412015

METHOD BLANK: 378513 Matrix: Water
Associated Lab Samples: 9259412001, 9259412002, 9259412003, 9259412004, 9259412005, 9259412006, 9259412007, 9259412008, 9259412009, 9259412010, 9259412011, 9259412012, 9259412013, 9259412014, 9259412015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	12/16/09 11:59	
Ethylbenzene	ug/L	ND	5.0	12/16/09 11:59	
m&p-Xylene	ug/L	ND	10.0	12/16/09 11:59	
Methyl-tert-butyl ether	ug/L	ND	5.0	12/16/09 11:59	
Naphthalene	ug/L	ND	5.0	12/16/09 11:59	
o-Xylene	ug/L	ND	5.0	12/16/09 11:59	
Toluene	ug/L	ND	5.0	12/16/09 11:59	
1,2-Dichloroethane-d4 (S)	%	99	79-120	12/16/09 11:59	
4-Bromofluorobenzene (S)	%	103	87-109	12/16/09 11:59	
Dibromofluoromethane (S)	%	101	85-115	12/16/09 11:59	
Toluene-d8 (S)	%	100	70-120	12/16/09 11:59	

LABORATORY CONTROL SAMPLE: 378514

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	54.1	108	78-128	
Ethylbenzene	ug/L	50	53.3	107	80-127	
m&p-Xylene	ug/L	100	108	108	82-127	
Methyl-tert-butyl ether	ug/L	50	55.2	110	71-130	
Naphthalene	ug/L	50	55.1	110	52-136	
o-Xylene	ug/L	50	53.4	107	83-124	
Toluene	ug/L	50	53.9	108	76-126	
1,2-Dichloroethane-d4 (S)	%			98	79-120	
4-Bromofluorobenzene (S)	%			101	87-109	
Dibromofluoromethane (S)	%			100	85-115	
Toluene-d8 (S)	%			100	70-120	

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QUALIFIERS

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGEFILED FUEL & CONV. 3
Pace Project No.: 9259412

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9259412001	**FS-2**	EPA 8260	MSV/9309		
9259412002	**FS-3**	EPA 8260	MSV/9309		
9259412003	**FS-4**	EPA 8260	MSV/9309		
9259412004	**FS-5**	EPA 8260	MSV/9309		
9259412005	**FS-6**	EPA 8260	MSV/9309		
9259412006	**FS-7**	EPA 8260	MSV/9309		
9259412007	**FS-8**	EPA 8260	MSV/9309		
9259412008	**FS-9**	EPA 8260	MSV/9309		
9259412009	**FS-10**	EPA 8260	MSV/9309		
9259412010	**FS-11**	EPA 8260	MSV/9309		
9259412011	**FS-12**	EPA 8260	MSV/9309		
9259412012	**FS-13**	EPA 8260	MSV/9309		
9259412013	**FS-14**	EPA 8260	MSV/9309		
9259412014	**FS-15**	EPA 8260	MSV/9309		
9259412015	**FS-16**	EPA 8260	MSV/9309		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

1333961

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Environmental Compliance Services	Report To: Randy Hutchins	Attention: Christina White
Address: 13504 S. Point Blvd Unit F.	Copy To:	Company Name: ECS
Charlotte, NC 28273		Address: 888 S. Westst, Agawam MA 01001
Email To: RHutchins@ecsconsult.com	Purchase Order No.:	Pace Quote Reference:
Phone: 7045832711 Fax:	Project Name: Edgefield Fuel + Conv. 3	Pace Project Manager: Kevin Herring
Requested Due Date/TAT: 48 hr	Project Number: IW-211651	Pace Profile #: 2071-12

REGULATORY AGENCY

NPDES ☐ GROUND WATER ☐ DRINKING WATER
UST ☑ RCRA ☐ OTHER _____

Site Location STATE: SC

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: BTEx, MN Screen	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	FS-2	WT	G				12/7	13:15		3				X					X		001
2	FS-3							13:40													002
3	FS-4							14:10													003
4	FS-5							15:10													004
5	FS-6							16:00													005
6	FS-7							16:20													006
7	FS-8						↓	16:50													~~007~~
8	FS-9						12/8	9:20													008
9	FS-10							10:15													009
10	FS-11							11:30													010
11	FS-12							12:50													011
12	FS-13	↓	↓				↓	14:45		↓				↓					↓		012

9259412

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
report J values	Ryan Byas/ECS	12/10/09	19:10	B Moody - Pace	12-11-09	13:45				
	B Moody	12-11-09	15:15	Justin Motley/Pace	12-11-09	15:15	0.3	Y	n	Y

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas

SIGNATURE of SAMPLER: Ryan Byas DATE Signed (MM/DD/YY): 12/10/09

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

1333962

Section A — **Required** Client Information:

Company: Environmental compliance services
Address: 13504 S. Point Blvd Unit E.
Charlotte, NC 28273
Email To: RHutchins@ecsconsulting.com
Phone: 7045832711 Fax:
Requested Due Date/TAT: 48 hr

Section B — **Required** Project Information:

Report To: Randy Hutchins
Copy To:
Purchase Order No.:
Project Name: Edgefield Fuel Conv. 3
Project Number: 14-21651

Section C — Invoice Information:

Attention: Christina White
Company Name: ECS
Address: 556 River St, Agawam MA 01001
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: SC

Section D — **Required** Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: BTEX & N Screen	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 9259412
1	FS-14	WT	G			12/8/09	15:30		3				X							013
2	FS-15	WT	G				15:55													014
3	FS-16	WT	G				16:40													015
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
report 3 values	Ryan Byas/ECS	12/10/09	19:10	Z Moody-Pace	12/11-09	13:45				
	Z Moody	12-11-09	15:15	Justin Motley Pace	12-11-09	1515	4.3	Y	n	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas

SIGNATURE of SAMPLER: Ryan Byas DATE Signed (MM/DD/YY): 12/10/09

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Face Analytical

Client Name: ECS Project # 9259412

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other ____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other ____

Thermometer Used T060 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 4.3° Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Optional
Proj. Due Date: N/A
Proj. Name: N/A

Date and Initials of person examining contents: JMM 12-11-09

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☑Yes ☐No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	JMM 12-11-09 ☑Yes ☐No ☐N/A	12. pg. 2 received 8260 for samples.
-Includes date/time/ID/Analysis Matrix: ____		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed ____
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15. sediment in vials
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): N/A		

Client Notification/ Resolution: Field Data Required? Y / N / N/A

Person Contacted: ____ Date/Time: ____

Comments/ Resolution: ____

Project Manager Review: KMA Date: 12/14/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect container).

APPENDIX C

Laboratory Report – Groundwater Field Screening Samples – March 9, 2010

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March 19, 2010

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on March 10, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Charlotte Certification IDs
9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Connecticut Certification #: PH-0104
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
North Carolina Wastewater Certification #: 12
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
West Virginia Certification #: 357

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SAMPLE SUMMARY

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9265041001	**FS-17**	Water	03/09/10 09:40	03/10/10 16:30
9265041002	**FS-18**	Water	03/09/10 10:10	03/10/10 16:30
9265041003	**FS-19**	Water	03/09/10 10:50	03/10/10 16:30
9265041004	**FS-20**	Water	03/09/10 12:35	03/10/10 16:30
9265041005	**FS-21**	Water	03/09/10 13:10	03/10/10 16:30
9265041006	**FS-22**	Water	03/09/10 13:25	03/10/10 16:30
9265041007	**FS-23**	Water	03/09/10 14:20	03/10/10 16:30
9265041008	**FS-24**	Water	03/09/10 14:50	03/10/10 16:30
9265041009	**FS-25**	Water	03/09/10 15:20	03/10/10 16:30

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SAMPLE ANALYTE COUNT

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9265041001	**FS-17**	EPA 8260	DLK	11	PASI-C
9265041002	**FS-18**	EPA 8260	DLK	11	PASI-C
9265041003	**FS-19**	EPA 8260	DLK	11	PASI-C
9265041004	**FS-20**	EPA 8260	DLK	11	PASI-C
9265041005	**FS-21**	EPA 8260	DLK	11	PASI-C
9265041006	**FS-22**	EPA 8260	DLK	11	PASI-C
9265041007	**FS-23**	EPA 8260	DLK	11	PASI-C
9265041008	**FS-24**	EPA 8260	DLK	11	PASI-C
9265041009	**FS-25**	EPA 8260	DLK	11	PASI-C

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ANALYTICAL RESULTS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Sample: FS-17 **Lab ID: 9265041001** Collected: 03/09/10 09:40 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 08:12	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 08:12	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 08:12	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 08:12	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 08:12	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 08:12	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 08:12	95-47-6	
4-Bromofluorobenzene (S)	96	%	70-130		1		03/16/10 08:12	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		1		03/16/10 08:12	1868-53-7	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		03/16/10 08:12	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		03/16/10 08:12	2037-26-5	

Sample: FS-18 **Lab ID: 9265041002** Collected: 03/09/10 10:10 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 08:30	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 08:30	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 08:30	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 08:30	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 08:30	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 08:30	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 08:30	95-47-6	
4-Bromofluorobenzene (S)	101	%	70-130		1		03/16/10 08:30	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		03/16/10 08:30	1868-53-7	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		03/16/10 08:30	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/16/10 08:30	2037-26-5	

Sample: FS-19 **Lab ID: 9265041003** Collected: 03/09/10 10:50 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 08:49	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 08:49	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 08:49	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 08:49	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 08:49	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 08:49	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 08:49	95-47-6	
4-Bromofluorobenzene (S)	95	%	70-130		1		03/16/10 08:49	460-00-4	

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ANALYTICAL RESULTS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Sample: FS-19 **Lab ID: 9265041003** Collected: 03/09/10 10:50 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	101	%	70-130		1		03/16/10 08:49	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		03/16/10 08:49	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/16/10 08:49	2037-26-5	

Sample: FS-20 **Lab ID: 9265041004** Collected: 03/09/10 12:35 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 09:07	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 09:07	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 09:07	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 09:07	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 09:07	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 09:07	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 09:07	95-47-6	
4-Bromofluorobenzene (S)	98	%	70-130		1		03/16/10 09:07	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		03/16/10 09:07	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		03/16/10 09:07	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		03/16/10 09:07	2037-26-5	

Sample: FS-21 **Lab ID: 9265041005** Collected: 03/09/10 13:10 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 09:25	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 09:25	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 09:25	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 09:25	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 09:25	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 09:25	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 09:25	95-47-6	
4-Bromofluorobenzene (S)	96	%	70-130		1		03/16/10 09:25	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		1		03/16/10 09:25	1868-53-7	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		03/16/10 09:25	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/16/10 09:25	2037-26-5	

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ANALYTICAL RESULTS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Sample: FS-22 **Lab ID: 9265041006** Collected: 03/09/10 13:25 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 09:44	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 09:44	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 09:44	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 09:44	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 09:44	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 09:44	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 09:44	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		1		03/16/10 09:44	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		03/16/10 09:44	1868-53-7	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		03/16/10 09:44	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		03/16/10 09:44	2037-26-5	

Sample: FS-23 **Lab ID: 9265041007** Collected: 03/09/10 14:20 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**28.0**	ug/L	25.0	6.0	5		03/16/10 12:36	71-43-2	
Ethylbenzene	**101**	ug/L	25.0	5.5	5		03/16/10 12:36	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	25.0	10.0	5		03/16/10 12:36	1634-04-4	
Naphthalene	**59.3**	ug/L	25.0	14.5	5		03/16/10 12:36	91-20-3	
Toluene	**106**	ug/L	25.0	9.0	5		03/16/10 12:36	108-88-3	
m&p-Xylene	**214**	ug/L	50.0	13.5	5		03/16/10 12:36	1330-20-7	
o-Xylene	**141**	ug/L	25.0	8.5	5		03/16/10 12:36	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		5		03/16/10 12:36	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		5		03/16/10 12:36	1868-53-7	
1,2-Dichloroethane-d4 (S)	98	%	70-130		5		03/16/10 12:36	17060-07-0	
Toluene-d8 (S)	100	%	70-130		5		03/16/10 12:36	2037-26-5	

Sample: FS-24 **Lab ID: 9265041008** Collected: 03/09/10 14:50 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**49.9**	ug/L	25.0	6.0	5		03/16/10 12:57	71-43-2	D3
Ethylbenzene	**56.3**	ug/L	25.0	5.5	5		03/16/10 12:57	100-41-4	
Methyl-tert-butyl ether	**26.2**	ug/L	25.0	10.0	5		03/16/10 12:57	1634-04-4	
Naphthalene	**18.7J**	ug/L	25.0	14.5	5		03/16/10 12:57	91-20-3	
Toluene	**10.3J**	ug/L	25.0	9.0	5		03/16/10 12:57	108-88-3	
m&p-Xylene	**115**	ug/L	50.0	13.5	5		03/16/10 12:57	1330-20-7	
o-Xylene	**39.9**	ug/L	25.0	8.5	5		03/16/10 12:57	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		5		03/16/10 12:57	460-00-4	

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ANALYTICAL RESULTS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Sample: FS-24 **Lab ID: 9265041008** Collected: 03/09/10 14:50 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	99	%	70-130		5		03/16/10 12:57	1868-53-7	
1,2-Dichloroethane-d4 (S)	97	%	70-130		5		03/16/10 12:57	17060-07-0	
Toluene-d8 (S)	101	%	70-130		5		03/16/10 12:57	2037-26-5	

Sample: FS-25 **Lab ID: 9265041009** Collected: 03/09/10 15:20 Received: 03/10/10 16:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		03/16/10 10:02	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		03/16/10 10:02	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		03/16/10 10:02	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		03/16/10 10:02	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		03/16/10 10:02	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		03/16/10 10:02	1330-20-7	
o-Xylene	ND	ug/L	5.0	1.7	1		03/16/10 10:02	95-47-6	
4-Bromofluorobenzene (S)	96	%	70-130		1		03/16/10 10:02	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		1		03/16/10 10:02	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		03/16/10 10:02	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		03/16/10 10:02	2037-26-5	

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QUALITY CONTROL DATA

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

QC Batch: MSV/10277 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 9265041001, 9265041002, 9265041003, 9265041004, 9265041005, 9265041006, 9265041007, 9265041008, 9265041009

METHOD BLANK: 414876 Matrix: Water
Associated Lab Samples: 9265041001, 9265041002, 9265041003, 9265041004, 9265041005, 9265041006, 9265041007, 9265041008, 9265041009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	03/16/10 10:57	
Ethylbenzene	ug/L	ND	5.0	03/16/10 10:57	
m&p-Xylene	ug/L	ND	10.0	03/16/10 10:57	
Methyl-tert-butyl ether	ug/L	ND	5.0	03/16/10 10:57	
Naphthalene	ug/L	ND	5.0	03/16/10 10:57	
o-Xylene	ug/L	ND	5.0	03/16/10 10:57	
Toluene	ug/L	ND	5.0	03/16/10 10:57	
1,2-Dichloroethane-d4 (S)	%	98	70-130	03/16/10 10:57	
4-Bromofluorobenzene (S)	%	98	70-130	03/16/10 10:57	
Dibromofluoromethane (S)	%	100	70-130	03/16/10 10:57	
Toluene-d8 (S)	%	101	70-130	03/16/10 10:57	

LABORATORY CONTROL SAMPLE: 414877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	54.9	110	70-130	
Ethylbenzene	ug/L	50	57.3	115	70-130	
m&p-Xylene	ug/L	100	118	118	70-130	
Methyl-tert-butyl ether	ug/L	50	56.3	113	70-130	
Naphthalene	ug/L	50	60.9	122	70-130	
o-Xylene	ug/L	50	61.5	123	70-130	
Toluene	ug/L	50	56.6	113	70-130	
1,2-Dichloroethane-d4 (S)	%			102	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			99	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 414878 414879

Parameter	Units	9265040001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	50	50	49.1	47.7	98	95	70-130	3	30	
Ethylbenzene	ug/L	ND	50	50	52.7	51.6	105	103	70-130	2	30	
m&p-Xylene	ug/L	ND	100	100	108	105	108	105	70-130	3	30	
Methyl-tert-butyl ether	ug/L	ND	50	50	49.0	44.7	98	89	70-130	9	30	
Naphthalene	ug/L	ND	50	50	57.6	54.1	115	108	70-130	6	30	
o-Xylene	ug/L	ND	50	50	53.5	53.2	107	106	70-130	1	30	
Toluene	ug/L	ND	50	50	50.7	49.6	101	99	70-130	2	30	

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 414878 414879

Parameter	Units	9265040001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane-d4 (S)	%						103	101	70-130			
4-Bromofluorobenzene (S)	%						101	101	70-130			
Dibromofluoromethane (S)	%						101	101	70-130			
Toluene-d8 (S)	%						99	99	70-130			

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(704)875-9092

QUALIFIERS

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Pace Analytical®
www.pacelabs.com

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Edge Field Fuel & Conv. 3
Pace Project No.: 9265041

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9265041001	**FS-17**	EPA 8260	MSV/10277		
9265041002	**FS-18**	EPA 8260	MSV/10277		
9265041003	**FS-19**	EPA 8260	MSV/10277		
9265041004	**FS-20**	EPA 8260	MSV/10277		
9265041005	**FS-21**	EPA 8260	MSV/10277		
9265041006	**FS-22**	EPA 8260	MSV/10277		
9265041007	**FS-23**	EPA 8260	MSV/10277		
9265041008	**FS-24**	EPA 8260	MSV/10277		
9265041009	**FS-25**	EPA 8260	MSV/10277		

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1351820

Section A Required Client Information:

Company: Environmental Compliance Services
Address: 13504 S. Point Blvd Unit F.
Charlotte, NC 28273
Email To: RHutchins@ecsconsult.com
Phone: 7045837211 Fax:
Requested Due Date/TAT: 7 Day

Section B Required Project Information:

Report To: Randall Hutchins
Copy To:
Purchase Order No.:
Project Name: Edgefield Fuel Convenience 3
Project Number: 14-21651

Section C Invoice Information:

Attention: Christina White
Company Name: ECS
Address: 595 Silver St Agawam MA 01001
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 2071-H3

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: BTEX, MN Screen	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ES-17	WT	G			3/9	9:40		3				X						X		92650411 087
2	ES-18						10:10														088
3	ES-19						10:50														089
4	ES-20						12:35														084
5	ES-21						13:10														085
6	ES-22						13:25														086
7	ES-23						14:20														087
8	ES-24						14:50														088
9	ES-25						15:20														089
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Report J values	Ryan Byas / ECS	3/9/10	18:50	D Moody - Pace	3-10-10	15:25	
	D Moody	3-10-10	16:30	[illegible] - Pace	3/10/10	16:30	3.4 4c 4c

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas
SIGNATURE of SAMPLER: Ryan Byas
DATE Signed (MM/DD/YY): 03/09/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical

Sample Condition Upon Receipt

Client Name: Env. Compliance Project # 9265041

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace Other ____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Optional
Proj. Due Date: N/A
Proj. Name: N/A

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other ____

Thermometer Used T060 Type of Ice: (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature 5.4 Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: Gmm 3/10/10

		Comments:
Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☒No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): N/A		

Client Notification/ Resolution:

Field Data Required? Y / N / N/A

Person Contacted: ____ Date/Time: ____

Comments/ Resolution: ____

Project Manager Review: RLH Date: 3/12/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

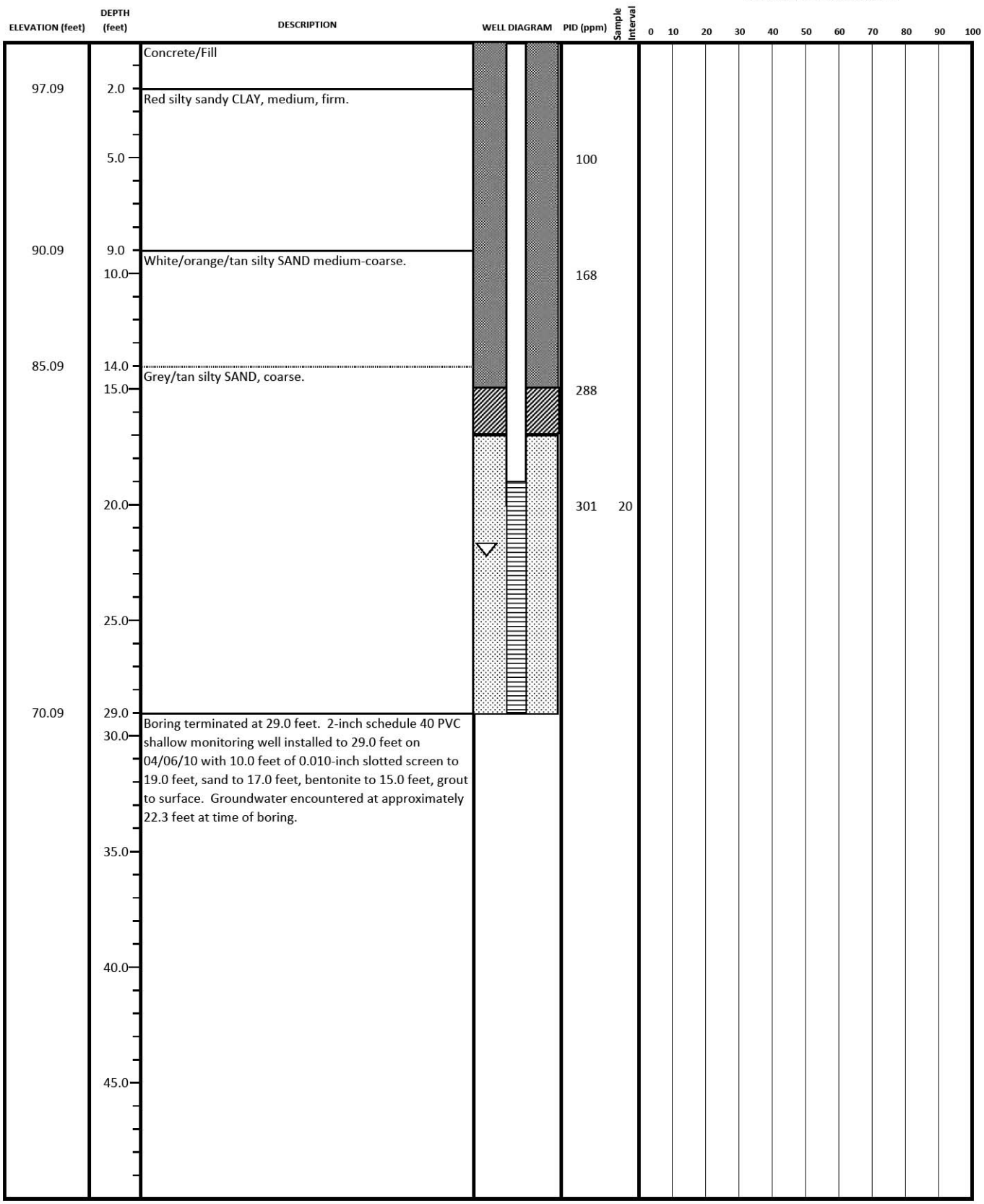
APPENDIX D

Boring Logs

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 99.09 feet
Height of Riser: 98.61 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

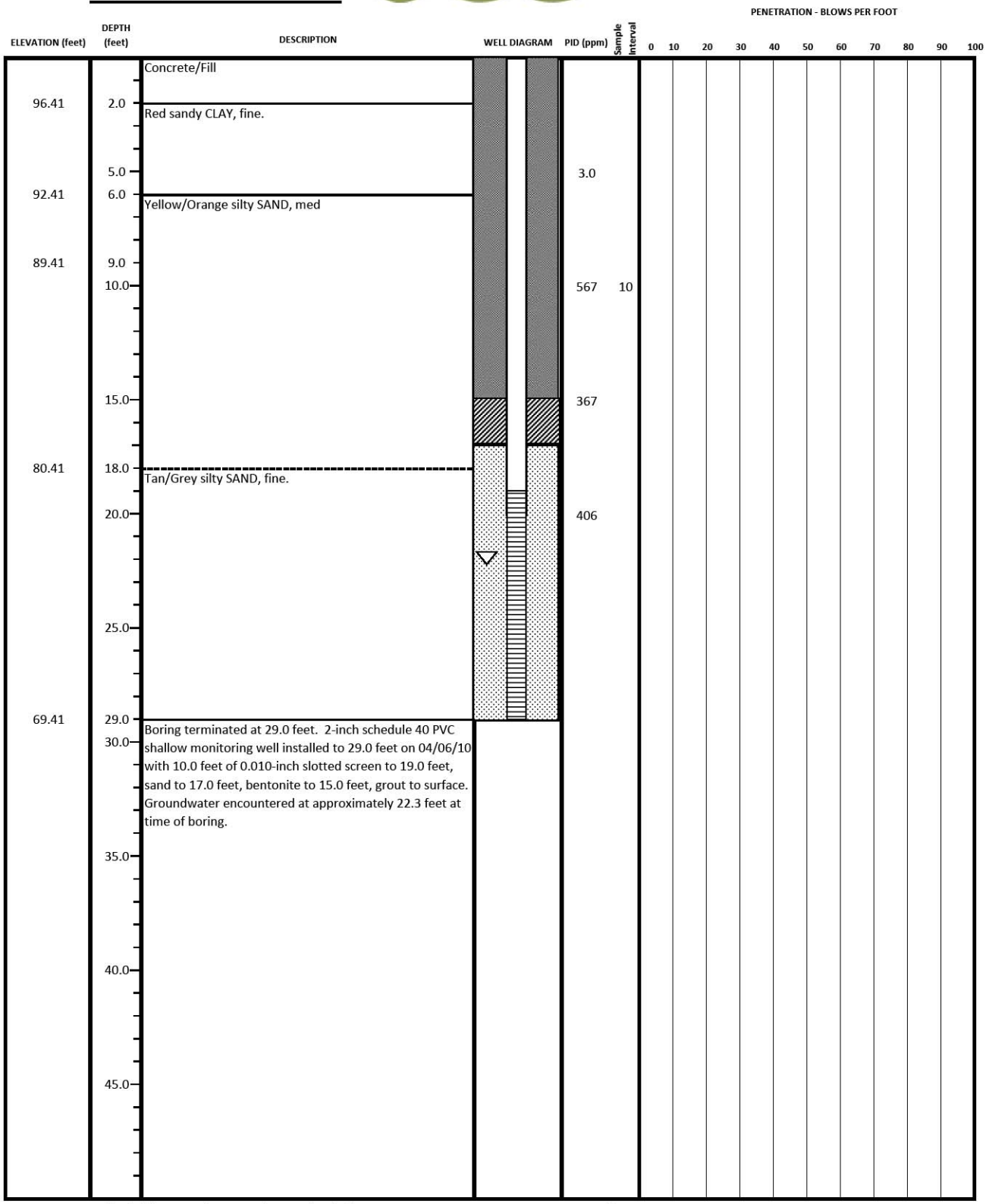
BORING NUMBER: MW-4
DATE STARTED: 4/6/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 98.41 feet
Height of Riser: 98.05 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

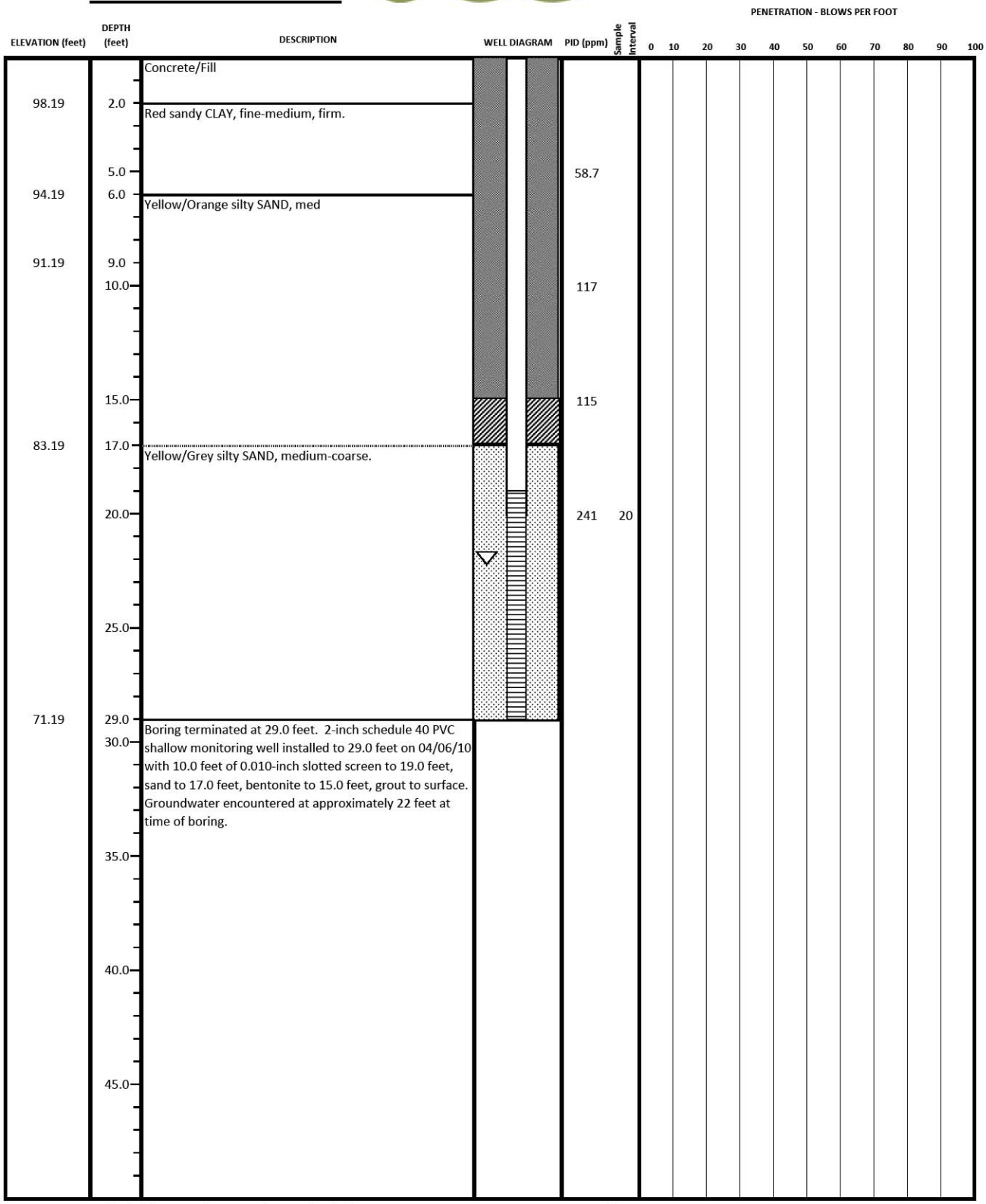
BORING NUMBER: MW-5
DATE STARTED: 4/6/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.19 feet
Height of Riser: 99.82 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

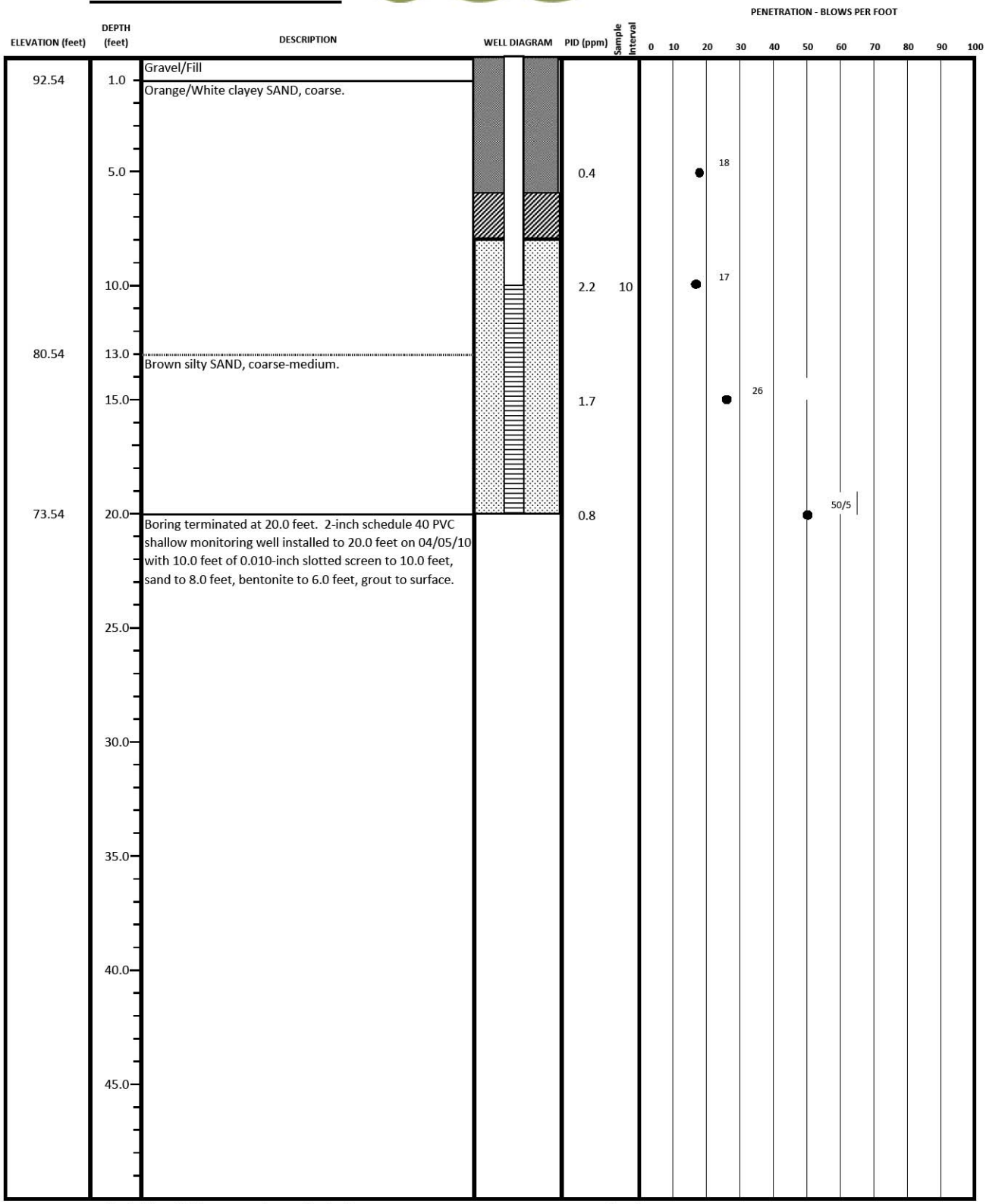
BORING NUMBER: MW-6
DATE STARTED: 4/6/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 93.54 feet
Height of Riser: 93.32 feet



REMARKS: Drilled with Deidrich D-120 using 4.25" ID hollow stem augers.
Borehole diameter approximately 7.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Brian Thomas
LOGGED BY: ECS - R. Byas

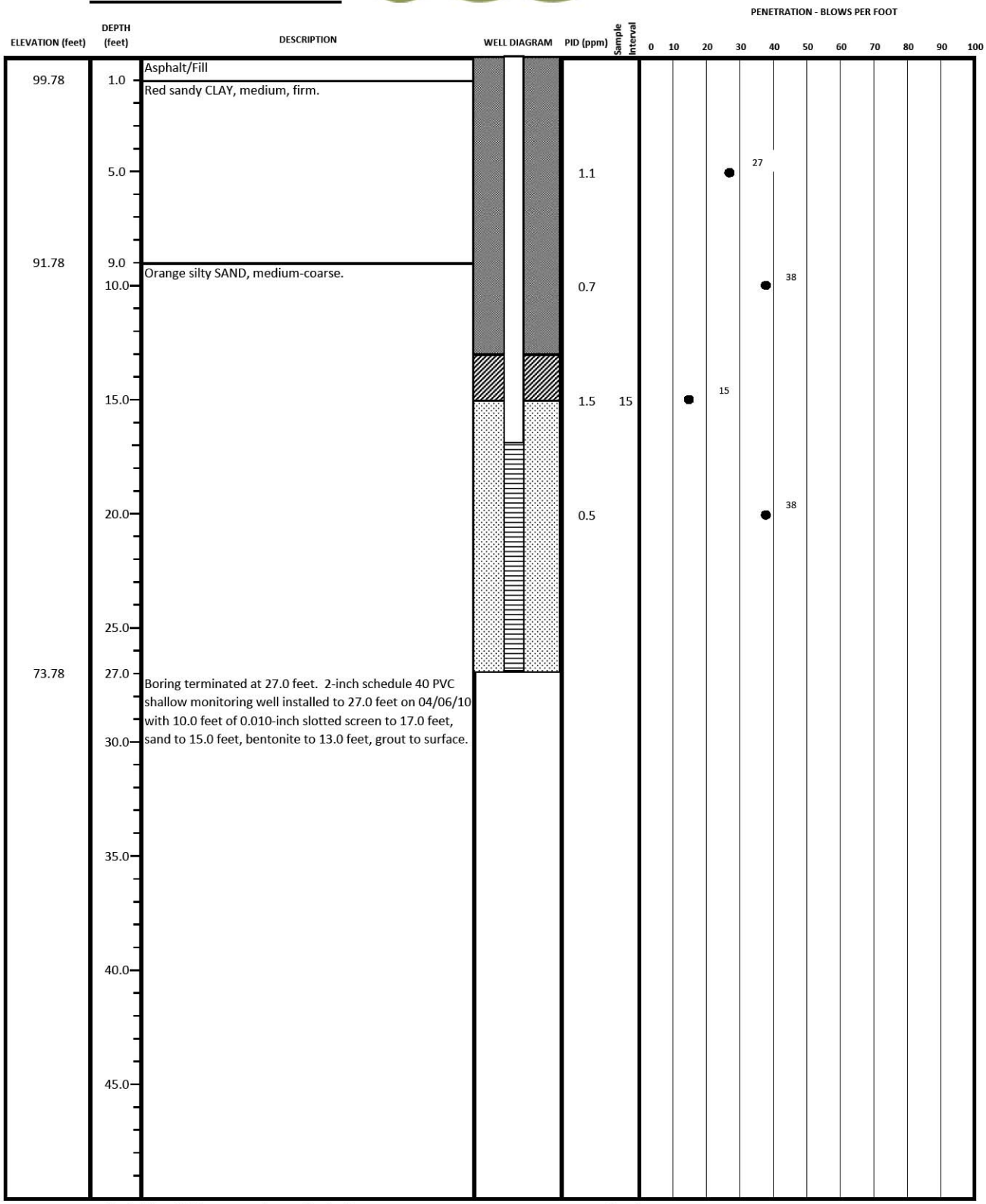
BORING NUMBER: MW-7
DATE STARTED: 4/5/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.78 feet
Height of Riser: 100.59 feet



REMARKS: Drilled with Deidrich D-120 using 4.25" ID hollow stem augers.
Borehole diameter approximately 7.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Brian Thomas
LOGGED BY: ECS - R. Byas

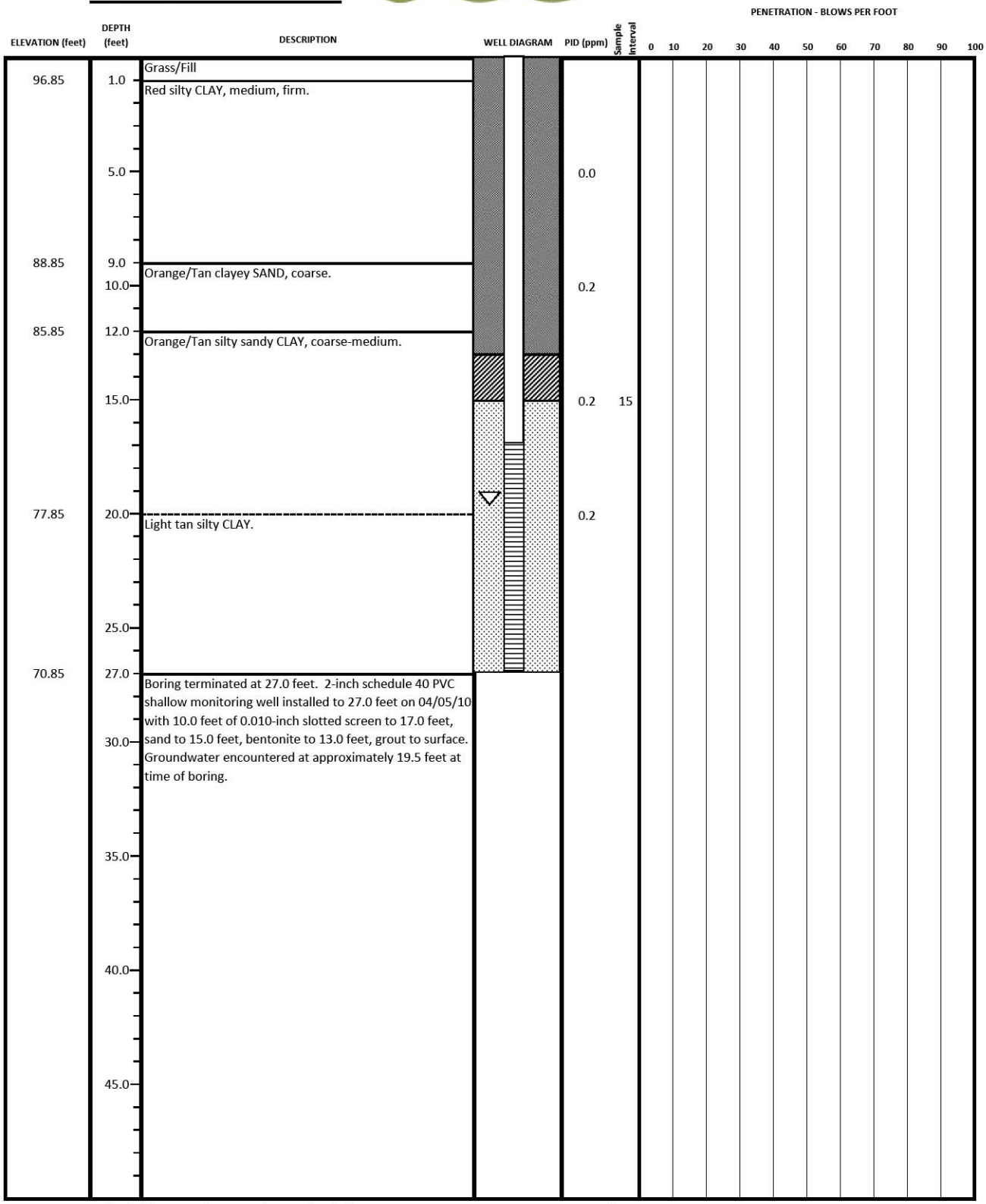
BORING NUMBER: MW-8
DATE STARTED: 4/6/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 97.85 feet
Height of Riser: 97.55 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

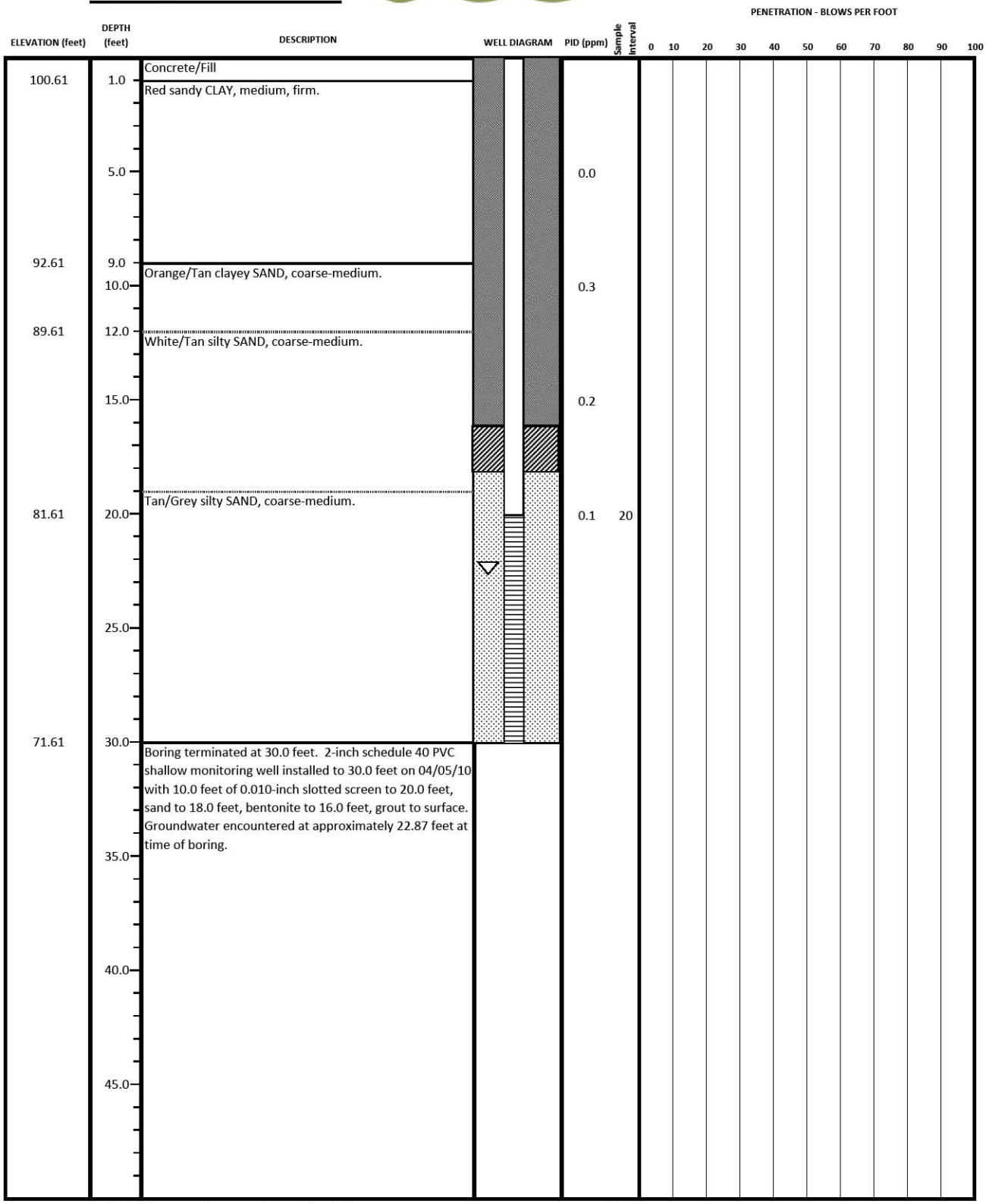
BORING NUMBER: MW-9
DATE STARTED: 4/5/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 101.61 feet
Height of Riser: 101.31 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

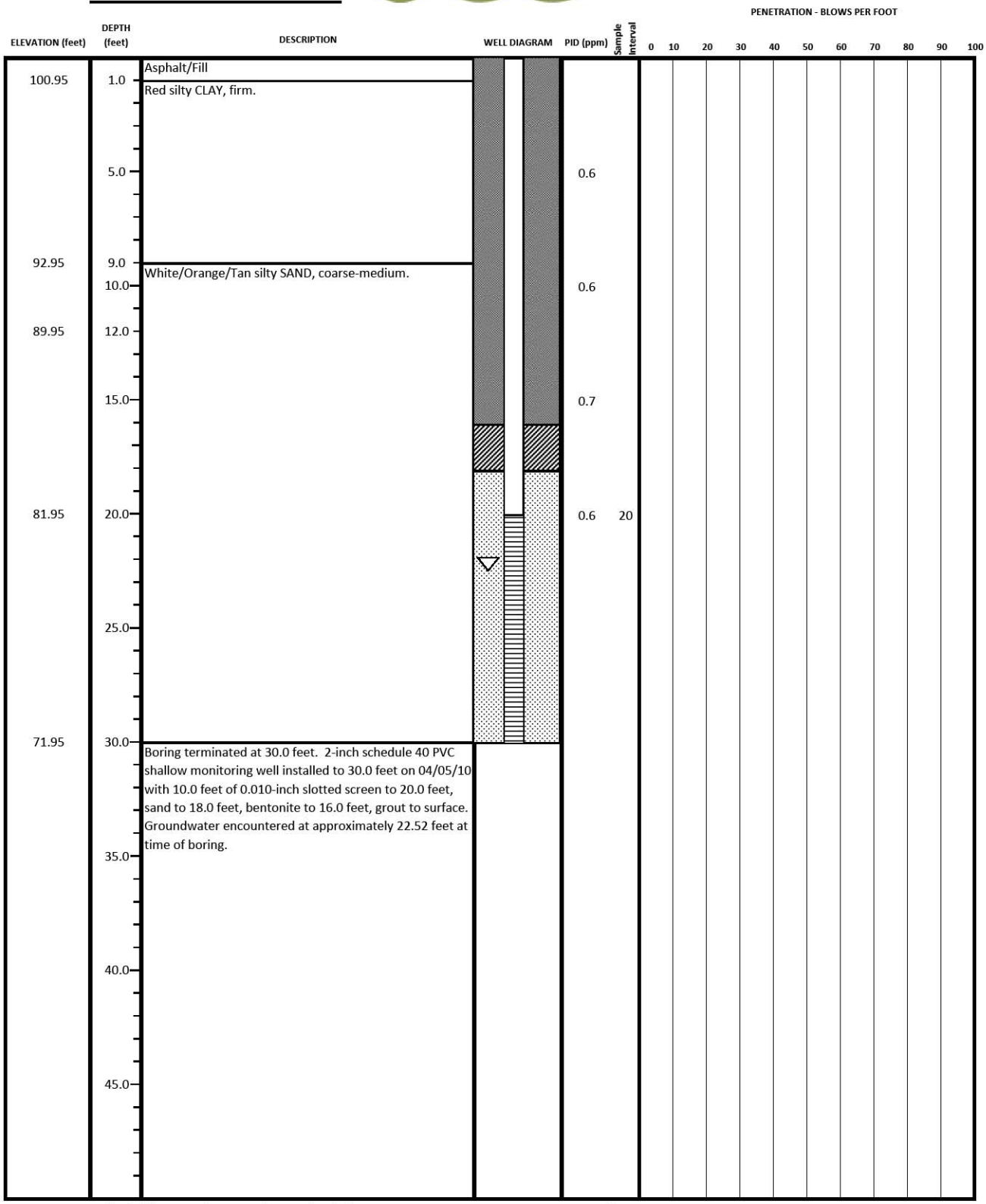
BORING NUMBER: MW-10
DATE STARTED: 4/5/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 101.95 feet
Height of Riser: 101.65 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

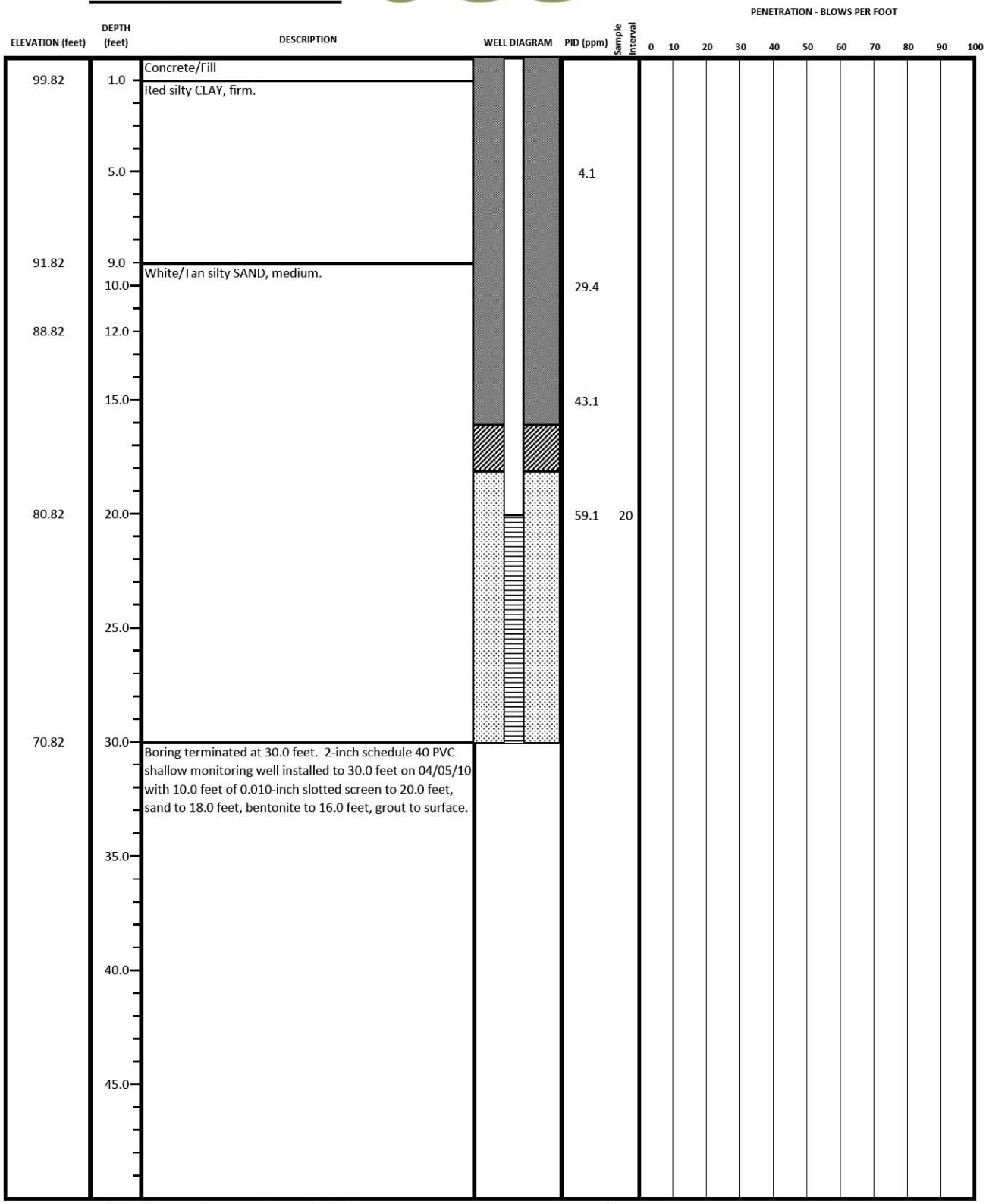
BORING NUMBER: MW-11
DATE STARTED: 4/5/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.82 feet
Height of Riser: 100.55 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

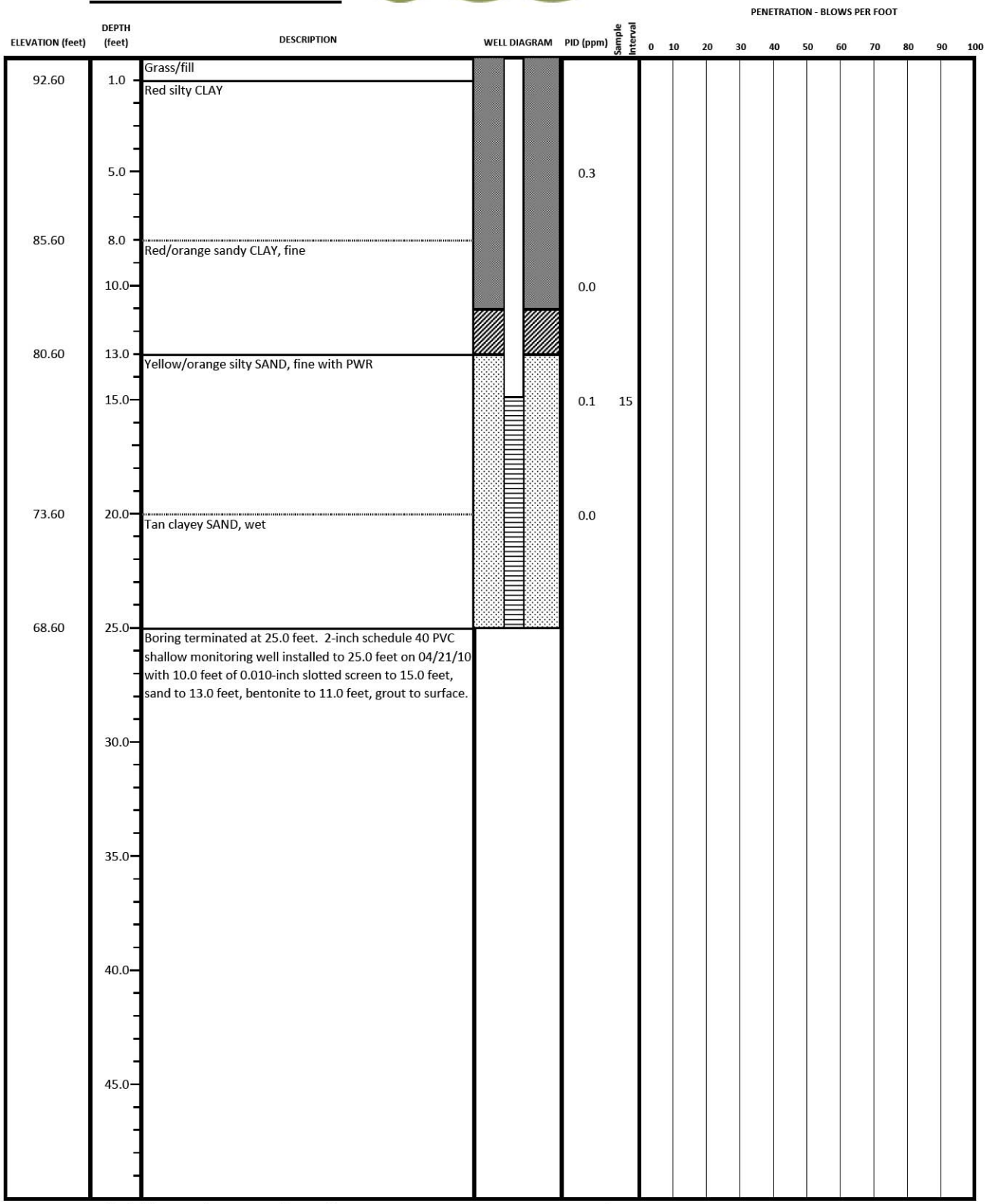
BORING NUMBER: MW-12
DATE STARTED: 4/5/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 93.60 feet
Height of Riser: 93.20 feet



REMARKS: Drilled with Geoprobe 6620 DT using 3.25" ID HS augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/21/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Vince
LOGGED BY: ECS - R. Byas

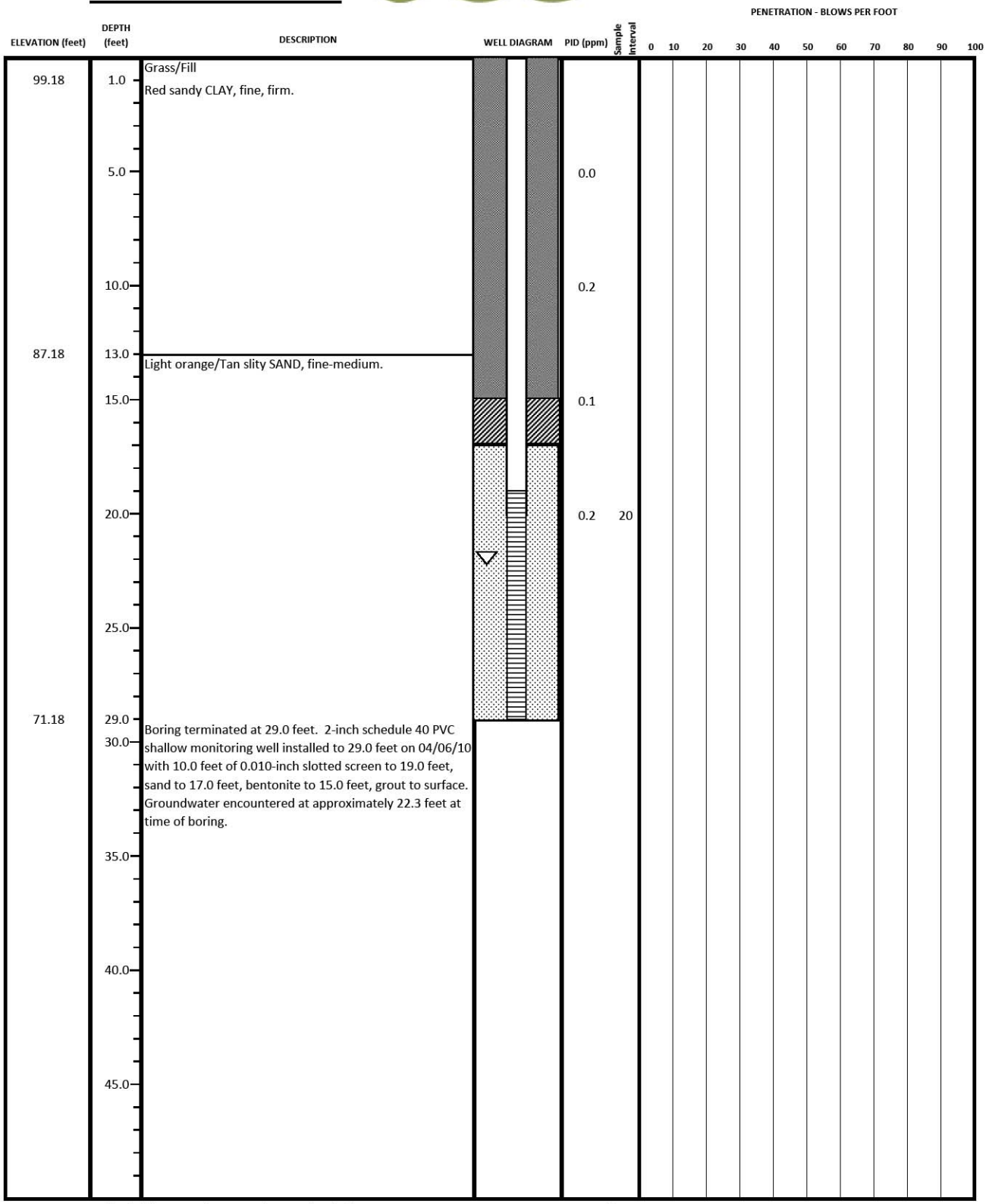
BORING NUMBER: MW-13
DATE STARTED: 4/21/2010
DATE COMPLETED: 4/21/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.18 feet
Height of Riser: 100.05 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

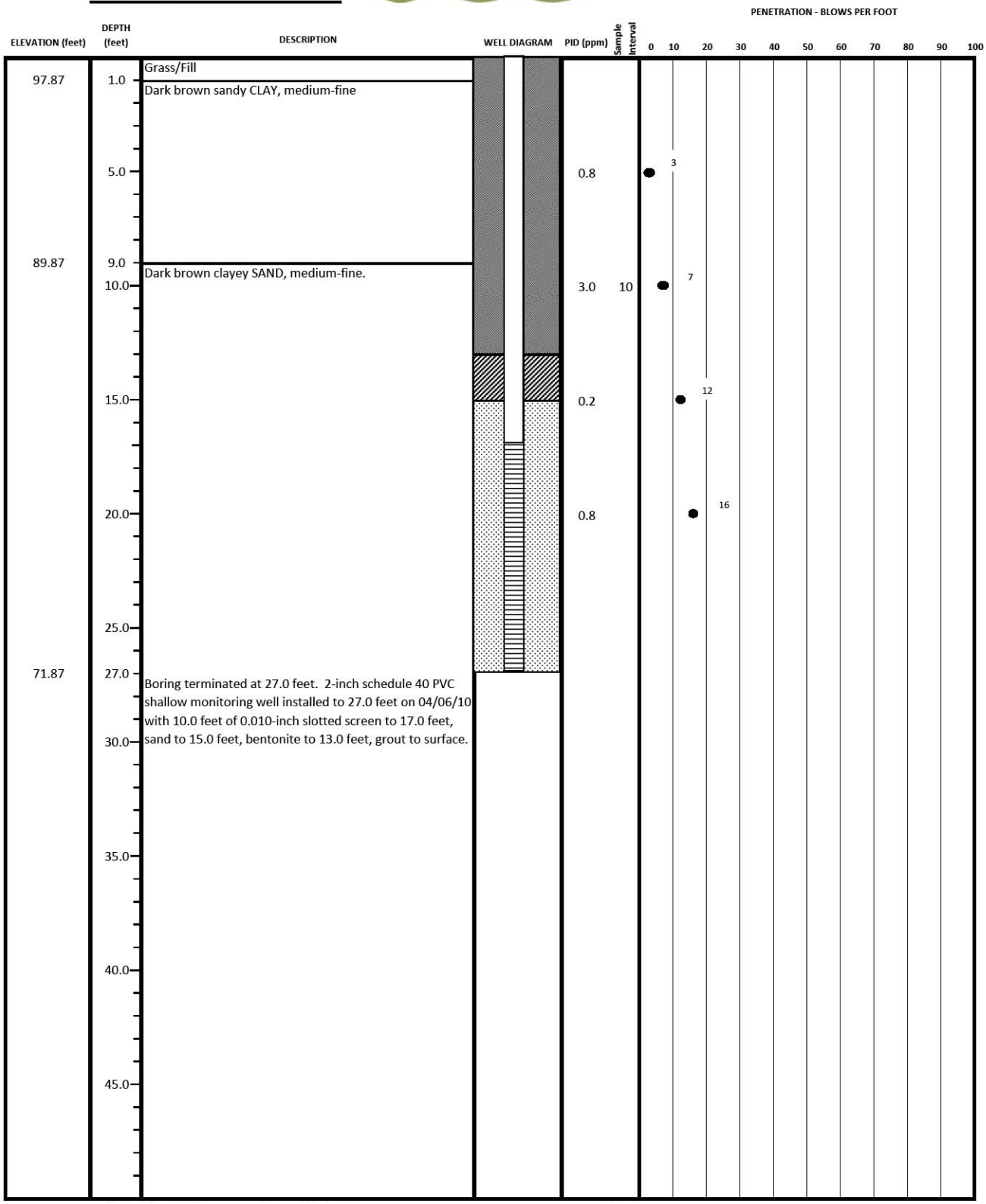
BORING NUMBER: MW-14
DATE STARTED: 4/5/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 98.87 feet
Height of Riser: 98.47 feet



REMARKS: Drilled with Deidrich D-120 using 4.25" ID hollow stem augers.
Borehole diameter approximately 7.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Brian Thomas
LOGGED BY: ECS - R. Byas

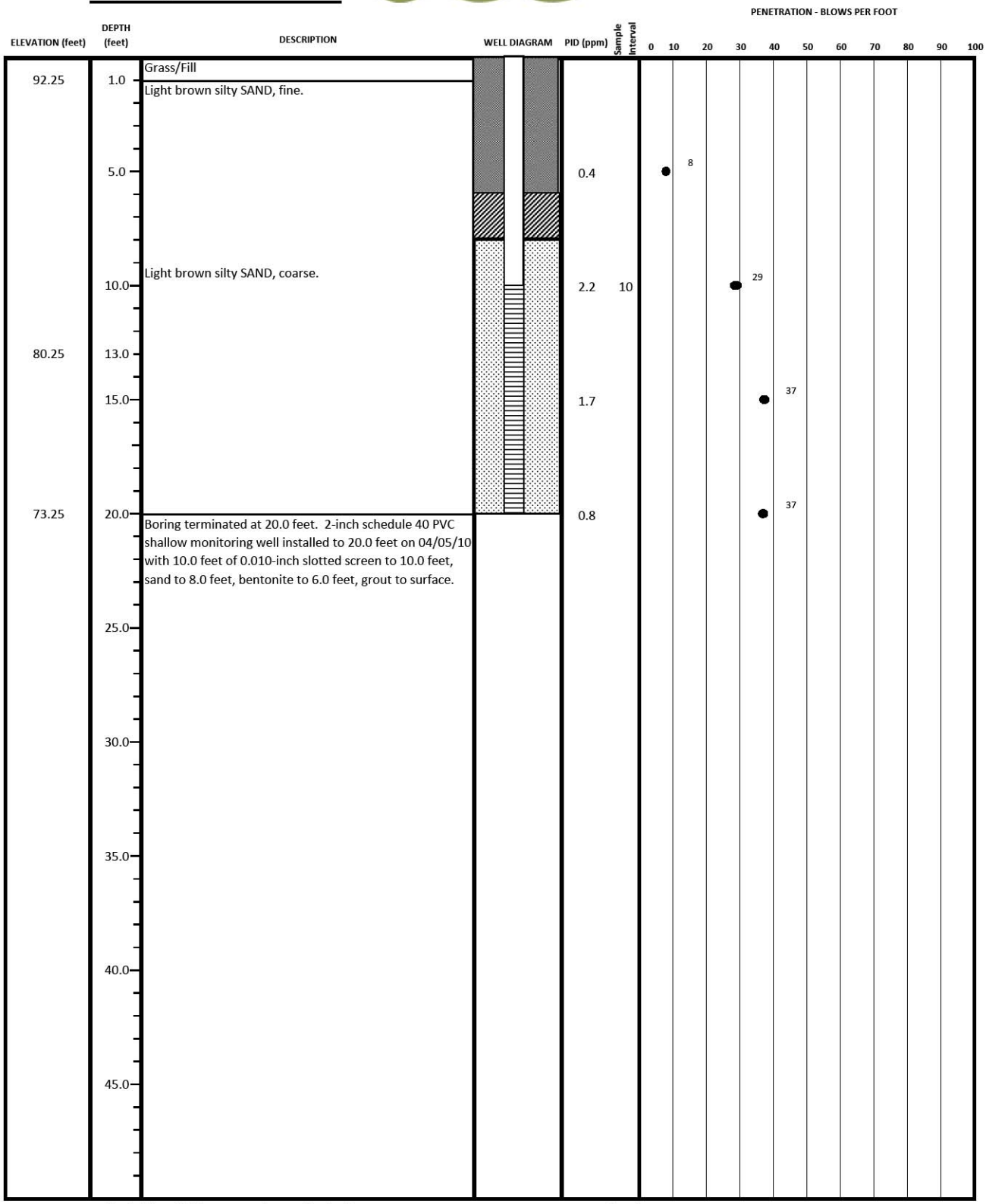
BORING NUMBER: MW-15
DATE STARTED: 4/6/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 93.25 feet
Height of Riser: 93.01 feet



REMARKS: Drilled with Deidrich D-120 using 4.25" ID hollow stem augers.
Borehole diameter approximately 7.5".
Flush-mount cover and locking cap installed on 04/06/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Brian Thomas
LOGGED BY: ECS - R. Byas

BORING NUMBER: MW-7
DATE STARTED: 4/5/2010
DATE COMPLETED: 4/6/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

APPENDIX E

Well Construction Records

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE	0.5	0.5
GRAVEL	0.5	1.0
RED CLAY	9.0	10.0
TAN SILTY CLAY	19.0	29.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-4 BENTONITE SEAL FROM 15.0 TO 17.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 04/07/10
29.0 ft. Date Completed: 04/07/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 19.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 19.0 ft. and 29.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 17.0 ft. to 29.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 15.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Signed: _____ Date: 04/27/10
Well Driller

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
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Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE	0.5	0.5
GRAVEL	0.5	1.0
RED CLAY	10.0	11.0
TAN SILTY CLAY	18.0	29.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-5 BENTONITE SEAL FROM 15.0 TO 17.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 29.0 ft. Date Started: 04/07/10 Date Completed: 04/07/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 19.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 19.0 ft. and 29.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 17.0 ft. to 29.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 15.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Date: 04/27/10
Well Driller

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE. PROTECT. PROSPER.

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE	0.5	0.5
GRAVEL	0.5	1.0
RED CLAY	9.0	10.0
TAN SILTY CLAY	19.0	29.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-6 BENTONITE SEAL FROM 15.0 TO 17.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 29.0 ft. Date Started: 04/07/10 Date Completed: 04/07/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 19.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 19.0 ft. and 29.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 17.0 ft. to 29.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 15.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Signed: _____ Well Driller Date: 04/27/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN SAND	7.0	7.0
BROWN SANDY CLAY	8.0	15.0
TAN SANDY CLAY	15.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-7 BENTONITE SEAL FROM 5.0 TO 8.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 04/05/10 Date Completed: 04/07/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 8.0 ft. to 20.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 5.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Brian Thomas Date: 04/27/10
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

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Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN SAND	7.0	7.0
BROWN SANDY CLAY	8.0	15.0
TAN SANDY CLAY	12.0	27.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-8 BENTONITE SEAL FROM 12.0 TO 15.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 27.0 ft. Date Started: 04/05/10 Date Completed: 04/07/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 17.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 17.0 ft. and 27.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 20.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 15.0 ft. to 27.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Brian Thomas Date: 04/27/10
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
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Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BLACK TOPSOIL	1.0	1.0
RED/ORANGE CLAY	9.0	10.0
TAN SILTY CLAY	17.0	27.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-9 BENTONITE SEAL FROM 13.0 TO 15.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 27.0 ft. Date Started: 04/05/10 Date Completed: 04/07/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 17.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 17.0 ft. and 27.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 15.0 ft. to 27.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 13.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Signed _____ Date: 04/27/10
Well Driller

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE. PROTECT. PROSPER.

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE	0.5	0.5
GRAVEL	0.5	1.0
RED/ORANGE CLAY	10.0	11.0
TAN SILTY CLAY	19.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-10 BENTONITE SEAL FROM 16.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30.0 ft. Date Started: 04/05/10 Date Completed: 04/06/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 16.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Signed: _____ Date: 04/27/10
Well Driller

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
ASPHALT	0.5	0.5
GRAVEL	0.5	1.0
RED/ORANGE CLAY	13.0	14.0
TAN SILTY CLAY	17.0	31.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-11 BENTONITE SEAL FROM 17.0 TO 19.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 04/05/10
31.0 ft. Date Completed: 04/06/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 21.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 21.0 ft. and 31.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 23.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 19.0 ft. to 31.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 17.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Well Driller Date: 04/27/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
CONCRETE	0.5	0.5
GRAVEL	0.5	1.0
RED/ORANGE CLAY	10.0	11.0
TAN SILTY CLAY	19.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-12 BENTONITE SEAL FROM 16.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 04/05/10
30.0 ft. Date Completed: 04/06/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 16.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Signed: _____ Well Driller Date: 04/27/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC
PROMOTE. PROTECT. PROSPER.

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONV, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TOPSOIL	1.0	1.0
ORANGE SILTY CLAY	24.0	25.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-13 BENTONITE SEAL FROM 11.0 TO 13.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 25.0 ft. Date Started: 04/21/10 Date Completed: 04/21/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 15.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 15.0 ft. and 25.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 13.0 ft. to 25.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 11.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: VINCE FEDERLE **CERT. NO.:** 01930
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Vincent R. Federle Well Driller Date: 04/26/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE. PROTECT. PROSPER.

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BLACK TOPSOIL	1.0	1.0
RED CLAY	9.0	10.0
TAN SILTY CLAY	20.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-14 BENTONITE SEAL FROM 16.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 04/05/10
30.0 ft. Date Completed: 04/06/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 16.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Date: 04/27/10
Well Driller

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE. PROTECT. PROSPER.

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN SAND	7.0	7.0
BROWN SANDY CLAY	8.0	15.0
TAN SANDY CLAY	12.0	27.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-15 BENTONITE SEAL FROM 12.0 TO 15.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 04/05/10
27.0 ft. Date Completed: 04/07/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 17.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 17.0 ft. and 27.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 20.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 15.0 ft. to 27.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Brian Thomas (Well Driller) Date: 04/27/10

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN SAND	7.0	7.0
BROWN SANDY CLAY	8.0	15.0
TAN SANDY CLAY	5.0	20.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-16 BENTONITE SEAL FROM 5.0 TO 8.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 04/05/10
20.0 ft. Date Completed: 04/07/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 8.0 ft. to 20.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 5.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Brian Thomas Date: 04/27/10
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

APPENDIX F

Laboratory Report – Soil Samples –
April 5 & 6, 2010

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April 15, 2010

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EF&C 3 14-211651
Pace Project No.: 9266893

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on April 07, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Charlotte Certification IDs

9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Connecticut Certification #: PH-0104
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
North Carolina Wastewater Certification #: 12
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
West Virginia Certification #: 357

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SAMPLE SUMMARY

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9266893001	MW-4-20'	Solid	04/06/10 14:45	04/07/10 17:15
9266893002	MW-5-10'	Solid	04/06/10 13:45	04/07/10 17:15
9266893003	MW-7-10'	Solid	04/06/10 17:15	04/07/10 17:15
9266893004	MW-8-15'	Solid	04/06/10 11:40	04/07/10 17:15
9266893005	MW-9-15'	Solid	04/05/10 12:40	04/07/10 17:15
9266893006	MW-10-20'	Solid	04/05/10 15:10	04/07/10 17:15
9266893007	MW-11-20'	Solid	04/05/10 15:15	04/07/10 17:15
9266893008	MW-12-20'	Solid	04/05/10 15:20	04/07/10 17:15
9266893009	MW-14-20'	Solid	04/05/10 17:10	04/07/10 17:15
9266893010	MW-15-10'	Solid	04/05/10 16:10	04/07/10 17:15
9266893011	MW-16-10'	Solid	04/05/10 16:05	04/07/10 17:15
9266893012	MW-6	Solid	04/06/10 11:45	04/07/10 17:15

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SAMPLE ANALYTE COUNT

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9266893001	**MW-4-20'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893002	**MW-5-10'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893003	**MW-7-10'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893004	**MW-8-15'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893005	**MW-9-15'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893006	**MW-10-20'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893007	**MW-11-20'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893008	**MW-12-20'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893009	**MW-14-20'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893010	**MW-15-10'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893011	**MW-16-10'**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C
9266893012	**MW-6**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	TNM	1	PASI-C

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ANALYTICAL RESULTS

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Sample: MW-4-20' **Lab ID: 9266893001** Collected: 04/06/10 14:45 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	**34.6**	ug/kg	2.6	0.83	1		04/10/10 12:27	71-43-2	
Ethylbenzene	**2.1J**	ug/kg	2.6	0.93	1		04/10/10 12:27	100-41-4	
Methyl-tert-butyl ether	**55.7**	ug/kg	2.6	0.78	1		04/10/10 12:27	1634-04-4	
Naphthalene	ND	ug/kg	2.6	0.62	1		04/10/10 12:27	91-20-3	
Toluene	**1.3J**	ug/kg	2.6	0.93	1		04/10/10 12:27	108-88-3	
m&p-Xylene	**1.9J**	ug/kg	5.2	1.9	1		04/10/10 12:27	1330-20-7	
o-Xylene	ND	ug/kg	2.6	0.99	1		04/10/10 12:27	95-47-6	
Dibromofluoromethane (S)	99	%	79-116		1		04/10/10 12:27	1868-53-7	
Toluene-d8 (S)	100	%	88-110		1		04/10/10 12:27	2037-26-5	
4-Bromofluorobenzene (S)	97	%	74-115		1		04/10/10 12:27	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	69-121		1		04/10/10 12:27	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.6**	%	0.10	0.10	1		04/08/10 17:21		

Sample: MW-5-10' **Lab ID: 9266893002** Collected: 04/06/10 13:45 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	**188**	ug/kg	5.4	1.7	1		04/11/10 23:39	71-43-2	
Ethylbenzene	**27.5**	ug/kg	5.4	1.9	1		04/11/10 23:39	100-41-4	
Methyl-tert-butyl ether	**56.8**	ug/kg	5.4	1.6	1		04/11/10 23:39	1634-04-4	
Naphthalene	ND	ug/kg	5.4	1.3	1		04/11/10 23:39	91-20-3	
Toluene	**191**	ug/kg	5.4	1.9	1		04/11/10 23:39	108-88-3	
m&p-Xylene	**98.4**	ug/kg	10.8	3.9	1		04/11/10 23:39	1330-20-7	
o-Xylene	**40.4**	ug/kg	5.4	2.1	1		04/11/10 23:39	95-47-6	
Dibromofluoromethane (S)	103	%	79-116		1		04/11/10 23:39	1868-53-7	
Toluene-d8 (S)	101	%	88-110		1		04/11/10 23:39	2037-26-5	
4-Bromofluorobenzene (S)	102	%	74-115		1		04/11/10 23:39	460-00-4	
1,2-Dichloroethane-d4 (S)	124	%	69-121		1		04/11/10 23:39	17060-07-0	S2
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**23.3**	%	0.10	0.10	1		04/08/10 17:09		

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ANALYTICAL RESULTS

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Sample: MW-7-10' **Lab ID: 9266893003** Collected: 04/06/10 17:15 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	5.0	1.6	1		04/10/10 09:25	71-43-2	
Ethylbenzene	ND	ug/kg	5.0	1.8	1		04/10/10 09:25	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.5	1		04/10/10 09:25	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1.2	1		04/10/10 09:25	91-20-3	
Toluene	ND	ug/kg	5.0	1.8	1		04/10/10 09:25	108-88-3	
m&p-Xylene	ND	ug/kg	10.1	3.6	1		04/10/10 09:25	1330-20-7	
o-Xylene	ND	ug/kg	5.0	1.9	1		04/10/10 09:25	95-47-6	
Dibromofluoromethane (S)	107	%	79-116		1		04/10/10 09:25	1868-53-7	
Toluene-d8 (S)	99	%	88-110		1		04/10/10 09:25	2037-26-5	
4-Bromofluorobenzene (S)	96	%	74-115		1		04/10/10 09:25	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	69-121		1		04/10/10 09:25	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.6**	%	0.10	0.10	1		04/08/10 17:10		

Sample: MW-8-15' **Lab ID: 9266893004** Collected: 04/06/10 11:40 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	5.5	1.8	1		04/10/10 12:08	71-43-2	
Ethylbenzene	ND	ug/kg	5.5	2.0	1		04/10/10 12:08	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.5	1.6	1		04/10/10 12:08	1634-04-4	
Naphthalene	ND	ug/kg	5.5	1.3	1		04/10/10 12:08	91-20-3	
Toluene	ND	ug/kg	5.5	2.0	1		04/10/10 12:08	108-88-3	
m&p-Xylene	ND	ug/kg	11.0	3.9	1		04/10/10 12:08	1330-20-7	
o-Xylene	ND	ug/kg	5.5	2.1	1		04/10/10 12:08	95-47-6	
Dibromofluoromethane (S)	102	%	79-116		1		04/10/10 12:08	1868-53-7	
Toluene-d8 (S)	100	%	88-110		1		04/10/10 12:08	2037-26-5	
4-Bromofluorobenzene (S)	98	%	74-115		1		04/10/10 12:08	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	69-121		1		04/10/10 12:08	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**22.9**	%	0.10	0.10	1		04/08/10 17:10		

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ANALYTICAL RESULTS

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Sample: MW-9-15' **Lab ID: 9266893005** Collected: 04/05/10 12:40 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	5.7	1.8	1		04/09/10 23:04	71-43-2	
Ethylbenzene	ND	ug/kg	5.7	2.0	1		04/09/10 23:04	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.7	1.7	1		04/09/10 23:04	1634-04-4	
Naphthalene	ND	ug/kg	5.7	1.4	1		04/09/10 23:04	91-20-3	
Toluene	ND	ug/kg	5.7	2.0	1		04/09/10 23:04	108-88-3	
m&p-Xylene	ND	ug/kg	11.3	4.1	1		04/09/10 23:04	1330-20-7	
o-Xylene	ND	ug/kg	5.7	2.1	1		04/09/10 23:04	95-47-6	
Dibromofluoromethane (S)	105	%	79-116		1		04/09/10 23:04	1868-53-7	
Toluene-d8 (S)	100	%	88-110		1		04/09/10 23:04	2037-26-5	
4-Bromofluorobenzene (S)	98	%	74-115		1		04/09/10 23:04	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	69-121		1		04/09/10 23:04	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.6**	%	0.10	0.10	1		04/08/10 17:11		

Sample: MW-10-20' **Lab ID: 9266893006** Collected: 04/05/10 15:10 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	5.1	1.6	1		04/09/10 23:22	71-43-2	
Ethylbenzene	ND	ug/kg	5.1	1.8	1		04/09/10 23:22	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.1	1.5	1		04/09/10 23:22	1634-04-4	
Naphthalene	ND	ug/kg	5.1	1.2	1		04/09/10 23:22	91-20-3	
Toluene	ND	ug/kg	5.1	1.8	1		04/09/10 23:22	108-88-3	
m&p-Xylene	ND	ug/kg	10.3	3.7	1		04/09/10 23:22	1330-20-7	
o-Xylene	ND	ug/kg	5.1	1.9	1		04/09/10 23:22	95-47-6	
Dibromofluoromethane (S)	102	%	79-116		1		04/09/10 23:22	1868-53-7	
Toluene-d8 (S)	100	%	88-110		1		04/09/10 23:22	2037-26-5	
4-Bromofluorobenzene (S)	98	%	74-115		1		04/09/10 23:22	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	69-121		1		04/09/10 23:22	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.9**	%	0.10	0.10	1		04/08/10 17:11		

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ANALYTICAL RESULTS

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Sample: MW-11-20' **Lab ID: 9266893007** Collected: 04/05/10 15:15 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	5.3	1.7	1		04/10/10 08:12	71-43-2	
Ethylbenzene	ND	ug/kg	5.3	1.9	1		04/10/10 08:12	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.3	1.6	1		04/10/10 08:12	1634-04-4	
Naphthalene	ND	ug/kg	5.3	1.3	1		04/10/10 08:12	91-20-3	
Toluene	ND	ug/kg	5.3	1.9	1		04/10/10 08:12	108-88-3	
m&p-Xylene	ND	ug/kg	10.7	3.8	1		04/10/10 08:12	1330-20-7	
o-Xylene	ND	ug/kg	5.3	2.0	1		04/10/10 08:12	95-47-6	
Dibromofluoromethane (S)	107	%	79-116		1		04/10/10 08:12	1868-53-7	
Toluene-d8 (S)	101	%	88-110		1		04/10/10 08:12	2037-26-5	
4-Bromofluorobenzene (S)	98	%	74-115		1		04/10/10 08:12	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	69-121		1		04/10/10 08:12	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.4**	%	0.10	0.10	1		04/08/10 17:11		

Sample: MW-12-20' **Lab ID: 9266893008** Collected: 04/05/10 15:20 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	**4.0J**	ug/kg	5.0	1.6	1		04/10/10 12:45	71-43-2	
Ethylbenzene	**4.9J**	ug/kg	5.0	1.8	1		04/10/10 12:45	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.5	1		04/10/10 12:45	1634-04-4	
Naphthalene	**2.2J**	ug/kg	5.0	1.2	1		04/10/10 12:45	91-20-3	
Toluene	ND	ug/kg	5.0	1.8	1		04/10/10 12:45	108-88-3	
m&p-Xylene	**20.7**	ug/kg	10.0	3.6	1		04/10/10 12:45	1330-20-7	
o-Xylene	**2.4J**	ug/kg	5.0	1.9	1		04/10/10 12:45	95-47-6	
Dibromofluoromethane (S)	100	%	79-116		1		04/10/10 12:45	1868-53-7	
Toluene-d8 (S)	101	%	88-110		1		04/10/10 12:45	2037-26-5	
4-Bromofluorobenzene (S)	100	%	74-115		1		04/10/10 12:45	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	69-121		1		04/10/10 12:45	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**17.0**	%	0.10	0.10	1		04/08/10 17:11		

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ANALYTICAL RESULTS

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Sample: MW-14-20' **Lab ID: 9266893009** Collected: 04/05/10 17:10 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	5.8	1.9	1		04/10/10 08:30	71-43-2	
Ethylbenzene	ND	ug/kg	5.8	2.1	1		04/10/10 08:30	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.8	1.7	1		04/10/10 08:30	1634-04-4	
Naphthalene	ND	ug/kg	5.8	1.4	1		04/10/10 08:30	91-20-3	
Toluene	ND	ug/kg	5.8	2.1	1		04/10/10 08:30	108-88-3	
m&p-Xylene	ND	ug/kg	11.6	4.2	1		04/10/10 08:30	1330-20-7	
o-Xylene	ND	ug/kg	5.8	2.2	1		04/10/10 08:30	95-47-6	
Dibromofluoromethane (S)	105	%	79-116		1		04/10/10 08:30	1868-53-7	
Toluene-d8 (S)	101	%	88-110		1		04/10/10 08:30	2037-26-5	
4-Bromofluorobenzene (S)	99	%	74-115		1		04/10/10 08:30	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	69-121		1		04/10/10 08:30	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**30.6**	%	0.10	0.10	1		04/08/10 17:11		

Sample: MW-15-10' **Lab ID: 9266893010** Collected: 04/05/10 16:10 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	4.9	1.6	1		04/10/10 08:48	71-43-2	
Ethylbenzene	ND	ug/kg	4.9	1.8	1		04/10/10 08:48	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	4.9	1.5	1		04/10/10 08:48	1634-04-4	
Naphthalene	ND	ug/kg	4.9	1.2	1		04/10/10 08:48	91-20-3	
Toluene	ND	ug/kg	4.9	1.8	1		04/10/10 08:48	108-88-3	
m&p-Xylene	ND	ug/kg	9.8	3.5	1		04/10/10 08:48	1330-20-7	
o-Xylene	ND	ug/kg	4.9	1.9	1		04/10/10 08:48	95-47-6	
Dibromofluoromethane (S)	107	%	79-116		1		04/10/10 08:48	1868-53-7	
Toluene-d8 (S)	100	%	88-110		1		04/10/10 08:48	2037-26-5	
4-Bromofluorobenzene (S)	99	%	74-115		1		04/10/10 08:48	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	69-121		1		04/10/10 08:48	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.3**	%	0.10	0.10	1		04/08/10 17:12		

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ANALYTICAL RESULTS

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Sample: MW-16-10' **Lab ID: 9266893011** Collected: 04/05/10 16:05 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	5.0	1.6	1		04/10/10 09:06	71-43-2	
Ethylbenzene	ND	ug/kg	5.0	1.8	1		04/10/10 09:06	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1.5	1		04/10/10 09:06	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1.2	1		04/10/10 09:06	91-20-3	
Toluene	ND	ug/kg	5.0	1.8	1		04/10/10 09:06	108-88-3	
m&p-Xylene	ND	ug/kg	10	3.6	1		04/10/10 09:06	1330-20-7	
o-Xylene	ND	ug/kg	5.0	1.9	1		04/10/10 09:06	95-47-6	
Dibromofluoromethane (S)	107	%	79-116		1		04/10/10 09:06	1868-53-7	
Toluene-d8 (S)	101	%	88-110		1		04/10/10 09:06	2037-26-5	
4-Bromofluorobenzene (S)	96	%	74-115		1		04/10/10 09:06	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	69-121		1		04/10/10 09:06	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.8**	%	0.10	0.10	1		04/08/10 17:12		

Sample: MW-6 **Lab ID: 9266893012** Collected: 04/06/10 11:45 Received: 04/07/10 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260								
Benzene	**167**	ug/kg	4.7	1.5	1		04/10/10 13:03	71-43-2	
Ethylbenzene	**23.1**	ug/kg	4.7	1.7	1		04/10/10 13:03	100-41-4	
Methyl-tert-butyl ether	**49.7**	ug/kg	4.7	1.4	1		04/10/10 13:03	1634-04-4	
Naphthalene	ND	ug/kg	4.7	1.1	1		04/10/10 13:03	91-20-3	
Toluene	**149**	ug/kg	4.7	1.7	1		04/10/10 13:03	108-88-3	
m&p-Xylene	**79.1**	ug/kg	9.4	3.4	1		04/10/10 13:03	1330-20-7	
o-Xylene	**12.7**	ug/kg	4.7	1.8	1		04/10/10 13:03	95-47-6	
Dibromofluoromethane (S)	98	%	79-116		1		04/10/10 13:03	1868-53-7	
Toluene-d8 (S)	100	%	88-110		1		04/10/10 13:03	2037-26-5	
4-Bromofluorobenzene (S)	99	%	74-115		1		04/10/10 13:03	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	69-121		1		04/10/10 13:03	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**21.1**	%	0.10	0.10	1		04/08/10 17:12		

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QUALITY CONTROL DATA

Project: EF&C 3 14-211651
Pace Project No.: 9266893

QC Batch: MSV/10560
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9266893005, 9266893006

METHOD BLANK: 426784 Matrix: Solid
Associated Lab Samples: 9266893005, 9266893006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	04/09/10 17:53	
Ethylbenzene	ug/kg	ND	5.0	04/09/10 17:53	
m&p-Xylene	ug/kg	ND	10.0	04/09/10 17:53	
Methyl-tert-butyl ether	ug/kg	ND	5.0	04/09/10 17:53	
Naphthalene	ug/kg	ND	5.0	04/09/10 17:53	
o-Xylene	ug/kg	ND	5.0	04/09/10 17:53	
Toluene	ug/kg	ND	5.0	04/09/10 17:53	
1,2-Dichloroethane-d4 (S)	%	103	69-121	04/09/10 17:53	
4-Bromofluorobenzene (S)	%	98	74-115	04/09/10 17:53	
Dibromofluoromethane (S)	%	108	79-116	04/09/10 17:53	
Toluene-d8 (S)	%	100	88-110	04/09/10 17:53	

LABORATORY CONTROL SAMPLE: 426785

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	50.2	100	71-140	
Ethylbenzene	ug/kg	50	50.8	102	69-141	
m&p-Xylene	ug/kg	100	102	102	72-138	
Methyl-tert-butyl ether	ug/kg	50	49.3	99	2-138	
Naphthalene	ug/kg	50	54.7	109	61-138	
o-Xylene	ug/kg	50	51.4	103	74-137	
Toluene	ug/kg	50	49.8	100	69-139	
1,2-Dichloroethane-d4 (S)	%			97	69-121	
4-Bromofluorobenzene (S)	%			102	74-115	
Dibromofluoromethane (S)	%			99	79-116	
Toluene-d8 (S)	%			100	88-110	

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QUALITY CONTROL DATA

Project: EF&C 3 14-211651
Pace Project No.: 9266893

QC Batch: MSV/10561 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9266893001, 9266893003, 9266893004, 9266893007, 9266893009, 9266893010, 9266893011

METHOD BLANK: 426830 Matrix: Solid
Associated Lab Samples: 9266893001, 9266893003, 9266893004, 9266893007, 9266893009, 9266893010, 9266893011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	04/10/10 04:51	
Ethylbenzene	ug/kg	ND	5.0	04/10/10 04:51	
m&p-Xylene	ug/kg	ND	10.0	04/10/10 04:51	
Methyl-tert-butyl ether	ug/kg	ND	5.0	04/10/10 04:51	
Naphthalene	ug/kg	ND	5.0	04/10/10 04:51	
o-Xylene	ug/kg	ND	5.0	04/10/10 04:51	
Toluene	ug/kg	ND	5.0	04/10/10 04:51	
1,2-Dichloroethane-d4 (S)	%	101	69-121	04/10/10 04:51	
4-Bromofluorobenzene (S)	%	99	74-115	04/10/10 04:51	
Dibromofluoromethane (S)	%	105	79-116	04/10/10 04:51	
Toluene-d8 (S)	%	101	88-110	04/10/10 04:51	

LABORATORY CONTROL SAMPLE: 426831

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	50.1	100	71-140	
Ethylbenzene	ug/kg	50	49.6	99	69-141	
m&p-Xylene	ug/kg	100	98.0	98	72-138	
Methyl-tert-butyl ether	ug/kg	50	48.9	98	2-138	
Naphthalene	ug/kg	50	50.7	101	61-138	
o-Xylene	ug/kg	50	50.8	102	74-137	
Toluene	ug/kg	50	49.3	99	69-139	
1,2-Dichloroethane-d4 (S)	%			97	69-121	
4-Bromofluorobenzene (S)	%			102	74-115	
Dibromofluoromethane (S)	%			103	79-116	
Toluene-d8 (S)	%			99	88-110	

MATRIX SPIKE SAMPLE: 427259

Parameter	Units	9266893007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	ND	55	57.2	104	46-143	
Ethylbenzene	ug/kg	ND	55	59.9	109	70-130	
m&p-Xylene	ug/kg	ND	110	118	108	70-130	
Methyl-tert-butyl ether	ug/kg	ND	55	42.9	78	70-130	
Naphthalene	ug/kg	ND	55	37.3	68	70-130	M0
o-Xylene	ug/kg	ND	55	58.1	106	70-130	
Toluene	ug/kg	ND	55	57.7	105	38-145	
1,2-Dichloroethane-d4 (S)	%				98	69-121	
4-Bromofluorobenzene (S)	%				100	74-115	
Dibromofluoromethane (S)	%				101	79-116	

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QUALITY CONTROL DATA

Project: EF&C 3 14-211651
Pace Project No.: 9266893

MATRIX SPIKE SAMPLE: 427259

Parameter	Units	9266893007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Toluene-d8 (S)	%				99	88-110	

SAMPLE DUPLICATE: 427260

Parameter	Units	9266762003 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
m&p-Xylene	ug/kg	ND	ND		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Naphthalene	ug/kg	ND	ND		30	
o-Xylene	ug/kg	ND	ND		30	
Toluene	ug/kg	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	97	101	13		
4-Bromofluorobenzene (S)	%	97	100	15		
Dibromofluoromethane (S)	%	103	101	19		
Toluene-d8 (S)	%	99	100	17		

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QUALITY CONTROL DATA

Project: EF&C 3 14-211651
Pace Project No.: 9266893

QC Batch: MSV/10562 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9266893002, 9266893008, 9266893012

METHOD BLANK: 426832 Matrix: Solid
Associated Lab Samples: 9266893002, 9266893008, 9266893012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	04/10/10 04:33	
Ethylbenzene	ug/kg	ND	5.0	04/10/10 04:33	
m&p-Xylene	ug/kg	ND	10.0	04/10/10 04:33	
Methyl-tert-butyl ether	ug/kg	ND	5.0	04/10/10 04:33	
Naphthalene	ug/kg	1.2J	5.0	04/10/10 04:33	
o-Xylene	ug/kg	ND	5.0	04/10/10 04:33	
Toluene	ug/kg	ND	5.0	04/10/10 04:33	
1,2-Dichloroethane-d4 (S)	%	102	69-121	04/10/10 04:33	
4-Bromofluorobenzene (S)	%	97	74-115	04/10/10 04:33	
Dibromofluoromethane (S)	%	107	79-116	04/10/10 04:33	
Toluene-d8 (S)	%	101	88-110	04/10/10 04:33	

LABORATORY CONTROL SAMPLE: 426833

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	48.3	97	71-140	
Ethylbenzene	ug/kg	50	46.8	94	69-141	
m&p-Xylene	ug/kg	100	93.5	94	72-138	
Methyl-tert-butyl ether	ug/kg	50	46.2	92	2-138	
Naphthalene	ug/kg	50	47.8	96	61-138	
o-Xylene	ug/kg	50	47.9	96	74-137	
Toluene	ug/kg	50	47.3	95	69-139	
1,2-Dichloroethane-d4 (S)	%			97	69-121	
4-Bromofluorobenzene (S)	%			101	74-115	
Dibromofluoromethane (S)	%			103	79-116	
Toluene-d8 (S)	%			101	88-110	

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QUALITY CONTROL DATA

Project: EF&C 3 14-211651
Pace Project No.: 9266893

QC Batch: PMST/3117
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 9266893001

SAMPLE DUPLICATE: 425892

Parameter	Units	9266893001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.6	17.3	7	25	

SAMPLE DUPLICATE: 425918

Parameter	Units	9266903001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	6.0	5.9	1	25	

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QUALITY CONTROL DATA

Project: EF&C 3 14-211651
Pace Project No.: 9266893

QC Batch: PMST/3118
Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 9266893002, 9266893003, 9266893004, 9266893005, 9266893006, 9266893007, 9266893008, 9266893009, 9266893010, 9266893011, 9266893012

SAMPLE DUPLICATE: 425893

Parameter	Units	9266893002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.3	24.0	3	25	

SAMPLE DUPLICATE: 425894

Parameter	Units	9266866008 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	23.6	25.9	9	25	

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QUALIFIERS

Project: EF&C 3 14-211651
Pace Project No.: 9266893

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

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U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
S2	Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

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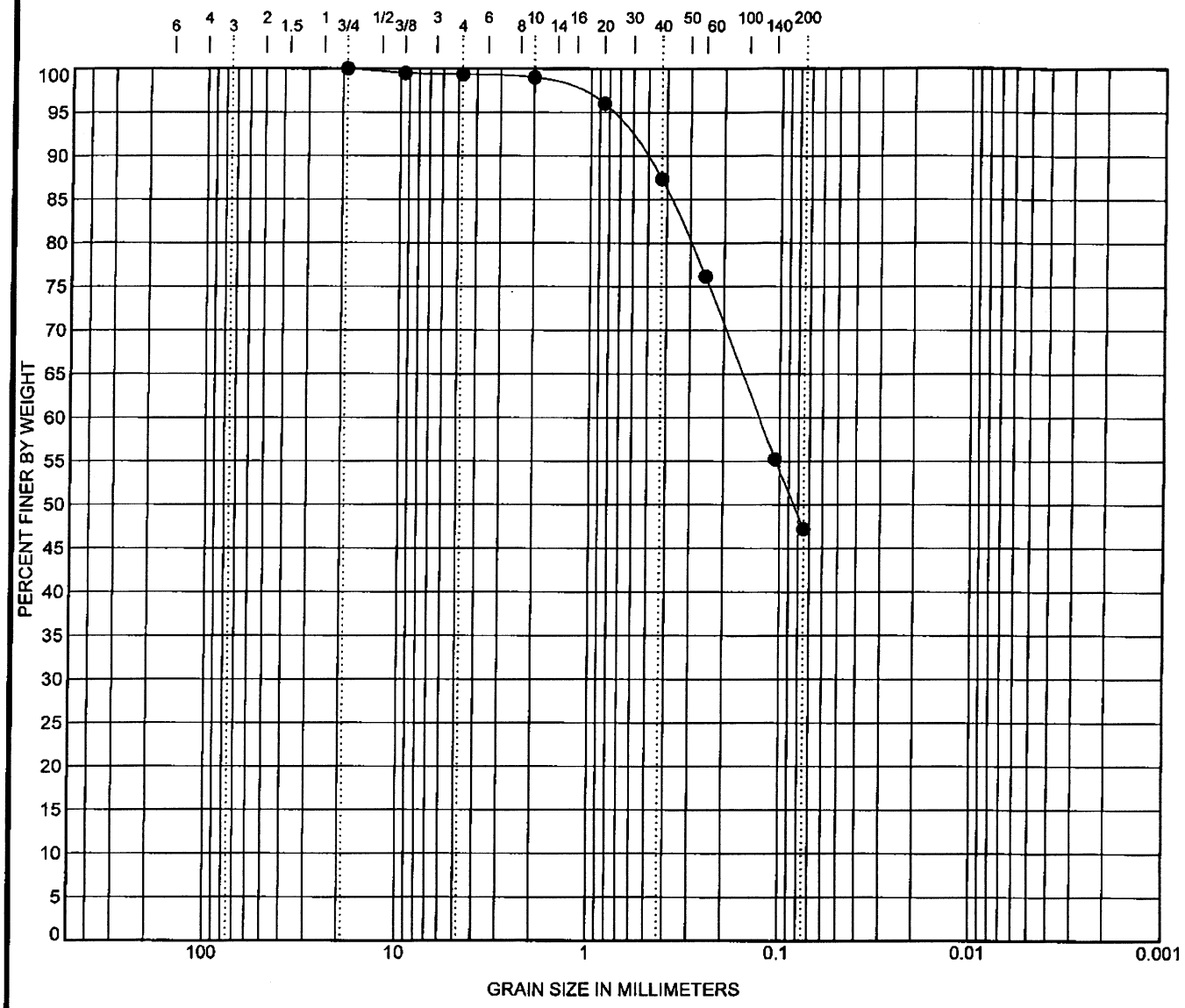
QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EF&C 3 14-211651
Pace Project No.: 9266893

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9266893001	**MW-4-20'**	EPA 8260	MSV/10561		
9266893002	**MW-5-10'**	EPA 8260	MSV/10562		
9266893003	**MW-7-10'**	EPA 8260	MSV/10561		
9266893004	**MW-8-15'**	EPA 8260	MSV/10561		
9266893005	**MW-9-15'**	EPA 8260	MSV/10560		
9266893006	**MW-10-20'**	EPA 8260	MSV/10560		
9266893007	**MW-11-20'**	EPA 8260	MSV/10561		
9266893008	**MW-12-20'**	EPA 8260	MSV/10562		
9266893009	**MW-14-20'**	EPA 8260	MSV/10561		
9266893010	**MW-15-10'**	EPA 8260	MSV/10561		
9266893011	**MW-16-10'**	EPA 8260	MSV/10561		
9266893012	**MW-6**	EPA 8260	MSV/10562		
9266893001	**MW-4-20'**	ASTM D2974-87	PMST/3117		
9266893002	**MW-5-10'**	ASTM D2974-87	PMST/3118		
9266893003	**MW-7-10'**	ASTM D2974-87	PMST/3118		
9266893004	**MW-8-15'**	ASTM D2974-87	PMST/3118		
9266893005	**MW-9-15'**	ASTM D2974-87	PMST/3118		
9266893006	**MW-10-20'**	ASTM D2974-87	PMST/3118		
9266893007	**MW-11-20'**	ASTM D2974-87	PMST/3118		
9266893008	**MW-12-20'**	ASTM D2974-87	PMST/3118		
9266893009	**MW-14-20'**	ASTM D2974-87	PMST/3118		
9266893010	**MW-15-10'**	ASTM D2974-87	PMST/3118		
9266893011	**MW-16-10'**	ASTM D2974-87	PMST/3118		
9266893012	**MW-6**	ASTM D2974-87	PMST/3118		

GRAIN SIZE DISTRIBUTION



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	MW-6	0.0						

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	MW-6	0.0	19	0.129			0.6	52.2	47.2	

SHIELD ENGINEERING, INC.

4301 Taggart Creek Road
Charlotte, NC 28208
Telephone: 704-394-6913
Toll Free: 800-395-5220
Fax: 704-394-6968

Pace Project No.: 9266893
Pace Lab ID: 9266893012
Pace Analytical
Shield Project No.: 1100026-01

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1351838

Section A Required Client Information:

Company: Environmental Compliance Services
Address: 13504 Point Blvd Unit F
Charlotte, NC 28273
Email To: RHutchins@ECSConsult.com
Phone: 704 583 2711 Fax:
Requested Due Date/TAT: Std.

Section B Required Project Information:

Report To: Randall Hutchins
Copy To:
Purchase Order No.:
Project Name: ER+C 3
Project Number: 14-211651

Section C Invoice Information:

Attention: Christina White
Company Name: ECS
Address: 5885 Riverside Ave Avon MA
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 2071-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: SC

Section D Required Client Information

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: BTEX MN	Irranize	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-4-20'	SL	G			4/6	14:45		4	X					X	X		X			92668930 01
2	MW-5-10'					4/6	13:45		4									X			002
3	MW-6 [redacted]'					4/6	11:45		X5									X	X		012
4	MW-7-10'					4/5	17:15		4									X			003
5	MW-8-15'					4/6	11:40		4									X			004
6	MW-9-15'					4/5	12:40											X			005
7	MW-10-20'					4/5	15:10											X			006
8	MW-11-20'					4/5	15:15											X			007
9	MW-12-20'					4/5	15:20											X			008
10	MW-14-20					4/5	17:10											X			009
11	MW-15-10'					4/5	16:10											X			010
12	MW-16-10'					4/5	16:05											X			011

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Report J values	Ryan Byars/ECS	4/7/10	15:10	D Moody - Pace	4-7-10	15:15				
	D Moody	4-7-10	17:15	[illegible] (Pace)	4/7/10	17:[illegible]	4.2	yes	no	yes

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byars
SIGNATURE of SAMPLER: Ryan Byars
DATE Signed (MM/DD/YY): 04/07/10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

PaceAnalytical

Sample Condition Upon Receipt

Client Name: EG   Project # 9266893

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other______

Custody Seal on Cooler/Box Present: ☐ yes ☑ no   Seals intact: ☐ yes ☑ no

Optional	
Proj. Due Date:	N/A
Proj. Name:	N/A

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other______

Thermometer Used T060   Type of Ice: (Wet) Blue None   ☑ Samples on ice, cooling process has begun

Cooler Temperature 4.9   Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: [initials] 4/7/10

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11. # date on kit for MW 4-20' 3/16/10 1428
Sample Labels match COC:	☐Yes ☑No ☐N/A	12. # 11 + # 12 bottles do not say 101 on them.
-Includes date/time/ID/Analysis Matrix:______		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13. ~~# 009 Grain size for MW-17 4/5/10 11:41~~ 4/7/10
All containers needing preservation are found to be in compliance with EPA recommendation.	~~☐Yes~~ ☑No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water) 4/7/10	☐Yes ☐No	Initial when completed No methanol in vial for kit for MW4-20'
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): N/A		

Client Notification/ Resolution: Field Data Required? Y / N / N/A

Person Contacted: ______ Date/Time: ______

Comments/ Resolution: ______

Project Manager Review: [signature]   Date: 4/8/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

SHIELD
ENGINEERING, INC.

May 13, 2010

Mr. Kevin Herring

Subject: **Laboratory Test Results**
Pace Job Number 9268879
Shield Job Number 1100026-01
LRF # 10-076

Dear Mr. Herring:

As requested Shield Engineering Inc., has completed the laboratory testing on the above referenced project. The test results for Grain Size Analysis are attached to this letter.

The laboratory tests were provided in accordance with the applicable ASTM Standards. The test samples were obtained by a representative of Shield Engineering, and then delivered to Shield's Charlotte, North Carolina laboratory for testing.

If you have any questions concerning our test results, please do not hesitate to call our office at (704) 394-6913.

Sincerely,

Shield Engineering, Inc.

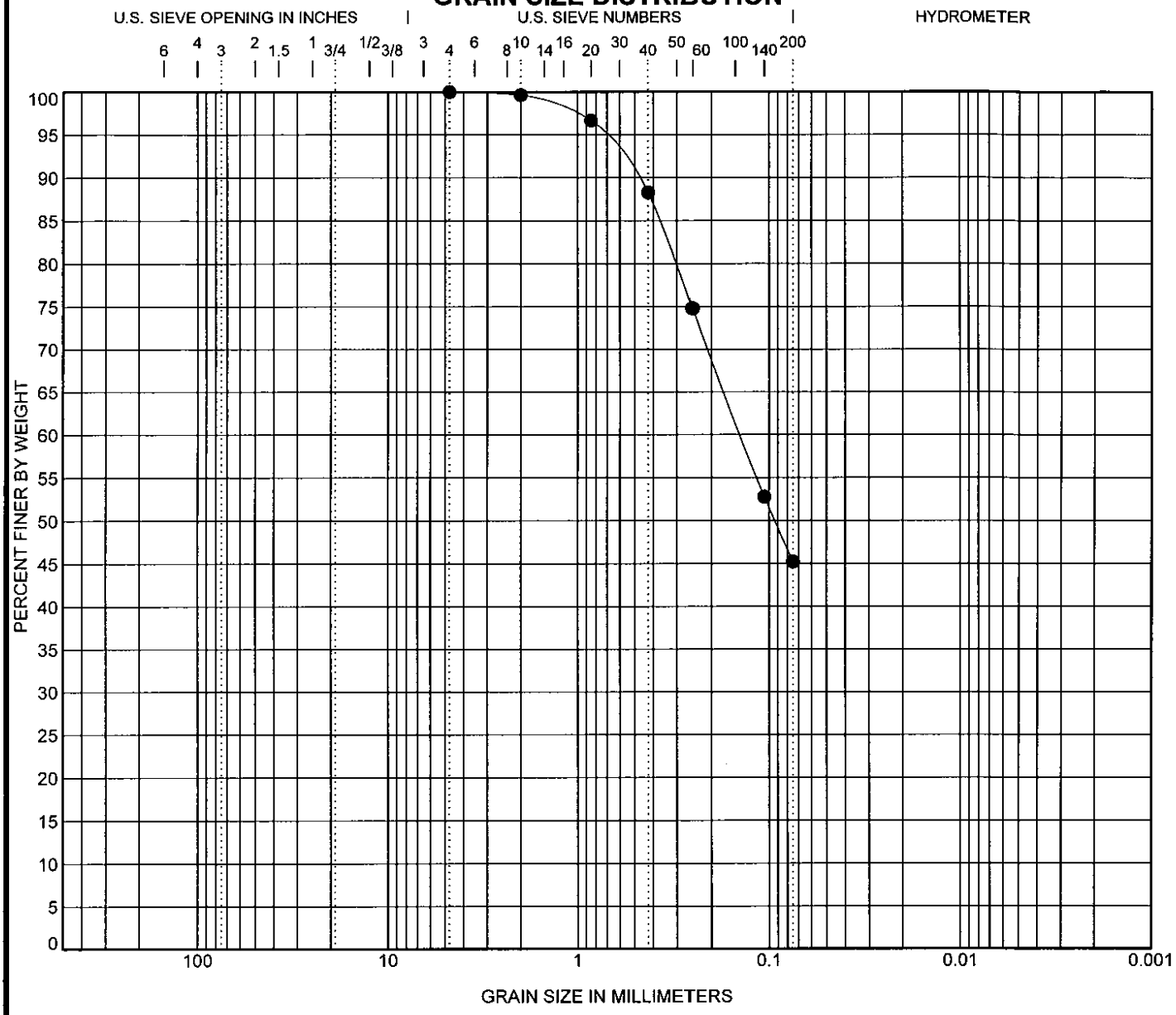
Josh Slusarczyk
Laboratory Manager

4301 Taggart Creek Road
Charlotte, NC 28208

www.shieldengineering.com

Telephone 704.394.6913
Fax 704.394.6968

GRAIN SIZE DISTRIBUTION



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	**MW-11**	**20'**						

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-11**	**20'**	**4.75**	**0.14**			**0.0**	**54.8**	**45.2**	

SHIELD ENGINEERING, INC.
4301 Taggart Creek Road
Charlotte, NC 28208
Telephone: 704-394-6913
Toll Free: 800-395-5220
Fax: 704-394-6968

Pace Project No.: 9268879
Pace Lab ID: 9268879001
Pace Analytical
Shield Project No.: 1100026-01

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1351266

Section A — **Required** Client Information:

Company:	ECS
Address:	13504 S. Point Blvd. Charlotte, NC
Email To:	rhutchins@ecsconsult.com
Phone:	704-583-2711
Fax:	
Requested Due Date/TAT:	Standard

Section B — **Required** Project Information:

Report To:	Randy Hutchins
Copy To:	
Purchase Order No.:	14-211651
Project Name:	Edgefield Fuel and Convenience 3
Project Number:	14-211651

Section C — Invoice Information:

Attention:	Christina White
Company Name:	ECS
Address:	Agawam, MA
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	2071-12

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: SC

Section D — **Required** Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: Grain Size	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-11-20'	SL	G			4/5	15:15		1	X								X	X		92488879 001
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ryan Byas / ECS	5/6/10	11:15	Moody - Pace	5-6-10	15:05	
	Moody	5-6-10	16:00	Moore Pace	5/6	1600	6D 4 N 4

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas

SIGNATURE of SAMPLER: Ryan Byas DATE Signed (MM/DD/YY): 05/06/10

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical

Sample Condition Upon Receipt

Client Name: ECS Project # 9268879

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Optional
Proj. Due Date: N/A
Proj. Name: N/A

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other____

Thermometer Used T060 Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 6.0 Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and initials of person examining contents: TMS/6

Comments:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☑No ☐N/A (TMS/6)	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☐Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:____		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): N/A		

Client Notification/ Resolution: Field Data Required? Y / N / N/A

Person Contacted:____ Date/Time:____

Comments/ Resolution:____

Project Manager Review: [signature] Date: 5/7/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

APPENDIX G

Laboratory Report – Soil Samples –
April 21, 2010

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

April 27, 2010

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on April 22, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

Charlotte Certification IDs
9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Connecticut Certification #: PH-0104
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
North Carolina Wastewater Certification #: 12
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
West Virginia Certification #: 357

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9267990001	**MW-13**	Solid	04/21/10 11:09	04/22/10 17:22

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2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9267990001	**MW-13**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	KDF	1	PASI-C

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

Sample: MW-13 **Lab ID: 9267990001** Collected: 04/21/10 11:09 Received: 04/22/10 17:22 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	5.3	1.7	1		04/23/10 23:38	71-43-2	
Ethylbenzene	ND	ug/kg	5.3	1.9	1		04/23/10 23:38	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.3	1.6	1		04/23/10 23:38	1634-04-4	
Naphthalene	ND	ug/kg	5.3	1.3	1		04/23/10 23:38	91-20-3	
Toluene	ND	ug/kg	5.3	1.9	1		04/23/10 23:38	108-88-3	
m&p-Xylene	ND	ug/kg	10.7	3.8	1		04/23/10 23:38	1330-20-7	
o-Xylene	ND	ug/kg	5.3	2.0	1		04/23/10 23:38	95-47-6	
Dibromofluoromethane (S)	105	%	70-130		1		04/23/10 23:38	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		04/23/10 23:38	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		04/23/10 23:38	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		04/23/10 23:38	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.8**	%	0.10	0.10	1		04/26/10 09:22		

Pace Analytical Services, Inc.
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Asheville, NC 28804
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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

QC Batch: MSV/10718
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9267990001

METHOD BLANK: 433158 Matrix: Solid
Associated Lab Samples: 9267990001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	5.0	04/23/10 16:37	
Ethylbenzene	ug/kg	ND	5.0	04/23/10 16:37	
m&p-Xylene	ug/kg	ND	10.0	04/23/10 16:37	
Methyl-tert-butyl ether	ug/kg	ND	5.0	04/23/10 16:37	
Naphthalene	ug/kg	ND	5.0	04/23/10 16:37	
o-Xylene	ug/kg	ND	5.0	04/23/10 16:37	
Toluene	ug/kg	ND	5.0	04/23/10 16:37	
1,2-Dichloroethane-d4 (S)	%	102	70-130	04/23/10 16:37	
4-Bromofluorobenzene (S)	%	99	70-130	04/23/10 16:37	
Dibromofluoromethane (S)	%	105	70-130	04/23/10 16:37	
Toluene-d8 (S)	%	102	70-130	04/23/10 16:37	

LABORATORY CONTROL SAMPLE: 433159

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	50	57.8	116	70-130	
Ethylbenzene	ug/kg	50	59.0	118	70-130	
m&p-Xylene	ug/kg	100	120	120	70-130	
Methyl-tert-butyl ether	ug/kg	50	58.9	118	70-130	
Naphthalene	ug/kg	50	60.3	121	70-130	
o-Xylene	ug/kg	50	61.5	123	70-130	
Toluene	ug/kg	50	57.8	116	70-130	
1,2-Dichloroethane-d4 (S)	%			97	70-130	
4-Bromofluorobenzene (S)	%			97	70-130	
Dibromofluoromethane (S)	%			98	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE SAMPLE: 433593

Parameter	Units	9267990001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	ND	52.6	54.7	104	70-130	
Ethylbenzene	ug/kg	ND	52.6	60.0	114	70-130	
m&p-Xylene	ug/kg	ND	105	124	118	70-130	
Methyl-tert-butyl ether	ug/kg	ND	52.6	49.8	95	70-130	
Naphthalene	ug/kg	ND	52.6	55.8	106	70-130	
o-Xylene	ug/kg	ND	52.6	60.4	115	70-130	
Toluene	ug/kg	ND	52.6	58.2	110	70-130	
1,2-Dichloroethane-d4 (S)	%				92	70-130	
4-Bromofluorobenzene (S)	%				103	70-130	
Dibromofluoromethane (S)	%				88	70-130	

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

MATRIX SPIKE SAMPLE: 433593

Parameter	Units	9267990001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 433592

Parameter	Units	9267900001 Result	Dup Result	RPD	Max RPD	Qualifiers
Benzene	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
m&p-Xylene	ug/kg	ND	ND		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Naphthalene	ug/kg	ND	6.7		30	
o-Xylene	ug/kg	ND	ND		30	
Toluene	ug/kg	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	109	121	32		
4-Bromofluorobenzene (S)	%	88	79	11		
Dibromofluoromethane (S)	%	102	123	39		
Toluene-d8 (S)	%	99	94	16		

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

QC Batch: PMST/3155
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 9267990001

SAMPLE DUPLICATE: 433506

Parameter	Units	9267678002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	21.8	19.9	9	25	

SAMPLE DUPLICATE: 433507

Parameter	Units	9268046006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.3	19.2	5	25	

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QUALIFIERS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9267990

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9267990001	**MW-13**	EPA 8260	MSV/10718		
9267990001	**MW-13**	ASTM D2974-87	PMST/3155		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	Page: 1 of 1
Company: Environmental Complianeverv	Report To: Randall Hutchins	Attention: Christina White	1351835
Address: 13504 S. PointBlvd unit F	Copy To:	Company Name: ECS	REGULATORY AGENCY
Charlotte, NC 28273		Address: 588 Silver St Agawam MA 01001	NPDES / GROUND WATER / DRINKING WATER
Email To: RHutchins@ecsconsult.com	Purchase Order No.:	Pace Quote Reference:	✓ UST / RCRA / OTHER
Phone: 7045832711 Fax:	Project Name: Edgefield Fuel Conv. 3	Pace Project Manager: Kevin Herring	Site Location STATE: SC
Requested Due Date/TAT:	Project Number: 14-21651	Pace Profile #: 2071 - 14 (BH)	

Requested Analysis Filtered (Y/N)

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

9267990

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	BTEX, M, N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-13	SL	G			4/21	11:05		4	Y					X	X			X		001
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Report "J" values	Ryan Byas / ECS	4/22/10	17:22	[signature] Pace	4/22/10	1722	5.6	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas

SIGNATURE of SAMPLER: Ryan Byas DATE Signed (MM/DD/YY): 04/22/10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical

Sample Condition Upon Receipt

Client Name: Environmental Compliance Serv Project # 9267990

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace Other ____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other ____

Thermometer Used T060 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 5.6 Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Optional	
Proj. Due Date:	N/A
Proj. Name:	N/A

Date and Initials of person examining contents: 4/22/10

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): N/A		

Client Notification/ Resolution: Field Data Required? Y / N / N/A

Person Contacted: ____ Date/Time: ____

Comments/ Resolution: ____

Project Manager Review: RH Date: 4/23/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR

APPENDIX H

AFVR Event Field Data, Emissions Calculations, & Disposal Manifest - April 6 & 7, 2010

APPENDIX H
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	A. Williamson
Date:	4/6/10-4/7/10		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,000	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	yes	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	314	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
MW-1	17.61	22.24	NP	21.42	20.37	20.42	20.00
MW-3	NP	20.74	NP	20.78	NP	20.78	-
MW-4	NP	19.14	NP	19.22	NP	19.23	-
MW-5	NP	18.24	NP	18.95	NP	18.82	-
MW-6	NP	20.14	NP	20.28	NP	20.29	-

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX H
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	4/6/10-4/7/10	Subcontractor	A&D

Measurements During AFVR Event

	Stack Outlet				Vac Truck	Non-AFVR Wells							
						MW-3		MW-4		MW-5		MW-6	
Time	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum in of H2O
22:15													
22:30	4,124	175.3	3.7	34	21								
22:45	4,521	181.7	3.1	300	21		0.0		0.0		0.0		0.0
23:00	4,710	184.8	2.5	240	21								
23:15	4,494	198.7	2.3	320	21		0.0		0.0		0.0		0.0
23:30	4,487	200.7	2.0	510	21								
23:45	4,393	200.3	2.0	680	21		0.0		0.0		0.0		0.0
0:00	4,390	201.4	1.5	700	21								
0:15	4,467	200.7	2.0	660	21		0.0		0.0		0.0		0.0
0:45	4,495	198.7	2.1	740	21		0.0		0.0		0.0		0.0
1:15	4,322	198.9	2.3	780	21		0.0		0.0		0.0		0.0
1:45	4,385	197.4	2.3	800	21		0.0		0.0		0.0		0.0
2:15	4,412	197.2	2.2	760	21		0.0		0.0		0.0		0.0
2:45	4,314	195.8	2.3	740	21		0.0		0.0		0.0		0.0
3:15	4,472	194.0	2.4	810	21		0.0		0.0		0.0		0.0
3:45	4,491	194.5	2.4	740	21		0.0		0.0		0.0		0.0
4:15	4,460	192.4	2.5	780	21		0.0		0.0		0.0		0.0
4:45	4,396	192.7	2.4	720	21		0.0		0.0		0.0		0.0
5:15	4,316	194.0	2.3	750	21		0.0		0.0		0.0		0.0
5:45	4,338	192.5	2.5	740	21		0.0		0.0		0.0		0.0
6:15	4,398	193.6	2.4	710	21		0.0		0.0		0.0		0.0

APPENDIX H
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 0.00
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: MW-1
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	22:15	Connection to MW-1. Stinger set at 20.00 feet below top of casing.							
04/06/10	22:30	21	4,124	6	175.3	3.7	0.010996	0.017	661
04/06/10	22:45	21	4,521	6	181.7	3.1	0.01062	0.017	718
04/06/10	23:00	21	4,710	6	184.8	2.5	0.009145	0.014	746
04/06/10	23:15	21	4,494	6	198.7	2.3	0.011347	0.018	695
04/06/10	23:30	21	4,487	6	200.7	2.0	0.010267	0.016	693
04/06/10	23:45	21	4,393	6	200.3	2.0	0.010181	0.016	679
04/07/10	0:00	21	4,390	6	201.4	1.5	0.007781	0.012	680
04/07/10	0:15	21	4,467	6	200.7	2.0	0.010267	0.016	690
04/07/10	0:45	21	4,495	6	198.7	2.1	0.010344	0.016	696
04/07/10	1:15	21	4,322	6	198.9	2.3	0.011396	0.018	668
04/07/10	1:45	21	4,385	6	197.4	2.3	0.011039	0.017	679
04/07/10	2:15	21	4,412	6	197.2	2.2	0.010507	0.017	684
04/07/10	2:45	21	4,314	6	195.8	2.3	0.01067	0.017	671
04/07/10	3:15	21	4,472	6	194.0	2.4	0.010721	0.017	697
04/07/10	3:45	21	4,491	6	194.5	2.4	0.010837	0.017	699
04/07/10	4:15	21	4,460	6	192.4	2.5	0.010797	0.017	697
04/07/10	4:45	21	4,396	6	192.7	2.4	0.010425	0.016	687
04/07/10	5:15	21	4,316	6	194.0	2.3	0.010267	0.016	673
04/07/10	5:45	21	4,338	6	192.5	2.5	0.01082	0.017	677
04/07/10	6:15	21	4,398	6	193.6	2.4	0.010629	0.017	686
Averages		21	4,419	6	194.3	2.4	0.010453	0.016	689

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX H
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6-Apr-2010

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	661	34	34	35	1.02	35	18	0.00000	0.04	0.05	0.01
30	718	300	300	305	1.02	311	155	0.00001	0.42	0.48	0.12
45	746	240	240	244	1.02	248	124	0.00001	0.35	0.40	0.10
60	695	320	320	326	1.02	332	166	0.00001	0.43	0.50	0.12
75	693	510	510	518	1.02	529	264	0.00002	0.68	0.79	0.20
90	679	680	680	691	1.02	705	352	0.00002	0.89	1.03	0.26
105	680	700	700	709	1.02	723	361	0.00002	0.92	1.06	0.27
120	690	660	660	671	1.02	684	341	0.00002	0.88	1.02	0.26
150	696	740	740	752	1.02	767	383	0.00002	1.00	1.16	0.58
180	668	780	780	794	1.02	810	404	0.00003	1.01	1.17	0.59
210	679	800	800	814	1.02	830	414	0.00003	1.05	1.22	0.61
240	684	760	760	773	1.02	788	393	0.00002	1.01	1.17	0.58
270	671	740	740	753	1.02	768	383	0.00002	0.96	1.11	0.56
300	697	810	810	824	1.02	840	419	0.00003	1.09	1.27	0.63
330	699	740	740	753	1.02	768	383	0.00002	1.00	1.16	0.58
360	697	780	780	793	1.02	809	404	0.00003	1.05	1.22	0.61
390	687	720	720	732	1.02	747	373	0.00002	0.96	1.11	0.55
420	673	750	750	762	1.02	778	388	0.00002	0.98	1.13	0.57
450	677	740	740	753	1.02	768	383	0.00002	0.97	1.13	0.56
480	686	710	710	722	1.02	737	368	0.00002	0.94	1.09	0.55
Averages	689	626	626	636	1.02	649	324	0.00002	0.83	0.96	0.42

Total emissions in pounds: 8.30
Total emissions in gallons: 1.33

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX H
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}$ lb-m^3/mg-ft^3)

$PMR_c = (C_c)(Q_{std})(60$ min/hr)

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone	4. Waste Tracking Number
		803-957-9175	30166

5. Generator's Name and Mailing Address: Edgefield Exxon Convenience, 944 Main Street, Edgefield, SC

Generator's Site Address (if different than mailing address): Environmental Compliance Services

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073 — U.S. EPA ID Number: SCD987598331

Facility's Phone: 803.957.9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water	1	TT	314 GAL	
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

In Case of Emergency Call 803-957-9175

A&D (SC) Job #098790

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Aaron Williamson — EC's Agent For Edgefield Fuel + Convenience — Signature: Aaron Williamson — Month / Day / Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: Date leaving U.S.:

Transporter Signature (for exports only):

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jay Sims — Signature — Month 4 / Day 7 / Year 10

Transporter 2 Printed/Typed Name — Signature — Month / Day / Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number: U.S. EPA ID Number

17b. Alternate Facility (or Generator)

Facility's Phone: — Month / Day / Year

17c. Signature of Alternate Facility (or Generator)

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette — Signature — Month 4 / Day 7 / Year 10

DESIGNATED FACILITY TO GENERATOR

169-BLC-O 6 10498 (Rev. 8/06)

APPENDIX I

Laboratory Report – Groundwater Samples –
May 10, 2010

Pace Analytical®
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(704)875-9092

June 01, 2010

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on May 11, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Minnesota Certification IDs

Washington Certification #: C754
Alaska Certification #: UST-078
1700 Elm Street SE, Suite 200 Minneapolis, MN 55414
Tennessee Certification #: 02818
Pennsylvania Certification #: 68-00563
Oregon Certification #: MN200001
North Dakota Certification #: R-036
North Carolina Certification #: 530
New York Certification #: 11647
New Jersey Certification #: MN-002
Montana Certification #: MT CERT0092
Minnesota Certification #: 027-053-137
Michigan DEQ Certification #: 9909
Maine Certification #: 2007029
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Kansas Certification #: E-10167
Iowa Certification #: 368
Illinois Certification #: 200011
Florida/NELAP Certification #: E87605
California Certification #: 01155CA
Arizona Certification #: AZ-0014
Wisconsin Certification #: 999407970

Charlotte Certification IDs

Virginia Certification #: 00213
West Virginia Certification #: 357
9800 Kincey Ave. - Ste 100 Huntersville, NC 28078
Tennessee Certification #: 04010
Connecticut Certification #: PH-0104
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana/LELAP Certification #: 04034
New Jersey Certification #: NC012
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
Pennsylvania Certification #: 68-00784
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003

Asheville Certification IDs

2225 Riverside Dr. Asheville, NC 28804
Connecticut Certification #: PH-0106
Virginia Certification #: 00072
Florida/NELAP Certification #: E87648
Louisiana/LELAP Certification #: 03095
Massachusetts Certification #: M-NC030
New Jersey Certification #: NC011
North Carolina Bioassay Certification #: 9
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
Pennsylvania Certification #: 68-03578
South Carolina Bioassay Certification #: 9903002
South Carolina Certification #: 9903001
Tennessee Certification #: 2980
West Virginia Certification #: 356

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SAMPLE SUMMARY

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9269130001	**MW-3**	Water	05/10/10 15:55	05/11/10 16:00
9269130002	**MW-4**	Water	05/10/10 16:00	05/11/10 16:00
9269130003	**MW-5**	Water	05/10/10 15:25	05/11/10 16:00
9269130004	**MW-6**	Water	05/10/10 15:30	05/11/10 16:00
9269130005	**MW-7**	Water	05/10/10 13:10	05/11/10 16:00
9269130006	**MW-8**	Water	05/10/10 13:05	05/11/10 16:00
9269130007	**MW-9**	Water	05/10/10 12:15	05/11/10 16:00
9269130008	**MW-10**	Water	05/10/10 12:10	05/11/10 16:00
9269130009	**MW-11**	Water	05/10/10 14:55	05/11/10 16:00
9269130010	**MW-12**	Water	05/10/10 14:45	05/11/10 16:00
9269130011	**MW-13**	Water	05/10/10 14:05	05/11/10 16:00
9269130012	**MW-14**	Water	05/10/10 14:10	05/11/10 16:00
9269130013	**MW-15**	Water	05/10/10 15:40	05/11/10 16:00
9269130014	**MW-16**	Water	05/10/10 13:40	05/11/10 16:00

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SAMPLE ANALYTE COUNT

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9269130001	**MW-3**	EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC	20	PASI-C
9269130002	**MW-4**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC, DLK	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	RAB	3	PASI-A
9269130003	**MW-5**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC, DLK	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	RAB	3	PASI-A
9269130004	**MW-6**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	DLK	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	RAB	3	PASI-A
9269130005	**MW-7**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	DLK	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A
9269130006	**MW-8**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A
9269130007	**MW-9**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC	20	PASI-C

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SAMPLE ANALYTE COUNT

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A
9269130008	**MW-10**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A
9269130009	**MW-11**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC, DLK	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A
9269130010	**MW-12**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	DLK	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A
9269130011	**MW-13**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A
9269130012	**MW-14**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A
9269130013	**MW-15**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A

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SAMPLE ANALYTE COUNT

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 353.2	RAB	3	PASI-A
9269130014	**MW-16**	RSK 175	CJR	1	PASI-M
		EPA 8011	CAH	2	PASI-C
		EPA 6010	JMW	1	PASI-A
		EPA 8260	BLC	20	PASI-C
		SM 3500-Fe D#4	EWS	1	PASI-A
		EPA 353.2	DMN	3	PASI-A

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-3 **Lab ID: 9269130001** Collected: 05/10/10 15:55 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	05/12/10 11:59	05/12/10 14:50	106-93-4	
1-Chloro-2-bromopropane (S)	98	%	60-140		1	05/12/10 11:59	05/12/10 14:50	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	ND	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:21	7439-92-1	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/12/10 15:47	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/12/10 15:47	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/12/10 15:47	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 15:47	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 15:47	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 15:47	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 15:47	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 15:47	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 15:47	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/12/10 15:47	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 15:47	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/12/10 15:47	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 15:47	91-20-3	
Toluene	**4.5J**	ug/L	5.0	1.8	1		05/12/10 15:47	108-88-3	
m&p-Xylene	**3.7J**	ug/L	10.0	2.7	1		05/12/10 15:47	179601-23-1	
o-Xylene	**2.0J**	ug/L	5.0	1.7	1		05/12/10 15:47	95-47-6	
Dibromofluoromethane (S)	105	%	70-130		1		05/12/10 15:47	1868-53-7	
Toluene-d8 (S)	97	%	70-130		1		05/12/10 15:47	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		05/12/10 15:47	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		05/12/10 15:47	17060-07-0	

Sample: MW-4 **Lab ID: 9269130002** Collected: 05/10/10 16:00 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**41.4**	ug/L	10.0	0.50	1		05/21/10 17:21	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	05/12/10 11:59	05/12/10 15:28	106-93-4	
1-Chloro-2-bromopropane (S)	69	%	60-140		1	05/12/10 11:59	05/12/10 15:28	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**17.6**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:24	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-4 **Lab ID: 9269130002** Collected: 05/10/10 16:00 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**3120**	ug/L	100	62.0	1		05/12/10 16:06	75-85-4	
tert-Amylmethyl ether	**11.8**	ug/L	10.0	4.5	1		05/12/10 16:06	994-05-8	
Benzene	**411**	ug/L	25.0	6.0	5		05/15/10 09:22	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 16:06	624-95-3	
tert-Butyl Alcohol	**322**	ug/L	100	27.0	1		05/12/10 16:06	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 16:06	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 16:06	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 16:06	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 16:06	64-17-5	
Ethylbenzene	**8.3**	ug/L	5.0	1.1	1		05/12/10 16:06	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 16:06	637-92-3	
Methyl-tert-butyl ether	**256**	ug/L	25.0	10.0	5		05/15/10 09:22	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 16:06	91-20-3	
Toluene	**29.8**	ug/L	5.0	1.8	1		05/12/10 16:06	108-88-3	
m&p-Xylene	**28.1**	ug/L	10.0	2.7	1		05/12/10 16:06	179601-23-1	
o-Xylene	**3.8J**	ug/L	5.0	1.7	1		05/12/10 16:06	95-47-6	
Dibromofluoromethane (S)	108	%	70-130		1		05/12/10 16:06	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		05/12/10 16:06	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-130		1		05/12/10 16:06	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		05/12/10 16:06	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:49		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**0.92**	mg/L	0.10	0.10	1		05/12/10 10:20		
Nitrogen, Nitrite	ND	mg/L	0.10	0.10	1		05/12/10 10:20		
Nitrogen, NO2 plus NO3	**0.92**	mg/L	0.10	0.10	1		05/12/10 10:20		

Sample: MW-5 **Lab ID: 9269130003** Collected: 05/10/10 15:25 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**22.5**	ug/L	10.0	0.50	1		05/21/10 17:35	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.93**	ug/L	0.020	0.020	1	05/12/10 11:59	05/12/10 15:46	106-93-4	
1-Chloro-2-bromopropane (S)	92	%	60-140		1	05/12/10 11:59	05/12/10 15:46	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**21.7**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:27	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-5 **Lab ID: 9269130003** Collected: 05/10/10 15:25 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**25300**	ug/L	100	62.0	1		05/12/10 16:25	75-85-4	E
tert-Amylmethyl ether	**1620**	ug/L	10.0	4.5	1		05/12/10 16:25	994-05-8	E
Benzene	**20900**	ug/L	2500	600	500		05/17/10 00:59	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 16:25	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 16:25	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 16:25	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 16:25	107-06-2	
Diisopropyl ether	**131**	ug/L	5.0	2.7	1		05/12/10 16:25	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 16:25	64-17-5	
Ethylbenzene	**1090**	ug/L	5.0	1.1	1		05/12/10 16:25	100-41-4	E
Ethyl-tert-butyl ether	**47.1**	ug/L	10.0	4.6	1		05/12/10 16:25	637-92-3	
Methyl-tert-butyl ether	**11400**	ug/L	2500	1000	500		05/17/10 00:59	1634-04-4	
Naphthalene	**316**	ug/L	5.0	2.9	1		05/12/10 16:25	91-20-3	E
Toluene	**30900**	ug/L	2500	900	500		05/17/10 00:59	108-88-3	
m&p-Xylene	**8250**	ug/L	5000	1350	500		05/17/10 00:59	179601-23-1	
o-Xylene	**3850**	ug/L	2500	850	500		05/17/10 00:59	95-47-6	
Dibromofluoromethane (S)	104	%	70-130		1		05/12/10 16:25	1868-53-7	
Toluene-d8 (S)	77	%	70-130		1		05/12/10 16:25	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130		1		05/12/10 16:25	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		05/12/10 16:25	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:45		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**0.42**	mg/L	0.10	0.10	1		05/12/10 10:13		
Nitrogen, Nitrite	**0.12**	mg/L	0.10	0.10	1		05/12/10 10:13		M0
Nitrogen, NO2 plus NO3	**0.54**	mg/L	0.10	0.10	1		05/12/10 10:13		

Sample: MW-6 **Lab ID: 9269130004** Collected: 05/10/10 15:30 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**15.8**	ug/L	10.0	0.50	1		05/21/10 17:50	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	05/12/10 11:59	05/12/10 16:05	106-93-4	
1-Chloro-2-bromopropane (S)	98	%	60-140		1	05/12/10 11:59	05/12/10 16:05	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**9.4**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:31	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-6 **Lab ID: 9269130004** Collected: 05/10/10 15:30 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**757**	ug/L	100	62.0	1		05/15/10 02:13	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/15/10 02:13	994-05-8	
Benzene	**270**	ug/L	25.0	6.0	5		05/17/10 01:18	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/15/10 02:13	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/15/10 02:13	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/15/10 02:13	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/15/10 02:13	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/15/10 02:13	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/15/10 02:13	64-17-5	
Ethylbenzene	**20.1**	ug/L	5.0	1.1	1		05/15/10 02:13	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/15/10 02:13	637-92-3	
Methyl-tert-butyl ether	**59.4**	ug/L	5.0	2.0	1		05/15/10 02:13	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/15/10 02:13	91-20-3	
Toluene	**200**	ug/L	25.0	9.0	5		05/17/10 01:18	108-88-3	
m&p-Xylene	**177**	ug/L	10.0	2.7	1		05/15/10 02:13	179601-23-1	
o-Xylene	**36.3**	ug/L	5.0	1.7	1		05/15/10 02:13	95-47-6	
Dibromofluoromethane (S)	96	%	70-130		1		05/15/10 02:13	1868-53-7	
Toluene-d8 (S)	99	%	70-130		1		05/15/10 02:13	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		05/15/10 02:13	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		1		05/15/10 02:13	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:47		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**1.6**	mg/L	0.10	0.10	1		05/12/10 10:17		
Nitrogen, Nitrite	ND	mg/L	0.10	0.10	1		05/12/10 10:17		
Nitrogen, NO2 plus NO3	**1.6**	mg/L	0.10	0.10	1		05/12/10 10:17		

Sample: MW-7 **Lab ID: 9269130005** Collected: 05/10/10 13:10 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**1.2J**	ug/L	10.0	0.50	1		05/21/10 18:04	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	05/12/10 11:59	05/12/10 16:24	106-93-4	
1-Chloro-2-bromopropane (S)	98	%	60-140		1	05/12/10 11:59	05/12/10 16:24	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**59.3**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:34	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-7 **Lab ID: 9269130005** Collected: 05/10/10 13:10 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/15/10 02:50	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/15/10 02:50	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/15/10 02:50	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/15/10 02:50	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/15/10 02:50	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/15/10 02:50	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/15/10 02:50	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/15/10 02:50	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/15/10 02:50	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/15/10 02:50	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/15/10 02:50	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/15/10 02:50	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/15/10 02:50	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		05/15/10 02:50	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		05/15/10 02:50	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		05/15/10 02:50	95-47-6	
Dibromofluoromethane (S)	98	%	70-130		1		05/15/10 02:50	1868-53-7	
Toluene-d8 (S)	96	%	70-130		1		05/15/10 02:50	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		1		05/15/10 02:50	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		05/15/10 02:50	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:38		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**0.74**	mg/L	0.10	0.10	1		05/11/10 23:32		
Nitrogen, Nitrite	**0.12**	mg/L	0.10	0.10	1		05/11/10 23:32		
Nitrogen, NO2 plus NO3	**0.86**	mg/L	0.10	0.10	1		05/11/10 23:32		

Sample: MW-8 **Lab ID: 9269130006** Collected: 05/10/10 13:05 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	ND	ug/L	10.0	0.50	1		05/21/10 18:18	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	05/12/10 11:59	05/12/10 16:43	106-93-4	
1-Chloro-2-bromopropane (S)	94	%	60-140		1	05/12/10 11:59	05/12/10 16:43	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**57.2**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:37	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-8 **Lab ID: 9269130006** Collected: 05/10/10 13:05 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/12/10 17:20	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/12/10 17:20	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/12/10 17:20	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 17:20	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 17:20	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 17:20	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 17:20	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 17:20	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 17:20	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/12/10 17:20	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 17:20	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/12/10 17:20	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 17:20	91-20-3	
Toluene	**3.7J**	ug/L	5.0	1.8	1		05/12/10 17:20	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		05/12/10 17:20	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		05/12/10 17:20	95-47-6	
Dibromofluoromethane (S)	100	%	70-130		1		05/12/10 17:20	1868-53-7	
Toluene-d8 (S)	96	%	70-130		1		05/12/10 17:20	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		05/12/10 17:20	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		05/12/10 17:20	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:33		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**25.1**	mg/L	0.40	0.40	4		05/11/10 23:56		
Nitrogen, Nitrite	**0.40**	mg/L	0.40	0.40	4		05/11/10 23:56		
Nitrogen, NO2 plus NO3	**25.5**	mg/L	0.40	0.40	4		05/11/10 23:56		

Sample: MW-9 **Lab ID: 9269130007** Collected: 05/10/10 12:15 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**2.3J**	ug/L	10.0	0.50	1		05/21/10 18:33	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	05/12/10 11:59	05/12/10 17:02	106-93-4	
1-Chloro-2-bromopropane (S)	93	%	60-140		1	05/12/10 11:59	05/12/10 17:02	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**34.4**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:41	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-9 **Lab ID: 9269130007** Collected: 05/10/10 12:15 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/12/10 17:38	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/12/10 17:38	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/12/10 17:38	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 17:38	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 17:38	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 17:38	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 17:38	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 17:38	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 17:38	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/12/10 17:38	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 17:38	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/12/10 17:38	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 17:38	91-20-3	
Toluene	**3.1J**	ug/L	5.0	1.8	1		05/12/10 17:38	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		05/12/10 17:38	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		05/12/10 17:38	95-47-6	
Dibromofluoromethane (S)	100	%	70-130		1		05/12/10 17:38	1868-53-7	
Toluene-d8 (S)	98	%	70-130		1		05/12/10 17:38	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-130		1		05/12/10 17:38	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		05/12/10 17:38	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:30		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**0.15**	mg/L	0.10	0.10	1		05/11/10 23:20		
Nitrogen, Nitrite	ND	mg/L	0.10	0.10	1		05/11/10 23:20		
Nitrogen, NO2 plus NO3	**0.15**	mg/L	0.10	0.10	1		05/11/10 23:20		

Sample: MW-10 **Lab ID: 9269130008** Collected: 05/10/10 12:10 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**2.4J**	ug/L	10.0	0.50	1		05/21/10 18:47	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	05/12/10 11:59	05/12/10 17:21	106-93-4	
1-Chloro-2-bromopropane (S)	91	%	60-140		1	05/12/10 11:59	05/12/10 17:21	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**41.6**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:44	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-10 **Lab ID: 9269130008** Collected: 05/10/10 12:10 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/12/10 17:57	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/12/10 17:57	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/12/10 17:57	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 17:57	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 17:57	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 17:57	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 17:57	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 17:57	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 17:57	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/12/10 17:57	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 17:57	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/12/10 17:57	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 17:57	91-20-3	
Toluene	**1.8J**	ug/L	5.0	1.8	1		05/12/10 17:57	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		05/12/10 17:57	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		05/12/10 17:57	95-47-6	
Dibromofluoromethane (S)	102	%	70-130		1		05/12/10 17:57	1868-53-7	
Toluene-d8 (S)	98	%	70-130		1		05/12/10 17:57	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130		1		05/12/10 17:57	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		05/12/10 17:57	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:28		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**4.9**	mg/L	0.10	0.10	1		05/11/10 23:16		
Nitrogen, Nitrite	**0.11**	mg/L	0.10	0.10	1		05/11/10 23:16		
Nitrogen, NO2 plus NO3	**5.0**	mg/L	0.10	0.10	1		05/11/10 23:16		

Sample: MW-11 **Lab ID: 9269130009** Collected: 05/10/10 14:55 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**2.0J**	ug/L	10.0	0.50	1		05/21/10 19:01	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.097**	ug/L	0.020	0.020	1	05/15/10 15:49	05/16/10 07:16	106-93-4	
1-Chloro-2-bromopropane (S)	118	%	60-140		1	05/15/10 15:49	05/16/10 07:16	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**40.5**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:47	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-11 **Lab ID: 9269130009** Collected: 05/10/10 14:55 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**310**	ug/L	100	62.0	1		05/12/10 18:15	75-85-4	
tert-Amylmethyl ether	**100**	ug/L	10.0	4.5	1		05/12/10 18:15	994-05-8	
Benzene	**1820**	ug/L	250	60.0	50		05/17/10 01:36	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 18:15	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 18:15	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 18:15	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 18:15	107-06-2	
Diisopropyl ether	**4.7J**	ug/L	5.0	2.7	1		05/12/10 18:15	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 18:15	64-17-5	
Ethylbenzene	**33.1**	ug/L	5.0	1.1	1		05/12/10 18:15	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 18:15	637-92-3	
Methyl-tert-butyl ether	**125**	ug/L	5.0	2.0	1		05/12/10 18:15	1634-04-4	
Naphthalene	**31.9**	ug/L	5.0	2.9	1		05/12/10 18:15	91-20-3	
Toluene	**522**	ug/L	250	90.0	50		05/17/10 01:36	108-88-3	
m&p-Xylene	**248**	ug/L	10.0	2.7	1		05/12/10 18:15	179601-23-1	
o-Xylene	**274**	ug/L	250	85.0	50		05/17/10 01:36	95-47-6	
Dibromofluoromethane (S)	103	%	70-130		1		05/12/10 18:15	1868-53-7	
Toluene-d8 (S)	99	%	70-130		1		05/12/10 18:15	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		1		05/12/10 18:15	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		05/12/10 18:15	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:45		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**15.3**	mg/L	0.30	0.30	3		05/11/10 23:58		
Nitrogen, Nitrite	**0.36**	mg/L	0.30	0.30	3		05/11/10 23:58		
Nitrogen, NO2 plus NO3	**15.6**	mg/L	0.30	0.30	3		05/11/10 23:58		

Sample: MW-12 **Lab ID: 9269130010** Collected: 05/10/10 14:45 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**16.7**	ug/L	10.0	0.50	1		05/21/10 19:16	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	05/12/10 11:59	05/12/10 17:59	106-93-4	
1-Chloro-2-bromopropane (S)	77	%	60-140		1	05/12/10 11:59	05/12/10 17:59	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**61.5**	ug/L	5.0	4.0	1	05/12/10 13:10	05/14/10 23:51	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-12 **Lab ID: 9269130010** Collected: 05/10/10 14:45 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**157**	ug/L	100	62.0	1		05/15/10 02:32	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/15/10 02:32	994-05-8	
Benzene	**75.7**	ug/L	5.0	1.2	1		05/15/10 02:32	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/15/10 02:32	624-95-3	
tert-Butyl Alcohol	**570**	ug/L	100	27.0	1		05/15/10 02:32	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/15/10 02:32	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/15/10 02:32	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/15/10 02:32	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/15/10 02:32	64-17-5	
Ethylbenzene	**9.4**	ug/L	5.0	1.1	1		05/15/10 02:32	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/15/10 02:32	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/15/10 02:32	1634-04-4	
Naphthalene	**12.0**	ug/L	5.0	2.9	1		05/15/10 02:32	91-20-3	
Toluene	**3.5J**	ug/L	5.0	1.8	1		05/15/10 02:32	108-88-3	
m&p-Xylene	**30.5**	ug/L	10.0	2.7	1		05/15/10 02:32	179601-23-1	
o-Xylene	**3.5J**	ug/L	5.0	1.7	1		05/15/10 02:32	95-47-6	
Dibromofluoromethane (S)	96	%	70-130		1		05/15/10 02:32	1868-53-7	
Toluene-d8 (S)	102	%	70-130		1		05/15/10 02:32	2037-26-5	
4-Bromofluorobenzene (S)	99	%	70-130		1		05/15/10 02:32	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		05/15/10 02:32	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:42		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	ND	mg/L	0.10	0.10	1		05/11/10 23:48		
Nitrogen, Nitrite	ND	mg/L	0.10	0.10	1		05/11/10 23:48		
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.10	1		05/11/10 23:48		

Sample: MW-13 **Lab ID: 9269130011** Collected: 05/10/10 14:05 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	ND	ug/L	10.0	0.50	1		05/21/10 19:30	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.021	0.021	1	05/12/10 12:00	05/12/10 18:19	106-93-4	
1-Chloro-2-bromopropane (S)	82	%	60-140		1	05/12/10 12:00	05/12/10 18:19	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**96.0**	ug/L	10.0	8.0	2	05/12/10 13:10	05/17/10 11:40	7439-92-1	D3

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-13 **Lab ID: 9269130011** Collected: 05/10/10 14:05 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/12/10 18:52	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/12/10 18:52	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/12/10 18:52	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 18:52	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 18:52	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 18:52	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 18:52	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 18:52	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 18:52	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/12/10 18:52	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 18:52	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/12/10 18:52	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 18:52	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		05/12/10 18:52	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		05/12/10 18:52	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		05/12/10 18:52	95-47-6	
Dibromofluoromethane (S)	99	%	70-130		1		05/12/10 18:52	1868-53-7	
Toluene-d8 (S)	97	%	70-130		1		05/12/10 18:52	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		05/12/10 18:52	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		05/12/10 18:52	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:40		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**1.8**	mg/L	0.10	0.10	1		05/11/10 23:43		
Nitrogen, Nitrite	ND	mg/L	0.10	0.10	1		05/11/10 23:43		
Nitrogen, NO2 plus NO3	**1.8**	mg/L	0.10	0.10	1		05/11/10 23:43		

Sample: MW-14 **Lab ID: 9269130012** Collected: 05/10/10 14:10 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**57.1**	ug/L	10.0	0.50	1		05/26/10 17:36	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	05/12/10 12:00	05/12/10 18:38	106-93-4	
1-Chloro-2-bromopropane (S)	86	%	60-140		1	05/12/10 12:00	05/12/10 18:38	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**7.2**	ug/L	5.0	4.0	1	05/12/10 13:10	05/15/10 00:07	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-14 **Lab ID: 9269130012** Collected: 05/10/10 14:10 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/12/10 19:11	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/12/10 19:11	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/12/10 19:11	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 19:11	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 19:11	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 19:11	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 19:11	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 19:11	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 19:11	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/12/10 19:11	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 19:11	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/12/10 19:11	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 19:11	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		05/12/10 19:11	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		05/12/10 19:11	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		05/12/10 19:11	95-47-6	
Dibromofluoromethane (S)	102	%	70-130		1		05/12/10 19:11	1868-53-7	
Toluene-d8 (S)	99	%	70-130		1		05/12/10 19:11	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130		1		05/12/10 19:11	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		05/12/10 19:11	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:42		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**1.4**	mg/L	0.10	0.10	1		05/11/10 23:44		
Nitrogen, Nitrite	**0.18**	mg/L	0.10	0.10	1		05/11/10 23:44		
Nitrogen, NO2 plus NO3	**1.6**	mg/L	0.10	0.10	1		05/11/10 23:44		

Sample: MW-15 **Lab ID: 9269130013** Collected: 05/10/10 15:40 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**66.0**	ug/L	10.0	0.50	1		05/27/10 07:56	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	05/12/10 12:00	05/12/10 18:57	106-93-4	
1-Chloro-2-bromopropane (S)	90	%	60-140		1	05/12/10 12:00	05/12/10 18:57	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**128**	ug/L	5.0	4.0	1	05/12/10 13:10	05/15/10 00:10	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-15 **Lab ID: 9269130013** Collected: 05/10/10 15:40 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/12/10 19:29	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/12/10 19:29	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/12/10 19:29	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 19:29	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 19:29	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 19:29	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 19:29	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 19:29	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 19:29	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/12/10 19:29	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 19:29	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/12/10 19:29	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 19:29	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		05/12/10 19:29	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		05/12/10 19:29	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		05/12/10 19:29	95-47-6	
Dibromofluoromethane (S)	101	%	70-130		1		05/12/10 19:29	1868-53-7	
Toluene-d8 (S)	99	%	70-130		1		05/12/10 19:29	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-130		1		05/12/10 19:29	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		05/12/10 19:29	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:47		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	ND	mg/L	0.10	0.10	1		05/12/10 10:19		
Nitrogen, Nitrite	ND	mg/L	0.10	0.10	1		05/12/10 10:19		
Nitrogen, NO2 plus NO3	ND	mg/L	0.10	0.10	1		05/12/10 10:19		

Sample: MW-16 **Lab ID: 9269130014** Collected: 05/10/10 13:40 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
RSK 175 AIR Headspace	Analytical Method: RSK 175								
Methane	**2.8J**	ug/L	10.0	0.50	1		05/27/10 08:10	74-82-8	
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	05/12/10 12:00	05/12/10 19:16	106-93-4	
1-Chloro-2-bromopropane (S)	98	%	60-140		1	05/12/10 12:00	05/12/10 19:16	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Lead	**146**	ug/L	5.0	4.0	1	05/12/10 13:10	05/15/10 00:13	7439-92-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Sample: MW-16 **Lab ID: 9269130014** Collected: 05/10/10 13:40 Received: 05/11/10 16:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		05/12/10 19:48	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		05/12/10 19:48	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		05/12/10 19:48	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		05/12/10 19:48	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		05/12/10 19:48	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		05/12/10 19:48	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		05/12/10 19:48	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		05/12/10 19:48	108-20-3	
Ethanol	ND	ug/L	200	170	1		05/12/10 19:48	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		05/12/10 19:48	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		05/12/10 19:48	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		05/12/10 19:48	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		05/12/10 19:48	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		05/12/10 19:48	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		05/12/10 19:48	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		05/12/10 19:48	95-47-6	
Dibromofluoromethane (S)	102	%	70-130		1		05/12/10 19:48	1868-53-7	
Toluene-d8 (S)	98	%	70-130		1		05/12/10 19:48	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		05/12/10 19:48	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		05/12/10 19:48	17060-07-0	
Iron, Ferrous	Analytical Method: SM 3500-Fe D#4								
Iron, Ferrous	ND	mg/L	0.50	0.50	1		05/18/10 14:40		
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**3.7**	mg/L	0.10	0.10	1		05/11/10 23:41		
Nitrogen, Nitrite	ND	mg/L	0.10	0.10	1		05/11/10 23:41		
Nitrogen, NO2 plus NO3	**3.7**	mg/L	0.10	0.10	1		05/11/10 23:41		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: AIR/10268 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011

METHOD BLANK: 794512 Matrix: Water
Associated Lab Samples: 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methane	ug/L	ND	10.0	05/21/10 17:06	

LABORATORY CONTROL SAMPLE & LCSD: 794513 794514

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Methane	ug/L	60.7	56.1	55.0	92	91	70-130	2	30	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: AIR/10274 Analysis Method: RSK 175
QC Batch Method: RSK 175 Analysis Description: RSK 175 AIR HEADSPACE
Associated Lab Samples: 9269130012, 9269130013, 9269130014

METHOD BLANK: 795323 Matrix: Water
Associated Lab Samples: 9269130012, 9269130013, 9269130014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Methane	ug/L	ND	10.0	05/26/10 17:22	

LABORATORY CONTROL SAMPLE & LCSD: 795324 795325

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Methane	ug/L	60.7	61.6	72.6	101	120	70-130	16	30	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: OEXT/9963 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9269130001, 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

METHOD BLANK: 440614 Matrix: Water
Associated Lab Samples: 9269130001, 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	05/12/10 13:15	
1-Chloro-2-bromopropane (S)	%	110	60-140	05/12/10 13:15	

LABORATORY CONTROL SAMPLE & LCSD: 440615 440616

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.29	0.28	0.28	96	98	60-140	2	20	
1-Chloro-2-bromopropane (S)	%				101	102	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 440618 440619

Parameter	Units	9268936003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	0.073	.28	.28	0.34	0.34	95	95	60-140	0	20	
1-Chloro-2-bromopropane (S)	%						102	100	60-140			

SAMPLE DUPLICATE: 440617

Parameter	Units	9269130001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	98	98	1		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: OEXT/10000
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9269130009

METHOD BLANK: 443002 Matrix: Water
Associated Lab Samples: 9269130009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	05/16/10 04:44	
1-Chloro-2-bromopropane (S)	%	101	60-140	05/16/10 04:44	

LABORATORY CONTROL SAMPLE & LCSD: 443003 443004

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.29	0.29	0.28	100	98	60-140	2	20	
1-Chloro-2-bromopropane (S)	%				94	97	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 443005 443006

Parameter	Units	9269257001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	169	.28	.28	147	146	-7768	-8224	60-140	1	20	P6
1-Chloro-2-bromopropane (S)	%						122	121	60-140			

SAMPLE DUPLICATE: 443007

Parameter	Units	9269257002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	122	104	17		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: MPRP/6311 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET
Associated Lab Samples: 9269130001, 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

METHOD BLANK: 440718 Matrix: Water
Associated Lab Samples: 9269130001, 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	05/14/10 22:46	

LABORATORY CONTROL SAMPLE: 440719

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	469	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 440720 440721

Parameter	Units	9268936003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	461	459	92	92	75-125	0	20	

QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: MSV/10891 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Oxygenates SC
Associated Lab Samples: 9269130001, 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

METHOD BLANK: 440569 Matrix: Water
Associated Lab Samples: 9269130001, 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	05/12/10 11:47	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	05/12/10 11:47	
Benzene	ug/L	ND	5.0	05/12/10 11:47	
Diisopropyl ether	ug/L	ND	5.0	05/12/10 11:47	
Ethanol	ug/L	ND	200	05/12/10 11:47	
Ethyl-tert-butyl ether	ug/L	ND	10.0	05/12/10 11:47	
Ethylbenzene	ug/L	ND	5.0	05/12/10 11:47	
m&p-Xylene	ug/L	ND	10.0	05/12/10 11:47	
Methyl-tert-butyl ether	ug/L	ND	5.0	05/12/10 11:47	
Naphthalene	ug/L	ND	5.0	05/12/10 11:47	
o-Xylene	ug/L	ND	5.0	05/12/10 11:47	
tert-Amyl Alcohol	ug/L	ND	100	05/12/10 11:47	
tert-Amylmethyl ether	ug/L	ND	10.0	05/12/10 11:47	
tert-Butyl Alcohol	ug/L	ND	100	05/12/10 11:47	
tert-Butyl Formate	ug/L	ND	50.0	05/12/10 11:47	
Toluene	ug/L	ND	5.0	05/12/10 11:47	
1,2-Dichloroethane-d4 (S)	%	98	70-130	05/12/10 11:47	
4-Bromofluorobenzene (S)	%	93	70-130	05/12/10 11:47	
Dibromofluoromethane (S)	%	102	70-130	05/12/10 11:47	
Toluene-d8 (S)	%	98	70-130	05/12/10 11:47	

METHOD BLANK: 442973 Matrix: Water
Associated Lab Samples: 9269130001, 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	05/15/10 01:55	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	05/15/10 01:55	
Benzene	ug/L	ND	5.0	05/15/10 01:55	
Diisopropyl ether	ug/L	ND	5.0	05/15/10 01:55	
Ethanol	ug/L	ND	200	05/15/10 01:55	
Ethyl-tert-butyl ether	ug/L	ND	10.0	05/15/10 01:55	
Ethylbenzene	ug/L	ND	5.0	05/15/10 01:55	
m&p-Xylene	ug/L	ND	10.0	05/15/10 01:55	
Methyl-tert-butyl ether	ug/L	ND	5.0	05/15/10 01:55	
Naphthalene	ug/L	ND	5.0	05/15/10 01:55	
o-Xylene	ug/L	ND	5.0	05/15/10 01:55	
tert-Amyl Alcohol	ug/L	ND	100	05/15/10 01:55	
tert-Amylmethyl ether	ug/L	ND	10.0	05/15/10 01:55	
tert-Butyl Alcohol	ug/L	ND	100	05/15/10 01:55	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

METHOD BLANK: 442973 Matrix: Water

Associated Lab Samples: 9269130001, 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
tert-Butyl Formate	ug/L	ND	50.0	05/15/10 01:55	
Toluene	ug/L	ND	5.0	05/15/10 01:55	
1,2-Dichloroethane-d4 (S)	%	92	70-130	05/15/10 01:55	
4-Bromofluorobenzene (S)	%	100	70-130	05/15/10 01:55	
Dibromofluoromethane (S)	%	97	70-130	05/15/10 01:55	
Toluene-d8 (S)	%	98	70-130	05/15/10 01:55	

LABORATORY CONTROL SAMPLE: 440570

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	58.8	118	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	995	99	70-130	
Benzene	ug/L	50	47.8	96	70-130	
Diisopropyl ether	ug/L	50	52.8	106	70-130	
Ethanol	ug/L	2000	2110	106	70-130	
Ethyl-tert-butyl ether	ug/L	100	109	109	70-130	
Ethylbenzene	ug/L	50	49.7	99	70-130	
m&p-Xylene	ug/L	100	103	103	70-130	
Methyl-tert-butyl ether	ug/L	50	52.3	105	70-130	
Naphthalene	ug/L	50	47.7	95	70-130	
o-Xylene	ug/L	50	51.3	103	70-130	
tert-Amyl Alcohol	ug/L	1000	1020	102	70-130	
tert-Amylmethyl ether	ug/L	100	103	103	70-130	
tert-Butyl Alcohol	ug/L	500	513	103	70-130	
tert-Butyl Formate	ug/L	400	393	98	70-130	
Toluene	ug/L	50	49.1	98	70-130	
1,2-Dichloroethane-d4 (S)	%			103	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Dibromofluoromethane (S)	%			107	70-130	
Toluene-d8 (S)	%			102	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 440571 440572

Parameter	Units	9268981001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	50	50	40.4	61.8	81	124	70-130	42	30	R1
3,3-Dimethyl-1-Butanol	ug/L	ND	1000	1000	755	1140	75	114	70-130	41	30	R1
Benzene	ug/L	ND	50	50	35.3	54.0	71	108	70-130	42	30	R1
Diisopropyl ether	ug/L	ND	50	50	38.0	57.6	76	115	70-130	41	30	R1
Ethanol	ug/L	ND	2000	2000	1540	2290	77	115	70-130	39	30	R1
Ethyl-tert-butyl ether	ug/L	ND	100	100	78.7	119	79	119	70-130	41	30	R1
Ethylbenzene	ug/L	ND	50	50	33.2	50.6	66	101	70-130	42	30	M0,R1
m&p-Xylene	ug/L	ND	100	100	59.4	93.6	59	93	70-130	45	30	M0,R1

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 440571 440572

Parameter	Units	9268981001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Methyl-tert-butyl ether	ug/L	ND	50	50	37.9	57.6	74	114	70-130	41	30	R1
Naphthalene	ug/L	ND	50	50	29.7	48.0	59	96	70-130	47	30	M0,R1
o-Xylene	ug/L	ND	50	50	30.4	47.7	61	95	70-130	44	30	M0,R1
tert-Amyl Alcohol	ug/L	ND	1000	1000	778	1150	78	115	70-130	39	30	R1
tert-Amylmethyl ether	ug/L	ND	100	100	74.5	113	74	113	70-130	41	30	R1
tert-Butyl Alcohol	ug/L	ND	500	500	499	736	100	147	70-130	38	30	M0,R1
tert-Butyl Formate	ug/L	ND	400	400	ND	54.3	0	14	70-130		30	P5
Toluene	ug/L	ND	50	50	34.1	52.6	67	104	70-130	43	30	M0,R1
1,2-Dichloroethane-d4 (S)	%						101	101	70-130			
4-Bromofluorobenzene (S)	%						99	98	70-130			
Dibromofluoromethane (S)	%						105	106	70-130			
Toluene-d8 (S)	%						97	100	70-130			

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: WET/12421 Analysis Method: SM 3500-Fe D#4
QC Batch Method: SM 3500-Fe D#4 Analysis Description: Iron, Ferrous
Associated Lab Samples: 9269130007, 9269130008

METHOD BLANK: 443619 Matrix: Water
Associated Lab Samples: 9269130007, 9269130008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.50	05/18/10 13:59	

LABORATORY CONTROL SAMPLE: 443620

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	1.5	1.6	104	90-110	

SAMPLE DUPLICATE: 443621

Parameter	Units	9268974029 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: WET/12422 Analysis Method: SM 3500-Fe D#4
QC Batch Method: SM 3500-Fe D#4 Analysis Description: Iron, Ferrous
Associated Lab Samples: 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130009, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

METHOD BLANK: 443624 Matrix: Water
Associated Lab Samples: 9269130002, 9269130003, 9269130004, 9269130005, 9269130006, 9269130009, 9269130010, 9269130011, 9269130012, 9269130013, 9269130014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iron, Ferrous	mg/L	ND	0.50	05/18/10 14:30	

LABORATORY CONTROL SAMPLE: 443625

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	1.5	1.6	104	90-110	

SAMPLE DUPLICATE: 443626

Parameter	Units	9269130006 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	ND	ND		20	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: WETA/7345 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011, 9269130012, 9269130014

METHOD BLANK: 440532 Matrix: Water
Associated Lab Samples: 9269130005, 9269130006, 9269130007, 9269130008, 9269130009, 9269130010, 9269130011, 9269130012, 9269130014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	05/11/10 23:09	
Nitrogen, Nitrite	mg/L	ND	0.10	05/11/10 23:09	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	05/11/10 23:09	

LABORATORY CONTROL SAMPLE: 440533

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	5	5.1	102	90-110	
Nitrogen, Nitrite	mg/L	1	1.0	102	90-110	
Nitrogen, NO2 plus NO3	mg/L	5	5.1	102	90-110	

MATRIX SPIKE SAMPLE: 440534

Parameter	Units	9269121001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.29	5	5.7	108	90-110	
Nitrogen, Nitrite	mg/L	ND	1	1.1	110	90-110	
Nitrogen, NO2 plus NO3	mg/L	0.29	5	5.7	108	90-110	

MATRIX SPIKE SAMPLE: 440535

Parameter	Units	9269130008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	4.9	5	10	101	90-110	
Nitrogen, Nitrite	mg/L	0.11	1	1.2	109	90-110	
Nitrogen, NO2 plus NO3	mg/L	5.0	5	10	99	90-110	

SAMPLE DUPLICATE: 440536

Parameter	Units	9269130007 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.15	0.16	2	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	0.15	0.16	2	20	

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Asheville, NC 28804
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Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

SAMPLE DUPLICATE: 440537

Parameter	Units	9269121002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.21	0.19	7	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	0.21	0.19	7	20	

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(704)875-9092

QUALITY CONTROL DATA

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

QC Batch: WETA/7347 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 9269130002, 9269130003, 9269130004, 9269130013

METHOD BLANK: 440588 Matrix: Water
Associated Lab Samples: 9269130002, 9269130003, 9269130004, 9269130013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	ND	0.10	05/12/10 10:09	
Nitrogen, Nitrite	mg/L	ND	0.10	05/12/10 10:09	
Nitrogen, NO2 plus NO3	mg/L	ND	0.10	05/12/10 10:09	

LABORATORY CONTROL SAMPLE: 440589

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	5	5.4	108	90-110	
Nitrogen, Nitrite	mg/L	1	1.0	101	90-110	
Nitrogen, NO2 plus NO3	mg/L	5	5.4	108	90-110	

MATRIX SPIKE SAMPLE: 440590

Parameter	Units	9269130003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrate	mg/L	0.42	5	5.9	109	90-110	
Nitrogen, Nitrite	mg/L	0.12	1	1.3	114	90-110	M0
Nitrogen, NO2 plus NO3	mg/L	0.54	5	5.9	107	90-110	

SAMPLE DUPLICATE: 440591

Parameter	Units	9269130004 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	1.6	1.6	0	20	
Nitrogen, Nitrite	mg/L	ND	ND		20	
Nitrogen, NO2 plus NO3	mg/L	1.6	1.6	0	20	

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QUALIFIERS

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-M	Pace Analytical Services - Minneapolis

SAMPLE QUALIFIERS

Sample: 9269130012

[1] The sample was analyzed within the recommended holding time but had QC failures. The reported results were analyzed outside the recommended holding time and confirmed the original analysis.

Sample: 9269130013

[1] The sample was analyzed within the recommended holding time but had QC failures. The reported results were analyzed outside the recommended holding time and confirmed the original analysis.

Sample: 9269130014

[1] The sample was analyzed within the recommended holding time but had QC failures. The reported results were analyzed outside the recommended holding time and confirmed the original analysis.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P5	The EPA or method required sample preservation degrades this compound, therefore acceptable recoveries may not be achieved in sample matrix spikes.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9269130002	MW-4	RSK 175	AIR/10268		
9269130003	MW-5	RSK 175	AIR/10268		
9269130004	MW-6	RSK 175	AIR/10268		
9269130005	MW-7	RSK 175	AIR/10268		
9269130006	MW-8	RSK 175	AIR/10268		
9269130007	MW-9	RSK 175	AIR/10268		
9269130008	MW-10	RSK 175	AIR/10268		
9269130009	MW-11	RSK 175	AIR/10268		
9269130010	MW-12	RSK 175	AIR/10268		
9269130011	MW-13	RSK 175	AIR/10268		
9269130012	MW-14	RSK 175	AIR/10274		
9269130013	MW-15	RSK 175	AIR/10274		
9269130014	MW-16	RSK 175	AIR/10274		
9269130001	MW-3	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130002	MW-4	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130003	MW-5	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130004	MW-6	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130005	MW-7	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130006	MW-8	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130007	MW-9	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130008	MW-10	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130009	MW-11	EPA 8011	OEXT/10000	EPA 8011	GCSV/7659
9269130010	MW-12	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130011	MW-13	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130012	MW-14	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130013	MW-15	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130014	MW-16	EPA 8011	OEXT/9963	EPA 8011	GCSV/7639
9269130001	MW-3	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130002	MW-4	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130003	MW-5	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130004	MW-6	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130005	MW-7	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130006	MW-8	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130007	MW-9	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130008	MW-10	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130009	MW-11	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130010	MW-12	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130011	MW-13	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130012	MW-14	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130013	MW-15	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130014	MW-16	EPA 3010	MPRP/6311	EPA 6010	ICP/5825
9269130001	MW-3	EPA 8260	MSV/10891		
9269130002	MW-4	EPA 8260	MSV/10891		
9269130003	MW-5	EPA 8260	MSV/10891		
9269130004	MW-6	EPA 8260	MSV/10891		
9269130005	MW-7	EPA 8260	MSV/10891		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGEFIELD FUEL + CONVENIENCE'S
Pace Project No.: 9269130

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9269130006	**MW-8**	EPA 8260	MSV/10891		
9269130007	**MW-9**	EPA 8260	MSV/10891		
9269130008	**MW-10**	EPA 8260	MSV/10891		
9269130009	**MW-11**	EPA 8260	MSV/10891		
9269130010	**MW-12**	EPA 8260	MSV/10891		
9269130011	**MW-13**	EPA 8260	MSV/10891		
9269130012	**MW-14**	EPA 8260	MSV/10891		
9269130013	**MW-15**	EPA 8260	MSV/10891		
9269130014	**MW-16**	EPA 8260	MSV/10891		
9269130002	**MW-4**	SM 3500-Fe D#4	WET/12422		
9269130003	**MW-5**	SM 3500-Fe D#4	WET/12422		
9269130004	**MW-6**	SM 3500-Fe D#4	WET/12422		
9269130005	**MW-7**	SM 3500-Fe D#4	WET/12422		
9269130006	**MW-8**	SM 3500-Fe D#4	WET/12422		
9269130007	**MW-9**	SM 3500-Fe D#4	WET/12421		
9269130008	**MW-10**	SM 3500-Fe D#4	WET/12421		
9269130009	**MW-11**	SM 3500-Fe D#4	WET/12422		
9269130010	**MW-12**	SM 3500-Fe D#4	WET/12422		
9269130011	**MW-13**	SM 3500-Fe D#4	WET/12422		
9269130012	**MW-14**	SM 3500-Fe D#4	WET/12422		
9269130013	**MW-15**	SM 3500-Fe D#4	WET/12422		
9269130014	**MW-16**	SM 3500-Fe D#4	WET/12422		
9269130002	**MW-4**	EPA 353.2	WETA/7347		
9269130003	**MW-5**	EPA 353.2	WETA/7347		
9269130004	**MW-6**	EPA 353.2	WETA/7347		
9269130005	**MW-7**	EPA 353.2	WETA/7345		
9269130006	**MW-8**	EPA 353.2	WETA/7345		
9269130007	**MW-9**	EPA 353.2	WETA/7345		
9269130008	**MW-10**	EPA 353.2	WETA/7345		
9269130009	**MW-11**	EPA 353.2	WETA/7345		
9269130010	**MW-12**	EPA 353.2	WETA/7345		
9269130011	**MW-13**	EPA 353.2	WETA/7345		
9269130012	**MW-14**	EPA 353.2	WETA/7345		
9269130013	**MW-15**	EPA 353.2	WETA/7347		
9269130014	**MW-16**	EPA 353.2	WETA/7345		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

1351840

Section A — Required Client Information:

Company: ECS
Address: 13504 S. Point Blvd
Charlotte, NC
Email To: RHutchins@ecsconsult.com
Phone: 704-583 2711 Fax:
Requested Due Date/TAT: Standard

Section B — Required Project Information:

Report To: Randy Hutchins
Copy To:
Purchase Order No.: 14-211851
Project Name: Bobfield Fuel + Convenience 3
Project Number: 14-211851

Section C — Invoice Information:

Attention: Christina White
Company Name: ECS
Address: Agawam, MA
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 2071-13

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D — Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): 8260 BTEX, MTBE, Naphthalene	1,2-DCA	8 Oxygenates	8011 EDB	Lead	Nitrate	Sulfate	Ferrous Iron	Methane	Residual Chlorine (Y/N)	Pace Project No./Lab I.D. 9216930
1	MW-3	WT	G			5-10-10	1555		7			X	X					X	X	X	X	X				001
2	MW-4						1600		2	X		X	X					X	X	X	X	X	X	X	X		002
3	MW-5						1525											X	X	X	X	X	X	X	X		003
4	MW-6						1530																				004
5	MW-7						1310																				005
6	MW-8						1305																				006
7	MW-9						1215																				007
8	MW-10						1210																				008
9	MW-11						1455																				009
10	MW-12						1445																				010
11	MW-13						1405																				011
12	MW-14					✓	1410		✓	✓		✓	✓					✓	✓	✓	✓	✓	✓	✓	✓		012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please report J-values	A. Williamson / ECS	5-10-10	1945	Colby Gott / Pace	5/11/10	1340	
	Colby Gott / Pace	05/11/10	1600	[illegible] / Pace	5/11/10	16:00	4.5 yes no yes

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Williamson, Brentley McNeill
SIGNATURE of SAMPLER: Aaron Williamson DATE Signed (MM/DD/YY): 5/10/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

1351841

Section A Required Client Information:

Company: ECS
Address: 13504 S. Point Blvd. Charlotte, NC
Email To: RHutchins@ecsconsult.com
Phone: 704-583-2711 Fax:
Requested Due Date/TAT: Standard

Section B Required Project Information:

Report To: Randy Hutchins
Copy To:
Purchase Order No.: 14-211651
Project Name: Edgefield Fuel & Convenience 3
Project Number: 14-211651

Section C Invoice Information:

Attention: Christina White
Company Name: ECS
Address: Agawam, MA
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: 8260 BTEX, M, N	1,2-DCA	8 oxygenates	8011 EDB	Lead	Nitrate	Sulfate	Ferrous Iron	Methane	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-15	WT	G			5-10-10	1540		12	X		X	X					X	X	X	X	X	X	X	X		9269130
2	MW-16	WT	G			5-10-10	1340		12	X		X	X					X	X	X	X	X	X	X	X		813
3																		X	X	X	X	X	X	X	X		
4																											
5																											
6																											
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Please report J-values.	A. Williamson/ECS	5-10-10	1945	Pace	05/11/10	1340				
	Pace	05/11/10	1600	Pace	5/11/10	1600	4.5	yes	no	yes

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Williamson, Brantley McNeill
SIGNATURE of SAMPLER: Aaron Williamson DATE Signed (MM/DD/YY): 5-10-10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15 May 2007

Pace Analytical

Sample Condition Upon Receipt

Client Name: ECI Project # 9269130

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used T060 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 4.5 Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Optional	
Proj. Due Date:	N/A
Proj. Name:	N/A

Date and Initials of person examining contents: Comm - 5/11/10

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: _____		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed
Samples checked for dechlorination:	☑Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): N/A		

Client Notification/ Resolution: Field Data Required? Y / N / N/A

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: 5/12/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

May 19, 2010

Kevin Herring
Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville NC 28078

TEL: (704) 875-9092
FAX: (704) 875-9091

RE: 9269130

Dear Kevin Herring: Order No: 1005B02

Analytical Environmental Services, Inc. received 13 samples on 5/13/2010 11:30:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/09-06/30/10.
-AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

James Forrest
Project Manager

1005B02

Chain of Custody

Pace Analytical
www.pacelabs.com

Workorder: 9269130 **Workorder Name:** EDGEFIELD FUEL + CONVENIENCE'S **Results Requested** 5/20/2010

Report / Invoice To	Subcontract To
Kevin Herring Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092 Email: kevin.herring@pacelabs.com	AES P.O. CHS10921

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: HCS	LAB USE ONLY
1	MW-4	5/10/2010 16:00	9269130002	Water			
2	MW-5	5/10/2010 15:25	9269130003	Water			
3	MW-6	5/10/2010 15:30	9269130004	Water			
4	MW-7	5/10/2010 13:10	9269130005	Water			
5	MW-8	5/10/2010 13:05	9269130006	Water			
6	MW-9	5/10/2010 12:15	9269130007	Water			
7	MW-10	5/10/2010 12:10	9269130008	Water			
8	MW-11	5/10/2010 14:55	9269130009	Water			
9	MW-12	5/10/2010 14:45	9269130010	Water			
10	MW-13	5/10/2010 14:05	9269130011	Water			
11	MW-14	5/10/2010 14:10	9269130012	Water			
12	MW-15	5/10/2010 15:40	9269130013	Water			
13	MW-16	5/10/2010 13:40	9269130014	Water			
14							
15							
16							
17							

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5/12/10 1700

5/13/10 11:30

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-4
Project:	9269130	**Collection Date:**	5/10/2010 4:00:00 PM
Lab ID:	1005B02-001	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	15	1.0		mg/L	R172117	1	05/17/2010 20:26	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-5
Project:	9269130	**Collection Date:**	5/10/2010 3:25:00 PM
Lab ID:	1005B02-002	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	35	1.0		mg/L	R172117	1	05/17/2010 20:40	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-6
Project:	9269130	**Collection Date:**	5/10/2010 3:30:00 PM
Lab ID:	1005B02-003	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	27	1.0		mg/L	R172117	1	05/17/2010 20:55	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-7
Project:	9269130	**Collection Date:**	5/10/2010 1:10:00 PM
Lab ID:	1005B02-004	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	34	1.0		mg/L	R172117	1	05/17/2010 21:10	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-8
Project:	9269130	**Collection Date:**	5/10/2010 1:05:00 PM
Lab ID:	1005B02-005	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	61	1.0		mg/L	R172117	1	05/17/2010 21:24	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-9
Project:	9269130	**Collection Date:**	5/10/2010 12:15:00 PM
Lab ID:	1005B02-006	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	9.5	1.0		mg/L	R172117	1	05/17/2010 21:39	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-10
Project:	9269130	**Collection Date:**	5/10/2010 12:10:00 PM
Lab ID:	1005B02-007	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	BRL	1.0		mg/L	R172117	1	05/17/2010 21:54	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-11
Project:	9269130	**Collection Date:**	5/10/2010 2:55:00 PM
Lab ID:	1005B02-008	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	10	1.0		mg/L	R172117	1	05/17/2010 22:53	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-12
Project:	9269130	**Collection Date:**	5/10/2010 2:45:00 PM
Lab ID:	1005B02-009	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	47	1.0		mg/L	R172117	1	05/17/2010 23:07	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-13
Project:	9269130	**Collection Date:**	5/10/2010 2:05:00 PM
Lab ID:	1005B02-010	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	84	1.0		mg/L	R172117	1	05/17/2010 23:22	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-14
Project:	9269130	**Collection Date:**	5/10/2010 2:10:00 PM
Lab ID:	1005B02-011	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	5.8	1.0		mg/L	R172117	1	05/17/2010 23:37	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-15
Project:	9269130	**Collection Date:**	5/10/2010 3:40:00 PM
Lab ID:	1005B02-012	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	50	1.0		mg/L	R172117	1	05/17/2010 23:52	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc **Date:** 19-May-10

Client:	Pace Analytical Services, Inc.	**Client Sample ID:**	MW-16
Project:	9269130	**Collection Date:**	5/10/2010 1:40:00 PM
Lab ID:	1005B02-013	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
ION SCAN SW9056A								
Sulfate	15	1.0		mg/L	R172117	1	05/18/2010 00:21	GR

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value		

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Pace Work Order Number 1005B02

Checklist completed by LA 5-13-10
Signature Date

Carrier name: FedEx ✓ UPS __ Courier __ Client __ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (4°C±2)* Yes ✓ No __

Cooler #1 3.7c Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted ✓ Yes __ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by LA

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\L\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample_Cooler_Receipt_Checklist

Client: Pace Analytical Services, Inc.
Project Name: 9269130
Workorder: 1005B02

ANALYTICAL QC SUMMARY REPORT

BatchID: R172117

Sample ID: **MB-R172117**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **172117**	
SampleType: **MBLK**	TestCode: **ION SCAN SW9056A**				BatchID: **R172117**		Analysis Date: **05/17/2010**		Seq No: **3575824**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	BRL	1.0	0	0	0	0	0	0	0	0	

Sample ID: **LCS-R172117**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **172117**	
SampleType: **LCS**	TestCode: **ION SCAN SW9056A**				BatchID: **R172117**		Analysis Date: **05/17/2010**		Seq No: **3575822**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	26.64	1.0	25	0.2047	106	90	110	0	0	0	

Sample ID: **1005B02-012AMS**	Client ID: **MW-15**				Units: **mg/L**		Prep Date:		Run No: **172117**	
SampleType: **MS**	TestCode: **ION SCAN SW9056A**				BatchID: **R172117**		Analysis Date: **05/18/2010**		Seq No: **3575873**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	72.23	1.0	25	49.82	89.7	90	110	0	0	0	S

Sample ID: **1005D61-001EMS**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **172117**	
SampleType: **MS**	TestCode: **ION SCAN SW9056A**				BatchID: **R172117**		Analysis Date: **05/17/2010**		Seq No: **3575828**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	127.7	5.0	125	3.725	99.1	90	110	0	0	0	

Sample ID: **1005D61-001EMSD**	Client ID:				Units: **mg/L**		Prep Date:		Run No: **172117**	
SampleType: **MSD**	TestCode: **ION SCAN SW9056A**				BatchID: **R172117**		Analysis Date: **05/17/2010**		Seq No: **3575830**	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Sulfate	131.9	5.0	125	3.725	103	90	110	127.7	3.27	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

APPENDIX J

Slug Test Data

SUMMARY of SLUG TEST ANALYSES

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID #: 12175 COUNTY: Edgefield

FACILITY NAME: Edgefield Fuel & Convenience 3

Slug Data

See
Appendix J Table 3 Figure _____ for a list of all data measurements.
(water level logs, etc.) (Complete as appropriate).

Water Level Recovery Data was measured by In-Situ Level Troll 700 (100 PSI)
(Hermit Data Logger, Manually with Water Level Indicator, etc.) (List Method)

Complete the following table for each well tested.
COMPLETE A SECOND SHEET IF MORE THAN FOUR WELLS ARE TESTED.

Slug Test Conducted in well(s) Number	MW-6	MW-11		
Initial Rise/Drawdown in well (feet)	1.909	1.948		
Radius of Well Casing (feet)	0.083	0.083		
Effective Radius of Well (feet)	0.33	0.33		
Static Saturated Aquifer Thickness (feet)	40	40		
Length of Well Screen (feet)	10	10		
Static Height of Water Column in Well (feet)	8.99	8.88		

Calculations

See
Appendix J Table 3 Figure _____ for calculations. (Complete as appropriate).
The method for aquifer calculations was Bouwer-Rice (I.e. Bouwer-Rice, Cooper, etc.)
Calculated values by well were as follows:

Slug Test Conducted in well(s) number	MW-6	MW-11		
Hydraulic Conductivity (ft/day)	0.11	0.26		

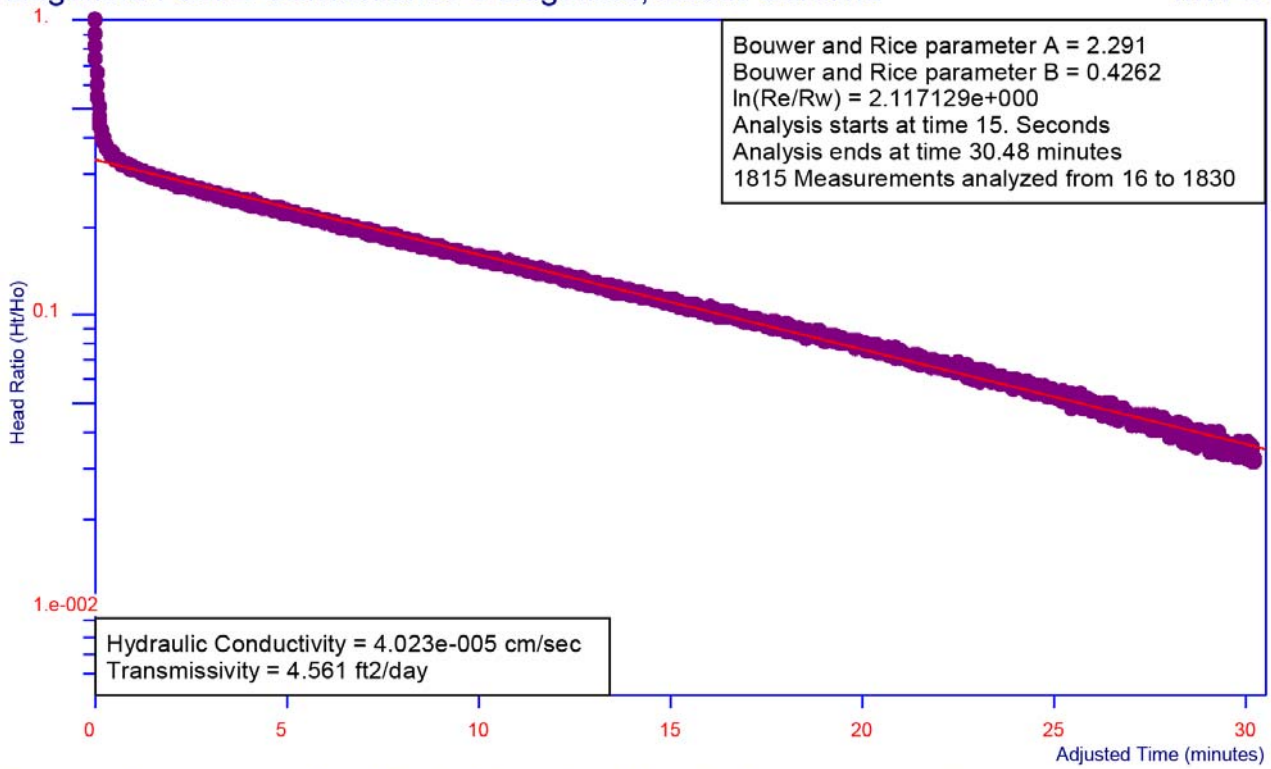
Thickness of the aquifer used to calculate hydraulic conductivity was 40 feet.
The aquifer is _____ confined _____ semi-confined x water table.

The estimated seepage velocity is 1.66 (MW-6) & 3.81 (MW-11) feet/year based on
a hydraulic conductivity of 0.11 (MW-6) & 0.26 (MW-11) a hydraulic gradient of 0.010 ft/ft and
a porosity of 25 per cent for a clayey silty SAND soil (list type).

SUMMARY of SLUG TEST

MW-6 (Slug Out) May 10, 2010 — Bouwer and Rice Graph

Edgefield Fuel & Convenience 3 Edgefield, South Carolina — MW-6



Project Number: 14-211651 for Edgefield Fuel & Convenience LLC

Ho is 1.909 feet at 15. Seconds

Analysis by Starpoint Software

MW-6 (Slug Out)

Site Name:	Edgefield Fuel & Convenience 3
Location:	Edgefield, South Carolina
Test Date:	May 10, 2010
Client:	Edgefield Fuel & Convenience LLC
Project Number:	14-211651
Import File:	F:\Projects\14-211651 Edgefield Fuel & Convenience 3\Slug Test Data\MW 6_20100

Well Label:	MW-6
Aquifer Thickness:	40. feet
Screen Length:	10. feet
Casing Radius:	8.3e-002 feet
Effective Radius:	0.33 feet
Static Water Level:	20. feet
Water Table to Screen Bottom:	8.99 feet
Anisotropy Ratio:	1.
Time Adjustment:	15. Seconds

Test starts with trial 15
There are 1830 time and drawdown measurements
Maximum head is 1.909 feet
Minimum head is -1.599e-002 feet

Trial	Time (Seconds)	Adjusted Time (Seconds)	Drawdown (feet)	Head (feet)	Head Ratio
1	0.	-15.	19.99	-1.163e-002	-6.092e-003
2	1.001	-14.	20.	-3.922e-003	-2.054e-003
3	2.001	-13.	20.	-4.527e-003	-2.371e-003
4	3.001	-12.	20.	-4.82e-003	-2.524e-003
5	4.001	-11.	20.01	8.746e-003	4.581e-003
6	5.001	-10.	20.	-1.359e-003	-7.118e-004
7	6.001	-9.	20.	-3.173e-003	-1.662e-003
8	7.001	-8.	19.99	-9.658e-003	-5.058e-003
9	8.001	-7.	19.98	-1.599e-002	-8.376e-003
10	9.001	-6.	20.	-2.259e-003	-1.183e-003
11	10.	-5.	20.	-1.057e-003	-5.536e-004
12	11.02	-3.985	19.99	-5.741e-003	-3.007e-003
13	12.	-3.	20.02	2.436e-002	1.276e-002
14	13.	-2.	21.26	1.258	0.6588
15	14.	-1.	21.75	1.75	0.9164
16	15.	0.	21.91	1.909	1.
17	16.	1.	21.71	1.713	0.8974
18	17.	2.	21.57	1.569	0.8217
19	18.	3.	21.42	1.416	0.7414
20	19.	4.	21.28	1.278	0.6693
21	20.	5.	21.16	1.156	0.6055
22	21.	6.	21.05	1.054	0.5521
23	22.	7.	20.97	0.9722	0.5092
24	23.	8.	20.9	0.9047	0.4738
25	24.	9.	20.86	0.8628	0.4519
26	25.	10.	20.83	0.833	0.4363
27	26.	11.	20.81	0.8113	0.4249
28	27.	12.	20.79	0.7859	0.4116
29	28.	13.	20.77	0.7659	0.4012
30	29.	14.	20.76	0.7576	0.3968
31	30.	15.	20.75	0.7481	0.3918
32	31.	16.	20.74	0.736	0.3855
33	32.	17.	20.73	0.73	0.3823

34	33.	18.	20.72	0.7203	0.3773
35	34.	19.	20.71	0.7102	0.372
36	35.	20.	20.7	0.7013	0.3673
37	36.	21.	20.7	0.6994	0.3663
38	37.	22.	20.7	0.6974	0.3652
39	38.	23.	20.69	0.6916	0.3622
40	39.	24.	20.69	0.6879	0.3603
41	40.	25.	20.68	0.682	0.3572
42	41.	26.	20.68	0.6796	0.3559
43	42.	27.	20.67	0.6717	0.3518
44	43.	28.	20.68	0.6758	0.3539
45	44.	29.	20.67	0.6702	0.351
46	45.	30.	20.66	0.659	0.3452
47	46.	31.	20.66	0.6601	0.3457
48	47.	32.	20.66	0.6565	0.3438
49	48.	33.	20.65	0.654	0.3426
50	49.	34.	20.65	0.6461	0.3384
51	50.	35.	20.65	0.6468	0.3388
52	51.	36.	20.64	0.6433	0.337
53	52.	37.	20.64	0.6412	0.3358
54	53.	38.	20.64	0.6429	0.3367
55	54.	39.	20.64	0.6408	0.3356
56	55.	40.	20.64	0.6384	0.3343
57	56.	41.	20.63	0.6332	0.3317
58	57.	42.	20.63	0.6334	0.3317
59	58.	43.	20.63	0.6319	0.3309
60	59.	44.	20.63	0.6252	0.3275
61	60.	45.	20.62	0.6242	0.3269
62	61.	46.	20.62	0.6248	0.3272
63	62.	47.	20.62	0.6219	0.3257
64	63.	48.	20.62	0.6204	0.3249
65	64.	49.	20.62	0.6184	0.3239
66	65.	50.	20.62	0.6156	0.3224
67	66.	51.	20.62	0.6154	0.3223
68	67.	52.	20.61	0.6141	0.3216
69	68.	53.	20.62	0.6175	0.3234
70	69.	54.	20.61	0.6139	0.3215
71	70.	55.	20.61	0.6094	0.3192
72	71.	56.	20.61	0.6073	0.3181
73	72.	57.	20.61	0.6054	0.3171
74	73.	58.	20.61	0.6058	0.3173
75	74.	59.	20.6	0.6018	0.3152
76	75.	60.	20.6	0.6021	0.3154
77	76.	61.	20.6	0.6033	0.316
78	77.	62.	20.6	0.6018	0.3152
79	78.	63.	20.6	0.5991	0.3138
80	79.	64.	20.59	0.5944	0.3113
81	80.	65.	20.6	0.5969	0.3126
82	81.	66.	20.6	0.5952	0.3117
83	82.	67.	20.6	0.5952	0.3117
84	83.	68.	20.59	0.5914	0.3098
85	84.	69.	20.59	0.5938	0.311
86	85.	70.	20.59	0.5887	0.3083
87	86.	71.	20.59	0.5874	0.3076
88	87.	72.	20.59	0.5852	0.3065
89	88.	73.	20.59	0.5896	0.3088
90	89.	74.	20.59	0.5868	0.3073

91	90.	75.	20.59	0.5882	0.3081
92	91.	76.	20.58	0.5831	0.3054
93	92.	77.	20.58	0.5813	0.3045
94	93.	78.	20.58	0.5834	0.3056
95	94.	79.	20.58	0.5786	0.303
96	95.	80.	20.58	0.578	0.3027
97	96.	81.	20.58	0.5768	0.3021
98	97.	82.	20.57	0.5717	0.2994
99	98.	83.	20.57	0.5742	0.3007
100	99.	84.	20.57	0.5733	0.3003
101	100.	85.	20.58	0.5751	0.3012
102	101.	86.	20.57	0.5694	0.2982
103	102.	87.	20.57	0.5691	0.2981
104	103.	88.	20.57	0.5688	0.2979
105	104.	89.	20.57	0.5682	0.2976
106	105.	90.	20.57	0.5692	0.2981
107	106.	91.	20.57	0.5664	0.2966
108	107.	92.	20.56	0.5635	0.2951
109	108.	93.	20.56	0.5644	0.2956
110	109.	94.	20.56	0.5618	0.2943
111	110.	95.	20.56	0.5611	0.2939
112	111.	96.	20.56	0.5609	0.2938
113	112.	97.	20.56	0.5591	0.2928
114	113.	98.	20.56	0.5617	0.2942
115	114.	99.	20.56	0.559	0.2928
116	115.	100.	20.56	0.5561	0.2913
117	116.	101.	20.55	0.5538	0.2901
118	117.	102.	20.56	0.5596	0.2931
119	118.	103.	20.56	0.5567	0.2916
120	119.	104.	20.55	0.5537	0.29
121	120.	105.	20.55	0.5541	0.2902
122	121.	106.	20.55	0.5507	0.2884
123	122.	107.	20.55	0.5507	0.2884
124	123.	108.	20.55	0.5538	0.2901
125	124.	109.	20.55	0.5495	0.2878
126	125.	110.	20.55	0.5466	0.2863
127	126.	111.	20.55	0.55	0.2881
128	127.	112.	20.55	0.5504	0.2883
129	128.	113.	20.55	0.5489	0.2875
130	129.	114.	20.55	0.5469	0.2864
131	130.	115.	20.54	0.5419	0.2838
132	131.	116.	20.54	0.5427	0.2842
133	132.	117.	20.54	0.5448	0.2853
134	133.	118.	20.54	0.5421	0.2839
135	134.	119.	20.54	0.5412	0.2834
136	135.	120.	20.54	0.5386	0.2821
137	136.	121.	20.54	0.5412	0.2834
138	137.	122.	20.54	0.5369	0.2812
139	138.	123.	20.54	0.5404	0.283
140	139.	124.	20.54	0.5375	0.2815
141	140.	125.	20.54	0.5354	0.2804
142	141.	126.	20.54	0.5351	0.2803
143	142.	127.	20.54	0.5359	0.2807
144	143.	128.	20.53	0.5333	0.2793
145	144.	129.	20.54	0.5351	0.2803
146	145.	130.	20.53	0.5336	0.2795
147	146.	131.	20.53	0.5265	0.2758

148	147.	132.	20.53	0.53	0.2776
149	148.	133.	20.54	0.5354	0.2804
150	149.	134.	20.53	0.5261	0.2755
151	150.	135.	20.53	0.527	0.276
152	151.	136.	20.53	0.5271	0.2761
153	152.	137.	20.53	0.5295	0.2773
154	153.	138.	20.53	0.5299	0.2775
155	154.	139.	20.53	0.525	0.275
156	155.	140.	20.53	0.5265	0.2758
157	156.	141.	20.52	0.5226	0.2737
158	157.	142.	20.53	0.525	0.275
159	158.	143.	20.52	0.5203	0.2725
160	159.	144.	20.52	0.5226	0.2737
161	160.	145.	20.52	0.5214	0.2731
162	161.	146.	20.52	0.5232	0.274
163	162.	147.	20.52	0.519	0.2718
164	163.	148.	20.52	0.5175	0.271
165	164.	149.	20.52	0.5187	0.2717
166	165.	150.	20.52	0.5187	0.2717
167	166.	151.	20.52	0.5181	0.2713
168	167.	152.	20.52	0.5166	0.2705
169	168.	153.	20.52	0.5167	0.2706
170	169.	154.	20.51	0.5119	0.2681
171	170.	155.	20.51	0.5143	0.2694
172	171.	156.	20.51	0.5148	0.2696
173	172.	157.	20.51	0.5117	0.268
174	173.	158.	20.51	0.5089	0.2665
175	174.	159.	20.51	0.5096	0.2669
176	175.	160.	20.51	0.509	0.2666
177	176.	161.	20.51	0.5123	0.2683
178	177.	162.	20.51	0.5101	0.2671
179	178.	163.	20.51	0.5087	0.2664
180	179.	164.	20.51	0.5101	0.2671
181	180.	165.	20.51	0.5072	0.2657
182	181.	166.	20.51	0.5068	0.2654
183	182.	167.	20.51	0.5051	0.2645
184	183.	168.	20.51	0.5077	0.2659
185	184.	169.	20.5	0.5042	0.2641
186	185.	170.	20.5	0.5021	0.263
187	186.	171.	20.5	0.5006	0.2622
188	187.	172.	20.5	0.5024	0.2631
189	188.	173.	20.5	0.4984	0.2611
190	189.	174.	20.5	0.4989	0.2613
191	190.	175.	20.5	0.4978	0.2607
192	191.	176.	20.5	0.4982	0.2609
193	192.	177.	20.5	0.5	0.2619
194	193.	178.	20.5	0.4975	0.2606
195	194.	179.	20.5	0.4994	0.2615
196	195.	180.	20.5	0.4953	0.2594
197	196.	181.	20.5	0.4968	0.2602
198	197.	182.	20.49	0.4902	0.2567
199	198.	183.	20.49	0.4942	0.2589
200	199.	184.	20.49	0.4944	0.2589
201	200.	185.	20.49	0.4918	0.2576
202	201.	186.	20.49	0.4915	0.2574
203	202.	187.	20.49	0.4905	0.2569
204	203.	188.	20.49	0.4933	0.2584

205	204.	189.	20.49	0.4906	0.2569
206	205.	190.	20.49	0.4912	0.2573
207	206.	191.	20.49	0.4908	0.257
208	207.	192.	20.49	0.4884	0.2558
209	208.	193.	20.49	0.4914	0.2574
210	209.	194.	20.49	0.4874	0.2553
211	210.	195.	20.48	0.4829	0.2529
212	211.	196.	20.49	0.4853	0.2542
213	212.	197.	20.48	0.4832	0.2531
214	213.	198.	20.48	0.4837	0.2533
215	214.	199.	20.48	0.4829	0.2529
216	215.	200.	20.48	0.4829	0.2529
217	216.	201.	20.48	0.484	0.2535
218	217.	202.	20.48	0.482	0.2524
219	218.	203.	20.48	0.4814	0.2521
220	219.	204.	20.49	0.4852	0.2541
221	220.	205.	20.48	0.4787	0.2507
222	221.	206.	20.48	0.482	0.2524
223	222.	207.	20.48	0.4803	0.2516
224	223.	208.	20.48	0.4787	0.2507
225	224.	209.	20.48	0.4782	0.2505
226	225.	210.	20.48	0.481	0.2519
227	226.	211.	20.47	0.4746	0.2486
228	227.	212.	20.48	0.477	0.2498
229	228.	213.	20.48	0.4769	0.2498
230	229.	214.	20.48	0.4767	0.2497
231	230.	215.	20.48	0.4752	0.2489
232	231.	216.	20.48	0.4755	0.2491
233	232.	217.	20.47	0.473	0.2477
234	233.	218.	20.47	0.4719	0.2472
235	234.	219.	20.47	0.4689	0.2456
236	235.	220.	20.47	0.4739	0.2482
237	236.	221.	20.47	0.4711	0.2468
238	237.	222.	20.47	0.4746	0.2486
239	238.	223.	20.47	0.4699	0.2461
240	239.	224.	20.47	0.4678	0.245
241	240.	225.	20.47	0.4684	0.2453
242	241.	226.	20.47	0.4678	0.245
243	242.	227.	20.47	0.4696	0.246
244	243.	228.	20.46	0.4647	0.2434
245	244.	229.	20.47	0.4656	0.2438
246	245.	230.	20.47	0.4677	0.2449
247	246.	231.	20.46	0.4642	0.2431
248	247.	232.	20.47	0.4662	0.2442
249	248.	233.	20.47	0.4657	0.2439
250	249.	234.	20.46	0.4622	0.2421
251	250.	235.	20.47	0.466	0.2441
252	251.	236.	20.46	0.4597	0.2408
253	252.	237.	20.46	0.4621	0.242
254	253.	238.	20.46	0.4616	0.2418
255	254.	239.	20.46	0.4618	0.2419
256	255.	240.	20.46	0.4622	0.2421
257	256.	241.	20.45	0.4547	0.2381
258	257.	242.	20.46	0.4567	0.2392
259	258.	243.	20.45	0.455	0.2383
260	259.	244.	20.45	0.4529	0.2372
261	260.	245.	20.46	0.4597	0.2408

262	261.	246.	20.46	0.4568	0.2392
263	262.	247.	20.46	0.4591	0.2404
264	263.	248.	20.46	0.4636	0.2428
265	264.	249.	20.46	0.4583	0.24
266	265.	250.	20.45	0.4529	0.2372
267	266.	251.	20.46	0.4555	0.2385
268	267.	252.	20.45	0.4544	0.238
269	268.	253.	20.46	0.4582	0.24
270	269.	254.	20.45	0.4487	0.235
271	270.	255.	20.46	0.4589	0.2404
272	271.	256.	20.45	0.4544	0.238
273	272.	257.	20.45	0.4482	0.2347
274	273.	258.	20.45	0.453	0.2373
275	274.	259.	20.45	0.4472	0.2342
276	275.	260.	20.45	0.4527	0.2371
277	276.	261.	20.45	0.4478	0.2345
278	277.	262.	20.45	0.4487	0.235
279	278.	263.	20.45	0.4472	0.2342
280	279.	264.	20.44	0.4446	0.2328
281	280.	265.	20.45	0.4487	0.235
282	281.	266.	20.44	0.441	0.231
283	282.	267.	20.45	0.4452	0.2332
284	283.	268.	20.44	0.4443	0.2327
285	284.	269.	20.44	0.4429	0.232
286	285.	270.	20.44	0.4431	0.2321
287	286.	271.	20.44	0.442	0.2315
288	287.	272.	20.44	0.4437	0.2324
289	288.	273.	20.44	0.4414	0.2312
290	289.	274.	20.44	0.4422	0.2316
291	290.	275.	20.44	0.4404	0.2306
292	291.	276.	20.44	0.4385	0.2297
293	292.	277.	20.44	0.4372	0.229
294	293.	278.	20.44	0.4387	0.2298
295	294.	279.	20.44	0.4432	0.2321
296	295.	280.	20.44	0.4358	0.2283
297	296.	281.	20.44	0.4355	0.2281
298	297.	282.	20.43	0.4331	0.2268
299	298.	283.	20.43	0.433	0.2268
300	299.	284.	20.43	0.4345	0.2276
301	300.	285.	20.44	0.441	0.231
302	301.	286.	20.43	0.434	0.2273
303	302.	287.	20.43	0.4299	0.2252
304	303.	288.	20.43	0.434	0.2273
305	304.	289.	20.43	0.431	0.2257
306	305.	290.	20.43	0.4292	0.2248
307	306.	291.	20.44	0.4367	0.2287
308	307.	292.	20.43	0.4308	0.2257
309	308.	293.	20.43	0.4293	0.2249
310	309.	294.	20.43	0.4328	0.2267
311	310.	295.	20.43	0.4256	0.2229
312	311.	296.	20.43	0.4277	0.224
313	312.	297.	20.43	0.4293	0.2249
314	313.	298.	20.43	0.4281	0.2242
315	314.	299.	20.43	0.4348	0.2277
316	315.	300.	20.43	0.4287	0.2246
317	316.	301.	20.43	0.4287	0.2245
318	317.	302.	20.42	0.4224	0.2212

319	318.	303.	20.43	0.4266	0.2234
320	319.	304.	20.42	0.4228	0.2215
321	320.	305.	20.42	0.4226	0.2213
322	321.	306.	20.42	0.4222	0.2212
323	322.	307.	20.43	0.4253	0.2227
324	323.	308.	20.43	0.4251	0.2227
325	324.	309.	20.42	0.4219	0.221
326	325.	310.	20.42	0.421	0.2205
327	326.	311.	20.42	0.4206	0.2203
328	327.	312.	20.42	0.4209	0.2204
329	328.	313.	20.42	0.4204	0.2202
330	329.	314.	20.42	0.4198	0.2199
331	330.	315.	20.42	0.4221	0.2211
332	331.	316.	20.42	0.4179	0.2189
333	332.	317.	20.42	0.4186	0.2193
334	333.	318.	20.42	0.4188	0.2193
335	334.	319.	20.42	0.418	0.2189
336	335.	320.	20.41	0.4132	0.2164
337	336.	321.	20.42	0.418	0.2189
338	337.	322.	20.42	0.4161	0.2179
339	338.	323.	20.41	0.4136	0.2166
340	339.	324.	20.42	0.4189	0.2194
341	340.	325.	20.42	0.4182	0.219
342	341.	326.	20.42	0.4182	0.219
343	342.	327.	20.41	0.4141	0.2169
344	343.	328.	20.41	0.4149	0.2173
345	344.	329.	20.41	0.4115	0.2155
346	345.	330.	20.41	0.4115	0.2155
347	346.	331.	20.41	0.4132	0.2164
348	347.	332.	20.41	0.4136	0.2166
349	348.	333.	20.41	0.4124	0.216
350	349.	334.	20.41	0.4103	0.2149
351	350.	335.	20.41	0.4055	0.2124
352	351.	336.	20.42	0.4152	0.2174
353	352.	337.	20.41	0.4091	0.2143
354	353.	338.	20.41	0.4063	0.2128
355	354.	339.	20.41	0.4105	0.215
356	355.	340.	20.41	0.4061	0.2127
357	356.	341.	20.41	0.4072	0.2132
358	357.	342.	20.4	0.4037	0.2114
359	358.	343.	20.41	0.4063	0.2128
360	359.	344.	20.4	0.4038	0.2115
361	360.	345.	20.4	0.4026	0.2109
362	361.	346.	20.4	0.4035	0.2114
363	362.	347.	20.41	0.4061	0.2127
364	363.	348.	20.4	0.4017	0.2104
365	364.	349.	20.4	0.4042	0.2117
366	365.	350.	20.4	0.4027	0.2109
367	366.	351.	20.4	0.4037	0.2114
368	367.	352.	20.4	0.3993	0.2091
369	368.	353.	20.4	0.4032	0.2112
370	369.	354.	20.4	0.4027	0.2109
371	370.	355.	20.4	0.4042	0.2117
372	371.	356.	20.4	0.398	0.2084
373	372.	357.	20.4	0.3975	0.2082
374	373.	358.	20.4	0.398	0.2084
375	374.	359.	20.4	0.4023	0.2107

376	375.	360.	20.4	0.3964	0.2076
377	376.	361.	20.4	0.399	0.209
378	377.	362.	20.4	0.3981	0.2085
379	378.	363.	20.4	0.3984	0.2087
380	379.	364.	20.4	0.3973	0.2081
381	380.	365.	20.4	0.398	0.2084
382	381.	366.	20.39	0.3937	0.2062
383	382.	367.	20.39	0.3927	0.2057
384	383.	368.	20.39	0.394	0.2064
385	384.	369.	20.39	0.3943	0.2065
386	385.	370.	20.39	0.391	0.2048
387	386.	371.	20.39	0.3934	0.2061
388	387.	372.	20.39	0.3901	0.2043
389	388.	373.	20.39	0.3893	0.2039
390	389.	374.	20.39	0.3927	0.2057
391	390.	375.	20.38	0.3847	0.2015
392	391.	376.	20.39	0.3872	0.2028
393	392.	377.	20.39	0.3909	0.2047
394	393.	378.	20.39	0.3878	0.2031
395	394.	379.	20.39	0.3874	0.2029
396	395.	380.	20.39	0.3866	0.2025
397	396.	381.	20.39	0.3895	0.204
398	397.	382.	20.39	0.3871	0.2027
399	398.	383.	20.39	0.3866	0.2025
400	399.	384.	20.39	0.3868	0.2026
401	400.	385.	20.38	0.3809	0.1995
402	401.	386.	20.38	0.3817	0.1999
403	402.	387.	20.38	0.3838	0.201
404	403.	388.	20.38	0.382	0.2
405	404.	389.	20.38	0.3816	0.1999
406	405.	390.	20.39	0.3876	0.203
407	406.	391.	20.39	0.386	0.2022
408	407.	392.	20.38	0.3785	0.1982
409	408.	393.	20.38	0.3798	0.1989
410	409.	394.	20.38	0.3832	0.2007
411	410.	395.	20.38	0.3762	0.197
412	411.	396.	20.38	0.3792	0.1986
413	412.	397.	20.38	0.3785	0.1982
414	413.	398.	20.38	0.3759	0.1969
415	414.	399.	20.38	0.3762	0.197
416	415.	400.	20.38	0.3782	0.1981
417	416.	401.	20.38	0.377	0.1974
418	417.	402.	20.38	0.3774	0.1977
419	418.	403.	20.37	0.3734	0.1955
420	419.	404.	20.38	0.3783	0.1981
421	420.	405.	20.38	0.38	0.199
422	421.	406.	20.37	0.3711	0.1944
423	422.	407.	20.38	0.3762	0.197
424	423.	408.	20.38	0.375	0.1964
425	424.	409.	20.38	0.3768	0.1974
426	425.	410.	20.38	0.3758	0.1968
427	426.	411.	20.37	0.3719	0.1948
428	427.	412.	20.37	0.3728	0.1952
429	428.	413.	20.37	0.3711	0.1944
430	429.	414.	20.37	0.373	0.1954
431	430.	415.	20.37	0.3685	0.193
432	431.	416.	20.37	0.3714	0.1945

433	432.	417.	20.37	0.369	0.1933
434	433.	418.	20.37	0.3744	0.1961
435	434.	419.	20.37	0.3743	0.196
436	435.	420.	20.37	0.3693	0.1934
437	436.	421.	20.37	0.371	0.1943
438	437.	422.	20.37	0.3684	0.1929
439	438.	423.	20.37	0.3691	0.1933
440	439.	424.	20.37	0.3652	0.1913
441	440.	425.	20.37	0.3693	0.1934
442	441.	426.	20.37	0.3658	0.1916
443	442.	427.	20.37	0.3696	0.1936
444	443.	428.	20.37	0.3676	0.1926
445	444.	429.	20.37	0.3654	0.1914
446	445.	430.	20.37	0.3698	0.1937
447	446.	431.	20.36	0.3598	0.1884
448	447.	432.	20.37	0.3669	0.1921
449	448.	433.	20.37	0.366	0.1917
450	449.	434.	20.36	0.3616	0.1894
451	450.	435.	20.36	0.3593	0.1882
452	451.	436.	20.36	0.3645	0.1909
453	452.	437.	20.36	0.3637	0.1905
454	453.	438.	20.36	0.3607	0.1889
455	454.	439.	20.36	0.3645	0.1909
456	455.	440.	20.36	0.3589	0.188
457	456.	441.	20.36	0.3596	0.1884
458	457.	442.	20.36	0.3598	0.1884
459	458.	443.	20.36	0.3593	0.1882
460	459.	444.	20.36	0.3607	0.1889
461	460.	445.	20.36	0.3595	0.1883
462	461.	446.	20.36	0.3569	0.1869
463	462.	447.	20.36	0.3584	0.1877
464	463.	448.	20.36	0.3577	0.1873
465	464.	449.	20.36	0.3609	0.189
466	465.	450.	20.35	0.3536	0.1852
467	466.	451.	20.35	0.3542	0.1855
468	467.	452.	20.36	0.3564	0.1867
469	468.	453.	20.35	0.3522	0.1845
470	469.	454.	20.35	0.3547	0.1858
471	470.	455.	20.35	0.3536	0.1852
472	471.	456.	20.35	0.3533	0.185
473	472.	457.	20.36	0.3559	0.1864
474	473.	458.	20.35	0.3516	0.1842
475	474.	459.	20.36	0.3568	0.1869
476	475.	460.	20.35	0.3547	0.1858
477	476.	461.	20.35	0.3544	0.1856
478	477.	462.	20.35	0.3472	0.1819
479	478.	463.	20.35	0.3521	0.1844
480	479.	464.	20.35	0.3481	0.1823
481	480.	465.	20.35	0.3494	0.183
482	481.	466.	20.35	0.348	0.1823
483	482.	467.	20.35	0.351	0.1839
484	483.	468.	20.35	0.3469	0.1817
485	484.	469.	20.35	0.3545	0.1857
486	485.	470.	20.35	0.3478	0.1822
487	486.	471.	20.35	0.3468	0.1816
488	487.	472.	20.34	0.3438	0.1801
489	488.	473.	20.34	0.3449	0.1806

490	489.	474.	20.35	0.347	0.1817
491	490.	475.	20.35	0.3497	0.1831
492	491.	476.	20.35	0.3453	0.1809
493	492.	477.	20.34	0.3444	0.1804
494	493.	478.	20.35	0.3456	0.181
495	494.	479.	20.34	0.3408	0.1785
496	495.	480.	20.34	0.3424	0.1794
497	496.	481.	20.35	0.3451	0.1808
498	497.	482.	20.34	0.3406	0.1784
499	498.	483.	20.34	0.3397	0.1779
500	499.	484.	20.34	0.3364	0.1762
501	500.	485.	20.34	0.3391	0.1776
502	501.	486.	20.34	0.3406	0.1784
503	502.	487.	20.34	0.3403	0.1782
504	503.	488.	20.34	0.34	0.1781
505	504.	489.	20.34	0.3418	0.179
506	505.	490.	20.34	0.3394	0.1778
507	506.	491.	20.34	0.3427	0.1795
508	507.	492.	20.34	0.3388	0.1774
509	508.	493.	20.34	0.3388	0.1775
510	509.	494.	20.34	0.3379	0.177
511	510.	495.	20.34	0.34	0.1781
512	511.	496.	20.34	0.3372	0.1766
513	512.	497.	20.33	0.3331	0.1744
514	513.	498.	20.33	0.3347	0.1753
515	514.	499.	20.34	0.3376	0.1768
516	515.	500.	20.34	0.3352	0.1756
517	516.	501.	20.34	0.337	0.1765
518	517.	502.	20.34	0.3382	0.1771
519	518.	503.	20.34	0.3381	0.1771
520	519.	504.	20.33	0.3314	0.1736
521	520.	505.	20.34	0.3367	0.1763
522	521.	506.	20.33	0.3322	0.174
523	522.	507.	20.33	0.3335	0.1747
524	523.	508.	20.34	0.336	0.176
525	524.	509.	20.33	0.3301	0.1729
526	525.	510.	20.33	0.3314	0.1736
527	526.	511.	20.33	0.3276	0.1716
528	527.	512.	20.33	0.3278	0.1717
529	528.	513.	20.33	0.3307	0.1732
530	529.	514.	20.33	0.3299	0.1728
531	530.	515.	20.33	0.3313	0.1735
532	531.	516.	20.33	0.3299	0.1728
533	532.	517.	20.33	0.3284	0.172
534	533.	518.	20.33	0.3258	0.1706
535	534.	519.	20.33	0.3301	0.1729
536	535.	520.	20.33	0.3283	0.1719
537	536.	521.	20.33	0.3284	0.172
538	537.	522.	20.33	0.3253	0.1703
539	538.	523.	20.33	0.3256	0.1705
540	539.	524.	20.33	0.3272	0.1714
541	540.	525.	20.33	0.3283	0.1719
542	541.	526.	20.33	0.3263	0.1709
543	542.	527.	20.32	0.3233	0.1693
544	543.	528.	20.32	0.3222	0.1688
545	544.	529.	20.33	0.3263	0.1709
546	545.	530.	20.33	0.3265	0.171

547	546.	531.	20.33	0.3257	0.1706
548	547.	532.	20.33	0.3254	0.1704
549	548.	533.	20.32	0.3213	0.1683
550	549.	534.	20.32	0.3192	0.1672
551	550.	535.	20.33	0.3275	0.1715
552	551.	536.	20.32	0.3224	0.1688
553	552.	537.	20.32	0.3236	0.1695
554	553.	538.	20.32	0.3186	0.1669
555	554.	539.	20.32	0.3231	0.1692
556	555.	540.	20.32	0.3197	0.1674
557	556.	541.	20.32	0.3191	0.1671
558	557.	542.	20.32	0.321	0.1681
559	558.	543.	20.32	0.3231	0.1692
560	559.	544.	20.32	0.3151	0.1651
561	560.	545.	20.31	0.3127	0.1638
562	561.	546.	20.31	0.3148	0.1649
563	562.	547.	20.32	0.3168	0.1659
564	563.	548.	20.32	0.3166	0.1658
565	564.	549.	20.32	0.3189	0.167
566	565.	550.	20.32	0.3157	0.1654
567	566.	551.	20.31	0.3145	0.1647
568	567.	552.	20.31	0.3135	0.1642
569	568.	553.	20.31	0.3138	0.1643
570	569.	554.	20.31	0.3139	0.1644
571	570.	555.	20.31	0.3135	0.1642
572	571.	556.	20.31	0.3135	0.1642
573	572.	557.	20.31	0.3136	0.1643
574	573.	558.	20.31	0.3126	0.1637
575	574.	559.	20.31	0.3136	0.1643
576	575.	560.	20.31	0.3112	0.163
577	576.	561.	20.31	0.312	0.1634
578	577.	562.	20.31	0.313	0.1639
579	578.	563.	20.31	0.3139	0.1644
580	579.	564.	20.31	0.312	0.1634
581	580.	565.	20.31	0.315	0.165
582	581.	566.	20.31	0.308	0.1613
583	582.	567.	20.31	0.3121	0.1635
584	583.	568.	20.31	0.3114	0.1631
585	584.	569.	20.31	0.3092	0.162
586	585.	570.	20.31	0.3114	0.1631
587	586.	571.	20.31	0.3117	0.1632
588	587.	572.	20.3	0.3029	0.1586
589	588.	573.	20.31	0.3071	0.1609
590	589.	574.	20.31	0.3077	0.1612
591	590.	575.	20.31	0.3089	0.1618
592	591.	576.	20.31	0.3071	0.1609
593	592.	577.	20.31	0.3073	0.1609
594	593.	578.	20.3	0.3035	0.159
595	594.	579.	20.3	0.3046	0.1595
596	595.	580.	20.31	0.3064	0.1605
597	596.	581.	20.31	0.305	0.1598
598	597.	582.	20.31	0.3065	0.1605
599	598.	583.	20.3	0.3032	0.1588
600	599.	584.	20.31	0.3062	0.1604
601	600.	585.	20.3	0.3015	0.1579
602	601.	586.	20.3	0.3002	0.1572
603	602.	587.	20.3	0.3046	0.1595

604	603.	588.	20.3	0.3031	0.1587
605	604.	589.	20.3	0.2993	0.1567
606	605.	590.	20.3	0.3006	0.1575
607	606.	591.	20.3	0.3043	0.1594
608	607.	592.	20.3	0.3011	0.1577
609	608.	593.	20.3	0.3012	0.1578
610	609.	594.	20.3	0.3001	0.1572
611	610.	595.	20.3	0.2981	0.1561
612	611.	596.	20.3	0.2994	0.1568
613	612.	597.	20.3	0.2997	0.157
614	613.	598.	20.3	0.3001	0.1572
615	614.	599.	20.3	0.2972	0.1556
616	615.	600.	20.3	0.2993	0.1567
617	616.	601.	20.3	0.2967	0.1554
618	617.	602.	20.3	0.2984	0.1563
619	618.	603.	20.3	0.3002	0.1572
620	619.	604.	20.3	0.2957	0.1549
621	620.	605.	20.3	0.299	0.1566
622	621.	606.	20.29	0.2945	0.1542
623	622.	607.	20.3	0.2963	0.1552
624	623.	608.	20.3	0.2961	0.1551
625	624.	609.	20.29	0.2916	0.1527
626	625.	610.	20.29	0.2927	0.1533
627	626.	611.	20.3	0.296	0.155
628	627.	612.	20.3	0.2979	0.156
629	628.	613.	20.3	0.2976	0.1559
630	629.	614.	20.29	0.2938	0.1539
631	630.	615.	20.29	0.2904	0.1521
632	631.	616.	20.29	0.2934	0.1537
633	632.	617.	20.29	0.2921	0.153
634	633.	618.	20.29	0.2916	0.1527
635	634.	619.	20.3	0.2961	0.1551
636	635.	620.	20.29	0.2925	0.1532
637	636.	621.	20.29	0.2948	0.1544
638	637.	622.	20.29	0.2924	0.1531
639	638.	623.	20.29	0.2916	0.1527
640	639.	624.	20.29	0.2872	0.1504
641	640.	625.	20.29	0.2893	0.1515
642	641.	626.	20.29	0.2853	0.1494
643	642.	627.	20.29	0.2925	0.1532
644	643.	628.	20.29	0.2937	0.1538
645	644.	629.	20.29	0.2949	0.1545
646	645.	630.	20.29	0.2886	0.1511
647	646.	631.	20.29	0.2871	0.1503
648	647.	632.	20.29	0.2872	0.1504
649	648.	633.	20.29	0.2925	0.1532
650	649.	634.	20.29	0.2896	0.1517
651	650.	635.	20.29	0.2874	0.1505
652	651.	636.	20.29	0.2859	0.1497
653	652.	637.	20.29	0.2859	0.1497
654	653.	638.	20.28	0.2843	0.1489
655	654.	639.	20.28	0.2848	0.1492
656	655.	640.	20.28	0.2833	0.1484
657	656.	641.	20.28	0.2845	0.149
658	657.	642.	20.29	0.2871	0.1503
659	658.	643.	20.28	0.284	0.1488
660	659.	644.	20.29	0.2856	0.1496

661	660.	645.	20.29	0.2874	0.1505
662	661.	646.	20.28	0.2801	0.1467
663	662.	647.	20.28	0.2832	0.1483
664	663.	648.	20.28	0.2807	0.147
665	664.	649.	20.28	0.2821	0.1477
666	665.	650.	20.29	0.2899	0.1519
667	666.	651.	20.28	0.2806	0.147
668	667.	652.	20.28	0.2833	0.1484
669	668.	653.	20.28	0.2797	0.1465
670	669.	654.	20.28	0.2798	0.1466
671	670.	655.	20.28	0.284	0.1488
672	671.	656.	20.28	0.281	0.1472
673	672.	657.	20.28	0.2785	0.1458
674	673.	658.	20.28	0.2801	0.1467
675	674.	659.	20.28	0.2806	0.147
676	675.	660.	20.28	0.2847	0.1491
677	676.	661.	20.28	0.2819	0.1477
678	677.	662.	20.28	0.2757	0.1444
679	678.	663.	20.28	0.2794	0.1463
680	679.	664.	20.28	0.2771	0.1451
681	680.	665.	20.28	0.2757	0.1444
682	681.	666.	20.28	0.2771	0.1451
683	682.	667.	20.28	0.2761	0.1446
684	683.	668.	20.27	0.2744	0.1437
685	684.	669.	20.27	0.2721	0.1425
686	685.	670.	20.27	0.2729	0.1429
687	686.	671.	20.27	0.2733	0.1432
688	687.	672.	20.27	0.2736	0.1433
689	688.	673.	20.28	0.2776	0.1454
690	689.	674.	20.27	0.2733	0.1432
691	690.	675.	20.27	0.2721	0.1425
692	691.	676.	20.27	0.2718	0.1424
693	692.	677.	20.27	0.2736	0.1433
694	693.	678.	20.27	0.2744	0.1437
695	694.	679.	20.27	0.2727	0.1428
696	695.	680.	20.27	0.2748	0.1439
697	696.	681.	20.27	0.2703	0.1416
698	697.	682.	20.27	0.2697	0.1413
699	698.	683.	20.27	0.2736	0.1433
700	699.	684.	20.27	0.2727	0.1428
701	700.	685.	20.27	0.2708	0.1418
702	701.	686.	20.27	0.2739	0.1435
703	702.	687.	20.27	0.2708	0.1418
704	703.	688.	20.27	0.2676	0.1402
705	704.	689.	20.27	0.2682	0.1405
706	705.	690.	20.27	0.2685	0.1406
707	706.	691.	20.27	0.2681	0.1404
708	707.	692.	20.27	0.2656	0.1391
709	708.	693.	20.27	0.2662	0.1394
710	709.	694.	20.27	0.2705	0.1417
711	710.	695.	20.27	0.2688	0.1408
712	711.	696.	20.27	0.2693	0.141
713	712.	697.	20.27	0.272	0.1424
714	713.	698.	20.27	0.2655	0.1391
715	714.	699.	20.27	0.2661	0.1394
716	715.	700.	20.27	0.2697	0.1413
717	716.	701.	20.26	0.2641	0.1383

718	717.	702.	20.26	0.264	0.1383
719	718.	703.	20.26	0.2632	0.1379
720	719.	704.	20.27	0.2656	0.1391
721	720.	705.	20.26	0.2638	0.1382
722	721.	706.	20.27	0.2654	0.139
723	722.	707.	20.26	0.2641	0.1383
724	723.	708.	20.26	0.2631	0.1378
725	724.	709.	20.26	0.2631	0.1378
726	725.	710.	20.27	0.2675	0.1401
727	726.	711.	20.27	0.265	0.1388
728	727.	712.	20.27	0.2664	0.1395
729	728.	713.	20.27	0.2655	0.1391
730	729.	714.	20.26	0.2577	0.1349
731	730.	715.	20.26	0.2596	0.136
732	731.	716.	20.26	0.2593	0.1358
733	732.	717.	20.26	0.2646	0.1386
734	733.	718.	20.26	0.2602	0.1363
735	734.	719.	20.26	0.2616	0.137
736	735.	720.	20.26	0.2607	0.1365
737	736.	721.	20.26	0.2586	0.1354
738	737.	722.	20.26	0.2614	0.1369
739	738.	723.	20.26	0.2616	0.137
740	739.	724.	20.26	0.2579	0.1351
741	740.	725.	20.26	0.2611	0.1368
742	741.	726.	20.26	0.2643	0.1384
743	742.	727.	20.26	0.2586	0.1354
744	743.	728.	20.26	0.2602	0.1363
745	744.	729.	20.26	0.2561	0.1341
746	745.	730.	20.26	0.2593	0.1358
747	746.	731.	20.26	0.2573	0.1348
748	747.	732.	20.26	0.2573	0.1348
749	748.	733.	20.25	0.2543	0.1332
750	749.	734.	20.25	0.253	0.1325
751	750.	735.	20.25	0.2549	0.1335
752	751.	736.	20.26	0.2573	0.1348
753	752.	737.	20.26	0.2557	0.1339
754	753.	738.	20.25	0.2514	0.1317
755	754.	739.	20.26	0.2602	0.1363
756	755.	740.	20.26	0.2555	0.1338
757	756.	741.	20.25	0.2534	0.1327
758	757.	742.	20.25	0.2539	0.133
759	758.	743.	20.25	0.2543	0.1332
760	759.	744.	20.25	0.2514	0.1317
761	760.	745.	20.26	0.2561	0.1341
762	761.	746.	20.25	0.2492	0.1305
763	762.	747.	20.25	0.2527	0.1323
764	763.	748.	20.25	0.251	0.1315
765	764.	749.	20.25	0.2519	0.1319
766	765.	750.	20.25	0.2487	0.1303
767	766.	751.	20.25	0.2481	0.13
768	767.	752.	20.25	0.2531	0.1326
769	768.	753.	20.25	0.2507	0.1313
770	769.	754.	20.25	0.2474	0.1296
771	770.	755.	20.25	0.2503	0.1311
772	771.	756.	20.25	0.2454	0.1285
773	772.	757.	20.25	0.2481	0.13
774	773.	758.	20.24	0.245	0.1283

775	774.	759.	20.25	0.2509	0.1314
776	775.	760.	20.25	0.2477	0.1297
777	776.	761.	20.25	0.2493	0.1306
778	777.	762.	20.25	0.2533	0.1327
779	778.	763.	20.25	0.2454	0.1285
780	779.	764.	20.25	0.2478	0.1298
781	780.	765.	20.24	0.2447	0.1282
782	781.	766.	20.25	0.2465	0.1291
783	782.	767.	20.25	0.2484	0.1301
784	783.	768.	20.24	0.2435	0.1275
785	784.	769.	20.25	0.248	0.1299
786	785.	770.	20.24	0.2448	0.1282
787	786.	771.	20.25	0.2459	0.1288
788	787.	772.	20.25	0.2468	0.1293
789	788.	773.	20.24	0.2418	0.1266
790	789.	774.	20.24	0.243	0.1273
791	790.	775.	20.24	0.2435	0.1275
792	791.	776.	20.24	0.2432	0.1274
793	792.	777.	20.24	0.2445	0.1281
794	793.	778.	20.24	0.2426	0.127
795	794.	779.	20.24	0.2401	0.1258
796	795.	780.	20.24	0.243	0.1273
797	796.	781.	20.24	0.2433	0.1274
798	797.	782.	20.24	0.2445	0.1281
799	798.	783.	20.24	0.2409	0.1262
800	799.	784.	20.24	0.2436	0.1276
801	800.	785.	20.24	0.2415	0.1265
802	801.	786.	20.24	0.2421	0.1268
803	802.	787.	20.24	0.2388	0.1251
804	803.	788.	20.24	0.2376	0.1244
805	804.	789.	20.24	0.2377	0.1245
806	805.	790.	20.24	0.2358	0.1235
807	806.	791.	20.24	0.2391	0.1252
808	807.	792.	20.24	0.238	0.1247
809	808.	793.	20.24	0.2403	0.1259
810	809.	794.	20.24	0.2377	0.1245
811	810.	795.	20.24	0.2401	0.1258
812	811.	796.	20.24	0.2374	0.1243
813	812.	797.	20.24	0.2358	0.1235
814	813.	798.	20.24	0.2398	0.1256
815	814.	799.	20.24	0.24	0.1257
816	815.	800.	20.24	0.235	0.1231
817	816.	801.	20.24	0.2365	0.1239
818	817.	802.	20.23	0.2327	0.1219
819	818.	803.	20.24	0.2423	0.1269
820	819.	804.	20.23	0.2346	0.1228
821	820.	805.	20.23	0.232	0.1215
822	821.	806.	20.23	0.2321	0.1216
823	822.	807.	20.24	0.2362	0.1237
824	823.	808.	20.24	0.2383	0.1248
825	824.	809.	20.23	0.2347	0.1229
826	825.	810.	20.23	0.2312	0.1211
827	826.	811.	20.23	0.2349	0.123
828	827.	812.	20.23	0.2341	0.1226
829	828.	813.	20.23	0.2327	0.1219
830	829.	814.	20.24	0.2361	0.1236
831	830.	815.	20.23	0.2291	0.12

832	831.	816.	20.23	0.2293	0.1201
833	832.	817.	20.23	0.2314	0.1212
834	833.	818.	20.23	0.231	0.121
835	834.	819.	20.24	0.237	0.1241
836	835.	820.	20.23	0.2312	0.1211
837	836.	821.	20.23	0.2326	0.1218
838	837.	822.	20.23	0.2308	0.1209
839	838.	823.	20.23	0.2327	0.1219
840	839.	824.	20.23	0.2297	0.1203
841	840.	825.	20.23	0.2291	0.12
842	841.	826.	20.23	0.2297	0.1203
843	842.	827.	20.23	0.2305	0.1207
844	843.	828.	20.23	0.2294	0.1202
845	844.	829.	20.23	0.227	0.1189
846	845.	830.	20.23	0.2293	0.1201
847	846.	831.	20.23	0.2267	0.1187
848	847.	832.	20.23	0.2305	0.1207
849	848.	833.	20.23	0.2282	0.1195
850	849.	834.	20.23	0.2281	0.1195
851	850.	835.	20.23	0.23	0.1205
852	851.	836.	20.23	0.2254	0.118
853	852.	837.	20.23	0.2287	0.1198
854	853.	838.	20.22	0.2237	0.1172
855	854.	839.	20.23	0.2296	0.1202
856	855.	840.	20.23	0.2273	0.1191
857	856.	841.	20.23	0.2252	0.118
858	857.	842.	20.22	0.2225	0.1165
859	858.	843.	20.22	0.2222	0.1164
860	859.	844.	20.22	0.2239	0.1172
861	860.	845.	20.22	0.2239	0.1172
862	861.	846.	20.23	0.2264	0.1186
863	862.	847.	20.23	0.2281	0.1195
864	863.	848.	20.22	0.2237	0.1172
865	864.	849.	20.22	0.2228	0.1167
866	865.	850.	20.22	0.2234	0.117
867	866.	851.	20.23	0.226	0.1184
868	867.	852.	20.22	0.2233	0.1169
869	868.	853.	20.23	0.226	0.1184
870	869.	854.	20.22	0.2228	0.1167
871	870.	855.	20.23	0.2254	0.118
872	871.	856.	20.22	0.2236	0.1171
873	872.	857.	20.22	0.2196	0.115
874	873.	858.	20.22	0.219	0.1147
875	874.	859.	20.22	0.2219	0.1162
876	875.	860.	20.22	0.2207	0.1156
877	876.	861.	20.22	0.2199	0.1152
878	877.	862.	20.22	0.2216	0.1161
879	878.	863.	20.22	0.2195	0.1149
880	879.	864.	20.22	0.2216	0.1161
881	880.	865.	20.22	0.2202	0.1153
882	881.	866.	20.22	0.2169	0.1136
883	882.	867.	20.22	0.2175	0.1139
884	883.	868.	20.22	0.2204	0.1154
885	884.	869.	20.22	0.2192	0.1148
886	885.	870.	20.22	0.2207	0.1156
887	886.	871.	20.22	0.2202	0.1153
888	887.	872.	20.22	0.219	0.1147

889	888.	873.	20.22	0.2198	0.1151
890	889.	874.	20.22	0.219	0.1147
891	890.	875.	20.22	0.2162	0.1132
892	891.	876.	20.21	0.2143	0.1123
893	892.	877.	20.22	0.2183	0.1143
894	893.	878.	20.21	0.2145	0.1123
895	894.	879.	20.21	0.2148	0.1125
896	895.	880.	20.22	0.2172	0.1138
897	896.	881.	20.22	0.2205	0.1155
898	897.	882.	20.22	0.2155	0.1129
899	898.	883.	20.22	0.2153	0.1127
900	899.	884.	20.22	0.2186	0.1145
901	900.	885.	20.21	0.2139	0.112
902	901.	886.	20.22	0.2157	0.113
903	902.	887.	20.22	0.216	0.1131
904	903.	888.	20.22	0.2154	0.1128
905	904.	889.	20.21	0.2091	0.1095
906	905.	890.	20.22	0.216	0.1131
907	906.	891.	20.21	0.2124	0.1112
908	907.	892.	20.21	0.2145	0.1123
909	908.	893.	20.21	0.2112	0.1106
910	909.	894.	20.21	0.2119	0.111
911	910.	895.	20.21	0.2128	0.1115
912	911.	896.	20.21	0.2116	0.1108
913	912.	897.	20.21	0.2112	0.1106
914	913.	898.	20.21	0.2103	0.1101
915	914.	899.	20.21	0.2097	0.1098
916	915.	900.	20.21	0.2139	0.112
917	916.	901.	20.21	0.2091	0.1095
918	917.	902.	20.21	0.21	0.11
919	918.	903.	20.21	0.2086	0.1093
920	919.	904.	20.21	0.2109	0.1104
921	920.	905.	20.21	0.2116	0.1108
922	921.	906.	20.21	0.2109	0.1104
923	922.	907.	20.22	0.216	0.1131
924	923.	908.	20.21	0.2097	0.1098
925	924.	909.	20.21	0.2094	0.1097
926	925.	910.	20.21	0.2098	0.1099
927	926.	911.	20.21	0.2098	0.1099
928	927.	912.	20.21	0.2077	0.1088
929	928.	913.	20.21	0.2062	0.108
930	929.	914.	20.21	0.211	0.1105
931	930.	915.	20.2	0.2041	0.1069
932	931.	916.	20.21	0.2098	0.1099
933	932.	917.	20.21	0.2085	0.1092
934	933.	918.	20.21	0.2057	0.1078
935	934.	919.	20.21	0.2054	0.1076
936	935.	920.	20.21	0.2072	0.1085
937	936.	921.	20.21	0.2062	0.108
938	937.	922.	20.21	0.2054	0.1076
939	938.	923.	20.21	0.2051	0.1074
940	939.	924.	20.21	0.2068	0.1083
941	940.	925.	20.21	0.2057	0.1078
942	941.	926.	20.21	0.208	0.1089
943	942.	927.	20.21	0.2051	0.1074
944	943.	928.	20.2	0.204	0.1068
945	944.	929.	20.2	0.2011	0.1053

946	945.	930.	20.2	0.2002	0.1048
947	946.	931.	20.2	0.204	0.1068
948	947.	932.	20.21	0.2075	0.1087
949	948.	933.	20.2	0.2033	0.1065
950	949.	934.	20.2	0.202	0.1058
951	950.	935.	20.2	0.2038	0.1067
952	951.	936.	20.2	0.2044	0.107
953	952.	937.	20.2	0.1999	0.1047
954	953.	938.	20.2	0.2038	0.1067
955	954.	939.	20.2	0.2048	0.1073
956	955.	940.	20.2	0.2005	0.105
957	956.	941.	20.2	0.2038	0.1067
958	957.	942.	20.2	0.2014	0.1055
959	958.	943.	20.2	0.1997	0.1046
960	959.	944.	20.2	0.2017	0.1056
961	960.	945.	20.2	0.1975	0.1034
962	961.	946.	20.2	0.1993	0.1044
963	962.	947.	20.2	0.2023	0.1059
964	963.	948.	20.2	0.1968	0.1031
965	964.	949.	20.2	0.1977	0.1036
966	965.	950.	20.2	0.2006	0.1051
967	966.	951.	20.2	0.1956	0.1025
968	967.	952.	20.2	0.1982	0.1038
969	968.	953.	20.2	0.1976	0.1035
970	969.	954.	20.2	0.2	0.1048
971	970.	955.	20.2	0.2	0.1048
972	971.	956.	20.2	0.1953	0.1023
973	972.	957.	20.2	0.1988	0.1041
974	973.	958.	20.2	0.1979	0.1036
975	974.	959.	20.2	0.1959	0.1026
976	975.	960.	20.19	0.192	0.1006
977	976.	961.	20.2	0.1972	0.1033
978	977.	962.	20.19	0.1949	0.1021
979	978.	963.	20.2	0.2029	0.1063
980	979.	964.	20.19	0.1944	0.1018
981	980.	965.	20.2	0.1985	0.104
982	981.	966.	20.2	0.1956	0.1025
983	982.	967.	20.2	0.1976	0.1035
984	983.	968.	20.2	0.195	0.1021
985	984.	969.	20.2	0.1972	0.1033
986	985.	970.	20.2	0.1956	0.1025
987	986.	971.	20.19	0.1937	0.1014
988	987.	972.	20.2	0.1961	0.1027
989	988.	973.	20.19	0.1893	9.915e-002
990	989.	974.	20.19	0.1908	9.994e-002
991	990.	975.	20.19	0.1899	9.946e-002
992	991.	976.	20.2	0.1956	0.1025
993	992.	977.	20.19	0.1901	9.954e-002
994	993.	978.	20.19	0.1949	0.1021
995	994.	979.	20.19	0.1914	0.1003
996	995.	980.	20.19	0.189	9.899e-002
997	996.	981.	20.19	0.1928	0.101
998	997.	982.	20.19	0.1907	9.985e-002
999	998.	983.	20.19	0.1935	0.1014
1000	999.	984.	20.19	0.1925	0.1008
1001	1000	985.	20.19	0.1911	0.1001
1002	1001	986.	20.19	0.1913	0.1002

1003	1002	987.	20.19	0.1887	9.883e-002
1004	1003	988.	20.19	0.1902	9.962e-002
1005	1004	989.	20.19	0.1907	9.985e-002
1006	1005	990.	20.19	0.1904	9.97e-002
1007	1006	991.	20.19	0.1863	9.756e-002
1008	1007	992.	20.19	0.1867	9.78e-002
1009	1008	993.	20.19	0.1935	0.1014
1010	1009	994.	20.19	0.1867	9.78e-002
1011	1010	995.	20.19	0.1876	9.828e-002
1012	1011	996.	20.19	0.1899	9.946e-002
1013	1012	997.	20.19	0.1913	0.1002
1014	1013	998.	20.19	0.1864	9.764e-002
1015	1014	999.	20.19	0.1882	9.859e-002
1016	1015	1000	20.19	0.187	9.796e-002
1017	1016	1001	20.19	0.1864	9.764e-002
1018	1017	1002	20.19	0.1879	9.843e-002
1019	1018	1003	20.19	0.1913	0.1002
1020	1019	1004	20.19	0.1854	9.709e-002
1021	1020	1005	20.19	0.1878	9.835e-002
1022	1021	1006	20.18	0.183	9.583e-002
1023	1022	1007	20.19	0.1882	9.859e-002
1024	1023	1008	20.18	0.1828	9.575e-002
1025	1024	1009	20.18	0.1849	9.685e-002
1026	1025	1010	20.19	0.1879	9.843e-002
1027	1026	1011	20.19	0.1858	9.733e-002
1028	1027	1012	20.19	0.1851	9.693e-002
1029	1028	1013	20.19	0.1855	9.717e-002
1030	1029	1014	20.19	0.1854	9.709e-002
1031	1030	1015	20.19	0.1864	9.764e-002
1032	1031	1016	20.18	0.1805	9.456e-002
1033	1032	1017	20.19	0.1852	9.701e-002
1034	1033	1018	20.18	0.1828	9.575e-002
1035	1034	1019	20.19	0.1852	9.701e-002
1036	1035	1020	20.18	0.1822	9.543e-002
1037	1036	1021	20.18	0.1816	9.511e-002
1038	1037	1022	20.18	0.1825	9.559e-002
1039	1038	1023	20.19	0.1855	9.717e-002
1040	1039	1024	20.18	0.1815	9.504e-002
1041	1040	1025	20.18	0.1816	9.511e-002
1042	1041	1026	20.18	0.1831	9.591e-002
1043	1042	1027	20.18	0.1805	9.456e-002
1044	1043	1028	20.18	0.1842	9.645e-002
1045	1044	1029	20.18	0.1818	9.52e-002
1046	1045	1030	20.18	0.184	9.638e-002
1047	1046	1031	20.18	0.184	9.638e-002
1048	1047	1032	20.18	0.184	9.638e-002
1049	1048	1033	20.18	0.1825	9.559e-002
1050	1049	1034	20.18	0.1792	9.385e-002
1051	1050	1035	20.18	0.1804	9.449e-002
1052	1051	1036	20.18	0.1837	9.622e-002
1053	1052	1037	20.18	0.1808	9.471e-002
1054	1053	1038	20.18	0.1795	9.401e-002
1055	1054	1039	20.18	0.1798	9.417e-002
1056	1055	1040	20.18	0.1805	9.456e-002
1057	1056	1041	20.18	0.1793	9.393e-002
1058	1057	1042	20.18	0.1822	9.543e-002
1059	1058	1043	20.18	0.1772	9.282e-002

1060	1059	1044	20.18	0.1768	9.258e-002
1061	1060	1045	20.18	0.1766	9.251e-002
1062	1061	1046	20.18	0.1807	9.464e-002
1063	1062	1047	20.18	0.1763	9.235e-002
1064	1063	1048	20.18	0.1792	9.385e-002
1065	1064	1049	20.18	0.1754	9.187e-002
1066	1065	1050	20.18	0.1769	9.267e-002
1067	1066	1051	20.18	0.1786	9.354e-002
1068	1067	1052	20.18	0.1756	9.195e-002
1069	1068	1053	20.18	0.179	9.377e-002
1070	1069	1054	20.18	0.1754	9.187e-002
1071	1070	1055	20.18	0.1756	9.195e-002
1072	1071	1056	20.18	0.1759	9.211e-002
1073	1072	1057	20.18	0.176	9.219e-002
1074	1073	1058	20.18	0.178	9.322e-002
1075	1074	1059	20.18	0.1771	9.275e-002
1076	1075	1060	20.18	0.181	9.48e-002
1077	1076	1061	20.18	0.179	9.377e-002
1078	1077	1062	20.17	0.1724	9.03e-002
1079	1078	1063	20.18	0.1762	9.227e-002
1080	1079	1064	20.18	0.1799	9.425e-002
1081	1080	1065	20.17	0.1744	9.132e-002
1082	1081	1066	20.18	0.1784	9.346e-002
1083	1082	1067	20.17	0.1721	9.013e-002
1084	1083	1068	20.17	0.1739	9.109e-002
1085	1084	1069	20.17	0.173	9.061e-002
1086	1085	1070	20.17	0.1716	8.99e-002
1087	1086	1071	20.17	0.1718	8.998e-002
1088	1087	1072	20.17	0.1733	9.077e-002
1089	1088	1073	20.18	0.1756	9.195e-002
1090	1089	1074	20.17	0.1748	9.156e-002
1091	1090	1075	20.17	0.1707	8.942e-002
1092	1091	1076	20.17	0.1727	9.045e-002
1093	1092	1077	20.17	0.1713	8.974e-002
1094	1093	1078	20.17	0.1725	9.037e-002
1095	1094	1079	20.17	0.173	9.061e-002
1096	1095	1080	20.17	0.1692	8.863e-002
1097	1096	1081	20.17	0.1725	9.037e-002
1098	1097	1082	20.17	0.1668	8.738e-002
1099	1098	1083	20.18	0.1772	9.282e-002
1100	1099	1084	20.17	0.1677	8.784e-002
1101	1100	1085	20.17	0.1713	8.974e-002
1102	1101	1086	20.17	0.1686	8.833e-002
1103	1102	1087	20.17	0.1721	9.013e-002
1104	1103	1088	20.17	0.1692	8.863e-002
1105	1104	1089	20.17	0.173	9.061e-002
1106	1105	1090	20.17	0.172	9.006e-002
1107	1106	1091	20.17	0.1725	9.037e-002
1108	1107	1092	20.17	0.1679	8.792e-002
1109	1108	1093	20.17	0.1679	8.792e-002
1110	1109	1094	20.17	0.1679	8.792e-002
1111	1110	1095	20.17	0.1694	8.871e-002
1112	1111	1096	20.17	0.1694	8.871e-002
1113	1112	1097	20.17	0.1667	8.729e-002
1114	1113	1098	20.17	0.1692	8.863e-002
1115	1114	1099	20.17	0.1676	8.777e-002
1116	1115	1100	20.17	0.1661	8.698e-002

1117	1116	1101	20.17	0.1698	8.895e-002
1118	1117	1102	20.17	0.1671	8.753e-002
1119	1118	1103	20.17	0.1673	8.76e-002
1120	1119	1104	20.17	0.1661	8.698e-002
1121	1120	1105	20.17	0.1674	8.769e-002
1122	1121	1106	20.16	0.1646	8.619e-002
1123	1122	1107	20.17	0.1662	8.706e-002
1124	1123	1108	20.17	0.1653	8.658e-002
1125	1124	1109	20.17	0.1653	8.658e-002
1126	1125	1110	20.17	0.1685	8.824e-002
1127	1126	1111	20.17	0.1676	8.777e-002
1128	1127	1112	20.16	0.1599	8.374e-002
1129	1128	1113	20.17	0.1688	8.839e-002
1130	1129	1114	20.17	0.1653	8.658e-002
1131	1130	1115	20.17	0.1674	8.769e-002
1132	1131	1116	20.17	0.169	8.851e-002
1133	1132	1117	20.16	0.1632	8.548e-002
1134	1133	1118	20.16	0.1631	8.543e-002
1135	1134	1119	20.17	0.1656	8.674e-002
1136	1135	1120	20.16	0.1632	8.548e-002
1137	1136	1121	20.16	0.1629	8.531e-002
1138	1137	1122	20.16	0.1617	8.468e-002
1139	1138	1123	20.16	0.1624	8.507e-002
1140	1139	1124	20.16	0.1629	8.531e-002
1141	1140	1125	20.16	0.1633	8.555e-002
1142	1141	1126	20.16	0.1647	8.626e-002
1143	1142	1127	20.16	0.1615	8.46e-002
1144	1143	1128	20.16	0.1627	8.523e-002
1145	1144	1129	20.16	0.1641	8.595e-002
1146	1145	1130	20.16	0.1605	8.405e-002
1147	1146	1131	20.17	0.1686	8.833e-002
1148	1147	1132	20.16	0.1614	8.453e-002
1149	1148	1133	20.16	0.1573	8.239e-002
1150	1149	1134	20.17	0.1664	8.714e-002
1151	1150	1135	20.16	0.1594	8.35e-002
1152	1151	1136	20.16	0.1612	8.441e-002
1153	1152	1137	20.16	0.162	8.484e-002
1154	1153	1138	20.16	0.163	8.539e-002
1155	1154	1139	20.16	0.1602	8.39e-002
1156	1155	1140	20.16	0.1608	8.421e-002
1157	1156	1141	20.16	0.1569	8.216e-002
1158	1157	1142	20.16	0.1576	8.255e-002
1159	1158	1143	20.16	0.1612	8.445e-002
1160	1159	1144	20.16	0.1605	8.405e-002
1161	1160	1145	20.16	0.1564	8.191e-002
1162	1161	1146	20.16	0.1621	8.492e-002
1163	1162	1147	20.16	0.1581	8.278e-002
1164	1163	1148	20.16	0.16	8.381e-002
1165	1164	1149	20.16	0.1596	8.358e-002
1166	1165	1150	20.16	0.1582	8.287e-002
1167	1166	1151	20.16	0.159	8.326e-002
1168	1167	1152	20.16	0.1603	8.397e-002
1169	1168	1153	20.16	0.1573	8.239e-002
1170	1169	1154	20.16	0.1565	8.199e-002
1171	1170	1155	20.16	0.1567	8.208e-002
1172	1171	1156	20.16	0.1588	8.319e-002
1173	1172	1157	20.16	0.1554	8.137e-002

1174	1173	1158	20.16	0.1609	8.428e-002
1175	1174	1159	20.16	0.1605	8.408e-002
1176	1175	1160	20.16	0.1552	8.129e-002
1177	1176	1161	20.16	0.1562	8.179e-002
1178	1177	1162	20.16	0.1554	8.137e-002
1179	1178	1163	20.16	0.1558	8.16e-002
1180	1179	1164	20.16	0.155	8.12e-002
1181	1180	1165	20.16	0.1573	8.239e-002
1182	1181	1166	20.15	0.1534	8.034e-002
1183	1182	1167	20.15	0.1544	8.089e-002
1184	1183	1168	20.16	0.1573	8.239e-002
1185	1184	1169	20.16	0.155	8.12e-002
1186	1185	1170	20.16	0.1554	8.137e-002
1187	1186	1171	20.15	0.154	8.066e-002
1188	1187	1172	20.15	0.1543	8.081e-002
1189	1188	1173	20.16	0.1561	8.176e-002
1190	1189	1174	20.16	0.1554	8.137e-002
1191	1190	1175	20.16	0.157	8.224e-002
1192	1191	1176	20.15	0.1547	8.104e-002
1193	1192	1177	20.15	0.1541	8.073e-002
1194	1193	1178	20.15	0.1519	7.955e-002
1195	1194	1179	20.16	0.1558	8.16e-002
1196	1195	1180	20.15	0.1532	8.026e-002
1197	1196	1181	20.15	0.1532	8.026e-002
1198	1197	1182	20.15	0.1514	7.931e-002
1199	1198	1183	20.16	0.155	8.12e-002
1200	1199	1184	20.15	0.152	7.962e-002
1201	1200	1185	20.15	0.1516	7.939e-002
1202	1201	1186	20.15	0.1507	7.891e-002
1203	1202	1187	20.15	0.1507	7.891e-002
1204	1203	1188	20.15	0.1505	7.884e-002
1205	1204	1189	20.15	0.1496	7.836e-002
1206	1205	1190	20.15	0.1477	7.733e-002
1207	1206	1191	20.15	0.1514	7.931e-002
1208	1207	1192	20.15	0.1487	7.788e-002
1209	1208	1193	20.15	0.1514	7.931e-002
1210	1209	1194	20.16	0.1554	8.137e-002
1211	1210	1195	20.15	0.1499	7.852e-002
1212	1211	1196	20.15	0.1486	7.781e-002
1213	1212	1197	20.15	0.1493	7.82e-002
1214	1213	1198	20.15	0.1537	8.049e-002
1215	1214	1199	20.15	0.1498	7.844e-002
1216	1215	1200	20.15	0.1495	7.828e-002
1217	1216	1201	20.15	0.1508	7.899e-002
1218	1217	1202	20.15	0.1484	7.773e-002
1219	1218	1203	20.15	0.1532	8.026e-002
1220	1219	1204	20.15	0.1492	7.813e-002
1221	1220	1205	20.15	0.1467	7.686e-002
1222	1221	1206	20.14	0.1442	7.552e-002
1223	1222	1207	20.15	0.1463	7.663e-002
1224	1223	1208	20.15	0.1463	7.663e-002
1225	1224	1209	20.15	0.1483	7.766e-002
1226	1225	1210	20.14	0.1437	7.528e-002
1227	1226	1211	20.15	0.1467	7.686e-002
1228	1227	1212	20.15	0.1486	7.781e-002
1229	1228	1213	20.15	0.1463	7.663e-002
1230	1229	1214	20.15	0.1477	7.733e-002

1231	1230	1215	20.15	0.1471	7.702e-002
1232	1231	1216	20.15	0.1454	7.615e-002
1233	1232	1217	20.15	0.1489	7.797e-002
1234	1233	1218	20.15	0.1472	7.709e-002
1235	1234	1219	20.15	0.1474	7.718e-002
1236	1235	1220	20.15	0.1458	7.638e-002
1237	1236	1221	20.15	0.1479	7.745e-002
1238	1237	1222	20.14	0.1445	7.568e-002
1239	1238	1223	20.15	0.1472	7.709e-002
1240	1239	1224	20.14	0.1428	7.48e-002
1241	1240	1225	20.15	0.1452	7.607e-002
1242	1241	1226	20.15	0.1486	7.781e-002
1243	1242	1227	20.14	0.1448	7.583e-002
1244	1243	1228	20.15	0.1461	7.65e-002
1245	1244	1229	20.15	0.1477	7.733e-002
1246	1245	1230	20.14	0.1437	7.528e-002
1247	1246	1231	20.14	0.1434	7.512e-002
1248	1247	1232	20.14	0.1421	7.442e-002
1249	1248	1233	20.14	0.1428	7.48e-002
1250	1249	1234	20.14	0.1431	7.496e-002
1251	1250	1235	20.14	0.1446	7.576e-002
1252	1251	1236	20.14	0.1439	7.536e-002
1253	1252	1237	20.14	0.1415	7.409e-002
1254	1253	1238	20.14	0.1431	7.496e-002
1255	1254	1239	20.14	0.141	7.386e-002
1256	1255	1240	20.14	0.1445	7.568e-002
1257	1256	1241	20.14	0.1392	7.292e-002
1258	1257	1242	20.15	0.1457	7.631e-002
1259	1258	1243	20.14	0.1381	7.235e-002
1260	1259	1244	20.14	0.1406	7.362e-002
1261	1260	1245	20.14	0.1436	7.52e-002
1262	1261	1246	20.14	0.1395	7.307e-002
1263	1262	1247	20.14	0.1412	7.394e-002
1264	1263	1248	20.14	0.1395	7.307e-002
1265	1264	1249	20.14	0.1383	7.243e-002
1266	1265	1250	20.14	0.1403	7.346e-002
1267	1266	1251	20.14	0.14	7.33e-002
1268	1267	1252	20.15	0.1474	7.718e-002
1269	1268	1253	20.14	0.1395	7.307e-002
1270	1269	1254	20.14	0.1368	7.164e-002
1271	1270	1255	20.14	0.1404	7.354e-002
1272	1271	1256	20.14	0.1391	7.283e-002
1273	1272	1257	20.14	0.1401	7.338e-002
1274	1273	1258	20.14	0.14	7.33e-002
1275	1274	1259	20.14	0.1381	7.235e-002
1276	1275	1260	20.14	0.1375	7.203e-002
1277	1276	1261	20.14	0.1439	7.536e-002
1278	1277	1262	20.14	0.1381	7.235e-002
1279	1278	1263	20.14	0.1404	7.354e-002
1280	1279	1264	20.14	0.1378	7.22e-002
1281	1280	1265	20.14	0.1366	7.152e-002
1282	1281	1266	20.14	0.1391	7.283e-002
1283	1282	1267	20.14	0.1365	7.148e-002
1284	1283	1268	20.14	0.1394	7.299e-002
1285	1284	1269	20.14	0.1377	7.212e-002
1286	1285	1270	20.14	0.1357	7.109e-002
1287	1286	1271	20.14	0.1369	7.172e-002

1288	1287	1272	20.14	0.1362	7.134e-002
1289	1288	1273	20.14	0.1353	7.086e-002
1290	1289	1274	20.14	0.1375	7.203e-002
1291	1290	1275	20.13	0.1339	7.015e-002
1292	1291	1276	20.14	0.1356	7.101e-002
1293	1292	1277	20.14	0.136	7.125e-002
1294	1293	1278	20.14	0.136	7.125e-002
1295	1294	1279	20.13	0.1335	6.991e-002
1296	1295	1280	20.13	0.1338	7.006e-002
1297	1296	1281	20.14	0.1381	7.235e-002
1298	1297	1282	20.13	0.1317	6.896e-002
1299	1298	1283	20.14	0.1374	7.196e-002
1300	1299	1284	20.13	0.1315	6.888e-002
1301	1300	1285	20.14	0.1373	7.189e-002
1302	1301	1286	20.14	0.1386	7.26e-002
1303	1302	1287	20.13	0.1344	7.038e-002
1304	1303	1288	20.13	0.132	6.911e-002
1305	1304	1289	20.13	0.1332	6.974e-002
1306	1305	1290	20.13	0.1333	6.983e-002
1307	1306	1291	20.13	0.1317	6.896e-002
1308	1307	1292	20.13	0.1285	6.73e-002
1309	1308	1293	20.13	0.1336	6.999e-002
1310	1309	1294	20.14	0.1351	7.078e-002
1311	1310	1295	20.13	0.1327	6.952e-002
1312	1311	1296	20.13	0.1314	6.88e-002
1313	1312	1297	20.13	0.1341	7.022e-002
1314	1313	1298	20.13	0.13	6.81e-002
1315	1314	1299	20.13	0.1308	6.848e-002
1316	1315	1300	20.13	0.132	6.911e-002
1317	1316	1301	20.13	0.1321	6.92e-002
1318	1317	1302	20.13	0.1311	6.864e-002
1319	1318	1303	20.13	0.1332	6.974e-002
1320	1319	1304	20.13	0.1318	6.903e-002
1321	1320	1305	20.13	0.1338	7.006e-002
1322	1321	1306	20.13	0.1288	6.746e-002
1323	1322	1307	20.13	0.1305	6.833e-002
1324	1323	1308	20.13	0.1312	6.872e-002
1325	1324	1309	20.13	0.1273	6.666e-002
1326	1325	1310	20.13	0.1305	6.833e-002
1327	1326	1311	20.13	0.1326	6.944e-002
1328	1327	1312	20.13	0.1289	6.753e-002
1329	1328	1313	20.13	0.1308	6.848e-002
1330	1329	1314	20.13	0.1287	6.738e-002
1331	1330	1315	20.13	0.1279	6.698e-002
1332	1331	1316	20.13	0.1312	6.872e-002
1333	1332	1317	20.13	0.1298	6.801e-002
1334	1333	1318	20.13	0.1309	6.856e-002
1335	1334	1319	20.13	0.1276	6.683e-002
1336	1335	1320	20.13	0.127	6.65e-002
1337	1336	1321	20.13	0.1292	6.769e-002
1338	1337	1322	20.13	0.1273	6.666e-002
1339	1338	1323	20.13	0.1324	6.935e-002
1340	1339	1324	20.13	0.1295	6.785e-002
1341	1340	1325	20.13	0.1264	6.619e-002
1342	1341	1326	20.13	0.1291	6.762e-002
1343	1342	1327	20.13	0.1298	6.801e-002
1344	1343	1328	20.13	0.1312	6.872e-002

1345	1344	1329	20.13	0.1283	6.722e-002
1346	1345	1330	20.13	0.1279	6.698e-002
1347	1346	1331	20.12	0.1244	6.516e-002
1348	1347	1332	20.12	0.1246	6.525e-002
1349	1348	1333	20.13	0.1264	6.619e-002
1350	1349	1334	20.12	0.1244	6.516e-002
1351	1350	1335	20.13	0.1258	6.587e-002
1352	1351	1336	20.12	0.1249	6.54e-002
1353	1352	1337	20.13	0.1265	6.628e-002
1354	1353	1338	20.13	0.1282	6.713e-002
1355	1354	1339	20.13	0.1298	6.801e-002
1356	1355	1340	20.12	0.1232	6.453e-002
1357	1356	1341	20.12	0.1237	6.477e-002
1358	1357	1342	20.12	0.1241	6.501e-002
1359	1358	1343	20.13	0.1287	6.738e-002
1360	1359	1344	20.12	0.124	6.493e-002
1361	1360	1345	20.13	0.1255	6.572e-002
1362	1361	1346	20.12	0.1222	6.398e-002
1363	1362	1347	20.12	0.1246	6.525e-002
1364	1363	1348	20.13	0.1258	6.587e-002
1365	1364	1349	20.13	0.1306	6.841e-002
1366	1365	1350	20.12	0.124	6.493e-002
1367	1366	1351	20.13	0.1271	6.659e-002
1368	1367	1352	20.12	0.1244	6.516e-002
1369	1368	1353	20.13	0.1261	6.604e-002
1370	1369	1354	20.13	0.1262	6.611e-002
1371	1370	1355	20.12	0.124	6.493e-002
1372	1371	1356	20.12	0.1238	6.485e-002
1373	1372	1357	20.12	0.1217	6.374e-002
1374	1373	1358	20.12	0.1229	6.437e-002
1375	1374	1359	20.13	0.1267	6.635e-002
1376	1375	1360	20.12	0.1208	6.327e-002
1377	1376	1361	20.12	0.1247	6.533e-002
1378	1377	1362	20.12	0.1225	6.414e-002
1379	1378	1363	20.13	0.1279	6.698e-002
1380	1379	1364	20.12	0.1181	6.184e-002
1381	1380	1365	20.12	0.1182	6.192e-002
1382	1381	1366	20.13	0.1255	6.572e-002
1383	1382	1367	20.12	0.121	6.335e-002
1384	1383	1368	20.12	0.1208	6.327e-002
1385	1384	1369	20.12	0.1228	6.429e-002
1386	1385	1370	20.12	0.1196	6.264e-002
1387	1386	1371	20.12	0.1188	6.224e-002
1388	1387	1372	20.12	0.1176	6.161e-002
1389	1388	1373	20.12	0.1209	6.331e-002
1390	1389	1374	20.12	0.1154	6.042e-002
1391	1390	1375	20.12	0.1229	6.437e-002
1392	1391	1376	20.12	0.1175	6.153e-002
1393	1392	1377	20.12	0.1196	6.264e-002
1394	1393	1378	20.12	0.1215	6.366e-002
1395	1394	1379	20.12	0.1223	6.406e-002
1396	1395	1380	20.12	0.1248	6.536e-002
1397	1396	1381	20.12	0.1169	6.122e-002
1398	1397	1382	20.12	0.1211	6.343e-002
1399	1398	1383	20.12	0.1194	6.256e-002
1400	1399	1384	20.12	0.1176	6.161e-002
1401	1400	1385	20.12	0.1169	6.122e-002

1402	1401	1386	20.11	0.1139	5.963e-002
1403	1402	1387	20.12	0.1205	6.311e-002
1404	1403	1388	20.12	0.1197	6.272e-002
1405	1404	1389	20.12	0.1172	6.138e-002
1406	1405	1390	20.12	0.1229	6.437e-002
1407	1406	1391	20.12	0.1185	6.208e-002
1408	1407	1392	20.12	0.1178	6.168e-002
1409	1408	1393	20.12	0.1188	6.224e-002
1410	1409	1394	20.12	0.1206	6.319e-002
1411	1410	1395	20.12	0.1184	6.201e-002
1412	1411	1396	20.11	0.1148	6.011e-002
1413	1412	1397	20.12	0.1203	6.303e-002
1414	1413	1398	20.12	0.1178	6.168e-002
1415	1414	1399	20.11	0.1143	5.987e-002
1416	1415	1400	20.12	0.121	6.335e-002
1417	1416	1401	20.11	0.1128	5.908e-002
1418	1417	1402	20.11	0.1149	6.019e-002
1419	1418	1403	20.12	0.1155	6.05e-002
1420	1419	1404	20.12	0.1167	6.113e-002
1421	1420	1405	20.12	0.1152	6.034e-002
1422	1421	1406	20.12	0.116	6.074e-002
1423	1422	1407	20.12	0.116	6.074e-002
1424	1423	1408	20.12	0.1151	6.026e-002
1425	1424	1409	20.11	0.1142	5.98e-002
1426	1425	1410	20.12	0.1157	6.058e-002
1427	1426	1411	20.12	0.1173	6.145e-002
1428	1427	1412	20.11	0.1129	5.915e-002
1429	1428	1413	20.12	0.1166	6.106e-002
1430	1429	1414	20.12	0.1175	6.153e-002
1431	1430	1415	20.11	0.1148	6.011e-002
1432	1431	1416	20.11	0.1108	5.805e-002
1433	1432	1417	20.11	0.1142	5.98e-002
1434	1433	1418	20.11	0.1137	5.956e-002
1435	1434	1419	20.11	0.1145	5.995e-002
1436	1435	1420	20.11	0.1129	5.915e-002
1437	1436	1421	20.12	0.1175	6.156e-002
1438	1437	1422	20.12	0.1151	6.03e-002
1439	1438	1423	20.11	0.1145	5.995e-002
1440	1439	1424	20.11	0.1137	5.956e-002
1441	1440	1425	20.11	0.1113	5.829e-002
1442	1441	1426	20.11	0.1107	5.798e-002
1443	1442	1427	20.11	0.1137	5.956e-002
1444	1443	1428	20.11	0.1119	5.861e-002
1445	1444	1429	20.11	0.1142	5.98e-002
1446	1445	1430	20.11	0.112	5.869e-002
1447	1446	1431	20.11	0.1105	5.789e-002
1448	1447	1432	20.11	0.1127	5.9e-002
1449	1448	1433	20.11	0.1131	5.923e-002
1450	1449	1434	20.11	0.1095	5.734e-002
1451	1450	1435	20.11	0.1146	6.003e-002
1452	1451	1436	20.11	0.1071	5.608e-002
1453	1452	1437	20.11	0.1092	5.719e-002
1454	1453	1438	20.11	0.109	5.71e-002
1455	1454	1439	20.11	0.1095	5.734e-002
1456	1455	1440	20.11	0.1113	5.829e-002
1457	1456	1441	20.11	0.1108	5.805e-002
1458	1457	1442	20.11	0.1139	5.967e-002

1459	1458	1443	20.11	0.1122	5.877e-002
1460	1459	1444	20.11	0.1099	5.758e-002
1461	1460	1445	20.11	0.1096	5.742e-002
1462	1461	1446	20.11	0.1078	5.648e-002
1463	1462	1447	20.11	0.111	5.813e-002
1464	1463	1448	20.11	0.109	5.71e-002
1465	1464	1449	20.11	0.1092	5.719e-002
1466	1465	1450	20.11	0.109	5.71e-002
1467	1466	1451	20.11	0.1104	5.782e-002
1468	1467	1452	20.11	0.1093	5.726e-002
1469	1468	1453	20.11	0.1078	5.648e-002
1470	1469	1454	20.11	0.1074	5.623e-002
1471	1470	1455	20.11	0.108	5.655e-002
1472	1471	1456	20.11	0.1084	5.679e-002
1473	1472	1457	20.11	0.1127	5.9e-002
1474	1473	1458	20.1	0.1041	5.45e-002
1475	1474	1459	20.11	0.1092	5.719e-002
1476	1475	1460	20.11	0.111	5.813e-002
1477	1476	1461	20.11	0.1092	5.719e-002
1478	1477	1462	20.11	0.1098	5.75e-002
1479	1478	1463	20.1	0.1047	5.482e-002
1480	1479	1464	20.11	0.1089	5.703e-002
1481	1480	1465	20.11	0.1104	5.782e-002
1482	1481	1466	20.11	0.108	5.655e-002
1483	1482	1467	20.11	0.1059	5.544e-002
1484	1483	1468	20.11	0.108	5.655e-002
1485	1484	1469	20.11	0.1059	5.544e-002
1486	1485	1470	20.1	0.103	5.395e-002
1487	1486	1471	20.11	0.1074	5.623e-002
1488	1487	1472	20.11	0.108	5.655e-002
1489	1488	1473	20.11	0.1089	5.703e-002
1490	1489	1474	20.11	0.106	5.552e-002
1491	1490	1475	20.1	0.1036	5.426e-002
1492	1491	1476	20.1	0.1041	5.45e-002
1493	1492	1477	20.11	0.1083	5.675e-002
1494	1493	1478	20.1	0.1024	5.363e-002
1495	1494	1479	20.11	0.1062	5.564e-002
1496	1495	1480	20.11	0.1093	5.723e-002
1497	1496	1481	20.11	0.1066	5.584e-002
1498	1497	1482	20.1	0.1026	5.371e-002
1499	1498	1483	20.1	0.105	5.497e-002
1500	1499	1484	20.11	0.1051	5.504e-002
1501	1500	1485	20.11	0.1078	5.648e-002
1502	1501	1486	20.11	0.1062	5.56e-002
1503	1502	1487	20.1	0.1045	5.473e-002
1504	1503	1488	20.11	0.1054	5.521e-002
1505	1504	1489	20.1	0.1023	5.356e-002
1506	1505	1490	20.1	0.1012	5.299e-002
1507	1506	1491	20.1	0.1023	5.356e-002
1508	1507	1492	20.11	0.1067	5.588e-002
1509	1508	1493	20.1	0.1003	5.252e-002
1510	1509	1494	20.1	0.1021	5.346e-002
1511	1510	1495	20.1	0.1019	5.339e-002
1512	1511	1496	20.11	0.1061	5.557e-002
1513	1512	1497	20.1	0.1001	5.244e-002
1514	1513	1498	20.1	0.1009	5.284e-002
1515	1514	1499	20.1	0.1034	5.414e-002

1516	1515	1500	20.1	0.101	5.292e-002
1517	1516	1501	20.1	0.1023	5.356e-002
1518	1517	1502	20.1	0.1007	5.276e-002
1519	1518	1503	20.1	0.1023	5.359e-002
1520	1519	1504	20.1	0.1013	5.307e-002
1521	1520	1505	20.1	0.1019	5.339e-002
1522	1521	1506	20.1	9.924e-002	5.197e-002
1523	1522	1507	20.1	0.1009	5.284e-002
1524	1523	1508	20.1	0.1003	5.252e-002
1525	1524	1509	20.1	9.876e-002	5.173e-002
1526	1525	1510	20.1	0.1007	5.276e-002
1527	1526	1511	20.1	0.1003	5.252e-002
1528	1527	1512	20.1	9.833e-002	5.15e-002
1529	1528	1513	20.1	9.681e-002	5.071e-002
1530	1529	1514	20.11	0.1053	5.517e-002
1531	1530	1515	20.1	0.1012	5.299e-002
1532	1531	1516	20.1	0.1004	5.261e-002
1533	1532	1517	20.1	0.1015	5.315e-002
1534	1533	1518	20.1	9.696e-002	5.078e-002
1535	1534	1519	20.1	0.103	5.395e-002
1536	1535	1520	20.1	9.786e-002	5.125e-002
1537	1536	1521	20.1	9.681e-002	5.071e-002
1538	1537	1522	20.1	0.1022	5.351e-002
1539	1538	1523	20.1	0.102	5.343e-002
1540	1539	1524	20.1	9.531e-002	4.992e-002
1541	1540	1525	20.1	9.575e-002	5.015e-002
1542	1541	1526	20.1	0.1013	5.307e-002
1543	1542	1527	20.1	0.1018	5.331e-002
1544	1543	1528	20.1	9.862e-002	5.165e-002
1545	1544	1529	20.09	9.244e-002	4.841e-002
1546	1545	1530	20.1	9.711e-002	5.086e-002
1547	1546	1531	20.1	9.891e-002	5.181e-002
1548	1547	1532	20.1	9.848e-002	5.158e-002
1549	1548	1533	20.09	9.44e-002	4.944e-002
1550	1549	1534	20.1	9.621e-002	5.039e-002
1551	1550	1535	20.1	9.946e-002	5.209e-002
1552	1551	1536	20.09	9.395e-002	4.921e-002
1553	1552	1537	20.1	9.711e-002	5.086e-002
1554	1553	1538	20.1	9.56e-002	5.007e-002
1555	1554	1539	20.1	9.876e-002	5.173e-002
1556	1555	1540	20.09	9.499e-002	4.975e-002
1557	1556	1541	20.1	0.103	5.395e-002
1558	1557	1542	20.09	9.333e-002	4.888e-002
1559	1558	1543	20.09	9.486e-002	4.968e-002
1560	1559	1544	20.09	9.198e-002	4.817e-002
1561	1560	1545	20.09	9.274e-002	4.857e-002
1562	1561	1546	20.1	9.696e-002	5.078e-002
1563	1562	1547	20.09	9.228e-002	4.833e-002
1564	1563	1548	20.09	9.409e-002	4.928e-002
1565	1564	1549	20.09	9.258e-002	4.849e-002
1566	1565	1550	20.09	9.244e-002	4.841e-002
1567	1566	1551	20.09	9.304e-002	4.873e-002
1568	1567	1552	20.09	9.44e-002	4.944e-002
1569	1568	1553	20.1	9.81e-002	5.138e-002
1570	1569	1554	20.09	9.139e-002	4.786e-002
1571	1570	1555	20.1	9.531e-002	4.992e-002
1572	1571	1556	20.09	9.213e-002	4.825e-002

1573	1572	1557	20.09	9.228e-002	4.833e-002
1574	1573	1558	20.1	9.786e-002	5.125e-002
1575	1574	1559	20.09	9.154e-002	4.794e-002
1576	1575	1560	20.09	9.032e-002	4.731e-002
1577	1576	1561	20.09	9.213e-002	4.825e-002
1578	1577	1562	20.09	9.244e-002	4.841e-002
1579	1578	1563	20.09	9.44e-002	4.944e-002
1580	1579	1564	20.09	9.047e-002	4.738e-002
1581	1580	1565	20.09	9.107e-002	4.77e-002
1582	1581	1566	20.09	9.341e-002	4.892e-002
1583	1582	1567	20.1	9.508e-002	4.98e-002
1584	1583	1568	20.09	9.327e-002	4.885e-002
1585	1584	1569	20.09	9.477e-002	4.964e-002
1586	1585	1570	20.1	9.516e-002	4.984e-002
1587	1586	1571	20.09	9.167e-002	4.801e-002
1588	1587	1572	20.09	8.971e-002	4.699e-002
1589	1588	1573	20.09	8.927e-002	4.676e-002
1590	1589	1574	20.09	9.207e-002	4.822e-002
1591	1590	1575	20.09	9.213e-002	4.825e-002
1592	1591	1576	20.09	9.341e-002	4.892e-002
1593	1592	1577	20.09	8.988e-002	4.707e-002
1594	1593	1578	20.09	8.64e-002	4.525e-002
1595	1594	1579	20.09	8.896e-002	4.659e-002
1596	1595	1580	20.09	8.905e-002	4.664e-002
1597	1596	1581	20.09	9.433e-002	4.941e-002
1598	1597	1582	20.09	9.44e-002	4.944e-002
1599	1598	1583	20.09	9.121e-002	4.777e-002
1600	1599	1584	20.09	8.957e-002	4.691e-002
1601	1600	1585	20.09	8.851e-002	4.635e-002
1602	1601	1586	20.09	8.957e-002	4.691e-002
1603	1602	1587	20.09	8.927e-002	4.676e-002
1604	1603	1588	20.09	9.002e-002	4.715e-002
1605	1604	1589	20.09	8.941e-002	4.683e-002
1606	1605	1590	20.09	8.519e-002	4.462e-002
1607	1606	1591	20.09	8.563e-002	4.485e-002
1608	1607	1592	20.09	9.477e-002	4.964e-002
1609	1608	1593	20.09	8.949e-002	4.687e-002
1610	1609	1594	20.09	9.056e-002	4.743e-002
1611	1610	1595	20.09	8.874e-002	4.648e-002
1612	1611	1596	20.09	8.64e-002	4.525e-002
1613	1612	1597	20.09	8.821e-002	4.62e-002
1614	1613	1598	20.08	8.488e-002	4.446e-002
1615	1614	1599	20.09	9.092e-002	4.762e-002
1616	1615	1600	20.08	8.488e-002	4.446e-002
1617	1616	1601	20.08	8.4e-002	4.4e-002
1618	1617	1602	20.09	8.595e-002	4.502e-002
1619	1618	1603	20.09	8.7e-002	4.557e-002
1620	1619	1604	20.09	8.761e-002	4.589e-002
1621	1620	1605	20.09	9.191e-002	4.814e-002
1622	1621	1606	20.09	8.563e-002	4.485e-002
1623	1622	1607	20.09	9.092e-002	4.762e-002
1624	1623	1608	20.09	8.58e-002	4.494e-002
1625	1624	1609	20.09	8.844e-002	4.632e-002
1626	1625	1610	20.09	8.896e-002	4.659e-002
1627	1626	1611	20.09	8.874e-002	4.648e-002
1628	1627	1612	20.08	8.428e-002	4.414e-002
1629	1628	1613	20.09	8.64e-002	4.525e-002

1630	1629	1614	20.09	8.505e-002	4.454e-002
1631	1630	1615	20.08	8.428e-002	4.414e-002
1632	1631	1616	20.09	8.776e-002	4.596e-002
1633	1632	1617	20.09	8.685e-002	4.549e-002
1634	1633	1618	20.08	8.322e-002	4.359e-002
1635	1634	1619	20.09	8.519e-002	4.462e-002
1636	1635	1620	20.08	8.096e-002	4.24e-002
1637	1636	1621	20.09	8.558e-002	4.482e-002
1638	1637	1622	20.09	8.729e-002	4.572e-002
1639	1638	1623	20.09	8.535e-002	4.47e-002
1640	1639	1624	20.08	8.277e-002	4.335e-002
1641	1640	1625	20.09	8.519e-002	4.462e-002
1642	1641	1626	20.08	8.247e-002	4.319e-002
1643	1642	1627	20.09	8.655e-002	4.533e-002
1644	1643	1628	20.08	7.962e-002	4.17e-002
1645	1644	1629	20.09	8.519e-002	4.462e-002
1646	1645	1630	20.08	8.247e-002	4.319e-002
1647	1646	1631	20.09	8.693e-002	4.553e-002
1648	1647	1632	20.08	8.225e-002	4.308e-002
1649	1648	1633	20.08	8.158e-002	4.273e-002
1650	1649	1634	20.08	8.203e-002	4.296e-002
1651	1650	1635	20.08	7.991e-002	4.185e-002
1652	1651	1636	20.08	8.218e-002	4.304e-002
1653	1652	1637	20.08	8.428e-002	4.414e-002
1654	1653	1638	20.09	8.526e-002	4.466e-002
1655	1654	1639	20.08	8.037e-002	4.209e-002
1656	1655	1640	20.09	8.649e-002	4.53e-002
1657	1656	1641	20.09	8.595e-002	4.502e-002
1658	1657	1642	20.08	8.262e-002	4.327e-002
1659	1658	1643	20.08	8.052e-002	4.217e-002
1660	1659	1644	20.09	8.558e-002	4.482e-002
1661	1660	1645	20.08	8.128e-002	4.257e-002
1662	1661	1646	20.08	8.187e-002	4.288e-002
1663	1662	1647	20.08	8.021e-002	4.201e-002
1664	1663	1648	20.08	8.052e-002	4.217e-002
1665	1664	1649	20.09	8.655e-002	4.533e-002
1666	1665	1650	20.08	7.81e-002	4.091e-002
1667	1666	1651	20.08	8.277e-002	4.335e-002
1668	1667	1652	20.08	8.24e-002	4.316e-002
1669	1668	1653	20.08	7.735e-002	4.051e-002
1670	1669	1654	20.08	7.735e-002	4.051e-002
1671	1670	1655	20.08	7.945e-002	4.161e-002
1672	1671	1656	20.08	8.044e-002	4.213e-002
1673	1672	1657	20.08	7.916e-002	4.146e-002
1674	1673	1658	20.09	8.677e-002	4.545e-002
1675	1674	1659	20.08	8.195e-002	4.292e-002
1676	1675	1660	20.08	8.187e-002	4.288e-002
1677	1676	1661	20.08	7.705e-002	4.035e-002
1678	1677	1662	20.08	7.887e-002	4.131e-002
1679	1678	1663	20.08	8.119e-002	4.252e-002
1680	1679	1664	20.08	8.24e-002	4.316e-002
1681	1680	1665	20.08	8.037e-002	4.209e-002
1682	1681	1666	20.08	7.819e-002	4.095e-002
1683	1682	1667	20.08	8.112e-002	4.249e-002
1684	1683	1668	20.08	7.75e-002	4.059e-002
1685	1684	1669	20.08	7.674e-002	4.019e-002
1686	1685	1670	20.08	8.103e-002	4.244e-002

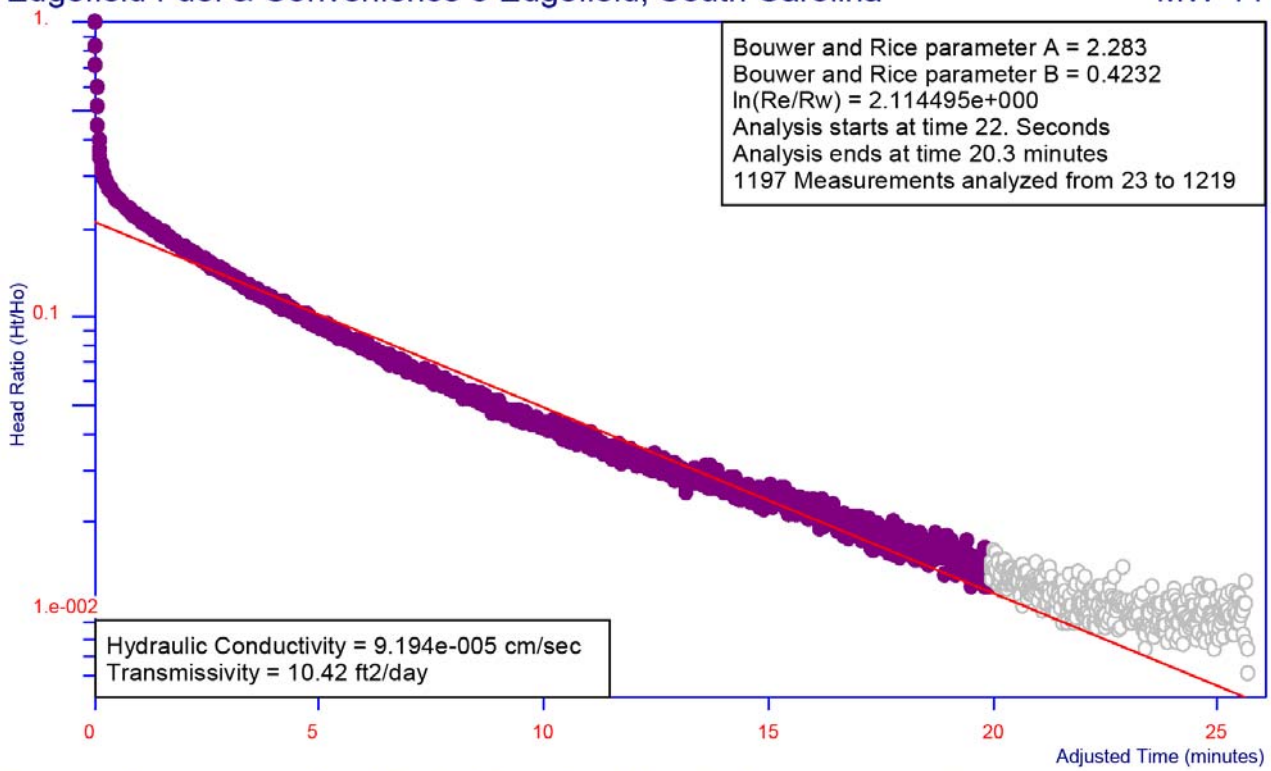
1687	1686	1671	20.08	8.096e-002	4.24e-002
1688	1687	1672	20.08	8.413e-002	4.406e-002
1689	1688	1673	20.08	7.66e-002	4.012e-002
1690	1689	1674	20.08	7.869e-002	4.121e-002
1691	1690	1675	20.08	7.683e-002	4.024e-002
1692	1691	1676	20.08	8.18e-002	4.284e-002
1693	1692	1677	20.08	7.744e-002	4.056e-002
1694	1693	1678	20.08	7.985e-002	4.182e-002
1695	1694	1679	20.08	8.103e-002	4.244e-002
1696	1695	1680	20.08	7.524e-002	3.941e-002
1697	1696	1681	20.08	7.901e-002	4.138e-002
1698	1697	1682	20.07	7.328e-002	3.838e-002
1699	1698	1683	20.08	7.854e-002	4.114e-002
1700	1699	1684	20.08	7.524e-002	3.941e-002
1701	1700	1685	20.08	7.931e-002	4.154e-002
1702	1701	1686	20.07	7.343e-002	3.846e-002
1703	1702	1687	20.08	7.688e-002	4.027e-002
1704	1703	1688	20.08	7.713e-002	4.04e-002
1705	1704	1689	20.08	7.644e-002	4.003e-002
1706	1705	1690	20.08	7.613e-002	3.987e-002
1707	1706	1691	20.07	7.418e-002	3.885e-002
1708	1707	1692	20.08	7.729e-002	4.048e-002
1709	1708	1693	20.08	7.924e-002	4.15e-002
1710	1709	1694	20.08	8.112e-002	4.249e-002
1711	1710	1695	20.08	7.705e-002	4.035e-002
1712	1711	1696	20.08	7.75e-002	4.059e-002
1713	1712	1697	20.08	7.504e-002	3.93e-002
1714	1713	1698	20.07	7.418e-002	3.885e-002
1715	1714	1699	20.08	7.554e-002	3.956e-002
1716	1715	1700	20.08	7.683e-002	4.024e-002
1717	1716	1701	20.08	7.524e-002	3.941e-002
1718	1717	1702	20.07	7.071e-002	3.703e-002
1719	1718	1703	20.07	7.281e-002	3.814e-002
1720	1719	1704	20.08	7.547e-002	3.953e-002
1721	1720	1705	20.08	7.66e-002	4.012e-002
1722	1721	1706	20.08	8.015e-002	4.198e-002
1723	1722	1707	20.07	7.184e-002	3.763e-002
1724	1723	1708	20.07	7.418e-002	3.885e-002
1725	1724	1709	20.08	7.833e-002	4.103e-002
1726	1725	1710	20.07	7.373e-002	3.861e-002
1727	1726	1711	20.08	7.613e-002	3.987e-002
1728	1727	1712	20.08	7.569e-002	3.964e-002
1729	1728	1713	20.07	7.102e-002	3.72e-002
1730	1729	1714	20.08	7.719e-002	4.043e-002
1731	1730	1715	20.07	7.343e-002	3.846e-002
1732	1731	1716	20.07	6.844e-002	3.585e-002
1733	1732	1717	20.07	7.335e-002	3.842e-002
1734	1733	1718	20.07	6.903e-002	3.615e-002
1735	1734	1719	20.07	6.844e-002	3.585e-002
1736	1735	1720	20.07	7.418e-002	3.885e-002
1737	1736	1721	20.07	7.487e-002	3.921e-002
1738	1737	1722	20.07	7.026e-002	3.68e-002
1739	1738	1723	20.07	7.048e-002	3.692e-002
1740	1739	1724	20.07	6.829e-002	3.577e-002
1741	1740	1725	20.07	7.267e-002	3.806e-002
1742	1741	1726	20.07	7.26e-002	3.802e-002
1743	1742	1727	20.08	7.66e-002	4.012e-002

1744	1743	1728	20.07	7.19e-002	3.766e-002
1745	1744	1729	20.07	7.026e-002	3.68e-002
1746	1745	1730	20.07	7.162e-002	3.751e-002
1747	1746	1731	20.07	6.995e-002	3.663e-002
1748	1747	1732	20.07	7.087e-002	3.712e-002
1749	1748	1733	20.07	7.184e-002	3.763e-002
1750	1749	1734	20.07	6.965e-002	3.648e-002
1751	1750	1735	20.07	7.267e-002	3.806e-002
1752	1751	1736	20.07	7.289e-002	3.818e-002
1753	1752	1737	20.07	7.396e-002	3.873e-002
1754	1753	1738	20.07	6.89e-002	3.608e-002
1755	1754	1739	20.07	7.289e-002	3.818e-002
1756	1755	1740	20.07	7.177e-002	3.759e-002
1757	1756	1741	20.07	7.018e-002	3.676e-002
1758	1757	1742	20.07	6.786e-002	3.554e-002
1759	1758	1743	20.08	7.517e-002	3.937e-002
1760	1759	1744	20.07	6.573e-002	3.443e-002
1761	1760	1745	20.07	6.829e-002	3.577e-002
1762	1761	1746	20.07	7.018e-002	3.676e-002
1763	1762	1747	20.08	7.547e-002	3.953e-002
1764	1763	1748	20.07	6.973e-002	3.652e-002
1765	1764	1749	20.07	7.26e-002	3.802e-002
1766	1765	1750	20.07	6.949e-002	3.64e-002
1767	1766	1751	20.07	7.087e-002	3.712e-002
1768	1767	1752	20.07	6.632e-002	3.473e-002
1769	1768	1753	20.07	7.04e-002	3.687e-002
1770	1769	1754	20.07	7.064e-002	3.7e-002
1771	1770	1755	20.07	7.064e-002	3.7e-002
1772	1771	1756	20.08	7.593e-002	3.977e-002
1773	1772	1757	20.07	6.557e-002	3.434e-002
1774	1773	1758	20.07	6.883e-002	3.605e-002
1775	1774	1759	20.07	6.89e-002	3.608e-002
1776	1775	1760	20.07	7.14e-002	3.739e-002
1777	1776	1761	20.07	6.858e-002	3.592e-002
1778	1777	1762	20.07	6.678e-002	3.497e-002
1779	1778	1763	20.07	6.769e-002	3.545e-002
1780	1779	1764	20.07	6.748e-002	3.534e-002
1781	1780	1765	20.07	6.822e-002	3.573e-002
1782	1781	1766	20.06	6.361e-002	3.331e-002
1783	1782	1767	20.07	6.958e-002	3.644e-002
1784	1783	1768	20.07	7.034e-002	3.684e-002
1785	1784	1769	20.07	6.511e-002	3.41e-002
1786	1785	1770	20.07	6.686e-002	3.502e-002
1787	1786	1771	20.07	6.777e-002	3.549e-002
1788	1787	1772	20.06	6.361e-002	3.331e-002
1789	1788	1773	20.07	6.731e-002	3.525e-002
1790	1789	1774	20.07	6.657e-002	3.487e-002
1791	1790	1775	20.06	6.475e-002	3.391e-002
1792	1791	1776	20.07	6.731e-002	3.525e-002
1793	1792	1777	20.06	6.377e-002	3.34e-002
1794	1793	1778	20.06	6.452e-002	3.379e-002
1795	1794	1779	20.07	6.717e-002	3.518e-002
1796	1795	1780	20.07	6.678e-002	3.497e-002
1797	1796	1781	20.06	6.436e-002	3.371e-002
1798	1797	1782	20.07	6.837e-002	3.581e-002
1799	1798	1783	20.07	6.632e-002	3.473e-002
1800	1799	1784	20.06	6.407e-002	3.356e-002

1801	1800	1785	20.07	6.588e-002	3.45e-002
1802	1801	1786	20.07	6.762e-002	3.542e-002
1803	1802	1787	20.06	6.226e-002	3.261e-002
1804	1803	1788	20.07	6.673e-002	3.495e-002
1805	1804	1789	20.06	6.241e-002	3.269e-002
1806	1805	1790	20.07	6.988e-002	3.66e-002
1807	1806	1791	20.06	6.423e-002	3.364e-002
1808	1807	1792	20.06	6.49e-002	3.399e-002
1809	1808	1793	20.07	6.648e-002	3.482e-002
1810	1809	1794	20.07	6.603e-002	3.458e-002
1811	1810	1795	20.06	6.468e-002	3.388e-002
1812	1811	1796	20.06	6.452e-002	3.379e-002
1813	1812	1797	20.07	6.552e-002	3.432e-002
1814	1813	1798	20.06	6.371e-002	3.337e-002
1815	1814	1799	20.06	6.271e-002	3.284e-002
1816	1815	1800	20.06	6.279e-002	3.289e-002
1817	1816	1801	20.06	6.339e-002	3.32e-002
1818	1817	1802	20.06	6.135e-002	3.213e-002
1819	1818	1803	20.07	7.093e-002	3.715e-002
1820	1819	1804	20.06	6.355e-002	3.329e-002
1821	1820	1805	20.07	6.853e-002	3.589e-002
1822	1821	1806	20.07	6.628e-002	3.471e-002
1823	1822	1807	20.07	6.731e-002	3.525e-002
1824	1823	1808	20.06	6.135e-002	3.213e-002
1825	1824	1809	20.06	5.992e-002	3.139e-002
1826	1825	1810	20.07	6.777e-002	3.549e-002
1827	1826	1811	20.06	6.49e-002	3.399e-002
1828	1827	1812	20.06	6.076e-002	3.182e-002
1829	1828	1813	20.06	5.999e-002	3.142e-002
1830	1829	1814	20.06	6.099e-002	3.194e-002

MW-11 (Slug Out) May 10, 2010 — Bouwer and Rice Graph

Edgefield Fuel & Convenience 3 Edgefield, South Carolina — MW-11



Project Number: 14-211651 for Edgefield Fuel & Convenience LLC

Ho is 1.948 feet at 22. Seconds

Analysis by Starpoint Software

MW-11 (Slug Out)

Site Name:	Edgefield Fuel & Convenience 3
Location:	Edgefield, South Carolina
Test Date:	May 10, 2010
Client:	Edgefield Fuel & Convenience LLC
Project Number:	14-211651
Import File:	F:\Projects\14-211651 Edgefield Fuel & Convenience 3\Slug Test Data\mw-11_2010

Well Label:	MW-11
Aquifer Thickness:	40. feet
Screen Length:	10. feet
Casing Radius:	8.3e-002 feet
Effective Radius:	0.33 feet
Static Water Level:	22.16 feet
Water Table to Screen Bottom:	8.88 feet
Anisotropy Ratio:	1.
Time Adjustment:	22. Seconds

Test starts with trial 22
There are 1564 time and drawdown measurements
Maximum head is 1.948 feet
Minimum head is -2.609e-002 feet

Trial	Time (Seconds)	Adjusted Time (Seconds)	Drawdown (feet)	Head (feet)	Head Ratio
1	0.	-22.	22.14	-1.991e-002	-1.022e-002
2	1.	-21.	22.15	-1.448e-002	-7.434e-003
3	2.	-20.	22.14	-1.735e-002	-8.906e-003
4	3.	-19.	22.14	-1.659e-002	-8.515e-003
5	4.	-18.	22.15	-1.403e-002	-7.201e-003
6	5.	-17.	22.14	-1.568e-002	-8.052e-003
7	6.	-16.	22.15	-1.356e-002	-6.96e-003
8	7.	-15.	22.15	-1.373e-002	-7.047e-003
9	8.	-14.	22.15	-1.387e-002	-7.122e-003
10	9.	-13.	22.15	-1.146e-002	-5.883e-003
11	10.	-12.	22.14	-1.583e-002	-8.126e-003
12	11.	-11.	22.15	-1.193e-002	-6.123e-003
13	12.	-10.	22.14	-1.598e-002	-8.203e-003
14	13.	-9.	22.15	-1.146e-002	-5.883e-003
15	14.	-8.	22.16	4.972e-003	2.553e-003
16	15.	-7.	22.14	-2.475e-002	-1.27e-002
17	16.	-6.	22.15	-1.193e-002	-6.123e-003
18	17.	-5.	22.13	-2.609e-002	-1.339e-002
19	18.	-4.	22.17	9.345e-003	4.798e-003
20	19.	-3.	22.23	7.302e-002	3.749e-002
21	20.	-2.	22.28	0.1151	5.909e-002
22	21.	-1.	22.83	0.6696	0.3438
23	22.	0.	24.11	1.948	1.
24	23.	1.	23.78	1.616	0.8295
25	24.	2.	23.55	1.394	0.7155
26	25.	3.	23.35	1.189	0.6103
27	26.	4.	23.17	1.013	0.5202
28	27.	5.	23.04	0.8762	0.4498
29	28.	6.	22.94	0.7761	0.3985
30	29.	7.	22.88	0.7199	0.3696
31	30.	8.	22.84	0.6754	0.3467
32	31.	9.	22.81	0.6467	0.332
33	32.	10.	22.79	0.6281	0.3225

34	33.	11.	22.77	0.6097	0.313
35	34.	12.	22.76	0.5956	0.3058
36	35.	13.	22.74	0.5828	0.2992
37	36.	14.	22.73	0.5731	0.2942
38	37.	15.	22.73	0.569	0.2921
39	38.	16.	22.72	0.5582	0.2866
40	39.	17.	22.71	0.5494	0.2821
41	40.	18.	22.7	0.5391	0.2768
42	41.	19.	22.7	0.5408	0.2776
43	42.	20.	22.7	0.5372	0.2758
44	43.	21.	22.69	0.53	0.2721
45	44.	22.	22.69	0.526	0.2701
46	45.	23.	22.68	0.523	0.2685
47	46.	24.	22.68	0.5153	0.2645
48	47.	25.	22.67	0.5121	0.2629
49	48.	26.	22.67	0.5116	0.2626
50	49.	27.	22.66	0.5039	0.2587
51	50.	28.	22.66	0.503	0.2582
52	51.	29.	22.66	0.4983	0.2558
53	52.	30.	22.65	0.493	0.2531
54	53.	31.	22.65	0.4942	0.2537
55	54.	32.	22.65	0.4891	0.2511
56	55.	33.	22.65	0.4857	0.2494
57	56.	34.	22.65	0.4876	0.2503
58	57.	35.	22.64	0.4829	0.2479
59	58.	36.	22.64	0.48	0.2464
60	59.	37.	22.63	0.4728	0.2427
61	60.	38.	22.64	0.4758	0.2443
62	61.	39.	22.63	0.4711	0.2418
63	62.	40.	22.62	0.4635	0.238
64	63.	41.	22.63	0.4695	0.241
65	64.	42.	22.62	0.4608	0.2366
66	65.	43.	22.62	0.4612	0.2368
67	66.	44.	22.62	0.4594	0.2358
68	67.	45.	22.62	0.4556	0.2339
69	68.	46.	22.61	0.4529	0.2325
70	69.	47.	22.61	0.4515	0.2318
71	70.	48.	22.61	0.4464	0.2292
72	71.	49.	22.6	0.4438	0.2279
73	72.	50.	22.6	0.4432	0.2275
74	73.	51.	22.6	0.4397	0.2257
75	74.	52.	22.6	0.4355	0.2236
76	75.	53.	22.6	0.4366	0.2241
77	76.	54.	22.59	0.4305	0.221
78	77.	55.	22.59	0.4308	0.2212
79	78.	56.	22.59	0.4348	0.2232
80	79.	57.	22.59	0.4328	0.2222
81	80.	58.	22.59	0.4269	0.2192
82	81.	59.	22.59	0.4259	0.2186
83	82.	60.	22.59	0.4259	0.2186
84	83.	61.	22.58	0.4243	0.2178
85	84.	62.	22.59	0.426	0.2187
86	85.	63.	22.58	0.4204	0.2159
87	86.	64.	22.57	0.412	0.2115
88	87.	65.	22.58	0.416	0.2136
89	88.	66.	22.57	0.4118	0.2114
90	89.	67.	22.57	0.4132	0.2121

91	90.	68.	22.57	0.4068	0.2088
92	91.	69.	22.57	0.4093	0.2101
93	92.	70.	22.57	0.4055	0.2082
94	93.	71.	22.56	0.4029	0.2068
95	94.	72.	22.56	0.4037	0.2073
96	95.	73.	22.56	0.3989	0.2048
97	96.	74.	22.56	0.4016	0.2062
98	97.	75.	22.56	0.3986	0.2046
99	98.	76.	22.55	0.3927	0.2016
100	99.	77.	22.55	0.3942	0.2024
101	100.	78.	22.55	0.394	0.2023
102	101.	79.	22.55	0.3916	0.201
103	102.	80.	22.55	0.3892	0.1998
104	103.	81.	22.55	0.3912	0.2008
105	104.	82.	22.54	0.3841	0.1972
106	105.	83.	22.55	0.3868	0.1986
107	106.	84.	22.54	0.383	0.1966
108	107.	85.	22.54	0.381	0.1956
109	108.	86.	22.54	0.3819	0.1961
110	109.	87.	22.54	0.3795	0.1949
111	110.	88.	22.54	0.377	0.1935
112	111.	89.	22.54	0.3753	0.1927
113	112.	90.	22.53	0.3717	0.1908
114	113.	91.	22.53	0.3697	0.1898
115	114.	92.	22.53	0.3686	0.1893
116	115.	93.	22.54	0.3774	0.1938
117	116.	94.	22.53	0.3681	0.189
118	117.	95.	22.53	0.3666	0.1882
119	118.	96.	22.53	0.3681	0.189
120	119.	97.	22.53	0.3673	0.1886
121	120.	98.	22.53	0.3654	0.1876
122	121.	99.	22.52	0.3619	0.1858
123	122.	100.	22.52	0.364	0.1869
124	123.	101.	22.52	0.3618	0.1858
125	124.	102.	22.51	0.3533	0.1814
126	125.	103.	22.52	0.3552	0.1824
127	126.	104.	22.51	0.354	0.1818
128	127.	105.	22.51	0.3505	0.18
129	128.	106.	22.51	0.3497	0.1795
130	129.	107.	22.51	0.3513	0.1804
131	130.	108.	22.51	0.3479	0.1786
132	131.	109.	22.51	0.347	0.1781
133	132.	110.	22.51	0.3485	0.1789
134	133.	111.	22.51	0.3468	0.178
135	134.	112.	22.5	0.3425	0.1759
136	135.	113.	22.51	0.3467	0.178
137	136.	114.	22.5	0.3409	0.175
138	137.	115.	22.5	0.3403	0.1747
139	138.	116.	22.5	0.3393	0.1742
140	139.	117.	22.5	0.3375	0.1732
141	140.	118.	22.49	0.3336	0.1713
142	141.	119.	22.49	0.3314	0.1702
143	142.	120.	22.5	0.3373	0.1732
144	143.	121.	22.5	0.3363	0.1726
145	144.	122.	22.49	0.331	0.1699
146	145.	123.	22.49	0.3289	0.1688
147	146.	124.	22.49	0.332	0.1705

148	147.	125.	22.49	0.3313	0.1701
149	148.	126.	22.49	0.3274	0.1681
150	149.	127.	22.49	0.326	0.1674
151	150.	128.	22.48	0.3245	0.1666
152	151.	129.	22.48	0.3236	0.1661
153	152.	130.	22.49	0.326	0.1674
154	153.	131.	22.48	0.3219	0.1653
155	154.	132.	22.48	0.3157	0.1621
156	155.	133.	22.48	0.3174	0.1629
157	156.	134.	22.48	0.3151	0.1618
158	157.	135.	22.48	0.3189	0.1637
159	158.	136.	22.48	0.3203	0.1644
160	159.	137.	22.47	0.3141	0.1612
161	160.	138.	22.47	0.3145	0.1615
162	161.	139.	22.47	0.313	0.1607
163	162.	140.	22.47	0.3085	0.1584
164	163.	141.	22.47	0.3067	0.1575
165	164.	142.	22.46	0.305	0.1566
166	165.	143.	22.46	0.3022	0.1552
167	166.	144.	22.46	0.3034	0.1557
168	167.	145.	22.47	0.3055	0.1568
169	168.	146.	22.47	0.3056	0.1569
170	169.	147.	22.46	0.3047	0.1564
171	170.	148.	22.46	0.3029	0.1555
172	171.	149.	22.46	0.2987	0.1533
173	172.	150.	22.46	0.302	0.155
174	173.	151.	22.46	0.3032	0.1557
175	174.	152.	22.46	0.2981	0.153
176	175.	153.	22.45	0.2939	0.1509
177	176.	154.	22.45	0.2949	0.1514
178	177.	155.	22.45	0.2945	0.1512
179	178.	156.	22.45	0.2932	0.1506
180	179.	157.	22.45	0.2873	0.1475
181	180.	158.	22.45	0.2907	0.1492
182	181.	159.	22.45	0.2911	0.1495
183	182.	160.	22.45	0.2886	0.1482
184	183.	161.	22.45	0.2851	0.1464
185	184.	162.	22.45	0.2869	0.1473
186	185.	163.	22.45	0.2875	0.1476
187	186.	164.	22.45	0.2854	0.1465
188	187.	165.	22.44	0.278	0.1427
189	188.	166.	22.44	0.2848	0.1462
190	189.	167.	22.45	0.2854	0.1465
191	190.	168.	22.44	0.2803	0.1439
192	191.	169.	22.44	0.2815	0.1445
193	192.	170.	22.44	0.2789	0.1432
194	193.	171.	22.44	0.2771	0.1423
195	194.	172.	22.44	0.2765	0.142
196	195.	173.	22.44	0.2813	0.1444
197	196.	174.	22.44	0.277	0.1422
198	197.	175.	22.43	0.2749	0.1411
199	198.	176.	22.43	0.2723	0.1398
200	199.	177.	22.43	0.273	0.1402
201	200.	178.	22.43	0.2676	0.1374
202	201.	179.	22.43	0.2714	0.1393
203	202.	180.	22.43	0.2703	0.1388
204	203.	181.	22.43	0.2697	0.1385

205	204.	182.	22.43	0.2663	0.1367
206	205.	183.	22.43	0.2699	0.1386
207	206.	184.	22.43	0.2697	0.1385
208	207.	185.	22.43	0.2655	0.1363
209	208.	186.	22.42	0.2646	0.1358
210	209.	187.	22.42	0.2625	0.1348
211	210.	188.	22.42	0.2631	0.1351
212	211.	189.	22.42	0.2613	0.1341
213	212.	190.	22.42	0.2635	0.1353
214	213.	191.	22.42	0.2583	0.1326
215	214.	192.	22.42	0.2551	0.131
216	215.	193.	22.42	0.262	0.1345
217	216.	194.	22.42	0.262	0.1345
218	217.	195.	22.42	0.2552	0.131
219	218.	196.	22.42	0.2559	0.1314
220	219.	197.	22.41	0.2513	0.129
221	220.	198.	22.41	0.2533	0.13
222	221.	199.	22.41	0.2498	0.1283
223	222.	200.	22.41	0.2516	0.1292
224	223.	201.	22.41	0.2506	0.1286
225	224.	202.	22.41	0.2465	0.1266
226	225.	203.	22.41	0.2512	0.129
227	226.	204.	22.41	0.2512	0.129
228	227.	205.	22.4	0.2445	0.1255
229	228.	206.	22.41	0.2478	0.1272
230	229.	207.	22.41	0.2482	0.1274
231	230.	208.	22.41	0.2454	0.126
232	231.	209.	22.4	0.2418	0.1242
233	232.	210.	22.4	0.2415	0.124
234	233.	211.	22.4	0.2376	0.122
235	234.	212.	22.4	0.2399	0.1231
236	235.	213.	22.4	0.2424	0.1245
237	236.	214.	22.4	0.2393	0.1228
238	237.	215.	22.39	0.2342	0.1202
239	238.	216.	22.4	0.2387	0.1225
240	239.	217.	22.4	0.2387	0.1225
241	240.	218.	22.39	0.2346	0.1204
242	241.	219.	22.4	0.2423	0.1244
243	242.	220.	22.39	0.2337	0.12
244	243.	221.	22.4	0.2353	0.1208
245	244.	222.	22.39	0.2311	0.1187
246	245.	223.	22.39	0.2338	0.12
247	246.	224.	22.39	0.23	0.1181
248	247.	225.	22.39	0.23	0.1181
249	248.	226.	22.39	0.2284	0.1173
250	249.	227.	22.39	0.2282	0.1172
251	250.	228.	22.39	0.23	0.1181
252	251.	229.	22.39	0.231	0.1186
253	252.	230.	22.39	0.2328	0.1195
254	253.	231.	22.39	0.2276	0.1169
255	254.	232.	22.39	0.2304	0.1183
256	255.	233.	22.38	0.2231	0.1145
257	256.	234.	22.38	0.2219	0.1139
258	257.	235.	22.38	0.2233	0.1146
259	258.	236.	22.39	0.2281	0.1171
260	259.	237.	22.38	0.2237	0.1149
261	260.	238.	22.38	0.2216	0.1138

262	261.	239.	22.38	0.2237	0.1149
263	262.	240.	22.38	0.2229	0.1145
264	263.	241.	22.38	0.2205	0.1132
265	264.	242.	22.38	0.2184	0.1121
266	265.	243.	22.38	0.2186	0.1122
267	266.	244.	22.38	0.2204	0.1132
268	267.	245.	22.38	0.2162	0.111
269	268.	246.	22.38	0.2192	0.1125
270	269.	247.	22.37	0.2126	0.1091
271	270.	248.	22.38	0.2189	0.1124
272	271.	249.	22.38	0.2204	0.1132
273	272.	250.	22.37	0.215	0.1104
274	273.	251.	22.37	0.213	0.1094
275	274.	252.	22.37	0.2085	0.1071
276	275.	253.	22.37	0.2132	0.1094
277	276.	254.	22.38	0.2175	0.1117
278	277.	255.	22.37	0.2133	0.1095
279	278.	256.	22.37	0.2115	0.1086
280	279.	257.	22.37	0.2109	0.1083
281	280.	258.	22.37	0.207	0.1063
282	281.	259.	22.37	0.2055	0.1055
283	282.	260.	22.37	0.2062	0.1059
284	283.	261.	22.37	0.2091	0.1074
285	284.	262.	22.36	0.202	0.1037
286	285.	263.	22.37	0.2051	0.1053
287	286.	264.	22.37	0.2071	0.1063
288	287.	265.	22.37	0.2051	0.1053
289	288.	266.	22.36	0.2014	0.1034
290	289.	267.	22.36	0.2037	0.1046
291	290.	268.	22.36	0.2015	0.1035
292	291.	269.	22.36	0.2039	0.1047
293	292.	270.	22.36	0.2003	0.1029
294	293.	271.	22.36	0.1993	0.1023
295	294.	272.	22.36	0.195	0.1001
296	295.	273.	22.36	0.2006	0.103
297	296.	274.	22.36	0.2009	0.1032
298	297.	275.	22.36	0.1966	0.1009
299	298.	276.	22.36	0.1996	0.1025
300	299.	277.	22.36	0.1979	0.1016
301	300.	278.	22.36	0.1984	0.1019
302	301.	279.	22.36	0.195	0.1001
303	302.	280.	22.35	0.1935	9.937e-002
304	303.	281.	22.35	0.1947	9.998e-002
305	304.	282.	22.36	0.1952	0.1002
306	305.	283.	22.36	0.1976	0.1015
307	306.	284.	22.35	0.1898	9.743e-002
308	307.	285.	22.35	0.1911	9.812e-002
309	308.	286.	22.35	0.1941	9.967e-002
310	309.	287.	22.35	0.1893	9.72e-002
311	310.	288.	22.35	0.1905	9.781e-002
312	311.	289.	22.34	0.1843	9.464e-002
313	312.	290.	22.35	0.1895	9.727e-002
314	313.	291.	22.35	0.1874	9.619e-002
315	314.	292.	22.35	0.1858	9.541e-002
316	315.	293.	22.34	0.1833	9.409e-002
317	316.	294.	22.35	0.1857	9.534e-002
318	317.	295.	22.34	0.1833	9.409e-002

319	318.	296.	22.35	0.1872	9.611e-002
320	319.	297.	22.34	0.1795	9.217e-002
321	320.	298.	22.35	0.1862	9.557e-002
322	321.	299.	22.34	0.1797	9.224e-002
323	322.	300.	22.34	0.1824	9.364e-002
324	323.	301.	22.34	0.1803	9.255e-002
325	324.	302.	22.34	0.1813	9.308e-002
326	325.	303.	22.34	0.179	9.192e-002
327	326.	304.	22.34	0.1779	9.131e-002
328	327.	305.	22.34	0.1783	9.155e-002
329	328.	306.	22.34	0.1807	9.278e-002
330	329.	307.	22.34	0.1775	9.115e-002
331	330.	308.	22.34	0.1783	9.155e-002
332	331.	309.	22.34	0.1792	9.2e-002
333	332.	310.	22.35	0.1854	9.518e-002
334	333.	311.	22.34	0.1756	9.015e-002
335	334.	312.	22.33	0.1736	8.914e-002
336	335.	313.	22.34	0.1762	9.046e-002
337	336.	314.	22.34	0.1756	9.015e-002
338	337.	315.	22.33	0.1747	8.968e-002
339	338.	316.	22.33	0.1708	8.767e-002
340	339.	317.	22.33	0.1696	8.708e-002
341	340.	318.	22.33	0.1745	8.961e-002
342	341.	319.	22.33	0.173	8.883e-002
343	342.	320.	22.33	0.1741	8.937e-002
344	343.	321.	22.33	0.1703	8.744e-002
345	344.	322.	22.33	0.1745	8.961e-002
346	345.	323.	22.33	0.1673	8.589e-002
347	346.	324.	22.33	0.1696	8.705e-002
348	347.	325.	22.33	0.1718	8.822e-002
349	348.	326.	22.33	0.1676	8.605e-002
350	349.	327.	22.33	0.1662	8.534e-002
351	350.	328.	22.33	0.1681	8.628e-002
352	351.	329.	22.33	0.1711	8.782e-002
353	352.	330.	22.33	0.167	8.573e-002
354	353.	331.	22.33	0.1665	8.55e-002
355	354.	332.	22.33	0.1668	8.566e-002
356	355.	333.	22.33	0.1656	8.504e-002
357	356.	334.	22.33	0.1671	8.581e-002
358	357.	335.	22.33	0.1655	8.496e-002
359	358.	336.	22.33	0.1653	8.488e-002
360	359.	337.	22.32	0.1634	8.388e-002
361	360.	338.	22.33	0.1655	8.496e-002
362	361.	339.	22.32	0.1625	8.341e-002
363	362.	340.	22.32	0.1613	8.279e-002
364	363.	341.	22.32	0.1623	8.334e-002
365	364.	342.	22.32	0.1625	8.341e-002
366	365.	343.	22.32	0.1604	8.233e-002
367	366.	344.	22.32	0.1626	8.348e-002
368	367.	345.	22.32	0.1629	8.364e-002
369	368.	346.	22.32	0.1595	8.186e-002
370	369.	347.	22.32	0.1585	8.14e-002
371	370.	348.	22.32	0.159	8.163e-002
372	371.	349.	22.32	0.1614	8.287e-002
373	372.	350.	22.32	0.1579	8.109e-002
374	373.	351.	22.32	0.1585	8.14e-002
375	374.	352.	22.32	0.1569	8.054e-002

376	375.	353.	22.32	0.1566	8.039e-002
377	376.	354.	22.32	0.1576	8.093e-002
378	377.	355.	22.32	0.1554	7.977e-002
379	378.	356.	22.32	0.1561	8.015e-002
380	379.	357.	22.31	0.154	7.907e-002
381	380.	358.	22.32	0.1558	8.e-002
382	381.	359.	22.32	0.1607	8.248e-002
383	382.	360.	22.31	0.1546	7.939e-002
384	383.	361.	22.32	0.1561	8.015e-002
385	384.	362.	22.31	0.1527	7.838e-002
386	385.	363.	22.32	0.16	8.217e-002
387	386.	364.	22.32	0.1572	8.069e-002
388	387.	365.	22.32	0.1587	8.147e-002
389	388.	366.	22.31	0.1496	7.683e-002
390	389.	367.	22.31	0.1503	7.714e-002
391	390.	368.	22.31	0.1513	7.768e-002
392	391.	369.	22.31	0.1542	7.915e-002
393	392.	370.	22.31	0.1499	7.698e-002
394	393.	371.	22.31	0.1477	7.582e-002
395	394.	372.	22.31	0.1486	7.629e-002
396	395.	373.	22.31	0.1474	7.566e-002
397	396.	374.	22.31	0.1466	7.529e-002
398	397.	375.	22.31	0.1472	7.559e-002
399	398.	376.	22.31	0.1469	7.543e-002
400	399.	377.	22.31	0.1462	7.505e-002
401	400.	378.	22.31	0.149	7.652e-002
402	401.	379.	22.3	0.1442	7.405e-002
403	402.	380.	22.31	0.1475	7.574e-002
404	403.	381.	22.3	0.144	7.395e-002
405	404.	382.	22.31	0.1474	7.566e-002
406	405.	383.	22.3	0.142	7.288e-002
407	406.	384.	22.3	0.1438	7.381e-002
408	407.	385.	22.3	0.1422	7.303e-002
409	408.	386.	22.3	0.1448	7.436e-002
410	409.	387.	22.3	0.1439	7.388e-002
411	410.	388.	22.3	0.1442	7.405e-002
412	411.	389.	22.31	0.1453	7.458e-002
413	412.	390.	22.3	0.1401	7.194e-002
414	413.	391.	22.3	0.1418	7.281e-002
415	414.	392.	22.3	0.1406	7.218e-002
416	415.	393.	22.3	0.1438	7.381e-002
417	416.	394.	22.3	0.1439	7.388e-002
418	417.	395.	22.29	0.1345	6.903e-002
419	418.	396.	22.3	0.1416	7.272e-002
420	419.	397.	22.3	0.1411	7.242e-002
421	420.	398.	22.3	0.1386	7.117e-002
422	421.	399.	22.3	0.1401	7.194e-002
423	422.	400.	22.3	0.14	7.188e-002
424	423.	401.	22.3	0.1385	7.109e-002
425	424.	402.	22.29	0.133	6.831e-002
426	425.	403.	22.3	0.1377	7.071e-002
427	426.	404.	22.3	0.1383	7.102e-002
428	427.	405.	22.3	0.138	7.087e-002
429	428.	406.	22.3	0.1359	6.977e-002
430	429.	407.	22.29	0.1311	6.73e-002
431	430.	408.	22.29	0.1328	6.818e-002
432	431.	409.	22.3	0.135	6.932e-002

433	432.	410.	22.3	0.1379	7.078e-002
434	433.	411.	22.29	0.1314	6.746e-002
435	434.	412.	22.3	0.137	7.032e-002
436	435.	413.	22.29	0.1326	6.807e-002
437	436.	414.	22.3	0.1374	7.055e-002
438	437.	415.	22.29	0.1317	6.761e-002
439	438.	416.	22.29	0.1305	6.7e-002
440	439.	417.	22.29	0.1315	6.753e-002
441	440.	418.	22.29	0.1309	6.722e-002
442	441.	419.	22.29	0.1275	6.544e-002
443	442.	420.	22.29	0.1291	6.629e-002
444	443.	421.	22.29	0.127	6.521e-002
445	444.	422.	22.29	0.1281	6.575e-002
446	445.	423.	22.29	0.1321	6.784e-002
447	446.	424.	22.29	0.1284	6.591e-002
448	447.	425.	22.29	0.1297	6.66e-002
449	448.	426.	22.29	0.1278	6.559e-002
450	449.	427.	22.29	0.1276	6.552e-002
451	450.	428.	22.29	0.1293	6.637e-002
452	451.	429.	22.29	0.1269	6.513e-002
453	452.	430.	22.28	0.1237	6.35e-002
454	453.	431.	22.29	0.1252	6.428e-002
455	454.	432.	22.29	0.1273	6.537e-002
456	455.	433.	22.29	0.1264	6.49e-002
457	456.	434.	22.29	0.1254	6.436e-002
458	457.	435.	22.28	0.1225	6.289e-002
459	458.	436.	22.28	0.1243	6.382e-002
460	459.	437.	22.28	0.124	6.367e-002
461	460.	438.	22.29	0.1263	6.483e-002
462	461.	439.	22.28	0.1228	6.304e-002
463	462.	440.	22.29	0.1267	6.506e-002
464	463.	441.	22.29	0.1251	6.42e-002
465	464.	442.	22.29	0.1278	6.559e-002
466	465.	443.	22.29	0.1258	6.459e-002
467	466.	444.	22.28	0.1243	6.382e-002
468	467.	445.	22.28	0.1224	6.284e-002
469	468.	446.	22.28	0.1208	6.204e-002
470	469.	447.	22.28	0.1196	6.142e-002
471	470.	448.	22.28	0.1231	6.32e-002
472	471.	449.	22.28	0.1201	6.164e-002
473	472.	450.	22.28	0.1217	6.25e-002
474	473.	451.	22.29	0.1258	6.459e-002
475	474.	452.	22.28	0.1228	6.304e-002
476	475.	453.	22.28	0.1158	5.943e-002
477	476.	454.	22.28	0.1183	6.071e-002
478	477.	455.	22.27	0.1142	5.863e-002
479	478.	456.	22.28	0.1174	6.026e-002
480	479.	457.	22.28	0.1169	6.002e-002
481	480.	458.	22.28	0.1225	6.289e-002
482	481.	459.	22.28	0.1165	5.979e-002
483	482.	460.	22.28	0.1198	6.149e-002
484	483.	461.	22.28	0.118	6.056e-002
485	484.	462.	22.28	0.1166	5.987e-002
486	485.	463.	22.28	0.1157	5.94e-002
487	486.	464.	22.28	0.116	5.955e-002
488	487.	465.	22.27	0.1119	5.746e-002
489	488.	466.	22.27	0.1148	5.893e-002

490	489.	467.	22.28	0.116	5.955e-002
491	490.	468.	22.28	0.1201	6.164e-002
492	491.	469.	22.27	0.1145	5.878e-002
493	492.	470.	22.28	0.118	6.056e-002
494	493.	471.	22.27	0.1146	5.886e-002
495	494.	472.	22.27	0.1142	5.863e-002
496	495.	473.	22.27	0.113	5.801e-002
497	496.	474.	22.27	0.1131	5.808e-002
498	497.	475.	22.27	0.113	5.801e-002
499	498.	476.	22.27	0.1107	5.684e-002
500	499.	477.	22.27	0.1143	5.87e-002
501	500.	478.	22.28	0.1151	5.909e-002
502	501.	479.	22.27	0.1125	5.778e-002
503	502.	480.	22.27	0.1142	5.863e-002
504	503.	481.	22.27	0.1103	5.661e-002
505	504.	482.	22.27	0.1091	5.6e-002
506	505.	483.	22.27	0.1091	5.6e-002
507	506.	484.	22.27	0.11	5.646e-002
508	507.	485.	22.27	0.1098	5.638e-002
509	508.	486.	22.27	0.1086	5.576e-002
510	509.	487.	22.27	0.1088	5.584e-002
511	510.	488.	22.27	0.1119	5.746e-002
512	511.	489.	22.27	0.111	5.7e-002
513	512.	490.	22.27	0.1088	5.584e-002
514	513.	491.	22.27	0.1085	5.569e-002
515	514.	492.	22.27	0.1064	5.46e-002
516	515.	493.	22.27	0.1086	5.576e-002
517	516.	494.	22.26	0.102	5.236e-002
518	517.	495.	22.27	0.1067	5.476e-002
519	518.	496.	22.27	0.1091	5.6e-002
520	519.	497.	22.27	0.1056	5.421e-002
521	520.	498.	22.27	0.1068	5.483e-002
522	521.	499.	22.26	0.1038	5.329e-002
523	522.	500.	22.27	0.1065	5.468e-002
524	523.	501.	22.27	0.1077	5.53e-002
525	524.	502.	22.26	0.1047	5.374e-002
526	525.	503.	22.26	0.1026	5.267e-002
527	526.	504.	22.27	0.1065	5.468e-002
528	527.	505.	22.27	0.1082	5.553e-002
529	528.	506.	22.26	0.1033	5.305e-002
530	529.	507.	22.26	0.1039	5.337e-002
531	530.	508.	22.27	0.1055	5.414e-002
532	531.	509.	22.26	0.1023	5.251e-002
533	532.	510.	22.26	0.102	5.236e-002
534	533.	511.	22.26	0.1015	5.212e-002
535	534.	512.	22.26	0.1006	5.165e-002
536	535.	513.	22.26	0.1047	5.374e-002
537	536.	514.	22.26	0.1042	5.351e-002
538	537.	515.	22.26	0.1003	5.15e-002
539	538.	516.	22.27	0.1067	5.476e-002
540	539.	517.	22.26	9.85e-002	5.057e-002
541	540.	518.	22.26	0.1035	5.312e-002
542	541.	519.	22.26	0.1035	5.312e-002
543	542.	520.	22.26	0.1024	5.259e-002
544	543.	521.	22.26	9.986e-002	5.127e-002
545	544.	522.	22.27	0.1053	5.406e-002
546	545.	523.	22.26	9.689e-002	4.974e-002

547	546.	524.	22.26	0.1011	5.19e-002
548	547.	525.	22.26	9.791e-002	5.027e-002
549	548.	526.	22.26	9.925e-002	5.096e-002
550	549.	527.	22.26	9.819e-002	5.041e-002
551	550.	528.	22.26	9.819e-002	5.041e-002
552	551.	529.	22.26	0.1011	5.19e-002
553	552.	530.	22.26	9.895e-002	5.08e-002
554	553.	531.	22.26	9.608e-002	4.933e-002
555	554.	532.	22.25	9.251e-002	4.749e-002
556	555.	533.	22.26	9.595e-002	4.926e-002
557	556.	534.	22.26	9.656e-002	4.957e-002
558	557.	535.	22.26	9.911e-002	5.088e-002
559	558.	536.	22.25	9.458e-002	4.856e-002
560	559.	537.	22.26	9.941e-002	5.104e-002
561	560.	538.	22.26	0.1008	5.174e-002
562	561.	539.	22.26	0.1008	5.174e-002
563	562.	540.	22.25	9.232e-002	4.74e-002
564	563.	541.	22.26	9.716e-002	4.988e-002
565	564.	542.	22.26	9.505e-002	4.88e-002
566	565.	543.	22.25	9.097e-002	4.67e-002
567	566.	544.	22.26	9.505e-002	4.88e-002
568	567.	545.	22.25	9.473e-002	4.863e-002
569	568.	546.	22.26	9.549e-002	4.902e-002
570	569.	547.	22.25	9.337e-002	4.794e-002
571	570.	548.	22.25	9.278e-002	4.763e-002
572	571.	549.	22.25	9.232e-002	4.74e-002
573	572.	550.	22.25	9.05e-002	4.646e-002
574	573.	551.	22.25	9.414e-002	4.833e-002
575	574.	552.	22.25	9.428e-002	4.84e-002
576	575.	553.	22.25	8.975e-002	4.608e-002
577	576.	554.	22.25	9.066e-002	4.654e-002
578	577.	555.	22.25	9.264e-002	4.756e-002
579	578.	556.	22.25	8.975e-002	4.608e-002
580	579.	557.	22.25	9.005e-002	4.623e-002
581	580.	558.	22.25	9.216e-002	4.731e-002
582	581.	559.	22.25	9.323e-002	4.786e-002
583	582.	560.	22.25	9.021e-002	4.631e-002
584	583.	561.	22.25	9.066e-002	4.654e-002
585	584.	562.	22.25	9.216e-002	4.731e-002
586	585.	563.	22.25	8.583e-002	4.406e-002
587	586.	564.	22.25	9.005e-002	4.623e-002
588	587.	565.	22.25	9.066e-002	4.654e-002
589	588.	566.	22.25	9.097e-002	4.67e-002
590	589.	567.	22.25	8.99e-002	4.616e-002
591	590.	568.	22.25	9.367e-002	4.809e-002
592	591.	569.	22.25	8.962e-002	4.601e-002
593	592.	570.	22.25	8.915e-002	4.577e-002
594	593.	571.	22.25	9.112e-002	4.678e-002
595	594.	572.	22.25	8.583e-002	4.406e-002
596	595.	573.	22.25	8.554e-002	4.392e-002
597	596.	574.	22.25	8.749e-002	4.492e-002
598	597.	575.	22.25	8.763e-002	4.499e-002
599	598.	576.	22.25	9.187e-002	4.717e-002
600	599.	577.	22.25	8.763e-002	4.499e-002
601	600.	578.	22.25	8.945e-002	4.593e-002
602	601.	579.	22.25	8.915e-002	4.577e-002
603	602.	580.	22.25	8.93e-002	4.585e-002

604	603.	581.	22.24	8.432e-002	4.329e-002
605	604.	582.	22.24	8.447e-002	4.337e-002
606	605.	583.	22.25	8.554e-002	4.392e-002
607	606.	584.	22.25	8.554e-002	4.392e-002
608	607.	585.	22.24	8.297e-002	4.26e-002
609	608.	586.	22.25	8.614e-002	4.422e-002
610	609.	587.	22.25	8.538e-002	4.384e-002
611	610.	588.	22.25	8.538e-002	4.384e-002
612	611.	589.	22.24	8.417e-002	4.321e-002
613	612.	590.	22.25	8.763e-002	4.499e-002
614	613.	591.	22.24	8.312e-002	4.267e-002
615	614.	592.	22.24	8.387e-002	4.306e-002
616	615.	593.	22.24	8.327e-002	4.275e-002
617	616.	594.	22.24	8.432e-002	4.329e-002
618	617.	595.	22.24	8.281e-002	4.251e-002
619	618.	596.	22.24	8.227e-002	4.224e-002
620	619.	597.	22.24	8.358e-002	4.291e-002
621	620.	598.	22.24	8.404e-002	4.314e-002
622	621.	599.	22.24	8.267e-002	4.244e-002
623	622.	600.	22.24	8.176e-002	4.197e-002
624	623.	601.	22.24	8.327e-002	4.275e-002
625	624.	602.	22.24	8.281e-002	4.251e-002
626	625.	603.	22.24	8.447e-002	4.337e-002
627	626.	604.	22.24	8.237e-002	4.229e-002
628	627.	605.	22.24	8.071e-002	4.143e-002
629	628.	606.	22.24	8.358e-002	4.291e-002
630	629.	607.	22.24	8.1e-002	4.159e-002
631	630.	608.	22.24	8.342e-002	4.283e-002
632	631.	609.	22.24	8.009e-002	4.112e-002
633	632.	610.	22.24	8.358e-002	4.291e-002
634	633.	611.	22.24	8.115e-002	4.166e-002
635	634.	612.	22.24	8.223e-002	4.221e-002
636	635.	613.	22.24	7.995e-002	4.105e-002
637	636.	614.	22.25	8.614e-002	4.422e-002
638	637.	615.	22.24	8.023e-002	4.119e-002
639	638.	616.	22.24	8.086e-002	4.151e-002
640	639.	617.	22.24	7.995e-002	4.105e-002
641	640.	618.	22.24	8.056e-002	4.136e-002
642	641.	619.	22.24	8.04e-002	4.128e-002
643	642.	620.	22.24	8.04e-002	4.128e-002
644	643.	621.	22.24	7.995e-002	4.105e-002
645	644.	622.	22.24	7.752e-002	3.98e-002
646	645.	623.	22.24	7.889e-002	4.05e-002
647	646.	624.	22.24	8.16e-002	4.189e-002
648	647.	625.	22.24	7.965e-002	4.089e-002
649	648.	626.	22.24	7.738e-002	3.973e-002
650	649.	627.	22.23	7.436e-002	3.818e-002
651	650.	628.	22.24	7.831e-002	4.02e-002
652	651.	629.	22.24	7.738e-002	3.973e-002
653	652.	630.	22.24	7.666e-002	3.936e-002
654	653.	631.	22.24	8.327e-002	4.275e-002
655	654.	632.	22.24	7.965e-002	4.089e-002
656	655.	633.	22.24	7.587e-002	3.895e-002
657	656.	634.	22.24	8.115e-002	4.166e-002
658	657.	635.	22.24	7.875e-002	4.043e-002
659	658.	636.	22.23	7.347e-002	3.772e-002
660	659.	637.	22.24	7.8e-002	4.005e-002

661	660.	638.	22.24	7.587e-002	3.895e-002
662	661.	639.	22.24	7.528e-002	3.865e-002
663	662.	640.	22.23	7.408e-002	3.803e-002
664	663.	641.	22.24	7.709e-002	3.958e-002
665	664.	642.	22.24	7.965e-002	4.089e-002
666	665.	643.	22.24	7.587e-002	3.895e-002
667	666.	644.	22.24	7.875e-002	4.043e-002
668	667.	645.	22.23	7.196e-002	3.694e-002
669	668.	646.	22.23	7.362e-002	3.779e-002
670	669.	647.	22.24	7.587e-002	3.895e-002
671	670.	648.	22.24	7.574e-002	3.888e-002
672	671.	649.	22.23	7.285e-002	3.74e-002
673	672.	650.	22.24	7.574e-002	3.888e-002
674	673.	651.	22.23	7.482e-002	3.841e-002
675	674.	652.	22.24	7.875e-002	4.043e-002
676	675.	653.	22.24	7.513e-002	3.857e-002
677	676.	654.	22.24	7.936e-002	4.075e-002
678	677.	655.	22.23	7.137e-002	3.664e-002
679	678.	656.	22.23	7.256e-002	3.725e-002
680	679.	657.	22.23	7.347e-002	3.772e-002
681	680.	658.	22.23	7.436e-002	3.818e-002
682	681.	659.	22.23	7.014e-002	3.601e-002
683	682.	660.	22.24	7.679e-002	3.942e-002
684	683.	661.	22.24	7.845e-002	4.028e-002
685	684.	662.	22.24	7.587e-002	3.895e-002
686	685.	663.	22.23	7.302e-002	3.749e-002
687	686.	664.	22.23	7.196e-002	3.694e-002
688	687.	665.	22.23	7.165e-002	3.679e-002
689	688.	666.	22.23	6.863e-002	3.524e-002
690	689.	667.	22.23	7.302e-002	3.749e-002
691	690.	668.	22.23	7.256e-002	3.725e-002
692	691.	669.	22.23	7.137e-002	3.664e-002
693	692.	670.	22.23	7.422e-002	3.81e-002
694	693.	671.	22.23	6.88e-002	3.532e-002
695	694.	672.	22.23	6.849e-002	3.516e-002
696	695.	673.	22.23	6.863e-002	3.524e-002
697	696.	674.	22.23	6.895e-002	3.54e-002
698	697.	675.	22.23	7.302e-002	3.749e-002
699	698.	676.	22.23	7.014e-002	3.601e-002
700	699.	677.	22.23	7.075e-002	3.633e-002
701	700.	678.	22.23	6.969e-002	3.578e-002
702	701.	679.	22.23	6.712e-002	3.446e-002
703	702.	680.	22.23	6.623e-002	3.4e-002
704	703.	681.	22.23	7.196e-002	3.694e-002
705	704.	682.	22.23	6.788e-002	3.485e-002
706	705.	683.	22.23	6.923e-002	3.554e-002
707	706.	684.	22.23	7.045e-002	3.617e-002
708	707.	685.	22.23	6.82e-002	3.501e-002
709	708.	686.	22.23	6.788e-002	3.485e-002
710	709.	687.	22.23	6.758e-002	3.47e-002
711	710.	688.	22.23	6.88e-002	3.532e-002
712	711.	689.	22.23	6.775e-002	3.478e-002
713	712.	690.	22.23	6.742e-002	3.461e-002
714	713.	691.	22.23	6.592e-002	3.384e-002
715	714.	692.	22.22	6.395e-002	3.283e-002
716	715.	693.	22.23	7.031e-002	3.609e-002
717	716.	694.	22.23	6.576e-002	3.376e-002

718	717.	695.	22.23	6.909e-002	3.547e-002
719	718.	696.	22.22	6.411e-002	3.292e-002
720	719.	697.	22.23	6.61e-002	3.393e-002
721	720.	698.	22.23	6.592e-002	3.384e-002
722	721.	699.	22.23	6.638e-002	3.408e-002
723	722.	700.	22.23	7.226e-002	3.71e-002
724	723.	701.	22.23	6.775e-002	3.478e-002
725	724.	702.	22.22	6.487e-002	3.33e-002
726	725.	703.	22.23	6.758e-002	3.47e-002
727	726.	704.	22.23	6.788e-002	3.485e-002
728	727.	705.	22.22	6.154e-002	3.16e-002
729	728.	706.	22.23	6.758e-002	3.47e-002
730	729.	707.	22.22	6.289e-002	3.229e-002
731	730.	708.	22.23	6.895e-002	3.54e-002
732	731.	709.	22.23	6.712e-002	3.446e-002
733	732.	710.	22.22	6.306e-002	3.237e-002
734	733.	711.	22.22	6.427e-002	3.299e-002
735	734.	712.	22.22	6.276e-002	3.222e-002
736	735.	713.	22.23	6.592e-002	3.384e-002
737	736.	714.	22.23	6.758e-002	3.47e-002
738	737.	715.	22.22	6.458e-002	3.315e-002
739	738.	716.	22.23	6.863e-002	3.524e-002
740	739.	717.	22.23	6.775e-002	3.478e-002
741	740.	718.	22.22	6.395e-002	3.283e-002
742	741.	719.	22.23	6.517e-002	3.346e-002
743	742.	720.	22.22	6.323e-002	3.246e-002
744	743.	721.	22.23	6.592e-002	3.384e-002
745	744.	722.	22.22	6.125e-002	3.144e-002
746	745.	723.	22.23	6.623e-002	3.4e-002
747	746.	724.	22.22	6.095e-002	3.129e-002
748	747.	725.	22.22	6.44e-002	3.306e-002
749	748.	726.	22.23	6.592e-002	3.384e-002
750	749.	727.	22.22	6.289e-002	3.229e-002
751	750.	728.	22.22	6.26e-002	3.214e-002
752	751.	729.	22.23	6.561e-002	3.368e-002
753	752.	730.	22.23	6.532e-002	3.353e-002
754	753.	731.	22.22	6.276e-002	3.222e-002
755	754.	732.	22.22	6.154e-002	3.16e-002
756	755.	733.	22.22	6.216e-002	3.191e-002
757	756.	734.	22.22	6.051e-002	3.106e-002
758	757.	735.	22.22	6.458e-002	3.315e-002
759	758.	736.	22.23	6.501e-002	3.338e-002
760	759.	737.	22.22	6.079e-002	3.121e-002
761	760.	738.	22.22	6.411e-002	3.292e-002
762	761.	739.	22.22	6.2e-002	3.183e-002
763	762.	740.	22.22	5.885e-002	3.021e-002
764	763.	741.	22.22	6.125e-002	3.144e-002
765	764.	742.	22.23	6.532e-002	3.353e-002
766	765.	743.	22.22	6.216e-002	3.191e-002
767	766.	744.	22.22	6.125e-002	3.144e-002
768	767.	745.	22.22	6.004e-002	3.083e-002
769	768.	746.	22.22	6.245e-002	3.206e-002
770	769.	747.	22.22	5.841e-002	2.999e-002
771	770.	748.	22.22	6.095e-002	3.129e-002
772	771.	749.	22.22	6.17e-002	3.168e-002
773	772.	750.	22.23	6.638e-002	3.408e-002
774	773.	751.	22.22	6.033e-002	3.098e-002

775	774.	752.	22.22	5.869e-002	3.013e-002
776	775.	753.	22.22	6.14e-002	3.152e-002
777	776.	754.	22.22	5.899e-002	3.028e-002
778	777.	755.	22.22	6.066e-002	3.114e-002
779	778.	756.	22.22	5.778e-002	2.967e-002
780	779.	757.	22.22	5.99e-002	3.075e-002
781	780.	758.	22.22	5.99e-002	3.075e-002
782	781.	759.	22.22	5.731e-002	2.942e-002
783	782.	760.	22.22	5.99e-002	3.075e-002
784	783.	761.	22.22	6.427e-002	3.299e-002
785	784.	762.	22.22	6.125e-002	3.144e-002
786	785.	763.	22.22	5.764e-002	2.959e-002
787	786.	764.	22.22	5.807e-002	2.981e-002
788	787.	765.	22.22	6.11e-002	3.137e-002
789	788.	766.	22.22	5.702e-002	2.927e-002
790	789.	767.	22.22	5.899e-002	3.028e-002
791	790.	768.	22.22	5.885e-002	3.021e-002
792	791.	769.	22.22	5.642e-002	2.896e-002
793	792.	770.	22.22	5.959e-002	3.059e-002
794	793.	771.	22.22	6.125e-002	3.144e-002
795	794.	772.	22.22	5.702e-002	2.927e-002
796	795.	773.	22.22	6.033e-002	3.098e-002
797	796.	774.	22.22	5.731e-002	2.942e-002
798	797.	775.	22.21	5.431e-002	2.788e-002
799	798.	776.	22.22	6.125e-002	3.144e-002
800	799.	777.	22.22	5.552e-002	2.85e-002
801	800.	778.	22.22	5.778e-002	2.967e-002
802	801.	779.	22.22	6.019e-002	3.09e-002
803	802.	780.	22.22	5.746e-002	2.95e-002
804	803.	781.	22.22	5.943e-002	3.051e-002
805	804.	782.	22.22	5.597e-002	2.874e-002
806	805.	783.	22.22	5.99e-002	3.075e-002
807	806.	784.	22.22	5.899e-002	3.028e-002
808	807.	785.	22.22	5.537e-002	2.843e-002
809	808.	786.	22.21	5.461e-002	2.804e-002
810	809.	787.	22.21	5.461e-002	2.804e-002
811	810.	788.	22.22	5.597e-002	2.874e-002
812	811.	789.	22.21	4.95e-002	2.541e-002
813	812.	790.	22.22	5.627e-002	2.889e-002
814	813.	791.	22.21	4.994e-002	2.564e-002
815	814.	792.	22.22	5.688e-002	2.92e-002
816	815.	793.	22.21	5.326e-002	2.734e-002
817	816.	794.	22.22	5.597e-002	2.874e-002
818	817.	795.	22.21	5.386e-002	2.765e-002
819	818.	796.	22.22	5.717e-002	2.935e-002
820	819.	797.	22.22	5.522e-002	2.835e-002
821	820.	798.	22.22	5.522e-002	2.835e-002
822	821.	799.	22.21	5.309e-002	2.726e-002
823	822.	800.	22.22	5.688e-002	2.92e-002
824	823.	801.	22.21	5.492e-002	2.819e-002
825	824.	802.	22.22	5.915e-002	3.037e-002
826	825.	803.	22.21	5.492e-002	2.819e-002
827	826.	804.	22.21	5.28e-002	2.71e-002
828	827.	805.	22.21	5.461e-002	2.804e-002
829	828.	806.	22.21	5.326e-002	2.734e-002
830	829.	807.	22.22	5.673e-002	2.912e-002
831	830.	808.	22.21	5.357e-002	2.751e-002

832	831.	809.	22.22	5.794e-002	2.975e-002
833	832.	810.	22.22	5.642e-002	2.896e-002
834	833.	811.	22.22	5.657e-002	2.904e-002
835	834.	812.	22.21	5.265e-002	2.703e-002
836	835.	813.	22.21	5.446e-002	2.796e-002
837	836.	814.	22.21	5.415e-002	2.78e-002
838	837.	815.	22.21	5.172e-002	2.656e-002
839	838.	816.	22.22	6.051e-002	3.106e-002
840	839.	817.	22.22	5.794e-002	2.975e-002
841	840.	818.	22.22	5.612e-002	2.881e-002
842	841.	819.	22.21	5.4e-002	2.772e-002
843	842.	820.	22.21	5.357e-002	2.751e-002
844	843.	821.	22.21	5.145e-002	2.641e-002
845	844.	822.	22.21	5.249e-002	2.695e-002
846	845.	823.	22.22	6.066e-002	3.114e-002
847	846.	824.	22.21	5.206e-002	2.673e-002
848	847.	825.	22.21	5.415e-002	2.78e-002
849	848.	826.	22.21	5.249e-002	2.695e-002
850	849.	827.	22.21	5.084e-002	2.61e-002
851	850.	828.	22.21	5.28e-002	2.71e-002
852	851.	829.	22.21	5.34e-002	2.741e-002
853	852.	830.	22.21	5.28e-002	2.71e-002
854	853.	831.	22.22	5.822e-002	2.989e-002
855	854.	832.	22.21	5.172e-002	2.656e-002
856	855.	833.	22.21	5.068e-002	2.602e-002
857	856.	834.	22.21	5.357e-002	2.751e-002
858	857.	835.	22.21	5.249e-002	2.695e-002
859	858.	836.	22.21	5.446e-002	2.796e-002
860	859.	837.	22.21	5.371e-002	2.757e-002
861	860.	838.	22.21	5.357e-002	2.751e-002
862	861.	839.	22.21	5.025e-002	2.58e-002
863	862.	840.	22.21	5.009e-002	2.572e-002
864	863.	841.	22.21	5.206e-002	2.673e-002
865	864.	842.	22.21	4.934e-002	2.533e-002
866	865.	843.	22.21	5.357e-002	2.751e-002
867	866.	844.	22.21	5.036e-002	2.586e-002
868	867.	845.	22.21	5.128e-002	2.633e-002
869	868.	846.	22.21	5.4e-002	2.772e-002
870	869.	847.	22.21	5.145e-002	2.641e-002
871	870.	848.	22.21	4.934e-002	2.533e-002
872	871.	849.	22.21	5.249e-002	2.695e-002
873	872.	850.	22.21	5.128e-002	2.633e-002
874	873.	851.	22.22	5.522e-002	2.835e-002
875	874.	852.	22.21	5.206e-002	2.673e-002
876	875.	853.	22.21	5.446e-002	2.796e-002
877	876.	854.	22.21	5.009e-002	2.572e-002
878	877.	855.	22.21	5.249e-002	2.695e-002
879	878.	856.	22.21	5.492e-002	2.819e-002
880	879.	857.	22.21	4.736e-002	2.431e-002
881	880.	858.	22.21	5.326e-002	2.734e-002
882	881.	859.	22.21	5.084e-002	2.61e-002
883	882.	860.	22.21	5.1e-002	2.618e-002
884	883.	861.	22.21	4.676e-002	2.4e-002
885	884.	862.	22.21	5.068e-002	2.602e-002
886	885.	863.	22.21	5.025e-002	2.58e-002
887	886.	864.	22.21	4.888e-002	2.51e-002
888	887.	865.	22.21	4.662e-002	2.393e-002

889	888.	866.	22.21	4.813e-002	2.471e-002
890	889.	867.	22.21	5.068e-002	2.602e-002
891	890.	868.	22.21	4.873e-002	2.502e-002
892	891.	869.	22.21	5.068e-002	2.602e-002
893	892.	870.	22.21	4.904e-002	2.518e-002
894	893.	871.	22.21	4.736e-002	2.431e-002
895	894.	872.	22.21	5.068e-002	2.602e-002
896	895.	873.	22.21	4.616e-002	2.37e-002
897	896.	874.	22.21	5.172e-002	2.656e-002
898	897.	875.	22.21	4.977e-002	2.555e-002
899	898.	876.	22.21	4.528e-002	2.325e-002
900	899.	877.	22.21	4.662e-002	2.393e-002
901	900.	878.	22.21	4.798e-002	2.463e-002
902	901.	879.	22.21	4.586e-002	2.354e-002
903	902.	880.	22.21	4.918e-002	2.525e-002
904	903.	881.	22.21	4.556e-002	2.339e-002
905	904.	882.	22.21	4.904e-002	2.518e-002
906	905.	883.	22.21	4.571e-002	2.347e-002
907	906.	884.	22.21	4.934e-002	2.533e-002
908	907.	885.	22.21	4.858e-002	2.494e-002
909	908.	886.	22.21	4.95e-002	2.541e-002
910	909.	887.	22.21	4.63e-002	2.377e-002
911	910.	888.	22.21	5.145e-002	2.641e-002
912	911.	889.	22.2	4.419e-002	2.269e-002
913	912.	890.	22.21	4.676e-002	2.4e-002
914	913.	891.	22.21	4.586e-002	2.354e-002
915	914.	892.	22.21	4.539e-002	2.33e-002
916	915.	893.	22.21	4.904e-002	2.518e-002
917	916.	894.	22.21	4.888e-002	2.51e-002
918	917.	895.	22.2	4.329e-002	2.223e-002
919	918.	896.	22.21	4.722e-002	2.424e-002
920	919.	897.	22.21	4.601e-002	2.362e-002
921	920.	898.	22.21	4.977e-002	2.555e-002
922	921.	899.	22.21	4.782e-002	2.455e-002
923	922.	900.	22.21	4.63e-002	2.377e-002
924	923.	901.	22.2	4.495e-002	2.308e-002
925	924.	902.	22.21	4.601e-002	2.362e-002
926	925.	903.	22.21	4.798e-002	2.463e-002
927	926.	904.	22.21	5.191e-002	2.665e-002
928	927.	905.	22.2	4.464e-002	2.292e-002
929	928.	906.	22.21	4.782e-002	2.455e-002
930	929.	907.	22.21	4.556e-002	2.339e-002
931	930.	908.	22.2	4.391e-002	2.254e-002
932	931.	909.	22.21	4.766e-002	2.447e-002
933	932.	910.	22.21	4.571e-002	2.347e-002
934	933.	911.	22.21	4.828e-002	2.479e-002
935	934.	912.	22.21	4.586e-002	2.354e-002
936	935.	913.	22.21	4.843e-002	2.486e-002
937	936.	914.	22.21	4.528e-002	2.325e-002
938	937.	915.	22.21	4.601e-002	2.362e-002
939	938.	916.	22.21	4.722e-002	2.424e-002
940	939.	917.	22.21	5.115e-002	2.626e-002
941	940.	918.	22.21	4.95e-002	2.541e-002
942	941.	919.	22.21	4.571e-002	2.347e-002
943	942.	920.	22.21	5.145e-002	2.641e-002
944	943.	921.	22.2	4.481e-002	2.3e-002
945	944.	922.	22.2	4.435e-002	2.277e-002

946	945.	923.	22.21	4.873e-002	2.502e-002
947	946.	924.	22.2	4.285e-002	2.2e-002
948	947.	925.	22.21	4.601e-002	2.362e-002
949	948.	926.	22.21	4.601e-002	2.362e-002
950	949.	927.	22.2	4.18e-002	2.146e-002
951	950.	928.	22.21	4.51e-002	2.315e-002
952	951.	929.	22.21	4.693e-002	2.409e-002
953	952.	930.	22.21	4.843e-002	2.486e-002
954	953.	931.	22.2	4.209e-002	2.161e-002
955	954.	932.	22.21	4.556e-002	2.339e-002
956	955.	933.	22.21	4.63e-002	2.377e-002
957	956.	934.	22.2	4.254e-002	2.184e-002
958	957.	935.	22.2	4.18e-002	2.146e-002
959	958.	936.	22.2	4.344e-002	2.23e-002
960	959.	937.	22.2	4.36e-002	2.238e-002
961	960.	938.	22.2	4.164e-002	2.138e-002
962	961.	939.	22.2	4.314e-002	2.215e-002
963	962.	940.	22.2	4.344e-002	2.23e-002
964	963.	941.	22.2	4.344e-002	2.23e-002
965	964.	942.	22.21	4.751e-002	2.439e-002
966	965.	943.	22.2	4.254e-002	2.184e-002
967	966.	944.	22.2	4.164e-002	2.138e-002
968	967.	945.	22.2	4.419e-002	2.269e-002
969	968.	946.	22.21	4.571e-002	2.347e-002
970	969.	947.	22.2	4.196e-002	2.154e-002
971	970.	948.	22.2	4.196e-002	2.154e-002
972	971.	949.	22.21	4.601e-002	2.362e-002
973	972.	950.	22.2	4.239e-002	2.176e-002
974	973.	951.	22.2	4.391e-002	2.254e-002
975	974.	952.	22.21	4.662e-002	2.393e-002
976	975.	953.	22.2	4.299e-002	2.207e-002
977	976.	954.	22.2	3.983e-002	2.045e-002
978	977.	955.	22.2	4.329e-002	2.223e-002
979	978.	956.	22.2	4.239e-002	2.176e-002
980	979.	957.	22.2	4.196e-002	2.154e-002
981	980.	958.	22.2	4.209e-002	2.161e-002
982	981.	959.	22.21	4.63e-002	2.377e-002
983	982.	960.	22.2	4.18e-002	2.146e-002
984	983.	961.	22.2	4.058e-002	2.083e-002
985	984.	962.	22.2	4.223e-002	2.168e-002
986	985.	963.	22.2	4.013e-002	2.06e-002
987	986.	964.	22.2	3.968e-002	2.037e-002
988	987.	965.	22.2	4.223e-002	2.168e-002
989	988.	966.	22.2	4.209e-002	2.161e-002
990	989.	967.	22.21	4.556e-002	2.339e-002
991	990.	968.	22.2	4.18e-002	2.146e-002
992	991.	969.	22.2	3.667e-002	1.883e-002
993	992.	970.	22.2	4.149e-002	2.13e-002
994	993.	971.	22.2	4.088e-002	2.099e-002
995	994.	972.	22.21	4.676e-002	2.4e-002
996	995.	973.	22.2	4.269e-002	2.192e-002
997	996.	974.	22.2	3.756e-002	1.928e-002
998	997.	975.	22.2	4.344e-002	2.23e-002
999	998.	976.	22.2	4.239e-002	2.176e-002
1000	999.	977.	22.2	3.953e-002	2.029e-002
1001	1000	978.	22.2	4.028e-002	2.068e-002
1002	1001	979.	22.2	4.073e-002	2.091e-002

1003	1002	980.	22.2	4.344e-002	2.23e-002
1004	1003	981.	22.2	3.936e-002	2.021e-002
1005	1004	982.	22.2	4.209e-002	2.161e-002
1006	1005	983.	22.2	4.196e-002	2.154e-002
1007	1006	984.	22.2	4.088e-002	2.099e-002
1008	1007	985.	22.2	3.816e-002	1.959e-002
1009	1008	986.	22.2	4.164e-002	2.138e-002
1010	1009	987.	22.2	4.464e-002	2.292e-002
1011	1010	988.	22.2	4.18e-002	2.146e-002
1012	1011	989.	22.2	3.863e-002	1.983e-002
1013	1012	990.	22.2	3.953e-002	2.029e-002
1014	1013	991.	22.2	4.164e-002	2.138e-002
1015	1014	992.	22.2	3.62e-002	1.858e-002
1016	1015	993.	22.2	3.77e-002	1.935e-002
1017	1016	994.	22.2	3.801e-002	1.951e-002
1018	1017	995.	22.2	3.635e-002	1.866e-002
1019	1018	996.	22.2	4.013e-002	2.06e-002
1020	1019	997.	22.2	3.953e-002	2.029e-002
1021	1020	998.	22.2	3.62e-002	1.858e-002
1022	1021	999.	22.2	3.605e-002	1.851e-002
1023	1022	1000	22.2	3.878e-002	1.991e-002
1024	1023	1001	22.2	4.118e-002	2.114e-002
1025	1024	1002	22.2	3.514e-002	1.804e-002
1026	1025	1003	22.2	3.786e-002	1.944e-002
1027	1026	1004	22.2	3.786e-002	1.944e-002
1028	1027	1005	22.2	3.667e-002	1.883e-002
1029	1028	1006	22.2	3.59e-002	1.843e-002
1030	1029	1007	22.2	3.605e-002	1.851e-002
1031	1030	1008	22.2	3.59e-002	1.843e-002
1032	1031	1009	22.19	3.44e-002	1.766e-002
1033	1032	1010	22.2	3.575e-002	1.835e-002
1034	1033	1011	22.2	3.756e-002	1.928e-002
1035	1034	1012	22.2	3.726e-002	1.913e-002
1036	1035	1013	22.2	3.846e-002	1.975e-002
1037	1036	1014	22.2	4.073e-002	2.091e-002
1038	1037	1015	22.2	3.816e-002	1.959e-002
1039	1038	1016	22.2	3.605e-002	1.851e-002
1040	1039	1017	22.2	3.59e-002	1.843e-002
1041	1040	1018	22.2	3.696e-002	1.898e-002
1042	1041	1019	22.2	3.575e-002	1.835e-002
1043	1042	1020	22.2	3.667e-002	1.883e-002
1044	1043	1021	22.2	4.043e-002	2.076e-002
1045	1044	1022	22.2	3.936e-002	2.021e-002
1046	1045	1023	22.2	4.073e-002	2.091e-002
1047	1046	1024	22.2	3.56e-002	1.828e-002
1048	1047	1025	22.2	3.667e-002	1.883e-002
1049	1048	1026	22.2	3.77e-002	1.935e-002
1050	1049	1027	22.19	3.35e-002	1.72e-002
1051	1050	1028	22.2	3.999e-002	2.053e-002
1052	1051	1029	22.2	3.71e-002	1.905e-002
1053	1052	1030	22.2	3.667e-002	1.883e-002
1054	1053	1031	22.2	3.696e-002	1.898e-002
1055	1054	1032	22.2	3.514e-002	1.804e-002
1056	1055	1033	22.19	3.394e-002	1.743e-002
1057	1056	1034	22.19	3.394e-002	1.743e-002
1058	1057	1035	22.19	3.363e-002	1.726e-002
1059	1058	1036	22.2	3.983e-002	2.045e-002

1060	1059	1037	22.19	3.183e-002	1.634e-002
1061	1060	1038	22.19	3.35e-002	1.72e-002
1062	1061	1039	22.19	3.183e-002	1.634e-002
1063	1062	1040	22.19	3.108e-002	1.595e-002
1064	1063	1041	22.2	3.514e-002	1.804e-002
1065	1064	1042	22.2	3.575e-002	1.835e-002
1066	1065	1043	22.19	3.378e-002	1.734e-002
1067	1066	1044	22.2	3.53e-002	1.812e-002
1068	1067	1045	22.19	3.319e-002	1.704e-002
1069	1068	1046	22.19	3.499e-002	1.796e-002
1070	1069	1047	22.2	3.832e-002	1.967e-002
1071	1070	1048	22.2	3.651e-002	1.875e-002
1072	1071	1049	22.19	3.289e-002	1.688e-002
1073	1072	1050	22.19	3.244e-002	1.665e-002
1074	1073	1051	22.19	3.378e-002	1.734e-002
1075	1074	1052	22.19	3.153e-002	1.619e-002
1076	1075	1053	22.19	3.215e-002	1.651e-002
1077	1076	1054	22.19	3.167e-002	1.626e-002
1078	1077	1055	22.19	3.425e-002	1.758e-002
1079	1078	1056	22.19	3.335e-002	1.712e-002
1080	1079	1057	22.19	3.319e-002	1.704e-002
1081	1080	1058	22.2	3.651e-002	1.875e-002
1082	1081	1059	22.19	3.35e-002	1.72e-002
1083	1082	1060	22.2	3.575e-002	1.835e-002
1084	1083	1061	22.19	3.062e-002	1.572e-002
1085	1084	1062	22.19	3.228e-002	1.657e-002
1086	1085	1063	22.19	3.363e-002	1.726e-002
1087	1086	1064	22.2	3.756e-002	1.928e-002
1088	1087	1065	22.19	3.153e-002	1.619e-002
1089	1088	1066	22.2	3.921e-002	2.013e-002
1090	1089	1067	22.19	3.484e-002	1.789e-002
1091	1090	1068	22.19	3.137e-002	1.611e-002
1092	1091	1069	22.19	3.137e-002	1.611e-002
1093	1092	1070	22.19	3.004e-002	1.542e-002
1094	1093	1071	22.19	3.289e-002	1.688e-002
1095	1094	1072	22.19	3.394e-002	1.743e-002
1096	1095	1073	22.19	3.228e-002	1.657e-002
1097	1096	1074	22.2	3.77e-002	1.935e-002
1098	1097	1075	22.19	3.304e-002	1.696e-002
1099	1098	1076	22.19	2.973e-002	1.526e-002
1100	1099	1077	22.19	3.454e-002	1.773e-002
1101	1100	1078	22.2	3.651e-002	1.875e-002
1102	1101	1079	22.2	3.651e-002	1.875e-002
1103	1102	1080	22.19	3.319e-002	1.704e-002
1104	1103	1081	22.19	3.048e-002	1.565e-002
1105	1104	1082	22.19	3.499e-002	1.796e-002
1106	1105	1083	22.19	3.199e-002	1.643e-002
1107	1106	1084	22.19	3.273e-002	1.68e-002
1108	1107	1085	22.19	3.319e-002	1.704e-002
1109	1108	1086	22.19	3.304e-002	1.696e-002
1110	1109	1087	22.19	3.199e-002	1.643e-002
1111	1110	1088	22.2	3.635e-002	1.866e-002
1112	1111	1089	22.19	3.108e-002	1.595e-002
1113	1112	1090	22.19	3.123e-002	1.603e-002
1114	1113	1091	22.19	3.153e-002	1.619e-002
1115	1114	1092	22.19	3.394e-002	1.743e-002
1116	1115	1093	22.19	2.958e-002	1.518e-002

1117	1116	1094	22.19	3.394e-002	1.743e-002
1118	1117	1095	22.19	3.289e-002	1.688e-002
1119	1118	1096	22.19	3.454e-002	1.773e-002
1120	1119	1097	22.19	3.425e-002	1.758e-002
1121	1120	1098	22.19	2.895e-002	1.486e-002
1122	1121	1099	22.19	3.471e-002	1.782e-002
1123	1122	1100	22.19	3.289e-002	1.688e-002
1124	1123	1101	22.19	3.183e-002	1.634e-002
1125	1124	1102	22.19	3.062e-002	1.572e-002
1126	1125	1103	22.2	3.53e-002	1.812e-002
1127	1126	1104	22.19	3.167e-002	1.626e-002
1128	1127	1105	22.19	3.123e-002	1.603e-002
1129	1128	1106	22.19	3.44e-002	1.766e-002
1130	1129	1107	22.19	2.895e-002	1.486e-002
1131	1130	1108	22.19	3.167e-002	1.626e-002
1132	1131	1109	22.19	3.199e-002	1.643e-002
1133	1132	1110	22.19	3.014e-002	1.547e-002
1134	1133	1111	22.19	3.079e-002	1.581e-002
1135	1134	1112	22.19	3.014e-002	1.547e-002
1136	1135	1113	22.19	3.335e-002	1.712e-002
1137	1136	1114	22.19	3.014e-002	1.547e-002
1138	1137	1115	22.19	2.806e-002	1.441e-002
1139	1138	1116	22.19	2.986e-002	1.533e-002
1140	1139	1117	22.19	3.108e-002	1.595e-002
1141	1140	1118	22.19	3.062e-002	1.572e-002
1142	1141	1119	22.19	3.153e-002	1.619e-002
1143	1142	1120	22.19	3.031e-002	1.556e-002
1144	1143	1121	22.19	3.079e-002	1.581e-002
1145	1144	1122	22.19	2.868e-002	1.472e-002
1146	1145	1123	22.19	2.986e-002	1.533e-002
1147	1146	1124	22.2	3.56e-002	1.828e-002
1148	1147	1125	22.19	3.123e-002	1.603e-002
1149	1148	1126	22.19	3.004e-002	1.542e-002
1150	1149	1127	22.19	3.257e-002	1.672e-002
1151	1150	1128	22.19	3.093e-002	1.588e-002
1152	1151	1129	22.19	3.137e-002	1.611e-002
1153	1152	1130	22.19	3.062e-002	1.572e-002
1154	1153	1131	22.19	2.942e-002	1.51e-002
1155	1154	1132	22.19	2.942e-002	1.51e-002
1156	1155	1133	22.19	3.048e-002	1.565e-002
1157	1156	1134	22.19	3.319e-002	1.704e-002
1158	1157	1135	22.19	2.579e-002	1.324e-002
1159	1158	1136	22.19	3.244e-002	1.665e-002
1160	1159	1137	22.19	3.108e-002	1.595e-002
1161	1160	1138	22.19	3.471e-002	1.782e-002
1162	1161	1139	22.19	3.014e-002	1.547e-002
1163	1162	1140	22.19	3.363e-002	1.726e-002
1164	1163	1141	22.19	2.926e-002	1.502e-002
1165	1164	1142	22.19	3.048e-002	1.565e-002
1166	1165	1143	22.19	2.926e-002	1.502e-002
1167	1166	1144	22.19	3.378e-002	1.734e-002
1168	1167	1145	22.19	2.882e-002	1.48e-002
1169	1168	1146	22.19	2.82e-002	1.448e-002
1170	1169	1147	22.19	2.775e-002	1.425e-002
1171	1170	1148	22.19	2.912e-002	1.495e-002
1172	1171	1149	22.19	2.853e-002	1.465e-002
1173	1172	1150	22.19	2.731e-002	1.402e-002

1174	1173	1151	22.19	2.746e-002	1.41e-002
1175	1174	1152	22.19	2.596e-002	1.333e-002
1176	1175	1153	22.19	2.895e-002	1.486e-002
1177	1176	1154	22.19	3.183e-002	1.634e-002
1178	1177	1155	22.19	2.868e-002	1.472e-002
1179	1178	1156	22.19	3.004e-002	1.542e-002
1180	1179	1157	22.19	2.868e-002	1.472e-002
1181	1180	1158	22.19	3.123e-002	1.603e-002
1182	1181	1159	22.19	2.882e-002	1.48e-002
1183	1182	1160	22.19	3.137e-002	1.611e-002
1184	1183	1161	22.19	2.912e-002	1.495e-002
1185	1184	1162	22.19	3.014e-002	1.547e-002
1186	1185	1163	22.19	3.079e-002	1.581e-002
1187	1186	1164	22.19	2.853e-002	1.465e-002
1188	1187	1165	22.19	3.079e-002	1.581e-002
1189	1188	1166	22.19	3.335e-002	1.712e-002
1190	1189	1167	22.19	2.596e-002	1.333e-002
1191	1190	1168	22.19	2.986e-002	1.533e-002
1192	1191	1169	22.19	2.868e-002	1.472e-002
1193	1192	1170	22.19	2.926e-002	1.502e-002
1194	1193	1171	22.18	2.353e-002	1.208e-002
1195	1194	1172	22.19	2.685e-002	1.379e-002
1196	1195	1173	22.19	2.731e-002	1.402e-002
1197	1196	1174	22.19	2.912e-002	1.495e-002
1198	1197	1175	22.18	2.475e-002	1.271e-002
1199	1198	1176	22.19	2.775e-002	1.425e-002
1200	1199	1177	22.19	2.942e-002	1.51e-002
1201	1200	1178	22.19	2.596e-002	1.333e-002
1202	1201	1179	22.18	2.459e-002	1.262e-002
1203	1202	1180	22.19	2.624e-002	1.347e-002
1204	1203	1181	22.19	2.655e-002	1.363e-002
1205	1204	1182	22.19	2.868e-002	1.472e-002
1206	1205	1183	22.18	2.475e-002	1.271e-002
1207	1206	1184	22.19	2.868e-002	1.472e-002
1208	1207	1185	22.19	2.746e-002	1.41e-002
1209	1208	1186	22.19	2.837e-002	1.457e-002
1210	1209	1187	22.18	2.489e-002	1.278e-002
1211	1210	1188	22.19	3.153e-002	1.619e-002
1212	1211	1189	22.18	2.338e-002	1.2e-002
1213	1212	1190	22.19	2.624e-002	1.347e-002
1214	1213	1191	22.19	2.746e-002	1.41e-002
1215	1214	1192	22.19	3.079e-002	1.581e-002
1216	1215	1193	22.19	2.926e-002	1.502e-002
1217	1216	1194	22.19	2.731e-002	1.402e-002
1218	1217	1195	22.18	2.369e-002	1.216e-002
1219	1218	1196	22.18	2.459e-002	1.262e-002
1220	1219	1197	22.19	2.685e-002	1.379e-002
1221	1220	1198	22.19	2.505e-002	1.286e-002
1222	1221	1199	22.19	2.837e-002	1.457e-002
1223	1222	1200	22.19	2.67e-002	1.371e-002
1224	1223	1201	22.19	3.108e-002	1.595e-002
1225	1224	1202	22.19	2.731e-002	1.402e-002
1226	1225	1203	22.19	2.61e-002	1.34e-002
1227	1226	1204	22.19	2.701e-002	1.387e-002
1228	1227	1205	22.19	3.048e-002	1.565e-002
1229	1228	1206	22.18	2.4e-002	1.232e-002
1230	1229	1207	22.19	2.882e-002	1.48e-002

1231	1230	1208	22.19	2.853e-002	1.465e-002
1232	1231	1209	22.18	2.459e-002	1.262e-002
1233	1232	1210	22.18	2.445e-002	1.255e-002
1234	1233	1211	22.19	2.579e-002	1.324e-002
1235	1234	1212	22.19	2.731e-002	1.402e-002
1236	1235	1213	22.18	2.294e-002	1.178e-002
1237	1236	1214	22.18	2.247e-002	1.154e-002
1238	1237	1215	22.18	2.323e-002	1.193e-002
1239	1238	1216	22.19	2.775e-002	1.425e-002
1240	1239	1217	22.19	2.912e-002	1.495e-002
1241	1240	1218	22.18	2.307e-002	1.185e-002
1242	1241	1219	22.19	2.535e-002	1.302e-002
1243	1242	1220	22.18	2.415e-002	1.24e-002
1244	1243	1221	22.19	2.535e-002	1.302e-002
1245	1244	1222	22.19	2.731e-002	1.402e-002
1246	1245	1223	22.18	2.428e-002	1.247e-002
1247	1246	1224	22.19	2.731e-002	1.402e-002
1248	1247	1225	22.18	2.4e-002	1.232e-002
1249	1248	1226	22.19	2.685e-002	1.379e-002
1250	1249	1227	22.18	2.384e-002	1.224e-002
1251	1250	1228	22.19	2.596e-002	1.333e-002
1252	1251	1229	22.19	2.549e-002	1.308e-002
1253	1252	1230	22.19	2.641e-002	1.356e-002
1254	1253	1231	22.19	2.61e-002	1.34e-002
1255	1254	1232	22.18	2.445e-002	1.255e-002
1256	1255	1233	22.18	2.4e-002	1.232e-002
1257	1256	1234	22.19	2.624e-002	1.347e-002
1258	1257	1235	22.18	2.445e-002	1.255e-002
1259	1258	1236	22.18	2.202e-002	1.13e-002
1260	1259	1237	22.18	2.157e-002	1.108e-002
1261	1260	1238	22.19	2.624e-002	1.347e-002
1262	1261	1239	22.19	2.792e-002	1.433e-002
1263	1262	1240	22.18	2.384e-002	1.224e-002
1264	1263	1241	22.18	2.006e-002	1.03e-002
1265	1264	1242	22.19	2.52e-002	1.294e-002
1266	1265	1243	22.18	2.353e-002	1.208e-002
1267	1266	1244	22.19	2.624e-002	1.347e-002
1268	1267	1245	22.18	2.263e-002	1.162e-002
1269	1268	1246	22.19	2.61e-002	1.34e-002
1270	1269	1247	22.18	2.127e-002	1.092e-002
1271	1270	1248	22.18	2.459e-002	1.262e-002
1272	1271	1249	22.18	2.217e-002	1.138e-002
1273	1272	1250	22.18	2.415e-002	1.24e-002
1274	1273	1251	22.18	2.233e-002	1.147e-002
1275	1274	1252	22.18	2.428e-002	1.247e-002
1276	1275	1253	22.18	2.415e-002	1.24e-002
1277	1276	1254	22.19	2.52e-002	1.294e-002
1278	1277	1255	22.18	2.338e-002	1.2e-002
1279	1278	1256	22.18	2.263e-002	1.162e-002
1280	1279	1257	22.19	2.837e-002	1.457e-002
1281	1280	1258	22.18	2.323e-002	1.193e-002
1282	1281	1259	22.18	2.489e-002	1.278e-002
1283	1282	1260	22.18	2.11e-002	1.083e-002
1284	1283	1261	22.18	2.353e-002	1.208e-002
1285	1284	1262	22.18	2.428e-002	1.247e-002
1286	1285	1263	22.18	2.263e-002	1.162e-002
1287	1286	1264	22.19	2.549e-002	1.308e-002

1288	1287	1265	22.18	2.415e-002	1.24e-002
1289	1288	1266	22.18	2.4e-002	1.232e-002
1290	1289	1267	22.18	2.475e-002	1.271e-002
1291	1290	1268	22.18	1.961e-002	1.007e-002
1292	1291	1269	22.18	2.307e-002	1.185e-002
1293	1292	1270	22.18	2.051e-002	1.053e-002
1294	1293	1271	22.19	2.655e-002	1.363e-002
1295	1294	1272	22.18	2.051e-002	1.053e-002
1296	1295	1273	22.19	2.61e-002	1.34e-002
1297	1296	1274	22.18	2.247e-002	1.154e-002
1298	1297	1275	22.18	2.323e-002	1.193e-002
1299	1298	1276	22.19	2.746e-002	1.41e-002
1300	1299	1277	22.18	2.173e-002	1.116e-002
1301	1300	1278	22.19	2.505e-002	1.286e-002
1302	1301	1279	22.18	1.976e-002	1.015e-002
1303	1302	1280	22.19	2.535e-002	1.302e-002
1304	1303	1281	22.18	1.946e-002	9.991e-003
1305	1304	1282	22.18	2.307e-002	1.185e-002
1306	1305	1283	22.18	2.247e-002	1.154e-002
1307	1306	1284	22.18	1.976e-002	1.015e-002
1308	1307	1285	22.18	1.916e-002	9.835e-003
1309	1308	1286	22.18	2.082e-002	1.069e-002
1310	1309	1287	22.18	2.28e-002	1.171e-002
1311	1310	1288	22.18	2.217e-002	1.138e-002
1312	1311	1289	22.18	2.173e-002	1.116e-002
1313	1312	1290	22.18	2.428e-002	1.247e-002
1314	1313	1291	22.18	2.141e-002	1.099e-002
1315	1314	1292	22.18	1.99e-002	1.022e-002
1316	1315	1293	22.18	2.384e-002	1.224e-002
1317	1316	1294	22.18	2.445e-002	1.255e-002
1318	1317	1295	22.18	1.751e-002	8.99e-003
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1320	1319	1297	22.18	2.141e-002	1.099e-002
1321	1320	1298	22.18	2.263e-002	1.162e-002
1322	1321	1299	22.18	1.902e-002	9.763e-003
1323	1322	1300	22.18	1.812e-002	9.302e-003
1324	1323	1301	22.18	1.782e-002	9.15e-003
1325	1324	1302	22.18	2.173e-002	1.116e-002
1326	1325	1303	22.18	2.021e-002	1.037e-002
1327	1326	1304	22.19	2.579e-002	1.324e-002
1328	1327	1305	22.18	2.006e-002	1.03e-002
1329	1328	1306	22.18	1.824e-002	9.365e-003
1330	1329	1307	22.18	2.307e-002	1.185e-002
1331	1330	1308	22.18	1.812e-002	9.302e-003
1332	1331	1309	22.18	1.751e-002	8.99e-003
1333	1332	1310	22.18	1.87e-002	9.6e-003
1334	1333	1311	22.18	1.84e-002	9.448e-003
1335	1334	1312	22.18	2.384e-002	1.224e-002
1336	1335	1313	22.18	2.021e-002	1.037e-002
1337	1336	1314	22.19	2.641e-002	1.356e-002
1338	1337	1315	22.18	2.097e-002	1.076e-002
1339	1338	1316	22.18	2.127e-002	1.092e-002
1340	1339	1317	22.18	1.934e-002	9.928e-003
1341	1340	1318	22.18	2.068e-002	1.062e-002
1342	1341	1319	22.18	2.051e-002	1.053e-002
1343	1342	1320	22.18	2.4e-002	1.232e-002
1344	1343	1321	22.18	1.886e-002	9.684e-003

1345	1344	1322	22.19	2.52e-002	1.294e-002
1346	1345	1323	22.18	1.824e-002	9.365e-003
1347	1346	1324	22.18	1.854e-002	9.521e-003
1348	1347	1325	22.18	2.038e-002	1.046e-002
1349	1348	1326	22.18	1.902e-002	9.763e-003
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1351	1350	1328	22.18	1.87e-002	9.6e-003
1352	1351	1329	22.18	1.751e-002	8.99e-003
1353	1352	1330	22.18	2.263e-002	1.162e-002
1354	1353	1331	22.18	2.173e-002	1.116e-002
1355	1354	1332	22.18	2.28e-002	1.171e-002
1356	1355	1333	22.18	2.051e-002	1.053e-002
1357	1356	1334	22.18	2.068e-002	1.062e-002
1358	1357	1335	22.18	1.766e-002	9.067e-003
1359	1358	1336	22.18	2.233e-002	1.147e-002
1360	1359	1337	22.18	1.812e-002	9.302e-003
1361	1360	1338	22.18	1.946e-002	9.991e-003
1362	1361	1339	22.18	1.69e-002	8.678e-003
1363	1362	1340	22.18	2.038e-002	1.046e-002
1364	1363	1341	22.18	2.006e-002	1.03e-002
1365	1364	1342	22.18	2.338e-002	1.2e-002
1366	1365	1343	22.18	2.369e-002	1.216e-002
1367	1366	1344	22.18	1.812e-002	9.302e-003
1368	1367	1345	22.18	1.902e-002	9.763e-003
1369	1368	1346	22.18	1.766e-002	9.067e-003
1370	1369	1347	22.18	1.886e-002	9.684e-003
1371	1370	1348	22.18	2.097e-002	1.076e-002
1372	1371	1349	22.18	1.705e-002	8.752e-003
1373	1372	1350	22.18	2.141e-002	1.099e-002
1374	1373	1351	22.18	1.886e-002	9.684e-003
1375	1374	1352	22.18	2.082e-002	1.069e-002
1376	1375	1353	22.18	2.173e-002	1.116e-002
1377	1376	1354	22.18	1.782e-002	9.15e-003
1378	1377	1355	22.18	1.824e-002	9.365e-003
1379	1378	1356	22.18	2.4e-002	1.232e-002
1380	1379	1357	22.18	2.307e-002	1.185e-002
1381	1380	1358	22.18	2.11e-002	1.083e-002
1382	1381	1359	22.18	2.188e-002	1.123e-002
1383	1382	1360	22.18	1.976e-002	1.015e-002
1384	1383	1361	22.18	2.141e-002	1.099e-002
1385	1384	1362	22.19	2.549e-002	1.308e-002
1386	1385	1363	22.18	1.751e-002	8.99e-003
1387	1386	1364	22.18	1.946e-002	9.991e-003
1388	1387	1365	22.18	1.934e-002	9.928e-003
1389	1388	1366	22.18	2.038e-002	1.046e-002
1390	1389	1367	22.18	1.662e-002	8.533e-003
1391	1390	1368	22.18	2.021e-002	1.037e-002
1392	1391	1369	22.18	2.127e-002	1.092e-002
1393	1392	1370	22.18	1.705e-002	8.752e-003
1394	1393	1371	22.18	2.051e-002	1.053e-002
1395	1394	1372	22.18	2.11e-002	1.083e-002
1396	1395	1373	22.18	2.021e-002	1.037e-002
1397	1396	1374	22.19	2.731e-002	1.402e-002
1398	1397	1375	22.18	2.068e-002	1.062e-002
1399	1398	1376	22.18	1.99e-002	1.022e-002
1400	1399	1377	22.18	1.976e-002	1.015e-002
1401	1400	1378	22.18	2.021e-002	1.037e-002

1402	1401	1379	22.18	1.886e-002	9.684e-003
1403	1402	1380	22.18	2.097e-002	1.076e-002
1404	1403	1381	22.18	1.824e-002	9.365e-003
1405	1404	1382	22.18	1.916e-002	9.835e-003
1406	1405	1383	22.18	1.886e-002	9.684e-003
1407	1406	1384	22.18	1.782e-002	9.15e-003
1408	1407	1385	22.18	1.824e-002	9.365e-003
1409	1408	1386	22.18	2.097e-002	1.076e-002
1410	1409	1387	22.18	1.766e-002	9.067e-003
1411	1410	1388	22.18	1.87e-002	9.6e-003
1412	1411	1389	22.18	1.87e-002	9.6e-003
1413	1412	1390	22.18	1.976e-002	1.015e-002
1414	1413	1391	22.18	1.812e-002	9.302e-003
1415	1414	1392	22.18	1.961e-002	1.007e-002
1416	1415	1393	22.18	1.961e-002	1.007e-002
1417	1416	1394	22.18	1.99e-002	1.022e-002
1418	1417	1395	22.18	1.87e-002	9.6e-003
1419	1418	1396	22.18	2.157e-002	1.108e-002
1420	1419	1397	22.18	1.734e-002	8.902e-003
1421	1420	1398	22.18	2.082e-002	1.069e-002
1422	1421	1399	22.18	1.719e-002	8.827e-003
1423	1422	1400	22.18	1.719e-002	8.827e-003
1424	1423	1401	22.18	1.662e-002	8.533e-003
1425	1424	1402	22.18	2.233e-002	1.147e-002
1426	1425	1403	22.17	1.434e-002	7.362e-003
1427	1426	1404	22.18	1.705e-002	8.752e-003
1428	1427	1405	22.18	1.615e-002	8.291e-003
1429	1428	1406	22.18	1.795e-002	9.213e-003
1430	1429	1407	22.18	1.946e-002	9.991e-003
1431	1430	1408	22.18	1.734e-002	8.902e-003
1432	1431	1409	22.18	1.751e-002	8.99e-003
1433	1432	1410	22.18	1.961e-002	1.007e-002
1434	1433	1411	22.18	1.916e-002	9.835e-003
1435	1434	1412	22.18	1.69e-002	8.678e-003
1436	1435	1413	22.18	1.645e-002	8.445e-003
1437	1436	1414	22.18	2.353e-002	1.208e-002
1438	1437	1415	22.18	1.99e-002	1.022e-002
1439	1438	1416	22.18	1.99e-002	1.022e-002
1440	1439	1417	22.18	1.568e-002	8.049e-003
1441	1440	1418	22.18	2.051e-002	1.053e-002
1442	1441	1419	22.18	1.705e-002	8.752e-003
1443	1442	1420	22.18	1.751e-002	8.99e-003
1444	1443	1421	22.18	2.038e-002	1.046e-002
1445	1444	1422	22.18	1.812e-002	9.302e-003
1446	1445	1423	22.18	1.934e-002	9.928e-003
1447	1446	1424	22.18	1.976e-002	1.015e-002
1448	1447	1425	22.18	2.038e-002	1.046e-002
1449	1448	1426	22.18	1.674e-002	8.594e-003
1450	1449	1427	22.18	1.782e-002	9.15e-003
1451	1450	1428	22.18	1.629e-002	8.361e-003
1452	1451	1429	22.18	1.812e-002	9.302e-003
1453	1452	1430	22.18	1.629e-002	8.361e-003
1454	1453	1431	22.18	1.795e-002	9.213e-003
1455	1454	1432	22.18	1.734e-002	8.902e-003
1456	1455	1433	22.18	2.051e-002	1.053e-002
1457	1456	1434	22.18	1.524e-002	7.823e-003
1458	1457	1435	22.18	2.127e-002	1.092e-002

1459	1458	1436	22.18	2.127e-002	1.092e-002
1460	1459	1437	22.18	2.006e-002	1.03e-002
1461	1460	1438	22.18	1.662e-002	8.533e-003
1462	1461	1439	22.18	1.795e-002	9.213e-003
1463	1462	1440	22.18	1.615e-002	8.291e-003
1464	1463	1441	22.18	2.307e-002	1.185e-002
1465	1464	1442	22.18	1.84e-002	9.448e-003
1466	1465	1443	22.18	2.188e-002	1.123e-002
1467	1466	1444	22.18	2.082e-002	1.069e-002
1468	1467	1445	22.18	1.782e-002	9.15e-003
1469	1468	1446	22.18	1.508e-002	7.741e-003
1470	1469	1447	22.18	1.751e-002	8.99e-003
1471	1470	1448	22.18	2.021e-002	1.037e-002
1472	1471	1449	22.18	1.568e-002	8.049e-003
1473	1472	1450	22.18	1.916e-002	9.835e-003
1474	1473	1451	22.18	2.006e-002	1.03e-002
1475	1474	1452	22.18	1.902e-002	9.763e-003
1476	1475	1453	22.17	1.478e-002	7.588e-003
1477	1476	1454	22.18	2.051e-002	1.053e-002
1478	1477	1455	22.18	1.916e-002	9.835e-003
1479	1478	1456	22.18	1.782e-002	9.15e-003
1480	1479	1457	22.18	1.84e-002	9.448e-003
1481	1480	1458	22.18	1.662e-002	8.533e-003
1482	1481	1459	22.18	1.782e-002	9.15e-003
1483	1482	1460	22.18	1.824e-002	9.365e-003
1484	1483	1461	22.18	2.141e-002	1.099e-002
1485	1484	1462	22.18	1.812e-002	9.302e-003
1486	1485	1463	22.18	2.247e-002	1.154e-002
1487	1486	1464	22.18	1.69e-002	8.678e-003
1488	1487	1465	22.18	2.11e-002	1.083e-002
1489	1488	1466	22.18	2.021e-002	1.037e-002
1490	1489	1467	22.18	1.719e-002	8.827e-003
1491	1490	1468	22.18	2.021e-002	1.037e-002
1492	1491	1469	22.18	1.751e-002	8.99e-003
1493	1492	1470	22.18	1.751e-002	8.99e-003
1494	1493	1471	22.18	1.751e-002	8.99e-003
1495	1494	1472	22.18	1.554e-002	7.979e-003
1496	1495	1473	22.18	1.87e-002	9.6e-003
1497	1496	1474	22.18	2.415e-002	1.24e-002
1498	1497	1475	22.18	1.87e-002	9.6e-003
1499	1498	1476	22.18	1.645e-002	8.445e-003
1500	1499	1477	22.18	2.051e-002	1.053e-002
1501	1500	1478	22.18	1.946e-002	9.991e-003
1502	1501	1479	22.18	1.886e-002	9.684e-003
1503	1502	1480	22.18	2.294e-002	1.178e-002
1504	1503	1481	22.18	1.946e-002	9.991e-003
1505	1504	1482	22.18	1.584e-002	8.131e-003
1506	1505	1483	22.18	2.051e-002	1.053e-002
1507	1506	1484	22.18	1.69e-002	8.678e-003
1508	1507	1485	22.18	1.524e-002	7.823e-003
1509	1508	1486	22.18	2.353e-002	1.208e-002
1510	1509	1487	22.18	1.766e-002	9.067e-003
1511	1510	1488	22.18	1.69e-002	8.678e-003
1512	1511	1489	22.18	1.916e-002	9.835e-003
1513	1512	1490	22.18	1.854e-002	9.521e-003
1514	1513	1491	22.18	2.353e-002	1.208e-002
1515	1514	1492	22.18	1.538e-002	7.898e-003

1516	1515	1493	22.18	1.854e-002	9.521e-003
1517	1516	1494	22.18	1.812e-002	9.302e-003
1518	1517	1495	22.18	1.766e-002	9.067e-003
1519	1518	1496	22.18	1.705e-002	8.752e-003
1520	1519	1497	22.17	1.434e-002	7.362e-003
1521	1520	1498	22.18	2.051e-002	1.053e-002
1522	1521	1499	22.18	1.568e-002	8.049e-003
1523	1522	1500	22.18	2.097e-002	1.076e-002
1524	1523	1501	22.18	1.554e-002	7.979e-003
1525	1524	1502	22.18	1.946e-002	9.991e-003
1526	1525	1503	22.18	1.705e-002	8.752e-003
1527	1526	1504	22.18	2.157e-002	1.108e-002
1528	1527	1505	22.18	1.946e-002	9.991e-003
1529	1528	1506	22.18	1.751e-002	8.99e-003
1530	1529	1507	22.18	1.84e-002	9.448e-003
1531	1530	1508	22.18	2.006e-002	1.03e-002
1532	1531	1509	22.18	1.584e-002	8.131e-003
1533	1532	1510	22.18	1.87e-002	9.6e-003
1534	1533	1511	22.18	1.946e-002	9.991e-003
1535	1534	1512	22.18	2.097e-002	1.076e-002
1536	1535	1513	22.18	1.854e-002	9.521e-003
1537	1536	1514	22.18	2.233e-002	1.147e-002
1538	1537	1515	22.18	1.934e-002	9.928e-003
1539	1538	1516	22.18	1.854e-002	9.521e-003
1540	1539	1517	22.18	1.824e-002	9.365e-003
1541	1540	1518	22.18	1.87e-002	9.6e-003
1542	1541	1519	22.18	1.615e-002	8.291e-003
1543	1542	1520	22.18	2.247e-002	1.154e-002
1544	1543	1521	22.18	1.674e-002	8.594e-003
1545	1544	1522	22.18	1.902e-002	9.763e-003
1546	1545	1523	22.18	1.615e-002	8.291e-003
1547	1546	1524	22.18	1.961e-002	1.007e-002
1548	1547	1525	22.18	1.916e-002	9.835e-003
1549	1548	1526	22.18	1.766e-002	9.067e-003
1550	1549	1527	22.18	2.233e-002	1.147e-002
1551	1550	1528	22.18	1.751e-002	8.99e-003
1552	1551	1529	22.18	1.751e-002	8.99e-003
1553	1552	1530	22.18	2.173e-002	1.116e-002
1554	1553	1531	22.18	1.902e-002	9.763e-003
1555	1554	1532	22.18	1.87e-002	9.6e-003
1556	1555	1533	22.18	2.006e-002	1.03e-002
1557	1556	1534	22.18	2.068e-002	1.062e-002
1558	1557	1535	22.18	1.961e-002	1.007e-002
1559	1558	1536	22.18	1.615e-002	8.291e-003
1560	1559	1537	22.18	2.051e-002	1.053e-002
1561	1560	1538	22.18	2.445e-002	1.255e-002
1562	1561	1539	22.18	1.508e-002	7.741e-003
1563	1562	1540	22.17	1.434e-002	7.362e-003
1564	1563	1541	22.17	1.192e-002	6.121e-003

APPENDIX K

Groundwater Sampling Field Data Sheets

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convience
Location: Edgefield, SC

Project No.: 14-211651
Date: 5/10/10

Measured By: A. Williamson
Weather: Sunny, 70s

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Well Depth (feet)	Volume Purged (gallons)
MW-1	17.83	21.00	3.17	-----	-----	0.00
MW-2	20.27	22.73	2.46	-----	-----	0.00
MW-3	-----	20.54	-----	-----	33.91	0.00
MW-4	-----	18.92	-----	-----	28.91	4.89
MW-5	-----	18.09	-----	-----	29.04	5.35
MW-6	-----	19.94	-----	-----	28.99	2.96
MW-7	-----	13.51	-----	-----	20.33	3.33
MW-8	-----	21.61	-----	-----	26.85	2.56
MW-9	-----	18.81	-----	-----	27.03	4.02
MW-10	-----	22.88	-----	-----	30.31	3.63
MW-11	-----	22.16	-----	-----	31.04	4.34
MW-12	-----	21.78	-----	-----	30.15	4.09
MW-13	-----	17.82	-----	-----	25.20	2.40
MW-14	-----	22.47	-----	-----	29.54	1.73
MW-15	-----	18.81	-----	-----	26.93	1.32
MW-16	-----	12.34	-----	-----	19.92	3.71

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-1**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 21.00 ft.
Depth to FP (Free product) **17.83** **ft.**
FP Thickness **3.17** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU)								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-2**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD)	-----	ft.
Depth to GW(DGW)	22.73	ft.
Depth to FP (Free product)	**20.27**	**ft.**
FP Thickness	**2.46**	**ft.**
Length of Water Column (LWC=TWD-DGW)	0.00	ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.65 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU) NTU								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-3**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 33.91 ft.
Depth to GW(DGW) 20.54 ft.

Length of Water Column (LWC=TWD-DGW) 13.37 ft.

1Csg. Vol. (LWC*C)= 13.37 X 0.163 = 2.18 gal.
3Csg. Volume = 3x 2.18 = 6.54 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								15:55
pH (s.u.)								5.85
O.R.P. (mV)								125
Temperature (°C)								20.5
Specific Cond. (mS/cm)								0.220
Dissolved Oxygen (mg/L)								3.08
Turbidity (NTU) NTU								119.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-4**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.91 ft.
Depth to GW(DGW) 18.92 ft.

Length of Water Column (LWC=TWD-DGW) 9.99 ft.

1Csg. Vol. (LWC*C)= 9.99 X 0.163 = 1.63 gal.
3Csg. Volume = 3x 1.63 = 4.89 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.89 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.63	1.63	1.63				0.00
Time (military)	15:43	15:47	15:51	15:56				16:00
pH (s.u.)	6.30	6.54	6.45	6.39				6.37
O.R.P. (mV)	51	19	28	55				58
Temperature (°C)	20.8	20.0	20.5	20.9				21.0
Specific Cond. (mS/cm)	0.486	0.501	0.463	0.438				0.456
Dissolved Oxygen (mg/L)	1.42	1.59	1.68	3.07				4.92
Turbidity (NTU) NTU	120.0	>999	>999	>999				>999

Remarks Moderate petrol odor.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-5**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.04 ft.
Depth to GW(DGW) 18.09 ft.

Length of Water Column (LWC=TWD-DGW) 10.95 ft.

1Csg. Vol. (LWC*C)= 10.95 X 0.163 = 1.78 gal.
3Csg. Volume = 3x 1.78 = 5.35 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 5.35 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.78	1.78	1.78				0.00
Time (military)	15:08	15:12	15:17	15:22				15:25
pH (s.u.)	6.20	6.07	6.26	6.41				6.36
O.R.P. (mV)	191	165	151	147				181
Temperature (°C)	20.7	20.4	20.7	20.7				20.8
Specific Cond. (mS/cm)	0.326	0.289	0.317	0.389				0.352
Dissolved Oxygen (mg/L)	1.38	1.46	3.25	1.51				1.42
Turbidity (NTU) NTU	242.0	380.0	>999	>999				>999

Remarks Moderate petrol odor.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-6**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.99 ft.
Depth to GW(DGW) 19.94 ft.

Length of Water Column (LWC=TWD-DGW) 9.05 ft.

1Csg. Vol. (LWC*C)= 9.05 X 0.163 = 1.48 gal.
3Csg. Volume = 3x 1.48 = 4.43 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 2.96 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.48	1.48					0.00
Time (military)	15:09	15:15	15:19					15:30
pH (s.u.)	5.78	5.57	5.56					5.67
O.R.P. (mV)	185	191	209					213
Temperature (°C)	20.4	20.8	20.8					20.8
Specific Cond. (mS/cm)	0.215	0.226	0.223					0.213
Dissolved Oxygen (mg/L)	1.75	1.12	1.47					1.74
Turbidity (NTU) NTU	131.0	>999	>999					>999

Remarks Purged dry after 2 well volumes.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-7**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 20.33 ft.
Depth to GW(DGW) 13.51 ft.

Length of Water Column (LWC=TWD-DGW) 6.82 ft.

1Csg. Vol. (LWC*C)= 6.82 X 0.163 = 1.11 gal.
3Csg. Volume = 3x 1.11 = 3.33 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 3.33 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.11	1.11	1.11				0.00
Time (military)	12:49	12:53	12:59	13:03				13:10
pH (s.u.)	5.47	5.30	5.37	5.19				5.44
O.R.P. (mV)	276	270	268	277				274
Temperature (°C)	19.9	18.9	19.1	18.8				18.8
Specific Cond. (mS/cm)	0.165	0.167	0.163	0.167				0.177
Dissolved Oxygen (mg/L)	7.25	6.70	6.97	6.60				5.64
Turbidity (NTU) NTU	78.3	>999	>999	>999				>999

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-8**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.85 ft.
Depth to GW(DGW) 21.61 ft.

Length of Water Column (LWC=TWD-DGW) 5.24 ft.

1Csg. Vol. (LWC*C)= 5.24 X 0.163 = 0.85 gal.
3Csg. Volume = 3x 0.85 = 2.56 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 2.56 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	0.85	0.85	0.85				0.00
Time (military)	12:47	12:50	12:56	13:00				13:05
pH (s.u.)	5.84	5.56	5.67	5.68				5.77
O.R.P. (mV)	267	271	267	259				262
Temperature (°C)	23.1	20.6	21.1	20.7				20.8
Specific Cond. (mS/cm)	0.530	0.521	0.560	0.573				0.533
Dissolved Oxygen (mg/L)	6.15	6.27	5.71	5.32				5.37
Turbidity (NTU) NTU	531.0	>999	>999	>999				>999

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-9**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 27.03 ft.
Depth to GW(DGW) 18.81 ft.

Length of Water Column (LWC=TWD-DGW) 8.22 ft.

1Csg. Vol. (LWC*C)= 8.22 X 0.163 = 1.34 gal.
3Csg. Volume = 3x 1.34 = 4.02 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.02 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.34	1.34	1.34				0.00
Time (military)	11:50	11:56	11:59	12:05				12:15
pH (s.u.)	5.82	5.71	5.59	5.57				5.64
O.R.P. (mV)	256	267	268	277				284
Temperature (°C)	18.8	18.3	18.4	18.2				18.3
Specific Cond. (mS/cm)	0.125	0.119	0.109	0.107				0.110
Dissolved Oxygen (mg/L)	4.21	3.98	4.06	4.62				4.87
Turbidity (NTU) NTU	38.5	>999	>999	>999				>999

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-10**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 30.31 ft.
Depth to GW(DGW) 22.88 ft.

Length of Water Column (LWC=TWD-DGW) 7.43 ft.

1Csg. Vol. (LWC*C)= 7.43 X 0.163 = 1.21 gal.
3Csg. Volume = 3x 1.21 = 3.63 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 3.63 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.21	1.21	1.21				0.00
Time (military)	11:49	11:54	11:58	12:02				12:10
pH (s.u.)	5.91	5.57	5.60	5.54				5.55
O.R.P. (mV)	242	261	267	274				282
Temperature (°C)	20.8	19.5	19.3	19.4				19.5
Specific Cond. (mS/cm)	0.198	0.158	0.155	0.163				0.171
Dissolved Oxygen (mg/L)	8.11	7.93	7.82	7.54				7.67
Turbidity (NTU) NTU	71.6	>999	>999	>999				>999

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-11**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 31.04 ft.
Depth to GW(DGW) 22.16 ft.

Length of Water Column (LWC=TWD-DGW) 8.88 ft.

1Csg. Vol. (LWC*C)= 8.88 X 0.163 = 1.45 gal.
3Csg. Volume = 3x 1.45 = 4.34 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.34 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.45	1.45	1.45				0.00
Time (military)	14:30	14:35	14:38	14:43				14:55
pH (s.u.)	5.96	5.93	5.89	5.84				5.85
O.R.P. (mV)	150	181	195	221				220
Temperature (°C)	21.3	20.8	20.7	20.8				20.8
Specific Cond. (mS/cm)	0.364	0.382	0.415	0.453				0.459
Dissolved Oxygen (mg/L)	1.42	1.29	1.21	1.22				2.35
Turbidity (NTU) NTU	181.0	>999	>999	>999				>999

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-12**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 30.15 ft.
Depth to GW(DGW) 21.78 ft.

Length of Water Column (LWC=TWD-DGW) 8.37 ft.

1Csg. Vol. (LWC*C)= 8.37 X 0.163 = 1.36 gal.
3Csg. Volume = 3x 1.36 = 4.09 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.09 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.36	1.36	1.36				0.00
Time (military)	14:28	14:34	14:38	14:42				14:45
pH (s.u.)	5.81	5.78	5.82	5.75				5.78
O.R.P. (mV)	150	179	197	223				219
Temperature (°C)	21.9	21.3	21.1	21.2				21.3
Specific Cond. (mS/cm)	0.308	0.306	0.299	0.287				0.293
Dissolved Oxygen (mg/L)	2.13	1.19	2.37	1.81				2.15
Turbidity (NTU) NTU	96.6	>999	>999	>999				>999

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-13**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 25.20 ft.
Depth to GW(DGW) 17.82 ft.

Length of Water Column (LWC=TWD-DGW) 7.38 ft.

1Csg. Vol. (LWC*C)= 7.38 X 0.163 = 1.20 gal.
3Csg. Volume = 3x 1.20 = 3.61 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 2.40 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.20	1.20					0.00
Time (military)	13:53	13:56	14:01					14:05
pH (s.u.)	5.79	5.74	5.75					5.67
O.R.P. (mV)	236	232	223					222
Temperature (°C)	20.0	20.2	20.1					20.2
Specific Cond. (mS/cm)	0.346	0.367	0.391					0.351
Dissolved Oxygen (mg/L)	4.62	4.55	4.67					5.00
Turbidity (NTU) NTU	173.0	>999	>999					>999

Remarks Purged dry after 2 well volumes.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-14**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.54 ft.
Depth to GW(DGW) 22.47 ft.

Length of Water Column (LWC=TWD-DGW) 7.07 ft.

1Csg. Vol. (LWC*C)= 7.07 X 0.163 = 1.15 gal.
3Csg. Volume = 3x 1.15 = 3.46 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 1.73 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.15	0.58					0.00
Time (military)	13:50	13:54						14:10
pH (s.u.)	5.66	5.49						5.59
O.R.P. (mV)	243	240						237
Temperature (°C)	20.7	20.9						21.1
Specific Cond. (mS/cm)	0.201	0.191						0.201
Dissolved Oxygen (mg/L)	4.20	2.99						3.55
Turbidity (NTU) NTU	169.0	339.0						826.0

Remarks Purged dry after 1.5 well volumes.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-15**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.93 ft.
Depth to GW(DGW) 18.81 ft.

Length of Water Column (LWC=TWD-DGW) 8.12 ft.

1Csg. Vol. (LWC*C)= 8.12 X 0.163 = 1.32 gal.
3Csg. Volume = 3x 1.32 = 3.97 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 1.32 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.32						0.00
Time (military)	13:25	13:28						15:40
pH (s.u.)	6.75	6.76						6.79
O.R.P. (mV)	94	79						68
Temperature (°C)	18.0	18.0						18.8
Specific Cond. (mS/cm)	1.22	1.24						1.23
Dissolved Oxygen (mg/L)	1.85	1.11						2.76
Turbidity (NTU) NTU	155.0	>999						881.0

Remarks Purged dry after 1 well volume.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05/10/10
Field Personnel A. Williamson, B. McNeill
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	5/5/10 19:45	Pace	5/11/10 13:40
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-16**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 19.92 ft.
Depth to GW(DGW) 12.34 ft.

Length of Water Column (LWC=TWD-DGW) 7.58 ft.

1Csg. Vol. (LWC*C)= 7.58 X 0.163 = 1.24 gal.
3Csg. Volume = 3x 1.24 = 3.71 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 3.71 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.24	1.24	1.24				0.00
Time (military)	13:22	13:26	13:30	13:34				13:40
pH (s.u.)	5.94	6.01	5.97	5.95				5.91
O.R.P. (mV)	462	198	181	203				232
Temperature (°C)	17.6	16.9	17.0	16.6				16.7
Specific Cond. (mS/cm)	0.263	0.272	0.283	0.246				0.246
Dissolved Oxygen (mg/L)	4.03	4.20	3.94	3.87				4.11
Turbidity (NTU) NTU	230.0	>999	>999	>999				>999

Remarks _____

APPENDIX L

Disposal Manifest - IDW

803-892-7790

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 803-957-9175	4. Waste Tracking Number 30320

GENERATOR

5. Generator's Name and Mailing Address
Edgefield Fuel & Convenience
PO Box 388
Edgefield, SC

Generator's Site Address (if different than mailing address)
Edgefield Fuel & Convenience #3
505 Main Street
Edgefield, SC

Generator's Phone: 704-600-2711 ECO - Aaron Williamson

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
VLS/RS
305 South Main Street
Mauldin, SC 29662

U.S. EPA ID Number: SCR000762468

Facility's Phone: 864-962-9953

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Soil Cuttings Profile # 11721	028	DM	12000	P
2.	NON-HAZARDOUS NON-REGULATED MATERIAL Purge Water Profile # 11720	004	DM	1800	P
3.					
4.					

13. Special Handling Instructions and Additional Information

A&D (SC) Job # 10040 Project # 14-211651 PO #14828

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Aaron Williamson ELS Agent For Edgefield Fuel + Convenience — Signature: Aaron Williamson — Month 5 Day 13 Year 10

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Cory Givens — Signature — Month 5 Day 25 Year 10

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month Day Year

169-BLC-O 6 10498 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

JUL 13 2010

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

UST DOCKET 11104

Re: Assessment Directive
Edgefield Fuel & Convenience # 3, 311 Main Street, Edgefield, SC
UST Permit # 12175, Cost Agreement # 39404, MWA # UMW-23766
Release reported: December 31, 2008
Tier II Assessment Report received June 25, 2010
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Division of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Division has reviewed the referenced report and has determined that additional well installation is necessary to define free phase product in monitoring well MW-2 and to define the dissolved chemicals of concern (CoC) plume southwest of monitoring wells MW-11 and MW-12.

Assessment activities at the site should begin immediately upon receipt of this letter. Characterization of all exposure pathways should be completed using field screening points. Based on the field screening results, four shallow monitoring wells should be installed in appropriate locations to define the dissolved CoC plume. In addition, three monitoring wells should be installed in the pre-determined locations depicted on the enclosed site map. The required monitoring well approval is enclosed. Please contact the Division prior to well installation for concurrence regarding the final well locations. The assessment should be conducted in accordance with the Tier II Assessment guidance document and must be conducted in compliance with all applicable regulations. All shallow wells are to be installed with screen intervals that bracket the water table. Please be aware that the February 1, 2006 State Underground Petroleum Environmental Response Bank (SUPERB) Account Allowable Costs sheet states that "If vertical and horizontal extent of chemicals of concern are not fully defined by this tier report, additional mobilizations may not be approved by the Department." Therefore, equipment and personnel mobilizations to screen and install wells were not approved. Samples from all monitoring wells should be collected and analyzed for BTEX, naphthalene, and MtBE in accordance with *Analytical Methodology* dated August 24, 2005. A copy of this publication is available on line at http://www.scdhec.gov/eqc/lwm/ forms/analmetpdf. Samples collected from the newly installed wells should also be analyzed for 1,2-DCA and 8 oxygenates. Purging will not be required for monitoring wells where the water table is bracketed by the screen (with the exception of new well development).

Cost agreement #39404 has been approved for the amount shown on the enclosed cost agreement form for the aforementioned scope of work. The Assessment Report is due within 90 days of the receipt date of this letter and should include the following:

- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Division, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells for this and all previous sampling events shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.

- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Updated geologic cross-sections with the newly installed wells.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

Environmental Compliance Services (ECS) can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Interim invoices may be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Division is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Division for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations based on laboratory analysis are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence concerning this site, please reference UST Permit #12175. If there are any questions concerning this project, please contact me at (803) 896-6633.

Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement
Monitoring Well Approval Form
Site Map

cc: Technical File (w/enc)
Environmental Compliance Services, Inc., P.O. Box 3528, Fort Mill, SC 29708 (w/enc)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Approval

Approval is hereby granted to:	Environmental Compliance Services, Inc.
(On behalf of):	Edgefield Fuel & Convenience, LLC
Facility:	Edgefield Fuel & Convenience #3, 311 Main Street, Edgefield, SC
UST Permit Number:	12175
County:	Edgefield

This approval is for the installation of eight temporary wells and seven shallow monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.

2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.

3. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f

4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

5. If any of the information provided to the Department changes, notification to Cathleen Ridgley (tel: (803) 896-6633 or e-mail: ridglect@dhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.

6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.

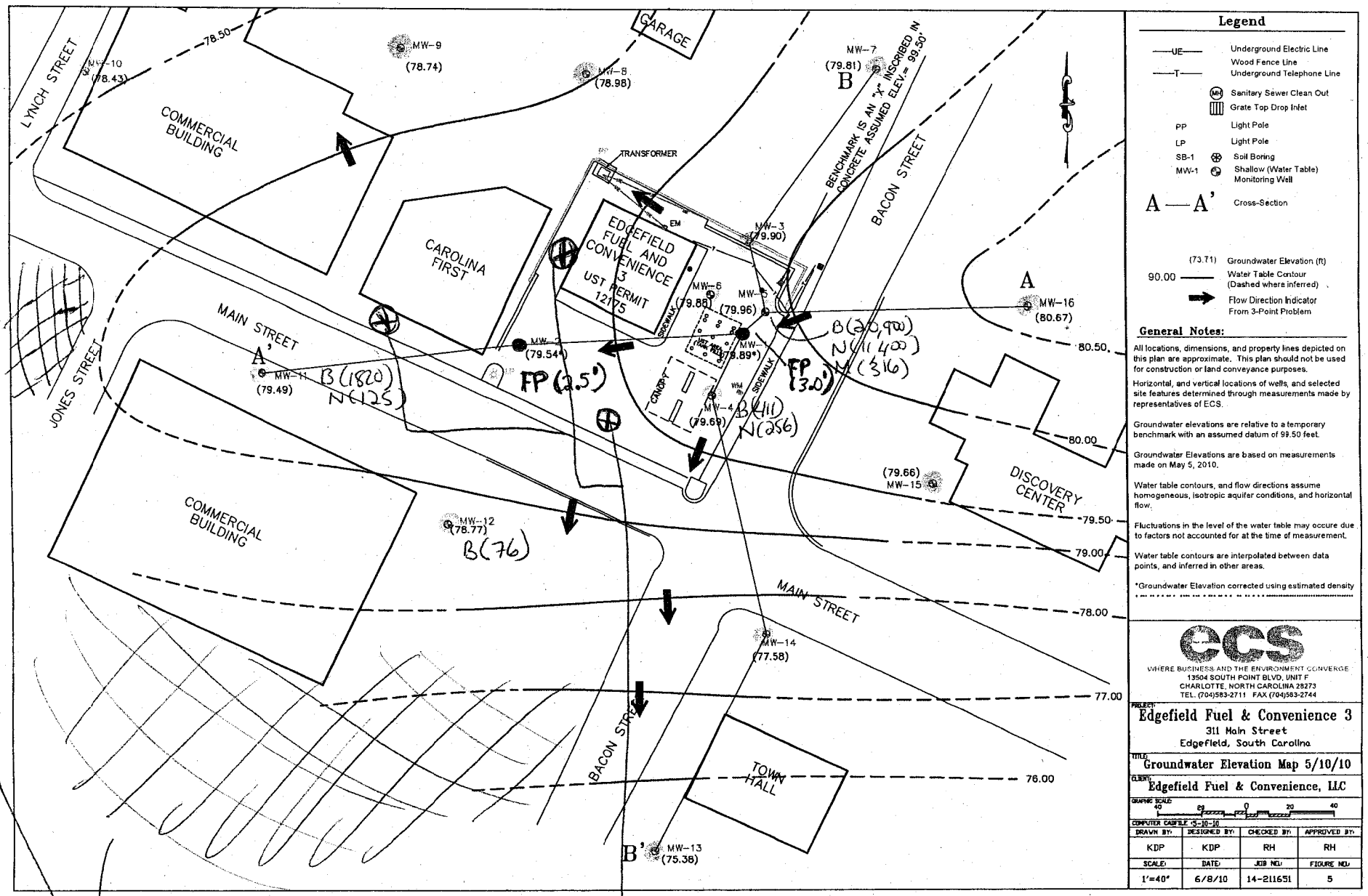
7. Departmental approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: **July 2, 2010** **Approval #:** **UMW-23766**

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Assessment Section
Underground Storage Tank Division
Bureau of Land and Waste Management



Legend

- UE — Underground Electric Line
- Wood Fence Line
- T — Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well
- A — A' — Cross-Section
- (73.71) — Groundwater Elevation (ft)
- 90.00 — Water Table Contour (Dashed where inferred)
- Flow Direction Indicator From 3-Point Problem

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Groundwater elevations are relative to a temporary benchmark with an assumed datum of 99.50 feet.

Groundwater Elevations are based on measurements made on May 5, 2010.

Water table contours, and flow directions assume homogeneous, isotropic aquifer conditions, and horizontal flow.

Fluctuations in the level of the water table may occure due to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

*Groundwater Elevation corrected using estimated density

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Groundwater Elevation Map 5/10/10

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE 15-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=40'	6/8/10	14-211651	5

Define CoC

Install 3 shallow monitoring wells @ these locations to define free product

Approved Cost Agreement 39404

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3
RIDGLECT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	1.0000	575.00	575.00
		B	PERSONNEL	3.0000	290.00	870.00
06 SOIL BORINGS (DRILLED)						
		A	SOIL BORINGS & FLD SCREENING	160.0000	17.00	2,720.00
08 ABANDONMENT						
			ABANDONMENT	160.0000	5.00	800.00
09 WELL INSTALLATION						
		B	WATER TABLE (DRILLED)	210.0000	38.00	7,980.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	7.0000	55.00	385.00
		D	GROUNDWATER NO-PURGE	16.0000	35.00	560.00
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	26.0000	100.00	2,600.00
		BB	1,2-DCA	7.0000	10.75	75.25
		F	EDB	26.0000	55.00	1,430.00
		P	8 OXYGENATES	7.0000	85.00	595.00
16 SUBSEQUENT SURVEY						
			SUBSEQUENT SURVEY	1.0000	260.00	260.00
17 DISPOSAL						
		A1	WASTEWATER - PURGING/SAMPLING	2.0000	90.00	180.00
		C	SOIL (TREATMENT/DISPOSAL)	11.0000	50.00	550.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	19,580.25	2,937.04
				Total Amount		22,517.29

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

ASSESSMENT REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651
November 11, 2010

Prepared by:
ECS
PO Box 3528
Fort Mill, SC 29708-3528
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

ASSESSMENT REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

November 11, 2010

Randall Hutchins
Project Manager

Craig L. Kennedy, P.G.
SC Registration No. 2425

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1.0 INTRODUCTION

This report presents the results of the assessment activities conducted at the Edgefield Fuel & Convenience 3 site between September 20 and October 21, 2010. The activities were conducted in accordance with Cost Agreement Number 39404 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated July 13, 2010.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc.
Address: Post Office Box 3528
Fort Mill, South Carolina 29708-3528
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 WELL DRILLER INFORMATION

Name: Johnny Burr
Company Name: Geologic Exploration, Inc.
Address: 176 Commerce Boulevard
Statesville, North Carolina 28625
Certification Number: 01740

1.6 SITE HISTORY

UST Permit: 12175
Site Name: Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC: December 31, 2008
Estimated Quantity of Product Released: Not reported
Cause of Release: UST system
SC RBCA Classification Code: Not reported

UST Permit 12175

UST #	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Premium	Unknown	Yes	Not applicable
2	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable
3	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable

No additional releases reported at the Edgefield Fuel & Convenience 3 (UST Permit 12175) facility.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of our site visits in March 2009 (Tier I), between December 2009 and May 2010 (Tier II), and between September 2010 and October 2010 (assessment). The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs were in use at the site during these assessment activities, these included of one 3,000-gallon premium gasoline UST and two 3,000-gallon gasoline USTs.

Historical site assessment activities reviewed in preparation of this assessment report included the Tier I and Tier II assessments, conducted and reported to the SCDHEC in March 2009 and June 2010, respectively. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. Two separate rounds of field screening activities were conducted to assist with the placement of 13 shallow monitoring wells (MW-4 through MW-16) during the Tier II assessment. Additionally, an 8-hour AFVR event was conducted in monitoring well MW-1 during Tier II activities to assist with free product removal. Historical data from the Tier I and Tier II assessments have been incorporated into this assessment report.

1.7 REGIONAL GEOLOGY/HYDROGEOLOGY

The area was located in the Carolina Terrane of the Piedmont Physiographic Province. The Carolina Terrane consisted of upper Precambrian to Cambrian greenschist facies metasedimentary and metavolcanic rocks intruded by numerous granitic and gabbroic plutons ranging in age from 265 to 650 million years. A mantle of residual soil and saprolite has been reported to typically overlie the crystalline rocks of the Carolina Terrane. The thickness of the mantle has ranged from approximately six to 60 feet, although it apparently has been absent in places and thicker than 60 feet in others. The surface layers reported to be composed chiefly of sandy clay. The clay content of most saprolites typically ranges from 10 to 25 percent, with some containing as little as three percent and others as much as 70 percent.

The mantle that covers the underlying fractured bedrock in most places has provided an intergranular medium through which recharge into, and discharge of water from, the fractured rocks commonly occur. As a result, groundwater flow has been reported to occur within a composite two-media system. The top of the system has been the water table surface, which has been typically located within the saprolite. The fractured bedrock is expected to generally grade downward into unfractured rock below a depth of approximately 300 feet. The base of the groundwater system is therefore indistinct.

1.8 RECEPTOR SURVEY

The Edgefield Fuel & Convenience 3 site was located in a primarily business and commercial area within the town limits of Edgefield, SC (**Figure 1**). The site was bordered to the north by an access road and parking lot for the west abutting Carolina First Bank. The site was bordered to the east by Bacon Street followed by the South Carolina National Heritage Corridor Discovery Center. The site was bordered to the south by Main Street (US Highway 25) followed by a parking lot for the downtown district of Edgefield. Edgefield Town Hall was located diagonally across the cross streets of Bacon Street and Main Street.

Potable water to the site and surrounding properties was provided by the Edgefield County Water and Sewer Authority. The Edgefield County Water and Sewer Authority utilized potable water from portions of the Savannah River located within the Savannah-Salkehatchie Basin. One private water supply well was identified within a 1,000-foot radius of the site. The private water supply well was located approximately 860 feet southeast of the active site UST basin. This private water supply well located at the community college, however, was not in operation.

One wet weather drainage feature was identified approximately 1,000 feet southeast of the site. This wet weather drainage feature flowed in a general east to west direction before a turn and began flowing toward the southwest. The wet weather drainage feature drained into the Beaverdam Creek. The two closest surface water bodies identified in relation to the site were Beaverdam Creek and a tributary to Beaverdam Creek. Beaverdam Creek was located approximately 1,375 feet southwest of the site and flowed in a general northwest to southeast direction. The tributary to Beaverdam Creek was located approximately 1,380 feet northwest of the site and flowed in a general northeast to southwest direction.

Underground utility conduits marked by the utility company were present on-site and in the immediate vicinity. Utilities marked included a water meter for a municipal water line, electrical lines, and a telephone line. Additionally, a sanitary sewer cleanout for a sanitary sewer line and drop inlets for a storm drainage system were observed during our site visit. A water meter was located on the eastern side of the property. Electrical lines were marked along the eastern side of the property beneath the sidewalk and marked along the northern property limits of the site. A telephone line was marked along the northeastern portion of the site. The sewer cleanout was located on the east side of the site building. The storm drains were located along Bacon Street next to the site property limits. A natural gas line and municipal water line were marked across Main Street from the site.

A Site Vicinity Map showing surrounding properties has been included as **Figure 2**. A list of names and addresses of adjacent and/or adjoining property owners is summarized in **Table 1**. A Site Map showing the utility features and the current UST system has been included as **Figure 3**. The surveyed site maps on which **Figure 3** was based have been included in **Appendix A**.

2.0 ASSESSMENT INFORMATION

The SCDHEC directive for this assessment included completion of field screening points and monitoring well installations, a subsequent survey, and a comprehensive groundwater sampling event.

2.1 SITE GEOLOGY/HYDROGEOLOGY

The site was located approximately 525 feet above mean sea level (MSL) with an approximate total site topographic relief of three feet. Storm water runoff at the site primarily drained toward the south and east. Retaining walls were observed to the north and northeast corner of the site with an approximate 6-foot grade elevation difference at the greatest point. The area around the site was generally characterized by broad ridges and gentle slopes to narrow ridges and side slopes adjacent to drainage ways. As previously discussed in **Section 1.8**, Beaverdam Creek was located approximately 1,375 feet southwest of the site and a tributary to Beaverdam Creek was located approximately 1,380 feet northwest of the site. The tributary flowed in a general northeast to southwest direction before discharging into Beaverdam Creek. Beaverdam Creek flowed in a general northwest to southeast direction.

The surface at the site was generally covered by asphalt, and some smaller areas of concrete and grass. The active site USTs were covered with concrete. The boring logs provided a general characterization of the geological formations encountered at the location of each monitoring well installed during assessment activities. In general, the site subsurface was characterized by asphalt and concrete ranging from four to six inches in thickness followed by fill material consisting of ABC stone and clayey to silty sand to depths of approximately 2 feet below ground surface (bgs). Native soils (residuum), below the fill material, were characterized as tan to brown to red silty sand and silty clay to depths of 6 feet bgs. Soils encountered in the boreholes 6 feet bgs were characterized as yellow to orange and tan to gray silty sand to the termination depths of the boreholes.

Based on the sieve and hydrometer analyses, the site was underlain at shallow depths by clayey silty sand. The percentages of sand, silt and clay in a soil sample collected from SB-2 (MW-1) at a depth of 20 feet during Tier I assessment activities (March 2009) were 64.1%, 24.5%, and 11.4%, respectively. The percentages of gravel, sand, and combination of silt & clay in the soil sample collected during Tier II activities (April 2010) from on-site monitoring well MW-6 at a depth of 20 feet were 0.6%, 52.2%, and 47.2%, respectively. A hydrometer analysis was not performed on the soil sample collected from monitoring well MW-6 to determine the percentages of silt and clay.

Historical and current depths to groundwater measured in shallow monitoring wells at the site (MW-1 through MW-6, MW-18, and MW-19) ranged from 18.09 feet (MW-5 in May 2010) to 25.61 feet (MW-2 in October 2010 with 3.65 feet of free product), and averaged 22.24 feet in on-site monitoring wells over time. Historical groundwater elevation data is presented in **Table 2**. Groundwater beneath the site was historically reported to flow radially from the northwest to south beneath the site.

Slug tests were previously performed on shallow monitoring wells MW-2 and MW-3 in March 2009 during Tier I activities and shallow monitoring wells MW-6 and MW-11 in May 2010 during Tier II activities. Hydraulic conductivities for these four shallow monitoring wells, calculated using the Bouwer and Rice method, ranged between 0.11 feet per day (ft/day) and 0.73 ft/day. Seepage velocities ranged between 1.66 feet per year (ft/yr) to 3.81 ft/yr. A summary of the results of historical slug test analyses is presented in **Table 3**.

2.2 ASSESSMENT ACTIVITIES

2.2.1 Field Screening

ECS traveled to the site on September 20, 2010 to collect field screening data from six proposed field screening points. ECS subcontracted Geologic Exploration, Inc. who mobilized to the site with direct push technology (Geoprobe® 6620) to install field screening points. Two field screening points (FS-26 and FS-27) were installed to depths of boring refusal (each at 35 feet below ground surface) and groundwater was not encountered in these two boreholes. Groundwater samples were collected from field screening points FS-28 through FS-31 with borehole depths ranging between 39 feet and 44 feet below ground surface (bgs). The locations of these field screening points are depicted on **Figure 4**.

Groundwater samples were collected using a peristaltic pump and new, unused tubing lowered to the depth of the decontaminated exposed stainless steel screen in the subsurface. Groundwater samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX compounds), methyl tert-butyl ether (MTBE), and naphthalene by EPA Method 8260.

Laboratory analyses of the groundwater screening samples reported a concentration of MTBE above the May 2001 Risk-Based Screening Level (RBSL) and a concentration of benzene below the May 2001 RBSL at field screening point FS-31. The remaining CoC were reported as not detected. A summary of the September 2010 field screening points installed is presented in **Table 4**. The laboratory report for the September 2010 field screening has been included in **Appendix B**.

The field screening data was forwarded to Ms. Cathleen Ridgley (Project Manager) of the SCDHEC on October 1, 2010 for review and comment. Based on the laboratory analytical data from the September 2010 field screening points, the horizontal extent of CoC in groundwater appeared relatively defined to the southwest and to the south. Ms. Ridgley acknowledged receipt of our September 2010 field screening data and approved the four off-site monitoring well locations to define CoC in groundwater. Three proposed monitoring well locations (two on-site and one off-site) were predetermined to define the extent of free product.

2.2.2 Monitoring Well Installations

Seven shallow (water table) monitoring wells (MW-17 through MW-23) were installed between October 18 and 19, 2010. Monitoring wells MW-17, MW-18, and MW-19 were each completed to depths of 28 feet below ground surface (bgs) and were each constructed with 10 feet of well screen. Monitoring wells MW-20 through MW-23 were completed to depths ranging between 27 feet and 31 feet bgs and were each completed with 10 feet of well screen. Monitoring wells MW-17 through MW-23 were completed with flush-mounted traffic bearing well covers.

Monitoring well locations are shown on **Figure 3**. Boring logs for monitoring wells installed in July 2010 are included in **Appendix C**. Well construction records for these monitoring wells are included in **Appendix D**. Following installation, monitoring wells were developed using both a submersible pump (decontaminated between each monitoring well) and a bailer (new bailer between each monitoring well where a pump was not sufficient) until the groundwater appeared sediment free.

During well installation activities, soil samples were collected every 5 feet in each boring for VOC (volatile organic compound) field screening and soil classification purposes. Soil samples were field-screened using a MiniRAE 2000 photo ionization detector (PID) calibrated using 100 parts per million (ppm) isobutylene. The soil sample above the water table from each boring (MW-17 through MW-23) exhibiting the highest PID measurement was combined and gently mixed to form one composite sample (COMPOSITE SOIL). The soil sample was submitted for laboratory analyses for benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds), MTBE, and naphthalene by EPA Method 8260. Results of the soil analyses are discussed later in this report.

2.2.3 Surveying Well Locations and Top-of-Casing Elevations

Environmental Compliance Services, Inc. (ECS) measured horizontal distances and top of casing elevations of the newly installed monitoring wells at the site using pre-existing locations and elevations as reference points. Four stations were used to complete the subsequent survey with fore shot and back shot distances less than 239 feet from the instrument setup location. After the survey data was reduced, the elevation data was calculated with vertical differences no greater than 0.03 feet from previously identified reference points. Monitoring well locations are shown on **Figure 3**.

2.2.4 Well Gauging and Sampling

Twenty-three monitoring wells (MW-1 through MW-23) were gauged for depths to free product, depths to groundwater, and total well depths (except where free product was detected) on October 20, 2010. Free product was detected in site monitoring wells MW-1, MW-2, MW-5, and MW-19 with free product thicknesses of 5.69 feet, 3.65 feet, 0.35 feet, and 0.84 feet, respectively.

The depths to groundwater measured in the shallow monitoring wells (MW-1 through MW-23) on October 20, 20100 ranged between 14.97 feet (MW-16) and 25.99 feet (MW-22) from their top of casing. The groundwater elevations in the shallow monitoring wells, relative to a temporary benchmark ("X" in concrete) with an assumed datum of 99.50 feet above mean sea level, ranged from 71.52 feet (MW-20) to 78.04 feet (MW-16). Based on these data, the groundwater flow direction was radially from the northwest to south beneath the site. The hydraulic gradient was estimated based on the change in head hydraulic head per unit distance, calculated by using the formula $i = \frac{h_2 - h_1}{d}$, referenced from the "EPA On-line Tools for Site Assessment Calculation" website <http://www.epa.gov/athens/learn2model/part-two/onsite/gradient.htm>. In this calculation, i is the gradient, h is the hydraulic head at the up gradient monitoring well (h_1) and down gradient monitoring well (h_2), and d is the distance between the down gradient monitoring well and the up gradient monitoring well. The average horizontal hydraulic gradient ranged between 0.007 feet per foot (ft/ft) and 0.011 ft/ft across the site. Historical Groundwater Elevation Data is presented in **Table 2**. A Groundwater Elevation Map based on the October 20, 2010 data has been included as **Figure 5**.

Thirteen shallow monitoring wells (MW-3, MW-4, and MW-6 through MW-16) were sampled without purging between October 20 and 21, 2010. Six monitoring wells (MW-17, MW-18, and MW-20 through MW-23) were purged and sampled between October 20 and 21, 2010. Monitoring wells 17, MW-18, and MW-20 through MW-23 were newly installed monitoring wells and were scheduled for purging prior to sample collection. Monitoring wells MW-1, MW-2, MW-5, and MW-19 were not sampled due to the presence of free product.

The groundwater samples collected from these 19 monitoring wells were analyzed for BTEX, MTBE, and naphthalene by EPA Method 8260, and ethylene dibromide (EDB) by EPA Method 8011. The water samples collected from the six newly installed monitoring wells (MW-17, MW-18, MW-20 through MW-23) were additionally analyzed for 1,2-dichloroethane (1,2-DCA) and the eight oxygenates by EPA Method 8260.

Groundwater samples were collected using new, disposable polyethylene bailers while wearing new, disposable nitrile gloves, containerized in laboratory-prepared glass bottles and plastic jars, packed on ice, and transported to Pace Analytical Services, Inc. (Huntersville, NC), a South Carolina certified laboratory. Standard chain-of-custody procedures were maintained, as documented in **Appendix E**.

2.3 SOIL QUALITY

The soil sample above the water table from each boring (MW-17 through MW-23) exhibiting the highest PID measurement was combined and gently mixed to form one composite sample (COMPOSITE SOIL). Based on the laboratory results for the one composite sample, CoC were not detected above the RBSLs. Historical Soil Analytical Data is summarized in **Table 5**. The laboratory report for the composite soil sample has been included in **Appendix E**.

2.4 GROUNDWATER QUALITY

Groundwater samples were analyzed from 19 site monitoring wells (MW-3, MW-4, MW-6 through MW-18, and MW-20 through MW-23) during the October 2010 groundwater sampling event. As noted earlier, monitoring wells MW-1, MW-2, MW-5, and MW-19 were not sampled due to the presence of free product. Concentrations of BTEX, MTBE, naphthalene, and EDB were detected above their respective May 2001 RBSL for groundwater samples collected during the October 2010 groundwater sampling event. Concentrations of tertiary amyl alcohol (TAA) and tertiary amyl methyl ether (TAME) were detected above their respective August 2008 Action Level during the October 2010 groundwater sampling event. The laboratory report for groundwater samples collected during the October 2010 groundwater sampling event is included in **Appendix E**. Groundwater Sampling Field Data Sheets have been included in **Appendix F**.

2.4.1 Chemicals of Concern

Concentrations of benzene exceeding the RBSL were reported in groundwater samples collected from monitoring wells MW-3, MW-4, MW-6, MW-12, MW-17, MW-18, and MW-20. Concentrations of toluene exceeding the RBSL were reported in groundwater samples collected from monitoring wells MW-6 and MW-17. Concentrations of ethylbenzene, total xylenes, naphthalene, and EDB exceeding the RBSL were reported in the groundwater sample collected from monitoring wells MW-17. Concentrations of MTBE exceeding the RBSL were reported in groundwater samples collected from monitoring wells MW-4, MW-6, and MW-17.

A detectable concentration of benzene below the RBSL was reported in the groundwater sample collected from monitoring well MW-21. The detectable concentration for benzene was flagged as a J value, which represents an estimated concentration above the adjusted method detection limit and below the adjusted reporting limit. Detectable concentrations of toluene below the RBSL were reported in groundwater samples collected from monitoring wells MW-4, MW-12 (J value), MW-18, MW-20, MW-21, MW-22 (J value), and MW-23 (J value). Detectable concentrations of ethylbenzene below the RBSL were reported in groundwater samples collected from monitoring wells MW-4, MW-6, MW-12, MW-18, MW-20 (J value), and MW-21 (J value). Detectable

concentrations of total xylenes below the RBSL were reported in groundwater samples collected from monitoring wells MW-3 (J value), MW-4, MW-6, MW-12, MW-18, MW-20 (J value), and MW-21 (J value). Detectable concentrations of MTBE below the RBSL were reported in groundwater samples collected from monitoring wells MW-11 (J value), MW-18 (J value), MW-20, and MW-23 (J value). Detectable concentrations of naphthalene below the RBSL were reported in groundwater samples collected from monitoring wells MW-3 (J value), MW-4, MW-6 (J value), MW-12, MW-18 (J value), and MW-20 (J value).

Chemicals of Concern (such as BTEX, MTBE, naphthalene, 1,2-DCA, and EDB) were reported as not detected in the laboratory report for groundwater samples collected from monitoring wells MW-7 through MW-10 and MW-13 through MW-16. Historical groundwater analytical data for CoC is presented in **Table 6**. A Groundwater Quality Map for CoC based on the October 20 and 21, 2010 data is included as **Figure 6**. The estimated vertical extent of total CoC (sum of BTEX, MTBE, naphthalene, and EDB concentrations) in groundwater are shown on Cross Section A - A' and Cross Section B - B' as **Figures 7** and **8**, respectively.

2.4.2 Eight Oxygenates

The eight oxygenates identified by the SCDHEC include tertiary amyl alcohol (TAA), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), tertiary butyl formate (TBF), diisopropyl ether (DIPE), ethanol, ethyl tert-butyl ether (ETBE), and 3,3-dimethyl-1-butanol. As noted earlier, six newly installed monitoring wells (MW-17, MW-18, and MW-20 through MW-23) were analyzed for the eight oxygenates during the October 2010 groundwater sampling event. One monitoring well (MW-17) was reported with one or more of the eight oxygenates above the 2008 Action Levels in the groundwater samples collected on October 20 and 21, 2010.

Concentrations of TAA and TAME exceeding the 2008 Action Levels were reported in the groundwater sample collected from monitoring wells MW-17. Concentrations of DIPE and ETBE detected below the 2008 Action Level were reported in the groundwater sample collected from monitoring well MW-17.

The remaining groundwater samples analyzed for the eight oxygenates were reported as not detected (below the adjusted reporting limits). Historical groundwater analytical data for the eight oxygenates is presented in **Table 7**. A Groundwater Quality Map for the Eight Oxygenates based on the October 20 and 21, 2010 data is included as **Figure 7**.

2.5 INVESTIGATIVE DERIVED WASTE

Investigative derived waste (IDW) generated during these activities was placed in 55-gallon drums for disposal by a permitted treatment facility. A copy of the disposal manifest for seven drums of soil generated during drilling activities and two drums of water generated during well development, decontamination, and well purging activities has been included in **Appendix G**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

- No active private water supply wells were identified within a 1,000-foot radius of the site.
- The two closest surface water bodies identified in relation to the site were Beaverdam Creek (approximately 1,375 feet southwest of the site) and a tributary to Beaverdam Creek (approximately 1,380 feet northwest of the site).
- Field screening activities were conducted to assist with the placement of off-site monitoring wells to the west, southwest and south. Laboratory results from the groundwater field screening samples indicated no to low dissolved-phase petroleum contamination from the west to southwest to south of the site.
- Shallow monitoring wells MW-17, MW-18, and MW-19 were installed on- and off-site to assist with delineation of liquid phase hydrocarbons (free product).
- Shallow monitoring wells MW-20 through MW-23 were installed off-site, following the SCDHEC's guidance with monitoring well locations, to assist with delineation of the dissolved-phase petroleum plume.
- During the October 20, 2010 groundwater level measurements, free product was detected in on-site monitoring wells MW-1 (located immediately adjacent to the active UST basin), MW-2 (located approximately 75 feet to the west, across the site property from the UST basin), MW-5 (located adjacent to UST basin), and MW-19 (located approximately 40 feet southwest of the UST basin). Free product thicknesses were reported at 5.69 feet (MW-1), 3.65 feet (MW-2), 0.35 feet (MW-5), and 0.84 feet (MW-19).
- Based on the May 10, 2010 groundwater level measurements, groundwater appears to flow radially northwest to south beneath the site.
- The distribution of free-phase and dissolved-phase petroleum hydrocarbons in groundwater appear relatively defined in the horizontal direction following the October 2010 gauging and groundwater sampling event.
- The vertical extent of CoC in groundwater has not been defined at the site. The SCDHEC had previously recommended not installing telescoping monitoring wells during Tier II activities.

3.2 RECOMMENDATIONS

- AFVR events should be performed in monitoring wells MW-1, MW-2, MW-5, and MW-19 to remove free product and to reduce high concentrations of CoC from the site.
- ECS recommends additional groundwater monitoring to establish trends for distribution of CoC and natural attenuation parameters if natural attenuation will be considered a possible remedial alternative by the SCDHEC.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience LLC for specific application to the referenced site in Edgefield County, South Carolina. The assessment was conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

TABLES

TABLE 1
ADJACENT PROPERTY OWNERS
EDGEFIELD FUEL & CONVENIENCE 3

Property Street Address	Occupant / Land Use	Tax Map Number	Distance / Direction from Site	Wells on This Property	Property Owner (Name, Address)
311 Main Street	Edgefield Fuel & Convenience 3	137-07-05-007-000	Site	MW-1 through MW-6, MW-18 and MW-19	Edgefield Fuel & Convenience, LLC P.O. Box 388 Edgefield, SC 29824
309 Main Street	Carolina First Bank	137-07-05-006-000	Abutting to the North and West	MW-8 and MW-17	Carolina First Bank 516 W. Wade Hampton Blvd. Greer, SC 29650
200 Bacon Street	Old Edgefield Iron Works	137-07-05-008-000	North of site	MW-7	Bettis C. Rainsford P.O. Box 388 Edgefield, SC 29824
300 block of Main Street	Edgefield Properties	137-07-05-021-000	Southwest of site		Edgefield Properties, Inc. P.O. Box 52 Edgefield, SC 29824
300 block of Main Street	Edgefield Properties Office	137-07-05-022-000	Southwest of site		Edgefield Properties, Inc. P.O. Box 52 Edgefield, SC 29824
324 Bacon Street	Church/ Parsonage	137-07-05-024-000	South of site	MW-12, MW-20, and MW-21	Methodist Church P.O. Box 25 Edgefield, SC 29824
405 Main Street	SC National Heritage Corridor Discovery Center	137-07-05-026-000	East of site	MW-15 and MW-16	Edgefield Historical Society P.O. Box 174 Edgefield, SC 29824
402 Main Street	Edgefield Town Hall	137-07-05-028-000	Southeast of site	MW-13 and MW-14	Town of Edgefield 400 Main Street Edgefield, SC 29824

TABLE 1 (continued)
ADJACENT PROPERTY OWNERS
EDGEFIELD FUEL & CONVENIENCE 3

Property Street Address	Occupant / Land Use	Tax Map Number	Distance / Direction from Site	Wells on This Property	Property Owner (Name, Address)
306 Main Street	Dialysis Corporation of America	137-07-05-051-000	Southwest of site		Edgefield Properties, Inc. P.O. Box 52 Edgefield, SC 29824
307 Simpkins Street	Law Office of John F. Byrd, Jr.	137-06-02-014-000	Northwest of site		John F. Byrd, Jr. P.O. Box 466 Edgefield, SC 29824

Note:
1. Adjacent/adjoining properties are identified on **Figure 2**.

TABLE 2
HISTORICAL GROUNDWATER ELEVATION DATA[1]
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Date	Top of Casing Elevation (ft)	Depth to Free Product (ft)	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation[2] (ft)	Well Depth[3] (ft)	Well Screen Length[3] (ft)	Measured Well Depth[4] (ft)	Screened Interval[5] (ft)
MW-1	12/17/04	98.51	22.13	23.68	1.55	75.99	35	15	NM	20-35
	05/10/10		17.83	21.00	3.17	79.89			NM	
	10/20/10		19.38	25.07	5.69	77.71			NM	
MW-2	12/17/04	100.42	---	24.55	---	75.87	34	15	34.05	19.05-34.05
	05/10/10		20.27	22.73	2.46	79.54			33.98	
	10/20/10		21.96	25.61	3.65	77.55			NM	
MW-3	12/17/04	100.44	---	24.38	---	76.06	34	15	34.00	19.00-34.00
	05/10/10		---	20.54	---	79.90			33.91	
	10/20/10		---	22.71	---	77.73			33.90	
MW-4	05/10/10	98.61	---	18.92	---	79.69	29	10	28.91	18.91-28.91
	10/20/10		---	21.04	---	77.57			28.95	
MW-5	05/10/10	98.05	---	18.09	---	79.96	29	10	29.04	19.04-29.04
	10/20/10		20.22	20.57	0.35	77.74			NM	
MW-6	05/10/10	99.82	---	19.94	---	79.88	29	10	28.99	18.99-28.99
	10/20/10		---	22.09	---	77.73			29.02	
MW-7	05/10/10	93.32	---	13.51	---	79.81	20	10	20.33	10.33-20.33
	10/20/10		---	15.91	---	77.41			20.25	
MW-8	05/10/10	100.59	---	21.61	---	78.98	27	10	26.85	16.85-26.85
	10/20/10		---	23.83	---	76.76			26.89	
MW-9	05/10/10	97.55	---	18.81	---	78.74	27	10	27.03	17.03-27.03
	10/20/10		---	21.12	---	76.43			27.07	
MW-10	05/10/10	101.31	---	22.88	---	78.43	30	10	30.31	20.31-30.31
	10/20/10		---	24.90	---	76.41			30.40	
MW-11	05/10/10	101.65	---	22.16	---	79.49	31	10	31.04	21.04-31.04
	10/20/10		---	24.10	---	77.55			31.07	

TABLE 2 (continued)
HISTORICAL GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Date	Top of Casing Elevation (ft)	Depth to Free Product (ft)	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation (ft)	Well Depth (ft)	Well Screen Length (ft)	Measured Well Depth (ft)	Screened Interval (ft)
MW-12	05/10/10	100.55	---	21.78	---	78.77	30	10	30.15	20.15-30.15
	10/20/10		---	23.75	---	76.80			30.10	
MW-13	05/10/10	93.20	---	17.82	---	75.38	25	10	25.20	15.20-25.20
	10/20/10		---	20.26	---	72.94			25.24	
MW-14	05/10/10	100.05	---	22.47	---	77.58	30	10	29.54	19.54-29.54
	10/20/10		---	24.77	---	75.28			29.59	
MW-15	05/10/10	98.47	---	18.81	---	79.66	27	10	26.93	16.93-26.93
	10/20/10		---	21.16	---	77.31			26.97	
MW-16	05/10/10	93.01	---	12.34	---	80.67	20	10	19.92	9.92-19.92
	10/20/10		---	14.97	---	78.04			19.89	
MW-17	10/20/10	101.09	---	23.52	---	77.57	28	10	28.70	18.70-28.70
MW-18	10/20/10	101.51	---	24.01	---	77.50	28	10	28.66	18.66-28.66
MW-19	10/20/10	100.01	22.35	23.19	0.84	77.45	28	10	NM	18-28
MW-20	10/20/10	91.80	---	20.28	---	71.52	27	10	26.24	16.24-26.26
MW-21	10/20/10	94.30	---	21.70	---	72.60	29	10	29.37	19.37-29.37
MW-22	10/20/10	99.82	---	25.99	---	73.83	30	10	29.89	19.84-29.84
MW-23	10/20/10	102.29	---	24.86	---	77.43	31	10	31.37	21.37-31.37

Notes:

1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product with an assumed density of 0.75g/cm^3, where present.
3. Based on well construction records.
4. Top of casing referenced as measuring point.
5. Based on measured well depth.

TABLE 3
HISTORICAL SLUG TEST ANALYSES AND GROUNDWATER FLOW RATES[1]
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Groundwater Measurement Date	Hydraulic Conductivity[2]				Hydraulic Gradient[2]	Effective Porosity[3]	Seepage Velocity[4]	
		cm/sec	ft/sec	ft/min	ft/day	ft/ft	(%)	ft/day	ft/year
MW-2	03/23/09	2.02E-04	6.6E-06	3.97E-04	0.57	0.002	0.20	0.006	2.09
MW-3	03/23/09	2.57E-04	8.4E-06	5.05E-04	0.73	0.002	0.20	0.007	2.65
MW-6	05/10/10	4.02E-05	1.3E-06	7.92E-05	0.11	0.010	0.25	0.005	1.66
MW-11	05/10/10	9.19E-05	3.0E-06	1.81E-04	0.26	0.010	0.25	0.010	3.81

Notes:

1. Slug tests were performed in MW-2 and MW-3 during Tier I activities on March 23, 2009; slug tests were performed in MW-6 and MW-11 during Tier II activities on May 10, 2010.
2. Average hydraulic conductivities were calculated using groundwater elevations data collected during groundwater sampling events.
3. Based on data reported during Tier I for MW-2 & MW-3. Effective porosity for MW-6 and MW-11 was calculated by percentage of soil from the 2009 and 2010 grain size distribution anaylsis and the arithmetic mean of drainable porosity from McWorter and Sunada (1977).
4. Seepage velocities (http://www.epa.gov/athens/learn2model/part-two/onsite/seepage.htm), calculated using the equation $V = Ki/ne$, where:
   K = hydraulic conductivity
   i = hydraulic gradient (feet/foot)
   n_e = effective porosity (%)

TABLE 4
GROUNDWATER FIELD SCREENING RESULTS[1]
SEPTEMBER 2010
EDGEFIELD FUEL & CONVENIENCE 3

Sample ID	Sample Date	Depth of Borehole (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)
FS-26	09/20/10	35	Not sampled; boring refusal encountered before groundwater.					
FS-27	09/20/10	35	Not sampled; boring refusal encountered before groundwater.					
FS-28	09/20/10	44	<5.0[2]	<5.0	<5.0	<15.0	<5.0	<5.0
FS-29	09/20/10	44	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-30	09/20/10	39	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0
FS-31	09/20/10	39	4.9J[3]	<5.0	<5.0	<15.0	**55.6**[4]	<5.0
		RBSL[5]	5	1,000	700	10,000	40	25

Notes:
1. Analyses for BTEX compounds, MTBE, and naphthalene by EPA Method 8260.
2. Less than the reporting limit specified in the laboratory report.
3. J value represents an estimated concentration between the method detection limit and the reporting limit.
4. Concentrations in bold face type exceeded the May 2001 RBSLs.
5. May 2001 Risk-Based Screening Level.

TABLE 5
HISTORICAL SOIL ANALYTICAL DATA[1]
EDGEFIELD FUEL & CONVIENENCE 3

Sample ID	Sample Depth (ft)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)	Lead (mg/kg)	Benzo(a) anthracene (mg/kg)	Benzo(b) fluoranthene (mg/kg)	Benzo(k) fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) anthracene (mg/kg)	TPH DRO (mg/kg)	TOC (mg/kg)
SB-1	20	03/03/09	<16.300[2]	**73.100**[3]	**31.100**	**138.800**	**16.500**	<16.300	11.7	<0.434	<0.434	<0.434	<0.434	<0.434	NR[4]	NR
SB-2/MW-1	20	03/03/09	**15.800**	**59.900**	**28.900**	**141.600**	**13.300**	6.660	6.5	<0.386	<0.386	<0.386	<0.386	<0.386	360	NR
SB-3	10	03/03/09	**0.0507**	0.0395	<0.0055	0.0143	<0.0055	0.220	19.5	<0.400	<0.400	<0.400	<0.400	<0.400	NR	NR
SB-4	10	03/03/09	**0.103**	0.335	0.0342	0.1337	<0.0094	0.0101	20.7	<0.394	<0.394	<0.394	<0.394	<0.394	NR	NR
SB-5	10	03/03/09	**0.0132**	0.0267	<0.0054	0.0152	<0.0054	<0.0054	20.9	<0.391	<0.391	<0.391	<0.391	<0.391	NR	NR
SB-6	10	03/03/09	**0.036**	0.0171	0.0178	0.063	0.0114	<0.0054	20.7	<0.397	<0.397	<0.397	<0.397	<0.397	NR	NR
SB-7	10	03/03/09	**1.450**	**6.600**	0.896	3.650	**0.872**	0.655	13.5	<0.398	<0.398	<0.398	<0.398	<0.398	NR	NR
SB-8/MW-2	10	03/03/09	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1,630
MW-4	20	04/06/10	**0.0346**	0.0013J[5]	0.0021J	0.0019J	<0.0026	0.0557	NR	NR	NR	NR	NR	NR	NR	NR
MW-5	10	04/06/10	**0.188**	0.191	0.0275	0.1388	<0.0054	0.0568	NR	NR	NR	NR	NR	NR	NR	NR
MW-6	20	04/06/10	**0.167**	0.149	0.0231	0.0918	<0.0047	0.0497	NR	NR	NR	NR	NR	NR	NR	NR
MW-7	10	04/06/10	<0.0050	<0.0050	<0.0050	<0.0151	<0.0050	<0.0050	NR	NR	NR	NR	NR	NR	NR	NR
MW-8	15	04/06/10	<0.0055	<0.0055	<0.0055	<0.0165	<0.0055	<0.0055	NR	NR	NR	NR	NR	NR	NR	NR
MW-9	15	04/05/10	<0.0057	<0.0057	<0.0057	<0.0170	<0.0057	<0.0057	NR	NR	NR	NR	NR	NR	NR	NR
MW-10	20	04/05/10	<0.0051	<0.0051	<0.0051	<0.0154	<0.0051	<0.0051	NR	NR	NR	NR	NR	NR	NR	NR
MW-11	20	04/05/10	<0.0053	<0.0053	<0.0053	<0.0160	<0.0053	<0.0053	NR	NR	NR	NR	NR	NR	NR	NR
MW-12	20	04/05/10	0.0040J	<0.0050	0.0049J	0.0231J	0.0022J	<0.0050	NR	NR	NR	NR	NR	NR	NR	NR
MW-13	15	04/21/10	<0.0053	<0.0053	<0.0053	<0.0160	<0.0053	<0.0053	NR	NR	NR	NR	NR	NR	NR	NR
MW-14	20	04/05/10	<0.0058	<0.0058	<0.0058	<0.0174	<0.0058	<0.0058	NR	NR	NR	NR	NR	NR	NR	NR
MW-15	10	04/05/10	<0.0049	<0.0049	<0.0049	0.0147	<0.0049	<0.0049	NR	NR	NR	NR	NR	NR	NR	NR
MW-16	10	04/05/10	<0.0050	<0.0050	<0.0050	<0.0150	<0.0050	<0.0050	NR	NR	NR	NR	NR	NR	NR	NR
	RBSL[6] (sandy)		0.007	1.450	1.150	14.500	0.036	N/A	N/A	0.066	0.066	0.066	0.066	0.066	N/A	N/A

Notes:

1. Analyses for BTEX constituents, napthalene and MTBE by EPA Method 8260, Lead by EPA Method 6010, Polycyclic Aromatic Hydrocarbons by EPA Method 8270, Total Petroleum Hydrocarbons-Diesel Range Organics by EPA Method 8015c, Total Organic Carbon by EPA Method 9060 Modified.
2. Less than the laboratory method detection limit specified in the laboratory report.
3. Concentrations in bold face type exceeded the RBSL for sandy soils.
4. Analysis not requested.
5. J value represents an estimated concentration above the adjusted method detection and below the adjusted reporting limit.
6. May 2001 Risk-Based Screening Level for sandy soils.

TABLE 6

HISTORICAL GROUNDWATER ANALYTICAL DATA[1]

CHEMICALS OF CONCERN

EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)
MW-1	03/04/09	**FP[2]**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-2	03/04/09	**4,970 [3]**	**7,470**	**1,020**	4,400	**183**	**142**	**0.46**	NR[4]	<5.0[5]
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-3	03/04/09	**7.9**	33.9	<5.0	12.8	<5.0	<5.0	<0.019	NR	<5.0
	05/10/10	<5.0	4.5J[6]	<5.0	5.7J	<5.0	<5.0	<0.020	<5.0	<5.0
	10/21/10	**7.5**	<5.0	<5.0	4.7J	<5.0	3.6J	<0.020	NR	NR
MW-4	05/10/10	**411**	29.8	8.3	31.9J	**256**	<5.0	<0.020	<5.0	**17.6**
	10/21/10	**1,360**	87.5	108	121.6	**630**	15.2	<0.020	NR	NR
MW-5	05/10/10	**20,900**	**30,900**	**1,090**	**12,100**	**11,400**	**316**	**0.93**	<5.0	**21.7**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-6	05/10/10	**270**	200	20.1	213.3	**59.4**	<5.0	<0.019	<5.0	9.4
	10/21/10	**1,830**	**1,140**	110	677	**186**	9.1J	<0.020	NR	NR
MW-7	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**59.3**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
MW-8	05/10/10	<5.0	3.7J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**57.2**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
MW-9	05/10/10	<5.0	3.1J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**34.4**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
MW-10	05/10/10	<5.0	1.8J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**41.6**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
MW-11	05/10/10	**1,820**	522	33.1	522	**125**	**31.9**	**0.097**	<5.0	**40.5**
	10/20/10	<5.0	<5.0	<5.0	<15.0	4.4J	<5.0	<0.020	NR	NR
MW-12	05/10/10	**75.7**	3.5J	9.4	34.0J	<5.0	12.0	<0.020	<5.0	**61.5**
	10/20/10	**58.0**	2.6J	8.5	19.5	<5.0	14.6	<0.020	NR	NR
MW-13	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.021	<5.0	**96.0**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
MW-14	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	7.2
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
MW-15	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**128**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
MW-16	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**146**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	RBSL[7]	5	1,000	700	10,000	40	25	0.05	5	15

TABLE 6 (continued)
HISTORICAL GROUNDWATER ANALYTICAL DATA
CHEMICALS OF CONCERN
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)
MW-17	10/21/10	**15,900**	**31,400**	**2,820**	**12,970**	**564**	**623**	**0.69**	<5.0	NR
MW-18	10/21/10	**26.8**	101	9.3	42.7	2.8J	3.1J	<0.020	<5.0	NR
MW-19	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-20	10/21/10	**5.6**	7.0	1.1J	9.1J	9.5	2.9J	<0.020	<5.0	NR
MW-21	10/21/10	2.5J	10.5	1.8J	8.2J	<5.0	5.0	<0.019	<5.0	NR
MW-22	10/21/10	<5.0	4.5J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	NR
MW-23	10/21/10	<5.0	4.5J	<5.0	<15.0	3.8J	<5.0	<0.020	<5.0	NR
	RBSL	5	1,000	700	10,000	40	25	0.05	5	15

Notes:

1. Analysis for BTEX constituents, MTBE, naphthalene, and 1,2-DCA by EPA Method 8260; analysis for EDB by Method 8011; analysis for total lead by EPA Method 6010 (2010).
2. Free Product.
3. Concentrations in bold face type exceeded the May 2001 RBSLs.
4. Analysis not requested.
5. Less than the reporting limit specified in the laboratory report.
6. Estimated value between the method detection limit and the reporting limit.
7. May 2001 Risk-Based Screening Levels.

TABLE 7
HISTORICAL GROUNDWATER ANALYTICAL DATA [1]
EIGHT OXYGENATES
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Tertiary Amyl Alcohol (TAA) (µg/L)	Tertiary Amyl Methyl Ether (TAME) (µg/L)	Tertiary Butyl Alcohol (TBA) (µg/L)	Tertiary Butyl Formate (TBF) (µg/L)	Diisopropyl Ether (DIPE) (µg/L)	Ethanol (µg/L)	Ethyl tert-Butyl Ether (ETBE) (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
MW-1	03/04/09	NR[2]	NR	NR	NR	NR	NR	NR	NR
	05/10/10	**FP[3]**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-2	03/04/09	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-3	03/04/09	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	<100[4]	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/21/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-4	05/10/10	**3,120** [5]	11.8	322	<50.0	<5.0	<200	<10.0	<100
	10/21/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-5	05/10/10	**25,300**	**1,620**	<100	<50.0	131	<200	**47.1**	<100
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-6	05/10/10	**757**	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/21/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-7	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-8	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-9	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-10	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-11	05/10/10	**310**	100	<100	<50.0	4.7J[6]	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-12	05/10/10	157	<10.0	570	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-13	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-14	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	Action Levels[7]	240	128	1,400	--	150	10,000	47	--

TABLE 7 (continued)
HISTORICAL GROUNDWATER ANALYTICAL DATA
EIGHT OXYGENATES
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Tertiary Amyl Alcohol (TAA) (µg/L)	Tertiary Amyl Methyl Ether (TAME) (µg/L)	Tertiary Butyl Alcohol (TBA) (µg/L)	Tertiary Butyl Formate (TBF) (µg/L)	Diisopropyl Ether (DIPE) (µg/L)	Ethanol (µg/L)	Ethyl tert-Butyl Ether (ETBE) (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
MW-15	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-16	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
MW-17	10/21/10	**13,600**	**533J**	<100	<50.0	24.5	<200	8.5J	<100
MW-18	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-19	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-20	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-21	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-22	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
MW-23	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	Action Levels	240	128	1,400	--	150	10,000	47	--

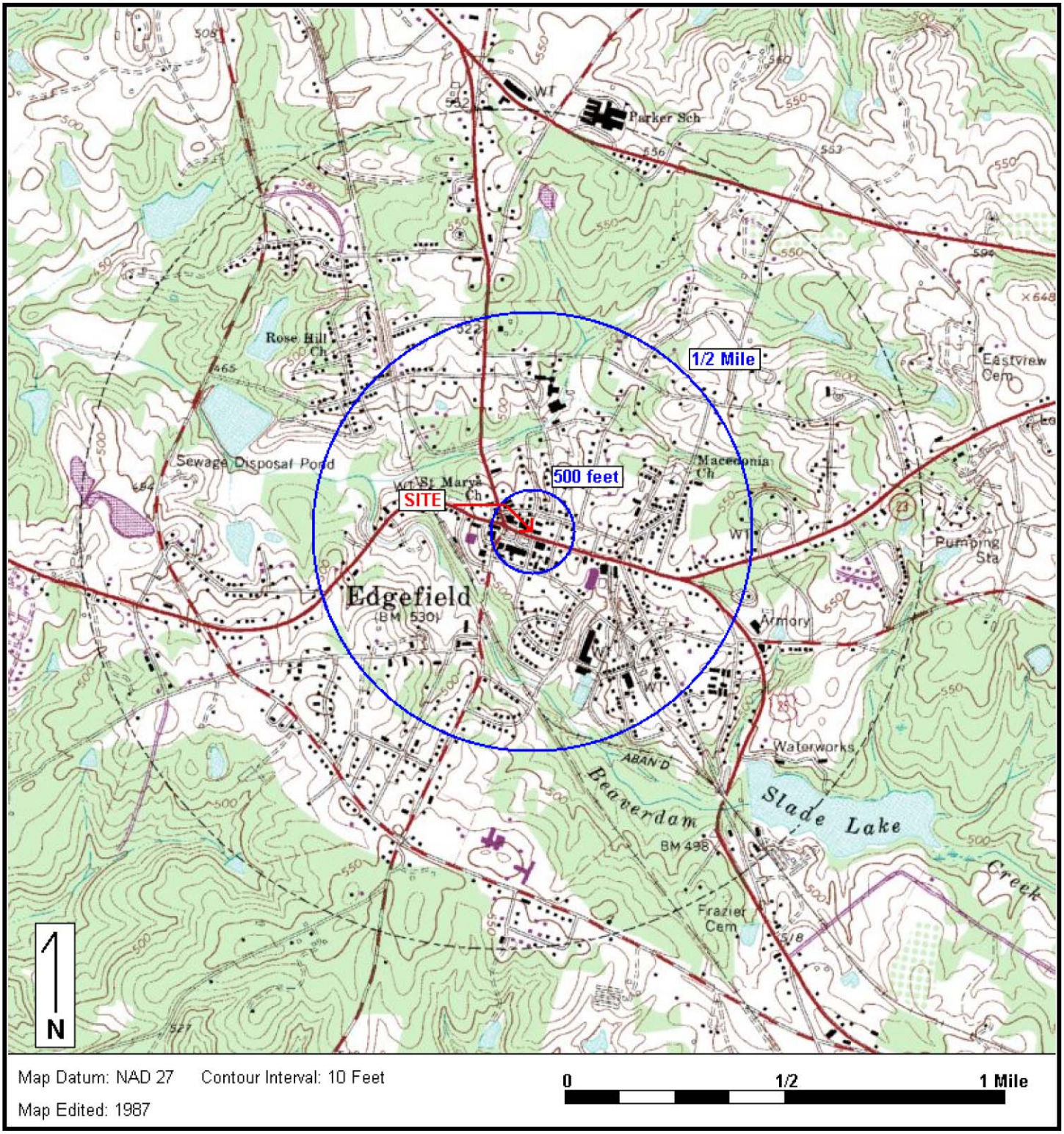
Notes:
1. Analyses for Eight Oxygenates by EPA Method 8260.
2. Analyses not requested.
3. Free Product.
4. Less than the reporting limit specified in the laboratory report.
5. Concentrations in bold face type exceeded the Action Level.
6. Estimated value between the laboratory reporting limit and the method detection limit.
7. August 2008 Action Levels.

FIGURES

Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins

Legend

137-07-5-07 TAX MAP PARCEL I.D. NUMBER

PROPERTY LINE

WATER SUPPLY WELL (NOT ACTIVE)

WET WEATHER DRAINAGE FEATURE

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Reference: Edgefield County Tax Office

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Vicinity Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 200 100 0 100 200

COMPUTER CADFILE -5-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
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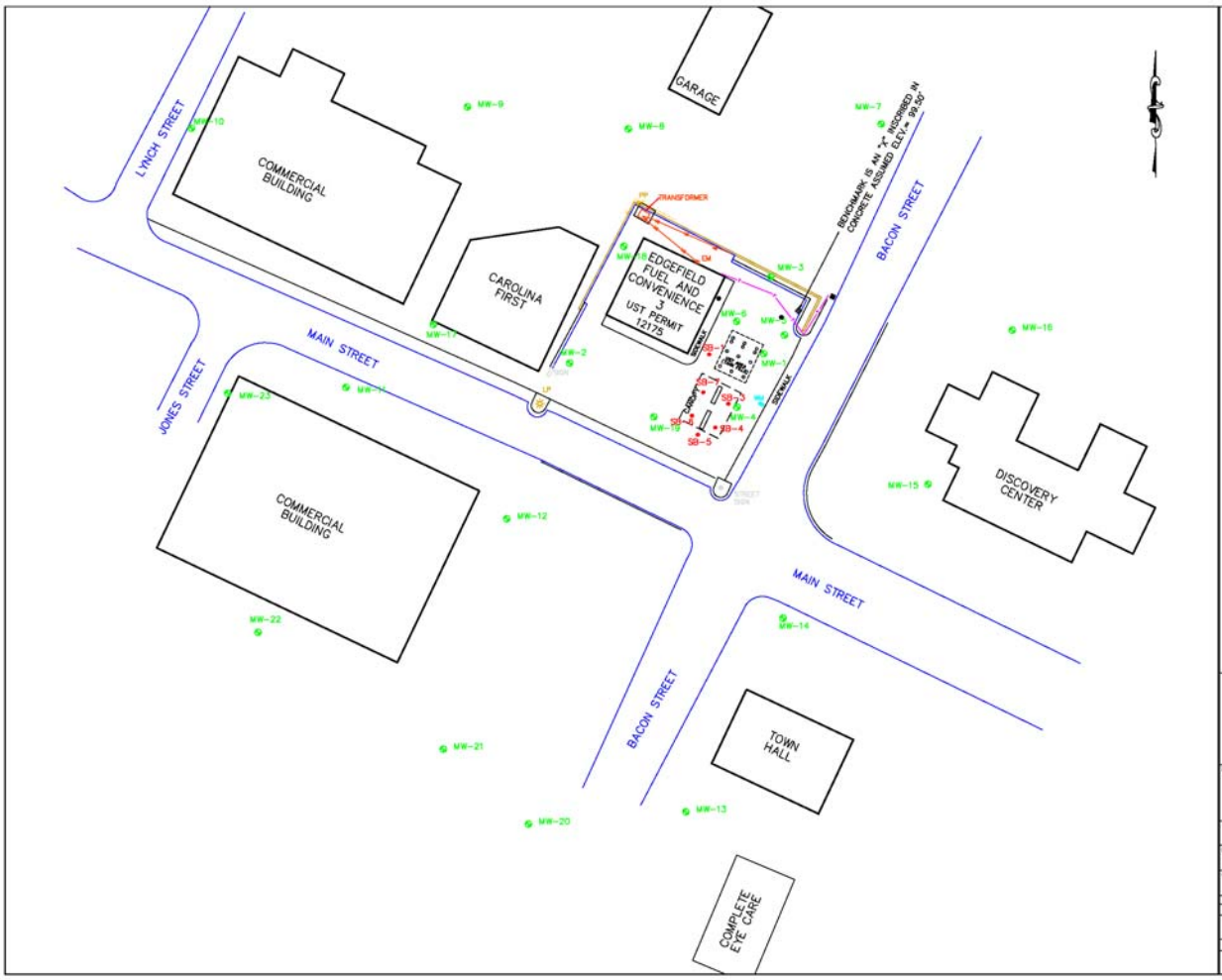

Legend

- UE — Underground Electric Line
- W — Wood Fence Line
- T — Underground Telephone Line
- MH — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 10-20-10.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	11/1/10	14-211651	3

Legend

- PROPERTY LINE
- UE — UNDERGROUND ELECTRIC LINE
- WOOD FENCE LINE
- T — UNDERGROUND TELEPHONE LINE
- SANITARY SEWER CLEAN OUT
- GRATE TOP DROP INLET
- FIELD SCREENING LOCATION
- MW-1 — SHALLOW MONITORING WELL

5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	MTBE
25	Naphthalene

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L).

Above concentrations represent May 2001 Risk-Based Screening Levels; Concentrations in **bold** face type exceeded the RBSL.

J - Estimated Value between the method detection limit and the reporting limit.

<1.0 - Less than the reporting limit specified in the laboratory report.

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13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Field Screening – September 20, 2010

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE: 05-10-10

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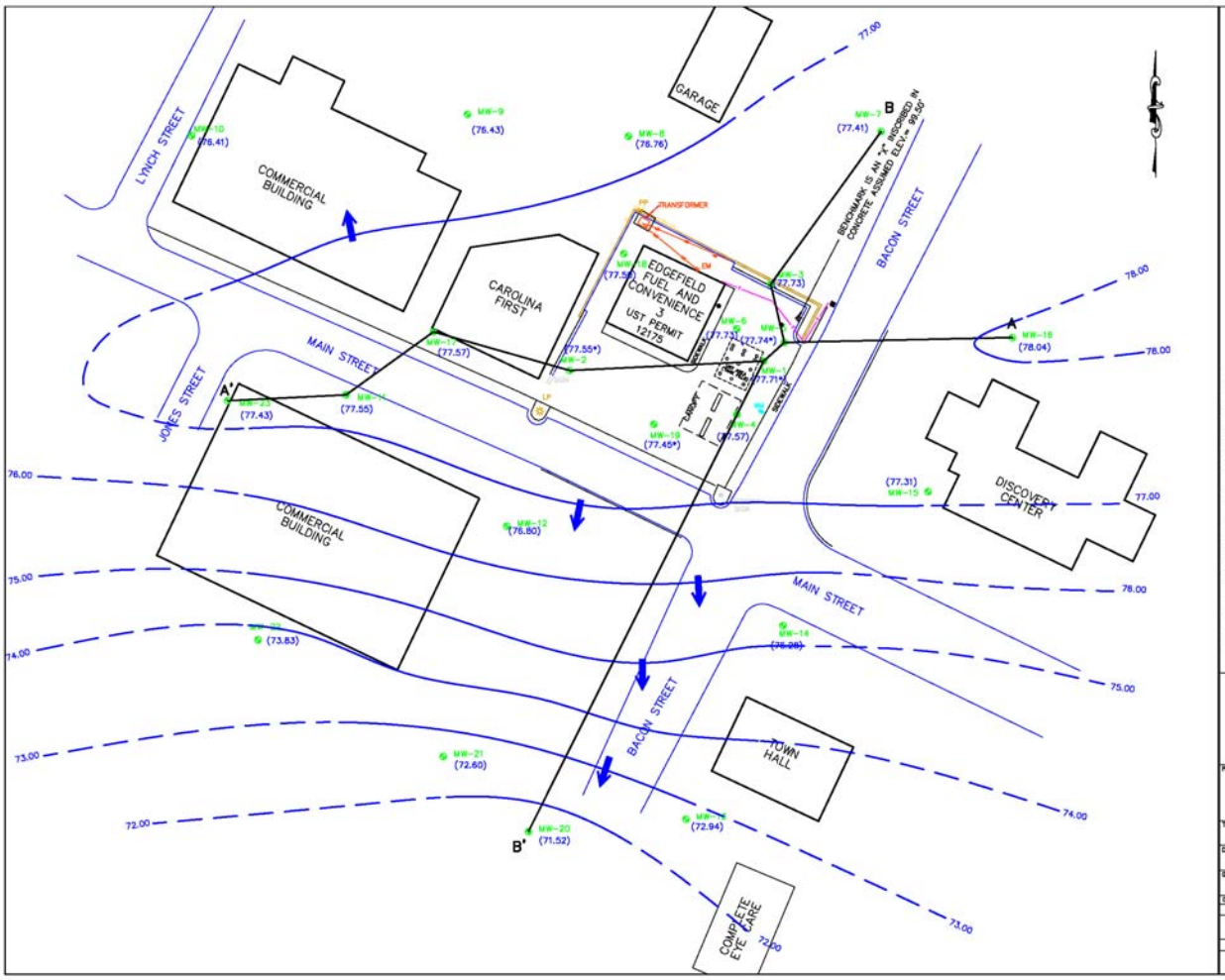

Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP Light Pole
- LP Light Pole
- SB-1 Soil Boring
- MW-1 Shallow (Water Table) Monitoring Well
- A —— A' Cross Section A - A'
- (73.71) Groundwater Elevation (ft)
- 90.00 Water Table Contour (Dashed where inferred)
- Flow Direction Indicator From 3-Point Problem

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Groundwater elevations are relative to a temporary benchmark with an assumed datum of 99.50 feet.

Groundwater Elevations are based on measurements made on October 20, 2010.

Water table contours, and flow directions assume homogeneous, isotropic aquifer conditions, and horizonta flow.

Fluctuations in the level of the water table may occure du to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

*Groundwater Elevation corrected using estimated densit of 0.75g/cm³ for Petroleum Product.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Groundwater Elevation Map 10/20/10

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 10-20-10.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
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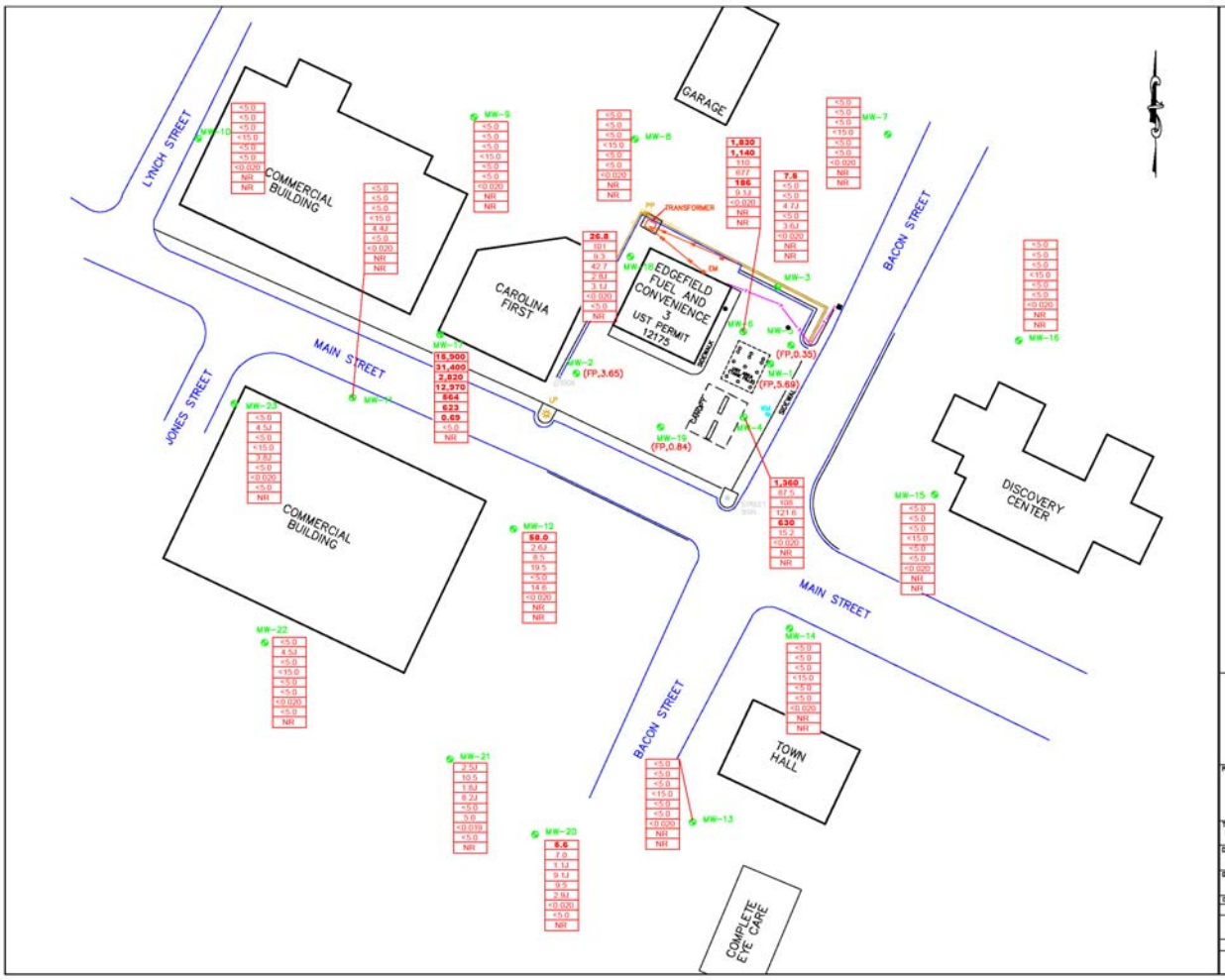


Legend

- UE — Underground Electric Line
- Wood Fence Line
- T — Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well

5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	Naphthalene
25	MTBE
0.05	EDB
5	1,2-DCA
15	Total Lead

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

concentrations are measured in micrograms per liter (ug/L) except Ferrous Iron, Nitrate and Sulfate are measured in milligrams per liter (mg/L).

Above concentrations represent May 2001 Risk-Based Screening Levels. Concentrations in **bold** face type exceede the RBSL.

FP - Free Product; thickness in feet.

<1.0 - Less than the reporting limit specified in the laboratory report.

J - Estimated value between the method detecion limit and the reported limit.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

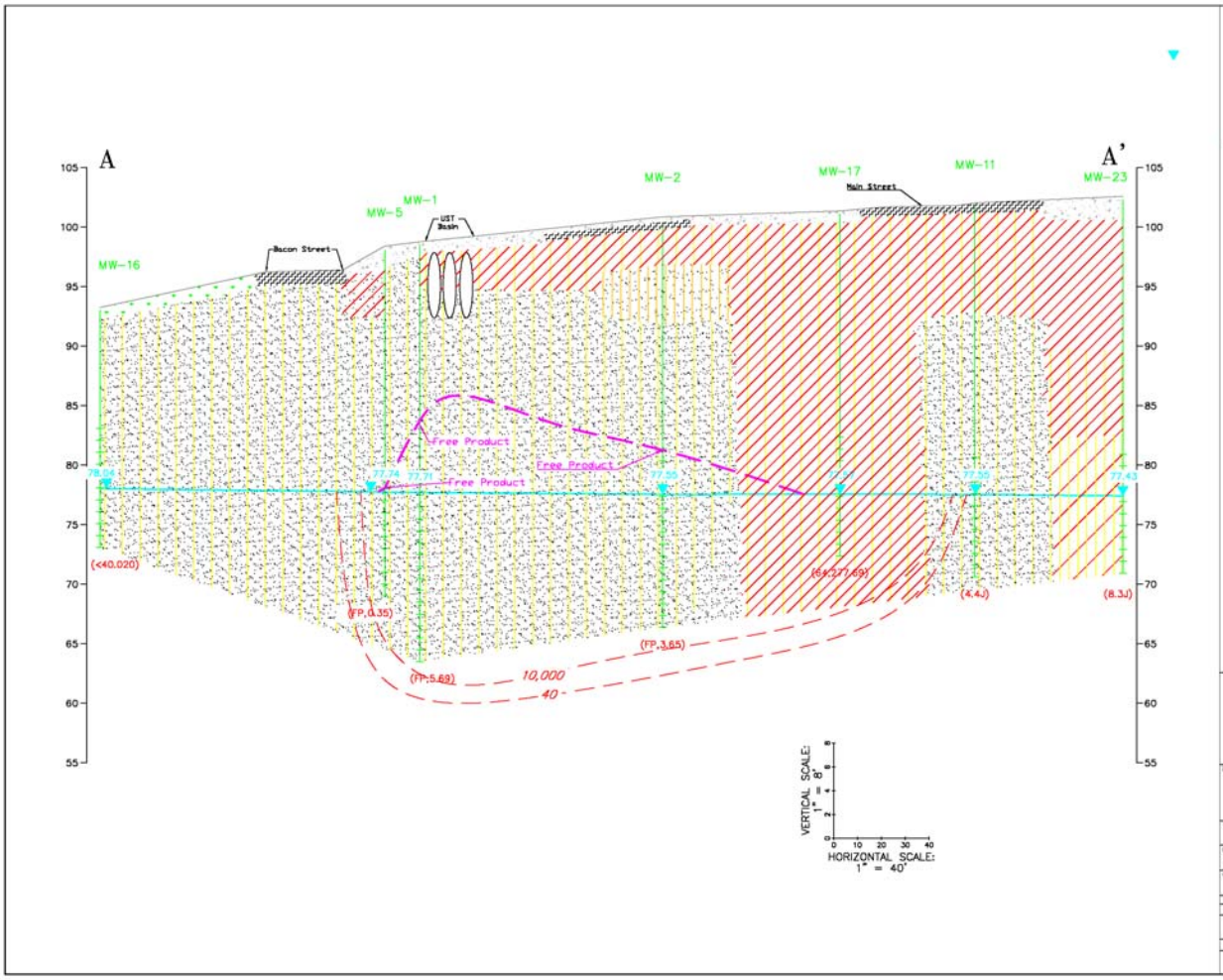
TITLE:
Groundwater Quality Map-CoC 10/20 & 10/21/10

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 10-20-10.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	11/3/10	14-211651	6



Legend

- 78.96 — Potentiometric Surface Observed 5/10/10 (ft)
- (76,706.93) — Total CoC in ug/L (Sum of BTEX, Naphthalene, MTBE, & EDB)
- (FP,5.69) — Free Product, thickness in feet
- 10,000 — Isoconcentration Line (ug/L)
- Grass/Topsoil
- Concrete/Fill
- Asphalt/Fill
- Silty Clay
- Sandy Silt
- Sandy Clay
- Silty Sand

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are reported in micrograms per liter (ug/L).

<45.020 – Less than the reporting limits specified in the laboratory report.

J value represents laboratory estimated value between the laboratory reporting limit and the method detection limit.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

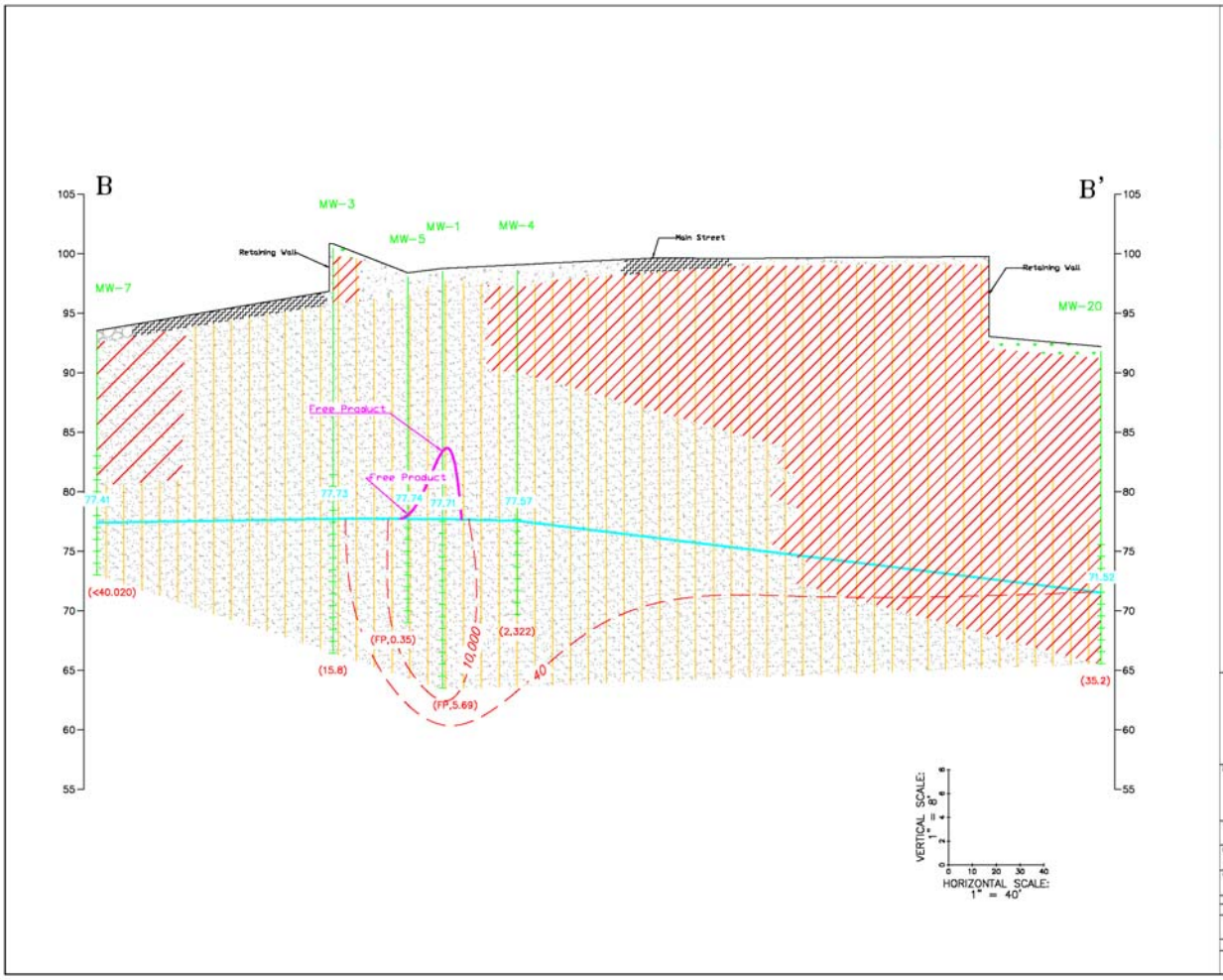
TITLE: Cross Section A – A'

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER DATEFILE 9-12-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=40'	11/11/10	14-211651	7



Legend

- 79.96 — Potentiometric Surface Observed 5/10/10 (ft)
- (76,706.93) — Total CoC in ug/L (Sum of BTEX, Naphthalene, MTBE, & EDB)
- (FP,5.69) — Free Product, thickness in feet
- 10,000 — Isoconcentration Line (ug/L)
- Grass/Topsoil
- Concrete/Fill
- Asphalt/Fill
- Silty Clay
- Sandy Silt
- Sandy Clay
- Silty Sand

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

All concentrations are reported in micrograms per liter (ug/L).

<45.020 – Less than the reporting limits specified in the laboratory report.

J value represents laboratory estimated value between the laboratory reporting limit and the method detection limit.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

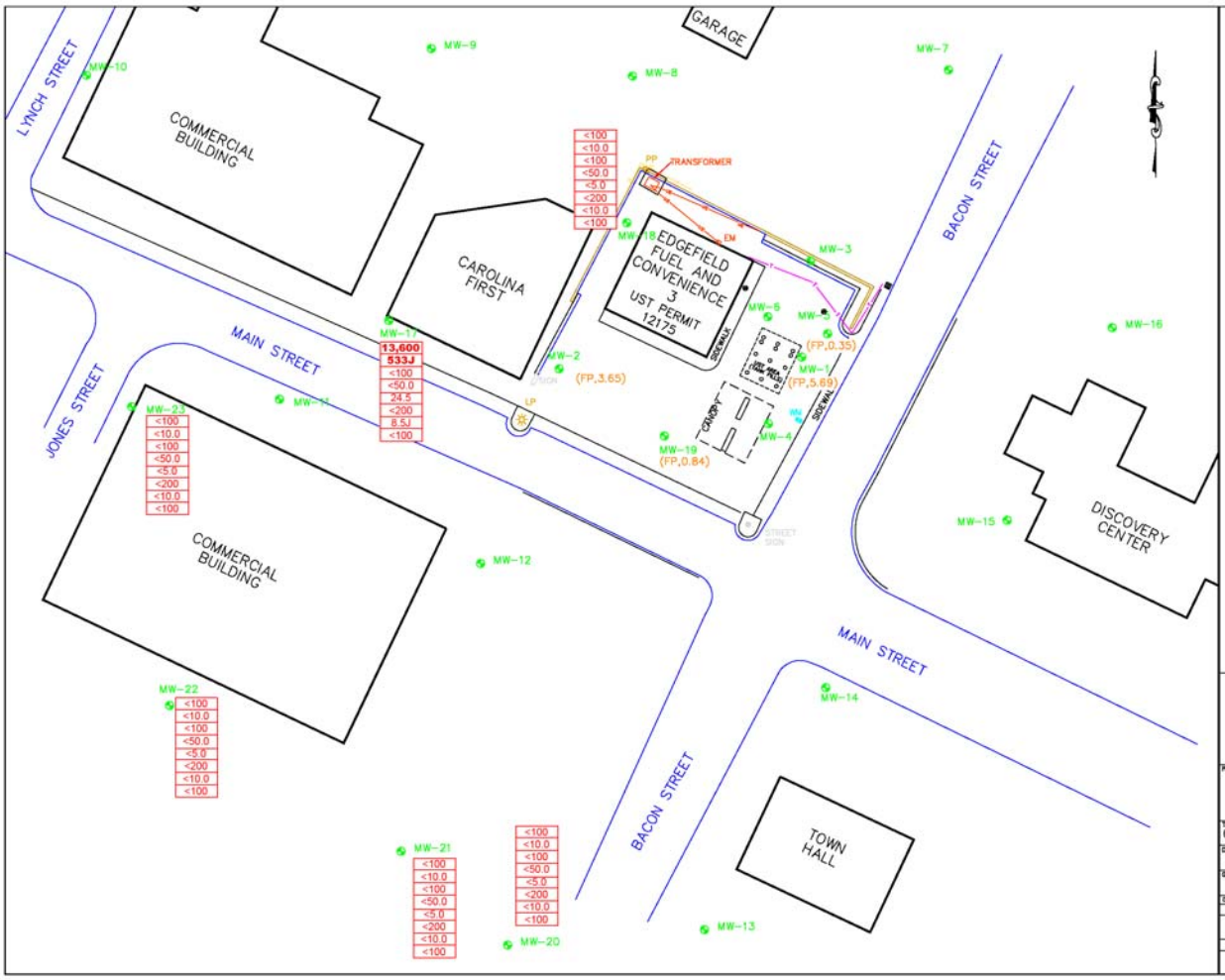
TITLE: Cross Section B – B'

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 40 20 0 20 40

COMPUTER CADFILE: 9-12-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=40'	11/11/10	14-211651	8



Legend

- UE — Underground Electric Line
- Wood Fence Line
- T — Underground Telephone Line
- SS — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well

240	Tert-Amyl Alcohal (TAA)
128	Tert-Amyl Methyl Ether (TAME)
1,400	Tert-Butyl Alcohal (TBA)
--	Tert-Butyl Formate (TBF)
150	Di-isopropyl Ether (DIPE)
10,000	Ethanol
47	Ethyl tert-Butyl Ether (ETBE)
--	3,3-Dimethyl-1-butanol

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L)

Above concentrations represent August 2008 Action Level for Oxygenate Compounds; Concentrations in **bold** face type exceeded the Action Levels.

J - Estimated Value between the method detection limit and t reporting limit.

<1.0 - Less than the reporting limit specified in the laboratory report.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Groundwater Quality Map-Oxygenates 10/20 & 10/21/10

CLIENT:
Edgefield Fuel & Convenience, LLC

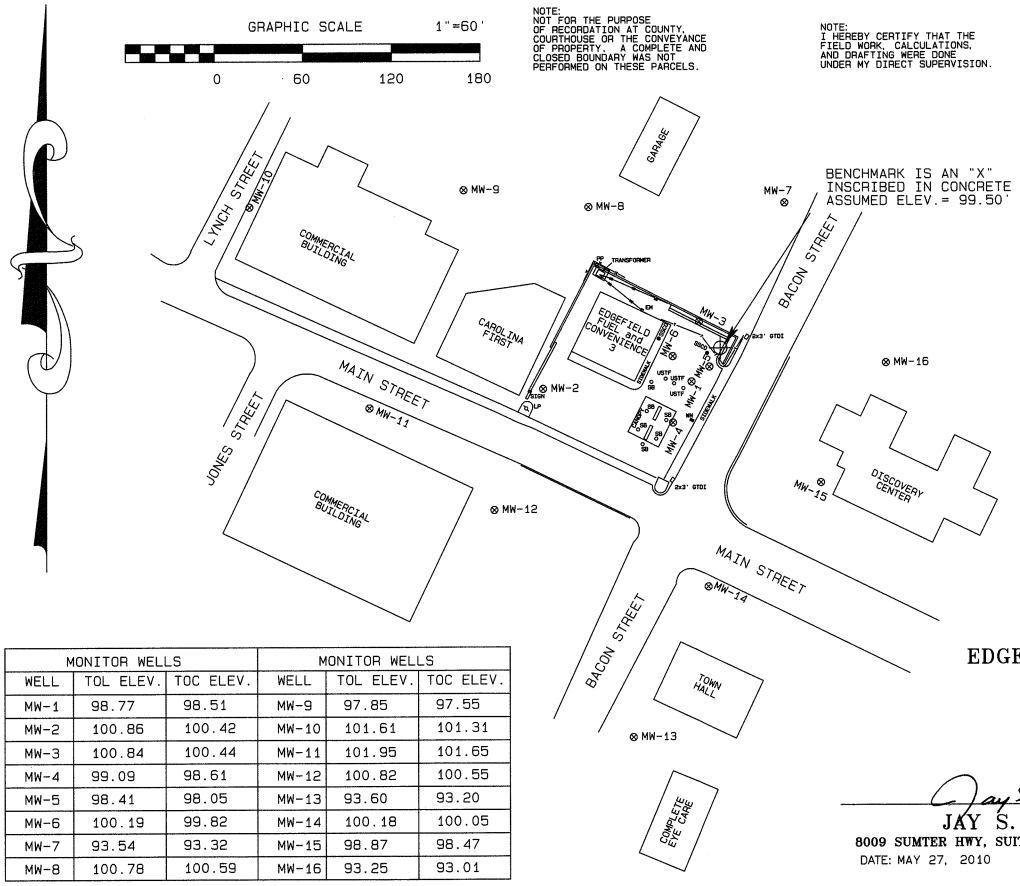
GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 10-20-10.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	11/3/10	14-211651	9

APPENDIX A

Surveyed Site Maps



LEGEND AND ABBREVIATIONS:

⊗	MW = MONITORING WELL
⊕	BM = BENCHMARK
○	SB = SOIL BORE
●	SSCO = SANITARY SEWER CLEAN OUT
■	WM = WATER METER
○	LP = LIGHT POLE
○	PP = POWER POLE
○	USTF = UNDERGROUND STORAGE TANK FILL
□	GTDI = GRATE TOP DROP INLET
▭	SIGN = SIGN
□	EM = ELECTRIC METER
—UE—	= UNDERGROUND ELECTRIC LINE
—X—	= WOOD FENCE LINE
—T—	= UNDERGROUND TELEPHONE LINE

SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 14811 JAY S. JOSHI

SOUTH CAROLINA CONSTRUCTION SUPPORT SERVICES No. C02425 CERTIFICATE OF AUTHORIZATION

MONITOR WELLS			MONITOR WELLS		
WELL	TOL ELEV.	TOC ELEV.	WELL	TOL ELEV.	TOC ELEV.
MW-1	98.77	98.51	MW-9	97.85	97.55
MW-2	100.86	100.42	MW-10	101.61	101.31
MW-3	100.84	100.44	MW-11	101.95	101.65
MW-4	99.09	98.61	MW-12	100.82	100.55
MW-5	98.41	98.05	MW-13	93.60	93.20
MW-6	100.19	99.82	MW-14	100.18	100.05
MW-7	93.54	93.32	MW-15	98.87	98.47
MW-8	100.78	100.59	MW-16	93.25	93.01

COMPREHENSIVE SITE SKETCH OF

EDGEFIELD FUEL AND CONVENIENCE 3

311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY, SC
UST PERMIT #12175

PREPARED FOR

ECS

JAY S. JOSHI PLS # 14811
8009 SUMTER HWY, SUITE 101, COLUMBIA, SC, 29209 803-776-9909

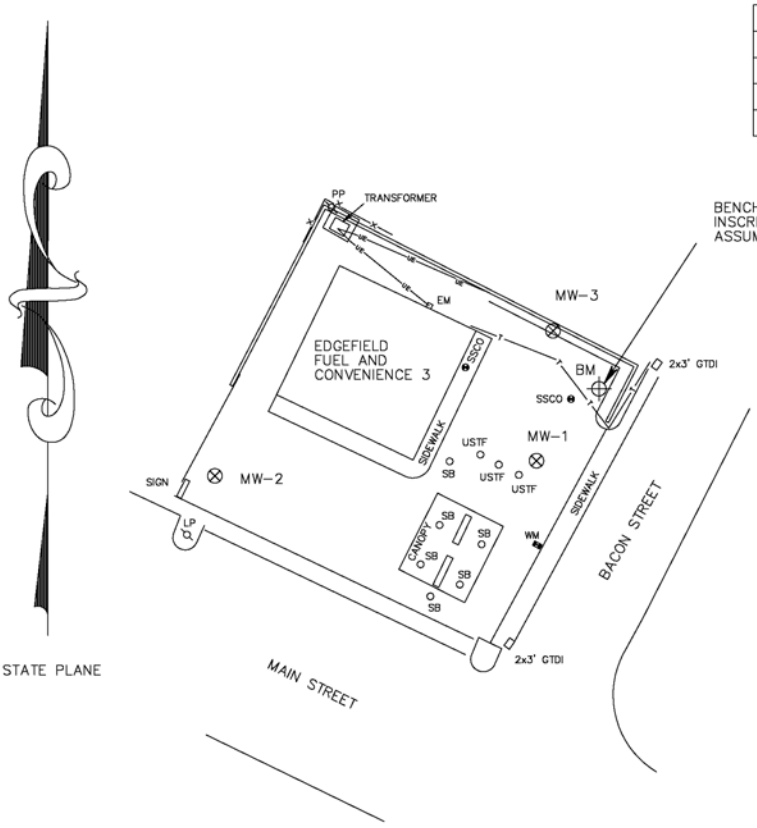
DATE: MAY 27, 2010 JOB #052010B

sub of #030509A

MONITOR WELLS		
WELL	TOL ELEV.	TOC ELEV.
MW-1	98.77	98.51
MW-2	100.86	100.42
MW-3	100.84	100.44

LEGEND AND ABBREVIATIONS:

- MW = MONITORING WELL
- BM = BENCHMARK
- SB = SOIL BORE
- SSCO = SANITARY SEWER CLEAN OUT
- WM = WATER METER
- LP = LIGHT POLE
- PP = POWER POLE
- USTF = UNDERGROUND STORAGE TANK FILL
- GTDI = GRATE TOP DROP INLET
- SIGN = SIGN
- EM = ELECTRIC METER
- —UE— = UNDERGROUND ELECTRIC LINE
- —X— = WOOD FENCE LINE
- —T— = UNDERGROUND TELEPHONE LINE



SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 14811 JAY S. JOSHI

SOUTH CAROLINA CONSTRUCTION SUPPORT SERVICES No. C02425 CERTIFICATE OF AUTHORIZATION

COMPREHENSIVE SITE SKETCH OF

EDGEFIELD FUEL AND CONVENIENCE 3

311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY, SC
UST PERMIT #12175

PREPARED FOR

ECS

GRAPHIC SCALE 1"=30'

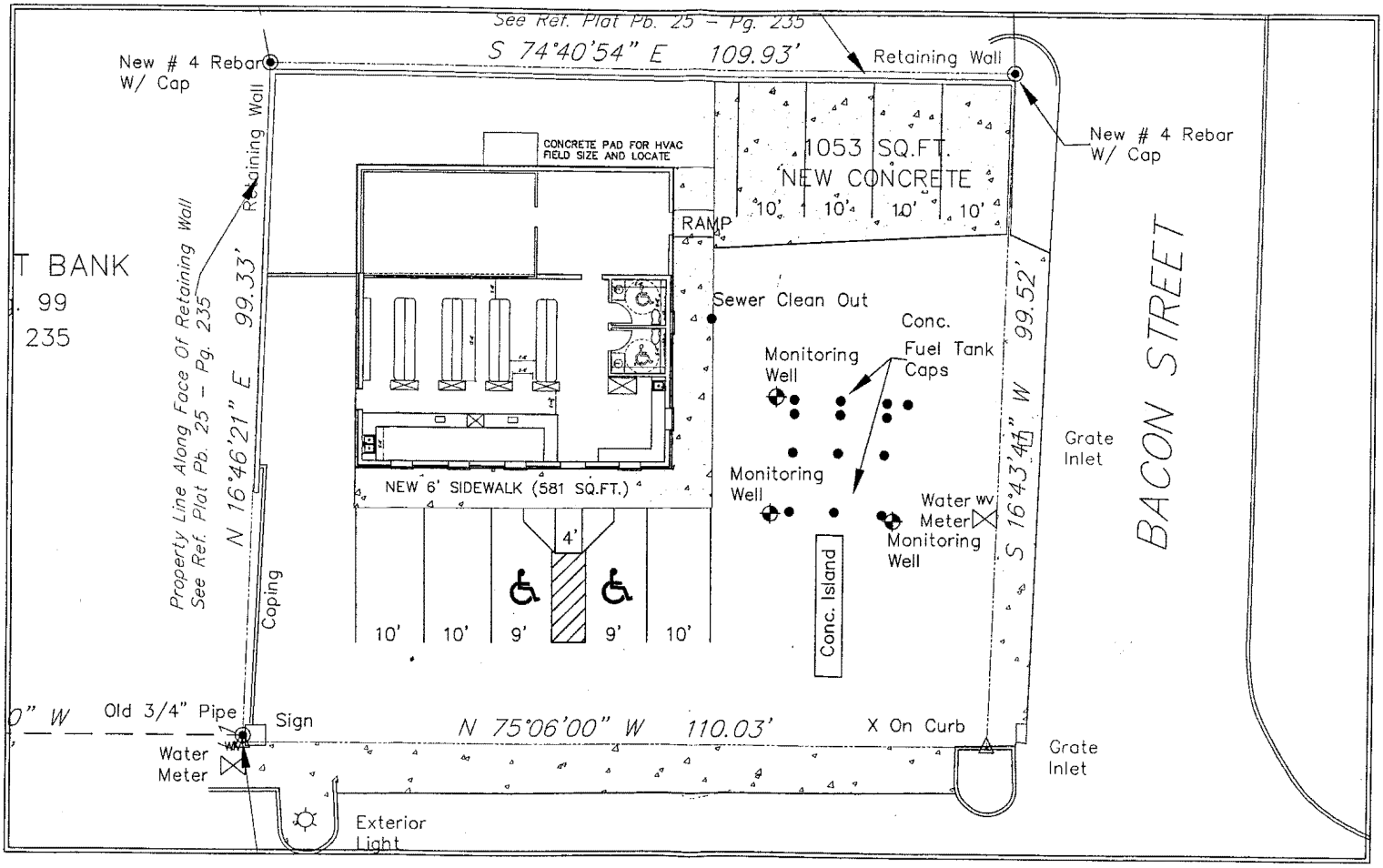
0 30 60 90

NOTE:
NOT FOR THE PURPOSE OF RECORDATION AT COUNTY, COURTHOUSE OR THE CONVEYANCE OF PROPERTY. A COMPLETE AND CLOSED BOUNDARY WAS NOT PERFORMED ON THESE PARCELS.

NOTE:
I HEREBY CERTIFY THAT THE FIELD WORK, CALCULATIONS, AND DRAFTING WERE DONE UNDER MY DIRECT SUPERVISION.

JAY S. JOSHI PLS # 14811
8009 SUMTER HWY, SUITE 101, COLUMBIA, SC, 29209 803-776-9909

DATE: MARCH 10, 2009 JOB #030509A


See Ref. Plat Pb. 25 – Pg. 235
S 74°40'54" E 109.93'
New # 4 Rebar W/ Cap
Retaining Wall
Retaining Wall
New # 4 Rebar W/ Cap
CONCRETE PAD FOR HVAC FIELD SIZE AND LOCATE
1053 SQ.FT. NEW CONCRETE
10' 10' 10' 10'
RAMP
T BANK
99
235
Property Line Along Face Of Retaining Wall See Ref. Plat Pb. 25 – Pg. 235
N 16°46'21" E 99.33'
Sewer Clean Out
Conc. Fuel Tank Caps
Monitoring Well
Monitoring Well
Water wv Meter
Monitoring Well
Conc. Island
S 16°43'41" W 99.52'
Grate Inlet
BACON STREET
NEW 6' SIDEWALK (581 SQ.FT.)
4'
10' 10' 9' 9' 10'
Coping
0" W
Old 3/4" Pipe
Sign
N 75°06'00" W 110.03'
X On Curb
Grate Inlet
Water Meter
Exterior Light

APPENDIX B

Laboratory Report – Groundwater Field Screening Samples – September 20, 2010

Pace Analytical®
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Pace Analytical Services, Inc.
2225 Riverside Dr.
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(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

September 28, 2010

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on September 21, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
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Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/LELAP Certification #: 04034
New Jersey Certification #: NC012
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
Pennsylvania Certification #: 68-00784
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Virginia Certification #: 00213
Connecticut Certification #: PH-0104
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DHH Drinking Water # LA 100031

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Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9278045001	**FS-28**	Water	09/20/10 14:40	09/21/10 15:14
9278045002	**FS-29**	Water	09/20/10 15:05	09/21/10 15:14
9278045003	**FS-30**	Water	09/20/10 15:50	09/21/10 15:14
9278045004	**FS-31**	Water	09/20/10 10:15	09/21/10 15:14

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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9278045001	**FS-28**	EPA 8260	MCK	11	PASI-C
9278045002	**FS-29**	EPA 8260	MCK	11	PASI-C
9278045003	**FS-30**	EPA 8260	MCK	11	PASI-C
9278045004	**FS-31**	EPA 8260	MCK	11	PASI-C

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ANALYTICAL RESULTS

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

Sample: FS-28 **Lab ID: 9278045001** Collected: 09/20/10 14:40 Received: 09/21/10 15:14 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		09/23/10 19:15	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		09/23/10 19:15	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		09/23/10 19:15	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		09/23/10 19:15	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		09/23/10 19:15	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		09/23/10 19:15	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		09/23/10 19:15	95-47-6	
4-Bromofluorobenzene (S)	103	%	70-130		1		09/23/10 19:15	460-00-4	
Dibromofluoromethane (S)	116	%	70-130		1		09/23/10 19:15	1868-53-7	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		09/23/10 19:15	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		09/23/10 19:15	2037-26-5	

Sample: FS-29 **Lab ID: 9278045002** Collected: 09/20/10 15:05 Received: 09/21/10 15:14 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		09/23/10 19:33	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		09/23/10 19:33	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		09/23/10 19:33	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		09/23/10 19:33	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		09/23/10 19:33	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		09/23/10 19:33	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		09/23/10 19:33	95-47-6	
4-Bromofluorobenzene (S)	101	%	70-130		1		09/23/10 19:33	460-00-4	
Dibromofluoromethane (S)	116	%	70-130		1		09/23/10 19:33	1868-53-7	
1,2-Dichloroethane-d4 (S)	113	%	70-130		1		09/23/10 19:33	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		09/23/10 19:33	2037-26-5	

Sample: FS-30 **Lab ID: 9278045003** Collected: 09/20/10 15:50 Received: 09/21/10 15:14 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		09/23/10 19:52	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		09/23/10 19:52	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		09/23/10 19:52	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		09/23/10 19:52	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		09/23/10 19:52	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		09/23/10 19:52	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		09/23/10 19:52	95-47-6	
4-Bromofluorobenzene (S)	101	%	70-130		1		09/23/10 19:52	460-00-4	

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

Sample: FS-30 **Lab ID: 9278045003** Collected: 09/20/10 15:50 Received: 09/21/10 15:14 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Dibromofluoromethane (S)	115	%	70-130		1		09/23/10 19:52	1868-53-7	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		09/23/10 19:52	17060-07-0	
Toluene-d8 (S)	104	%	70-130		1		09/23/10 19:52	2037-26-5	

Sample: FS-31 **Lab ID: 9278045004** Collected: 09/20/10 10:15 Received: 09/21/10 15:14 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**4.9J**	ug/L	5.0	1.2	1		09/23/10 20:10	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		09/23/10 20:10	100-41-4	
Methyl-tert-butyl ether	**55.6**	ug/L	5.0	2.0	1		09/23/10 20:10	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		09/23/10 20:10	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		09/23/10 20:10	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		09/23/10 20:10	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		09/23/10 20:10	95-47-6	
4-Bromofluorobenzene (S)	108	%	70-130		1		09/23/10 20:10	460-00-4	
Dibromofluoromethane (S)	119	%	70-130		1		09/23/10 20:10	1868-53-7	
1,2-Dichloroethane-d4 (S)	115	%	70-130		1		09/23/10 20:10	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		09/23/10 20:10	2037-26-5	

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(704)875-9092

QUALITY CONTROL DATA

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

QC Batch: MSV/12351 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 9278045001, 9278045002, 9278045003, 9278045004

METHOD BLANK: 501805 Matrix: Water
Associated Lab Samples: 9278045001, 9278045002, 9278045003, 9278045004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	09/23/10 11:31	
Ethylbenzene	ug/L	ND	5.0	09/23/10 11:31	
m&p-Xylene	ug/L	ND	10.0	09/23/10 11:31	
Methyl-tert-butyl ether	ug/L	ND	5.0	09/23/10 11:31	
Naphthalene	ug/L	ND	5.0	09/23/10 11:31	
o-Xylene	ug/L	ND	5.0	09/23/10 11:31	
Toluene	ug/L	ND	5.0	09/23/10 11:31	
1,2-Dichloroethane-d4 (S)	%	113	70-130	09/23/10 11:31	
4-Bromofluorobenzene (S)	%	99	70-130	09/23/10 11:31	
Dibromofluoromethane (S)	%	113	70-130	09/23/10 11:31	
Toluene-d8 (S)	%	101	70-130	09/23/10 11:31	

LABORATORY CONTROL SAMPLE: 501806

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	48.4	97	70-130	
Ethylbenzene	ug/L	50	45.5	91	70-130	
m&p-Xylene	ug/L	100	92.6	93	70-130	
Methyl-tert-butyl ether	ug/L	50	44.9	90	70-130	
Naphthalene	ug/L	50	43.7	87	70-130	
o-Xylene	ug/L	50	46.3	93	70-130	
Toluene	ug/L	50	49.4	99	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			108	70-130	
Dibromofluoromethane (S)	%			103	70-130	
Toluene-d8 (S)	%			97	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 501807 501808

Parameter	Units	9277655010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	50	50	33.1	37.8	66	76	70-130	13	30	M0
Ethylbenzene	ug/L	ND	50	50	30.4	34.9	61	70	70-130	14	30	M0
m&p-Xylene	ug/L	ND	100	100	61.4	70.4	61	70	70-130	14	30	M0
Methyl-tert-butyl ether	ug/L	ND	50	50	31.4	38.4	63	77	70-130	20	30	M0
Naphthalene	ug/L	ND	50	50	26.4	34.6	53	69	70-130	27	30	M0
o-Xylene	ug/L	ND	50	50	30.5	33.8	61	68	70-130	10	30	M0
Toluene	ug/L	ND	50	50	33.7	38.6	67	77	70-130	13	30	M0
1,2-Dichloroethane-d4 (S)	%						112	107	70-130			
4-Bromofluorobenzene (S)	%						105	109	70-130			

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 501807 501808

Parameter	Units	9277655010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromofluoromethane (S)	%						109	111	70-130			
Toluene-d8 (S)	%						100	98	70-130			

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Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGE FIELD FUEL + CONV 3
Pace Project No.: 9278045

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9278045001	**FS-28**	EPA 8260	MSV/12351		
9278045002	**FS-29**	EPA 8260	MSV/12351		
9278045003	**FS-30**	EPA 8260	MSV/12351		
9278045004	**FS-31**	EPA 8260	MSV/12351		

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1409454

Section A Required Client Information:

Company: Environmental Compliance Services
Address: 13504 S. point Blvd, Unit F
Charlotte, NC 28273
Email To: RHutchins@ecsconsult.com
Phone: 704 583 2711 Fax:
Requested Due Date/TAT: STD

Section B Required Project Information:

Report To: Randall Hutchins
Copy To:
Purchase Order No.:
Project Name: Edgefield Fuel & Conv. 3
Project Number: 14-21651

Section C Invoice Information:

Attention: Christina White
Company Name: ECS
Address: 588 Silver St Agawam MA
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 2071-3

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: BTEX, M, N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	ES-28	WT	G			9/20	14:40		3				X					X	X		9278045 001
2	ES-29	↓	↓			↓	15:05		↓												002
3	ES-30						15:50														003
4	ES-31						16:15														004
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Report J values	Ryan Byas / ECS	9/20	18:55	Justin Pettit / pace CH	9-21-10	12:22				
	Justin Pettit / pace CH	9-21-10	15:14	Justin Pettit / pace CH	9-21-10	15:14	2.8	Y	n	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas
SIGNATURE of SAMPLER: Ryan Byas
DATE Signed (MM/DD/YY): 09/20/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Sample Condition Upon Receipt

Pace Analytical

Client Name: Env. Compliance Services Project # 9278045

Where Received: ☑ Huntersville ☐ Asheville ☐ Eden

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun : T809 **Type of Ice:** (Wet) Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor: Add / Subtract _____0_____C

Corrected Cooler Temp.: 2.8 C **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C **Comments:**

Date and Initials of person examining contents: JMM 9-21-10

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

CURF Review: KLB **Date:** 9/21/10 **SRF Review:** KLB **Date:** 9/21/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

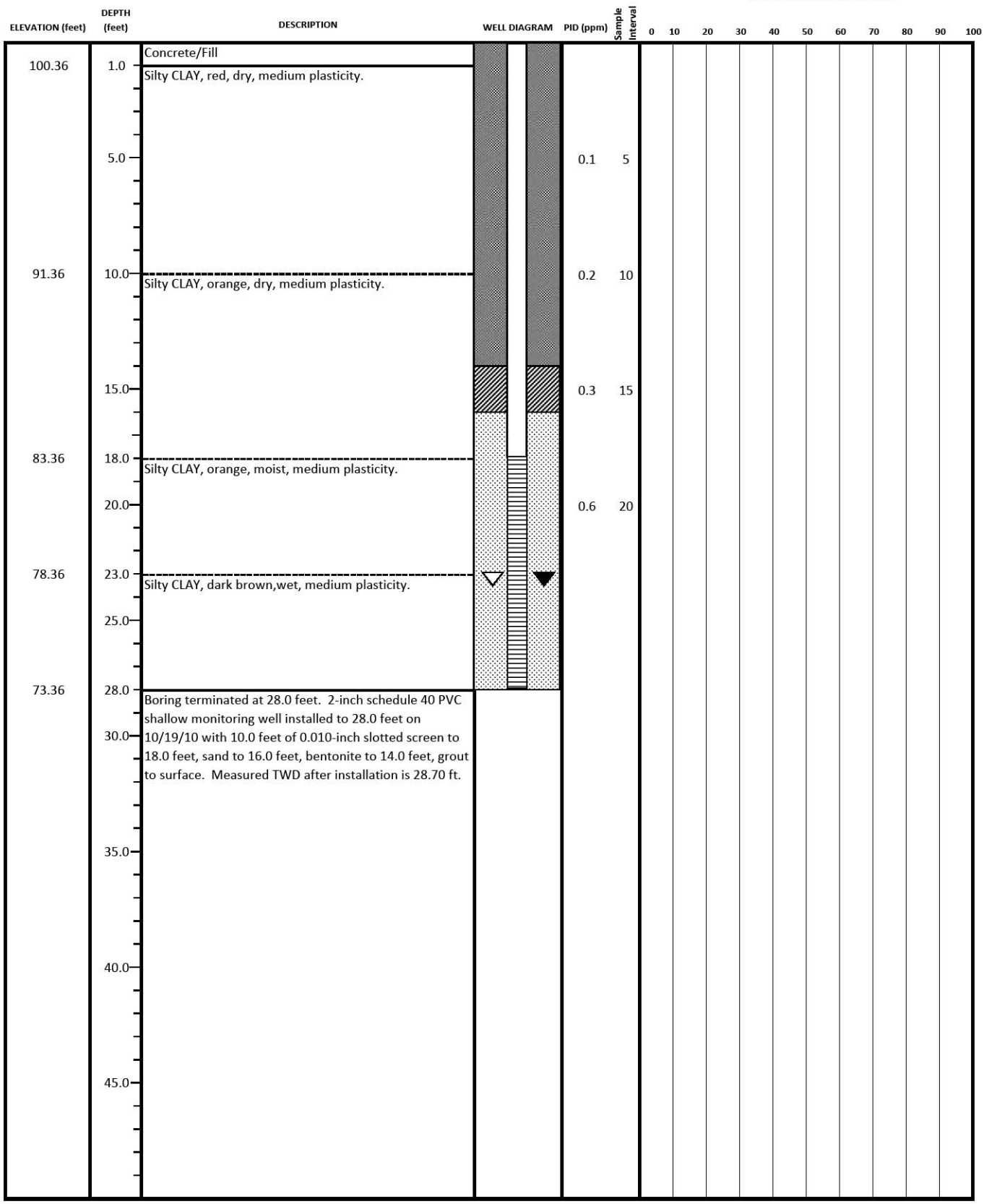
APPENDIX C

Boring Logs

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 101.36 feet
Height of Riser: 101.09 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 10/20/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

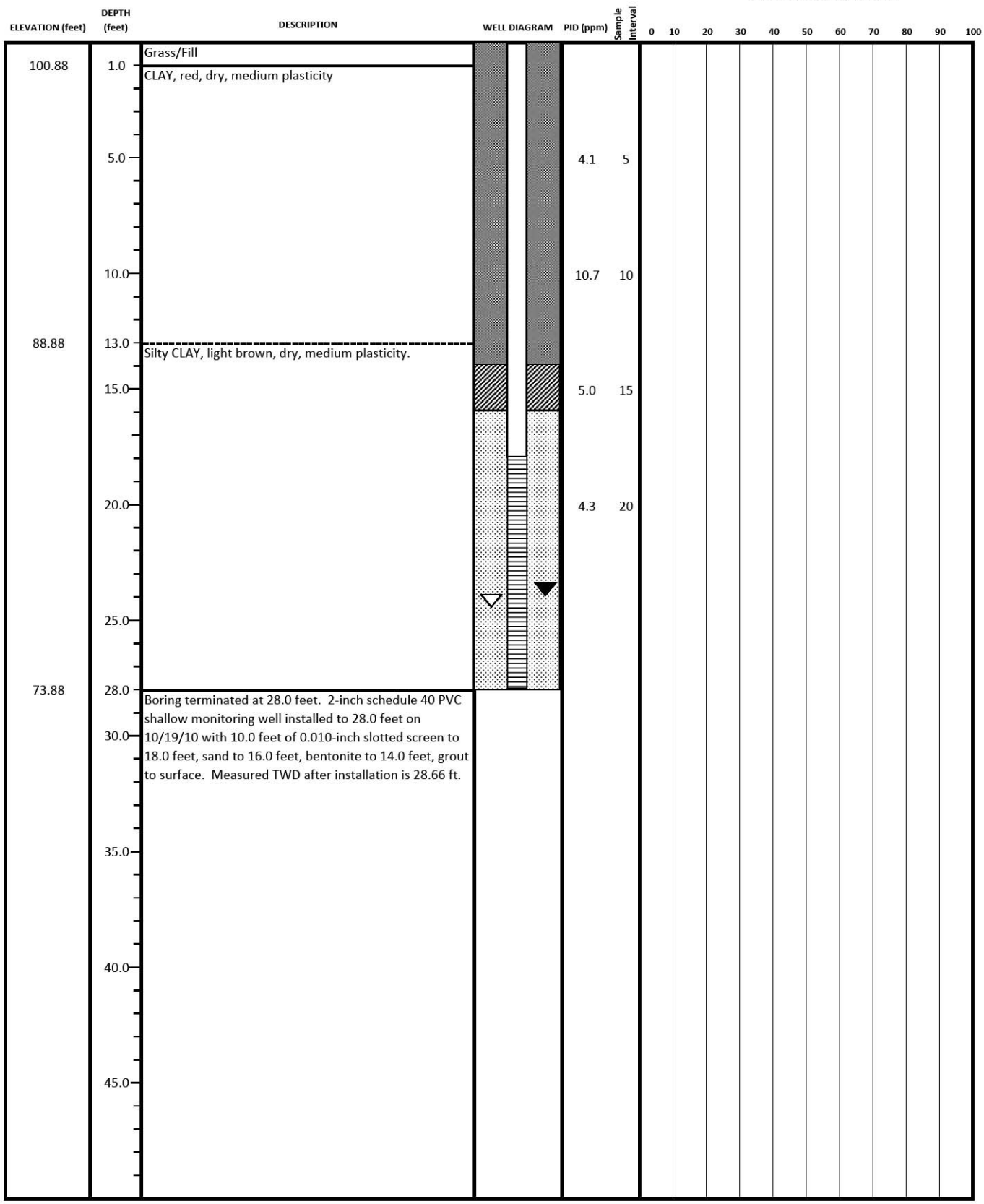
BORING NUMBER: MW-17
DATE STARTED: 10/19/2010
DATE COMPLETED: 10/20/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 101.88 feet
Height of Riser: 101.51 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 10/20/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

BORING NUMBER: MW-18
DATE STARTED: 10/19/2010
DATE COMPLETED: 10/20/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.24 feet
Height of Riser: 100.01 feet

ELEVATION (feet)	DEPTH (feet)	DESCRIPTION	WELL DIAGRAM	PID (ppm)	Sample Interval	PENETRATION - BLOWS PER FOOT (0 10 20 30 40 50 60 70 80 90 100)
99.24	1.0	Concrete/Fill				
		Silty CLAY, red, moist, medium plasticity, petroleum odor.				
	5.0			11.4	5	
91.24	9.0					
	10.0	SILT, brown, dry, petroleum odor.		79.7	10	
	15.0			70.6	15	
81.24	19.0					
	20.0	SILT, dark brown, moist, petroleum odor.		167	20	
75.24	25.0	Silty CLAY, dark grey, wet, strong petroleum odor, medium plasticity.				
72.24	28.0	Boring terminated at 28.0 feet. 2-inch schedule 40 PVC shallow monitoring well installed to 28.0 feet on 10/19/10 with 10.0 feet of 0.010-inch slotted screen to 18.0 feet, sand to 16.0 feet, bentonite to 14.0 feet, grout to surface.				
	30.0					
	35.0					
	40.0					
	45.0					

REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 10/20/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

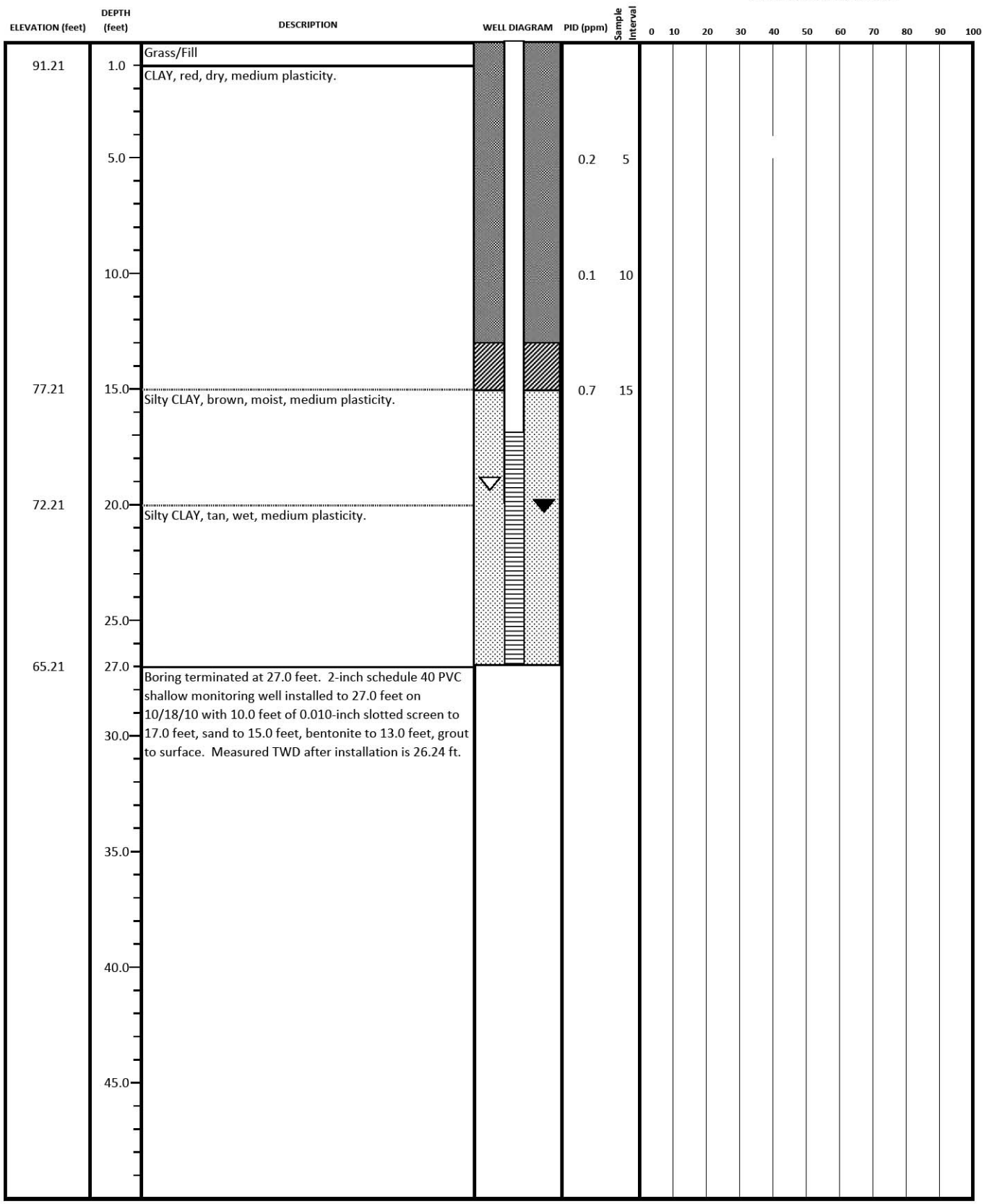
BORING NUMBER: MW-19
DATE STARTED: 10/19/2010
DATE COMPLETED: 10/20/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 92.21 feet
Height of Riser: 91.80 feet



ELEVATION (feet)	DEPTH (feet)	DESCRIPTION	PID (ppm)	Sample Interval
91.21	1.0	Grass/Fill		
		CLAY, red, dry, medium plasticity.		
	5.0		0.2	5
	10.0		0.1	10
77.21	15.0	Silty CLAY, brown, moist, medium plasticity.	0.7	15
72.21	20.0	Silty CLAY, tan, wet, medium plasticity.		
	25.0			
65.21	27.0	Boring terminated at 27.0 feet. 2-inch schedule 40 PVC shallow monitoring well installed to 27.0 feet on 10/18/10 with 10.0 feet of 0.010-inch slotted screen to 17.0 feet, sand to 15.0 feet, bentonite to 13.0 feet, grout to surface. Measured TWD after installation is 26.24 ft.		
	30.0			
	35.0			
	40.0			
	45.0			

REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 10/19/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

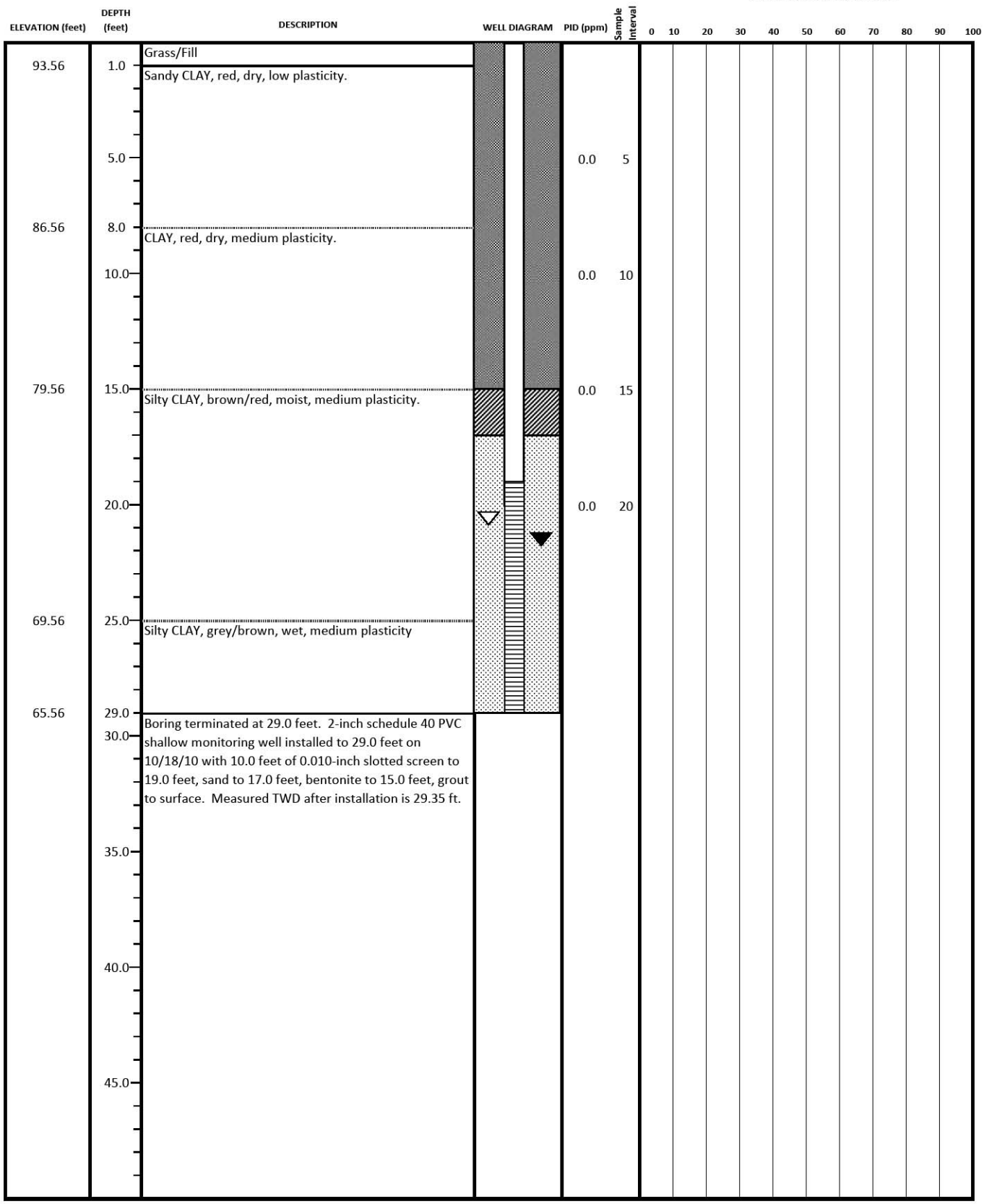
BORING NUMBER: MW-20
DATE STARTED: 10/18/2010
DATE COMPLETED: 10/19/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 94.56 feet
Height of Riser: 94.30 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 10/19/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

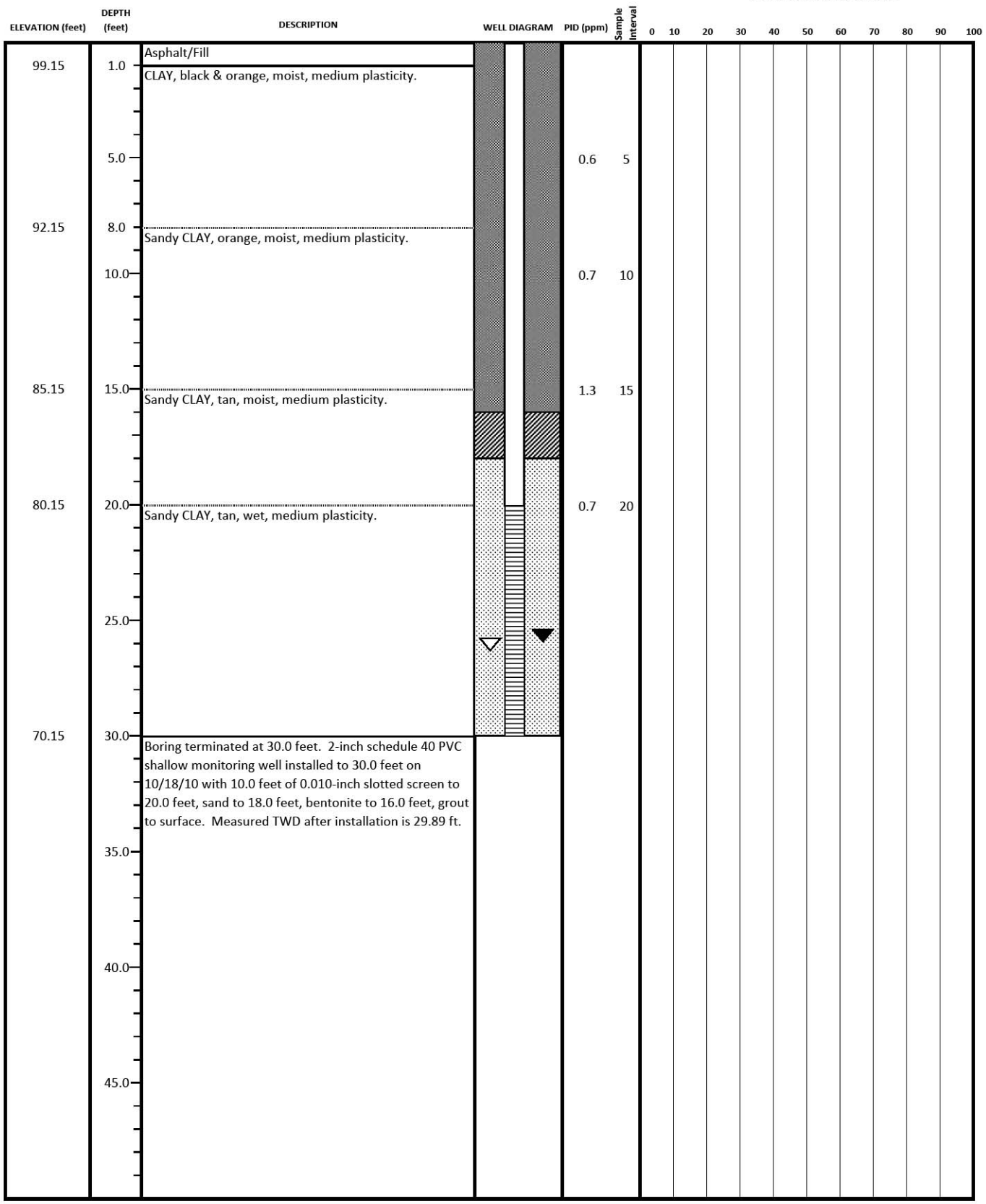
BORING NUMBER: MW-21
DATE STARTED: 10/18/2010
DATE COMPLETED: 10/19/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.15 feet
Height of Riser: 99.82 feet



ELEVATION (feet)	DEPTH (feet)	DESCRIPTION	PID (ppm)	Sample Interval
99.15	1.0	Asphalt/Fill		
		CLAY, black & orange, moist, medium plasticity.		
	5.0		0.6	5
92.15	8.0	Sandy CLAY, orange, moist, medium plasticity.		
	10.0		0.7	10
85.15	15.0	Sandy CLAY, tan, moist, medium plasticity.	1.3	15
80.15	20.0	Sandy CLAY, tan, wet, medium plasticity.	0.7	20
	25.0			
70.15	30.0	Boring terminated at 30.0 feet. 2-inch schedule 40 PVC shallow monitoring well installed to 30.0 feet on 10/18/10 with 10.0 feet of 0.010-inch slotted screen to 20.0 feet, sand to 18.0 feet, bentonite to 16.0 feet, grout to surface. Measured TWD after installation is 29.89 ft.		
	35.0			
	40.0			
	45.0			

REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 10/19/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

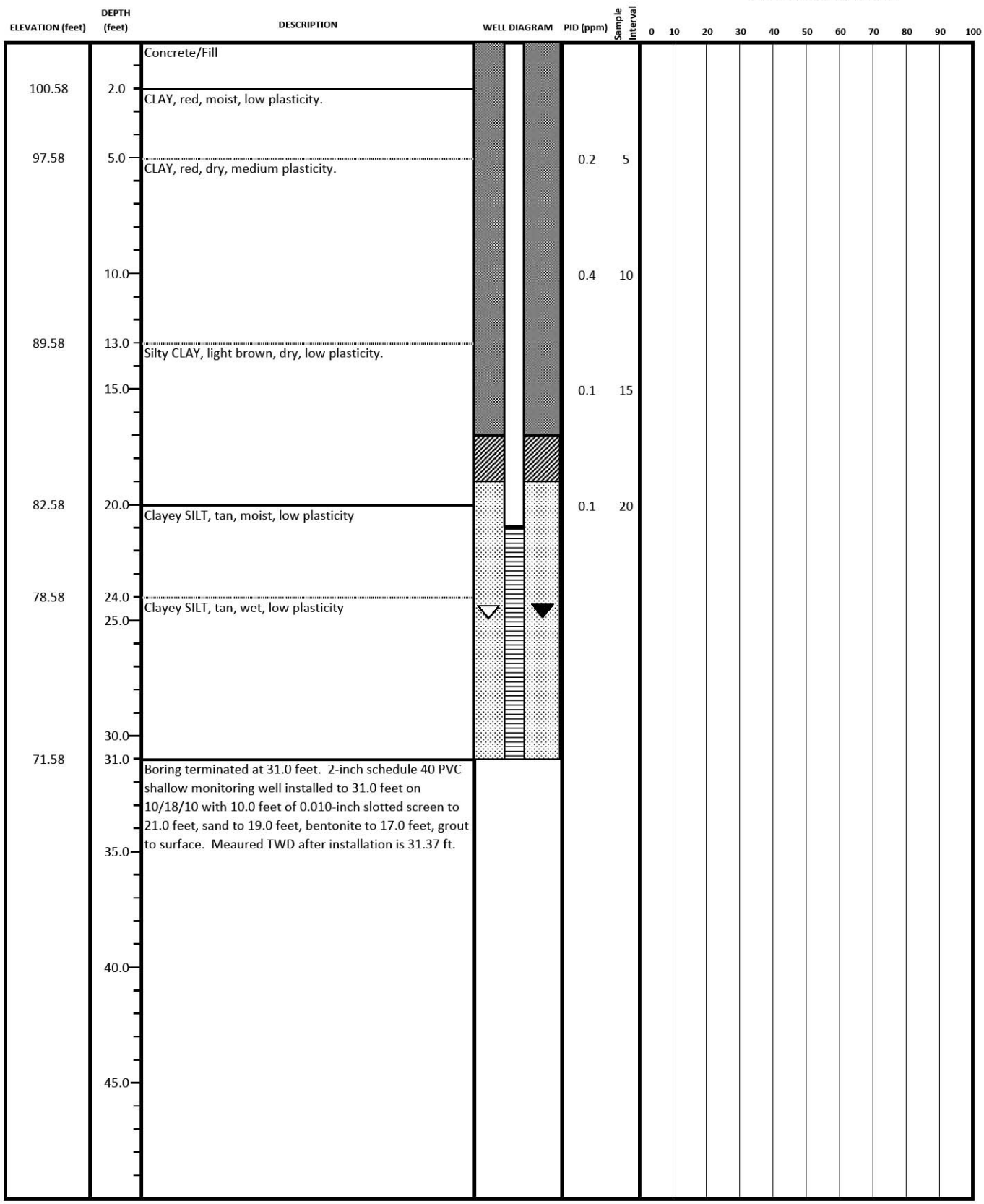
BORING NUMBER: MW-22
DATE STARTED: 10/18/2010
DATE COMPLETED: 10/19/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 102.58 feet
Height of Riser: 102.29 feet



REMARKS: Drilled with Geoprobe 7822 using 3.25" ID hollow stem augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 10/19/10.
Geologic Exploration - GEX

DRILLED BY: GEX - Johnny Burr
LOGGED BY: ECS - R. Byas

BORING NUMBER: MW-23
DATE STARTED: 10/18/2010
DATE COMPLETED: 10/19/2010
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

APPENDIX D

Well Construction Records

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE. PROTECT. PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TAN CLAY	10.0	10.0
TAN/ORANGE CLAY	8.0	18.0
TAN SILTY CLAY	10.0	28.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-17 BENTONITE SEAL FROM 12.0 TO 16.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/18/10
28.0 ft. Date Completed: 10/20/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 18.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 18.0 ft. and 28.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 20.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 16.0 ft. to 28.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Johnny Burr Well Driller Date: 10/28/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TAN CLAY	7.0	7.0
TAN/ORANGE CLAY	11.0	18.0
TAN SILTY CLAY	10.0	28.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-18 BENTONITE SEAL FROM 12.0 TO 16.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/18/10
28.0 ft. Date Completed: 10/20/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 18.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 18.0 ft. and 28.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 20.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 16.0 ft. to 28.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Johnny Burr Date: 10/28/10
Well Driller

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TAN SILTY CLAY	7.0	7.0
TAN/ORANGE CLAY	11.0	18.0
TAN SILTY CLAY	10.0	28.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-19 BENTONITE SEAL FROM 12.0 TO 16.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/18/10
28.0 ft. Date Completed: 10/20/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 18.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 18.0 ft. and 28.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 20.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 16.0 ft. to 28.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Johnny Burr (Well Driller) Date: 10/28/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TAN CLAY	5.0	5.0
TAN/ORANGE CLAY	13.0	18.0
TAN SILTY CLAY	8.0	26.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-20 BENTONITE SEAL FROM 10.0 TO 14.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/18/10
26.0 ft. Date Completed: 10/20/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 16.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 16.0 ft. and 26.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 14.0 ft. to 26.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 10.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Johnny Burr Date: 10/28/10
Well Driller

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

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Bureau of Water
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Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TAN CLAY	7.0	7.0
TAN/ORANGE CLAY	13.0	20.0
TAN SILTY CLAY	9.0	29.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-21 BENTONITE SEAL FROM 12.0 TO 16.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/18/10
29.0 ft. Date Completed: 10/20/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 18.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 11.0 FEET
Set Between: 18.0 ft. and 29.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 20.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 16.0 ft. to 29.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 12.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Signed: Johnny Burr Date: 10/28/10
Well Driller

If D Level Driller, provide supervising driller's name:
MARK GETTYS

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DHEC — PROMOTE. PROTECT. PROSPER

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Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TAN CLAY	8.0	8.0
TAN/ORANGE CLAY	7.0	15.0
TAN SILTY CLAY	15.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-22 BENTONITE SEAL FROM 14.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30.0 ft. Date Started: 10/18/10 Date Completed: 10/20/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 14.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Johnny Burr (Well Driller) Date: 10/28/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

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Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TAN CLAY	7.0	7.0
TAN/ORANGE CLAY	9.0	16.0
TAN SILTY CLAY	15.0	31.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-23 BENTONITE SEAL FROM 15.0 TO 19.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/18/10
31.0 ft. Date Completed: 10/20/10

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 21.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 21.0 ft. and 31.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 19.0 ft. to 31.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 15.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JOHNNY BURR **CERT. NO.:** 01740
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☐ D ☑ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Johnny Burr Well Driller Date: 10/28/10

If D Level Driller, provide supervising driller's name:
MARK GETTYS

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

APPENDIX E

Laboratory Report – Groundwater and Soil Samples – October 2010

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

November 02, 2010

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on October 22, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Herring

kevin.herring@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/LELAP Certification #: 04034
New Jersey Certification #: NC012
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
Pennsylvania Certification #: 68-00784
South Carolina Certification #: 99006001
South Carolina Drinking Water Cert. #: 99006003
Virginia Certification #: 00213
Connecticut Certification #: PH-0104
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Louisiana DHH Drinking Water # LA 100031

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SAMPLE SUMMARY

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Lab ID	Sample ID	Matrix	Date Collected	Date Received
9280455001	MW-3	Water	10/21/10 09:00	10/22/10 15:50
9280455002	MW-4	Water	10/21/10 09:25	10/22/10 15:50
9280455003	MW-6	Water	10/21/10 09:10	10/22/10 15:50
9280455004	MW-7	Water	10/20/10 14:20	10/22/10 15:50
9280455005	MW-8	Water	10/20/10 14:05	10/22/10 15:50
9280455006	MW-9	Water	10/20/10 17:00	10/22/10 15:50
9280455007	MW-10	Water	10/20/10 16:45	10/22/10 15:50
9280455008	MW-11	Water	10/20/10 16:00	10/22/10 15:50
9280455009	MW-12	Water	10/20/10 16:20	10/22/10 15:50
9280455010	MW-13	Water	10/20/10 15:15	10/22/10 15:50
9280455011	MW-14	Water	10/20/10 15:00	10/22/10 15:50
9280455012	MW-15	Water	10/20/10 14:45	10/22/10 15:50
9280455013	MW-16	Water	10/20/10 14:35	10/22/10 15:50
9280455014	MW-17	Water	10/21/10 09:40	10/22/10 15:50
9280455015	MW-18	Water	10/21/10 08:45	10/22/10 15:50
9280455016	MW-2D	Water	10/21/10 08:55	10/22/10 15:50
9280455017	MW-21	Water	10/21/10 08:45	10/22/10 15:50
9280455018	MW-22	Water	10/21/10 09:20	10/22/10 15:50
9280455019	MW-23	Water	10/21/10 09:10	10/22/10 15:50
9280455020	COMPOSITE SOIL	Solid	10/19/10 15:10	10/22/10 15:50

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SAMPLE ANALYTE COUNT

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9280455001	MW-3	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455002	MW-4	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455003	MW-6	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455004	MW-7	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455005	MW-8	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455006	MW-9	EPA 8011	RES	2	PASI-C
		EPA 8260	KJM	11	PASI-C
9280455007	MW-10	EPA 8011	RES	2	PASI-C
		EPA 8260	KJM	11	PASI-C
9280455008	MW-11	EPA 8011	RES	2	PASI-C
		EPA 8260	BLC	11	PASI-C
9280455009	MW-12	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455010	MW-13	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455011	MW-14	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455012	MW-15	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455013	MW-16	EPA 8011	RES	2	PASI-C
		EPA 8260	MCK	11	PASI-C
9280455014	MW-17	EPA 8011	RES	2	PASI-C
		EPA 8260	BLC, MCK	20	PASI-C
9280455015	MW-18	EPA 8011	RES	2	PASI-C
		EPA 8260	BLC	20	PASI-C
9280455016	MW-2D	EPA 8011	RES	2	PASI-C
		EPA 8260	BLC	20	PASI-C
9280455017	MW-21	EPA 8011	RES	2	PASI-C
		EPA 8260	BLC	20	PASI-C
9280455018	MW-22	EPA 8011	RES	2	PASI-C
		EPA 8260	BLC	20	PASI-C
9280455019	MW-23	EPA 8011	RES	2	PASI-C

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SAMPLE ANALYTE COUNT

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260	BLC	20	PASI-C
9280455020	**COMPOSITE SOIL**	EPA 8260	DLK	11	PASI-C
		ASTM D2974-87	KDF	1	PASI-C

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-3 **Lab ID: 9280455001** Collected: 10/21/10 09:00 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:16	10/27/10 02:59	106-93-4	
1-Chloro-2-bromopropane (S)	104	%	60-140		1	10/26/10 14:16	10/27/10 02:59	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**7.5**	ug/L	5.0	1.2	1		10/28/10 04:03	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 04:03	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 04:03	1634-04-4	
Naphthalene	**3.6J**	ug/L	5.0	2.9	1		10/28/10 04:03	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/28/10 04:03	108-88-3	
m&p-Xylene	**3.0J**	ug/L	10.0	2.7	1		10/28/10 04:03	179601-23-1	
o-Xylene	**1.7J**	ug/L	5.0	1.7	1		10/28/10 04:03	95-47-6	
4-Bromofluorobenzene (S)	96	%	70-130		1		10/28/10 04:03	460-00-4	
Dibromofluoromethane (S)	98	%	70-130		1		10/28/10 04:03	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		10/28/10 04:03	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		10/28/10 04:03	2037-26-5	

Sample: MW-4 **Lab ID: 9280455002** Collected: 10/21/10 09:25 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:16	10/27/10 03:20	106-93-4	
1-Chloro-2-bromopropane (S)	106	%	60-140		1	10/26/10 14:16	10/27/10 03:20	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**1360**	ug/L	250	60.0	50		10/29/10 10:04	71-43-2	
Ethylbenzene	**108**	ug/L	10.0	2.2	2		10/28/10 08:42	100-41-4	
Methyl-tert-butyl ether	**630**	ug/L	250	100	50		10/29/10 10:04	1634-04-4	
Naphthalene	**15.2**	ug/L	10.0	5.8	2		10/28/10 08:42	91-20-3	
Toluene	**87.5**	ug/L	10.0	3.6	2		10/28/10 08:42	108-88-3	
m&p-Xylene	**108**	ug/L	20.0	5.4	2		10/28/10 08:42	179601-23-1	
o-Xylene	**13.6**	ug/L	10.0	3.4	2		10/28/10 08:42	95-47-6	
4-Bromofluorobenzene (S)	98	%	70-130		2		10/28/10 08:42	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		2		10/28/10 08:42	1868-53-7	
1,2-Dichloroethane-d4 (S)	108	%	70-130		2		10/28/10 08:42	17060-07-0	
Toluene-d8 (S)	100	%	70-130		2		10/28/10 08:42	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-6 **Lab ID: 9280455003** Collected: 10/21/10 09:10 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:16	10/27/10 03:40	106-93-4	
1-Chloro-2-bromopropane (S)	122	%	60-140		1	10/26/10 14:16	10/27/10 03:40	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**1830**	ug/L	250	60.0	50		10/29/10 09:36	71-43-2	
Ethylbenzene	**110**	ug/L	10.0	2.2	2		10/28/10 08:14	100-41-4	
Methyl-tert-butyl ether	**186**	ug/L	10.0	4.0	2		10/28/10 08:14	1634-04-4	
Naphthalene	**9.1J**	ug/L	10.0	5.8	2		10/28/10 08:14	91-20-3	
Toluene	**1140**	ug/L	250	90.0	50		10/29/10 09:36	108-88-3	
m&p-Xylene	**404**	ug/L	20.0	5.4	2		10/28/10 08:14	179601-23-1	
o-Xylene	**273**	ug/L	10.0	3.4	2		10/28/10 08:14	95-47-6	
4-Bromofluorobenzene (S)	103	%	70-130		2		10/28/10 08:14	460-00-4	
Dibromofluoromethane (S)	105	%	70-130		2		10/28/10 08:14	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	70-130		2		10/28/10 08:14	17060-07-0	
Toluene-d8 (S)	103	%	70-130		2		10/28/10 08:14	2037-26-5	

Sample: MW-7 **Lab ID: 9280455004** Collected: 10/20/10 14:20 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:16	10/27/10 04:00	106-93-4	
1-Chloro-2-bromopropane (S)	97	%	60-140		1	10/26/10 14:16	10/27/10 04:00	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 04:28	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 04:28	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 04:28	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 04:28	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/28/10 04:28	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 04:28	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 04:28	95-47-6	
4-Bromofluorobenzene (S)	99	%	70-130		1		10/28/10 04:28	460-00-4	
Dibromofluoromethane (S)	94	%	70-130		1		10/28/10 04:28	1868-53-7	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		10/28/10 04:28	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		10/28/10 04:28	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-8 **Lab ID: 9280455005** Collected: 10/20/10 14:05 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:16	10/27/10 04:20	106-93-4	
1-Chloro-2-bromopropane (S)	101	%	60-140		1	10/26/10 14:16	10/27/10 04:20	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 04:54	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 04:54	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 04:54	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 04:54	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/28/10 04:54	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 04:54	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 04:54	95-47-6	
4-Bromofluorobenzene (S)	99	%	70-130		1		10/28/10 04:54	460-00-4	
Dibromofluoromethane (S)	102	%	70-130		1		10/28/10 04:54	1868-53-7	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		10/28/10 04:54	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		10/28/10 04:54	2037-26-5	

Sample: MW-9 **Lab ID: 9280455006** Collected: 10/20/10 17:00 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:17	10/27/10 04:40	106-93-4	
1-Chloro-2-bromopropane (S)	101	%	60-140		1	10/26/10 14:17	10/27/10 04:40	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/27/10 20:28	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/27/10 20:28	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/27/10 20:28	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/27/10 20:28	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/27/10 20:28	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/27/10 20:28	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/27/10 20:28	95-47-6	
4-Bromofluorobenzene (S)	95	%	70-130		1		10/27/10 20:28	460-00-4	
Dibromofluoromethane (S)	95	%	70-130		1		10/27/10 20:28	1868-53-7	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		10/27/10 20:28	17060-07-0	
Toluene-d8 (S)	96	%	70-130		1		10/27/10 20:28	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-10 **Lab ID: 9280455007** Collected: 10/20/10 16:45 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:17	10/27/10 05:01	106-93-4	
1-Chloro-2-bromopropane (S)	120	%	60-140		1	10/26/10 14:17	10/27/10 05:01	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/27/10 20:46	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/27/10 20:46	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/27/10 20:46	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/27/10 20:46	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/27/10 20:46	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/27/10 20:46	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/27/10 20:46	95-47-6	
4-Bromofluorobenzene (S)	95	%	70-130		1		10/27/10 20:46	460-00-4	
Dibromofluoromethane (S)	93	%	70-130		1		10/27/10 20:46	1868-53-7	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		10/27/10 20:46	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		10/27/10 20:46	2037-26-5	

Sample: MW-11 **Lab ID: 9280455008** Collected: 10/20/10 16:00 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:17	10/27/10 05:21	106-93-4	
1-Chloro-2-bromopropane (S)	101	%	60-140		1	10/26/10 14:17	10/27/10 05:21	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 19:31	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 19:31	100-41-4	
Methyl-tert-butyl ether	**4.4J**	ug/L	5.0	2.0	1		10/28/10 19:31	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 19:31	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/28/10 19:31	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 19:31	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 19:31	95-47-6	
4-Bromofluorobenzene (S)	100	%	70-130		1		10/28/10 19:31	460-00-4	
Dibromofluoromethane (S)	91	%	70-130		1		10/28/10 19:31	1868-53-7	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		10/28/10 19:31	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		10/28/10 19:31	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-12 **Lab ID: 9280455009** Collected: 10/20/10 16:20 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:17	10/27/10 05:41	106-93-4	
1-Chloro-2-bromopropane (S)	103	%	60-140		1	10/26/10 14:17	10/27/10 05:41	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**58.0**	ug/L	5.0	1.2	1		10/28/10 05:19	71-43-2	
Ethylbenzene	**8.5**	ug/L	5.0	1.1	1		10/28/10 05:19	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 05:19	1634-04-4	
Naphthalene	**14.6**	ug/L	5.0	2.9	1		10/28/10 05:19	91-20-3	
Toluene	**2.6J**	ug/L	5.0	1.8	1		10/28/10 05:19	108-88-3	
m&p-Xylene	**16.1**	ug/L	10.0	2.7	1		10/28/10 05:19	179601-23-1	
o-Xylene	**3.4J**	ug/L	5.0	1.7	1		10/28/10 05:19	95-47-6	
4-Bromofluorobenzene (S)	101	%	70-130		1		10/28/10 05:19	460-00-4	
Dibromofluoromethane (S)	98	%	70-130		1		10/28/10 05:19	1868-53-7	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		10/28/10 05:19	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		10/28/10 05:19	2037-26-5	

Sample: MW-13 **Lab ID: 9280455010** Collected: 10/20/10 15:15 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:17	10/27/10 06:01	106-93-4	
1-Chloro-2-bromopropane (S)	101	%	60-140		1	10/26/10 14:17	10/27/10 06:01	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 05:45	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 05:45	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 05:45	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 05:45	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/28/10 05:45	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 05:45	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 05:45	95-47-6	
4-Bromofluorobenzene (S)	97	%	70-130		1		10/28/10 05:45	460-00-4	
Dibromofluoromethane (S)	96	%	70-130		1		10/28/10 05:45	1868-53-7	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		10/28/10 05:45	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		10/28/10 05:45	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-14 **Lab ID: 9280455011** Collected: 10/20/10 15:00 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:17	10/27/10 06:21	106-93-4	
1-Chloro-2-bromopropane (S)	100	%	60-140		1	10/26/10 14:17	10/27/10 06:21	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 06:26	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 06:26	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 06:26	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 06:26	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/28/10 06:26	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 06:26	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 06:26	95-47-6	
4-Bromofluorobenzene (S)	101	%	70-130		1		10/28/10 06:26	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		1		10/28/10 06:26	1868-53-7	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		10/28/10 06:26	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		10/28/10 06:26	2037-26-5	

Sample: MW-15 **Lab ID: 9280455012** Collected: 10/20/10 14:45 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:17	10/27/10 06:41	106-93-4	
1-Chloro-2-bromopropane (S)	103	%	60-140		1	10/26/10 14:17	10/27/10 06:41	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 06:52	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 06:52	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 06:52	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 06:52	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/28/10 06:52	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 06:52	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 06:52	95-47-6	
4-Bromofluorobenzene (S)	94	%	70-130		1		10/28/10 06:52	460-00-4	
Dibromofluoromethane (S)	97	%	70-130		1		10/28/10 06:52	1868-53-7	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		10/28/10 06:52	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		10/28/10 06:52	2037-26-5	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-16 **Lab ID: 9280455013** Collected: 10/20/10 14:35 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:18	10/27/10 07:02	106-93-4	
1-Chloro-2-bromopropane (S)	102	%	60-140		1	10/26/10 14:18	10/27/10 07:02	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 07:17	71-43-2	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 07:17	100-41-4	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 07:17	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 07:17	91-20-3	
Toluene	ND	ug/L	5.0	1.8	1		10/28/10 07:17	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 07:17	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 07:17	95-47-6	
4-Bromofluorobenzene (S)	95	%	70-130		1		10/28/10 07:17	460-00-4	
Dibromofluoromethane (S)	102	%	70-130		1		10/28/10 07:17	1868-53-7	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		10/28/10 07:17	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		10/28/10 07:17	2037-26-5	

Sample: MW-17 **Lab ID: 9280455014** Collected: 10/21/10 09:40 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.69**	ug/L	0.020	0.020	1	10/26/10 14:18	10/27/10 07:22	106-93-4	
1-Chloro-2-bromopropane (S)	107	%	60-140		1	10/26/10 14:18	10/27/10 07:22	301-79-56	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**13600**	ug/L	10000	6200	100		10/30/10 04:44	75-85-4	
tert-Amylmethyl ether	**533J**	ug/L	1000	450	100		10/30/10 04:44	994-05-8	
Benzene	**15900**	ug/L	500	120	100		10/30/10 04:44	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		10/28/10 00:50	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		10/28/10 00:50	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		10/28/10 00:50	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		10/28/10 00:50	107-06-2	
Diisopropyl ether	**24.5**	ug/L	5.0	2.7	1		10/28/10 00:50	108-20-3	
Ethanol	ND	ug/L	200	170	1		10/28/10 00:50	64-17-5	
Ethylbenzene	**2820**	ug/L	500	110	100		10/30/10 04:44	100-41-4	
Ethyl-tert-butyl ether	**8.5J**	ug/L	10.0	4.6	1		10/28/10 00:50	637-92-3	
Methyl-tert-butyl ether	**564**	ug/L	500	200	100		10/30/10 04:44	1634-04-4	
Naphthalene	**623**	ug/L	500	290	100		10/30/10 04:44	91-20-3	
Toluene	**31400**	ug/L	2500	900	500		10/31/10 14:55	108-88-3	
m&p-Xylene	**8740**	ug/L	1000	270	100		10/30/10 04:44	179601-23-1	
o-Xylene	**4230**	ug/L	500	170	100		10/30/10 04:44	95-47-6	
Dibromofluoromethane (S)	88	%	70-130		1		10/28/10 00:50	1868-53-7	
Toluene-d8 (S)	97	%	70-130		1		10/28/10 00:50	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		10/28/10 00:50	460-00-4	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-17 **Lab ID: 9280455014** Collected: 10/21/10 09:40 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		10/28/10 00:50	17060-07-0	

Sample: MW-18 **Lab ID: 9280455015** Collected: 10/21/10 08:45 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:18	10/27/10 07:42	106-93-4	
1-Chloro-2-bromopropane (S)	103	%	60-140		1	10/26/10 14:18	10/27/10 07:42	301-79-56	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		10/28/10 16:46	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		10/28/10 16:46	994-05-8	
Benzene	**26.8**	ug/L	5.0	1.2	1		10/28/10 16:46	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		10/28/10 16:46	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		10/28/10 16:46	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		10/28/10 16:46	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		10/28/10 16:46	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		10/28/10 16:46	108-20-3	
Ethanol	ND	ug/L	200	170	1		10/28/10 16:46	64-17-5	
Ethylbenzene	**9.3**	ug/L	5.0	1.1	1		10/28/10 16:46	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		10/28/10 16:46	637-92-3	
Methyl-tert-butyl ether	**2.8J**	ug/L	5.0	2.0	1		10/28/10 16:46	1634-04-4	
Naphthalene	**3.1J**	ug/L	5.0	2.9	1		10/28/10 16:46	91-20-3	
Toluene	**101**	ug/L	5.0	1.8	1		10/28/10 16:46	108-88-3	
m&p-Xylene	**29.1**	ug/L	10.0	2.7	1		10/28/10 16:46	179601-23-1	
o-Xylene	**13.6**	ug/L	5.0	1.7	1		10/28/10 16:46	95-47-6	
Dibromofluoromethane (S)	93	%	70-130		1		10/28/10 16:46	1868-53-7	
Toluene-d8 (S)	102	%	70-130		1		10/28/10 16:46	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		10/28/10 16:46	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		10/28/10 16:46	17060-07-0	

Sample: MW-2D **Lab ID: 9280455016** Collected: 10/21/10 08:55 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/26/10 14:18	10/27/10 08:02	106-93-4	
1-Chloro-2-bromopropane (S)	100	%	60-140		1	10/26/10 14:18	10/27/10 08:02	301-79-56	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		10/28/10 01:44	75-85-4	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-2D **Lab ID: 9280455016** Collected: 10/21/10 08:55 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		10/28/10 01:44	994-05-8	
Benzene	**5.6**	ug/L	5.0	1.2	1		10/28/10 01:44	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		10/28/10 01:44	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		10/28/10 01:44	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		10/28/10 01:44	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		10/28/10 01:44	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		10/28/10 01:44	108-20-3	
Ethanol	ND	ug/L	200	170	1		10/28/10 01:44	64-17-5	
Ethylbenzene	**1.1J**	ug/L	5.0	1.1	1		10/28/10 01:44	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		10/28/10 01:44	637-92-3	
Methyl-tert-butyl ether	**9.5**	ug/L	5.0	2.0	1		10/28/10 01:44	1634-04-4	
Naphthalene	**2.9J**	ug/L	5.0	2.9	1		10/28/10 01:44	91-20-3	
Toluene	**7.0**	ug/L	5.0	1.8	1		10/28/10 01:44	108-88-3	
m&p-Xylene	**7.0J**	ug/L	10.0	2.7	1		10/28/10 01:44	179601-23-1	
o-Xylene	**2.1J**	ug/L	5.0	1.7	1		10/28/10 01:44	95-47-6	
Dibromofluoromethane (S)	93	%	70-130		1		10/28/10 01:44	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		10/28/10 01:44	2037-26-5	
4-Bromofluorobenzene (S)	99	%	70-130		1		10/28/10 01:44	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		10/28/10 01:44	17060-07-0	

Sample: MW-21 **Lab ID: 9280455017** Collected: 10/21/10 08:45 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	10/26/10 14:18	10/27/10 08:23	106-93-4	
1-Chloro-2-bromopropane (S)	100	%	60-140		1	10/26/10 14:18	10/27/10 08:23	301-79-56	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		10/28/10 01:26	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		10/28/10 01:26	994-05-8	
Benzene	**2.5J**	ug/L	5.0	1.2	1		10/28/10 01:26	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		10/28/10 01:26	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		10/28/10 01:26	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		10/28/10 01:26	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		10/28/10 01:26	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		10/28/10 01:26	108-20-3	
Ethanol	ND	ug/L	200	170	1		10/28/10 01:26	64-17-5	
Ethylbenzene	**1.8J**	ug/L	5.0	1.1	1		10/28/10 01:26	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		10/28/10 01:26	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 01:26	1634-04-4	
Naphthalene	**5.0**	ug/L	5.0	2.9	1		10/28/10 01:26	91-20-3	
Toluene	**10.5**	ug/L	5.0	1.8	1		10/28/10 01:26	108-88-3	
m&p-Xylene	**5.7J**	ug/L	10.0	2.7	1		10/28/10 01:26	179601-23-1	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-21 **Lab ID: 9280455017** Collected: 10/21/10 08:45 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Oxygenates	Analytical Method: EPA 8260								
o-Xylene	**2.5J**	ug/L	5.0	1.7	1		10/28/10 01:26	95-47-6	
Dibromofluoromethane (S)	92	%	70-130		1		10/28/10 01:26	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		10/28/10 01:26	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		1		10/28/10 01:26	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		10/28/10 01:26	17060-07-0	

Sample: MW-22 **Lab ID: 9280455018** Collected: 10/21/10 09:20 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/27/10 15:13	10/27/10 19:24	106-93-4	
1-Chloro-2-bromopropane (S)	103	%	60-140		1	10/27/10 15:13	10/27/10 19:24	301-79-56	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		10/28/10 02:02	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		10/28/10 02:02	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 02:02	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		10/28/10 02:02	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		10/28/10 02:02	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		10/28/10 02:02	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		10/28/10 02:02	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		10/28/10 02:02	108-20-3	
Ethanol	ND	ug/L	200	170	1		10/28/10 02:02	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 02:02	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		10/28/10 02:02	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	2.0	1		10/28/10 02:02	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 02:02	91-20-3	
Toluene	**4.5J**	ug/L	5.0	1.8	1		10/28/10 02:02	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 02:02	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 02:02	95-47-6	
Dibromofluoromethane (S)	92	%	70-130		1		10/28/10 02:02	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		10/28/10 02:02	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		1		10/28/10 02:02	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		10/28/10 02:02	17060-07-0	

Sample: MW-23 **Lab ID: 9280455019** Collected: 10/21/10 09:10 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	10/27/10 15:14	10/27/10 20:25	106-93-4	

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ANALYTICAL RESULTS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Sample: MW-23 **Lab ID: 9280455019** Collected: 10/21/10 09:10 Received: 10/22/10 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1-Chloro-2-bromopropane (S)	104	%	60-140		1	10/27/10 15:14	10/27/10 20:25	301-79-56	
8260 MSV Oxygenates	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	62.0	1		10/28/10 02:21	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	4.5	1		10/28/10 02:21	994-05-8	
Benzene	ND	ug/L	5.0	1.2	1		10/28/10 02:21	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	48.0	1		10/28/10 02:21	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	27.0	1		10/28/10 02:21	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	9.0	1		10/28/10 02:21	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.3	1		10/28/10 02:21	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	2.7	1		10/28/10 02:21	108-20-3	
Ethanol	ND	ug/L	200	170	1		10/28/10 02:21	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.1	1		10/28/10 02:21	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	4.6	1		10/28/10 02:21	637-92-3	
Methyl-tert-butyl ether	**3.8J**	ug/L	5.0	2.0	1		10/28/10 02:21	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.9	1		10/28/10 02:21	91-20-3	
Toluene	**4.5J**	ug/L	5.0	1.8	1		10/28/10 02:21	108-88-3	
m&p-Xylene	ND	ug/L	10.0	2.7	1		10/28/10 02:21	179601-23-1	
o-Xylene	ND	ug/L	5.0	1.7	1		10/28/10 02:21	95-47-6	
Dibromofluoromethane (S)	92	%	70-130		1		10/28/10 02:21	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		10/28/10 02:21	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		1		10/28/10 02:21	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		10/28/10 02:21	17060-07-0	

Sample: COMPOSITE SOIL **Lab ID: 9280455020** Collected: 10/19/10 15:10 Received: 10/22/10 15:50 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260								
Benzene	ND	ug/kg	4.3	1.4	1		10/27/10 21:27	71-43-2	
Ethylbenzene	ND	ug/kg	4.3	1.6	1		10/27/10 21:27	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	4.3	1.3	1		10/27/10 21:27	1634-04-4	
Naphthalene	ND	ug/kg	4.3	1.0	1		10/27/10 21:27	91-20-3	
Toluene	ND	ug/kg	4.3	1.6	1		10/27/10 21:27	108-88-3	
m&p-Xylene	ND	ug/kg	8.7	3.1	1		10/27/10 21:27	179601-23-1	
o-Xylene	ND	ug/kg	4.3	1.6	1		10/27/10 21:27	95-47-6	
Dibromofluoromethane (S)	117	%	70-130		1		10/27/10 21:27	1868-53-7	
Toluene-d8 (S)	106	%	70-130		1		10/27/10 21:27	2037-26-5	
4-Bromofluorobenzene (S)	81	%	70-130		1		10/27/10 21:27	460-00-4	
1,2-Dichloroethane-d4 (S)	121	%	70-130		1		10/27/10 21:27	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**18.6**	%	0.10	0.10	1		10/25/10 17:46		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: OEXT/11609 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9280455001, 9280455002, 9280455003, 9280455004, 9280455005, 9280455006, 9280455007, 9280455008, 9280455009, 9280455010, 9280455011, 9280455012, 9280455013, 9280455014, 9280455015, 9280455016, 9280455017

METHOD BLANK: 517319 Matrix: Water
Associated Lab Samples: 9280455001, 9280455002, 9280455003, 9280455004, 9280455005, 9280455006, 9280455007, 9280455008, 9280455009, 9280455010, 9280455011, 9280455012, 9280455013, 9280455014, 9280455015, 9280455016, 9280455017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	10/26/10 23:57	
1-Chloro-2-bromopropane (S)	%	107	60-140	10/26/10 23:57	

LABORATORY CONTROL SAMPLE & LCSD: 517320 517321

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.29	0.33	0.32	114	114	60-140	3	20	
1-Chloro-2-bromopropane (S)	%				106	107	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 517322 517323

Parameter	Units	9280478002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.28	.28	0.37	0.37	132	132	60-140	0	20	
1-Chloro-2-bromopropane (S)	%						107	106	60-140			

SAMPLE DUPLICATE: 517324

Parameter	Units	9280478003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	107	104	3		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: OEXT/11634
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 9280455018, 9280455019

METHOD BLANK: 518389 Matrix: Water
Associated Lab Samples: 9280455018, 9280455019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	10/27/10 16:21	
1-Chloro-2-bromopropane (S)	%	111	60-140	10/27/10 16:21	

LABORATORY CONTROL SAMPLE & LCSD: 518390 518391

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.28	0.34	0.32	120	114	60-140	6	20	
1-Chloro-2-bromopropane (S)	%				109	108	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 518392 518393

Parameter	Units	9280455018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.28	.28	0.34	0.34	118	120	60-140	2	20	
1-Chloro-2-bromopropane (S)	%						104	105	60-140			

SAMPLE DUPLICATE: 518394

Parameter	Units	9280455019 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	104	100	5		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: MSV/12817 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 9280455001, 9280455002, 9280455003, 9280455004, 9280455005, 9280455009, 9280455010, 9280455011, 9280455012, 9280455013

METHOD BLANK: 518373 Matrix: Water
Associated Lab Samples: 9280455001, 9280455002, 9280455003, 9280455004, 9280455005, 9280455009, 9280455010, 9280455011, 9280455012, 9280455013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	10/27/10 23:48	
Ethylbenzene	ug/L	ND	5.0	10/27/10 23:48	
m&p-Xylene	ug/L	ND	10.0	10/27/10 23:48	
Methyl-tert-butyl ether	ug/L	ND	5.0	10/27/10 23:48	
Naphthalene	ug/L	ND	5.0	10/27/10 23:48	
o-Xylene	ug/L	ND	5.0	10/27/10 23:48	
Toluene	ug/L	ND	5.0	10/27/10 23:48	
1,2-Dichloroethane-d4 (S)	%	103	70-130	10/27/10 23:48	
4-Bromofluorobenzene (S)	%	96	70-130	10/27/10 23:48	
Dibromofluoromethane (S)	%	97	70-130	10/27/10 23:48	
Toluene-d8 (S)	%	101	70-130	10/27/10 23:48	

LABORATORY CONTROL SAMPLE: 518374

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	53.6	107	70-130	
Ethylbenzene	ug/L	50	50.9	102	70-130	
m&p-Xylene	ug/L	100	92.7	93	70-130	
Methyl-tert-butyl ether	ug/L	50	47.1	94	70-130	
Naphthalene	ug/L	50	47.4	95	70-130	
o-Xylene	ug/L	50	47.0	94	70-130	
Toluene	ug/L	50	50.8	102	70-130	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
4-Bromofluorobenzene (S)	%			105	70-130	
Dibromofluoromethane (S)	%			99	70-130	
Toluene-d8 (S)	%			101	70-130	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: MSV/12825
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV SC
Associated Lab Samples: 9280455006, 9280455007

METHOD BLANK: 518572
Matrix: Water
Associated Lab Samples: 9280455006, 9280455007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	10/27/10 18:37	
Ethylbenzene	ug/L	ND	5.0	10/27/10 18:37	
m&p-Xylene	ug/L	ND	10.0	10/27/10 18:37	
Methyl-tert-butyl ether	ug/L	ND	5.0	10/27/10 18:37	
Naphthalene	ug/L	ND	5.0	10/27/10 18:37	
o-Xylene	ug/L	ND	5.0	10/27/10 18:37	
Toluene	ug/L	ND	5.0	10/27/10 18:37	
1,2-Dichloroethane-d4 (S)	%	99	70-130	10/27/10 18:37	
4-Bromofluorobenzene (S)	%	97	70-130	10/27/10 18:37	
Dibromofluoromethane (S)	%	99	70-130	10/27/10 18:37	
Toluene-d8 (S)	%	105	70-130	10/27/10 18:37	

LABORATORY CONTROL SAMPLE: 518573

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	45.3	91	70-130	
Ethylbenzene	ug/L	50	48.8	98	70-130	
m&p-Xylene	ug/L	100	96.4	96	70-130	
Methyl-tert-butyl ether	ug/L	50	46.3	93	70-130	
Naphthalene	ug/L	50	46.4	93	70-130	
o-Xylene	ug/L	50	44.1	88	70-130	
Toluene	ug/L	50	46.5	93	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			98	70-130	
Toluene-d8 (S)	%			104	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 518574 518575

Parameter	Units	9280455007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	ND	50	50	46.6	50.4	93	101	70-130	8	30	
Ethylbenzene	ug/L	ND	50	50	52.3	53.0	105	106	70-130	1	30	
m&p-Xylene	ug/L	ND	100	100	103	104	103	104	70-130	1	30	
Methyl-tert-butyl ether	ug/L	ND	50	50	46.0	51.5	92	103	70-130	11	30	
Naphthalene	ug/L	ND	50	50	40.0	50.6	80	101	70-130	23	30	
o-Xylene	ug/L	ND	50	50	46.4	47.3	93	95	70-130	2	30	
Toluene	ug/L	ND	50	50	46.7	46.1	93	92	70-130	1	30	
1,2-Dichloroethane-d4 (S)	%						99	97	70-130			
4-Bromofluorobenzene (S)	%						99	98	70-130			

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 518574 518575

Parameter	Units	9280455007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromofluoromethane (S)	%						102	102	70-130			
Toluene-d8 (S)	%						96	97	70-130			

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: MSV/12841
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV SC
Associated Lab Samples: 9280455008

METHOD BLANK: 519297
Matrix: Water
Associated Lab Samples: 9280455008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/L	ND	5.0	10/28/10 16:09	
Ethylbenzene	ug/L	ND	5.0	10/28/10 16:09	
m&p-Xylene	ug/L	ND	10.0	10/28/10 16:09	
Methyl-tert-butyl ether	ug/L	ND	5.0	10/28/10 16:09	
Naphthalene	ug/L	ND	5.0	10/28/10 16:09	
o-Xylene	ug/L	ND	5.0	10/28/10 16:09	
Toluene	ug/L	ND	5.0	10/28/10 16:09	
1,2-Dichloroethane-d4 (S)	%	94	70-130	10/28/10 16:09	
4-Bromofluorobenzene (S)	%	99	70-130	10/28/10 16:09	
Dibromofluoromethane (S)	%	97	70-130	10/28/10 16:09	
Toluene-d8 (S)	%	101	70-130	10/28/10 16:09	

LABORATORY CONTROL SAMPLE: 519298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	51.7	103	70-130	
Ethylbenzene	ug/L	50	51.1	102	70-130	
m&p-Xylene	ug/L	100	103	103	70-130	
Methyl-tert-butyl ether	ug/L	50	49.9	100	70-130	
Naphthalene	ug/L	50	48.6	97	70-130	
o-Xylene	ug/L	50	51.0	102	70-130	
Toluene	ug/L	50	52.8	106	70-130	
1,2-Dichloroethane-d4 (S)	%			90	70-130	
4-Bromofluorobenzene (S)	%			104	70-130	
Dibromofluoromethane (S)	%			94	70-130	
Toluene-d8 (S)	%			102	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 519299 519300

Parameter	Units	9280454011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	179	50	50	245	246	132	133	70-130	0	30	E,M0
Ethylbenzene	ug/L	ND	50	50	55.4	53.8	111	108	70-130	3	30	
m&p-Xylene	ug/L	ND	100	100	112	107	111	107	70-130	4	30	
Methyl-tert-butyl ether	ug/L	30.5	50	50	83.3	89.8	106	119	70-130	8	30	
Naphthalene	ug/L	25.6	50	50	66.4	77.0	82	103	70-130	15	30	
o-Xylene	ug/L	97.4	50	50	166	156	137	118	70-130	6	30	M0
Toluene	ug/L	ND	50	50	58.7	59.7	116	118	70-130	2	30	
1,2-Dichloroethane-d4 (S)	%						96	98	70-130			
4-Bromofluorobenzene (S)	%						105	97	70-130			

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 519299 519300

Parameter	Units	9280454011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Dibromofluoromethane (S)	%						100	100	70-130			
Toluene-d8 (S)	%						103	101	70-130			

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: MSV/12818
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 9280455020

METHOD BLANK: 518404 Matrix: Solid
Associated Lab Samples: 9280455020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/kg	ND	5.0	10/27/10 12:13	
Benzene	ug/kg	ND	5.0	10/27/10 12:13	
Ethylbenzene	ug/kg	ND	5.0	10/27/10 12:13	
m&p-Xylene	ug/kg	ND	10.0	10/27/10 12:13	
Methyl-tert-butyl ether	ug/kg	ND	5.0	10/27/10 12:13	
Naphthalene	ug/kg	2.1J	5.0	10/27/10 12:13	
o-Xylene	ug/kg	ND	5.0	10/27/10 12:13	
Toluene	ug/kg	ND	5.0	10/27/10 12:13	
1,2-Dichloroethane-d4 (S)	%	117	70-130	10/27/10 12:13	
4-Bromofluorobenzene (S)	%	81	70-130	10/27/10 12:13	
Dibromofluoromethane (S)	%	117	70-130	10/27/10 12:13	
Toluene-d8 (S)	%	107	70-130	10/27/10 12:13	

LABORATORY CONTROL SAMPLE: 518405

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/kg	50	58.4	117	70-130	
Benzene	ug/kg	50	51.7	103	70-130	
Ethylbenzene	ug/kg	50	52.2	104	70-130	
m&p-Xylene	ug/kg	100	105	105	70-130	
Methyl-tert-butyl ether	ug/kg	50	54.8	110	70-130	
Naphthalene	ug/kg	50	55.9	112	70-130	
o-Xylene	ug/kg	50	51.5	103	70-130	
Toluene	ug/kg	50	51.9	104	70-130	
1,2-Dichloroethane-d4 (S)	%			123	70-130	
4-Bromofluorobenzene (S)	%			84	70-130	
Dibromofluoromethane (S)	%			116	70-130	
Toluene-d8 (S)	%			105	70-130	

MATRIX SPIKE SAMPLE: 519016

Parameter	Units	9280455020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/kg	ND	50	40.7	82	70-130	
Benzene	ug/kg	ND	50	47.2	95	70-130	
Ethylbenzene	ug/kg	ND	50	47.8	96	70-130	
m&p-Xylene	ug/kg	ND	99.8	95.0	95	70-130	
Methyl-tert-butyl ether	ug/kg	ND	50	39.0	78	70-130	
Naphthalene	ug/kg	ND	50	27.9	56	70-130	M0
o-Xylene	ug/kg	ND	50	44.7	90	70-130	
Toluene	ug/kg	ND	50	48.3	94	70-130	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

MATRIX SPIKE SAMPLE: 519016

Parameter	Units	9280455020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane-d4 (S)	%				107	70-130	
4-Bromofluorobenzene (S)	%				99	70-130	
Dibromofluoromethane (S)	%				104	70-130	
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 519015

Parameter	Units	9280675001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/kg	ND	ND		30	
Benzene	ug/kg	ND	2.1J		30	
Ethylbenzene	ug/kg	ND	ND		30	
m&p-Xylene	ug/kg	ND	3.8J		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Naphthalene	ug/kg	ND	4.4J		30	
o-Xylene	ug/kg	ND	2.6J		30	
Toluene	ug/kg	ND	5.9		30	
1,2-Dichloroethane-d4 (S)	%	116	105	6		
4-Bromofluorobenzene (S)	%	80	80	3		
Dibromofluoromethane (S)	%	115	106	4		
Toluene-d8 (S)	%	107	97	6		

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: MSV/12823
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Oxygenates SC
Associated Lab Samples: 9280455014, 9280455017

METHOD BLANK: 518476
Matrix: Water
Associated Lab Samples: 9280455014, 9280455017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	10/27/10 22:42	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	10/27/10 22:42	
Benzene	ug/L	ND	5.0	10/27/10 22:42	
Diisopropyl ether	ug/L	ND	5.0	10/27/10 22:42	
Ethanol	ug/L	ND	200	10/27/10 22:42	
Ethyl-tert-butyl ether	ug/L	ND	10.0	10/27/10 22:42	
Ethylbenzene	ug/L	ND	5.0	10/27/10 22:42	
m&p-Xylene	ug/L	ND	10.0	10/27/10 22:42	
Methyl-tert-butyl ether	ug/L	ND	5.0	10/27/10 22:42	
Naphthalene	ug/L	ND	5.0	10/27/10 22:42	
o-Xylene	ug/L	ND	5.0	10/27/10 22:42	
tert-Amyl Alcohol	ug/L	ND	100	10/27/10 22:42	
tert-Amylmethyl ether	ug/L	ND	10.0	10/27/10 22:42	
tert-Butyl Alcohol	ug/L	ND	100	10/27/10 22:42	
tert-Butyl Formate	ug/L	ND	50.0	10/27/10 22:42	
Toluene	ug/L	ND	5.0	10/27/10 22:42	
1,2-Dichloroethane-d4 (S)	%	86	70-130	10/27/10 22:42	
4-Bromofluorobenzene (S)	%	103	70-130	10/27/10 22:42	
Dibromofluoromethane (S)	%	91	70-130	10/27/10 22:42	
Toluene-d8 (S)	%	98	70-130	10/27/10 22:42	

LABORATORY CONTROL SAMPLE: 518477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	50.5	101	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	881	88	70-130	
Benzene	ug/L	50	53.0	106	70-130	
Diisopropyl ether	ug/L	50	50.5	101	70-130	
Ethanol	ug/L	2000	1700	85	70-130	
Ethyl-tert-butyl ether	ug/L	100	102	102	70-130	
Ethylbenzene	ug/L	50	51.2	102	70-130	
m&p-Xylene	ug/L	100	104	104	70-130	
Methyl-tert-butyl ether	ug/L	50	47.8	96	70-130	
Naphthalene	ug/L	50	48.3	97	70-130	
o-Xylene	ug/L	50	51.0	102	70-130	
tert-Amyl Alcohol	ug/L	1000	908	91	70-130	
tert-Amylmethyl ether	ug/L	100	105	105	70-130	
tert-Butyl Alcohol	ug/L	500	453	91	70-130	
tert-Butyl Formate	ug/L	400	359	90	70-130	
Toluene	ug/L	50	55.0	110	70-130	
1,2-Dichloroethane-d4 (S)	%			89	70-130	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

LABORATORY CONTROL SAMPLE: 518477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			93	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 518478 518479

Parameter	Units	9280388018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	50	50	53.9	58.7	108	117	70-130	9	30	
3,3-Dimethyl-1-Butanol	ug/L	84.0J	1000	1000	1140	1290	106	120	70-130	12	30	
Benzene	ug/L	ND	50	50	53.0	56.6	105	112	70-130	7	30	
Diisopropyl ether	ug/L	ND	50	50	57.2	60.1	114	120	70-130	5	30	
Ethanol	ug/L	ND	2000	2000	2260	2260	113	113	70-130	0	30	
Ethyl-tert-butyl ether	ug/L	ND	100	100	113	119	113	119	70-130	5	30	
Ethylbenzene	ug/L	ND	50	50	47.3	51.8	94	103	70-130	9	30	
m&p-Xylene	ug/L	ND	100	100	92.8	104	93	103	70-130	11	30	
Methyl-tert-butyl ether	ug/L	2.9J	50	50	54.4	59.4	103	113	70-130	9	30	
Naphthalene	ug/L	ND	50	50	48.3	53.9	93	104	70-130	11	30	
o-Xylene	ug/L	ND	50	50	47.1	52.9	94	106	70-130	12	30	
tert-Amyl Alcohol	ug/L	ND	1000	1000	1250	1340	122	131	70-130	7	30	M0
tert-Amylmethyl ether	ug/L	ND	100	100	114	124	114	124	70-130	8	30	
tert-Butyl Alcohol	ug/L	ND	500	500	718	778	144	156	70-130	8	30	M0
tert-Butyl Formate	ug/L	ND	400	400	38.3J	38.6J	10	10	70-130		30	P5
Toluene	ug/L	ND	50	50	50.9	54.8	102	109	70-130	7	30	
1,2-Dichloroethane-d4 (S)	%						92	93	70-130			
4-Bromofluorobenzene (S)	%						107	106	70-130			
Dibromofluoromethane (S)	%						95	93	70-130			
Toluene-d8 (S)	%						105	99	70-130			

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: MSV/12824 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Oxygenates SC
Associated Lab Samples: 9280455016, 9280455018, 9280455019

METHOD BLANK: 518485 Matrix: Water
Associated Lab Samples: 9280455016, 9280455018, 9280455019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	10/27/10 23:00	
3,3-Dimethyl-1-Butanol	ug/L	82.9J	100	10/27/10 23:00	
Benzene	ug/L	ND	5.0	10/27/10 23:00	
Diisopropyl ether	ug/L	ND	5.0	10/27/10 23:00	
Ethanol	ug/L	ND	200	10/27/10 23:00	
Ethyl-tert-butyl ether	ug/L	ND	10.0	10/27/10 23:00	
Ethylbenzene	ug/L	ND	5.0	10/27/10 23:00	
m&p-Xylene	ug/L	ND	10.0	10/27/10 23:00	
Methyl-tert-butyl ether	ug/L	ND	5.0	10/27/10 23:00	
Naphthalene	ug/L	ND	5.0	10/27/10 23:00	
o-Xylene	ug/L	ND	5.0	10/27/10 23:00	
tert-Amyl Alcohol	ug/L	ND	100	10/27/10 23:00	
tert-Amylmethyl ether	ug/L	ND	10.0	10/27/10 23:00	
tert-Butyl Alcohol	ug/L	ND	100	10/27/10 23:00	
tert-Butyl Formate	ug/L	ND	50.0	10/27/10 23:00	
Toluene	ug/L	ND	5.0	10/27/10 23:00	
1,2-Dichloroethane-d4 (S)	%	96	70-130	10/27/10 23:00	
4-Bromofluorobenzene (S)	%	100	70-130	10/27/10 23:00	
Dibromofluoromethane (S)	%	98	70-130	10/27/10 23:00	
Toluene-d8 (S)	%	100	70-130	10/27/10 23:00	

LABORATORY CONTROL SAMPLE: 518486

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	48.2	96	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	915	92	70-130	
Benzene	ug/L	50	48.7	97	70-130	
Diisopropyl ether	ug/L	50	48.0	96	70-130	
Ethanol	ug/L	2000	1630	82	70-130	
Ethyl-tert-butyl ether	ug/L	100	100	100	70-130	
Ethylbenzene	ug/L	50	47.9	96	70-130	
m&p-Xylene	ug/L	100	95.8	96	70-130	
Methyl-tert-butyl ether	ug/L	50	47.5	95	70-130	
Naphthalene	ug/L	50	50.1	100	70-130	
o-Xylene	ug/L	50	47.8	96	70-130	
tert-Amyl Alcohol	ug/L	1000	877	88	70-130	
tert-Amylmethyl ether	ug/L	100	99.1	99	70-130	
tert-Butyl Alcohol	ug/L	500	454	91	70-130	
tert-Butyl Formate	ug/L	400	350	88	70-130	
Toluene	ug/L	50	48.3	97	70-130	
1,2-Dichloroethane-d4 (S)	%			92	70-130	

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

LABORATORY CONTROL SAMPLE: 518486

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			95	70-130	
Toluene-d8 (S)	%			102	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 518487 518488

Parameter	Units	9280455016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	50	50	49.1	54.8	98	109	70-130	11	30	
3,3-Dimethyl-1-Butanol	ug/L	ND	1000	1000	914	1170	91	117	70-130	25	30	
Benzene	ug/L	5.6	50	50	55.8	56.6	100	102	70-130	2	30	
Diisopropyl ether	ug/L	ND	50	50	51.6	55.3	103	111	70-130	7	30	
Ethanol	ug/L	ND	2000	2000	1160	2220	58	111	70-130	63	30	L0,R1
Ethyl-tert-butyl ether	ug/L	ND	100	100	105	113	105	113	70-130	7	30	
Ethylbenzene	ug/L	1.1J	50	50	47.4	48.1	93	94	70-130	1	30	
m&p-Xylene	ug/L	7.0J	100	100	98.1	101	91	94	70-130	3	30	
Methyl-tert-butyl ether	ug/L	9.5	50	50	55.5	60.5	92	102	70-130	9	30	
Naphthalene	ug/L	2.9J	50	50	50.3	49.9	95	94	70-130	1	30	
o-Xylene	ug/L	2.1J	50	50	48.9	50.2	94	96	70-130	2	30	
tert-Amyl Alcohol	ug/L	ND	1000	1000	840	1230	84	123	70-130	38	30	R1
tert-Amylmethyl ether	ug/L	ND	100	100	108	115	108	115	70-130	7	30	
tert-Butyl Alcohol	ug/L	ND	500	500	463	711	93	142	70-130	42	30	M0,R1
tert-Butyl Formate	ug/L	ND	400	400	38.3J	38.8J	10	10	70-130		30	P5
Toluene	ug/L	7.0	50	50	52.5	53.3	91	93	70-130	2	30	
1,2-Dichloroethane-d4 (S)	%						90	92	70-130			
4-Bromofluorobenzene (S)	%						104	104	70-130			
Dibromofluoromethane (S)	%						93	97	70-130			
Toluene-d8 (S)	%						100	101	70-130			

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QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: MSV/12858
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Oxygenates SC
Associated Lab Samples: 9280455015

METHOD BLANK: 520052
Matrix: Water
Associated Lab Samples: 9280455015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	10/28/10 15:51	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	10/28/10 15:51	
Benzene	ug/L	ND	5.0	10/28/10 15:51	
Diisopropyl ether	ug/L	ND	5.0	10/28/10 15:51	
Ethanol	ug/L	ND	200	10/28/10 15:51	
Ethyl-tert-butyl ether	ug/L	ND	10.0	10/28/10 15:51	
Ethylbenzene	ug/L	ND	5.0	10/28/10 15:51	
m&p-Xylene	ug/L	ND	10.0	10/28/10 15:51	
Methyl-tert-butyl ether	ug/L	ND	5.0	10/28/10 15:51	
Naphthalene	ug/L	ND	5.0	10/28/10 15:51	
o-Xylene	ug/L	ND	5.0	10/28/10 15:51	
tert-Amyl Alcohol	ug/L	ND	100	10/28/10 15:51	
tert-Amylmethyl ether	ug/L	ND	10.0	10/28/10 15:51	
tert-Butyl Alcohol	ug/L	ND	100	10/28/10 15:51	
tert-Butyl Formate	ug/L	ND	50.0	10/28/10 15:51	
Toluene	ug/L	ND	5.0	10/28/10 15:51	
1,2-Dichloroethane-d4 (S)	%	90	70-130	10/28/10 15:51	
4-Bromofluorobenzene (S)	%	103	70-130	10/28/10 15:51	
Dibromofluoromethane (S)	%	92	70-130	10/28/10 15:51	
Toluene-d8 (S)	%	102	70-130	10/28/10 15:51	

LABORATORY CONTROL SAMPLE: 520053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	46.9	94	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	923	92	70-130	
Benzene	ug/L	50	50.9	102	70-130	
Diisopropyl ether	ug/L	50	47.9	96	70-130	
Ethanol	ug/L	2000	1890	94	70-130	
Ethyl-tert-butyl ether	ug/L	100	96.3	96	70-130	
Ethylbenzene	ug/L	50	47.4	95	70-130	
m&p-Xylene	ug/L	100	99.9	100	70-130	
Methyl-tert-butyl ether	ug/L	50	43.8	88	70-130	
Naphthalene	ug/L	50	44.1	88	70-130	
o-Xylene	ug/L	50	46.8	94	70-130	
tert-Amyl Alcohol	ug/L	1000	972	97	70-130	
tert-Amylmethyl ether	ug/L	100	97.9	98	70-130	
tert-Butyl Alcohol	ug/L	500	500	100	70-130	
tert-Butyl Formate	ug/L	400	339	85	70-130	
Toluene	ug/L	50	50.7	101	70-130	
1,2-Dichloroethane-d4 (S)	%			88	70-130	

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

LABORATORY CONTROL SAMPLE: 520053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Bromofluorobenzene (S)	%			98	70-130	
Dibromofluoromethane (S)	%			94	70-130	
Toluene-d8 (S)	%			101	70-130	

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(704)875-9092

QUALITY CONTROL DATA

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

QC Batch: PMST/3531
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 9280455020

SAMPLE DUPLICATE: 517079

Parameter	Units	9280441001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.3	18.8	3	25	

SAMPLE DUPLICATE: 517080

Parameter	Units	9280465010 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.3	18.8	3	25	

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QUALIFIERS

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P5	The EPA or method required sample preservation degrades this compound, therefore acceptable recoveries may not be achieved in sample matrix spikes.
R1	RPD value was outside control limits.

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(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EDGEFIELD FUEL & CONV. 3
Pace Project No.: 9280455

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
9280455001	MW-3	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455002	MW-4	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455003	MW-6	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455004	MW-7	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455005	MW-8	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455006	MW-9	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455007	MW-10	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455008	MW-11	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455009	MW-12	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455010	MW-13	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455011	MW-14	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455012	MW-15	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455013	MW-16	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455014	MW-17	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455015	MW-18	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455016	MW-2D	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455017	MW-21	EPA 8011	OEXT/11609	EPA 8011	GCSV/8615
9280455018	MW-22	EPA 8011	OEXT/11634	EPA 8011	GCSV/8624
9280455019	MW-23	EPA 8011	OEXT/11634	EPA 8011	GCSV/8624
9280455001	MW-3	EPA 8260	MSV/12817		
9280455002	MW-4	EPA 8260	MSV/12817		
9280455003	MW-6	EPA 8260	MSV/12817		
9280455004	MW-7	EPA 8260	MSV/12817		
9280455005	MW-8	EPA 8260	MSV/12817		
9280455006	MW-9	EPA 8260	MSV/12825		
9280455007	MW-10	EPA 8260	MSV/12825		
9280455008	MW-11	EPA 8260	MSV/12841		
9280455009	MW-12	EPA 8260	MSV/12817		
9280455010	MW-13	EPA 8260	MSV/12817		
9280455011	MW-14	EPA 8260	MSV/12817		
9280455012	MW-15	EPA 8260	MSV/12817		
9280455013	MW-16	EPA 8260	MSV/12817		
9280455020	COMPOSITE SOIL	EPA 8260	MSV/12818		
9280455014	MW-17	EPA 8260	MSV/12823		
9280455015	MW-18	EPA 8260	MSV/12858		
9280455016	MW-2D	EPA 8260	MSV/12824		
9280455017	MW-21	EPA 8260	MSV/12823		
9280455018	MW-22	EPA 8260	MSV/12824		
9280455019	MW-23	EPA 8260	MSV/12824		
9280455020	COMPOSITE SOIL	ASTM D2974-87	PMST/3531		

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

1396509

Section A Required Client Information:

Company: Environmental Compliance Services
Address: 13504 S. Point Blvd, Unit F
Charlotte, NC 28273
Email To: RHutchins@ECSconsult.com
Phone: 704 583 2711 Fax:
Requested Due Date/TAT: 5+D

Section B Required Project Information:

Report To: Randall Hutchins
Copy To:
Purchase Order No.:
Project Name: Edgefield Fuel Conv. 3
Project Number: 14-211651

Section C Invoice Information:

Attention: Christina White
Company Name: ECS
Address: 5335 Iverson Agawam MA 01001
Pace Quote Reference:
Pace Project Manager: Kevin Herring
Pace Profile #: 2071-3, 13

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

Site Location STATE: SC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N): BTEX, MN	EDB	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-3	WT	G			10/21	9:00		6				X						X	X			92804550 01
2	MW-4						9:25																002
3	MW-6						9:10																003
4	MW-7					10/20	14:20																004
5	MW-8						14:05																005
6	MW-9						17:00																006
7	MW-10						16:45																007
8	MW-11						16:05																008
9	MW-12						16:20																009
10	MW-13						15:15																010
11	MW-14						15:00																011
12	MW-15						14:45																012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Report Values	Ryan Byas / ECS	10/21	16:00	[signature] / Pace	10/22/10	1430				
	[signature]	10/22/10	1550	[signature] / Pace	10/22/10	1515	5.1	Y	-	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas
SIGNATURE of SAMPLER: Ryan Byas
DATE Signed (MM/DD/YY): 10/21/10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

1396510

Section A
Required Client Information:

Company:	Environmental Compliance serv.
Address:	13504 S. Point Blvd unit F
	Charlotte, NC 28273
Email To:	RHutchins@ecsconsult.com
Phone:	704 583 2711
Fax:	
Requested Due Date/TAT:	STD

Section B
Required Project Information:

Report To:	Randall Hutchins
Copy To:	
Purchase Order No.:	
Project Name:	Edgefield Fuel & Conv. 3
Project Number:	14-211651

Section C
Invoice Information:

Attention:	Christina white
Company Name:	ECS
Address:	558 Silver St Agawam MA
Pace Quote Reference:	
Pace Project Manager:	Kevin Herring
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: SC

Section D
Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	BTEX MN	EDB	1,2-DCA	8-oxygenates	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-16	WT	G			10/20	14:35		6				X						↓	X				9280455013
2	MW-17	↓	↓			10/21	9:40		↓				↓						↓	↓	X	X		014
3	MW-19	↓	↓			↓	8:45		↓				↓						↓	↓	↓	↓		015
4	MW-20	↓	↓			↓	8:55		↓				↓						↓	↓	↓	↓		016
5	MW-21	↓	↓			↓	8:45		↓				↓						↓	↓	↓	↓		017
6	MW-22	↓	↓			↓	9:20		↓				↓						↓	↓	↓	↓		018
7	MW-23	↓	↓				9:10		↓				↓						↓	↓	↓	↓		019
8	Composite soil	SL	C	10/18	11:30	10/19	15:10		4						X	X			↓					020
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Report J values	Ryan Byas / ECS	10/21	16:00	[signature] / Pace	10/22/10	1430				
	[signature] / Pace	10/23/10	1550	[signature]	10/24/10	1550	5	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Ryan Byas

SIGNATURE of SAMPLER: Ryan Byas

DATE Signed (MM/DD/YY): 10/21/10

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Sample Condition Upon Receipt

Pace Analytical

Client Name: ELT Project # 9280455

Where Received: ☑ Huntersville ☐ Asheville ☐ Eden

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other_____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun : T809 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Temp Correction Factor: **Add / Subtract** _____0_____**C**

Corrected Cooler Temp.: 5.1 **C** **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C **Comments:**

Date and Initials of person examining contents: WMM - 10/22/10

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:_____		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☑Yes ☐No ☐N/A	15. Trial - MW22
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

10/22

SCURF Review: ~~BM~~ KLH **Date:** 10/22/10 **SRF Review:** [signature] **Date:** 10/25/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

APPENDIX F

Groundwater Sampling Field Data Sheets –
October 20 & 21, 2010

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convience 3 | Location: Edgefield, SC

Project No.: 14-211651 | Date: 10/20/10

Measured By: R. Byas | Weather: Sunny, 70s

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Well Depth (feet)	Volume Purged (gallons)
MW-1	19.38	25.07	5.69	-----	-----	0.00
MW-2	21.96	25.61	3.65	-----	-----	0.00
MW-3	-----	22.71	-----	-----	33.90	0.00
MW-4	-----	21.04	-----	-----	28.95	0.00
MW-5	20.22	20.57	0.35	-----	-----	0.00
MW-6	-----	22.09	-----	-----	29.02	0.00
MW-7	-----	15.91	-----	-----	20.25	0.00
MW-8	-----	23.83	-----	-----	26.89	0.00
MW-9	-----	21.12	-----	-----	27.07	0.00
MW-10	-----	24.90	-----	-----	30.40	0.00
MW-11	-----	24.10	-----	-----	31.07	0.00
MW-12	-----	23.75	-----	-----	30.10	0.00
MW-13	-----	20.26	-----	-----	25.24	0.00
MW-14	-----	24.77	-----	-----	29.59	0.00
MW-15	-----	21.16	-----	-----	26.97	0.00
MW-16	-----	14.97	-----	-----	19.89	0.00
MW-17	-----	23.52	-----	-----	28.70	0.84
MW-18	-----	24.01	-----	-----	28.66	0.76
MW-19	22.35	23.19	0.84	-----	-----	0.00
MW-20	-----	20.28	-----	-----	26.24	1.94
MW-21	-----	21.70	-----	-----	29.37	3.75
MW-22	-----	25.99	-----	-----	29.89	0.64
MW-23	-----	24.86	-----	-----	31.37	3.18

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-1**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 25.07 ft.
Depth to FP (Free product) **19.38** **ft.**
FP Thickness **5.69** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU)								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-2**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 25.61 ft.
Depth to FP (Free product) **21.96** **ft.**
FP Thickness **3.65** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU) NTU								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/21/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-3**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 33.90 ft.
Depth to GW(DGW) 22.71 ft.

Length of Water Column (LWC=TWD-DGW) 11.19 ft.

1Csg. Vol. (LWC*C)= 11.19 X 0.163 = 1.82 gal.
3Csg. Volume = 3x 1.82 = 5.47 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								9:00
pH (s.u.)								5.76
O.R.P. (mV)								209
Temperature (°C)								19.7
Specific Cond. (mS/cm)								0.240
Dissolved Oxygen (mg/L)								1.50
Turbidity (NTU) NTU								20.2

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/21/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-4**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.95 ft.
Depth to GW(DGW) 21.04 ft.

Length of Water Column (LWC=TWD-DGW) 7.91 ft.

1Csg. Vol. (LWC*C)= 7.91 X 0.163 = 1.29 gal.
3Csg. Volume = 3x 1.29 = 3.87 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								9:25
pH (s.u.)								6.26
O.R.P. (mV)								-57
Temperature (°C)								20.6
Specific Cond. (mS/cm)								0.577
Dissolved Oxygen (mg/L)								1.27
Turbidity (NTU) NTU								0.1

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Well # **MW-5**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 20.57 ft.
Depth to FP (Free product) **20.22** **ft.**
FP Thickness **0.35** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU) NTU								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/21/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-6**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.02 ft.
Depth to GW(DGW) 22.09 ft.

Length of Water Column (LWC=TWD-DGW) 6.93 ft.

1Csg. Vol. (LWC*C)= 6.93 X 0.163 = 1.13 gal.
3Csg. Volume = 3x 1.13 = 3.39 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								9:10
pH (s.u.)								5.68
O.R.P. (mV)								30
Temperature (°C)								20.4
Specific Cond. (mS/cm)								0.286
Dissolved Oxygen (mg/L)								1.10
Turbidity (NTU) NTU								18.8

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-7**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 20.25 ft.
Depth to GW(DGW) 15.91 ft.

Length of Water Column (LWC=TWD-DGW) 4.34 ft.

1Csg. Vol. (LWC*C)= 4.34 X 0.163 = 0.71 gal.
3Csg. Volume = 3x 0.71 = 2.12 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								14:20
pH (s.u.)								5.45
O.R.P. (mV)								298
Temperature (°C)								22.9
Specific Cond. (mS/cm)								0.162
Dissolved Oxygen (mg/L)								6.05
Turbidity (NTU) NTU								169.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-8**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.89 ft.
Depth to GW(DGW) 23.83 ft.

Length of Water Column (LWC=TWD-DGW) 3.06 ft.

1Csg. Vol. (LWC*C)= 3.06 X 0.163 = 0.50 gal.
3Csg. Volume = 3x 0.50 = 1.50 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								14:05
pH (s.u.)								5.84
O.R.P. (mV)								269
Temperature (°C)								22.1
Specific Cond. (mS/cm)								0.416
Dissolved Oxygen (mg/L)								4.93
Turbidity (NTU) NTU								>999

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-9**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 27.07 ft.
Depth to GW(DGW) 21.12 ft.

Length of Water Column (LWC=TWD-DGW) 5.95 ft.

1Csg. Vol. (LWC*C)= 5.95 X 0.163 = 0.97 gal.
3Csg. Volume = 3x 0.97 = 2.91 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								17:00
pH (s.u.)								5.58
O.R.P. (mV)								246
Temperature (°C)								19.6
Specific Cond. (mS/cm)								0.157
Dissolved Oxygen (mg/L)								5.30
Turbidity (NTU) NTU								396.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-10**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 30.40 ft.
Depth to GW(DGW) 24.90 ft.

Length of Water Column (LWC=TWD-DGW) 5.50 ft.

1Csg. Vol. (LWC*C)= 5.50 X 0.163 = 0.90 gal.
3Csg. Volume = 3x 0.90 = 2.69 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								16:45
pH (s.u.)								6.00
O.R.P. (mV)								201
Temperature (°C)								20.8
Specific Cond. (mS/cm)								0.167
Dissolved Oxygen (mg/L)								8.43
Turbidity (NTU) NTU								260.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-11**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 31.07 ft.
Depth to GW(DGW) 24.10 ft.

Length of Water Column (LWC=TWD-DGW) 6.97 ft.

1Csg. Vol. (LWC*C)= 6.97 X 0.163 = 1.14 gal.
3Csg. Volume = 3x 1.14 = 3.41 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								16:00
pH (s.u.)								5.33
O.R.P. (mV)								293
Temperature (°C)								23.4
Specific Cond. (mS/cm)								0.838
Dissolved Oxygen (mg/L)								3.94
Turbidity (NTU) NTU								870.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-12**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 30.10 ft.
Depth to GW(DGW) 23.75 ft.

Length of Water Column (LWC=TWD-DGW) 6.35 ft.

1Csg. Vol. (LWC*C)= 6.35 X 0.163 = 1.04 gal.
3Csg. Volume = 3x 1.04 = 3.11 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								16:20
pH (s.u.)								5.77
O.R.P. (mV)								40
Temperature (°C)								22.5
Specific Cond. (mS/cm)								0.344
Dissolved Oxygen (mg/L)								2.83
Turbidity (NTU) NTU								495.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-13**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 25.24 ft.
Depth to GW(DGW) 20.26 ft.

Length of Water Column (LWC=TWD-DGW) 4.98 ft.

1Csg. Vol. (LWC*C)= 4.98 X 0.163 = 0.81 gal.
3Csg. Volume = 3x 0.81 = 2.44 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								15:15
pH (s.u.)								5.25
O.R.P. (mV)								274
Temperature (°C)								22.3
Specific Cond. (mS/cm)								0.207
Dissolved Oxygen (mg/L)								4.11
Turbidity (NTU) NTU								175.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-14**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.59 ft.
Depth to GW(DGW) 24.77 ft.

Length of Water Column (LWC=TWD-DGW) 4.82 ft.

1Csg. Vol. (LWC*C)= 4.82 X 0.163 = 0.79 gal.
3Csg. Volume = 3x 0.79 = 2.36 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								15:00
pH (s.u.)								6.44
O.R.P. (mV)								201
Temperature (°C)								22.6
Specific Cond. (mS/cm)								0.240
Dissolved Oxygen (mg/L)								3.30
Turbidity (NTU) NTU								97.1

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-15**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.97 ft.
Depth to GW(DGW) 21.16 ft.

Length of Water Column (LWC=TWD-DGW) 5.81 ft.

1Csg. Vol. (LWC*C)= 5.81 X 0.163 = 0.95 gal.
3Csg. Volume = 3x 0.95 = 2.84 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								14:45
pH (s.u.)								6.46
O.R.P. (mV)								55
Temperature (°C)								20.3
Specific Cond. (mS/cm)								1.47
Dissolved Oxygen (mg/L)								2.45
Turbidity (NTU) NTU								452.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-16**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 19.89 ft.
Depth to GW(DGW) 14.97 ft.

Length of Water Column (LWC=TWD-DGW) 4.92 ft.

1Csg. Vol. (LWC*C)= 4.92 X 0.163 = 0.80 gal.
3Csg. Volume = 3x 0.80 = 2.41 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								14:35
pH (s.u.)								6.15
O.R.P. (mV)								274
Temperature (°C)								21.4
Specific Cond. (mS/cm)								0.295
Dissolved Oxygen (mg/L)								3.13
Turbidity (NTU) NTU								371.0

Remarks _____

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/2010 through 10/21/2010
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-17**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.70 ft.
Depth to GW(DGW) 23.52 ft.

Length of Water Column (LWC=TWD-DGW) 5.18 ft.

1Csg. Vol. (LWC*C)= 5.18 X 0.163 = 0.84 gal.
3Csg. Volume = 3x 0.84 = 2.53 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.84 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	0.84						0.00
Time (military)	13:45	13:47						9:40
pH (s.u.)	6.00	5.83						6.41
O.R.P. (mV)	259	259						93
Temperature (°C)	21.8	21.8						20.4
Specific Cond. (mS/cm)	0.154	0.172						0.172
Dissolved Oxygen (mg/L)	9.41	5.20						3.58
Turbidity (NTU) NTU	635.0	>999						82.7

Remarks Purged 10/20/10 sampled 10/21/10
Purged dry after one well volume.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/2010 through 10/21/2010
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-18**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.66 ft.
Depth to GW(DGW) 24.01 ft.

Length of Water Column (LWC=TWD-DGW) 4.65 ft.

1Csg. Vol. (LWC*C)= 4.65 X 0.163 = 0.76 gal.
3Csg. Volume = 3x 0.76 = 2.27 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.76 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	0.76						0.00
Time (military)	13:33	13:36						8:45
pH (s.u.)	5.76	5.70						6.40
O.R.P. (mV)	252	254						217
Temperature (°C)	20.4	20.2						17.7
Specific Cond. (mS/cm)	0.229	0.112						0.262
Dissolved Oxygen (mg/L)	5.18	5.92						4.23
Turbidity (NTU) NTU	>999	>999						446.0

Remarks Purged 10/20/10 sampled 10/21/10
Purged dry after one well volume.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/10
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Well # **MW-19**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 23.19 ft.
Depth to FP (Free product) **22.35** **ft.**
FP Thickness **0.84** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU) NTU								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/2010 through 10/21/2010
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-20**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.24 ft.
Depth to GW(DGW) 20.28 ft.

Length of Water Column (LWC=TWD-DGW) 5.96 ft.

1Csg. Vol. (LWC*C)= 5.96 X 0.163 = 0.97 gal.
3Csg. Volume = 3x 0.97 = 2.91 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 1.94 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	0.97	0.97					0.00
Time (military)	13:10	13:12	13:14					8:55
pH (s.u.)	5.47	5.30	5.23					5.24
O.R.P. (mV)	253	244	236					231
Temperature (°C)	20.1	20.1	20.1					19.4
Specific Cond. (mS/cm)	0.225	0.215	0.216					0.215
Dissolved Oxygen (mg/L)	6.43	6.67	5.65					5.07
Turbidity (NTU) NTU	159.0	>999	>999					24.5

Remarks Purged 10/20/10 sampled 10/21/10
Purged dry after two well volumes.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/2010 through 10/21/2010
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-21**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.37 ft.
Depth to GW(DGW) 21.70 ft.

Length of Water Column (LWC=TWD-DGW) 7.67 ft.

1Csg. Vol. (LWC*C)= 7.67 X 0.163 = 1.25 gal.
3Csg. Volume = 3x 1.25 = 3.75 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 3.75 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.25	1.25	1.25				0.00
Time (military)	12:56	12:59	13:01	13:03				8:45
pH (s.u.)	6.10	5.64	5.52	5.49				5.62
O.R.P. (mV)	238	235	230	226				258
Temperature (°C)	19.7	19.9	19.4	19.5				17.6
Specific Cond. (mS/cm)	0.243	0.258	0.234	0.226				0.234
Dissolved Oxygen (mg/L)	6.32	7.60	7.42	5.20				5.11
Turbidity (NTU) NTU	204.0	>999	>999	>999				78.7

Remarks Purged 10/20/10 sampled 10/21/10

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/2010 through 10/21/2010
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-22**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.89 ft.
Depth to GW(DGW) 25.99 ft.

Length of Water Column (LWC=TWD-DGW) 3.90 ft.

1Csg. Vol. (LWC*C)= 3.90 X 0.163 = 0.64 gal.
3Csg. Volume = 3x 0.64 = 1.91 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.64 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	0.64						0.00
Time (military)	12:46	12:48						9:20
pH (s.u.)	6.07	6.21						6.16
O.R.P. (mV)	237	200						197
Temperature (°C)	20.6	20.4						19.7
Specific Cond. (mS/cm)	0.253	0.255						0.248
Dissolved Oxygen (mg/L)	6.82	7.00						6.95
Turbidity (NTU) NTU	>999	>999						447.0

Remarks Purged 10/20/10 sampled 10/21/10
Purged dry after one well volume.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 10/20/2010 through 10/21/2010
Field Personnel R. Byas, A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 70 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

R. Byas	10/21/10 16:00	Pace	10/22/10 14:30
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-23**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 31.37 ft.
Depth to GW(DGW) 24.86 ft.

Length of Water Column (LWC=TWD-DGW) 6.51 ft.

1Csg. Vol. (LWC*C)= 6.51 X 0.163 = 1.06 gal.
3Csg. Volume = 3x 1.06 = 3.18 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 3.18 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)	0.00	1.06	1.06	1.06				0.38
Time (military)	12:30	12:33	12:36	12:39				9:10
pH (s.u.)	6.88	6.56	6.20	5.98				5.71
O.R.P. (mV)	196	208	212	219				176
Temperature (°C)	21.0	21.2	21.3	21.3				20.5
Specific Cond. (mS/cm)	0.417	0.410	0.404	0.400				0.385
Dissolved Oxygen (mg/L)	4.35	5.11	5.09	4.95				4.84
Turbidity (NTU) NTU	>999	>999	>999	>999				384.0

Remarks Purged 10/20/10 sampled 10/21/10

APPENDIX G

Disposal Manifest

D H E C
PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

JUN 06 2011

UST DOCKET 13 Ltr

Re: AFVR and Groundwater Sampling Directive
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 41188
Release reported March 14, 2002
Assessment Report received December 8, 2010
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced report and determined the next necessary scope of work to be three separate 12-hour Aggressive Fluid/Vapor Recovery (AFVR) events to remove free product from monitoring wells MW-1, MW-2, MW-5, and MW-19. Each AFVR event should be separated by 15 days. The first AFVR event should be conducted on monitoring wells MW-1 and MW-5; the second event should be conducted on MW-2; and the third event should be conducted on MW-19. One month after completion of the last AFVR event, a comprehensive groundwater sampling event should be completed to obtain current data.

Samples from all monitoring wells should be collected and analyzed for BTEX, naphthalene, MTBE, 1,2-DCA, and the 8-oxygenates by EPA method 8260B, and EDB by EPA Method 8011. Purging will not be required for existing monitoring wells where the water table is bracketed by the screen. Please have your contractor request low detection limits/reporting levels for all analyses. The use of "J" values is encouraged. Note that a non-detect analysis where the detection limit/reporting level exceeds the risk-based screening level (RBSL) is inconclusive. In this case, SUPERB payment may be denied since the analysis cannot be used as the basis for a decision.

The UST Division will no longer reimburse costs for oxygenate analysis for any laboratory that is not certified through the SCDHEC Office of Environmental Laboratory Certification. Detailed information regarding the oxygenate certification can be found on the UST Guidance Documents webpage. (http://www.scdhec.gov/environment/envserv/docs/OxygenateCertification.pdf. The document can also be accessed from the UST documents page at http://www.scdhec.net/environment/ lwm/forms/). Any laboratory with questions regarding the certification requirements should contact the Office of Environmental Laboratory Certification at (803) 896-0970.

Cost Agreement # 41188 has been approved in the amount shown on the enclosed cost agreement form for the aforementioned scope of work. The AFVR and groundwater sampling activities may proceed immediately upon receipt of this letter. The AFVR/Groundwater Sampling Report submitted at the completion of these activities should include the following:

- A narrative portion documenting the AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time the AFVR event started and ended, ambient air temperature, and general weather conditions during the AFVR event.

- A brief description of the completed work scope and any relevant descriptions pertaining to the data tables.
- A table summarizing the airflow (in CFM) and volatile air emissions concentrations collected from the stack of the truck every thirty minutes through the duration of the events. The table shall also document which well(s) were being recovered from during that time interval.
- A table summarizing the magnehelic gauge measurements from all applicable wells on a thirty-minute time interval.
- The total volume of water recovered (gallons).
- The total volume of free phase product recovered (typically measured with a product/water interface device inserted into the top of the tanker at the completion of the event and then converted to an approximate volume).
- The total weight of petroleum removed as vapor. This is calculated based on the airflow rate and the concentration of vapor.
- A table documenting the free product thickness in each well before and after the recovery events.
- Scaled base map depicting the location of the extraction wells and the surrounding wells equipped with magnehelic gauges.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Division, shall be presented in tabular form. Historical and current groundwater laboratory analytical data for all monitoring wells shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

Environmental Compliance Services (ECS), Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

An AFVR/groundwater monitoring report and invoice are due within 90 days from the date of this letter. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Division is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Division for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence or inquiries regarding this project, please reference **UST Permit # 12175**. If you have any questions, please feel free to contact me by phone at (803) 896-6633, by fax at (803) 896-6245, or email at ridglect@dhec.sc.gov.

Sincerely,

Cathleen T. Ridgley, Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

enc: Cost Agreement

cc: ECS, Inc., PO Box 3528, Fort Mill, SC 29708 (w/enc)
Technical File (w/enc)

Approved Cost Agreement 41188

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3

RIDGLECT

PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	3.0000	575.00	1,725.00
		B	PERSONNEL	4.0000	290.00	1,160.00
10 SAMPLE COLLECTION						
		D	GROUNDWATER NO-PURGE	23.0000	35.00	805.00
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	23.0000	100.00	2,300.00
		BB	1,2-DCA	23.0000	10.75	247.25
		F	EDB	23.0000	55.00	1,265.00
		P	8 OXYGENATES	23.0000	85.00	1,955.00
17 DISPOSAL						
		A2	WASTEWATER - PUMPING TEST	7,000.0000	0.60	4,200.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	26,365.25	3,954.79
23 EFR						
		A	8 HOUR EVENT	3.0000	3,000.00	9,000.00
		B	ADDITIONAL HOUR	12.0000	204.00	2,448.00
		C	OFF GAS TREATMENT	36.0000	35.00	1,260.00
				Total Amount		30,320.04

D H E C
PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

JUN 21 2011

14tech
UST
DOCKET

JESSIE J O KING
ELLIS LAWHORNE & SIMS PA
P O BOX 2285
COLUMBIA SC 29202

Re: Letter of Concern for Adjacent Property
Edgefield Fuel & Convenience #3, 311 Main Street, Edgefield, SC
UST Permit # 12175
Adjacent property located at 309 Main Street, Edgefield, SC
Request received from Jessie King on June 17, 2011

Dear Ms. King:

In response to your request for information about environmental conditions and liability associated with the referenced facility and adjacent property, the following is provided.

Our records indicate that three Underground Storage Tanks (USTs) were registered with the Department by Edgefield Fuel & Convenience LLC. The registered USTs are currently in operation and found to be in compliance with all federal and state regulations on May 17, 2011. An assessment report received in December 31, 2008 documented a release of petroleum products in the vicinity of the UST. Our records indicate that Edgefield Fuel & Convenience LLC complied with the regulatory requirements and stopped the leak from the tanks. They have pursued the extent and severity of petroleum chemicals of concern (CoC), and the release in now in the Corrective Action Section. Under our direction, Edgefield Fuel & Convenience LLC, is currently conducting Aggressive Fluid & Vapor Recovery (AFVR) Events, which use a vacuum truck to remove petroleum CoC and their vapors from the soil and groundwater. An AFVR report is due by the end of September 2011.

The UST owner/operator and the Department will require access to the property located 309 Main Street during reasonable hours to perform necessary rehabilitation activities. The owner of the property will be contacted before corrective action is initiated. Rehabilitation activities remain the responsibility of Edgefield Fuel & Convenience LLC.

This release of petroleum products from the USTs is qualified to receive funding under the conditions of the State Underground Petroleum Environmental Response Bank (SUPERB) Act. This means that reasonable costs up to $1,000,000 can be paid by the SUPERB account for site rehabilitation actions associated with this release. Should cleanup costs exceed $1,000,000, Edgefield Fuel & Convenience LLC under state and federal law, retains responsibility for any additional actions and associated costs. $64,868.37 of SUPERB funds has been used to date.

Monitoring wells MW-8 and MW-17 were installed on the adjacent property located at 309 Main Street as part of the assessment investigation. The samples collected in October 2010 were analyzed for dissolved petroleum CoC. The sample from monitoring Well MW-8 did not contain any petroleum CoC above their respective drinking water standards. The laboratory analysis detected the following constituents in monitoring well MW-17 as listed below in parts per billion:

Monitoring Well	Chemical of Concern	Results	Maximum Contaminant Level
MW-17	Benzene	15,900	5
	Toluene	31,400	1000
	Ethylbenzene	2,820	700
	Xylenes	12,970	10,000
	MTBE	564	40
	EDB	0.69	.05

The levels of all petroleum CoC in monitoring well MW-17 exceed the drinking water standards established by the Environmental Protection Agency (EPA). MW-17 was installed as a monitoring well and is not considered a source of drinking water.

The Department is not aware of any laws or regulations that prohibit the use or development of adjacent properties and properties where a petroleum release has occurred. However, the Department advises against installing a water supply well for drinking, cooking, or bathing purposes until active corrective action is completed. If you should choose to install a water supply well for these purposes at this time, it is at your discretion. As stated above, active corrective action measures have been implemented to rehabilitate affected ground water to acceptable levels.

If you have any questions, please do not hesitate to call me at (803) 896-6633.

Sincerely,

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management

cc: Carolina First Bank, 516 W. Wade Hampton Blvd., Greer, SC 29650
Joel Jolly, Edgefield Fuel & Convenience, LLC, P. O. Box 388, Edgefield SC 29824
Technical File

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

AFVR & GROUNDWATER SAMPLING REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651
November 28, 2011

Prepared by:
ECS
PO Box 3528
Fort Mill, SC 29708-3528
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

AFVR & GROUNDWATER SAMPLING REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

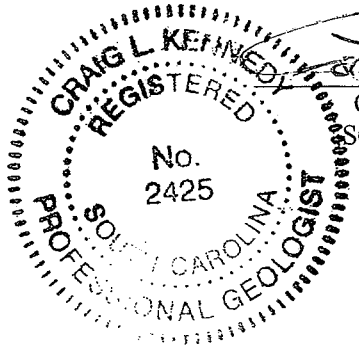
Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

November 28, 2011

Randall Hutchins
Project Manager



Craig L. Kennedy, P.G.
SC Registration No. 2425

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APPENDICES

Appendix A: AFVR Event Field Data Sheets, Emissions Calculations, and Disposal Manifest – July 12-13, 2011
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1.0 INTRODUCTION

This report presents the results of the corrective action and assessment activities conducted at the Edgefield Fuel & Convenience 3 site between July 13, 2011 and September 12, 2011. The activities were conducted in accordance with Cost Agreement Number 41188 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated June 6, 2011.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc.
Address: Post Office Box 3528
Fort Mill, South Carolina 29708
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	Not reported

UST Permit 12175

UST #	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Premium	Unknown	Yes	Not applicable
2	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable
3	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable

No additional releases reported at the Edgefield Fuel & Convenience 3 (UST Permit 12175) facility.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of our site visits in March 2009 (Tier I), between December 2009 and May 2010 (Tier II), between September and October 2010 (assessment), and between July and September 2011 (AFVRs & sampling). The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs were in use at the site during these assessment activities, these included of one 3,000-gallon premium gasoline UST and two 3,000-gallon gasoline USTs.

Historical site assessment activities reviewed in preparation of this assessment report included the Tier I and Tier II assessments, conducted and reported to the SCDHEC in March 2009 and June 2010, respectively. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. Two separate rounds of field screening activities were conducted to assist with the placement of 13 shallow monitoring wells (MW-4 through MW-16) during the Tier II assessment. Additionally, an 8-hour AFVR event was conducted in monitoring well MW-1 during Tier II activities to assist with free product removal. Historical data from the Tier I and Tier II assessments have been incorporated into this assessment report.

2.0 CORRECTIVE ACTION INFORMATION

The SCDHEC directive for this corrective action included conducting three separate 12-hour Aggressive Fluid & Vapor Recovery (AFVR) events on select monitoring wells. The first AFVR event included connection to monitoring wells MW-1 and MW-5; the second AFVR event included connection to monitoring well MW-2; and the third AFVR event included connection to monitoring well MW-19.

2.1 CORRECTIVE ACTION ACTIVITIES

2.1.1 AFVR Event – July 12-13, 2011

This AFVR event was initiated on July 12, 2011 and completed on July 13, 2011 by Zebra Environmental and Industrial Services, Inc. (Zebra) with activity monitoring provided by Aaron Williamson of ECS. Prior to the start of the event, the depths to liquid phase hydrocarbons (free product) and groundwater were measured in shallow monitoring wells MW-1 and MW-5. Free product was detected at depths of 19.61 feet (MW-1) and 19.30 feet (MW-5) below each top of casing (TOC) and groundwater was measured at depths of 24.75 feet (MW-1) and 23.60 feet (MW-5) below each TOC, resulting in free product thicknesses of 5.14 feet (MW-1) and 4.30 feet (MW-5). Monitoring wells MW-3, MW-4, and MW-6 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements. This AFVR event consisted of one vacuum truck simultaneously extracting fluids from monitoring wells MW-1 and MW-5 for approximately 12 hours. The drop tube (also known as stinger pipe) was lowered to a depth of approximately 6-inches below the free product/water table interface. The depth of the stinger piping was not adjusted throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 26 inches of mercury (in Hg) at monitoring wells MW-1 and MW-5 over the course of the event. The air velocity rates averaged 4,456 feet per minute (ft/min) from the discharge stack over the course of the event. The organic vapor concentrations recovered from monitoring wells MW-1 and MW-5 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 2,454 parts per million (ppm) during the event. The exhaust stack gas temperatures averaged 232.3 degrees Fahrenheit (°F) from monitoring wells MW-1 and MW-5.

Free product was not detected immediately after the AFVR event in monitoring well MW-1. Free product was, however, detected immediately after the AFVR event in monitoring well MW-5 with a thickness of 0.09 feet. Free product was detected in monitoring wells MW-1 and MW-5 during 20-minutes post-AFVR measurements with thicknesses of 0.11 feet and 0.20 feet, respectively. A summary of free product and AFVR data collected from monitoring wells MW-1 and MW-5 during AFVR activities is presented in **Table 1**. A summary of groundwater elevation data collected during AFVR activities is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 12 hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 30.54 pounds (4.88 gallons). Approximately 1,503 gallons of liquid were removed from monitoring wells MW-1 and MW-5 during the July 12-13, 2011 AFVR event. Free product was reported as not detected, however, a visible sheen was reported in the tank of the vacuum truck by Zebra after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the July 12-13, 2011 AFVR event are included in **Appendix A**.

2.1.2 AFVR Event – August 2-3, 2011

This AFVR event was initiated on August 2, 2011 and completed on August 3, 2011 by A&D Environmental Services, Inc. (A&D) with activity monitoring provided by Aaron Williamson of ECS. Prior to the start of the event, the depths to liquid phase hydrocarbons (free product) and groundwater were measured in shallow monitoring well MW-2. Free product was detected at a depth of 22.45 feet below the TOC and groundwater was measured at a depth of 26.65 feet below the TOC, resulting in a free product thickness of 4.20 feet. Monitoring wells MW-17, MW-18, and MW-19 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements. This AFVR event consisted of one vacuum truck extracting fluids from monitoring well MW-2 for approximately 12 hours. The stinger pipe was lowered to a depth of approximately 6-inches below the free product/water table interface. The depth of the stinger piping was not adjusted throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 20 in Hg at monitoring well MW-2 over the course of the event. The air velocity rates averaged 4,069 ft/min from the discharge stack over the course of the event. The organic vapor concentrations recovered from monitoring well MW-2 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 923 ppm during the event. The exhaust stack gas temperatures averaged 244.6 °F from monitoring well MW-2.

Free product was not detected immediately after the AFVR event in monitoring well MW-2. Free product was, however, detected in monitoring well MW-2 during 20-minutes post-AFVR measurements with a thickness of 0.10 feet. A summary of free product and AFVR data collected from monitoring well MW-2 during AFVR activities is presented in **Table 1**. A summary of groundwater elevation data collected during AFVR activities is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 12 hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 10.33 pounds (1.65 gallons). Approximately 580 gallons of liquid were removed from monitoring well MW-2 during the August 2-3, 2011 AFVR event. Free product was reported as not detected, however, a visible sheen was reported in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the August 2-3, 2011 AFVR event are included in **Appendix B**.

2.1.3 AFVR Event – August 11-12, 2011

This AFVR event was initiated on August 11, 2011 and completed on August 12, 2011 by A&D with activity monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to liquid phase hydrocarbons (free product) and groundwater were measured in shallow monitoring well MW-19. Free product was detected at a depth of 22.13 feet below the TOC and groundwater was measured at a depth of 27.05 feet below the TOC, resulting in a free product thickness of 4.92 feet. Monitoring wells MW-1, MW-2, and MW-4 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements. This AFVR event consisted of one vacuum truck extracting fluids from monitoring well MW-19 for approximately 12 hours. The stinger pipe was lowered to a depth of approximately 6-inches below the free product/water table interface. The depth of the stinger piping was not adjusted throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 25 in Hg at monitoring well MW-19 over the course of the event. The air velocity rates averaged 4,274 ft/min from the discharge stack over the course of the event. The organic vapor concentrations recovered from monitoring well MW-19 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 2,804 ppm during the event. The exhaust stack gas temperatures averaged 216.4 °F from monitoring well MW-19.

Free product was not detected immediately after the AFVR event in monitoring well MW-19. Free product was, however, detected in monitoring well MW-19 during 20-minutes post-AFVR measurements with a thickness of 0.09 feet. A summary of free product and AFVR data collected from monitoring well MW-19 during AFVR activities is presented in **Table 1**. A summary of groundwater elevation data collected during AFVR activities is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 12 hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 33.16 pounds (5.30 gallons). Approximately 740 gallons of liquid were removed from monitoring well MW-19 during the August 11-12, 2011 AFVR event. Free product was reported as not detected, however, a visible sheen was reported in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the August 11-12, 2011 AFVR event are included in **Appendix C**.

3.0 ASSESSMENT INFORMATION

The SCDHEC directive for this scope of work included a comprehensive groundwater sampling event one month following the three AFVR events.

3.1 ASSESSMENT ACTIVITIES

3.1.1 Well Gauging and Sampling

Four monitoring wells (MW-1, MW-2, MW-6 and MW-11) were each gauged for depth to free product, depth to groundwater, and total well depth on September 6, 2011. Free product was detected in monitoring well MW-2 with a free product thickness of 2.31 feet. Free product was not detected in the remaining three monitoring wells.

The depths to groundwater measured in shallow monitoring wells MW-1, MW-6, and MW-11 were 13.58 feet, 14.03 feet, and 12.43 feet, respectively. The groundwater elevations in the shallow monitoring wells, relative to a temporary benchmark (magnail in sidewalk) with an assumed datum of 100.00 feet, ranged from 86.22 feet (MW-1) to 84.38 feet (MW-11).

Three monitoring wells (MW-1, MW-6 and MW-11) were sampled using the no-purge method on September 6, 2011. Monitoring well MW-2 was not sampled due to the presence of free product.

The groundwater samples collected from these 3 monitoring wells were analyzed for benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX), methyl tert-butyl ether (MTBE), naphthalene, 1,2-dichloroethane (1,2-DCA) and the eight oxygenates by EPA Method 8260, and ethylene dibromide (EDB) by EPA Method 8011.

Groundwater samples were collected using new, disposable polyethylene bailers while wearing new, disposable nitrile gloves, containerized in laboratory-prepared glass bottles, packed on ice, and transported to Pace Analytical Services, Inc. (Huntersville, NC), a South Carolina certified laboratory. Standard chain-of-custody procedures were maintained, as documented in **Appendices B**.

Twenty-three monitoring wells (MW-1 through MW-23) were gauged for depths to free product, depths to groundwater, and total well depths (except where free product was detected) on September 12, 2011. Free product was detected in site monitoring wells MW-1, MW-2, MW-5, and MW-19 with free product thicknesses of 5.76 feet, 4.05 feet, 3.39 feet, and 4.61 feet, respectively.

The depths to groundwater measured in the shallow monitoring wells (MW-1 through MW-23) on September 12, 2011 ranged between 16.15 feet (MW-16) and 27.18 feet (MW-19) from their top of casing. The groundwater elevations in the shallow monitoring wells, relative to a temporary benchmark ("X" in concrete) with an assumed datum of 99.50 feet above mean sea level, ranged from 70.14 feet (MW-20) to 76.86 feet (MW-16). Based on these data, the groundwater flow direction was radially from the northwest to south beneath the site. The hydraulic gradient was estimated based on the change in head hydraulic head per unit distance, calculated by using the formula $i = \frac{h_2 - h_1}{d}$, referenced from the "EPA On-line Tools for Site Assessment Calculation" website <http://www.epa.gov/athens/learn2model/part-two/onsite/gradient.htm>. In this calculation, i is the gradient, h is the hydraulic head at the up gradient monitoring well (h_1) and down gradient monitoring well (h_2), and d is the distance

between the down gradient monitoring well and the up gradient monitoring well. The average horizontal hydraulic gradient ranged between 0.016 feet per foot (ft/ft) and 0.024 ft/ft across the site. Historical Groundwater Elevation Data is presented in **Table 3**. A Groundwater Elevation Map based on the September 12, 2011 data has been included as **Figure 4**.

Nineteen shallow monitoring wells (MW-3, MW-4, and MW-6 through MW-18, and MW-20 through MW-23) were sampled without purging on September 12, 2011. Monitoring wells MW-1, MW-2, MW-5, and MW-19 were not sampled due to the presence of free product.

The groundwater samples collected from these 19 monitoring wells were analyzed for benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX), methyl tertiary butyl ether (MTBE), naphthalene, 1,2-dichloroethane (1,2-DCA), and the eight oxygenates by EPA Method 8260, and ethylene dibromide (EDB) by EPA Method 8011.

Groundwater samples were collected using new, disposable polyethylene bailers while wearing new, disposable nitrile gloves, containerized in laboratory-prepared glass bottles, packed on ice, and transported to Pace Analytical Services, Inc. (Huntersville, NC), a South Carolina certified laboratory. Standard chain-of-custody procedures were maintained, as documented in **Appendix D**.

3.2 GROUNDWATER QUALITY

Groundwater samples were analyzed from 19 site monitoring wells (MW-3, MW-4, MW-6 through MW-18, and MW-20 through MW-23) during the September 12, 2011 groundwater sampling event. As noted earlier, monitoring wells MW-1, MW-2, MW-5, and MW-19 were not sampled due to the presence of free product. Concentrations of benzene, toluene, ethylbenzene, MTBE, naphthalene, and EDB were detected above their respective May 2001 RBSL for groundwater samples collected during the September 12, 2011 groundwater sampling event. Concentrations of tertiary amyl alcohol (TAA) and tertiary amyl methyl ether (TAME) were detected above their respective August 2008 Action Level during the September 12, 2011 groundwater sampling event. The laboratory report for groundwater samples collected during the September 12, 2011 groundwater sampling event is included in **Appendix D**. Groundwater Sampling Field Data Sheets have been included in **Appendix E**.

3.2.1 Chemicals of Concern

Concentrations of benzene exceeding the RBSL were reported in groundwater samples collected from monitoring wells MW-3, MW-4, MW-6, MW-11, MW-12, and MW-17. Concentrations of toluene exceeding the RBSL were reported in groundwater samples collected from monitoring wells MW-11 and MW-17. Concentrations of ethylbenzene, naphthalene, and EDB exceeding their respective RBSL were reported in the groundwater sample collected from monitoring well MW-17. Concentrations of MTBE exceeding the RBSL were reported in groundwater samples collected from monitoring wells MW-4 and MW-6.

Detectable concentrations of toluene below the RBSL were reported in groundwater samples collected from monitoring wells MW-4, MW-6, MW-12, and MW-20. The detectable concentration for toluene for monitoring well MW-20 was flagged as an I value, which represents the reported value between the laboratory detection limit and the laboratory practical quantitation limit. Detectable concentrations of ethylbenzene below the RBSL were reported in groundwater samples collected from monitoring wells MW-4, MW-6, MW-11, and MW-12. Detectable concentrations of total xylenes below the RBSL were reported in groundwater samples collected from monitoring wells MW-3, MW-4, MW-6, MW-11, and MW-12 (I value). Detectable concentrations of MTBE below the RBSL were reported in groundwater samples collected from

monitoring wells MW-20 and MW-23 (I value). Detectable concentrations of naphthalene below the RBSL were reported in groundwater samples collected from monitoring wells MW-8 (I value) and MW-12.

Chemicals of Concern (such as BTEX, MTBE, naphthalene, 1,2-DCA, and EDB) were reported as not detected in the laboratory report for groundwater samples collected from monitoring wells MW-7, MW-9, MW-10, MW-13 through MW-16, MW-18, MW-21, and MW-22. Historical groundwater analytical data for CoC is presented in **Table 4**. A Groundwater Quality Map for CoC based on the September 12, 2011 data is included as **Figure 4**.

3.2.1 Eight Oxygenates

The eight oxygenates identified by the SCDHEC include tertiary amyl alcohol (TAA), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), tertiary butyl formate (TBF), diisopropyl ether (DIPE), ethanol, ethyl tert-butyl ether (ETBE), and 3,3-dimethyl-1-butanol. Three monitoring wells were reported with one or more of the eight oxygenates above the 2008 Action Levels in the groundwater samples collected on September 12, 2011.

Concentrations of TAA exceeding the Action Level were reported in groundwater samples collected from monitoring wells MW-4, MW-12, and MW-17. A concentration of TAME exceeding the Action Level was reported in the groundwater sample collected from monitoring well MW-17.

Concentrations of TAME detected below the Action Level were reported in groundwater samples collected from monitoring wells MW-4, MW-6 (I value), and MW-11. Concentrations of TBA detected below the Action Level were reported in groundwater samples collected from monitoring wells MW-3 (I value), MW-4, and MW-12. A concentration of DIPE detected below the Action Level was reported in the groundwater sample collected from monitoring well MW-4.

The remaining groundwater samples analyzed for the eight oxygenates were reported as not detected (below the laboratory method detection limits). Historical groundwater analytical data for the eight oxygenates is presented in **Table 5**. A Groundwater Quality Map for the Eight Oxygenates based on the September 12, 2011 data is included as **Figure 5**.

3.3 INVESTIGATIVE DERIVED WASTE

No investigative derived waste (IDW) was generated during the groundwater sampling event due to all the shallow monitoring wells targeted for sample collection had water levels that were bracketed by the well screen.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

- Free product was detected in on-site monitoring wells MW-1 and MW-5 prior to the scheduled AFVR event on July 12-13, 2011 and 20-minutes after during post-AFVR measurements. A total of 1,503 gallons of fluids was measured in the tank of the vacuum truck following the AFVR event with no measurable volume of free product in the tank. Stack emission calculations indicated 4.88 gallons of petroleum vapors were emitted through the stack. Free product thicknesses were reduced from 5.14 feet to 0.11 feet in monitoring well MW-1 and from 4.30 feet to 0.20 feet in monitoring well MW-5.
- Free product was detected in on-site monitoring well MW-2 prior to the August 2-3, 2011 AFVR event and during 20-minutes post-AFVR measurements. A total of 580 gallons of fluids was measured in the tank of the tank of the vacuum truck following the AFVR event with no measurable volume of free product in the tank. Stack emission calculations indicated 1.65 gallons of petroleum vapors were emitted through the stack. Free product thickness was reduced from 4.20 feet to 0.10 feet in monitoring well MW-2.
- Free product was detected in on-site monitoring well MW-19 prior to the August 11-12, 2011 AFVR event and during 20-minutes post-AFVR measurements. A total of 740 gallons of fluids was measured in the tank of the tank of the vacuum truck following the AFVR event with no measurable volume of free product in the tank. Stack emission calculations indicated 5.30 gallons of petroleum vapors were emitted through the stack. Free product thickness was reduced from 4.92 feet to 0.09 feet in monitoring well MW-19.
- Free product was detected in on-site monitoring wells MW-1 (thickness of 5.76 feet), MW-2 (thickness of 4.05 feet), MW-5 (thickness of 3.39 feet), and MW-19 (thickness of 4.61 feet) during the groundwater sampling event on September 12, 2011.
- Based on the September 12, 2011 groundwater level measurements, groundwater appears to generally flow in a radially northwest to south direction from the site. The previous groundwater sampling event from October 2010 also indicated a flow radially northwest to south beneath the site.
- The distribution of free-phase and dissolved-phase petroleum hydrocarbons in groundwater appear relatively defined in the horizontal direction following the September 12, 2011 gauging and groundwater sampling event.

4.2 RECOMMENDATIONS

- ECS recommends continuing AFVR events in monitoring wells MW-1, MW-2, MW-5, and MW-19 to remove free product from the site.
- ECS also recommends continuing to monitor CoC in groundwater, provided monitored natural attenuation is considered as a viable option for corrective action.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience LLC for specific application to the referenced site in Edgefield County, South Carolina. The corrective action and assessment were conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

TABLES

TABLE 1

SUMMARY OF AFVR INFORMATION[1]

EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F^o)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
MW-1	4/6/10 - 4/7/10	8	4,419	194.3	626	1.33	0	1.33	314
MW-1 MW-5	7/12/11 - 7/13/11	12	4,456	232.3	2,454	4.88	0	4.88	1,503
MW-2	8/2/11 - 8/3/11	12	4,069	244.6	923	1.65	0	1.65	580
MW-19	8/11/11 - 8/12/11	12	4,274	216.4	2,804	5.30	0	5.30	740
Totals		44	--	--	--	13.16	0	13.16	3,137

Notes:

1. Aggressive Fluid Vapor Recovery (AFVR) events using vaccum trucks provided by A & D Environmental and Industrial Services, Inc. (4/6/10-4/7/10, 8/2/11-8/3/11, & 8/11/11-8/12/11) and Zebra Environmental (7/12/11-7/13/11).
2. Duration of the AFVR event at well location.
3. Cross-sectional area of exhaust stack is 0.785 sq. ft.
4. Total Volatized in gallons = Air emissions in pounds/(6.25 lbs./gal.)
5. Total Free Product as Fluid is obtained from disposal manifest and/or correspondence with subcontractors from each AFVR event.
6. Total Free Product Recovered = Total Free Product Volatized + Total Free Product as Fluid.

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-1	4/6/10 (pre-AFVR)	98.51	17.61	22.24	4.63	79.74	35	15
	4/7/10 (immediately post-AFVR)		--	21.42	--	77.09		
	4/7/10 (20 minutes post-AFVR)		20.37	20.42	0.05	78.13		
MW-3	4/6/10 (pre-AFVR)	100.44	--	20.74	--	79.70	34	15
	4/7/10 (immediately post-AFVR)		--	20.78	--	79.66		
	4/7/10 (20 minutes post-AFVR)		--	20.78	--	79.66		
MW-4	4/6/10 (pre-AFVR)	98.61	--	19.14	--	79.47	29	10
	4/7/10 (immediately post-AFVR)		--	19.22	--	79.39		
	4/7/10 (20 minutes post-AFVR)		--	19.23	--	79.38		
MW-5	4/6/10 (pre-AFVR)	98.05	--	18.24	--	79.81	29	10
	4/7/10 (immediately post-AFVR)		--	18.95	--	79.10		
	4/7/10 (20 minutes post-AFVR)		--	18.82	--	79.23		
MW-6	4/6/10 (pre-AFVR)	99.82	--	20.14	--	79.68	29	10
	4/7/10 (immediately post-AFVR)		--	20.28	--	79.54		
	4/7/10 (20 minutes post-AFVR)		--	20.29	--	79.53		
MW-1	7/12/11 (pre-AFVR)	98.51	19.61	24.75	5.14	77.62	35	15
	7/13/11 (immediately post-AFVR)		--	25.35	--	73.16		
	7/13/11 (20 minutes post-AFVR)		22.92	23.03	0.11	75.56		
MW-5	7/12/11 (pre-AFVR)	98.05	19.3	23.6	4.30	77.68	29	10
	7/13/11 (immediately post-AFVR)		23.16	23.25	0.09	74.87		
	7/13/11 (20 minutes post-AFVR)		22.31	22.51	0.20	75.69		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-3	7/12/11 (pre-AFVR)	100.44	--	22.84	--	77.60	34	15
	7/13/11 (immediately post-AFVR)		--	22.89	--	77.55		
	7/13/11 (20 minutes post-AFVR)		--	22.84	--	77.60		
MW-4	7/12/11 (pre-AFVR)	98.61	--	21.21	--	77.40	29	10
	7/13/11 (immediately post-AFVR)		--	21.31	--	77.30		
	7/13/11 (20 minutes post-AFVR)		--	21.32	--	77.29		
MW-6	7/12/11 (pre-AFVR)	99.82	--	22.20	--	77.62	29	10
	7/13/11 (immediately post-AFVR)		--	22.50	--	77.32		
	7/13/11 (20 minutes post-AFVR)		--	22.51	--	77.31		
MW-2	8/2/11 (pre-AFVR)	100.42	22.45	26.65	4.20	76.92	34	15
	8/3/11 (immediately post-AFVR)		--	25.67	--	74.75		
	8/3/11 (20 minutes post-AFVR)		24.03	24.13	0.10	76.37		
MW-17	8/2/11 (pre-AFVR)	101.09	--	24.07	--	77.02	28	10
	8/3/11 (immediately post-AFVR)		--	24.19	--	76.90		
	8/3/11 (20 minutes post-AFVR)		--	24.18	--	76.91		
MW-18	8/2/11 (pre-AFVR)	101.51	--	24.51	--	77.00	28	10
	8/3/11 (immediately post-AFVR)		--	24.56	--	76.95		
	8/3/11 (20 minutes post-AFVR)		--	24.56	--	76.95		
MW-19	8/2/11 (pre-AFVR)	100.01	21.98	26.81	4.83	76.82	28	10
	8/3/11 (immediately post-AFVR)		22.05	26.90	4.85	76.75		
	8/3/11 (20 minutes post-AFVR)		22.05	26.89	4.84	76.75		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-19	8/11/11 (pre-AFVR)	100.01	22.13	27.05	4.92	76.65	28	10
	8/12/11 (immediately post-AFVR)		--	27.42	--	72.59		
	8/12/11 (20 minutes post-AFVR)		24.42	24.51	0.09	75.57		
MW-1	8/11/11 (pre-AFVR)	98.51	20.25	25.86	5.61	76.86	35	15
	8/12/11 (immediately post-AFVR)		20.37	25.97	5.60	76.74		
	8/12/11 (20 minutes post-AFVR)		20.41	26.02	5.61	76.70		
MW-2	8/11/11 (pre-AFVR)	100.42	23.05	25.47	2.42	76.77	34	15
	8/12/11 (immediately post-AFVR)		23.12	25.97	2.85	76.59		
	8/12/11 (20 minutes post-AFVR)		23.13	25.58	2.45	76.68		
MW-4	8/11/11 (pre-AFVR)	98.61	--	21.90	--	76.71	29	10
	8/12/11 (immediately post-AFVR)		--	22.32	--	76.29		
	8/12/11 (20 minutes post-AFVR)		--	22.32	--	76.29		

Notes:

1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product, where present, with an assumed density of 0.75 g/cm^3.

TABLE 3
HISTORICAL GROUNDWATER ELEVATION DATA[1]
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Date	Top of Casing Elevation (ft)	Depth to Free Product (ft)	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation[2] (ft)	Well Depth[3] (ft)	Well Screen Length[3] (ft)	Measured Well Depth[4] (ft)	Screened Interval[5] (ft)
MW-1	12/17/04	98.51	22.13	23.68	1.55	75.99	35	15	NM	20-35
	05/10/10		17.83	21.00	3.17	79.89			NM	
	10/20/10		19.38	25.07	5.69	77.71			NM	
	09/12/11		20.59	26.35	5.76	76.48			NM	
MW-2	12/17/04	100.42	---	24.55	---	75.87	34	15	34.05	19.05-34.05
	05/10/10		20.27	22.73	2.46	79.54			33.98	
	10/20/10		21.96	25.61	3.65	77.55			NM	
	09/12/11		23.01	27.06	4.05	76.40			NM	
MW-3	12/17/04	100.44	---	24.38	---	76.06	34	15	34.00	19.00-34.00
	05/10/10		---	20.54	---	79.90			33.91	
	10/20/10		---	22.71	---	77.73			33.90	
	09/12/11		---	23.90	---	76.54			33.89	
MW-4	05/10/10	98.61	---	18.92	---	79.69	29	10	28.91	18.91-28.91
	10/20/10		---	21.04	---	77.57			28.95	
	09/12/11		---	22.22	---	76.39			28.96	
MW-5	05/10/10	98.05	---	18.09	---	79.96	29	10	29.04	19.04-29.04
	10/20/10		20.22	20.57	0.35	77.74			NM	
	09/12/11		20.66	24.05	3.39	76.54			NM	
MW-6	05/10/10	99.82	---	19.94	---	79.88	29	10	28.99	18.99-28.99
	10/20/10		---	22.09	---	77.73			29.02	
	09/12/11		---	23.27	---	76.55			28.99	
MW-7	05/10/10	93.32	---	13.51	---	79.81	20	10	20.33	10.33-20.33
	10/20/10		---	15.91	---	77.41			20.25	
	09/12/11		---	17.00	---	76.32			20.36	

TABLE 3
HISTORICAL GROUNDWATER ELEVATION DATA[1]
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Date	Top of Casing Elevation (ft)	Depth to Free Product (ft)	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation[2] (ft)	Well Depth[3] (ft)	Well Screen Length[3] (ft)	Measured Well Depth[4] (ft)	Screened Interval[5] (ft)
MW-8	05/10/10	100.59	---	21.61	---	78.98	27	10	26.85	16.85-26.85
	10/20/10		---	23.83	---	76.76			26.89	
	09/12/11		---	24.89	---	75.70			26.89	
MW-9	05/10/10	97.55	---	18.81	---	78.74	27	10	27.03	17.03-27.03
	10/20/10		---	21.12	---	76.43			27.07	
	09/12/11		---	22.16	---	75.39			26.93	
MW-10	05/10/10	101.31	---	22.88	---	78.43	30	10	30.31	20.31-30.31
	10/20/10		---	24.90	---	76.41			30.40	
	09/12/11		---	25.87	---	75.44			30.39	
MW-11	05/10/10	101.65	---	22.16	---	79.49	31	10	31.04	21.04-31.04
	10/20/10		---	24.10	---	77.55			31.07	
	09/12/11		---	25.25	---	76.40			30.91	
MW-12	05/10/10	100.55	---	21.78	---	78.77	30	10	30.15	20.15-30.15
	10/20/10		---	23.75	---	76.80			30.10	
	09/12/11		---	25.00	---	75.55			30.04	
MW-13	05/10/10	93.20	---	17.82	---	75.38	25	10	25.20	15.20-25.20
	10/20/10		---	20.26	---	72.94			25.24	
	09/12/11		---	21.60	---	71.60			25.24	
MW-14	05/10/10	100.05	---	22.47	---	77.58	30	10	29.54	19.54-29.54
	10/20/10		---	24.77	---	75.28			29.59	
	09/12/11		---	25.97	---	74.08			29.57	
MW-15	05/10/10	98.47	---	18.81	---	79.66	27	10	26.93	16.93-26.93
	10/20/10		---	21.16	---	77.31			26.97	
	09/12/11		---	22.10	---	76.37			26.96	

TABLE 3
HISTORICAL GROUNDWATER ELEVATION DATA[1]
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Date	Top of Casing Elevation (ft)	Depth to Free Product (ft)	Depth to Groundwater (ft)	Free Product Thickness (ft)	Groundwater Elevation[2] (ft)	Well Depth[3] (ft)	Well Screen Length[3] (ft)	Measured Well Depth[4] (ft)	Screened Interval[5] (ft)
MW-16	05/10/10	93.01	---	12.34	---	80.67	20	10	19.92	9.92-19.92
	10/20/10		---	14.97	---	78.04			19.89	
	09/12/11		---	16.15	---	76.86			19.66	
MW-17	10/20/10	101.09	---	23.52	---	77.57	28	10	28.70	18.70-28.70
	09/12/11		---	24.67	---	76.42			28.68	
MW-18	10/20/10	101.51	---	24.01	---	77.50	28	10	28.66	18.66-28.66
	09/12/11		---	25.14	---	76.37			28.58	
MW-19	10/20/10	100.01	22.35	23.19	0.84	77.45	28	10	NM	18-28
	09/12/11		22.57	27.18	4.61	76.29			NM	
MW-20	10/20/10	91.80	---	20.28	---	71.52	27	10	26.24	16.24-26.26
	09/12/11		---	21.66	---	70.14			26.24	
MW-21	10/20/10	94.30	---	21.70	---	72.60	29	10	29.37	19.37-29.37
	09/12/11		---	22.94	---	71.36			29.35	
MW-22	10/20/10	99.82	---	25.99	---	73.83	30	10	29.89	19.84-29.84
	09/12/11		---	26.94	---	72.88			29.89	
MW-23	10/20/10	102.29	---	24.86	---	77.43	31	10	31.37	21.37-31.37
	09/12/11		---	25.99	---	76.30			31.34	

Notes:

1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product with an assumed density of 0.75g/cm^3, where present.
3. Based on well construction records.
4. Top of casing referenced as measuring point.
5. Based on measured well depth.

TABLE 4

HISTORICAL GROUNDWATER ANALYTICAL DATA[1]

CHEMICALS OF CONCERN

EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)
MW-1	03/04/09	**FP[2]**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	09/12/11	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-2	03/04/09	**4,970 [3]**	**7,470**	**1,020**	4,400	**183**	**142**	**0.46**	NR[4]	<5.0[5]
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	09/12/11	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-3	03/04/09	**7.9**	33.9	<5.0	12.8	<5.0	<5.0	<0.019	NR	<5.0
	05/10/10	<5.0	4.5J[6]	<5.0	5.7J	<5.0	<5.0	<0.020	<5.0	<5.0
	10/21/10	**7.5**	<5.0	<5.0	4.7J	<5.0	3.6J	<0.020	NR	NR
	09/12/11	**21.4**	<1	<0.5	3.5	<1	<5	<0.0189	<0.5	NR
MW-4	05/10/10	**411**	29.8	8.3	31.9J	**256**	<5.0	<0.020	<5.0	**17.6**
	10/21/10	**1,360**	87.5	108	121.6	**630**	15.2	<0.020	NR	NR
	09/12/11	**626**	10.6	9.5	19.2	**862**	<25	<0.019	<2.5	NR
MW-5	05/10/10	**20,900**	**30,900**	**1,090**	**12,100**	**11,400**	**316**	**0.93**	<5.0	**21.7**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	09/12/11	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-6	05/10/10	**270**	200	20.1	213.3	**59.4**	<5.0	<0.019	<5.0	9.4
	10/21/10	**1,830**	**1,140**	110	677	**186**	9.1J	<0.020	NR	NR
	09/12/11	**1,500**	351	19.5	353	**155**	<50	<0.0187	<5	NR
MW-7	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**59.3**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0187	<0.5	NR
MW-8	05/10/10	<5.0	3.7J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**57.2**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	1.9 I[7]	<0.0189	<0.5	NR
MW-9	05/10/10	<5.0	3.1J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**34.4**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0185	<0.5	NR
MW-10	05/10/10	<5.0	1.8J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**41.6**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR
	RBSL[8]	5	1,000	700	10,000	40	25	0.05	5	15

TABLE 4 (continued)
HISTORICAL GROUNDWATER ANALYTICAL DATA
CHEMICALS OF CONCERN
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)
MW-11	05/10/10	**1,820**	522	33.1	522	**125**	**31.9**	**0.097**	<5.0	**40.5**
	10/20/10	<5.0	<5.0	<5.0	<15.0	4.4J	<5.0	<0.020	NR	NR
	09/12/11	**1,110**	**1,140**	155	3,610	<10	<50	<0.0191	<5	NR
MW-12	05/10/10	**75.7**	3.5J	9.4	34.0J	<5.0	12.0	<0.020	<5.0	**61.5**
	10/20/10	**58.0**	2.6J	8.5	19.5	<5.0	14.6	<0.020	NR	NR
	09/12/11	**53.6**	2.1	2.6	1.1 I	<1	5.9	<0.0188	<0.5	NR
MW-13	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.021	<5.0	**96.0**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.019	<0.5	NR
MW-14	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	7.2
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR
MW-15	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**128**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR
MW-16	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**146**
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR
MW-17	10/21/10	**15,900**	**31,400**	**2,820**	**12,970**	**564**	**623**	**0.69**	<5.0	NR
	09/12/11	**9,220**	**19,500**	**1,530**	7,480	<100	**272 I**	**0.13**	<50	NR
MW-18	10/21/10	**26.8**	101	9.3	42.7	2.8J	3.1J	<0.020	<5.0	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR
MW-19	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	09/12/11	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-20	10/21/10	**5.6**	7.0	1.1J	9.1J	9.5	2.9J	<0.020	<5.0	NR
	09/12/11	<0.5	0.17 I	<0.5	<2	5	<5	<0.0188	<0.5	NR
MW-21	10/21/10	2.5J	10.5	1.8J	8.2J	<5.0	5.0	<0.019	<5.0	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR
MW-22	10/21/10	<5.0	4.5J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0191	<0.5	NR
	RBSL	5	1,000	700	10,000	40	25	0.05	5	15

TABLE 4 (continued)
HISTORICAL GROUNDWATER ANALYTICAL DATA
CHEMICALS OF CONCERN
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naph-thalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)
MW-23	10/21/10	<5.0	4.5J	<5.0	<15.0	3.8J	<5.0	<0.020	<5.0	NR
	09/12/11	<0.5	<1	<0.5	<2	0.66 I	<5	<0.0189	<0.5	NR
	RBSL	5	1,000	700	10,000	40	25	0.05	5	15

Notes:

1. Analysis for BTEX constituents, MTBE, naphthalene, and 1,2-DCA by EPA Method 8260; analysis for EDB by Method 8011; analysis for total lead by EPA Method 6010 (2010).
2. Free Product.
3. Concentrations in bold face type exceeded the May 2001 RBSLs.
4. Analysis not requested.
5. Less than the reporting limit specified in the laboratory report.
6. Estimated value between the method detection limit and the reporting limit.
7. Estimated value between the laboratory method detection limit and the laboratory practical quantitation limit.
8. May 2001 Risk-Based Screening Levels.

TABLE 5
HISTORICAL GROUNDWATER ANALYTICAL DATA [1]
EIGHT OXYGENATES
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Tertiary Amyl Alcohol (TAA) (µg/L)	Tertiary Amyl Methyl Ether (TAME) (µg/L)	Tertiary Butyl Alcohol (TBA) (µg/L)	Tertiary Butyl Formate (TBF) (µg/L)	Diisopropyl Ether (DIPE) (µg/L)	Ethanol (µg/L)	Ethyl tert-Butyl Ether (ETBE) (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
MW-1	03/04/09	NR[2]	NR	NR	NR	NR	NR	NR	NR
	05/10/10	**FP[3]**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	09/12/11	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-2	03/04/09	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	09/12/11	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-3	03/04/09	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	<100[4]	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/21/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	2.6 I[5]	<160	<1	<800	<1	<40
MW-4	05/10/10	**3,120**[6]	11.8	322	<50.0	<5.0	<200	<10.0	<100
	10/21/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**7,600**	30	350	<800	4.4 I	<4,000	<5	<200
MW-5	05/10/10	**25,300**	**1,620**	<100	<50.0	131	<200	**47.1**	<100
	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	09/12/11	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-6	05/10/10	**757**	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/21/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<200	6.7 I	<200	<1,600	<10	<8,000	<10	<400
MW-7	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-8	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-9	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
	Action Levels[8]	240	128	1,400	--	150	10,000	47	--

TABLE 5 (continued)
HISTORICAL GROUNDWATER ANALYTICAL DATA
EIGHT OXYGENATES
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Tertiary Amyl Alcohol (TAA) (µg/L)	Tertiary Amyl Methyl Ether (TAME) (µg/L)	Tertiary Butyl Alcohol (TBA) (µg/L)	Tertiary Butyl Formate (TBF) (µg/L)	Diisopropyl Ether (DIPE) (µg/L)	Ethanol (µg/L)	Ethyl tert-Butyl Ether (ETBE) (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
MW-10	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-11	05/10/10	**310**	100	<100	<50.0	4.7J[7]	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<200	19.3	<200	<1,600	<10	<8,000	<10	<400
MW-12	05/10/10	157	<10.0	570	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**343**	<1	88.2	<160	<1	<800	<1	<40
MW-13	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-14	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-15	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-16	05/10/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-17	10/21/10	**13,600**	**533J**	<100	<50.0	24.5	<200	8.5J	<100
	09/12/11	**9,580**	**260**	<2,000	<16,000	<100	<80,000	<100	<4,000
MW-18	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-19	10/20/10	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
	09/12/11	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**
MW-20	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
	Action Levels[8]	240	128	1,400	--	150	10,000	47	--

TABLE 5 (continued)
HISTORICAL GROUNDWATER ANALYTICAL DATA
EIGHT OXYGENATES
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Tertiary Amyl Alcohol (TAA) (µg/L)	Tertiary Amyl Methyl Ether (TAME) (µg/L)	Tertiary Butyl Alcohol (TBA) (µg/L)	Tertiary Butyl Formate (TBF) (µg/L)	Diisopropyl Ether (DIPE) (µg/L)	Ethanol (µg/L)	Ethyl tert-Butyl Ether (ETBE) (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
MW-21	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-22	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
MW-23	10/21/10	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<20	<1	<20	<160	<1	<800	<1	<40
	Action Levels	240	128	1,400	--	150	10,000	47	--

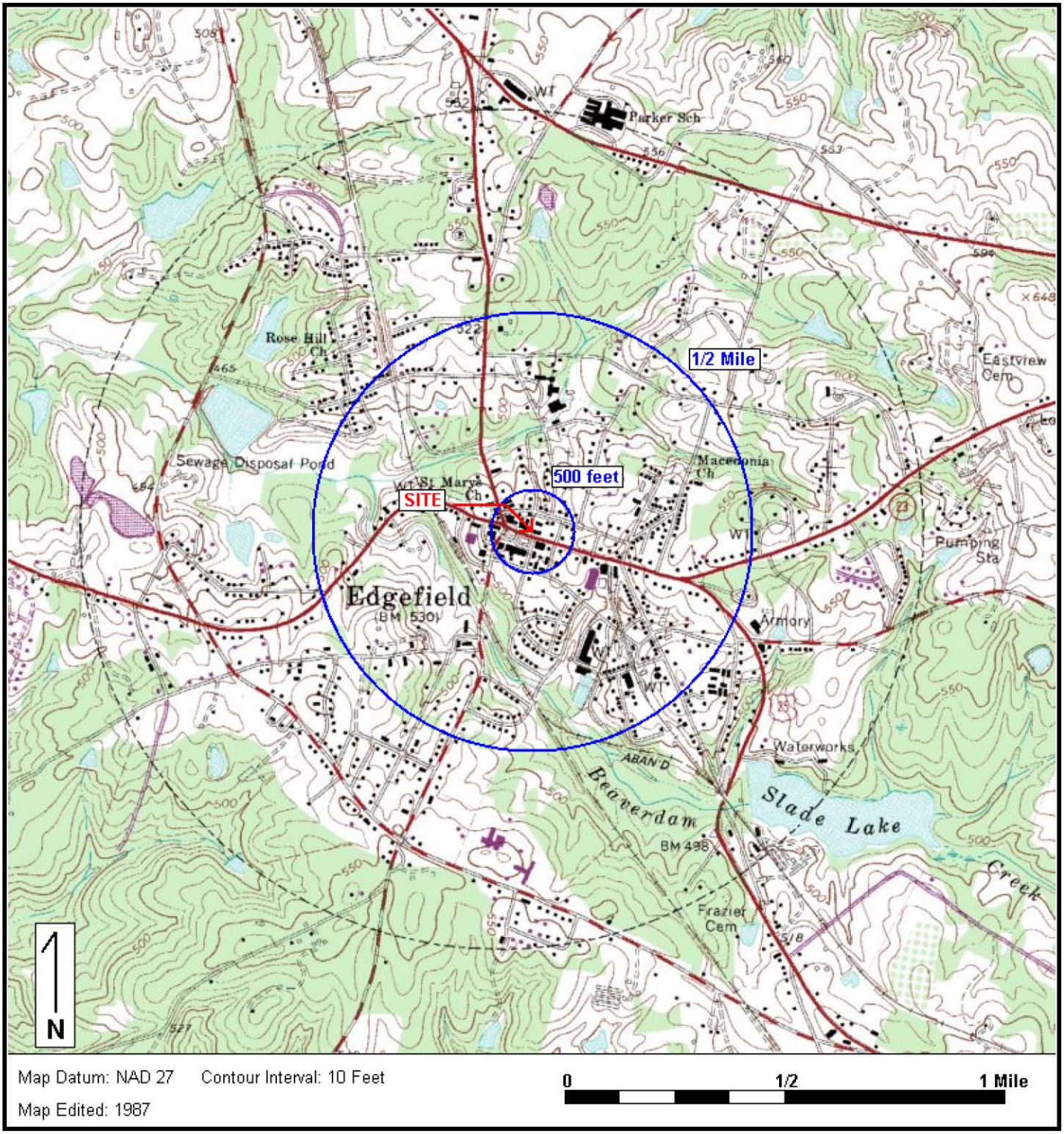
Notes:
1. Analyses for Eight Oxygenates by EPA Method 8260.
2. Analyses not requested.
3. Free Product.
4. Less than the reporting limit specified in the laboratory report.
5. Estimated value between the laboratory method detection limit and the laboratory practical quantitation limit.
6. Concentrations in bold face type exceeded the Action Level.
7. Estimated value between the laboratory reporting limit and the method detection limit.
8. August 2008 Action Levels.

FIGURES

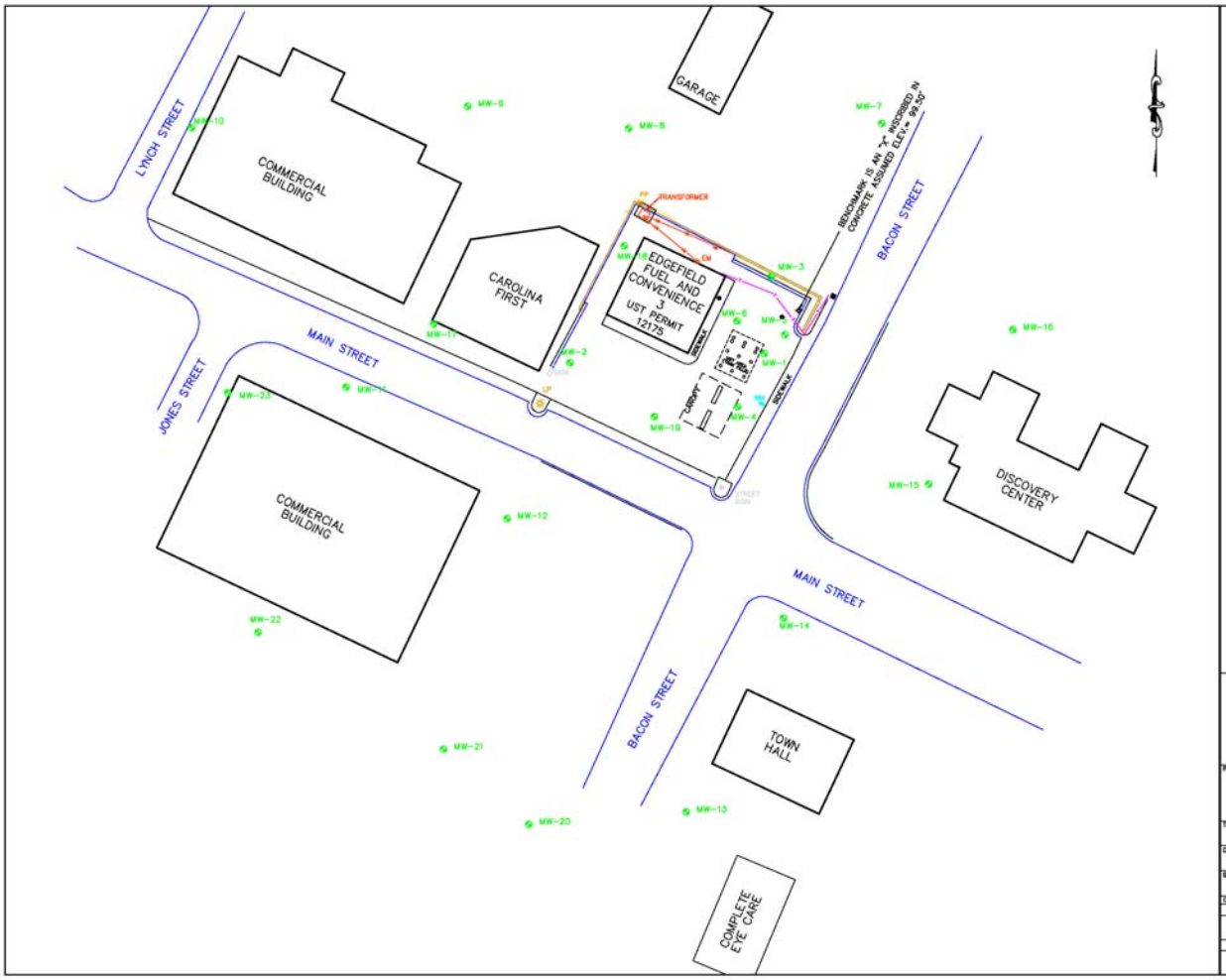
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP Light Pole
- LP Light Pole
- MW-1 Shallow (Water Table) Monitoring Well

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

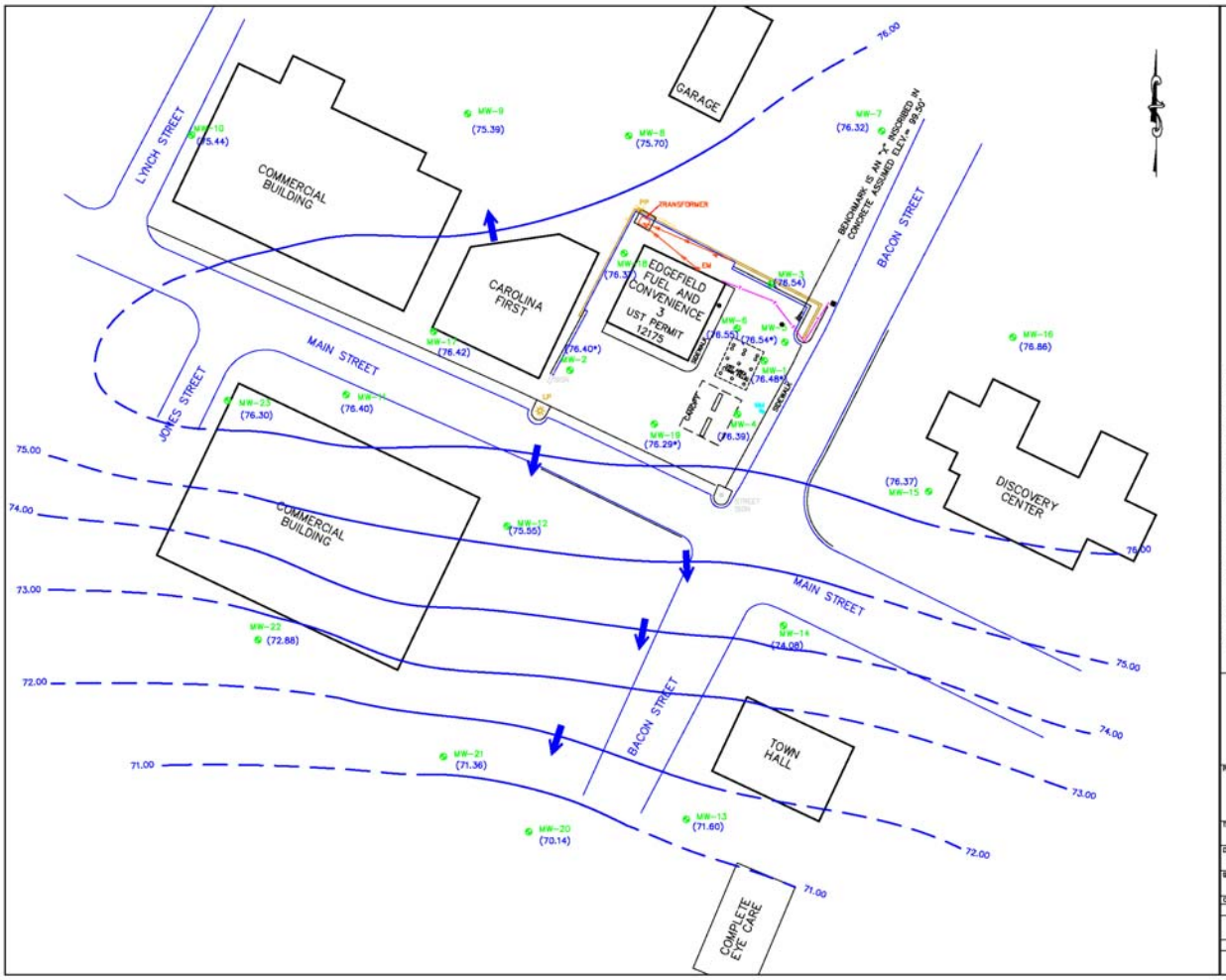
TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 09-12-11.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	11/28/11	14-211631	2



Legend

- UE — Underground Electric Line
- Wood Fence Line
- T — Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- MW-1 — Shallow (Water Table) Monitoring Well
- (73.71) — Groundwater Elevation (ft)
- 90.00 — Water Table Contour (Dashed where inferred)
- Flow Direction Indicator From 3-Point Problem

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Groundwater elevations are relative to a temporary benchmark with an assumed datum of 99.50 feet.

Groundwater Elevations are based on measurements made on September 12, 2011.

Water table contours, and flow directions assume homogeneous, isotropic aquifer conditions, and horizontal flow.

Fluctuations in the level of the water table may occure due to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

*Groundwater Elevation corrected using estimated density of 0.75g/cm³ for Petroleum Product.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

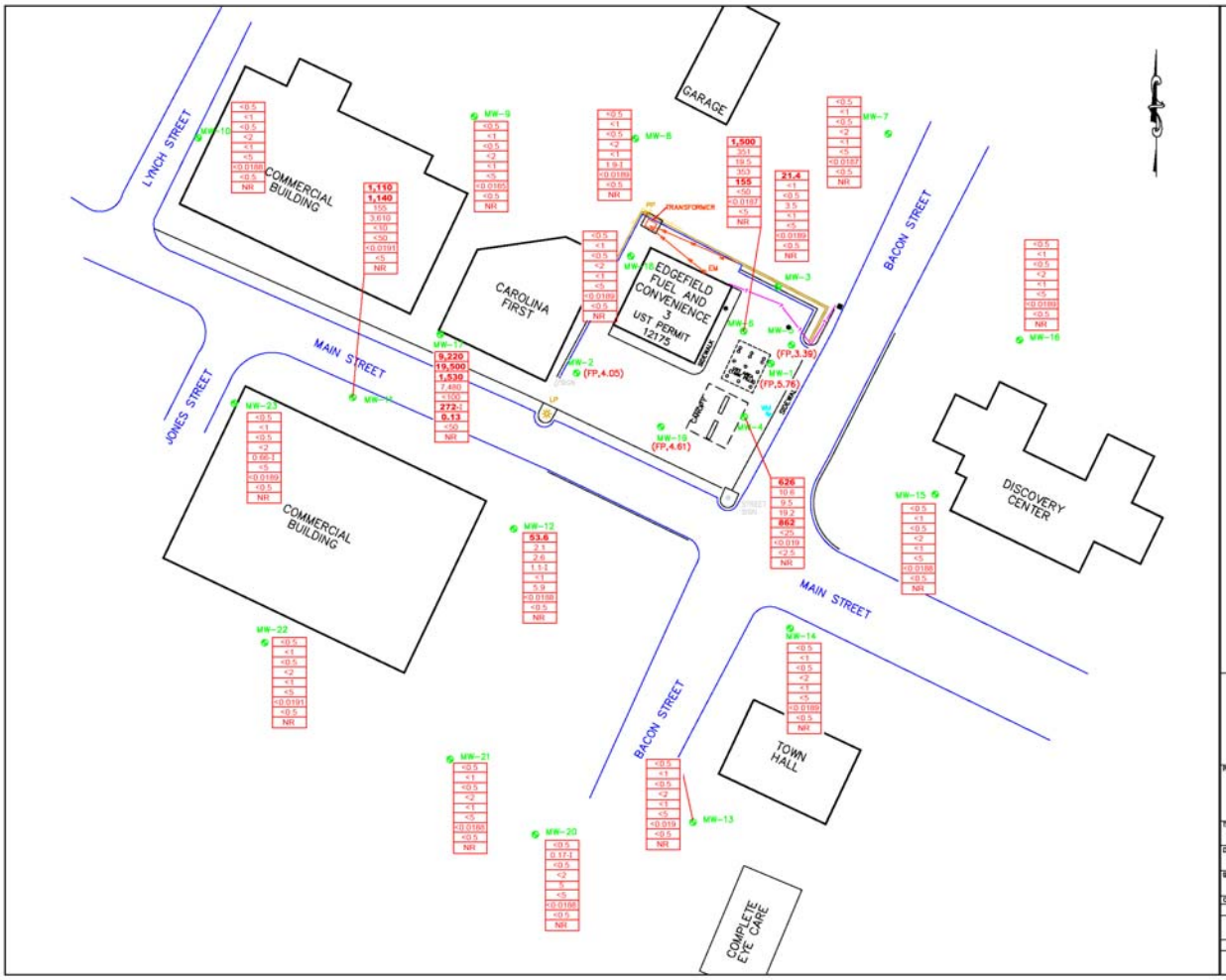
TITLE: Groundwater Elevation Map 9/12/11

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 0 25 50

COMPUTER CADFILE 09-12-11.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	11/23/11	14-211651	3



Legend

- UE — Underground Electric Line
- W — Wood Fence Line
- T — Underground Telephone Line
- SS — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well

5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	Naphthalene
25	MTBE
0.05	EDB
5	1,2-DCA
15	Total Lead

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L)

Above concentrations represent May 2001 Risk-Based Screening Levels; Concentrations in **bold** face type exceede the RBSL.

FP - Free Product; thickness in feet.

<1.0 - Less than the reporting limit specified in the laboratory report.

I - Reported value between the method detection limit and the practical quantitation limit.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

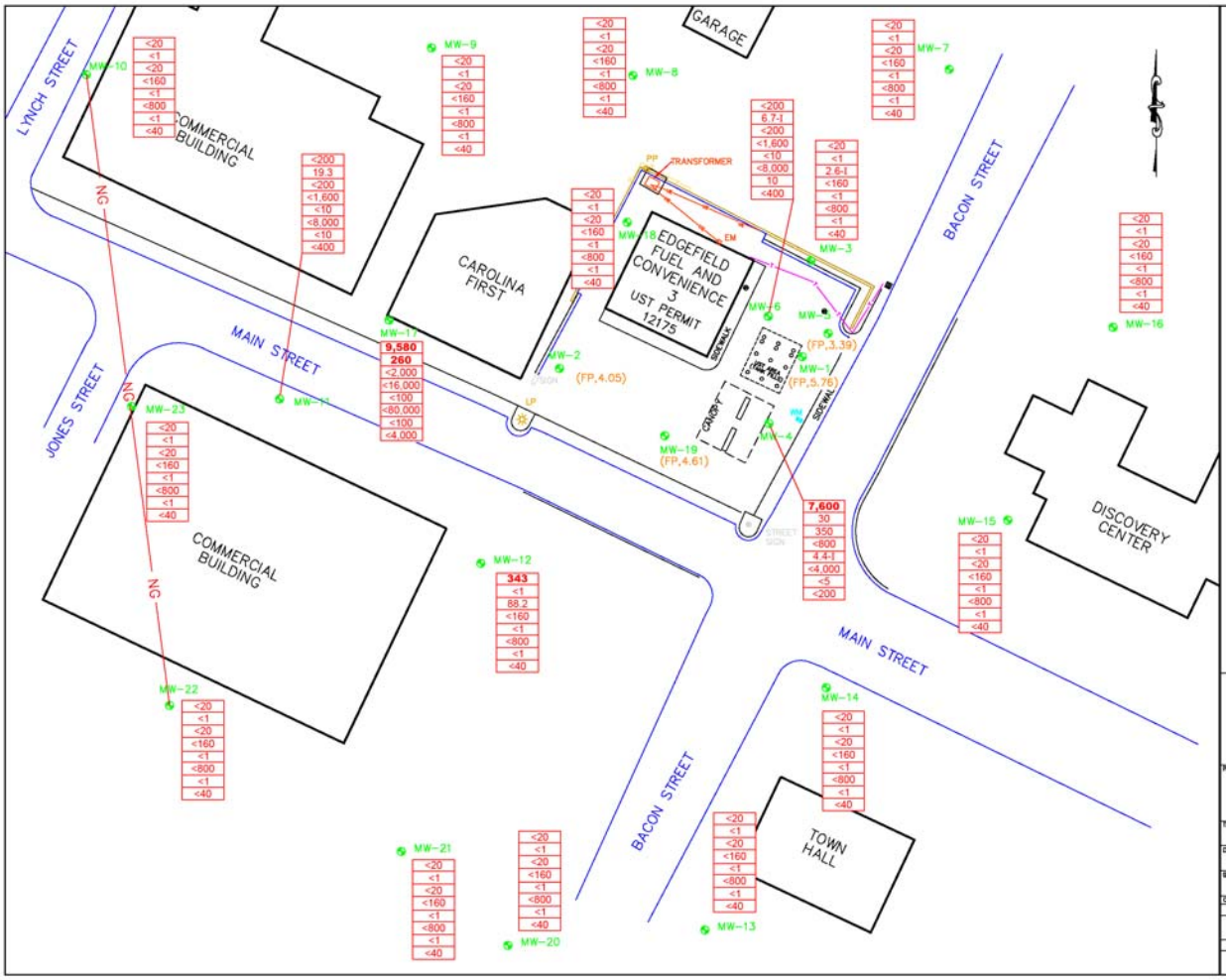
TITLE:
Groundwater Quality Map-CoC 9/12/11

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 09-12-11.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	11/23/11	14-211631	4



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- SB-1 — Soil Boring
- MW-1 — Shallow (Water Table) Monitoring Well

240	Tert-Amyl Alcohal (TAA)
128	Tert-Amyl Methyl Ether (TAME)
1,400	Tert-Butyl Alcohal (TBA)
–	Tert-Butyl Formate (TBF)
150	Di-isopropyl Ether (DIPE)
10,000	Ethanol
47	Ethyl tert-Butyl Ether (ETBE)
–	3,3-Dimethyl-1-butanol

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L;

Above concentrations represent August 2008 Action Level for Oxygenate Compounds; Concentrations in **bold** face type exceeded the Action Levels.

I - Reported value between the method detection limit and th practical quantitation limit.

<1.0 - Less than the reporting limit specified in the laboratory report.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Groundwater Quality Map-Oxygenates 9/12/11

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 09-12-11.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	11/23/11	14-211631	5

APPENDIX A

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – July 12-13, 2011

APPENDIX A
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	A. Williamson
Date:	7/12/11-7/13/11		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	Zebra Environmental	
VT No.:	6	
VT Tank Capacity:	3,400	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Yes	

Measurements After AFVR Event

VT Tank Product volume	Sheen	gallons
VT Tank Water volume	1,503	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
12175-MW1	19.61	24.75	NP	25.35	22.92	23.03	25.25
12175-MW5	19.30	23.60	23.16	23.25	22.31	22.51	24.10
12175-MW3	NP	22.84	NP	22.89	NP	22.84	--
12175-MW4	NP	21.21	NP	21.31	NP	21.32	--
12175-MW6	NP	22.20	NP	22.50	NP	22.51	--

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX A

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	7/12/11-7/13/11	Subcontractor	Zebra Environmental

Measurements During AFVR Event

	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW3		12175-MW4		12175-MW6	
Time	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O)
19:20											
19:35	4,704	206.2	2.9	3,000	26	--	0.00	--	0.00	--	0.00
19:50	4,427	222.1	1.9	3,400	26	--	0.00	--	0.00	--	0.00
20:05	4,271	221.5	2.4	3,500	26	--	0.00	--	0.00	--	0.00
20:20	4,764	222.1	2.3	3,600	26	--	0.00	--	0.00	--	0.00
20:35	4,739	228.6	1.9	3,300	26	--	0.00	--	0.00	--	0.00
20:50	4,531	228.7	2.1	2,600	26	--	0.00	--	0.00	--	0.00
21:05	4,808	225.1	2.1	5,600	26	--	0.05	--	0.20	--	0.20
21:20	4,739	226.9	2.0	2,400	26	--	0.05	--	0.20	--	0.20
21:50	4,357	237.0	1.9	3,300	26	--	0.05	--	0.25	--	0.20
22:20	4,375	233.1	1.9	2,200	26	--	0.05	--	0.25	--	0.20
22:50	4,392	232.1	1.8	2,600	27	--	0.05	--	0.25	--	0.20
23:20	4,669	233.8	2.3	2,300	27	--	0.05	--	0.25	--	0.20
23:50	4,739	233.4	2.0	1,900	27	--	0.05	--	0.25	--	0.20
0:20	4,254	234.0	2.1	2,100	26	--	0.05	--	0.25	--	0.20
0:50	4,202	234.0	2.0	1,800	26	--	0.05	--	0.20	--	0.20
1:20	4,271	237.4	1.8	2,400	26	--	0.05	--	0.20	--	0.20
1:50	4,219	239.7	2.0	2,000	26	--	0.05	--	0.20	--	0.20
2:20	4,323	227.1	2.1	2,200	26	--	0.05	--	0.20	--	0.20
2:50	4,254	240.8	2.1	3,300	26	--	0.05	--	0.20	--	0.20
3:20	4,202	241.5	2.0	1,700	26	--	0.05	--	0.25	--	0.20
3:50	4,479	241.5	1.9	1,700	26	--	0.05	--	0.25	--	0.20
4:20	4,444	237.4	1.9	1,800	26	--	0.05	--	0.25	--	0.20

APPENDIX A

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	7/12/11-7/13/11	Subcontractor	Zebra Environmental

7/12/11-7/13/11

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW3		12175-MW4		12175-MW6	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O)
4:50	4,583	229.5	2.3	1,900	26	--	0.05	--	0.20	--	0.20
5:20	4,203	234.7	2.1	1,700	26	--	0.05	--	0.20	--	0.20
5:50	4,548	235.9	2.0	1,600	26	--	0.05	--	0.20	--	0.20
6:20	4,479	242.2	2.0	1,600	26	--	0.05	--	0.20	--	0.20
6:50	4,531	241.3	1.9	1,600	26	--	0.05	--	0.20	--	0.20
7:20	4,271	236.1	1.9	1,600	26	--	0.05	--	0.20	--	0.20

APPENDIX A
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 22.92
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-MW1 & 12175-MW5
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	19:20	Connection to 12175-MW1 & 12175-MW5. Stingers set at 25.25 & 24.10 feet							
		below top of casing, respectively.							
07/12/11	19:35	26	4,704	6	206.2	2.9	0.016829	0.026	713
07/12/11	19:50	26	4,427	6	222.1	1.9	0.015037	0.024	657
07/12/11	20:05	26	4,271	6	221.5	2.4	0.01889	0.029	631
07/12/11	20:20	26	4,764	6	222.1	2.3	0.018295	0.028	703
07/12/11	20:35	26	4,739	6	228.6	1.9	0.017062	0.027	694
07/12/11	20:50	26	4,531	6	228.7	2.1	0.018949	0.029	662
07/12/11	21:05	26	4,808	6	225.1	2.1	0.01767	0.028	708
07/12/11	21:20	26	4,739	6	226.9	2.0	0.017404	0.027	696
07/12/11	21:50	26	4,357	6	237.0	1.9	0.020022	0.031	628
07/12/11	22:20	26	4,375	6	233.1	1.9	0.018597	0.029	635
07/12/11	22:50	27	4,392	6	232.1	1.8	0.017259	0.027	640
07/12/11	23:20	27	4,669	6	233.8	2.3	0.02296	0.035	673
07/12/11	23:50	27	4,739	6	233.4	2.0	0.019719	0.031	687
07/13/11	0:20	26	4,254	6	234.0	2.1	0.020976	0.033	615
07/13/11	0:50	26	4,202	6	234.0	2.0	0.019946	0.031	608
07/13/11	1:20	26	4,271	6	237.4	1.8	0.019079	0.030	616
07/13/11	1:50	26	4,219	6	239.7	2.0	0.02221	0.034	604
07/13/11	2:20	26	4,323	6	227.1	2.1	0.018371	0.029	634
07/13/11	2:50	26	4,254	6	240.8	2.1	0.023848	0.037	606
07/13/11	3:20	26	4,202	6	241.5	2.0	0.022969	0.035	599
07/13/11	3:50	26	4,479	6	241.5	1.9	0.021781	0.034	640
07/13/11	4:20	26	4,444	6	237.4	1.9	0.020173	0.031	640
07/13/11	4:50	26	4,583	6	229.5	2.3	0.021139	0.033	667
07/13/11	5:20	26	4,203	6	234.7	2.1	0.021258	0.033	607
07/13/11	5:50	26	4,548	6	235.9	2.0	0.020677	0.032	656
07/13/11	6:20	26	4,479	6	242.2	2.0	0.023271	0.036	638
07/13/11	6:50	26	4,531	6	241.3	1.9	0.0217	0.034	647
07/13/11	7:20	26	4,271	6	236.1	1.9	0.019685	0.031	617
Averages		26	4,456	6	232.3	2.1	0.019849	0.031	647

APPENDIX A
EMISSIONS CALCULATIONS

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX A
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 7/12/11-7/13/11

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	713	3,000	3,000	3,081	1.02	3,143	1,568	0.00010	4.19	4.85	1.21
30	657	3,400	3,400	3,482	1.02	3,552	1,772	0.00011	4.36	5.05	1.26
45	631	3,500	3,500	3,606	1.02	3,678	1,835	0.00011	4.34	5.02	1.25
60	703	3,600	3,600	3,706	1.02	3,780	1,886	0.00012	4.97	5.75	1.44
75	694	3,300	3,300	3,390	1.02	3,458	1,725	0.00011	4.49	5.19	1.30
90	662	2,600	2,600	2,679	1.02	2,733	1,363	0.00009	3.38	3.91	0.98
105	708	5,600	5,600	5,759	1.02	5,874	2,931	0.00018	7.77	8.99	2.25
120	696	2,400	2,400	2,467	1.02	2,516	1,256	0.00008	3.27	3.79	0.95
150	628	3,300	3,300	3,406	1.02	3,474	1,733	0.00011	4.08	4.72	2.36
180	635	2,200	2,200	2,266	1.02	2,311	1,153	0.00007	2.74	3.18	1.59
210	640	2,600	2,600	2,672	1.02	2,725	1,360	0.00008	3.26	3.77	1.89
240	673	2,300	2,300	2,385	1.02	2,432	1,214	0.00008	3.06	3.54	1.77
270	687	1,900	1,900	1,960	1.02	1,999	998	0.00006	2.57	2.97	1.49
300	615	2,100	2,100	2,171	1.02	2,214	1,105	0.00007	2.54	2.94	1.47
330	608	1,800	1,800	1,858	1.02	1,895	945	0.00006	2.15	2.49	1.25
360	616	2,400	2,400	2,473	1.02	2,523	1,259	0.00008	2.90	3.36	1.68
390	604	2,000	2,000	2,071	1.02	2,113	1,054	0.00007	2.38	2.76	1.38
420	634	2,200	2,200	2,265	1.02	2,310	1,153	0.00007	2.74	3.17	1.58
450	606	3,300	3,300	3,426	1.02	3,495	1,744	0.00011	3.96	4.58	2.29
480	599	1,700	1,700	1,763	1.02	1,798	897	0.00006	2.01	2.33	1.16
510	640	1,700	1,700	1,759	1.02	1,795	895	0.00006	2.15	2.48	1.24
540	640	1,800	1,800	1,858	1.02	1,895	946	0.00006	2.27	2.62	1.31
570	667	1,900	1,900	1,964	1.02	2,004	1,000	0.00006	2.50	2.89	1.44
600	607	1,700	1,700	1,758	1.02	1,793	895	0.00006	2.03	2.35	1.18
630	656	1,600	1,600	1,653	1.02	1,686	841	0.00005	2.07	2.39	1.20
660	638	1,600	1,600	1,660	1.02	1,693	845	0.00005	2.02	2.33	1.17
690	647	1,600	1,600	1,656	1.02	1,689	843	0.00005	2.04	2.36	1.18
720	617	1,600	1,600	1,650	1.02	1,683	840	0.00005	1.94	2.25	1.12
Averages	647	2,454	2,454	2,530	1.02	2,581	1,288	0.00008	3.15	3.64	1.44

Total emissions in pounds: 30.54
Total emissions in gallons: 4.88

APPENDIX A
EMISSIONS CALCULATIONS

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

MATERIAL MANIFEST

Zebra Environmental & Industrial Services

EMERGENCY PHONE NO. (336) 841-5276

POST OFFICE BOX 357 HIGH POINT, NC 27261

TEL (336) 841-5276 FAX (336) 841-5509

Manifest Document No.

Page 1 of 1

Zebra Job No. 1943

GENERATOR INFORMATION

Name: ECS

US EPA ID No.:

Street Address: 311 Main St. Edgefield, S.C.

Mailing Address:

Phone No.: 803-367-3827

Contact: Aaron Williamson

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class or Div	UN / NA ID No.	Packing Group	Containers Qty.	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Non Hazardous Liquid	/	/	/	1	TT	1503	G.
b.									
c.									

ADDITIONAL INFORMATION	ERG No.	Zebra Profile Code	Facility Use
a. Con't Groundwater (PFVK)			
b.			
c.			

GENERATOR'S CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed / Typed Name: ECS Agent for Aaron Williamson Edgefield Fuel & Convenience

Signature: Aaron Williamson

Mo. / Day / Yr.: 7/13/11

TRANSPORTER INFORMATION

Transporter: Zebra Environmental & Industrial Services Inc

Address: 901 East Springfield Road, High Point, NC 27263

Transporter or EPA ID No.: NCO991302669

Unit No.: VT-6

Phone: (336) 841-5276

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: Michael Hicks 7-13-11 Shipment Date

I hereby acknowledge receipt of the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: Delivery Date

FACILITY INFORMATION

Facility: Zebra Environmental & Industrial Services, Inc.

Address: 901 East Springfield Road, High Point, NC 27263

Facility or EPA ID No.: NCO991302669

Phone: (336) 841-5276

Contact: David Tedder

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: 7/14/11 Receipt Date

Discrepancies / Routing Codes / Handling Methods

a.

b.

c.

ORIGINAL - Facility Retain COPY 2 - Return to Generator COPY 3 - Transporter Retain COPY 4 - Generator Retain

APPENDIX B

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – August 2-3, 2011

APPENDIX B
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	A. Williamson
Date:	8/2/11-8/3/11		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Yes	

Measurements After AFVR Event

VT Tank Product volume	Sheen	gallons
VT Tank Water volume	580	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
12175-MW2	22.45	26.65	NP	25.67	24.03	24.13	27.00
12175-MW17	NP	24.07	NP	24.19	NP	24.18	--
12175-MW18	NP	24.51	NP	24.56	NP	24.56	--
12175-MW19	21.98	26.81	22.05	26.9	22.05	26.89	--

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX B

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	8/2/11-8/3/11	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW17		12175-MW18		12175-MW19	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O)
19:10											
19:25	3,863	234.3	1.5	1,200	20	--	0.00	--	0.00	--	0.00
19:40	4,024	248.5	1.0	900	20	--	0.00	--	0.00	--	0.00
19:55	4,100	251.8	1.0	720	20	--	0.00	--	0.00	--	0.00
20:10	4,019	252.9	1.0	560	20	--	0.00	--	0.00	--	0.00
20:25	4,332	250.5	1.2	460	20	--	0.00	--	0.00	--	0.00
20:40	4,107	250.9	1.1	640	20	--	0.00	--	0.00	--	0.00
20:55	4,253	250.9	1.1	1,000	20	--	0.00	--	0.00	--	0.00
21:10	3,829	253.9	1.1	1,200	20	--	0.00	--	0.00	--	0.00
21:40	3,931	256.3	1.0	1,200	20	--	0.00	--	0.00	--	0.00
22:10	4,264	250.7	1.2	1,200	20	--	0.00	--	0.00	--	0.00
22:40	3,928	249.8	1.1	1,100	20	--	0.00	--	0.00	--	0.00
23:10	4,015	245.7	1.3	1,100	20	--	0.00	--	0.00	--	0.00
23:40	3,958	241.9	1.4	1,000	20	--	0.00	--	0.00	--	0.00
0:10	4,364	243.0	1.4	1,000	20	--	0.00	--	0.00	--	0.00
0:40	4,001	242.1	1.4	1,000	20	--	0.00	--	0.00	--	0.00
1:10	3,880	240.6	1.4	980	20	--	0.00	--	0.00	--	0.00
1:40	4,241	241.0	1.3	980	20	--	0.00	--	0.00	--	0.00
2:10	4,233	238.8	1.4	940	20	--	0.00	--	0.00	--	0.00
2:40	4,148	236.7	1.4	940	20	--	0.00	--	0.00	--	0.00
3:10	3,902	239.4	1.3	900	20	--	0.00	--	0.00	--	0.00
3:40	4,038	239.5	1.3	860	20	--	0.00	--	0.00	--	0.00
4:10	3,877	238.6	1.3	900	20	--	0.00	--	0.00	--	0.00

APPENDIX B

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	8/2/11-8/3/11	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW17		12175-MW18		12175-MW19	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O)
4:40	4,207	240.6	1.3	860	20	--	0.00	--	0.00	--	0.00
5:10	4,341	240.1	1.3	840	20	--	0.00	--	0.00	--	0.00
5:40	3,860	241.2	1.2	840	20	--	0.00	--	0.00	--	0.00
6:10	4,136	239.2	1.3	840	20	--	0.00	--	0.00	--	0.00
6:40	3,905	244.9	1.0	850	20	--	0.00	--	0.00	--	0.00
7:10	4,177	244.4	1.1	820	20	--	0.00	--	0.00	--	0.00

APPENDIX B
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 25.51
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-MW2
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	19:10	Connection to 12175-MW2. Stinger set at 27.00 feet below top of casing.							
08/02/11	19:25	20	3,863	6	234.3	1.5	0.014924	0.023	563
08/02/11	19:40	20	4,024	6	248.5	1.0	0.012801	0.020	577
08/02/11	19:55	20	4,100	6	251.8	1.0	0.013577	0.021	584
08/02/11	20:10	20	4,019	6	252.9	1.0	0.013845	0.022	572
08/02/11	20:25	20	4,332	6	250.5	1.2	0.015988	0.025	616
08/02/11	20:40	20	4,107	6	250.9	1.1	0.014729	0.023	585
08/02/11	20:55	20	4,253	6	250.9	1.1	0.014729	0.023	606
08/02/11	21:10	20	3,829	6	253.9	1.1	0.015536	0.024	543
08/02/11	21:40	20	3,931	6	256.3	1.0	0.0147	0.023	556
08/02/11	22:10	20	4,264	6	250.7	1.2	0.016046	0.025	606
08/02/11	22:40	20	3,928	6	249.8	1.1	0.014443	0.023	561
08/02/11	23:10	20	4,015	6	245.7	1.3	0.015916	0.025	575
08/02/11	23:40	20	3,958	6	241.9	1.4	0.01602	0.025	570
08/03/11	0:10	20	4,364	6	243.0	1.4	0.016347	0.026	627
08/03/11	0:40	20	4,001	6	242.1	1.4	0.016079	0.025	576
08/03/11	1:10	20	3,880	6	240.6	1.4	0.01564	0.024	560
08/03/11	1:40	20	4,241	6	241.0	1.3	0.014604	0.023	613
08/03/11	2:10	20	4,233	6	238.8	1.4	0.014904	0.023	613
08/03/11	2:40	20	4,148	6	236.7	1.4	0.014547	0.023	603
08/03/11	3:10	20	3,902	6	239.4	1.3	0.014179	0.022	566
08/03/11	3:40	20	4,038	6	239.5	1.3	0.014206	0.022	585
08/03/11	4:10	20	3,877	6	238.6	1.3	0.013971	0.022	563
08/03/11	4:40	20	4,207	6	240.6	1.3	0.014497	0.023	608
08/03/11	5:10	20	4,341	6	240.1	1.3	0.014364	0.022	628
08/03/11	5:40	20	3,860	6	241.2	1.2	0.013506	0.021	559
08/03/11	6:10	20	4,136	6	239.2	1.3	0.014127	0.022	600
08/03/11	6:40	20	3,905	6	244.9	1.0	0.011996	0.019	563
08/03/11	7:10	20	4,177	6	244.4	1.1	0.013102	0.021	602
Averages		20	4,069	6	244.6	1.2	0.014619	0.023	585

APPENDIX B
EMISSIONS CALCULATIONS

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX B
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 8/2/11-8/3/11

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	563	1,200	1,200	1,229	1.02	1,253	625	0.00004	1.32	1.53	0.38
30	577	900	900	918	1.02	937	467	0.00003	1.01	1.17	0.29
45	584	720	720	736	1.02	750	374	0.00002	0.82	0.95	0.24
60	572	560	560	572	1.02	584	291	0.00002	0.62	0.72	0.18
75	616	460	460	472	1.02	481	240	0.00001	0.55	0.64	0.16
90	585	640	640	655	1.02	668	333	0.00002	0.73	0.85	0.21
105	606	1,000	1,000	1,024	1.02	1,044	521	0.00003	1.18	1.37	0.34
120	543	1,200	1,200	1,230	1.02	1,254	626	0.00004	1.27	1.47	0.37
150	556	1,200	1,200	1,228	1.02	1,253	625	0.00004	1.30	1.51	0.75
180	606	1,200	1,200	1,231	1.02	1,255	626	0.00004	1.42	1.65	0.82
210	561	1,100	1,100	1,125	1.02	1,148	573	0.00004	1.20	1.39	0.70
240	575	1,100	1,100	1,128	1.02	1,151	574	0.00004	1.24	1.43	0.72
270	570	1,000	1,000	1,026	1.02	1,046	522	0.00003	1.11	1.29	0.64
300	627	1,000	1,000	1,026	1.02	1,047	522	0.00003	1.23	1.42	0.71
330	576	1,000	1,000	1,026	1.02	1,046	522	0.00003	1.13	1.30	0.65
360	560	980	980	1,005	1.02	1,025	511	0.00003	1.07	1.24	0.62
390	613	980	980	1,003	1.02	1,023	510	0.00003	1.17	1.36	0.68
420	613	940	940	962	1.02	982	490	0.00003	1.13	1.30	0.65
450	603	940	940	962	1.02	981	490	0.00003	1.11	1.28	0.64
480	566	900	900	920	1.02	939	468	0.00003	0.99	1.15	0.57
510	585	860	860	880	1.02	897	448	0.00003	0.98	1.14	0.57
540	563	900	900	920	1.02	939	468	0.00003	0.99	1.14	0.57
570	608	860	860	880	1.02	898	448	0.00003	1.02	1.18	0.59
600	628	840	840	859	1.02	877	437	0.00003	1.03	1.19	0.60
630	559	840	840	858	1.02	875	437	0.00003	0.91	1.06	0.53
660	600	840	840	859	1.02	876	437	0.00003	0.98	1.14	0.57
690	563	850	850	866	1.02	884	441	0.00003	0.93	1.08	0.54
720	602	820	820	837	1.02	854	426	0.00003	0.96	1.11	0.56
Averages	585	923	923	944	1.02	963	481	0.00003	1.05	1.22	0.53

Total emissions in pounds: 10.33
Total emissions in gallons: 1.65

APPENDIX B
EMISSIONS CALCULATIONS

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 803-957-9175	4. Waste Tracking Number 31398

5. Generator's Name and Mailing Address: 311 Main Street, Engefield, SC

Generator's Site Address (if different than mailing address): Environmental Compliance Services

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073 — U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water		TT	Approx. 580	GALS.	0 Free Product (Sheen)
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175

A&D (SC) Job #15552

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and governmental regulations.

Generator's/Offeror's Printed/Typed Name: Aaron Williamson ECS Agent For Edgefield Fuel + Convenience LLC — Signature: [signature] — Month 8 Day 3 Year 11

INTL

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: Date leaving U.S.:

Transporter Signature (for exports only):

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Bryan Richardson — Signature: [signature] — Month 8 Day 2 Year 11

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette — Signature: [signature] — Month 8 Day 2 Year 11

APPENDIX C

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – August 11-12, 2011

APPENDIX C
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	P.Pike
Date:	8/11/11 - 8/12/11		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Yes	

Measurements After AFVR Event

VT Tank Product volume	Sheen	gallons
VT Tank Water volume	740	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
12175-MW19	22.13	27.05	NP	27.42	24.42	24.51	27.50
12175-MW1	20.25	25.86	20.37	25.97	20.41	26.02	--
12175-MW2	23.05	25.47	23.12	25.97	23.13	25.58	--
12175-MW4	NP	21.90	NP	22.32	NP	22.32	--

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX C

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P.Pike
Date:	8/11/11 - 8/12/11	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12145-MW-1		12145-MW-12		12145-MW-4	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O)
19:30											
19:45	4,248	189.0	3.0	4,000	25	--		--		--	
20:00	4,158	209.3	2.1	3,800	25	--	1.00	--	0.00	--	0.00
20:15	4,036	214.5	1.7	3,500	25	--		--		--	
20:30	4,454	216.7	1.7	3,300	25	--	1.40	--	0.00	--	0.40
20:45	4,209	218.5	1.6	3,300	25	--		--		--	
21:00	4,303	221.4	1.5	3,200	25	--	1.40	--	0.00	--	0.40
21:15	4,111	220.9	1.6	3,200	25	--		--		--	
21:30	4,145	220.5	1.6	3,100	25	--	1.40	--	0.00	--	0.40
22:00	4,417	220.6	1.7	2,900	25	--	1.40	--	0.00	--	0.40
22:30	4,297	221.2	1.6	2,900	25	--	1.40	--	0.00	--	0.40
23:00	4,369	218.4	1.7	2,800	25	--	1.40	--	0.00	--	0.30
23:30	4,318	213.1	1.6	2,800	25	--	1.50	--	0.00	--	0.30
0:00	4,373	218.5	1.6	2,700	25	--	1.50	--	0.00	--	0.30
0:30	4,271	216.7	1.7	2,700	25	--	1.40	--	0.00	--	0.30
1:00	4,339	214.0	1.8	2,600	25	--	1.40	--	0.00	--	0.30
1:30	4,422	214.7	1.7	2,600	25	--	1.50	--	0.00	--	0.30
2:00	4,312	213.8	1.8	2,500	25	--	1.50	--	0.00	--	0.30
2:30	4,281	214.3	1.9	2,500	25	--	1.50	--	0.00	--	0.30
3:00	4,319	214.2	1.8	2,500	25	--	1.40	--	0.00	--	0.30
3:30	4,241	213.9	1.8	2,400	25	--	1.40	--	0.00	--	0.30
4:00	4,351	215.7	1.7	2,400	25	--	1.40	--	0.00	--	0.30
4:30	4,269	218.1	1.6	2,400	25	--	1.40	--	0.00	--	0.30

APPENDIX C

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P.Pike
Date:	8/11/11 - 8/12/11	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12145-MW-1		12145-MW-2		12145-MW-4	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O	DTW (ft)	Vacuum (in of H2O)
5:00	4,132	218.5	1.6	2,400	25	--	1.40	--	0.00	--	0.30
5:30	4,213	219.1	1.6	2,400	25	--	1.40	--	0.00	--	0.30
6:00	4,361	220.0	1.6	2,400	25	--	1.40	--	0.00	--	0.30
6:30	4,087	220.1	1.6	2,400	25	--	1.40	--	0.00	--	0.30
7:00	4,357	220.7	1.6	2,400	25	--	1.40	--	0.00	--	0.30
7:30	4,269	221.5	1.6	2,400	25	--	1.40	--	0.00	--	0.30

APPENDIX C
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 25.07
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-MW19
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	19:30	Connection to 12175-MW19. Stinger set at 27.50 feet below top of casing.							
08/02/11	19:45	25	4,248	6	189.0	3.0	0.012074	0.019	666
08/02/11	20:00	25	4,158	6	209.3	2.1	0.012891	0.020	631
08/02/11	20:15	25	4,036	6	214.5	1.7	0.011545	0.018	609
08/02/11	20:30	25	4,454	6	216.7	1.7	0.012063	0.019	669
08/02/11	20:45	25	4,209	6	218.5	1.6	0.011752	0.018	631
08/02/11	21:00	25	4,303	6	221.4	1.5	0.01165	0.018	643
08/02/11	21:15	25	4,111	6	220.9	1.6	0.012321	0.019	614
08/02/11	21:30	25	4,145	6	220.5	1.6	0.012225	0.019	619
08/02/11	22:00	25	4,417	6	220.6	1.7	0.01303	0.020	659
08/02/11	22:30	25	4,297	6	221.2	1.6	0.012394	0.019	641
08/02/11	23:00	25	4,369	6	218.4	1.7	0.012477	0.020	655
08/02/11	23:30	25	4,318	6	213.1	1.6	0.010554	0.017	654
08/02/11	0:00	25	4,373	6	218.5	1.6	0.011752	0.018	656
08/03/11	0:30	25	4,271	6	216.7	1.7	0.012063	0.019	642
08/03/11	1:00	25	4,339	6	214.0	1.8	0.012115	0.019	655
08/03/11	1:30	25	4,422	6	214.7	1.7	0.011591	0.018	667
08/03/11	2:00	25	4,312	6	213.8	1.8	0.012067	0.019	651
08/03/11	2:30	25	4,281	6	214.3	1.9	0.01288	0.020	645
08/03/11	3:00	25	4,319	6	214.2	1.8	0.012164	0.019	651
08/03/11	3:30	25	4,241	6	213.9	1.8	0.012091	0.019	640
08/03/11	4:00	25	4,351	6	215.7	1.7	0.011825	0.019	655
08/03/11	4:30	25	4,269	6	218.1	1.6	0.01166	0.018	641
08/03/11	5:00	25	4,132	6	218.5	1.6	0.011752	0.018	620
08/03/11	5:30	25	4,213	6	219.1	1.6	0.011892	0.019	631
08/03/11	6:00	25	4,361	6	220.0	1.6	0.012105	0.019	652
08/03/11	6:30	25	4,087	6	220.1	1.6	0.012129	0.019	611
08/03/11	7:00	25	4,357	6	220.7	1.6	0.012273	0.019	651
08/03/11	7:30	25	4,269	6	221.5	1.6	0.012472	0.020	637
Averages		25	4,274	6	216.4	1.7	0.012065	0.019	643

APPENDIX C
EMISSIONS CALCULATIONS

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX C
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 2-Aug-2011

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	666	4,000	4,000	4,077	1.02	4,159	2,075	0.00013	5.17	5.99	1.50
30	631	3,800	3,800	3,878	1.02	3,956	1,974	0.00012	4.67	5.40	1.35
45	609	3,500	3,500	3,565	1.02	3,636	1,814	0.00011	4.14	4.79	1.20
60	669	3,300	3,300	3,364	1.02	3,431	1,712	0.00011	4.29	4.97	1.24
75	631	3,300	3,300	3,362	1.02	3,429	1,711	0.00011	4.05	4.68	1.17
90	643	3,200	3,200	3,260	1.02	3,325	1,659	0.00010	3.99	4.62	1.16
105	614	3,200	3,200	3,263	1.02	3,328	1,661	0.00010	3.82	4.42	1.10
120	619	3,100	3,100	3,161	1.02	3,224	1,609	0.00010	3.73	4.32	1.08
150	659	2,900	2,900	2,961	1.02	3,020	1,507	0.00009	3.72	4.30	2.15
180	641	2,900	2,900	2,958	1.02	3,017	1,505	0.00009	3.62	4.18	2.09
210	655	2,800	2,800	2,856	1.02	2,913	1,454	0.00009	3.56	4.12	2.06
240	654	2,800	2,800	2,847	1.02	2,904	1,449	0.00009	3.55	4.11	2.05
270	656	2,700	2,700	2,751	1.02	2,806	1,400	0.00009	3.44	3.98	1.99
300	642	2,700	2,700	2,752	1.02	2,807	1,401	0.00009	3.37	3.90	1.95
330	655	2,600	2,600	2,650	1.02	2,703	1,349	0.00008	3.31	3.83	1.91
360	667	2,600	2,600	2,648	1.02	2,701	1,348	0.00008	3.37	3.90	1.95
390	651	2,500	2,500	2,548	1.02	2,599	1,297	0.00008	3.16	3.66	1.83
420	645	2,500	2,500	2,552	1.02	2,603	1,299	0.00008	3.14	3.63	1.82
450	651	2,500	2,500	2,549	1.02	2,600	1,297	0.00008	3.17	3.66	1.83
480	640	2,400	2,400	2,446	1.02	2,495	1,245	0.00008	2.99	3.45	1.73
510	655	2,400	2,400	2,445	1.02	2,494	1,245	0.00008	3.05	3.53	1.77
540	641	2,400	2,400	2,445	1.02	2,494	1,244	0.00008	2.99	3.46	1.73
570	620	2,400	2,400	2,445	1.02	2,494	1,244	0.00008	2.89	3.34	1.67
600	631	2,400	2,400	2,446	1.02	2,495	1,245	0.00008	2.94	3.41	1.70
630	652	2,400	2,400	2,447	1.02	2,495	1,245	0.00008	3.04	3.52	1.76
660	611	2,400	2,400	2,447	1.02	2,496	1,245	0.00008	2.85	3.30	1.65
690	651	2,400	2,400	2,447	1.02	2,496	1,245	0.00008	3.04	3.51	1.76
720	637	2,400	2,400	2,448	1.02	2,497	1,246	0.00008	2.97	3.44	1.72
Averages	643	2,804	2,804	2,858	1.02	2,915	1,454	0.00009	3.50	4.05	1.68

Total emissions in pounds: 33.16
Total emissions in gallons: 5.30

APPENDIX C
EMISSIONS CALCULATIONS

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 803-957-9175	4. Waste Tracking Number 31432

5. Generator's Name and Mailing Address

311 Main Street
Engefield, SC

Generator's Site Address (if different than mailing address)

Environmental Compliance Services

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address

A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water		TT	Apprx 740	LMS	0 Free Product (Sheen)
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175

A&D (SC) Job #15553

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and governmental regulations.

Generator's/Offeror's Printed/Typed Name: Phillip Pilar (AGENT FOR Edgefield FSC) — Signature — Month 8 Day 12 Year 11

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Bryan Richardson — Signature — Month 8 Day 12 Year 11

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: [illegible] — Signature — Month 8 Day 12 Year 11

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

APPENDIX D

Laboratory Report – Groundwater Samples
September 12, 2011

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY
Florida Division

Florida	# E84207	California	# 07253CA
Texas	# T104704408-11-3	Louisiana	# 02025
South Carolina	# 96011001	Kansas	# E-10385
North Dakota	# R-178	Arkansas	# 11-036-1

NELAP ACCREDITED TNI LABORATORY

- CERTIFICATE OF ANALYSIS -

Report Date: 09/16/2011

To: Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd. Unit F
Charlotte, NC 28273

Work 704.583.2711
FAX

PROJECT ID:	Edgefield Fuel and Convenience 3 / 14-211651
WORK ORDER:	3504020 Revised Report
DATE RECEIVED:	Tuesday, September 13, 2011

Project Notes:

(†): Short Hold Time Analysis Date

Samples reported on dry weight basis

All test results in this report pertain only to the samples as submitted.

Spectrum Analytical, Inc. FL Division Contact: Mark Gudnason / extension: 242
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Spectrum Analytical, Inc. FL Division
featuring Hanibal Technology

DATA QUALIFIER CODES

State of Florida, Department of Environmental Protection and
Department of Health _Rehabilitative Services / NELAC

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

J Estimated value; value not accurate. This code shall be used in the following instances:

1. Surrogate recovery limits have been exceeded.
2. No known quality control criteria exits for the component.
3. The reported value did not meet the established quality control criteria for either precision or accuracy but falls within the NELAC marginal exceedance range.

3M. The reported value did not meet the established quality control criteria for either precision or accuracy and falls beyond the NELAC range for marginal exceedances.

3R. The RPD for the LCSD exceeds the laboratory established control limits.

4. The sample matrix interfered with the ability to make an accurate determination.
5. The data is questionable because of improper laboratory or field protocols (e.g. composite sample was collected instead of a grab sample).

L Off-scale high. Actual value is known to be greater than the value given. To be used when the concentration of the analyte is above the acceptable limit for quantitation (exceeds the linear range of the highest calibration standard) and the calibration curve is known to exhibit a negative deflection.

Q Sample held beyond acceptable holding time. This code shall be used if the value is derived from a sample that was prepared or analyzed after the approved holding time restrictions for the sample preparation or analysis.

U Indicates that the compound was analyzed for but not detected above the method detection limit (MDL).

V Indicates that the analyte was detected in both the sample and the associated method blank. Note: The value in the blank shall not be subtracted from associated samples.

Y The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

RL - Reporing Limit. The PEL lowest Practical Quanititation Limit (PQL), defined by the lowest point in the calibration curve.

CASE NARRATIVE
EDB GC SEMIVOLATILE ORGANIC

Spectrum Analytical Inc. Lab Reference No./SDG: 3504020

Client: ECS - NC

I. RECEIPT

Exceptions encountered upon receipt are addressed in the Sample Receipt Confirmation Report, included with the Chain-of-Custody documentation, or communication included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHODS

SW846/EPA 8011

IV. PREPARATION

Water samples were prepared by SW846/EPA 8011 for semi-volatile analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

An LCS/LCSD set was analyzed.
All percent recovery and relative percent difference (RPD) criteria were met.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by client.

E. Internal Standards:

This method does not require the use of internal standards.

CASE NARRATIVE
EDB GC SEMIVOLATILE ORGANIC

Spectrum Analytical Inc. Lab Reference No./SDG: 3504020

Client: ECS - NC

F. Samples:

Data was collected using dual column analysis. Results reported from the primary column if the %D between the two columns is >40%, data is coded.

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:

Name: Brian C. Spanfr Title: Lab Director

SIGNED: **DATE:** **09/16/2011**

CASE NARRATIVE
GC/MS VOLATILE ORGANICS

Spectrum Analytical Inc. Lab Reference No./SDG: 3504020

Client: ECS - NC

/

I. RECEIPT

Exceptions encountered upon receipt are addressed in the Sample Receipt Confirmation Report, included with the Chain-of-Custody documentation, or communication included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHODS

EPA 8260B/SW846

IV. PREPARATION

Water samples were prepared by SW846/5030 for EPA8260B volatiles analysis. All aspects of sample preparation proceeded without exception.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by the client.

E. Internal Standards:

All acceptance criteria were met.

CASE NARRATIVE
GC/MS VOLATILE ORGANICS

Spectrum Analytical Inc. Lab Reference No./SDG: 3504020

Client: ECS - NC

F. Samples:

Sample analysis proceeded normally.

All samples were screened prior to GC/MS analysis.

Sample MW-11 required a 10X and a 50X dilution due to high concentration of the following analyte(s): Benzene, Toluene, Xylene (total). Both diluted runs are reported.

Sample MW-17 required a 100X and a 500X dilution due to high concentration of the following analyte(s): Benzene, Toluene. Both diluted runs are reported.

Sample MW-4 required a 5X and a 20X dilution due to high concentration of the following analyte(s): Benzene, Methyl tert-butyl ether. Both diluted runs are reported.

Sample MW-6 required a 10X and a 100X dilution due to high concentration of the following analyte(s): Benzene. Both diluted runs are reported.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature: 
Name: Lisa Pelo Title: VOA Manager

SIGNED: **DATE:** **09/16/2011**

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402001

Client ID : MW-3

Matrix : W

Collection Information:

Sample Date: 9/12/2011 10:20:00 AM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00776 U	09/15/2011 12:27	09/14/2011 9:00	UG/L	0.00776	0.0189	1
1,1,2,2-Tetrachloroethane(SURR	8011	83.3	09/15/2011 12:27	09/14/2011 9:00	%	0.00776	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/16/2011 2:16		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/16/2011 2:16		UG/L	25	40	1
Benzene	8260	**21.4**	09/16/2011 2:16		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/16/2011 2:16		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/16/2011 2:16		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/16/2011 2:16		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/16/2011 2:16		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/16/2011 2:16		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/16/2011 2:16		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/16/2011 2:16		UG/L	10	20	1
t-Butanol	8260	2.6 I	09/16/2011 2:16		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/16/2011 2:16		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/16/2011 2:16		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/16/2011 2:16		UG/L	0.14	1	1
Xylene (total)	8260	**3.5**	09/16/2011 2:16		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	106	09/16/2011 2:16		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	105	09/16/2011 2:16		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	102	09/16/2011 2:16		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	103	09/16/2011 2:16		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402002

Client ID : MW-4

Matrix : W

Collection Information:

Sample Date: 9/12/2011 10:30:00 AM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.0078 U	09/15/2011 12:57	09/14/2011 9:00	UG/L	0.0078	0.019	1
1,1,2,2-Tetrachloroethane(SURR	8011	79.2	09/15/2011 12:57	09/14/2011 9:00	%	0.0078	(70 - 130)	1
1,2-Dichloroethane	8260	0.75 U	09/16/2011 3:05		UG/L	0.75	2.5	5
3,3-Dimethyl-1-butanol	8260	125 U	09/16/2011 3:05		UG/L	125	200	5
Ethanol	8260	2000 U	09/16/2011 3:05		UG/L	2000	4000	5
ethyl tert-butyl ether	8260	2.5 U	09/16/2011 3:05		UG/L	2.5	5	5
Ethylbenzene	8260	**9.5**	09/16/2011 3:05		UG/L	1.1	2.5	5
Isopropyl Ether	8260	4.4 I	09/16/2011 3:05		UG/L	0.65	5	5
Naphthalene	8260	2.5 U	09/16/2011 3:05		UG/L	2.5	25	5
t-Amyl Alcohol	8260	**7600**	09/16/2011 3:05		UG/L	50	100	5
t-Butanol	8260	**350**	09/16/2011 3:05		UG/L	9	100	5
t-Butyl Formate	8260	400 U	09/16/2011 3:05		UG/L	400	800	5
TERT-AMYL METHYL ETHER	8260	**30**	09/16/2011 3:05		UG/L	1	5	5
Toluene	8260	**10.6**	09/16/2011 3:05		UG/L	0.7	5	5
Xylene (total)	8260	**19.2**	09/16/2011 3:05		UG/L	2.5	10	5
1,2-Dichloroethane-d4(SURR)	8260	104	09/16/2011 3:05		%	2.5	(89 - 123)	5
4-Bromofluorobenzene(SURR)	8260	104	09/16/2011 3:05		%	2.5	(85 - 115)	5
Dibromofluoromethane(SURR)	8260	104	09/16/2011 3:05		%	2.5	(83 - 128)	5
Toluene-d8(SURR)	8260	105	09/16/2011 3:05		%	2.5	(89 - 121)	5
Benzene	8260	**626**	09/16/2011 3:30		UG/L	3.4	10	20
Methyl tert-butyl ether	8260	**862**	09/16/2011 3:30		UG/L	10	20	20
1,2-Dichloroethane-d4(SURR)	8260	102	09/16/2011 3:30		%	10	(89 - 123)	20
4-Bromofluorobenzene(SURR)	8260	104	09/16/2011 3:30		%	10	(85 - 115)	20
Dibromofluoromethane(SURR)	8260	98.8	09/16/2011 3:30		%	10	(83 - 128)	20
Toluene-d8(SURR)	8260	101	09/16/2011 3:30		%	10	(89 - 121)	20

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402003

Client ID : MW-6

Matrix : W

Collection Information:

Sample Date: 9/12/2011 10:40:00 AM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00767 U	09/15/2011 13:27	09/14/2011 9:00	UG/L	0.00767	0.0187	1
1,1,2,2-Tetrachloroethane(SURR	8011	108	09/15/2011 13:27	09/14/2011 9:00	%	0.00767	(70 - 130)	1
1,2-Dichloroethane	8260	1.5 U	09/15/2011 22:00		UG/L	1.5	5	10
3,3-Dimethyl-1-butanol	8260	250 U	09/15/2011 22:00		UG/L	250	400	10
Ethanol	8260	4000 U	09/15/2011 22:00		UG/L	4000	8000	10
ethyl tert-butyl ether	8260	5 U	09/15/2011 22:00		UG/L	5	10	10
Ethylbenzene	8260	**19.5**	09/15/2011 22:00		UG/L	2.2	5	10
Isopropyl Ether	8260	1.3 U	09/15/2011 22:00		UG/L	1.3	10	10
Methyl tert-butyl ether	8260	**155**	09/15/2011 22:00		UG/L	5	10	10
Naphthalene	8260	5 U	09/15/2011 22:00		UG/L	5	50	10
t-Amyl Alcohol	8260	100 U	09/15/2011 22:00		UG/L	100	200	10
t-Butanol	8260	18 U	09/15/2011 22:00		UG/L	18	200	10
t-Butyl Formate	8260	800 U	09/15/2011 22:00		UG/L	800	1600	10
TERT-AMYL METHYL ETHER	8260	6.7 I	09/15/2011 22:00		UG/L	2	10	10
Toluene	8260	**351**	09/15/2011 22:00		UG/L	1.4	10	10
Xylene (total)	8260	**353**	09/15/2011 22:00		UG/L	5	20	10
1,2-Dichloroethane-d4(SURR)	8260	98.4	09/15/2011 22:00		%	5	(89 - 123)	10
4-Bromofluorobenzene(SURR)	8260	103	09/15/2011 22:00		%	5	(85 - 115)	10
Dibromofluoromethane(SURR)	8260	99	09/15/2011 22:00		%	5	(83 - 128)	10
Toluene-d8(SURR)	8260	101	09/15/2011 22:00		%	5	(89 - 121)	10
Benzene	8260	**1500**	09/15/2011 22:24		UG/L	17	50	100
1,2-Dichloroethane-d4(SURR)	8260	99.8	09/15/2011 22:24		%	17	(89 - 123)	100
4-Bromofluorobenzene(SURR)	8260	103	09/15/2011 22:24		%	17	(85 - 115)	100
Dibromofluoromethane(SURR)	8260	102	09/15/2011 22:24		%	17	(83 - 128)	100
Toluene-d8(SURR)	8260	102	09/15/2011 22:24		%	17	(89 - 121)	100

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402004

Client ID : MW-7

Matrix : W

Collection Information:

Sample Date: 9/12/2011 11:30:00 AM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00767 U	09/15/2011 13:41	09/14/2011 9:00	UG/L	0.00767	0.0187	1
1,1,2,2-Tetrachloroethane(SURR	8011	112	09/15/2011 13:41	09/14/2011 9:00	%	0.00767	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/15/2011 20:57		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/15/2011 20:57		UG/L	25	40	1
Benzene	8260	0.17 U	09/15/2011 20:57		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/15/2011 20:57		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/15/2011 20:57		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/15/2011 20:57		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/15/2011 20:57		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/15/2011 20:57		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/15/2011 20:57		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/15/2011 20:57		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/15/2011 20:57		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/15/2011 20:57		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/15/2011 20:57		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/15/2011 20:57		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/15/2011 20:57		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	104	09/15/2011 20:57		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	107	09/15/2011 20:57		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	102	09/15/2011 20:57		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	105	09/15/2011 20:57		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402005

Client ID : MW-8

Matrix : W

Collection Information:

Sample Date: 9/12/2011 11:15:00 AM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00776 U	09/15/2011 13:56	09/14/2011 9:00	UG/L	0.00776	0.0189	1
1,1,2,2-Tetrachloroethane(SURR	8011	91.7	09/15/2011 13:56	09/14/2011 9:00	%	0.00776	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/15/2011 21:21		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/15/2011 21:21		UG/L	25	40	1
Benzene	8260	0.17 U	09/15/2011 21:21		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/15/2011 21:21		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/15/2011 21:21		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/15/2011 21:21		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/15/2011 21:21		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/15/2011 21:21		UG/L	0.5	1	1
Naphthalene	8260	1.9 I	09/15/2011 21:21		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/15/2011 21:21		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/15/2011 21:21		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/15/2011 21:21		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/15/2011 21:21		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/15/2011 21:21		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/15/2011 21:21		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	105	09/15/2011 21:21		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	102	09/15/2011 21:21		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	102	09/15/2011 21:21		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	100	09/15/2011 21:21		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402006

Client ID : MW-9

Matrix : W

Collection Information:

Sample Date: 9/12/2011 1:00:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00759 U	09/15/2011 14:41	09/14/2011 9:00	UG/L	0.00759	0.0185	1
1,1,2,2-Tetrachloroethane(SURR	8011	108	09/15/2011 14:41	09/14/2011 9:00	%	0.00759	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/15/2011 21:46		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/15/2011 21:46		UG/L	25	40	1
Benzene	8260	0.17 U	09/15/2011 21:46		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/15/2011 21:46		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/15/2011 21:46		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/15/2011 21:46		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/15/2011 21:46		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/15/2011 21:46		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/15/2011 21:46		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/15/2011 21:46		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/15/2011 21:46		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/15/2011 21:46		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/15/2011 21:46		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/15/2011 21:46		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/15/2011 21:46		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	105	09/15/2011 21:46		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	105	09/15/2011 21:46		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	103	09/15/2011 21:46		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	103	09/15/2011 21:46		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402007

Client ID : MW-10

Matrix : W

Collection Information:

Sample Date: 9/12/2011 1:10:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00769 U	09/15/2011 14:56	09/14/2011 9:00	UG/L	0.00769	0.0188	1
1,1,2,2-Tetrachloroethane(SURR	8011	117	09/15/2011 14:56	09/14/2011 9:00	%	0.00769	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/15/2011 22:10		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/15/2011 22:10		UG/L	25	40	1
Benzene	8260	0.17 U	09/15/2011 22:10		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/15/2011 22:10		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/15/2011 22:10		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/15/2011 22:10		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/15/2011 22:10		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/15/2011 22:10		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/15/2011 22:10		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/15/2011 22:10		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/15/2011 22:10		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/15/2011 22:10		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/15/2011 22:10		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/15/2011 22:10		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/15/2011 22:10		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	108	09/15/2011 22:10		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	108	09/15/2011 22:10		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	105	09/15/2011 22:10		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	106	09/15/2011 22:10		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402008

Client ID : MW-11

Matrix : W

Collection Information:

Sample Date: 9/12/2011 1:20:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00782 U	09/15/2011 15:11	09/14/2011 9:00	UG/L	0.00782	0.0191	1
1,1,2,2-Tetrachloroethane(SURR	8011	108	09/15/2011 15:11	09/14/2011 9:00	%	0.00782	(70 - 130)	1
1,2-Dichloroethane	8260	1.5 U	09/15/2011 22:47		UG/L	1.5	5	10
3,3-Dimethyl-1-butanol	8260	250 U	09/15/2011 22:47		UG/L	250	400	10
Ethanol	8260	4000 U	09/15/2011 22:47		UG/L	4000	8000	10
ethyl tert-butyl ether	8260	5 U	09/15/2011 22:47		UG/L	5	10	10
Ethylbenzene	8260	**155**	09/15/2011 22:47		UG/L	2.2	5	10
Isopropyl Ether	8260	1.3 U	09/15/2011 22:47		UG/L	1.3	10	10
Methyl tert-butyl ether	8260	5 U	09/15/2011 22:47		UG/L	5	10	10
Naphthalene	8260	**170**	09/15/2011 22:47		UG/L	5	50	10
t-Amyl Alcohol	8260	100 U	09/15/2011 22:47		UG/L	100	200	10
t-Butanol	8260	18 U	09/15/2011 22:47		UG/L	18	200	10
t-Butyl Formate	8260	800 U	09/15/2011 22:47		UG/L	800	1600	10
TERT-AMYL METHYL ETHER	8260	**19.3**	09/15/2011 22:47		UG/L	2	10	10
1,2-Dichloroethane-d4(SURR)	8260	98.2	09/15/2011 22:47		%	2	(89 - 123)	10
4-Bromofluorobenzene(SURR)	8260	103	09/15/2011 22:47		%	2	(85 - 115)	10
Dibromofluoromethane(SURR)	8260	102	09/15/2011 22:47		%	2	(83 - 128)	10
Toluene-d8(SURR)	8260	101	09/15/2011 22:47		%	2	(89 - 121)	10
Benzene	8260	**1110**	09/15/2011 23:11		UG/L	8.5	25	50
Toluene	8260	**1140**	09/15/2011 23:11		UG/L	7	50	50
Xylene (total)	8260	**3610**	09/15/2011 23:11		UG/L	25	100	50
1,2-Dichloroethane-d4(SURR)	8260	102	09/15/2011 23:11		%	25	(89 - 123)	50
4-Bromofluorobenzene(SURR)	8260	102	09/15/2011 23:11		%	25	(85 - 115)	50
Dibromofluoromethane(SURR)	8260	103	09/15/2011 23:11		%	25	(83 - 128)	50
Toluene-d8(SURR)	8260	103	09/15/2011 23:11		%	25	(89 - 121)	50

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402009

Client ID : MW-12

Matrix : W

Collection Information:

Sample Date: 9/12/2011 1:35:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00772 U	09/15/2011 15:26	09/14/2011 9:00	UG/L	0.00772	0.0188	1
1,1,2,2-Tetrachloroethane(SURR	8011	112	09/15/2011 15:26	09/14/2011 9:00	%	0.00772	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/16/2011 2:41		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/16/2011 2:41		UG/L	25	40	1
Benzene	8260	**53.6**	09/16/2011 2:41		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/16/2011 2:41		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/16/2011 2:41		UG/L	0.5	1	1
Ethylbenzene	8260	**2.6**	09/16/2011 2:41		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/16/2011 2:41		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/16/2011 2:41		UG/L	0.5	1	1
Naphthalene	8260	**5.9**	09/16/2011 2:41		UG/L	0.5	5	1
t-Amyl Alcohol	8260	**343**	09/16/2011 2:41		UG/L	10	20	1
t-Butanol	8260	**88.2**	09/16/2011 2:41		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/16/2011 2:41		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/16/2011 2:41		UG/L	0.2	1	1
Toluene	8260	**2.1**	09/16/2011 2:41		UG/L	0.14	1	1
Xylene (total)	8260	1.1 I	09/16/2011 2:41		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	106	09/16/2011 2:41		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	101	09/16/2011 2:41		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	101	09/16/2011 2:41		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	107	09/16/2011 2:41		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402010

Client ID : MW-13

Matrix : W

Collection Information:

Sample Date: 9/12/2011 12:00:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.0078 U	09/15/2011 15:41	09/14/2011 9:00	UG/L	0.0078	0.019	1
1,1,2,2-Tetrachloroethane(SURR	8011	91.7	09/15/2011 15:41	09/14/2011 9:00	%	0.0078	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/15/2011 22:35		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/15/2011 22:35		UG/L	25	40	1
Benzene	8260	0.17 U	09/15/2011 22:35		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/15/2011 22:35		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/15/2011 22:35		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/15/2011 22:35		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/15/2011 22:35		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/15/2011 22:35		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/15/2011 22:35		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/15/2011 22:35		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/15/2011 22:35		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/15/2011 22:35		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/15/2011 22:35		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/15/2011 22:35		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/15/2011 22:35		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	107	09/15/2011 22:35		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	107	09/15/2011 22:35		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	102	09/15/2011 22:35		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	103	09/15/2011 22:35		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020
PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402011
Client ID : MW-14
Matrix : W

Collection Information:
Sample Date: 9/12/2011 11:45:00 AM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00776 U	09/15/2011 15:56	09/14/2011 9:00	UG/L	0.00776	0.0189	1
1,1,2,2-Tetrachloroethane(SURR	8011	95.8	09/15/2011 15:56	09/14/2011 9:00	%	0.00776	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/15/2011 22:59		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/15/2011 22:59		UG/L	25	40	1
Benzene	8260	0.17 U	09/15/2011 22:59		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/15/2011 22:59		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/15/2011 22:59		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/15/2011 22:59		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/15/2011 22:59		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/15/2011 22:59		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/15/2011 22:59		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/15/2011 22:59		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/15/2011 22:59		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/15/2011 22:59		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/15/2011 22:59		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/15/2011 22:59		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/15/2011 22:59		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	109	09/15/2011 22:59		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	109	09/15/2011 22:59		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	105	09/15/2011 22:59		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	106	09/15/2011 22:59		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402012

Client ID : MW-15

Matrix : W

Collection Information:

Sample Date: 9/12/2011 11:05:00 AM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00769 U	09/15/2011 16:26	09/14/2011 9:00	UG/L	0.00769	0.0188	1
1,1,2,2-Tetrachloroethane(SURR	8011	70.8	09/15/2011 16:26	09/14/2011 9:00	%	0.00769	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/15/2011 23:24		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/15/2011 23:24		UG/L	25	40	1
Benzene	8260	0.17 U	09/15/2011 23:24		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/15/2011 23:24		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/15/2011 23:24		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/15/2011 23:24		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/15/2011 23:24		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/15/2011 23:24		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/15/2011 23:24		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/15/2011 23:24		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/15/2011 23:24		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/15/2011 23:24		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/15/2011 23:24		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/15/2011 23:24		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/15/2011 23:24		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	109	09/15/2011 23:24		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	106	09/15/2011 23:24		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	108	09/15/2011 23:24		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	107	09/15/2011 23:24		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020
PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402013
Client ID : MW-16
Matrix : W

Collection Information:
Sample Date: 9/12/2011 10:55:00 AM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00776 U	09/15/2011 16:41	09/14/2011 9:00	UG/L	0.00776	0.0189	1
1,1,2,2-Tetrachloroethane(SURR	8011	91.7	09/15/2011 16:41	09/14/2011 9:00	%	0.00776	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/15/2011 23:48		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/15/2011 23:48		UG/L	25	40	1
Benzene	8260	0.17 U	09/15/2011 23:48		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/15/2011 23:48		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/15/2011 23:48		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/15/2011 23:48		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/15/2011 23:48		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/15/2011 23:48		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/15/2011 23:48		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/15/2011 23:48		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/15/2011 23:48		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/15/2011 23:48		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/15/2011 23:48		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/15/2011 23:48		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/15/2011 23:48		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	104	09/15/2011 23:48		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	104	09/15/2011 23:48		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	103	09/15/2011 23:48		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	103	09/15/2011 23:48		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402014

Client ID : MW-17

Matrix : W

Collection Information:

Sample Date: 9/12/2011 1:50:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	**0.13**	09/16/2011 13:35	09/14/2011 9:00	UG/L	0.00772	0.0188	1
1,1,2,2-Tetrachloroethane(SURR	8011	75	09/16/2011 13:35	09/14/2011 9:00	%	0.00772	(70 - 130)	1
1,2-Dichloroethane	8260	15 U	09/15/2011 23:34		UG/L	15	50	100
3,3-Dimethyl-1-butanol	8260	2500 U	09/15/2011 23:34		UG/L	2500	4000	100
Ethanol	8260	40000 U	09/15/2011 23:34		UG/L	40000	80000	100
ethyl tert-butyl ether	8260	50 U	09/15/2011 23:34		UG/L	50	100	100
Ethylbenzene	8260	**1530**	09/15/2011 23:34		UG/L	22	50	100
Isopropyl Ether	8260	13 U	09/15/2011 23:34		UG/L	13	100	100
Methyl tert-butyl ether	8260	50 U	09/15/2011 23:34		UG/L	50	100	100
Naphthalene	8260	272 I	09/15/2011 23:34		UG/L	50	500	100
t-Amyl Alcohol	8260	**9580**	09/15/2011 23:34		UG/L	1000	2000	100
t-Butanol	8260	180 U	09/15/2011 23:34		UG/L	180	2000	100
t-Butyl Formate	8260	8000 U	09/15/2011 23:34		UG/L	8000	16000	100
TERT-AMYL METHYL ETHER	8260	**260**	09/15/2011 23:34		UG/L	20	100	100
Xylene (total)	8260	**7480**	09/15/2011 23:34		UG/L	50	200	100
1,2-Dichloroethane-d4(SURR)	8260	98.4	09/15/2011 23:34		%	50	(89 - 123)	100
4-Bromofluorobenzene(SURR)	8260	102	09/15/2011 23:34		%	50	(85 - 115)	100
Dibromofluoromethane(SURR)	8260	100	09/15/2011 23:34		%	50	(83 - 128)	100
Toluene-d8(SURR)	8260	100	09/15/2011 23:34		%	50	(89 - 121)	100
Benzene	8260	**9220**	09/15/2011 23:57		UG/L	85	250	500
Toluene	8260	**19500**	09/15/2011 23:57		UG/L	70	500	500
1,2-Dichloroethane-d4(SURR)	8260	101	09/15/2011 23:57		%	70	(89 - 123)	500
4-Bromofluorobenzene(SURR)	8260	100	09/15/2011 23:57		%	70	(85 - 115)	500
Dibromofluoromethane(SURR)	8260	99.6	09/15/2011 23:57		%	70	(83 - 128)	500
Toluene-d8(SURR)	8260	101	09/15/2011 23:57		%	70	(89 - 121)	500

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402015

Client ID : MW-18

Matrix : W

Collection Information:

Sample Date: 9/12/2011 2:00:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00774 U	09/16/2011 13:50	09/14/2011 9:00	UG/L	0.00774	0.0189	1
1,1,2,2-Tetrachloroethane(SURR	8011	100	09/16/2011 13:50	09/14/2011 9:00	%	0.00774	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/16/2011 0:13		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/16/2011 0:13		UG/L	25	40	1
Benzene	8260	0.17 U	09/16/2011 0:13		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/16/2011 0:13		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/16/2011 0:13		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/16/2011 0:13		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/16/2011 0:13		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/16/2011 0:13		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/16/2011 0:13		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/16/2011 0:13		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/16/2011 0:13		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/16/2011 0:13		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/16/2011 0:13		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/16/2011 0:13		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/16/2011 0:13		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	105	09/16/2011 0:13		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	104	09/16/2011 0:13		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	103	09/16/2011 0:13		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	102	09/16/2011 0:13		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402016

Client ID : MW-20

Matrix : W

Collection Information:

Sample Date: 9/12/2011 12:15:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00772 U	09/16/2011 14:05	09/14/2011 9:00	UG/L	0.00772	0.0188	1
1,1,2,2-Tetrachloroethane(SURR	8011	91.7	09/16/2011 14:05	09/14/2011 9:00	%	0.00772	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/16/2011 0:38		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/16/2011 0:38		UG/L	25	40	1
Benzene	8260	0.17 U	09/16/2011 0:38		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/16/2011 0:38		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/16/2011 0:38		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/16/2011 0:38		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/16/2011 0:38		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	**5**	09/16/2011 0:38		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/16/2011 0:38		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/16/2011 0:38		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/16/2011 0:38		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/16/2011 0:38		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/16/2011 0:38		UG/L	0.2	1	1
Toluene	8260	0.17 I	09/16/2011 0:38		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/16/2011 0:38		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	103	09/16/2011 0:38		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	104	09/16/2011 0:38		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	105	09/16/2011 0:38		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	103	09/16/2011 0:38		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402017

Client ID : MW-21

Matrix : W

Collection Information:

Sample Date: 9/12/2011 12:10:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00772 U	09/16/2011 14:20	09/14/2011 9:00	UG/L	0.00772	0.0188	1
1,1,2,2-Tetrachloroethane(SURR	8011	91.7	09/16/2011 14:20	09/14/2011 9:00	%	0.00772	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/16/2011 1:02		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/16/2011 1:02		UG/L	25	40	1
Benzene	8260	0.17 U	09/16/2011 1:02		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/16/2011 1:02		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/16/2011 1:02		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/16/2011 1:02		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/16/2011 1:02		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/16/2011 1:02		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/16/2011 1:02		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/16/2011 1:02		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/16/2011 1:02		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/16/2011 1:02		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/16/2011 1:02		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/16/2011 1:02		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/16/2011 1:02		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	106	09/16/2011 1:02		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	98.6	09/16/2011 1:02		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	102	09/16/2011 1:02		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	101	09/16/2011 1:02		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402018

Client ID : MW-22

Matrix : W

Collection Information:

Sample Date: 9/12/2011 12:30:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00782 U	09/16/2011 14:35	09/14/2011 9:00	UG/L	0.00782	0.0191	1
1,1,2,2-Tetrachloroethane(SURR	8011	100	09/16/2011 14:35	09/14/2011 9:00	%	0.00782	(70 - 130)	1
1,2-Dichloroethane	8260	0.15 U	09/16/2011 1:27		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/16/2011 1:27		UG/L	25	40	1
Benzene	8260	0.17 U	09/16/2011 1:27		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/16/2011 1:27		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/16/2011 1:27		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/16/2011 1:27		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/16/2011 1:27		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.5 U	09/16/2011 1:27		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/16/2011 1:27		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/16/2011 1:27		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/16/2011 1:27		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/16/2011 1:27		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/16/2011 1:27		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/16/2011 1:27		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/16/2011 1:27		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	103	09/16/2011 1:27		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	103	09/16/2011 1:27		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	102	09/16/2011 1:27		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	101	09/16/2011 1:27		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Lab# : 350402019

Client ID : MW-23

Matrix : W

Collection Information:

Sample Date: 9/12/2011 12:45:00 PM

Parameter	Method	Results	Analysis Date	Prep Date	Units	MDL	RL	Dilution Factor
1,2-Dibromoethane	8011	0.00774 U	09/16/2011 14:50	09/14/2011 9:00	UG/L	0.00774	0.0189	1
1,1,2,2-Tetrachloroethane(SURR	8011	104	09/16/2011 14:50	09/14/2011 9:00	%	0.00774	(70 - 130)	1
1,2-Dichloroethane	8260	0.19 I	09/16/2011 1:51		UG/L	0.15	0.5	1
3,3-Dimethyl-1-butanol	8260	25 U	09/16/2011 1:51		UG/L	25	40	1
Benzene	8260	0.17 U	09/16/2011 1:51		UG/L	0.17	0.5	1
Ethanol	8260	400 U	09/16/2011 1:51		UG/L	400	800	1
ethyl tert-butyl ether	8260	0.5 U	09/16/2011 1:51		UG/L	0.5	1	1
Ethylbenzene	8260	0.22 U	09/16/2011 1:51		UG/L	0.22	0.5	1
Isopropyl Ether	8260	0.13 U	09/16/2011 1:51		UG/L	0.13	1	1
Methyl tert-butyl ether	8260	0.66 I	09/16/2011 1:51		UG/L	0.5	1	1
Naphthalene	8260	0.5 U	09/16/2011 1:51		UG/L	0.5	5	1
t-Amyl Alcohol	8260	10 U	09/16/2011 1:51		UG/L	10	20	1
t-Butanol	8260	1.8 U	09/16/2011 1:51		UG/L	1.8	20	1
t-Butyl Formate	8260	80 U	09/16/2011 1:51		UG/L	80	160	1
TERT-AMYL METHYL ETHER	8260	0.2 U	09/16/2011 1:51		UG/L	0.2	1	1
Toluene	8260	0.14 U	09/16/2011 1:51		UG/L	0.14	1	1
Xylene (total)	8260	0.5 U	09/16/2011 1:51		UG/L	0.5	2	1
1,2-Dichloroethane-d4(SURR)	8260	106	09/16/2011 1:51		%	0.5	(89 - 123)	1
4-Bromofluorobenzene(SURR)	8260	106	09/16/2011 1:51		%	0.5	(85 - 115)	1
Dibromofluoromethane(SURR)	8260	102	09/16/2011 1:51		%	0.5	(83 - 128)	1
Toluene-d8(SURR)	8260	102	09/16/2011 1:51		%	0.5	(89 - 121)	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020
PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

QC SUMMARY

METHOD: 8011

Method Blank : 99135MB **Matrix :** WQ

Associated Lab Samples : 350402001 350402002 350402003 350402004 350402005 350402006 350402007 350402008 350402009 350402010 350402011 350402012 350402013 350402014 350402015 350402016 350402017 350402018 350402019 99133LCS 99134LCSD 99135MB

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
1,2-Dibromoethane	U	9/16/2011	9/14/2011	UG/L	0.00815	1
1,1,2,2-Tetrachloroethane(SURR	79.2	9/16/2011	9/14/2011	%	(70 - 130)	1

LABORATORY CONTROL SAMPLE: 99133LCS **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS	RPD	RPD LIMIT
1,2-Dibromoethane	ug/L	0.12	0.13	108	(60-140)		
1,1,2,2-Tetrachloroethane(SURR	ug/L	0.24	0.25	104	(70-130)		

LABORATORY CONTROL SAMPLE: 99134LCSD **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS	RPD	RPD LIMIT
1,2-Dibromoethane	ug/L	0.12	0.13	108	(60-140)	0	10
1,1,2,2-Tetrachloroethane(SURR	ug/L	0.24	0.24	100	(70-130)		

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020
PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

METHOD: 8260

Method Blank : 091511BLK34 **Matrix :** WQ

Associated Lab Samples : 091511BLK34 091511LCS33 091511LCS33D 350402003 350402003DL1 350402008 350402008DL1 350402014 350402014DL1 350402014MSDL1 350402014SDDL1

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
1,2-Dichloroethane	U	9/15/2011		UG/L	0.15	1
3,3-Dimethyl-1-butanol	U	9/15/2011		UG/L	25	1
Benzene	U	9/15/2011		UG/L	0.17	1
Ethanol	U	9/15/2011		UG/L	400	1
ethyl tert-butyl ether	U	9/15/2011		UG/L	0.5	1
Ethylbenzene	U	9/15/2011		UG/L	0.22	1
Isopropyl Ether	U	9/15/2011		UG/L	0.13	1
Methyl tert-butyl ether	U	9/15/2011		UG/L	0.5	1
Naphthalene	U	9/15/2011		UG/L	0.5	1
t-Amyl Alcohol	U	9/15/2011		UG/L	10	1
t-Butanol	U	9/15/2011		UG/L	1.8	1
t-Butyl Formate	U	9/15/2011		UG/L	80	1
TERT-AMYL METHYL ETHER	U	9/15/2011		UG/L	0.2	1
Toluene	U	9/15/2011		UG/L	0.14	1
Xylene (total)	U	9/15/2011		UG/L	0.5	1
1,2-Dichloroethane-d4(SURR) (S	96.8	9/15/2011		%	(89 - 123)	1
4-Bromofluorobenzene(SURR) (	98.2	9/15/2011		%	(85 - 115)	1
Dibromofluoromethane(SURR) (	97.2	9/15/2011		%	(83 - 128)	1
Toluene-d8(SURR) (S)	98.2	9/15/2011		%	(89 - 121)	1

Method Blank : 091511BLK62 **Matrix :** WQ

Associated Lab Samples : 091511BLK62 091511LCS61 091511LCS61D 350402001 350402002 350402002DL1 350402004 350402005 350402006 350402007 350402009 350402010 350402011 350402012 350402013 350402015 350402016 350402017 350402018 350402019

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
1,2-Dichloroethane	U	9/15/2011		UG/L	0.15	1
3,3-Dimethyl-1-butanol	U	9/15/2011		UG/L	25	1
Benzene	U	9/15/2011		UG/L	0.17	1
Ethanol	U	9/15/2011		UG/L	400	1
ethyl tert-butyl ether	U	9/15/2011		UG/L	0.5	1
Ethylbenzene	U	9/15/2011		UG/L	0.22	1
Isopropyl Ether	U	9/15/2011		UG/L	0.13	1
Methyl tert-butyl ether	U	9/15/2011		UG/L	0.5	1
Naphthalene	U	9/15/2011		UG/L	0.5	1
t-Amyl Alcohol	U	9/15/2011		UG/L	10	1
t-Butanol	U	9/15/2011		UG/L	1.8	1
t-Butyl Formate	U	9/15/2011		UG/L	80	1
TERT-AMYL METHYL ETHER	U	9/15/2011		UG/L	0.2	1

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020
PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

METHOD: 8260

Method Blank : 091511BLK62 **Matrix :** WQ

Associated Lab Samples : 091511BLK62 091511LCS61 091511LCS61D 350402001 350402002 350402002DL1 350402004 350402005 350402006 350402007 350402009 350402010 350402011 350402012 350402013 350402015 350402016 350402017 350402018 350402019

Parameter	Results	Analysis Date	Prep Date	Units	RL	Dilution Factor
Toluene	U	9/15/2011		UG/L	0.14	1
Xylene (total)	U	9/15/2011		UG/L	0.5	1
1,2-Dichloroethane-d4(SURR) (S	102	9/15/2011		%	(89 - 123)	1
4-Bromofluorobenzene(SURR) (	100	9/15/2011		%	(85 - 115)	1
Dibromofluoromethane(SURR) (	99.2	9/15/2011		%	(83 - 128)	1
Toluene-d8(SURR) (S)	101	9/15/2011		%	(89 - 121)	1

LABORATORY CONTROL SAMPLE: 091511LCS33 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS	RPD	RPD LIMIT
1,2-Dichloroethane	ug/L	20	20.7	104	(75-126)		
3,3-Dimethyl-1-butanol	ug/L	400	364	91	(12-170)		
Benzene	ug/L	20	21.1	106	(82-123)		
Ethanol	ug/L	1600	1990	124	(56-154)		
ethyl tert-butyl ether	ug/L	20	20.2	101	(72-139)		
Ethylbenzene	ug/L	20	21.1	106	(82-119)		
Isopropyl Ether	ug/L	20	20.6	103	(82-131)		
Methyl tert-butyl ether	ug/L	20	19.3	96.5	(67-147)		
Naphthalene	ug/L	20	19.6	98	(65-135)		
t-Amyl Alcohol	ug/L	400	427	107	(10-170)		
t-Butanol	ug/L	200	176	88	(56-151)		
t-Butyl Formate	ug/L	400	302	75.5	(18-171)		
TERT-AMYL METHYL ETHER	ug/L	20	19.4	97	(67-149)		
Toluene	ug/L	20	21.5	108	(80-116)		
Xylene (total)	ug/L	60	63.8	106	(81-124)		
1,2-Dichloroethane-d4(SURR) (S	ug/L	50	50.9	102	(89-123)		
4-Bromofluorobenzene(SURR) (	ug/L	50	51	102	(85-115)		
Dibromofluoromethane(SURR) (	ug/L	50	52.8	106	(83-128)		
Toluene-d8(SURR) (S)	ug/L	50	53	106	(89-121)		

LABORATORY CONTROL SAMPLE: 091511LCS33D **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS	RPD	RPD LIMIT
1,2-Dichloroethane	ug/L	20	19.9	99.5	(75-126)	3.9	20
3,3-Dimethyl-1-butanol	ug/L	400	345	86.2	(12-170)	5.4	20
Benzene	ug/L	20	20.3	102	(82-123)	3.9	20
Ethanol	ug/L	1600	1720	108	(56-154)	14.6	20
ethyl tert-butyl ether	ug/L	20	20	100	(72-139)	1	20
Ethylbenzene	ug/L	20	21	105	(82-119)	0.5	20
Isopropyl Ether	ug/L	20	20.2	101	(82-131)	2	20

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020
PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

METHOD: 8260

LABORATORY CONTROL SAMPLE: 091511LCS33D **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS	RPD	RPD LIMIT
Methyl tert-butyl ether	ug/L	20	19.3	96.5	(67-147)	0	20
Naphthalene	ug/L	20	18.9	94.5	(65-135)	3.6	20
t-Amyl Alcohol	ug/L	400	398	99.5	(10-170)	7	20
t-Butanol	ug/L	200	170	85	(56-151)	3.5	20
t-Butyl Formate	ug/L	400	342	85.5	(18-171)	12.4	20
TERT-AMYL METHYL ETHER	ug/L	20	18.5	92.5	(67-149)	4.7	20
Toluene	ug/L	20	21.1	106	(80-116)	1.9	20
Xylene (total)	ug/L	60	62.2	104	(81-124)	2.5	20
1,2-Dichloroethane-d4(SURR) (S	ug/L	50	51.3	103	(89-123)		
4-Bromofluorobenzene(SURR) (	ug/L	50	50.5	101	(85-115)		
Dibromofluoromethane(SURR) (	ug/L	50	51.8	104	(83-128)		
Toluene-d8(SURR) (S)	ug/L	50	51.8	104	(89-121)		

LABORATORY CONTROL SAMPLE: 091511LCS61 **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS	RPD	RPD LIMIT
1,2-Dichloroethane	ug/L	20	18	90	(75-126)		
3,3-Dimethyl-1-butanol	ug/L	400	356	89	(12-170)		
Benzene	ug/L	20	18.8	94	(82-123)		
Ethanol	ug/L	1600	1370	85.6	(56-154)		
ethyl tert-butyl ether	ug/L	20	19.1	95.5	(72-139)		
Ethylbenzene	ug/L	20	20.7	104	(82-119)		
Isopropyl Ether	ug/L	20	19.3	96.5	(82-131)		
Methyl tert-butyl ether	ug/L	20	18.9	94.5	(67-147)		
Naphthalene	ug/L	20	19	95	(65-135)		
t-Amyl Alcohol	ug/L	400	356	89	(10-170)		
t-Butanol	ug/L	200	190	95	(56-151)		
t-Butyl Formate	ug/L	400	318	79.5	(18-171)		
TERT-AMYL METHYL ETHER	ug/L	20	19.6	98	(67-149)		
Toluene	ug/L	20	20.2	101	(80-116)		
Xylene (total)	ug/L	60	61.1	102	(81-124)		
1,2-Dichloroethane-d4(SURR) (S	ug/L	50	50.5	101	(89-123)		
4-Bromofluorobenzene(SURR) (	ug/L	50	51.4	103	(85-115)		
Dibromofluoromethane(SURR) (	ug/L	50	49.7	99.4	(83-128)		
Toluene-d8(SURR) (S)	ug/L	50	50.8	102	(89-121)		

LABORATORY CONTROL SAMPLE: 091511LCS61D **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS	RPD	RPD LIMIT
1,2-Dichloroethane	ug/L	20	18.2	91	(75-126)	1.1	20
3,3-Dimethyl-1-butanol	ug/L	400	354	88.5	(12-170)	0.6	20
Benzene	ug/L	20	19.3	96.5	(82-123)	2.6	20
Ethanol	ug/L	1600	1330	83.1	(56-154)	3	20
ethyl tert-butyl ether	ug/L	20	19.2	96	(72-139)	0.5	20
Ethylbenzene	ug/L	20	20.4	102	(82-119)	1.5	20
Isopropyl Ether	ug/L	20	19.1	95.5	(82-131)	1	20
Methyl tert-butyl ether	ug/L	20	19	95	(67-147)	0.5	20

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020
PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

METHOD: 8260

LABORATORY CONTROL SAMPLE: 091511LCS61D **Matrix :** WQ

PARAMETER	UNITS	SPIKE CONC	LCS RESULT	SPIKE % REC	% REC LIMITS	RPD	RPD LIMIT
Naphthalene	ug/L	20	17.9	89.5	(65-135)	6	20
t-Amyl Alcohol	ug/L	400	351	87.8	(10-170)	1.4	20
t-Butanol	ug/L	200	187	93.5	(56-151)	1.6	20
t-Butyl Formate	ug/L	400	306	76.5	(18-171)	3.8	20
TERT-AMYL METHYL ETHER	ug/L	20	20	100	(67-149)	2	20
Toluene	ug/L	20	20.3	102	(80-116)	0.5	20
Xylene (total)	ug/L	60	60.8	101	(81-124)	0.5	20
1,2-Dichloroethane-d4(SURR) (S	ug/L	50	49.9	99.8	(89-123)		
4-Bromofluorobenzene(SURR) (	ug/L	50	51.2	102	(85-115)		
Dibromofluoromethane(SURR) (	ug/L	50	50	100	(83-128)		
Toluene-d8(SURR) (S)	ug/L	50	50.9	102	(89-121)		

- CERTIFICATE OF ANALYSIS -

FLDOH #E84207

To: Randall Hutchins
Environmental Compliance Services

WORK ORDER: 3504020

PROJECT ID: Edgefield Fuel and Convenience 3 / 14-21

Brian C. Spann Laboratory Manager

or

Mark Gudnason Technical Director

PEL

A DIVISION OF SPECTRUM ANALYTICAL, INC. Featuring HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

3504020 N8

Page 1 of 2

Special Handling:
TAT- Indicate Date Needed: Standard
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: Randy Hitchins
ECS
13504 S. Point Blvd, Unit E
Charlotte, NC 28273
704-583-2211
Project Mgr.: Randy Hitchins

Invoice To: Sue Streeter
ECS
588 Silver Street
Agawam, MA

P.O. No.: 14-211651 RQN:

Project No.: 14-211651
Site Name: Edgefield Fuel + Convenience 3
Location: Edgefield State: SC
Sampler(s): Aaron Williamson

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9=_____ 10=_____ 11=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below: 2 2 2	Analyses: 8260 BTEX/MN	Analyses: 1,2 DCA	Analyses: 8 Oxygenates	Analyses: 8011 EDB
-01	MW-3	9-12-11	1020	G	GW	6					X	X	X	X
-02	MW-4		1030											
-03	MW-6		1040											
-04	MW-7		1130											
-05	MW-8		1115											
-06	MW-9		1300											
-07	MW-10		1310											
-08	MW-11		1320											
-09	MW-12		1335											
-10	MW-13		1200											

Notes:

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State specific reporting standards:

☒ E-mail to RHitchins@ecsconsult.com
EDD Format PW2 8260

Condition upon receipt: ☒ Iced ☐ Ambient ☒ °C 2.1

Relinquished by:	Received by:	Date:	Time:
A. Williamson / ECS	FedEx 872615988974	9-12-11	1745
	MB	9-13-11	900

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CHAIN OF CUSTODY RECORD

3504020

Page 2 of 2

NS

Special Handling:
TAT- Indicate Date Needed: Standard
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Randy Hutchins
ECS
13504 S. Point Blvd, Unit F
Charlotte, NC 28273
704-583-2711
Project Mgr.: Randy Hutchins

Invoice To: Sue Streeter
ECS
588 Silver Street
Agawam, MA
P.O. No.: 14-211651 RQN:

Project No.: 14-211651
Site Name: Edgefield Fuel + Convenience 3
Location: Edgefield State: SC
Sampler(s): Aaron Williamson

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9=_____ 10=_____ 11=_____

List preservative code below: 2 2 2

Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: 8260 BTEXMN	1,2 DCA	8 Oxygenates	8011 EDB
-11	MW-14	9-12-11	1145	G	GW	6				X	X	X	X
-12	MW-15		1105										
-13	MW-16		1055										
-14	MW-17		1350										
-15	MW-18		1400										
-16	MW-20		1215										
-17	MW-21		1210										
-18	MW-22		1230										
-19	MW-23		1245										

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State specific reporting standards:

☒ E-mail to RHutchins@ecsconsult.com
EDD Format

Condition upon receipt: ☐ Iced ☐ Ambient ☐ °C

Relinquished by:	Received by:	Date:	Time:
A. Williamson / ECS	FedEx 872615988924	9-12-11	1745
	MR	9-13-11	900

FedEx Express **US Airbill**

FedEx Tracking Number **8726 1598 8974**

0200 Form ID No.

FedEx Retrieval Copy

1 From

Date 9-12-11 Sender's FedEx Account Number

Sender's Name Aaron Williamson Phone 704 583-2711

Company Environmental Compliance Services

Address 13504 S. Point Blvd Unit F Dept/Floor/Suite/Room

City Charlotte State NC ZIP 28273

2 Your Internal Billing Reference

3 To

Recipient's Name Sample Receiving Phone [illegible]

Company [illegible]

Address [illegible] Dept/Floor/Suite/Room
We cannot deliver to P.O. boxes or P.O. ZIP codes.

01 ☐ HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight.

Address
Use this line for the HOLD location address or for continuation of your shipping address.

31 ☐ HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

City Tampa State FL ZIP [illegible]

8726 1598 8974

4a Express Package Service *To most locations. *Packages up to 150 lbs.*

- 01 ☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 05 ☒ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- 06 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations.*
- 03 ☐ FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

4b Express Freight Service **To most locations. *Packages over 150 lbs.*

- 70 ☐ FedEx 1Day Freight — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected. FedEx 1Day Freight Booking No.
- 80 ☐ FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- 83 ☐ FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

5 Packaging *Declared value limit $500.

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* (Includes FedEx Small Pak and FedEx Large Pak.) 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ **SATURDAY DELIVERY**

- ☐ No Signature Required — Package may be left without obtaining a signature for delivery.
- 10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
- 34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?
One box must be checked.

☐ No 04 ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. 06 ☐ Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. ☐

1 ☐ Sender (Acct. No. in Section 1 will be billed.) 2 ☒ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

[redacted]

Total Packages 1 Total Weight 3 lbs. Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

606

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SAMPLE RECEIPT CONFIRMATION SHEET

Client Information

SDG:	3504020	**Req:**	90620
Client:	ECS - NC	**Project:**	Randall Hutchins
Level:	1	**Date Rec'd:**	9/13/2011 9:00:00 AM
Rec'd via:	Fed-Ex	**Due Date:**	9/16/2011

Sample Verification

Samples/Cooler Secure?	Yes	**All Samples on COC accounted For?**	Yes
Temperature of Samples(Celsius)	2.1C	**All Samples Rec'd Intact?**	Yes
pH Verified?	Yes	**Sample Vol. Sufficient For Analysis**	Yes
pH WNL?	Yes	**Samples Rec'd W/I Hold Time?**	Yes
Soil Origin (Domestic/Foreign):		**Are All Samples to be Analyzed?**	Yes
Site Location/Project on COC?	Yes	**Correct Sample Containers?**	Yes
Client Project # on COC?	Yes	**COC Comments written on COC?**	Yes
Project Mgr. Indicated on COC?	Yes	**Samplers Initials on COC?**	Yes
COC relinquished/Dated by Client?	Yes	**Sample Date/Time Indicated?**	Yes
COC Received/Dated by SA?	Yes	**TAT Requested:**	STD
Specific Subcontract Indicated?	No	**Client Requests Verbal Results?**	No
Samples Received By	Fed-Ex	**Client Requests Faxed Results?**	No
PEL to Conduct ALL Analyses?	Yes		
Radioactivity Check?	No		
COC Present?	Yes		

PEER REVIEW: SH

End Of Report

160911 1804

APPENDIX E

Groundwater Sampling Field Data Sheets

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convience 3 | Location: Edgefield, SC

Project No.: 14-211651 | Date: 9/12/11

Measured By: A. Williamson | Weather: Sunny, 80s

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Measured Well Depth (feet)	Volume Purged (gallons)
MW-1	20.59	26.35	5.76	-----	-----	0.00
MW-2	23.01	27.06	4.05	-----	-----	0.00
MW-3	-----	23.90	-----	-----	33.89	0.00
MW-4	-----	22.22	-----	-----	28.96	0.00
MW-5	20.66	24.05	3.39	-----	-----	0.00
MW-6	-----	23.27	-----	-----	28.99	0.00
MW-7	-----	17.00	-----	-----	20.36	0.00
MW-8	-----	24.89	-----	-----	26.89	0.00
MW-9	-----	22.16	-----	-----	26.93	0.00
MW-10	-----	25.87	-----	-----	30.39	0.00
MW-11	-----	25.25	-----	-----	30.91	0.00
MW-12	-----	25.00	-----	-----	30.04	0.00
MW-13	-----	21.60	-----	-----	25.24	0.00
MW-14	-----	25.97	-----	-----	29.57	0.00
MW-15	-----	22.10	-----	-----	26.96	0.00
MW-16	-----	16.15	-----	-----	19.66	0.00
MW-17	-----	24.67	-----	-----	28.68	0.00
MW-18	-----	25.14	-----	-----	28.58	0.00
MW-19	22.57	27.18	4.61	-----	-----	0.00
MW-20	-----	21.66	-----	-----	26.24	0.00
MW-21	-----	22.94	-----	-----	29.35	0.00
MW-22	-----	26.94	-----	-----	29.89	0.00
MW-23	-----	25.99	-----	-----	31.34	0.00

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Well # **MW-1**

Well Diameter (D) 2.0 inch or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 26.35 ft.
Depth to FP (Free product) **20.59** **ft.**
FP Thickness **5.76** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU)								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Well # **MW-2**

Well Diameter (D) 2.0 inch or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 27.06 ft.
Depth to FP (Free product) **23.01** **ft.**
FP Thickness **4.05** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU) NTU								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-3**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 33.89 ft.
Depth to GW(DGW) 23.90 ft.

Length of Water Column (LWC=TWD-DGW) 9.99 ft.

1Csg. Vol. (LWC*C)= 9.99 X 0.163 = 1.63 gal.
3Csg. Volume = 3x 1.63 = 4.89 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								10:20
pH (s.u.)								5.44
O.R.P. (mV)								182
Temperature (°C)								23.71
Specific Cond. (mS/cm)								0.421
Dissolved Oxygen (mg/L)								3.18
Turbidity (NTU) NTU								78.5

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-4**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.96 ft.
Depth to GW(DGW) 22.22 ft.

Length of Water Column (LWC=TWD-DGW) 6.74 ft.

1Csg. Vol. (LWC*C)= 6.74 X 0.163 = 1.10 gal.
3Csg. Volume = 3x 1.10 = 3.30 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								10:30
pH (s.u.)								9.13
O.R.P. (mV)								-50
Temperature (°C)								23.4
Specific Cond. (mS/cm)								0.717
Dissolved Oxygen (mg/L)								2.39
Turbidity (NTU) NTU								20.3

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Well # **MW-5**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 24.05 ft.
Depth to FP (Free product) **20.66** **ft.**
FP Thickness **3.39** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU) NTU								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-6**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.99 ft.
Depth to GW(DGW) 23.27 ft.

Length of Water Column (LWC=TWD-DGW) 5.72 ft.

1Csg. Vol. (LWC*C)= 5.72 X 0.163 = 0.93 gal.
3Csg. Volume = 3x 0.93 = 2.80 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								10:40
pH (s.u.)								6.95
O.R.P. (mV)								46
Temperature (°C)								23.04
Specific Cond. (mS/cm)								0.336
Dissolved Oxygen (mg/L)								2.51
Turbidity (NTU) NTU								109.0

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-7**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 20.36 ft.
Depth to GW(DGW) 17.00 ft.

Length of Water Column (LWC=TWD-DGW) 3.36 ft.

1Csg. Vol. (LWC*C)= 3.36 X 0.163 = 0.55 gal.
3Csg. Volume = 3x 0.55 = 1.64 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								11:30
pH (s.u.)								4.83
O.R.P. (mV)								210
Temperature (°C)								23.47
Specific Cond. (mS/cm)								0.194
Dissolved Oxygen (mg/L)								6.41
Turbidity (NTU) NTU								262.2

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-8**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.89 ft.
Depth to GW(DGW) 24.89 ft.

Length of Water Column (LWC=TWD-DGW) 2.00 ft.

1Csg. Vol. (LWC*C)= 2.00 X 0.163 = 0.33 gal.
3Csg. Volume = 3x 0.33 = 0.98 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								11:15
pH (s.u.)								5.58
O.R.P. (mV)								167
Temperature (°C)								23.67
Specific Cond. (mS/cm)								0.450
Dissolved Oxygen (mg/L)								5.55
Turbidity (NTU) NTU								>999

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-9**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.93 ft.
Depth to GW(DGW) 22.16 ft.

Length of Water Column (LWC=TWD-DGW) 4.77 ft.

1Csg. Vol. (LWC*C)= 4.77 X 0.163 = 0.78 gal.
3Csg. Volume = 3x 0.78 = 2.33 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								13:00
pH (s.u.)								5.03
O.R.P. (mV)								223
Temperature (°C)								22.89
Specific Cond. (mS/cm)								0.194
Dissolved Oxygen (mg/L)								4.57
Turbidity (NTU) NTU								627.0

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-10**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 30.39 ft.
Depth to GW(DGW) 25.87 ft.

Length of Water Column (LWC=TWD-DGW) 4.52 ft.

1Csg. Vol. (LWC*C)= 4.52 X 0.163 = 0.74 gal.
3Csg. Volume = 3x 0.74 = 2.21 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								13:10
pH (s.u.)								4.67
O.R.P. (mV)								241
Temperature (°C)								21.98
Specific Cond. (mS/cm)								0.185
Dissolved Oxygen (mg/L)								7.67
Turbidity (NTU) NTU								89.4

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-11**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 30.91 ft.
Depth to GW(DGW) 25.25 ft.

Length of Water Column (LWC=TWD-DGW) 5.66 ft.

1Csg. Vol. (LWC*C)= 5.66 X 0.163 = 0.92 gal.
3Csg. Volume = 3x 0.92 = 2.77 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								13:20
pH (s.u.)								5.25
O.R.P. (mV)								222
Temperature (°C)								23.54
Specific Cond. (mS/cm)								0.937
Dissolved Oxygen (mg/L)								3.08
Turbidity (NTU) NTU								196.0

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-12**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 30.04 ft.
Depth to GW(DGW) 25.00 ft.

Length of Water Column (LWC=TWD-DGW) 5.04 ft.

1Csg. Vol. (LWC*C)= 5.04 X 0.163 = 0.82 gal.
3Csg. Volume = 3x 0.82 = 2.46 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								13:35
pH (s.u.)								7.38
O.R.P. (mV)								8
Temperature (°C)								23.34
Specific Cond. (mS/cm)								0.433
Dissolved Oxygen (mg/L)								2.44
Turbidity (NTU) NTU								89.1

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-13**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 25.24 ft.
Depth to GW(DGW) 21.60 ft.

Length of Water Column (LWC=TWD-DGW) 3.64 ft.

1Csg. Vol. (LWC*C)= 3.64 X 0.163 = 0.59 gal.
3Csg. Volume = 3x 0.59 = 1.78 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								12:00
pH (s.u.)								4.43
O.R.P. (mV)								240
Temperature (°C)								23.36
Specific Cond. (mS/cm)								0.316
Dissolved Oxygen (mg/L)								5.09
Turbidity (NTU) NTU								112.0

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-14**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.57 ft.
Depth to GW(DGW) 25.97 ft.

Length of Water Column (LWC=TWD-DGW) 3.60 ft.

1Csg. Vol. (LWC*C)= 3.60 X 0.163 = 0.59 gal.
3Csg. Volume = 3x 0.59 = 1.76 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								11:45
pH (s.u.)								4.94
O.R.P. (mV)								211
Temperature (°C)								23.25
Specific Cond. (mS/cm)								0.250
Dissolved Oxygen (mg/L)								4.41
Turbidity (NTU) NTU								34.2

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-15**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.96 ft.
Depth to GW(DGW) 22.10 ft.

Length of Water Column (LWC=TWD-DGW) 4.86 ft.

1Csg. Vol. (LWC*C)= 4.86 X 0.163 = 0.79 gal.
3Csg. Volume = 3x 0.79 = 2.38 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								11:05
pH (s.u.)								6.36
O.R.P. (mV)								111
Temperature (°C)								21.02
Specific Cond. (mS/cm)								1.18
Dissolved Oxygen (mg/L)								2.73
Turbidity (NTU) NTU								84.7

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-16**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 19.66 ft.
Depth to GW(DGW) 16.15 ft.

Length of Water Column (LWC=TWD-DGW) 3.51 ft.

1Csg. Vol. (LWC*C)= 3.51 X 0.163 = 0.57 gal.
3Csg. Volume = 3x 0.57 = 1.72 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								10:55
pH (s.u.)								5.84
O.R.P. (mV)								124
Temperature (°C)								22.33
Specific Cond. (mS/cm)								0.293
Dissolved Oxygen (mg/L)								3.25
Turbidity (NTU) NTU								575.0

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-17**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.68 ft.
Depth to GW(DGW) 24.67 ft.

Length of Water Column (LWC=TWD-DGW) 4.01 ft.

1Csg. Vol. (LWC*C)= 4.01 X 0.163 = 0.65 gal.
3Csg. Volume = 3x 0.65 = 1.96 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								13:50
pH (s.u.)								6.30
O.R.P. (mV)								56
Temperature (°C)								23.36
Specific Cond. (mS/cm)								0.201
Dissolved Oxygen (mg/L)								2.39
Turbidity (NTU) NTU								110.0

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-18**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 28.58 ft.
Depth to GW(DGW) 25.14 ft.

Length of Water Column (LWC=TWD-DGW) 3.44 ft.

1Csg. Vol. (LWC*C)= 3.44 X 0.163 = 0.56 gal.
3Csg. Volume = 3x 0.56 = 1.68 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								14:00
pH (s.u.)								5.69
O.R.P. (mV)								119
Temperature (°C)								22.61
Specific Cond. (mS/cm)								0.290
Dissolved Oxygen (mg/L)								4.52
Turbidity (NTU) NTU								131.0

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Well # **MW-19**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) 27.18 ft.
Depth to FP (Free product) **22.57** **ft.**
FP Thickness **4.61** **ft.**
Length of Water Column (LWC=TWD-DGW) 0.00 ft.

1Csg. Vol. (LWC*C)= 0.00 X 0.163 = 0.00 gal.
3Csg. Volume = 3x 0.00 = 0.00 gals.(Std. Purge Vol)

Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
O.R.P. (mV)								
Temperature (°C)								
Specific Cond. (mS/cm)								
Dissolved Oxygen (mg/L)								
Turbidity (NTU) NTU								

Remarks Not sampled due to presence of free product.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter	Horiba U-22	Conductivity Meter	Horiba U-22
serial no.	T908009	serial no.	T908009
pH = 4.0		Standard	
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-20**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 26.24 ft.
Depth to GW(DGW) 21.66 ft.

Length of Water Column (LWC=TWD-DGW) 4.58 ft.

1Csg. Vol. (LWC*C)= 4.58 X 0.163 = 0.75 gal.
3Csg. Volume = 3x 0.75 = 2.24 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								12:15
pH (s.u.)								4.11
O.R.P. (mV)								265
Temperature (°C)								21.45
Specific Cond. (mS/cm)								0.249
Dissolved Oxygen (mg/L)								2.55
Turbidity (NTU) NTU								39.4

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-21**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.35 ft.
Depth to GW(DGW) 22.94 ft.

Length of Water Column (LWC=TWD-DGW) 6.41 ft.

1Csg. Vol. (LWC*C)= 6.41 X 0.163 = 1.04 gal.
3Csg. Volume = 3x 1.04 = 3.13 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								12:10
pH (s.u.)								4.49
O.R.P. (mV)								240
Temperature (°C)								21.57
Specific Cond. (mS/cm)								0.306
Dissolved Oxygen (mg/L)								2.96
Turbidity (NTU) NTU								62.8

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-22**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 29.89 ft.
Depth to GW(DGW) 26.94 ft.

Length of Water Column (LWC=TWD-DGW) 2.95 ft.

1Csg. Vol. (LWC*C)= 2.95 X 0.163 = 0.48 gal.
3Csg. Volume = 3x 0.48 = 1.44 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.00
Time (military)								12:30
pH (s.u.)								5.66
O.R.P. (mV)								198
Temperature (°C)								21.98
Specific Cond. (mS/cm)								0.331
Dissolved Oxygen (mg/L)								7.04
Turbidity (NTU) NTU								117.0

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 09/12/11
Field Personnel A. Williamson
General Weather Conditions Sunny
Ambient Air Temperature 85 F

Facility Name Edgefield Fuel & Convience 3 Site ID# 12175

Quality Assurance:

pH Meter Horiba U-22 Conductivity Meter Horiba U-22
serial no. T908009 serial no. T908009
pH = 4.0 Standard
pH = 7.0 Standard
pH = 10.0 Standard

Chain of Custody

A. Williamson	9/12/11 17:45	PEL	
Relinquished by	Date/Time	Received by	Date/Time

Well # **MW-23**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652
Total Well Depth (TWD) 31.34 ft.
Depth to GW(DGW) 25.99 ft.

Length of Water Column (LWC=TWD-DGW) 5.35 ft.

1Csg. Vol. (LWC*C)= 5.35 X 0.163 = 0.87 gal.
3Csg. Volume = 3x 0.87 = 2.62 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.00 gal.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								0.38
Time (military)								12:45
pH (s.u.)								5.44
O.R.P. (mV)								206
Temperature (°C)								23
Specific Cond. (mS/cm)								0.479
Dissolved Oxygen (mg/L)								4.13
Turbidity (NTU) NTU								78.2

Remarks No-purge sample collected using new clean disposable polyethylene bailer.

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

JAN 1 3 2012

Re: QAPP Contractor Addendum Directive
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175
Release reported December 31, 2008
AFVR Report received December 12, 2011
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced report. The report indicates the presence of chemicals of concern in the groundwater and soil.

To determine what risk the referenced release may pose to the environment and public health, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of well installation and aggressive fluid and vapor recovery (AFVR) events as outlined in the UST Quality Assurance Program Plan (QAPP) is necessary. This scope of work should be conducted in accordance with the UST Quality Assurance Program Plan and must be conducted in compliance with all applicable regulations. A copy of SCDHEC QAPP for the Underground Storage Tank Division is available at http://www.dhec.sc.gov/environment/lwm/html/ ust.htm.

Three shallow monitoring wells should be installed to define free phase product in the vicinity of existing monitoring wells MW-2 and MW-19 and south of Main Street east of MW-12. These wells will also aid in the removal of free phase product. Following the installation of these monitoring wells, four AFVR events should be conducted on monitoring wells MW-1, MW-2, MW-5, and MW-19. The AFVR events should be conducted for eight hours on each well, and the events should be separated by 15 days. Thirty days after the last AFVR event, monitoring wells MW-1, MW-2, MW-5, MW-19, and the newly installed wells should be gauged.

Please have your contractor complete and submit the QAPP Contractor Addendum and Cost Agreement within thirty days of the date of this letter. Every component may not be necessary to complete the above scope of work. The State Underground Petroleum Environmental Response Bank (SUPERB) Account allowable cost for each component is included on the Assessment Component Cost Agreement Form. **Please note that technical and financial preapproval from the Department must be issued before work begins**.

On all correspondence regarding this site, please reference UST Permit #12175. If you have questions or need additional information, feel free to call me at (803) 896-6633.

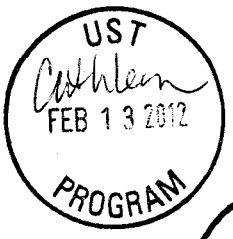
Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: ECS, Inc., PO Box 3528, Fort Mill, SC 29708
Technical File

12175



Appendix B: Contractor Addendum

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
RH 2/10/12 For
Edgefield Fuel & Convenience ~~York Imports~~; UST Permit #12175

311 Main Street, Edgefield, SC

Prepared by:
Randall Hutchins
Environmental Compliance Services, Inc.
13504 South Point Blvd, Ste F
Charlotte, NC 28273

Date: January 31, 2012
Certified UST Site Rehabilitation Contractor #358
Environmental Compliance Services, Inc.

Approvals:

Cathleen Ridgley SC DHEC Project Manager	Signature	Date
Randall Hutchins Contractor Project Manager	Signature	Date 02/10/2012
Kurt Blevins Site Rehabilitation Contractor	Signature	Date 2/10/2012
Craig L. Kennedy, PG Project Verifier/QA Manager	Signature	Date 2/8/2012

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A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Cathleen Ridgley	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6633	803-896-6245	ridglect@dhec.sc.gov
Kurt Blevins	Site Rehabilitation Contractor	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	kblevins@ecsconsult.com
Randall Hutchins	Contractor Project Manager	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	rhutchins@ecsconsult.com
Craig L. Kennedy, PG	Project Verifier/QA Manager	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	ckennedy@ecsconsult.com
Steve Taylor	Well Services/Driller	Geologic Exploration Inc. 176 Commerce Blvd Statesville, NC 28625	800-752-8853		staylo @gexnc.com

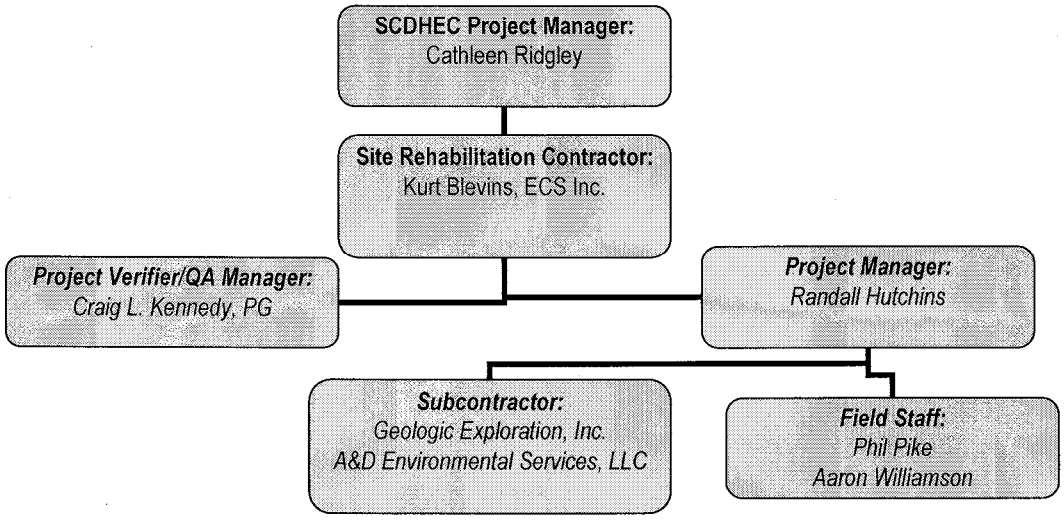
Table 1A Addendum Distribution List

A4 Project Organization

Role from the UST Master QAPP	Person in this Role for Project	Organization/Address	Telephone Number	Fax Number	Email Address
Project Manager	Cathleen Ridgley	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6633	803-896-6245	ridglect@dhec.sc.gov
Site Rehabilitation Contractor	Kurt Blevins	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	kblevins@ecsconsult.com
Contractor Project Manager	Randall Hutchins	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	rhutchins@ecsconsult.com
Well Services/Driller	Steve Taylor	Geologic Exploration Inc. 176 Commerce Blvd Statesville, NC 28625	800-752-8853	800-752-8853	staylor@gexnc.com
Investigative-Derived Waste Disposal Services	Bill Aikins	A&D Environmental Services, LLC 1741 Calks Ferry Road Lexington, SC 29703	803-957-9175	803-821-6021	baikins@adenviro.com
Project Verifier/QA Manager	Craig L. Kennedy, PG	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	ckennedy@ecsconsult.com

Table 2A Addendum Role Identification and Contact Information

Figure 1A Organizational Chart:



Definitions of Project Roles

Site Rehabilitation Contractor

Kurt Blevins is the local Branch Manager of ECS Inc and will be responsible for overseeing adherence to the site specific QAPP during all phases of work. The Site Rehabilitation Contractor is responsible for maintaining the original, approved QAPP.

Project QA Officer

The project QA Officer (Craig L. Kennedy, PG) provides review of field work, documentation of calibration for field instruments, lab data, and technical review of reports produced utilizing this data. The QA Officer will independently review data generated from this project and determine if the data meets QA/QC criteria as set forth in the SCDHEC UST Programmatic QAPP.

Project Manager

The Project Manager (Randall Hutchins) will be responsible for work conducted during this scope of work and the primary point of contact. His duties will include development of the site specific QAPP, supervising field work, documenting and QA failures, determining corrective actions to QA failures, and preparing reports for submission to SCDHEC.

Field Staff

The contractor field staff will perform sampling and field activities per the QAPP document under the direction of the Project Manager. Field staff will be responsible for collection and sampling of related data and calibration of field instruments. The Project Manager in certain situations may also be a member of the Field Staff.

A5 Problem Definition/Background

Discuss the background (as much as is known) of the site and appropriate historical information, and why this site is being assessed.

The site previously operated as York Imports (a used car dealership), and as petroleum retail facility. A release from the previously existing underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on April 9, 1991. Three USTs were removed from the site on December 1, 1998. The USTs removed consisted of one 6,000-gallon gasoline UST, one 8,000-gallon gasoline UST, and one 10,000-gallon gasoline UST.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of site visits in March 2009 (Tier I), between December 2009 and May 2010 (Tier II), between September and October 2010 (assessment), and between July and September 2011 (AFVRs & sampling). The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs were in use at the site during these assessment activities, these included of one 3,000-gallon premium gasoline UST and two 3,000-gallon gasoline USTs.

Historical site assessment activities reviewed in preparation of this assessment report included the Tier I and Tier II assessments, conducted and reported to the SCDHEC in March 2009 and June 2010, respectively. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. Two separate rounds of field screening activities were conducted to assist with the placement of 13 shallow monitoring wells (MW-4 through MW-16) during the Tier II assessment. Additionally, an 8-hour AFVR event was conducted in monitoring well MW-1 during Tier II activities to assist with free product removal.

The purpose of these corrective actions (well installations and AFVR events) is to assist with free product removal in the subsurface.

Please answer the following: Does this project fall under UST or Brownfields area?

Yes, UST Area.

A6 Project/Task Description

1. ***Summarize what is known about the work to be done. This can be a short sentence indicating what the Scope of this project is (see Master QAPP Section A6).***

   The UST Management Division has directed installation of three shallow monitoring wells in the vicinity of monitoring wells MW-2 and MW-19, and south of Main Street east of MW-12 to assist with defining and the removal of free product. Subsequent to the well installations, four AFVR events shall be conducted in monitoring wells MW-1, MW-2, MW-5, and MW-19. Each 8-hour AFVR event will be conducted separately in one well per event and shall be scheduled a minimum of 15 days apart. The three new wells and four AFVR wells shall be gauged 30 days after the fourth AFVR event.

2. ***The work will begin within*** approximately one month ***after cost approval and the Well Installations & AFVRs (including report) should be complete (and submitted)*** within approximately 120 days (depending on access agreements) after cost approval receipt by ECS, Inc.

3. ***Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.***

   Potential issues may arise from inclement weather, access issues, unpredicted site or equipment problems or schedule conflicts.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Detail the geographical area that is to be part of the project. Maps should be included to show not only the topography and the geographical area of the State, but also to show more detail of the site itself including property lines.

As shown in **Figure 1**, the Edgefield Fuel & Convenience 3 site was located in a primarily business and commercial area within the town limits of Edgefield, South Carolina. The site was bordered to the north by an access road and parking lot for the west abutting Carolina First Bank. The site was bordered to the east by Bacon Street followed by the South Carolina National Heritage Corridor Discovery Center. The site was bordered to the south by Main Street (US Highway 25) followed by a parking lot for the downtown district of Edgefield. Edgefield Town Hall was located diagonally across the cross streets of Bacon Street and Main Street.

The site was located approximately 525 feet above mean sea level (MSL) with an approximate total site topographic relief of three feet. Storm water runoff at the site primarily drained toward the south and east. Retaining walls were observed to the north and northeast corner of the site with an approximate 6-foot grade elevation difference at the greatest point. The area around the site was generally characterized by broad ridges and gentle slopes to narrow ridges and side slopes adjacent to drainage ways. Beaverdam Creek was located approximately 1,375 feet southwest of the site and a tributary to Beaverdam Creek was located approximately 1,380 feet northwest of the site. The tributary flowed in a general northeast to southwest direction before discharging into Beavedam Creek. Beaverdam Creek flowed in a general northwest to southeast direction.

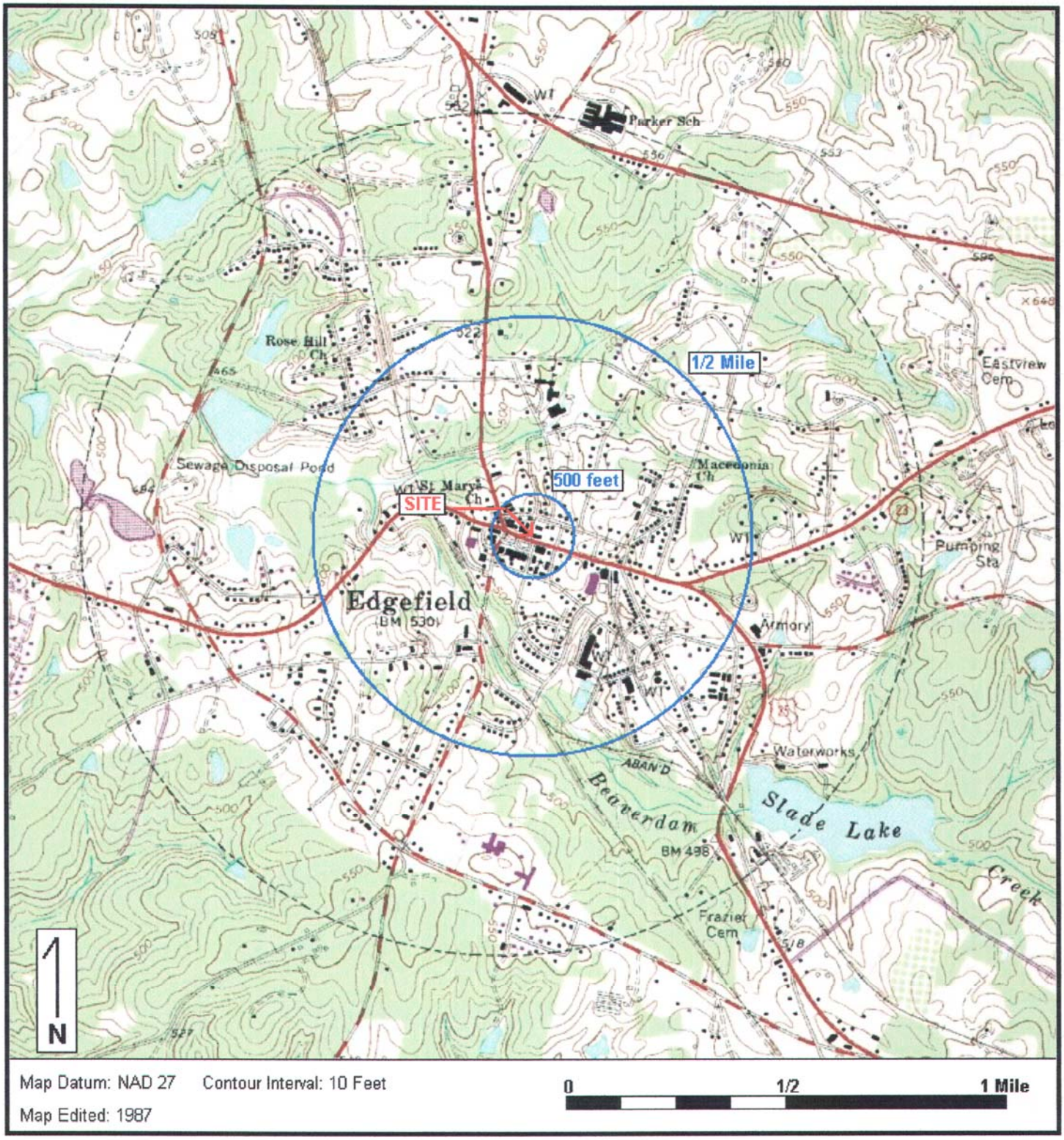
The surface at the site was generally covered by asphalt, and some smaller areas of concrete and grass. The active site USTs were covered with concrete. Underground utility conduits marked by the utility companies included a water meter for a municipal water line, electrical lines, and a telephone line. A sanitary sewer cleanout for a sanitary sewer line and drop inlets for a storm drainage system were observed during our site visit. A water meter was located on the eastern side of the property. Electrical lines were marked along the eastern side of the property beneath the sidewalk and marked along the northern property limits of the site. A telephone line was marked along the northeastern portion of the site. The sewer cleanout was located on the east side of the site building. The storm drains were located along Bacon Street next to the site property limits. A natural gas line and municipal water line were marked across Main Street from the site.

See attached **Figure 1** for topographic information, **Figure 2** for site vicinity information, **Figure 3** for UST location and pre-existing monitoring well locations; and **Figure 4** for proposed well locations.

Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC

Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH

Generated By: Kevin Collins

Legend

137-07-5-07 TAX MAP PARCEL I.D. NUMBER

PROPERTY LINE

WATER SUPPLY WELL (NOT ACTIVE)

WET WEATHER DRAINAGE FEATURE

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Reference: Edgefield County Tax Office

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL: (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

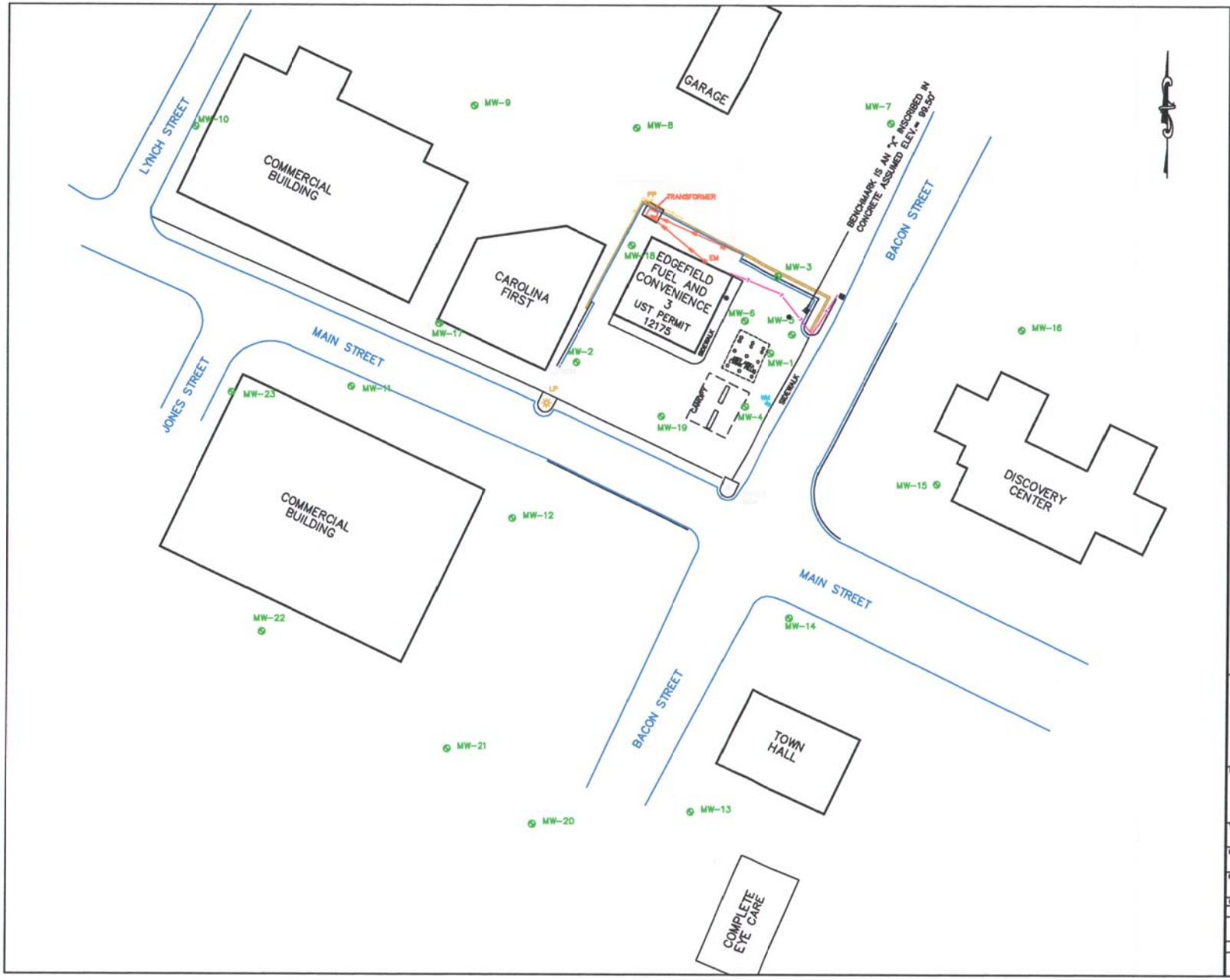
TITLE:
Site Vicinity Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 200 100 0 100 200

COMPUTER CADFILE 05-18-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=200'	11/9/10	14-211651	2



Legend

- UE — Underground Electric Line
- Wood Fence Line
- T — Underground Telephone Line
- MH — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- MW-1 — Shallow (Water Table) Monitoring Well

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE: Site Plan

CLIENT: Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE <09-12-11.dwg>

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO:	FIGURE NO:
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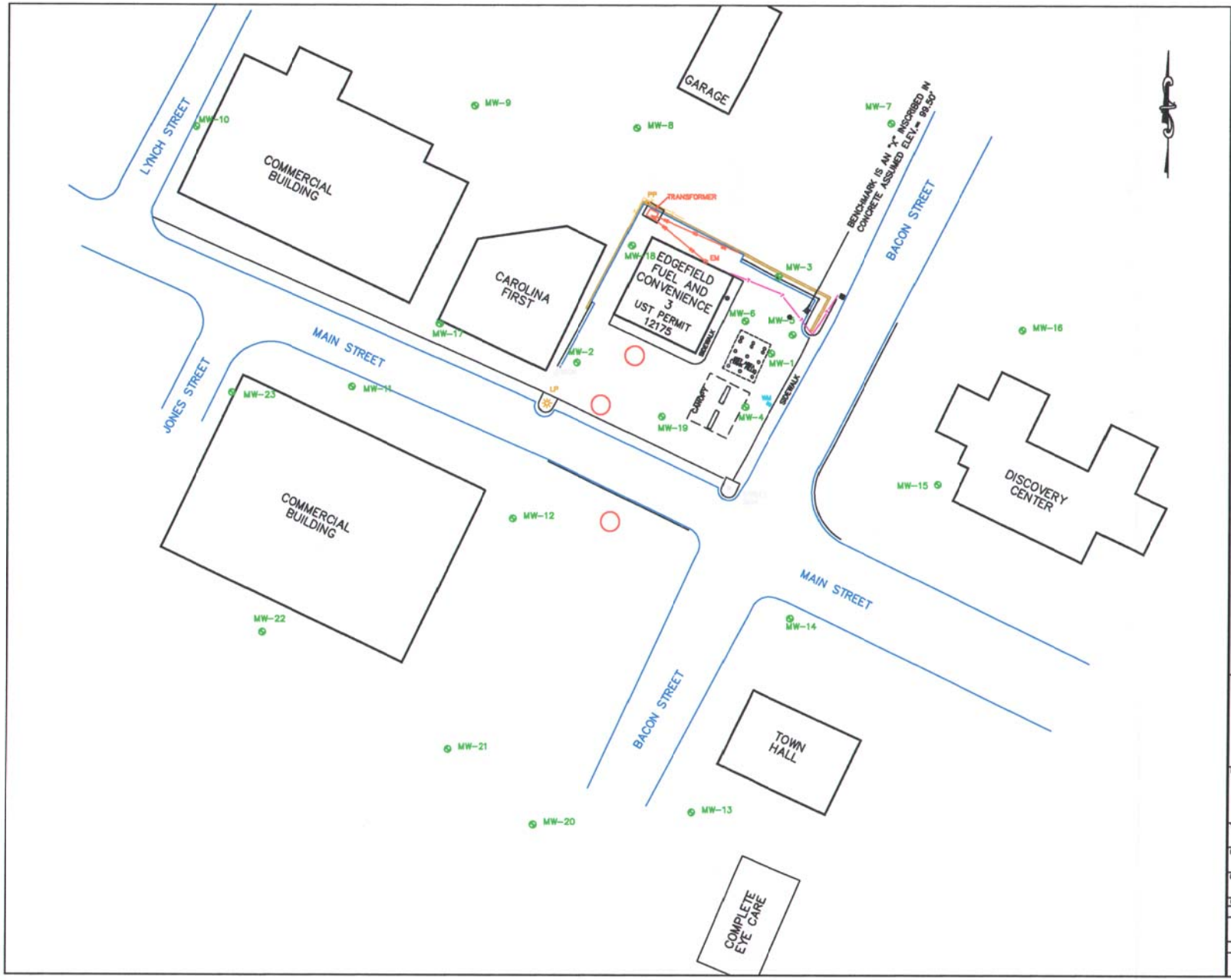


Legend

- UE — Underground Electric Line
- W — Wood Fence Line
- T — Underground Telephone Line
- MH — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- MW-1 — Shallow (Water Table) Monitoring Well
- Proposed Shallow Monitoring Wells

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13604 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: **Edgefield Fuel & Convenience 3**
311 Main Street
Edgefield, South Carolina

TITLE: Proposed Monitoring Well Locations

CLIENT: **Edgefield Fuel & Convenience, LLC**

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE: 09-12-11.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	**DATE:**	**JOB NO:**	**FIGURE NO:**
1"=50'	1/31/12	14-211651	4

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Project Manager	Randall Hutchins	40 Hr HAZWOPER & Refresher	40 Hr: 2003 Refresher: July 2011	-	-
Project Verifier/ QA Manager	Craig L. Kennedy, PG	40 Hr HAZWOPER & Refresher	40 Hr: 1995 Refresher: February 2011	PG	2425
Field Staff	Phil Pike	40 Hr HAZWOPER & Refresher	40 Hr: 1990 Refresher: July 2011	-	-
Field Staff	Aaron Williamson	40 Hr HAZWOPER & Refresher	40 Hr: 2009 Refresher: July 2011	-	-

Table 3A Required Training and Licenses

Kurt Blevins of **ECS, Inc.** is responsible for ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: **588 Silver St, Agawam, MA**.

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Well Driller	Jonathan Burr	Continuing Ed.		Well Driller	1740
Well Driller	Vincent Federle	Continuing Ed.		Well Driller	1930
Well Driller	Mark Gettys	Continuing Ed.		Well Driller	1086
Well Driller	Nicholas Hayes	Continuing Ed.		Well Driller	1983
Well Driller	James Hess	Continuing Ed.		Well Driller	1929
Well Driller	Jason Mantak	Continuing Ed.		Well Driller	1494
Well Driller	Michael McConahey	Continuing Ed.		Well Driller	1276
Well Driller	Daniel Summers	Continuing Ed.		Well Driller	1430
Well Driller	Jerry Watkins	Continuing Ed.		Well Driller	1979

Steve Taylor of **Geologic Exploration Inc.** is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location:
176 Commerce Blvd, Statesville, NC 28625.

It is understood that training records will be produced if requested by SC DHEC.

The Following Laboratory(ies) will be used for this Project:

Commercial Lab(s)

Full Name of the Laboratory: Pace Analytical Services, Inc.-Huntersville
Name of Lab Director: Jeff Graham
SC DHEC Certification Number: 9900601
Parameters this Lab will analyze for this project:

None.

Please note: SC DHEC may require that the contractor submit some or all of the Laboratory's SOPs as part of this QAPP.

A9 Documents and Records

Personnel will receive the most current version of the QAPP Addendum via: (Check all that apply)

_X_ US Mail _X_ Courier _X_ Hand delivered

Other (please specify):_____

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Laboratory Instrument Raw Data	Target software	Electronic	To Disc –offsite storage for 5 yrs	Yes
Laboratory Final Reports	LIMS	Electronic	Tape backup – offsite storage for 5 years	Yes
Field Measurements	ECS, Inc.	Hard Copy: Field Book Electronic: PDF File	Hard Copy & PDF File: ≥5yrs	Yes
Well Construction Records	Geologic Exploration, Inc.	Hard Copy	GEX Storage Facility: ≥5yrs	Yes
Well Abandonment Records	Geologic Exploration, Inc.	Hard Copy	GEX Storage Facility: ≥5yrs	Yes
Waste Manifests	Transporter/Disposal Facility	Hard Copy & Electronic Copy	Transporter/Disposal Facility: ≥5yrs	Yes
Well Installations & AFVRs Report	ECS, Inc.	Hard Copy & Electronic	≥5yrs	Yes

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Item	Start Date	End Date	Comments
QAPP Preparation	Within approx. 30 days of receiving directive	Within approx. 60 days after receiving directive	End date dependent upon QAPP finalization
Access Agreements	Within approx. 30 Days of CA receipt	Within approx. 45 days after receipt of CA	End Date depends on approved or denied access agreements and/or encroachment permits
Utility Locate Request	Within approx. 10 Days of Access Agreements	Within approx. 30 days of Access Agreements	End Date depends on approved or denied access agreements and/or encroachment permits
Field Screening Activities	Within approx. 30 Days of Access Agreements	Within approx. 45 days of Access Agreements	End Date depends on success of delineating CoC with Access Agreements obtained
Monitoring Well Installations	Within approx. 30 Days of SCDHEC PM approval of well locations	Within approx. 45 days of SCDHEC PM approval of well locations	End Date depends on date of well locations approved by SCDHEC Project Manager
Subsequent Survey	Within approx. 15 Days of well installation	Within approx. 30 days after well installation	End Date depends on completion of well installation
AFVR Event	First AFVR event within approx. 15 days of well installations	Within approx. 45-60 days after well installations	End Date depends on completion of well installation. Scope of work includes four separate AFVR events scheduled approximately 15 days apart.
Disposal of IDW	Within approx 10 days of well installs; Within approx. 1 day of each AFVR event	Within approx 60 days of well installs; Within approx. 15 days after each AFVR event	End date depends on completion of well installs; End date depends on date of receiving IDW at permitted disposal facility
Gauging Event	Within approx. 25 days of fourth AFVR event	Within approx. 35 days of fourth AFVR event	End Date depends on completion of fourth AFVR event
Report Prep/Submittal	Within approx. 1 day of gauging event	Within approximately 15 days after gauging event	End date depends on date of gauging event

Table 5A Sampling Activities

B2 Sampling Methods

Please note: The contractor must follow sampling protocols as given in the UST QAPP.

***Estimate* the number of samples of each matrix that are expected to be collected:**

Soil	0
Ground Water from monitoring wells	0
From Drinking/Irrigation water wells	0
From surface water features	0
Total number of Water samples	0

The samples will be (check as many as apply): ____Homogenized ____Split

For the sample matrices indicated above, please describe how samples will be collected and the equipment needed.

Not applicable.

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable?

Not applicable.

If sampling equipment must be cleaned please give a detailed description of how this is done and the disposal of by-products from the cleaning and decontamination.

Stainless steel hand auger, hollow stem augers, and cutting heads of drilling equipment will be cleaned with tap water and soap, using a brush if necessary, to remove particulate matter and surface films. Steam cleaning (high pressure hot water with soap) may be necessary to remove matter that is difficult to remove with the brush. Augers that are steam cleaned should be placed on racks or saw horses at least two feet aboveground. Rinse thoroughly with tap water. Allow to air dry.

The water level/interface probe meter will be cleaned between monitoring wells with a solution of alconox and deionized water and rinsed with deionized water.

Please see attached ECS SOP 10.00 Decontamination.

Decontamination water will be containerized in properly labeled; DOT approved 55-gallon drums and disposed as non-hazardous waste at an approved facility.

Investigative Derived Waste from drilling activities shall be placed in a 55 gallon drum, labeled with the proper labeling (Non-hazardous or Hazardous) following RCRA regulations and left onsite to be picked up by A&D Environmental Services.

Identify any equipment and support facilities needed. This may include such things as Fed-ex to ship the samples, a Geoprobe, field analysis done by another contractor (who must be certified), and electricity to run sampling equipment.

The following drilling equipment shall be utilized and maintained by Geologic Exploration Inc. for field screening and monitoring well installation purposes: Geoprobe 7822DT, Geoprobe 7822DT, Geoprobe 6620DT, Diedrich D-120 (truck mounted), DrillMax 2400, Mobil B-58 (truck mounted), Diedrich D-120 (atv), Drilltech D25KW.

Investigative Derived Wastes (soil & water) shall be received by A&D Environmental Services.

Subsequent surveying activities shall be performed by ECS personnel.

Address the actions to be taken when problems occur in the field, and the person responsible for taking corrective action and how the corrective action will be documented.

Failure	Response	Documentation	Individual Responsible
Property & well location access	Call property owner/acquire SCDOT right of way permit access	Document in report or contact SCDHEC PM for assistance	Contractor PM
Drilling Equipment failure	Contact Steve Taylor	Note problem schedule date to remobilize to site.	Drilling supervisor
Horiba Water Quality Meter Fails	Use Back up meter	Change serial number on sampling sheets	Field Staff
Purge Pump Failure	Use Hand bailing Method	Sampling sheet & Report	Field Staff
Water Level Meter Fails	Use Back up meter	Change serial number on sampling sheets	Field Staff

Table 6A Field Corrective Action

B3 Sample Handling and Custody

1. ***How will the samples get from the Site to the Lab to ensure holding requirements are met?***

Not applicable.

2. ***How will the contactors cool the samples and keep the samples cool?***

Not applicable.

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***

Not applicable.

4. ***Where will the samples be stored in the Lab once they are received?***

Not applicable.

5. ***Describe the chain of custody procedure and attach a copy of each chain of custody that will be used. If a Chain of Custody SOP exists from the Lab and the Contractor is willing to adhere to it, then this may be attached.***

Not applicable.

B4 Analytical Methods

1. ***Identify the SOPs which will be used to analyze the samples, the method which the SOP references and the equipment or instrumentation that is needed:***

Not applicable.

2. ***Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:***

Not applicable.

3. ***Identify sample disposal procedures.***

Not applicable.

4. ***Provide SOPs for the Kerr Method or the Ferrous Iron Method if these are parameters for this study. This can be attached or written here. If attached please note that it is an attachment and where it is located (if applicable).***

Not Applicable.

B5 Quality Control Requirements:

All QC will follow the requirements laid out in Section B5 of the UST Programmatic QAPP.

B6 Field Instrument and Equipment Testing, Inspection and Maintenance

1. Identify all fields and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Note the availability and location of spare parts.

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
In-Field PID Instrument	MiniRae 2000 PGM 7600	As recommended in attached MiniRae O&M Manual Doc #011-4001-000 pp 4-5 through 4-10	Periodic	Manufacturer/Rental Equipment Supplier	Phil Pike Aaron Williamson
In-Field Groundwater Quality Instrument	Horiba Y2FAH6H3	As recommended in attached Horiba W-22XD.23XD Operation Manual pp 28-32	Periodic	Manufacturer/Rental Equipment Supplier	Phil Pike Aaron Williamson
Groundwater Level Indicator	Heron WLI 11614	As recommended in attached Heron Instrument O&M Manual	Periodic	Manufacturer/Rental Equipment Supplier	Phil Pike Aaron Williamson
Interface Probe	1220056491	As recommended in attached Heron Interface O&M Manual	Periodic	Manufacturer/Rental Equipment Supplier	Phil Pike Aaron Williamson

Table 11A Instrument and Equipment Maintenance

2. Identify the testing criteria for each lab or field instrument that is used to ensure the equipment is performing properly. Indicate how deficiencies, if found, will be resolved, re-inspections performed, and effectiveness of corrective action determined and documented. Give the person responsible for this.

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
In-Field PID Instrument MiniRae 2000 PGM 7600	Daily prior to use	Calibration as discussed in attached MiniRae O&M Manual Doc #011-4001-000 pp 4-5 through 4-10	Phil Pike Aaron Williamson	Recalibrate or instrument maintenance
In-Field Groundwater Quality Instrument Horiba Y2FAH6H3	Daily prior to use	Calibration as discussed attached in Horiba W-22XD.23XD Operation Manual pp 28-32	Phil Pike Aaron Williamson	Recalibrate or instrument maintenance
Groundwater Level Indicator Heron WLI 11614	Daily prior to use	Calibration as discussed in attached Heron Instrument O&M Manual	Phil Pike Aaron Williamson	Recalibrate or instrument maintenance
Interface Probe Heron 1220056491	Daily prior to use	Calibration as discussed in attached Heron Interface O&M Manual	Phil Pike Aaron Williamson	Recalibrate or instrument maintenance

Table 12A Instrument and Equipment Inspection

B7 Instrument Calibration and Frequency

1. Identify equipment, tools, and instruments for field or lab work that should be calibrated and the frequency.
2. Describe how the calibrations should be performed and documented, indicating test criteria and standards or certified equipment.
3. Identify how deficiencies should be resolved and documented. Identify the person responsible for corrective action.

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
In-Field PID/FID Instrument	Operator's Manual and/or Rental Equipment Supplier	Daily prior to use	Operator's Manual and/or Rental Equipment Supplier	Operator's Manual and/or Rental Equipment Supplier	Phil Pike Aaron Williamson	MiniRae O&M Manual Doc #011-4001-000 pp 4-5 through 4-10
In-Field Groundwater Quality Instrument	Operator's Manual and/or Rental Equipment Supplier	Daily prior to use	Operator's Manual and/or Rental Equipment Supplier	Operator's Manual and/or Rental Equipment Supplier	Phil Pike Aaron Williamson	Horiba W-22XD.23XD Operation Manual pp 28-32
Groundwater Level Indicator	Check against standard	Daily prior to use	0.01-ft per 10-ft	Replace instrument	Phil Pike Aaron Williamson	See attached Heron Instrument O&M Manual
Interface Probe	Check against standard	Daily prior to use	0.01-ft per 10-ft	Replace instrument	Phil Pike Aaron Williamson	See attached Heron Interface O&M Manual

Table 13A Instrument Calibration Criteria and Corrective Action

*** This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

B8 Inspection/Acceptance Requirements for Supplies and Consumables

1. Identify critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials.
2. Identify the individual(s) responsible for this.

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Span gas for PID	Liquid Technology Corp.	Attached pressure gauge reads what sticker on span gas can details.	Cool dry cabinet	Phil Pike Aaron Williamson
Leather Gloves	Home Depot	New & Undamaged	Cool dry cabinet	Phil Pike Aaron Williamson
Nitrile Gloves	Enviro-Equipment	New & Undamaged	Sealed boxes	Phil Pike Aaron Williamson

Table 14A List of Consumables and Acceptance Criteria

B9 Data Acquisition Requirements (Non-Direct Measurements)

1. Identify data sources, for example, computer databases or literature files, or models that should be accessed or used.
2. Describe the intended use of this information and the rationale for their selection, i.e., its relevance to project.
3. Indicate the acceptance criteria for these data sources and/or models.

Data Source	Used for	Justification for use in this project	Comments
Previously submitted assessment reports, tax maps, topographic maps	Historic GW depth/GW Quality & values	Establishes the DTW; Establishes materials needed.	Documents provided by SCDHEC will be considered an acceptable data source.
-	-	-	-
-	-	-	-

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed.

Not applicable.

B10 Data Management

1. Describe the data management scheme from field to final use and storage.

Field notes are recorded in bound, water resistant log books using indelible ink. Pages are dated at the start of the field day, and the name or initials of the field staff, weather, and required activities for the day are recorded. Data collected in the field is also entered into a limited access database.

Project related computer files are stored on a restricted access network server. Information is backed-up daily. Logbooks are scanned into the network server.

2. How does the lab and field staff ensure that no unauthorized changes are made to the chain of custody, sampling notebooks, laboratory notebooks and computer records?

Field notes are kept in dedicated field notebooks with no pages removed and nothing erased. If an error is made field notes, a mark will be made through the error with one strike and initials next to strike.

3. How does the lab ensure that there are no errors in samples records including times when sample information is compiled, data calculated and/or transmitted?

Not applicable.

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Hard copies will remain in the office for a minimum of 5 years. The electronic copies will be maintained for a minimum 5 years.

Section C Assessment and Oversight

C1 Assessment and Response Actions

1. *The Contractor is supposed to observe field personnel daily during sampling activities to ensure samples are collected and handled properly and report problems to DHEC within 24 hours. Please state who is responsible for doing this and what observations will be made. Will this person have the authority to stop work if severe problems are seen?*

The Contractor Project Manager will supervise field personnel during sampling activities to ensure samples are collected according to the requirements of the QAPP. The Contractor Project Manager shall provide oversight and will have the authority to stop work when necessary. The contractor's project manager will check to ensure compliance with the contractor's SOPs detailed in the QAPP Addendum.

2. *The SCDHEC UST QAPP states that the Lab will receive an Offsite Technical System Audit. For this project, what assessments will be done on the Commercial Lab(s) that are being used—other than their certification audit? When or how often are these done? Who will the results be given to and who has the ability to stop work if problems are severe?*

Not applicable.

C2 Reports to Management

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

Section D Data Validation and Usability

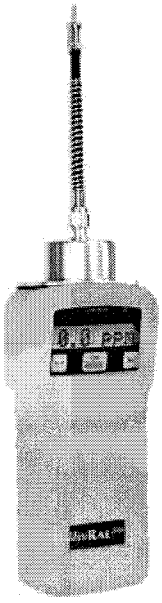
See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

QAPP APPENDIX B ATTACHMENTS

O&M Manuals & SOP

MiniRAE 2000

Portable VOC Monitor
PGM-7600



OPERATION AND MAINTENANCE MANUAL

(Document No.: 011-4001-000)
Revision E, May 2005

RAE SYSTEMS

ISO 9001 CERTIFIED

4.4 Calibrate and Select Gas

WARNINGS

The calibration of all newly purchased RAE Systems instruments should be tested by exposing the sensor(s) to known concentration calibration gas before the instrument is put into service for the first time.

For maximum safety, the accuracy of the MiniRAE 2000 should be checked by exposing it to known concentration calibration gas before each day's use.

In the first menu of the programming mode, the user can perform functions such as calibration of the MiniRAE 2000 Monitor, select default cal memories, and modify cal memories (see Table 4.4).

Table 4.4

Calibrate/Select Gas Sub-Menu
Fresh Air Cal?
Span Cal?
Select Cal Memory?
Change Span Value?
Modify Cal Memory?
Change Correction Factor?

Calibrating the MiniRAE 2000 monitor is a two-point process using "fresh air " and the standard reference gas (also known as span gas). First a "Fresh air" calibration, which contains no detectable VOC (0.0 ppm), is used to set the zero point for the sensor. Then a standard reference gas that contains a known concentration of a given gas is used to set the second point of reference.

Note: The span value must be set prior to calibrating for fresh air or span.

The user can store calibrations for up to 8 different measurement gases. The default gas selections are as follows:

Cal Memory #0.....Isobutylene

Cal Memory #1.....Hexane

Cal Memory #2.....Xylene

Cal Memory #3.....Benzene

Cal Memory #4.....Styrene

Cal Memory #5.....Toluene

Cal Memory #6.....Vinyl Chloride

Cal Memory #7.....Custom?

Memory #0 functions differently than the other 7 memories. For Memory #0, isobutylene is always the calibration gas. When the gas is changed in Memory #0 to one of 100 other preprogrammed chemicals or to a user-defined custom gas, a correction factor is applied to all the readings. During calibration, the unit requests isobutylene gas and displays the isobutylene concentration immediately following calibration, but when the unit is returned to the normal reading mode, it displays the selected gas and applies the correction factor.

The other 7 cal memories require the same calibration gas as the measurement gas. These memories may also be modified to a preprogrammed chemical or to a user-defined custom gas. In the gas library, only the gases that can be detected by the installed UV lamp will actually be displayed. Note that although the correction factor for the new gas will be displayed and can be modified, this factor is not applied when Memories #1-7 are

used. Therefore the factor will not affect the readings in these memories.

Once each of the memories has been calibrated, the user can switch between the calibrated gases by changing the cal memory without the need to recalibrate. Or the user can switch the measurement gas in Memory #0 and the appropriate correction factor will automatically be applied without the need to recalibrate. If the gas is changed in Memories #1-7, it is necessary to recalibrate.

To change a default gas from the list above to a library or custom gas, first go to Select Cal Memory (Section 4.4.3) and then proceed to Modify Cal Memory (Section 4.4.5) to enter the desired gas. If the desired compound does not appear in the preprogrammed library, the user can use the Custom_VOC entry in the library, or the name and correction factor of any of the existing compounds can be changed as described in Section 4.4.5. A list of some 300 correction factors is given in Technical Note 106, available at the website www.raesystems.com.

4.4.1 Fresh Air Calibration

This procedure determines the zero point of the sensor calibration curve. To perform a fresh air calibration, use the calibration adapter to connect the MiniRAE 2000 to a "fresh" air source such as from a cylinder or Tedlar bag (option accessory). The "fresh" air is clean dry air without any organic impurities. If such an air cylinder is not available, any clean ambient air without detectable contaminant or a charcoal filter can be used.

1. The first sub-menu shows: "Fresh air Cal?"
2. Make sure that the MiniRAE 2000 is connected to one of the "fresh" air sources described above.
3. Press the **[Y/+]** key, the display shows "zero in progress" followed by "wait.." and a countdown timer.

After about 15 seconds pause, the display will show the message "update data…zeroed… reading = X.X ppm…" Press any key or wait about 20 seconds, the monitor will return back to "Fresh air Calibration?" submenu.

4.4.2 Span Calibration

This procedure determines the second point of the sensor calibration curve for the sensor. A cylinder of standard reference gas (span gas) fitted with a 500 cc/min. flow-limiting regulator or a flow-matching regulator is the simplest way to perform this procedure. Choose the 500 cc/min. regulator only if the flow rate matches or slightly exceeds the flow rate of the instrument pump. Alternatively, the span gas can first be filled into a Tedlar Bag, or delivered through a demand-flow regulator. Connect the calibration adapter to the inlet port of the MiniRAE 2000 Monitor, and connect the tubing to the regulator or Tedlar bag.

Another alternative is to use a regulator with >500 cc/min flow but allow the excess flow to escape through a T or an open tube. In the latter method, the span gas flows out through an open tube slightly wider than the probe, and the probe is inserted into the calibration tube.

Before executing a span calibration, make sure the span value has been set correctly (see next sub-menu).

1. Make sure the monitor is connected to one of the span gas sources described above.
2. Press the **[Y/+]** key at the "Span Cal?" to start the calibration. The display shows the gas name and the span value of the corresponding gas.
3. The display shows "Apply gas now!" Turn on the valve of the span gas supply.

4. Display shows "wait.... 30" with a count down timer showing the number of remaining seconds while the monitor performs the calibration.
5. To abort the calibration, press any key during the count down. The display shows "Aborted!" and return to "Span Cal?" sub-menu.
6. When the count down timer reaches 0, the display shows the calibrated value.

   Note: The reading should be very close to the span gas value.
7. During calibration, the monitor waits for an increased signal before starting the countdown timer. If a minimal response is not obtained after 35 seconds, the monitor displays "No Gas!" Check the span gas valve is on and for lamp or sensor failure before trying again.
8. The calibration can be started manually by pressing any key while the "Apply gas now!" is displayed.
9. After a span calibration is completed, the display will show the message "Update Data Span Cal Done! Turn Off Gas."
10. Turn off the flow of gas. Disconnect the calibration adapter or Tedlar bag from the MiniRAE 2000 Monitor.
11. Press any key and it returns back to "Span Gas Cal?"

7. TROUBLESHOOTING

To aid the user in diagnosing the monitor, a special diagnostic mode can be used displays critical, low level parameters. Section 7.1 describes the operation of the diagnostic mode. Section 7.2 summarizes the frequently encountered problems and suggested solutions. By turning on the MiniRAE 2000 monitor in diagnostic mode and by using the troubleshooting table in Section 7.2, the user can usually correct the problem without having to return the monitor for repair.

WARNING

This function should be used by qualified personnel only! The diagnostic mode allows the user to set several low-level parameters that are very critical to the operation of the monitor. Extra care should be taken when setting these parameters. If the user is not familiar with the function of these parameters and sets them incorrectly, it may cause the monitor to shut down or malfunction.

7.1 Troubleshooting Table

Problem	Possible Reasons & Solutions
Cannot turn on power after charging the battery	**Reasons:** Discharged battery. Dcfcctivc battery. Microcomputer hang-up. **Solutions:** Charge or replace battery. Disconnect, then connect battery to reset computer.
No LCD back light	**Reasons:** Trigger level too low, the current mode is not user mode, and the mode does not support automatic turn on back light. **Solutions:** Adjust trigger level. Verify the back light can be turned on in user mode. Call authorized service center.
Lost password	**Solutions:** Call Technical Support at +1.408 .752 .0723 or +1. 888 .723 .4800
Reading abnormally High	**Reasons:** Dirty sensor module. Dirty water trap filter. Excessive moisture and water condensation. **Solutions:** Clean sensor module and lamp housing. Replace water trap filter. Blow dry the sensor module.
Buzzer Inoperative	**Reasons:** Bad buzzer. **Solutions:** Call authorized service center.

Inlet flow too low	**Reasons:**	Pump diaphragm damaged or has debris. Flow path leaks.
	Solutions:	Check flow path for leaks; sensor module O-ring, tube connectors, Teflon tube compression fitting. Replace pump or diaphragm.
"Lamp" message during operation	**Reasons:**	Lamp drive circuit. Weak or defective PID lamp, defective.
	Solutions:	Turn the unit off and back on Replace UV lamp
Full scale measurement in humid environment	**Reasons:**	Dirty or wet sensor.
	Solutions:	Clean and dry sensor and lamp housing. Adjust sensor fingers to ensure not touching Teflon. Use water trap filter.
Reading abnormally low	**Reasons:**	Incorrect calibration. Low sensitivity to the specific gas. Weak or dirty lamp. Air leakage.
	Solutions:	Calibrate the monitor. Replace sensor. Clean or replace lamp. Check air leakage.

Contact Heron Instruments Inc.

T 1-800-331-2032
905-634-4449

F 905-634-9657

E info@heroninstruments.com

www.heroninstruments.com

Heron also carries:

- dipper-log groundwater dataloggers
- H.OIL Interface Meters
- Sm.OIL Interface Meters

HERON INSTRUMENTS Groundwater Monitoring INC.
Your obvious choice

Warranty

Heron Instruments Inc warrants to repair or replace any such defective equipment or part (determined to our satisfaction to have a defect in workmanship or original material) upon receipt and inspection of such defective equipment to Heron Instruments Inc. with all shipping pre paid by the user.

In no event shall Heron be liable for any direct, indirect or consequential damages, abuse, acts of third parties (rental equipment) environmental conditions or other expenses which may arise in connection with such defective equipment. This warranty shall not apply to damage of equipment caused by incorrect installation, usage, storage alteration or inadequate care.

Heron Warranty coverage does not extend to the following:

- Tape, bag or batteries used with the product.
- Products used as rental equipment.
- Products contaminated by materials which are hazardous and as such have rendered the unit unserviceable as outlined in the maintenance guide and warranty manual.
- Parts failure due to neglect in cleaning or servicing.
- Failure of parts caused by misuse or inappropriate use.

All probe tips (excluding dipper-T 5/8 probe tip) warranted for 1 year.

When returning a product under warranty, please review service options available or advise Heron Instruments in advance,
by telephone at 1-800-331-2032 or 905-634-4449;
by fax at 905-634-9657 or
by e-mail at info@heroninstruments.com

Accurate. Efficient.

On the job!

Groundwater monitoring instruments

Operating/Maintenance
Instructions & Warranty for

dipper-T, little dipper, SKINNY DIPPER, WATER TAPE & potable water meter

Water Level Meters

HERON INSTRUMENTS Groundwater Monitoring INC.
Your obvious choice

General

Avoid sharp edged casing

Avoid entanglement with other equipment in boreholes and wells.

Do not use to plumb borehole depths

Do not use as guide to backfilling with sand etc. Instrument may get locked in sand.

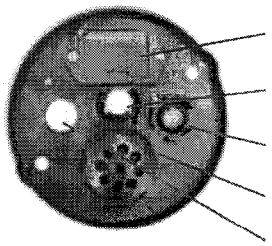
Rewind tape onto reel after each use

Warranty is conditional upon adherence to these guide lines.

Maintenance continued inside

Water Level Meter Instructions

dipper-T, little dipper, potable water meter, SKINNY DIPPER



Battery Box

Sensitivity Knob for Cascading Water

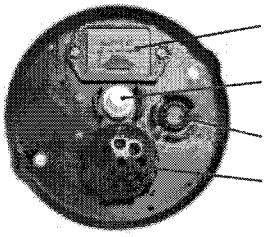
Signal LED

Signal Buzzer

Test Button Only

IMPORTANT
This is not an ON/OFF switch

WATER TAPE



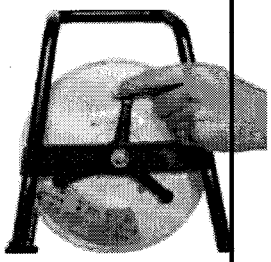
Battery Box

ON/TEST Button

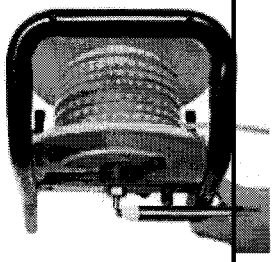
Signal LED

Signal Buzzer

NOTE: WATER TAPE does not have a sensitivity control.



Reel Lock
To unlock the reel turn the plastic lock handle in the direction shown until it touches the frame.



To Test Entire System
Hold the centre pin on the probe against the stud on the back of the axle at the same time touch the probe body against the screw on the frame. The buzzer will sound if the system is ok. **Make sure unit is on.**

Equipment Check

1 Test circuit and battery by pressing the **white** button. Make sure the panel securing knobs are tight. If the unit does not sound, replace the battery (one 9 volt) in the drawer on the faceplate and repeat.

2 Test tape and probe by shorting out the centre conductor and probe body on the stud on the back axle of the unit as shown. The buzzer and light should activate; if not, adjust the sensitivity and repeat. **Make sure unit is on.**

3 Test the unit in tap water before going out to the field. **DO NOT** use distilled or deionized water.

Use in the Field - Important*

1 Reel the tape down the well carefully, avoiding the edge of the casing. Hang the unit on the casing where possible and run the tape over the tape guide on the frame leg to avoid cuts and nicks.

2 When the unit sounds, carefully measure the depth to water from your reference point by slowly lowering and raising the probe to the air/water interface. Raise the probe, shake off the water and repeat the measurement. In wells with cascading water, reduce the sensitivity by turning the Sensitivity Knob anti-clockwise.

3 The dipper-T, little dipper and WATER TAPE probes are rated to full depth and can be used to measure depth to bottom of well. Reel the tape until the probe touches bottom and the tape becomes slack. **DO NOT** let the probe fall under gravity or it will be damaged when it hits the bottom of the well. **DO NOT** use the unit to measure sand backfill as the tape and probe may get "locked" in the backfill.

4 Wind the tape back onto the reel, removing any excess moisture and dirt.

Cleaning the Meters

1 Always the clean the meters after use in the field to maintain optimal performance and extend the life of the unit.

2 Unwind the tape and probe and wash with a mild detergent. Rinse well, wipe and rewind onto the reel. The tape and probe can be cleaned and degreased with the following: soap solution, naptha alcanox 10%, Joy detergent 10%, Lestoil; methyl, isopropyl and isobutyl alcohols; hexane, heptane and fully halogenated freon. Rinse thoroughly with water afterwards.

3 Wash reel if necessary. The central electronic panel can be removed and the reel washed down. Unthread the panel securing knobs and carefully pull out the central panel. Disconnect the panel from the tape. The reel may be cleaned with the following: soap solution, naptha alcanox 10%, Fantastic, Windex, Joy, Top Job, Mr. Clean, Formula 409; hexane, heptane, white kerosene, mineral spirits; methyl, isopropyl, isobutyl and 1 + 3 denatured alcohols; freons TF + TE. Rinse well with water and let dry before putting the panel back in. DO NOT use abrasives, partially halogenated hydrocarbons or ketones to clean the reel.

Trouble Shooting

No Sound when the unit is tested

1 Check battery by pressing the **white** button. Replace battery if low and make sure panel securing knobs are tight. If unit still does not sound, remove central panel and check all connections.

2 Check probe conductor to make sure it is clean and not crusted with mineral deposits. Check tape/probe connection for any breaks.

Continuous Sound when the unit is turned on or probe removed from water.

1 Make sure probe conductor tip is clean.

2 Check for excess moisture on the back of the electronic panel.

3 Check probe/tape connection and tape for any breaks or leaks where water might get in.

General

- Avoid sharp edged casing
- Avoid entanglement with other equipment in boreholes and wells.
- Do not use as guide to backfilling with sand etc., Instrument may get locked in sand.
- Rewind tape onto reel after each use

Warranty is conditional upon adherence to these guide lines.

***Important: Ensure that the Panel Securing Nuts are tight before use.**

Environmental Compliance Services, Inc.

STANDARD OPERATING PROCEDURES
FOR
ENVIRONMENTAL COMPLIANCE SERVICES, INC.
AT
SOUTH CAROLINA UST SITES

Prepared For:

Environmental Compliance Services, Inc.
13504 South Point Boulevard, Unit F
Charlotte, North Carolina 28273

F:\Forms & Templates\SC Forms\QAPP
October 2011
Revised January 2012

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STANDARD OPERATING PROCEDURES

This document details the standard operating procedures (SOPs) employed by Environmental Compliance Services, Inc. (ECS), a SCDHEC UST Site Rehabilitation Contractor (Certification No. 358). These SOPs are employed by ECS when performing environmental assessments, hydrogeological investigations, and remedial activities on properties with releases of oil and hazardous materials. These SOPs are based on current commonly accepted professional standards and practices in the environmental field.

These SOPs cover the technical aspects of drilling, installation of monitoring wells, sampling of environmental media, and hydrogeological investigations. These activities will be conducted in general accordance with the SOPs unless site-specific conditions are encountered. Any changes in SOPs due to site specific conditions will be specified within a scope of services prior to the performance of the work, if known. If conditions are encountered during the performance of the work, the changes will be duly noted within the report documenting the work. Alternative methods are discussed for jobs requiring a lesser level of quality assurance and quality control (QA/QC).

These SOPs are based on established procedures included within the following: guidance documents produced by the American Society for Testing and Materials (ASTM), United States Environmental Protection Agency (USEPA), and South Carolina Department of Health and Environmental Control (SCDHEC); published professional papers; and current professional standards and practices. References for cited documents and papers are attached.

DECONTAMINATION

Decontamination will be performed in order to: minimize the spread of contaminants on the Site and from one sampling location to another; reduce the potential exposure of field personnel to contaminants; and to ensure good data quality and reliability. Decontamination of all field analytical testing and sampling equipment will be performed according to the following procedures. These procedures are based on ASTM Designation D 5088-90, USEPA CERCLA QAPP Review Guidance, 1987, and USAEPA Region 4 Environmental Investigation guidelines (SOP & QAM, 2001).

Equipment cleaning procedures include pre-field, field, and post-field decontamination. Non-disposable equipment will be decontaminated after completing each sampling event. In cases of gross contamination (free phase product), rinse water will be contained for proper disposal according to municipal, state, and federal regulations. Decontamination procedures will be monitored through sampling and analysis when quality assurance/quality control checks are necessary.

Equipment will be dedicated to each sampling point and decontamination will be performed at the off-site facility as much as possible.

Decontaminated equipment will be rested on polyethylene sheeting at each sampling point.

Samplers will use new disposable gloves at each sampling point.

Potable water from the public water supply will be used for control rinse water.

A certified laboratory supply of deionized water will be used for decontamination of field testing and sampling equipment and for the collection of rinsate blanks. Deionized water will be stored in Nalgene, glass, or Teflon containers. The storage area containing the deionized water will be separated from the storage area for solvents.

Equipment rinsate blanks will be collected when a quality control check of the decontamination procedure is necessary. This check will not be performed if dedicated equipment is used. One blank will be collected at least once during a sampling event for each different piece of sampling equipment used. Rinsate blanks will be prepared by pouring deionized water over the decontaminated piece of equipment and collecting it in the sample container. The equipment rinsate blank will be analyzed for the same analytes as the samples that have been collected with that piece of equipment.

1.0 MATERIALS

- health and safety equipment;
- laboratory-supplied deionized water;
- phosphate-free detergent (Alconox, Liquinox);
- potable water (municipal water source);
- methanol;
- Hexane;
- Acetone;
- nitric acid rinse solution;
- wash basins;
- inert brushes;
- polyethylene sheeting;
- large heavy duty garbage bags;
- spray bottles;
- zip-lock bags;
- paper towels/Handiwipes;
- disposable gloves.

2.0 DECONTAMINATION PROCEDURES

- Soil and sediment sampling equipment (stainless steel sampling scoop, tool, and bowl, split-spoon and macro-core sampler, knife) will be decontaminated in the field after each use.

- Soil and sediment sampling equipment will be decontaminated as follows: scrubbed with inert brushes in a bucket containing phosphate-free detergent and potable water; rinsed with potable water; rinsed with pesticide grade methanol; and finally rinsed with deionized water. The final potable water and deionized water rinse volumes will equal 5 times the volume of the methanol rinse. The equipment will be allowed to air dry and will be stored in a clean environment until reused.

- Water quality instruments (e.g. Horiba Water Quality Meter), interface probe, down-hole slug test equipment, well development equipment, and other measuring instruments will be decontaminated between uses by rinsing with Alconox or Liquinox, followed by potable water and deionized water rinses. A methanol rinse will be utilized prior to the deionized water rinse in the event of gross contamination such as contact with free-phase product.

- The drill rig, direct-push technology equipment, and all drilling equipment and associated tools, including but not limited to augers, drill casing, drill rods, sampling equipment, and wrenches, will be steam cleaned prior to beginning the drilling on the Site. This cleaning will consist of using a high pressure detergent steam cleaning equipment, followed by a nanograde methanol swabbing if gross contamination was present. This will be followed by a controlled water rinse. Any down-hole equipment (auger flights, rods, sampling equipment, etc.) coming in contact with gross contamination (i.e. free phase product) will be steam-cleaned between uses. Otherwise equipment will be scrubbed manually with potable water and Alconox as needed to remove soil between uses.

- Sampling equipment and probes will be decontaminated in an area covered by polyethylene sheeting adjacent to the sampling location.

- In cases of gross contamination (i.e. free phase product) rinse water will be collected for proper disposal according to municipal, state or federal regulations. Contaminated solids (disposable

gloves, clothing, polyethylene tubing and sheeting, etc.) will be collected and characterized for proper disposal.

- Decontamination procedures will be fully documented in the field notebook. The following information should be recorded: Site location, date, time and weather; sample location where equipment used; location where decontamination was performed; field personnel performing the decontamination; decontamination procedures; disposal of rinse water if necessary; samples collected for QA/QC and analytical results.

- Health and safety procedures associated with decontamination are found in the Health and Safety Plan.

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

September 1, 2011 ASSESSMENT COMPONENT COST AGREEMENT
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account

Facility Name: Edgefield Fuel & Convenience LLC

UST Permit #: 12175 **Cost Agreement #:**

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL	
1. Plan*					
B. Tax Map		x	$50.00	$0.00	
C. Tier II or Comp. Plan /QAPP Appendix B	1	x	$525.00	$525.00	
2. Receptor Survey *		x	$500.00	$0.00	
3. Survey (500 x 500 feet)					
A. Comprehensive Survey		x	$1,000.00	$0.00	
B. Subsurface Geophysical Survey					
1. < 10 meters below grade		x	$2,750.00	$0.00	
2. > 10 meters below grade		x	$3,250.00	$0.00	
C. Geophysical UST or Drum Survey		x	$1,125.00	$0.00	
4. Mob/Demob (Each)					
A. Equipment	5	x	$575.00	$2,875.00	Well Installation & 4 AFVRs
B. Personnel	7	x	$290.00	$2,030.00	Tasks 9, 16, 17, & 23
C. Adverse Terrain Vehicle to install wells		x	$575.00	$0.00	
5. Soil Borings (hand auger)* (Feet)		feet x	$14.00	$0.00	
6. Soil Borings (drilled) & Field Screening *					
Rate includes collection of water sample or soil sample, and lab or other analyses					
A. Standard		feet x	$17.00	$0.00	
C. Fractured Rock		feet x	$27.50	$0.00	
7. Soil Leachability Model (Each)		each x	$200.00	$0.00	
8. Abandonment* (per foot)					
A. 2" diameter or less		feet x	$5.00	$0.00	
B. Greater than 2" to 6" diameter		feet x	$5.50	$0.00	
C. Dug/Bored well (up to 6 foot diameter)		feet x	$18.00	$0.00	
9. Well Installation* (per foot)					
A. Water Table (hand augered)		feet x	$20.00	$0.00	
B. Water Table (drill rig)	90	feet x	$38.00	$3,420.00	3 x 30
C. Telescoping/ Pit Cased		feet x	$58.00	$0.00	
D. Rock Drilling		feet x	$58.00	$0.00	
E. 2" Rock Coring		feet x	$45.00	$0.00	
G. Rock Multi-sampling ports/screens		feet x	$47.20	$0.00	
H. Recovery Well (4 inch diameter)		each x	$45.00	$0.00	
I. Pushed Pre-packed screen (1.25 diameter)		each x	$18.50	$0.00	
J. Rotosonic (2 inch diameter)		each x	$45.00	$0.00	
10. Groundwater Sample Collection / Gauge Depth to Water or Product (Each)					
A. Groundwater Purge		wells x	$55.00	$0.00	
B. Air or Vapors		samples x	$90.00	$0.00	
C. Water Supply		samples x	$30.00	$0.00	
D. Groundwater No Purge or Duplicate		samples x	$35.00	$0.00	
E. Gauge Well only		per well x	$20.00	$0.00	
F. Sample Below Product		wells x	$50.00	$0.00	
G. Pasive Diffusion Bag		each x	$40.00	$0.00	
H. Field Blank		each x	$5.00	$0.00	
11. Laboratory Analyses-Groundwater (Each Sample)					
A1. BTEX+Naphth.+ Oxyg's+ 1,2 DCA + Ethanol		samples x	$100.00	$0.00	
AA. Lead, Filtered		samples x	$46.00	$0.00	
B1. Rush EPA Method 8260B (All of item A.)		samples x	$143.00	$0.00	
C1. Trimethal, Butyl, and Isopropyl Benzenes		samples x	$40.00	$0.00	
D. PAH's		samples x	$120.00	$0.00	
E. Lead, Unfiltered		samples x	$20.00	$0.00	
F. EDB by EPA 8011		samples x	$55.00	$0.00	
FF. EDB by EPA Method 8011 Rush		samples x	$75.00	$0.00	
G. 8 RCRA Metals		samples x	$140.00	$0.00	
H. TPH (9070)		samples x	$55.00	$0.00	
I. pH		samples x	$10.00	$0.00	
J. BOD		samples x	$40.00	$0.00	
K. Nitrate		samples x	$20.00	$0.00	

L. Sulfate		samples x	$20.00	$0.00	
M. Ferrous Iron		samples x	$20.00	$0.00	
N. Methane		samples x	$110.00	$0.00	
P1. Ethanol		samples x	$21.50	$0.00	
11. Analyses-Soil (Each Sample)					
Q. BTEX + Naphth.		samples x	$100.00	$0.00	
R. PAH's		samples x	$120.00	$0.00	
S. 8 RCRA Metals		samples x	$150.00	$0.00	
T. Oil & Grease (9071)		samples x	$60.00	$0.00	
U. TPH-DRO (3550B/8015B)		samples x	$65.00	$0.00	
V. TPH- GRO (5030B/8015B)		samples x	$65.00	$0.00	
W. Grain size/hydrometer		samples x	$99.00	$0.00	
X. Total Organic Carbon		samples x	$35.00	$0.00	
11. Analyses-Air (Each Sample)					
Y. BTEX + Naphthalene		samples x	$247.50	$0.00	
11. Analyses-Free Phase Product (Each Sample)					
Z. Hydrocarbon Fuel Identification		samples x	$620.00	$0.00	
12. Aquifer Characterization*					
A. Pumping Test		hours x	$120.00	$0.00	
B. Slug Test*		tests x	$150.00	$0.00	
C. Fractured Rock		tests x	$500.00	$0.00	
13. Free Product Recovery Rate Test* (Each)		tests x	$120.00	$0.00	
14. Fate/Transport Modeling					
A. Mathematical Model		each x	$300.00	$0.00	
B. Computer Model		each x	$500.00	$0.00	
15. Risk Evaluation					
A. Tier I Risk Evaluation		x	$300.00	$0.00	
B. Tier II Risk Evaluation		x	$500.00	$0.00	
16. Subsequent Survey*	1	x	$300.00	$300.00	
17. Disposal* (gallons or tons)					
A. Wastewater	4000	gallons x	$0.80	$3,200.00	1,000 gal per AFVR event
B1. Free Product		gallons x	$0.85	$0.00	
C. Soil Treatment/Disposal	8	tons x	$72.50	$580.00	Estimated based on proposed number of wells & their proposed
D. Drilling fluids	55	gallons x	$0.80	$44.00	well depths
18. Miscellaneous (attach receipts)					
		x		$0.00	
		x		$0.00	
20. Tier I Assessment (Use DHEC 3665 form)		x		$0.00	
21. IGWA (Use DHEC 3666 form)		x		$0.00	
22. Corrective Action (Use DHEC 3667 form)		x		$0.00	
23. Aggressive Fluid & Vapor Recovery (AFVR)					
A. 8-hour Event*	4	each x	$3,000.00	$12,000.00	
B. AFVR per-hour Continuance		per hour x	$204.00	$0.00	
C. Off-gas treatment per-hour Continuance	32	per hour x	$35.00	$1,120.00	
24. Granulated Activated Carbon (GAC) filter system installation & service:					
A. New GAC System Installation*		each x	$2,500.00	$0.00	
B1. Refurbished GAC Sys. Install*		each x	$1,180.00	$0.00	
C. Filter replacement/removal*		each x	$450.00	$0.00	
D1. GAC System removal, cleaning, & refurbishment*		each x	$720.00	$0.00	
E. GAC System housing		each x	$450.00	$0.00	
F. In-line particulate filter		each x	$150.00	$0.00	
G. Additional piping & fittings		feet x	$4.00	$0.00	
25. Well Repair					
A. Additional Copies of the Report Delivered		each x	$32.50	$0.00	
B. Repair 2x2 MW pad		each x	$100.00	$0.00	
C. Repair 4x4 MW pad		each x	$150.00	$0.00	
D. Repair well vault		each x	$225.00	$0.00	
F. Replace well cover bolts		each x	$10.00	$0.00	
G. Replace locking well cap & lock		each x	$15.00	$0.00	
H. Replace/Repair stick-up		each x	$137.50	$0.00	
I. Convert Flush-mount to Stick-up		each x	$175.00	$0.00	
J. Convert Stick-up to Flush-mount		each x	$125.00	$0.00	
K. Replace missing/illegible well ID plate		each x	$22.50	$0.00	
Report Prep & Project Management	15%	x	$26,094.00	$3,914.10	
TOTAL				$30,008.10	

*The appropriate mobilization cost can be added to complete these tasks, as necessary

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MAR 0 6 2012

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

Re: **Assessment Directive**
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 42921; MWA # UMW-24483
Release reported December 31, 2008
AFVR Report received December 12, 2011
Site Specific QAPP Contractor Addendum and Cost Agreement received February 13, 2012
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced addendum submitted on your behalf by Environmental Compliance Services (ECS), Inc. The previous assessment work for this release indicates that petroleum Chemicals of Concern (CoC) are present in the soil and groundwater at concentrations that exceed risk-based screening levels. In order to determine the extent of the CoC, additional assessment is necessary. All work should be conducted in accordance with the UST Quality Assurance Division Plan and must be conducted in compliance with all applicable regulations. A copy of SCDHEC Quality Assurance Program Plan (QAPP) for the UST Management Division is available at http://www.scdhec.gov/environment/lwm/html/ust.htm.

Assessment activities at the site should begin immediately upon receipt of this letter. Cost agreement # 42921 has been approved for the amount shown on the enclosed cost agreement form for the installation of three shallow monitoring wells in the vicinity of monitoring wells MW-2 and MW-19 and four aggressive fluid and vapor recovery (AFVR) events to remove free product. Each eight-hour AFVR event should be conducted separately in one well per event and shall be scheduled a minimum of 15 days apart. Thirty days after the last AFVR event, monitoring wells MW-1, MW-2, MW-5, MW-19 and the newly installed wells should be gauged.

The Assessment Report, contractor checklist (Appendix K), and invoice are due within 90 days from the date of this letter. The report submitted at the completion of these activities should include the required information outlined in the QAPP. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

ECS, Inc. can submit an invoice for direct payment from State Underground Petroleum Environmental Response Bank (SUPERB) Account for pre-approved costs. By law, the SUPERB Account cannot

compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the SCDHEC is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Department for the cost to be paid. SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

Please note, if unnecessary dilutions are completed resulting in reporting limits of individual CoC in excess of Risk-Based Screening Levels (RBSLs), the data cannot be used. In those cases, the Division may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The UST Management Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The transport and disposal must be conducted in accordance with the QAPP. If the CoC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit #12175. If you have any questions regarding this correspondence, please contact me by telephone at (803) 896-6633, by fax at (803) 896-6245, or by e-mail at ridglect@dhec.sc.gov.

Sincerely,

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement
Monitoring Well Approval UMW-24483
Signed Site Specific QAPP Contractor Addendum

cc: ECS, Inc., PO Box 3528, Fort Mill, SC 29708 (with enc)
Technical File (with enc)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Approval

Approval is hereby granted to:	Environmental Compliance Services, Inc.
(On behalf of):	Edgefield Fuel & Convenience, LLC
Facility:	Edgefield Fuel & Convenience 3, 311 Main St., Edgefield, SC
UST Permit Number:	**12175**
County:	**Edgefield**

This approval is for the installation of three shallow groundwater monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.
5. If any of the information provided to the Department changes, notification to the project manager (tel: 803-896-6633, or e-mail: ridglect@dhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.
6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.
7. Departmental approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: March 5, 2012 **Approval #: UMW-24483**

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
Rev 2/10/12 For
Edgefield Fuel & Convenience ~~York Imports~~; UST Permit #12175

311 Main Street, Edgefield, SC

Prepared by:
Randall Hutchins
Environmental Compliance Services, Inc.
13504 South Point Blvd, Ste F
Charlotte, NC 28273

Date: January 31, 2012
Certified UST Site Rehabilitation Contractor #358
Environmental Compliance Services, Inc.

Approvals:

Cathleen Ridgley SC DHEC Project Manager	Cathleen Ridgley Signature	Date 3-5-12
Randall Hutchins Contractor Project Manager	Randall Hutchins Signature	Date 02/10/2012
Kurt Blevins Site Rehabilitation Contractor	Kurt Blevins Signature	Date 2/10/2012
Craig L. Kennedy, PG Project Verifier/QA Manager	 Signature	Date 2/8/2012

Approved Cost Agreement 42921

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3
RIDGLECT
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN					
		C TIER II/COMP. PLAN/QAPP APP B	1.0000	525.00	525.00
04 MOB/DEMOB					
		A EQUIPMENT	5.0000	575.00	2,875.00
		B PERSONNEL	6.0000	290.00	1,740.00
09 WELL INSTALLATION					
		B WATER TABLE (DRILLED)	90.0000	38.00	3,420.00
10 SAMPLE COLLECTION					
		E GAUGE WELL ONLY	7.0000	20.00	140.00
16 SUBSEQUENT SURVEY					
		SUBSEQUENT SURVEY	1.0000	300.00	300.00
17 DISPOSAL					
		B1 FREE PRODUCT	4,000.0000	0.85	3,400.00
		C SOIL (TREATMENT/DISPOSAL)	4.0000	72.50	290.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	25,810.00	3,871.50
23 EFR					
		A 8 HOUR EVENT	4.0000	3,000.00	12,000.00
		C OFF GAS TREATMENT	32.0000	35.00	1,120.00
			Total Amount		29,681.50

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

ASSESSMENT REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651.00
August 14, 2012

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ASSESSMENT REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

August 14, 2012

Randall Hutchins
Project Manager

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SC Registration No. 2425

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1.0 INTRODUCTION

This report presents the results of the corrective action and assessment activities conducted at the Edgefield Fuel & Convenience 3 site between April 30 and July 30, 2012. The activities were conducted in accordance with Cost Agreement Number 42921 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated March 8, 2012.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc.
Address: Post Office Box 3528
Fort Mill, South Carolina 29708
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 WELL DRILLER INFORMATION

Name: James Hess
Company Name: Geologic Exploration, Inc.
Address: 176 Commerce Boulevard
Statesville, North Carolina 28625
Certification Number: 01929

1.6 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	Not reported

UST Permit 12175

UST #	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Premium	Unknown	Yes	Not applicable
2	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable
3	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable

No additional releases reported at the Edgefield Fuel & Convenience 3 (UST Permit 12175) facility.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of our site visits in March 2009 (Tier I), between December 2009 and May 2010 (Tier II), between September and October 2010 (assessment), and between July and September 2011 (AFVRs & sampling). The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs were in use at the site during these assessment activities, these included of one 3,000-gallon premium gasoline UST and two 3,000-gallon gasoline USTs.

Historical site assessment activities reviewed in preparation of this assessment report included the Tier I and Tier II assessments, conducted and reported to the SCDHEC in March 2009 and June 2010, respectively. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. Two separate rounds of field screening activities were conducted to assist with the placement of 13 shallow monitoring wells (MW-4 through MW-16) during the Tier II assessment. Additionally, an 8-hour AFVR event was conducted in monitoring well MW-1 during Tier II activities to assist with free product removal. Historical data from the Tier I and Tier II assessments have been incorporated into this assessment report.

2.0 CORRECTIVE ACTION INFORMATION

The SCDHEC directive for this corrective action included the installation of three monitoring wells in the vicinity of site monitoring wells MW-2 and MW-19 to assist in the delineation of free product and to assist with free product removal by conducting four separate 8-hour Aggressive Fluid & Vapor Recovery (AFVR) events on select monitoring wells. The first AFVR event included connection to monitoring wells MW-1; the second AFVR event included connection to monitoring well MW-2; the third AFVR event included connection to monitoring well MW-5; and, the fourth AFVR event included connection to monitoring well MW-19. Approximately 30 days after the fourth AFVR event, the targeted AFVR monitoring wells (MW-1, MW-2, MW-5, and MW-19) and newly installed monitoring wells (MW-24, MW-25, and MW-26) were gauged for free product.

2.1 CORRECTIVE ACTION ACTIVITIES

2.1.1 Monitoring Well Installations

Three shallow monitoring wells (MW-24, MW-25, and MW-26) were installed between April 31 and June 1, 2012. The locations for these three monitoring wells were pre-approved by the SCDHEC Project Manager. Monitoring well locations are shown on **Figure 2**.

Monitoring wells MW-24, MW-25, and MW-26 were each completed to a depth of 30 feet below ground surface (bgs) and constructed with a 2-inch schedule 40 PVC risers and 10 feet of well screen with 0.010-inch slots. These three monitoring wells were each completed with flush-mounted traffic bearing well covers.

Boring logs for monitoring wells MW-24, MW-25, and MW-26 are included in **Appendix A**. Well construction records for these three monitoring wells are included in **Appendix B**. Following installation, each monitoring well was developed, using a decontaminated submersible pump between each well, until the groundwater appeared sediment free.

2.1.2 Surveying Well Locations and Top-of-Casing Elevations

Environmental Compliance Services, Inc. (ECS) measured horizontal distances and top of casing elevations of the newly installed monitoring wells at the site using pre-existing locations and elevations as reference points. One station was used to complete the subsequent survey with fore shot and back shot distances less than 102 feet from the instrument setup location. After the survey data was reduced, the elevation data was calculated with vertical differences no greater than 0.01 feet from previously identified reference points. Monitoring well locations are shown on **Figure 2**.

2.1.3 AFVR Event – May 10-11, 2012

This AFVR event was initiated on May 10, 2012 and completed on May 11, 2012 by A&D Environmental Services, Inc. (A&D) with activity monitoring provided by Aaron Williamson of ECS. Prior to the start of the event, the depths to liquid phase hydrocarbons (free product) and groundwater were measured in shallow monitoring wells MW-1 through MW-6, MW-19, MW-24, MW-25, and MW-26. Free product was detected in targeted AFVR monitoring well MW-1 with a free product thickness of 5.22 feet. Free product was also detected in area monitoring wells MW-2, MW-4, MW-5, MW-19, and MW-25. Monitoring wells MW-3, MW-4, and MW-6 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements. This AFVR event consisted of one vacuum truck extracting fluids from

monitoring well MW-1 for approximately 8 hours. The drop tube (also known as stinger pipe) was lowered to a depth of approximately 6-inches below the free product/water table interface. The depth of the stinger piping was not adjusted throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 21 inches of mercury (in Hg) at monitoring well MW-1 over the course of the event. The air velocity rates averaged 3,579 feet per minute (ft/min) from the discharge stack over the course of the event. The organic vapor concentrations recovered from monitoring well MW-1 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 3,280 parts per million (ppm) during the event. The exhaust stack gas temperatures averaged 186.7 degrees Fahrenheit (°F) from monitoring well MW-1.

Free product was detected immediately after and 20-minutes after the AFVR event in monitoring well MW-1 with free product thicknesses of 0.09 feet and 0.34 feet, respectively. Please note, depths to free product and free product thicknesses in surrounding free product monitoring wells (MW-2, MW-4, MW-5, MW-19, and MW-25) increased at the conclusion of the AFVR event. A summary of free product and AFVR data collected from monitoring well MW-1 is presented in **Table 1**. A summary of groundwater elevation data collected during this AFVR event is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 8 hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 32.40 pounds (5.18 gallons). Approximately 674 gallons of liquid were removed from monitoring well MW-1 during the May 10-11, 2012 AFVR event. Free product was reported as not detected in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the May 10-11, 2012 AFVR event are included in **Appendix C**.

2.1.4 AFVR Event – May 31 – June 1, 2012

This AFVR event was initiated on May 31, 2012 and completed on June 1, 2012 by A&D with activity monitoring provided by Aaron Williamson of ECS. Prior to the start of the event, the depths to free product and groundwater were measured in shallow monitoring wells MW-1, MW-2, MW-5, MW-19, MW-24, MW-25, and MW-26. Free product was detected in targeted AFVR monitoring well MW-2 with a free product thickness of 3.77 feet. Free product was also detected in area monitoring wells MW-1, MW-5, MW-19, and MW-25. Monitoring wells MW-19, MW-24, and MW-25 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements. This AFVR event consisted of one vacuum truck extracting fluids from monitoring well MW-2 for approximately 8 hours. The stinger pipe was lowered to a depth of approximately 6-inches below the free product/water table interface. The depth of the stinger piping was not adjusted throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 22 in Hg at monitoring well MW-2 over the course of the event. The air velocity rates averaged 3,481 ft/min from the discharge stack over the course of the event. The organic vapor concentrations recovered from monitoring well MW-2 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 1,325 ppm during the event. The exhaust stack gas temperatures averaged 188.1 °F from monitoring well MW-2.

Free product was detected immediately after and 20-minutes after the AFVR event in monitoring well MW-2 with free product thicknesses of 0.17 feet and 0.31 feet, respectively. Please note, depths to free product in surrounding free product monitoring wells (MW-1, MW-5, MW-19, and MW-25) increased at the conclusion of the AFVR event, while the thickness free product in these monitoring wells decreased. A summary of free product and AFVR data collected from monitoring well MW-2 is presented in **Table 1**. A summary of groundwater elevation data collected during this AFVR event is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 8 hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 12.34 pounds (1.97 gallons). Approximately 330 gallons of liquid were removed from monitoring well MW-2 during the May 31 – June 1, 2012 AFVR event. Free product was reported as not detected in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for this AFVR event are included in **Appendix D**.

2.1.5 AFVR Event – June 13-14, 2012

This AFVR event was initiated on June 13, 2012 and completed on June 14, 2012 by A&D with activity monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to free product and groundwater were measured in shallow monitoring wells MW-1 through MW-6, MW-19, MW-24, MW-25, and MW-26. Free product was detected in targeted AFVR monitoring well MW-5 with a free product thickness of 4.71 feet. Free product was also detected in area monitoring wells MW-1, MW-2, MW-4, MW-19, and MW-25. Monitoring wells MW-3, MW-4, and MW-6 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements. This AFVR event consisted of one vacuum truck extracting fluids from monitoring well MW-5 for approximately 8 hours. The stinger pipe was lowered to a depth of approximately 6-inches below the free product/water table interface. The depth of the stinger piping was not adjusted throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 25 in Hg at monitoring well MW-5 over the course of the event. The air velocity rates averaged 2,899 ft/min from the discharge stack over the course of the event. The organic vapor concentrations recovered from monitoring well MW-5 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 2,010 ppm during the event. The exhaust stack gas temperatures averaged 204.4 °F from monitoring well MW-5.

Free product was not detected immediately after the AFVR event in monitoring well MW-5. Free product was, however, detected in monitoring well MW-5 during 20-minutes post-AFVR measurements with a thickness of 0.35 feet. A summary of free product and AFVR data collected from monitoring well MW-5 during AFVR activities is presented in **Table 1**. A summary of groundwater elevation data collected during this AFVR event is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 8 hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 15.43 pounds (2.47 gallons). Approximately 155 gallons of liquid were removed from monitoring well MW-5 during the June 13-14, 2012 AFVR event. Free product was reported as not detected in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the June 13-12, 2011 AFVR event are included in **Appendix E**.

2.1.6 AFVR Event – June 28-29, 2012

This AFVR event was initiated on June 28, 2012 and completed on June 29, 2012 by A&D with activity monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to free product and groundwater were measured in shallow monitoring wells MW-1, MW-2, MW-5, MW-19, MW-24, MW-25, and MW-26. Free product was detected in targeted AFVR monitoring well MW-19 with a free product thickness of 3.88 feet. Free product was also detected in area monitoring wells MW-1, MW-2, MW-5, and MW-25. Monitoring wells MW-2, MW-24, and MW-25 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements. This AFVR event consisted of one vacuum truck extracting fluids from monitoring well MW-19 for approximately 8 hours. The stinger pipe was lowered to a depth of approximately 6-inches below the free product/water table interface. The depth of the stinger piping was not adjusted throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 24 in Hg at monitoring well MW-19 over the course of the event. The air velocity rates averaged 4,901 ft/min from the discharge stack over the course of the event. The organic vapor concentrations recovered from monitoring well MW-19 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 2,790 ppm during the event. The exhaust stack gas temperatures averaged 230.1 °F from monitoring well MW-19.

Free product was not detected immediately after the AFVR event in monitoring well MW-19. Free product was, however, detected in monitoring well MW-19 during 20-minutes post-AFVR measurements with a thickness of 0.32 feet. A summary of free product and AFVR data collected from monitoring well MW-19 during AFVR activities is presented in **Table 1**. A summary of groundwater elevation data collected during this AFVR event is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 8 hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 34.38 pounds (5.50 gallons). Approximately 167 gallons of liquid were removed from monitoring well MW-19 during the June 28-29, 2012 AFVR event. Free product was reported as not detected in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the June 28-29, 2012 AFVR event are included in **Appendix F**.

2.1.7 Well Gauging Event – July 30, 2012

Seven monitoring wells (MW-1, MW-2, MW-5, MW-19, MW-24, MW-25, and MW-26) were gauged for depths to free product and depths to groundwater on July 30, 2012. Free product was detected in site monitoring wells MW-1, MW-2, MW-5, MW-19, and MW-25 with free product thicknesses of 5.51 feet, 0.78 feet, 4.54 feet, 3.70 feet, and 5.08 feet, respectively. Free product was not detected in monitoring wells MW-24 and MW-26. Groundwater elevation data is presented in **Table 2**. A Gauge Report has been included in **Appendix G**.

2.2 INVESTIGATIVE DERIVED WASTE

Investigative derived waste (IDW) generated during these activities was placed in 55-gallon drums for disposal by a permitted treatment facility. A copy of the disposal manifest for 7 drums (six soils from drilling, and one waters from well development, purging, and decontamination of equipment) has been included in **Appendix H**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

- Shallow monitoring wells MW-24, MW-25, and MW-26 were installed between April 30, 2012 and May 1, 2012 at on-site and off-site locations.
- Free product was detected in on-site monitoring wells MW-1 (thickness of 5.22 feet), MW-2 (thickness of 3.29 feet), MW-4 (thickness of 4.44 feet), MW-5 (thickness of 4.65 feet), MW-19 (thickness of 4.07 feet), and MW-25 (thickness of 4.84 feet) on May 10, 2012 prior to initiating AFVR activities.
- Approximately 674 gallons of fluids were removed from monitoring well MW-1 during the 8-hour AFVR event completed on May 11, 2012. Stack emission calculations indicated 5.18 gallons of petroleum vapors were emitted during this AFVR event.
- Approximately 330 gallons of fluids were removed from monitoring well MW-2 during the 8-hour AFVR event completed on June 1, 2012. Stack emission calculations indicated 1.97 gallons of petroleum vapors were emitted during this AFVR event.
- Approximately 155 gallons of fluids were removed from monitoring well MW-5 during the 8-hour AFVR event completed on June 14, 2012. Stack emission calculations indicated 2.47 gallons of petroleum vapors were emitted during this AFVR event.
- Approximately 167 gallons of fluids were removed from monitoring well MW-19 during the 8-hour AFVR event completed on June 29, 2012. Stack emission calculations indicated 5.50 gallons of petroleum vapors were emitted during this AFVR event.
- Free product was detected in on-site monitoring wells MW-1 (thickness of 5.51 feet), MW-2 (thickness of 0.78 feet), MW-5 (thickness of 4.54 feet), MW-19 (thickness of 3.70 feet), and MW-25 (thickness of 5.08 feet) during the gauging event on July 30, 2012.
- The distribution of free-phase petroleum hydrocarbons in groundwater appear relatively defined in the horizontal direction.

3.2 RECOMMENDATIONS

- ECS recommends continuing AFVR events in monitoring wells MW-1, MW-2, MW-4, MW-5, MW-19, and MW-25 to remove free product from the site.
- ECS also recommends continuing to monitor CoC in groundwater, provided monitored natural attenuation is considered as a viable option for corrective action.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience LLC for specific application to the referenced site in Edgefield County, South Carolina. The corrective action and assessment were conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

TABLES

TABLE 1
SUMMARY OF AFVR INFORMATION[1]
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F^o)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
MW-1	4/6/10 - 4/7/10	8	4,419	194.3	626	1.33	0	1.33	314
MW-1 MW-5	7/12/11 - 7/13/11	12	4,456	232.3	2,454	4.88	0	4.88	1,503
MW-2	8/2/11 - 8/3/11	12	4,069	244.6	923	1.65	0	1.65	580
MW-19	8/11/11 - 8/12/11	12	4,274	216.4	2,804	5.30	0	5.30	740
MW-1	5/10/12- 5/11/12	8	3,579	186.7	3,280	5.18	0	5.18	674
MW-2	5/31/12- 6/1/12	8	3,481	188.1	1,325	1.97	0	1.97	330
MW-5	6/13/12- 6/14/12	8	2,899	204.4	2,010	2.47	0	2.47	155
MW-19	6/28/12- 6/29/12	8	4,901	230.1	2,790	5.50	0	5.50	167
Totals		76	--	--	--	28.28	0	28.28	4,463

Notes:

1. Aggressive Fluid Vapor Recovery (AFVR) events using vacuum trucks provided by A & D Environmental and Industrial Services, Inc. (April 2010, August 2011, May 2012, June 2012) and Zebra Environmental (July 2011).
2. Duration of the AFVR event at well location.
3. Cross-sectional area of exhaust stack is 0.785 sq. ft.
4. Total Volatized in gallons = Air emissions in pounds/(6.25 lbs./gal.)
5. Total Free Product as Fluid is obtained from disposal manifest and/or correspondence with subcontractors from each AFVR event.
6. Total Free Product Recovered = Total Free Product Volatized + Total Free Product as Fluid.

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-1	4/6/10 (pre-AFVR)	98.51	17.61	22.24	4.63	79.74	35	15
	4/7/10 (immediately post-AFVR)		--	21.42	--	77.09		
	4/7/10 (20 minutes post-AFVR)		20.37	20.42	0.05	78.13		
MW-3	4/6/10 (pre-AFVR)	100.44	--	20.74	--	79.70	34	15
	4/7/10 (immediately post-AFVR)		--	20.78	--	79.66		
	4/7/10 (20 minutes post-AFVR)		--	20.78	--	79.66		
MW-4	4/6/10 (pre-AFVR)	98.61	--	19.14	--	79.47	29	10
	4/7/10 (immediately post-AFVR)		--	19.22	--	79.39		
	4/7/10 (20 minutes post-AFVR)		--	19.23	--	79.38		
MW-5	4/6/10 (pre-AFVR)	98.05	--	18.24	--	79.81	29	10
	4/7/10 (immediately post-AFVR)		--	18.95	--	79.10		
	4/7/10 (20 minutes post-AFVR)		--	18.82	--	79.23		
MW-6	4/6/10 (pre-AFVR)	99.82	--	20.14	--	79.68	29	10
	4/7/10 (immediately post-AFVR)		--	20.28	--	79.54		
	4/7/10 (20 minutes post-AFVR)		--	20.29	--	79.53		
MW-1	7/12/11 (pre-AFVR)	98.51	19.61	24.75	5.14	77.62	35	15
	7/13/11 (immediately post-AFVR)		--	25.35	--	73.16		
	7/13/11 (20 minutes post-AFVR)		22.92	23.03	0.11	75.56		
MW-5	7/12/11 (pre-AFVR)	98.05	19.3	23.6	4.30	77.68	29	10
	7/13/11 (immediately post-AFVR)		23.16	23.25	0.09	74.87		
	7/13/11 (20 minutes post-AFVR)		22.31	22.51	0.20	75.69		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-3	7/12/11 (pre-AFVR)	100.44	--	22.84	--	77.60	34	15
	7/13/11 (immediately post-AFVR)		--	22.89	--	77.55		
	7/13/11 (20 minutes post-AFVR)		--	22.84	--	77.60		
MW-4	7/12/11 (pre-AFVR)	98.61	--	21.21	--	77.40	29	10
	7/13/11 (immediately post-AFVR)		--	21.31	--	77.30		
	7/13/11 (20 minutes post-AFVR)		--	21.32	--	77.29		
MW-6	7/12/11 (pre-AFVR)	99.82	--	22.20	--	77.62	29	10
	7/13/11 (immediately post-AFVR)		--	22.50	--	77.32		
	7/13/11 (20 minutes post-AFVR)		--	22.51	--	77.31		
MW-2	8/2/11 (pre-AFVR)	100.42	22.45	26.65	4.20	76.92	34	15
	8/3/11 (immediately post-AFVR)		--	25.67	--	74.75		
	8/3/11 (20 minutes post-AFVR)		24.03	24.13	0.10	76.37		
MW-17	8/2/11 (pre-AFVR)	101.09	--	24.07	--	77.02	28	10
	8/3/11 (immediately post-AFVR)		--	24.19	--	76.90		
	8/3/11 (20 minutes post-AFVR)		--	24.18	--	76.91		
MW-18	8/2/11 (pre-AFVR)	101.51	--	24.51	--	77.00	28	10
	8/3/11 (immediately post-AFVR)		--	24.56	--	76.95		
	8/3/11 (20 minutes post-AFVR)		--	24.56	--	76.95		
MW-19	8/2/11 (pre-AFVR)	100.01	21.98	26.81	4.83	76.82	28	10
	8/3/11 (immediately post-AFVR)		22.05	26.90	4.85	76.75		
	8/3/11 (20 minutes post-AFVR)		22.05	26.89	4.84	76.75		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-19	8/11/11 (pre-AFVR)	100.01	22.13	27.05	4.92	76.65	28	10
	8/12/11 (immediately post-AFVR)		--	27.42	--	72.59		
	8/12/11 (20 minutes post-AFVR)		24.42	24.51	0.09	75.57		
MW-1	8/11/11 (pre-AFVR)	98.51	20.25	25.86	5.61	76.86	35	15
	8/12/11 (immediately post-AFVR)		20.37	25.97	5.60	76.74		
	8/12/11 (20 minutes post-AFVR)		20.41	26.02	5.61	76.70		
MW-2	8/11/11 (pre-AFVR)	100.42	23.05	25.47	2.42	76.77	34	15
	8/12/11 (immediately post-AFVR)		23.12	25.97	2.85	76.59		
	8/12/11 (20 minutes post-AFVR)		23.13	25.58	2.45	76.68		
MW-4	8/11/11 (pre-AFVR)	98.61	--	21.90	--	76.71	29	10
	8/12/11 (immediately post-AFVR)		--	22.32	--	76.29		
	8/12/11 (20 minutes post-AFVR)		--	22.32	--	76.29		
MW-1	5/10/12 (pre-AFVR)	98.51	21.91	27.13	5.22	75.30	35	15
	5/11/12 (immediately post-AFVR)		24.97	25.06	0.09	73.52		
	5/11/12 (20 minutes post-AFVR)		23.90	24.24	0.34	74.53		
MW-2	5/10/12 (pre-AFVR)	100.42	24.23	28.02	3.79	75.24	34	15
	5/11/12 (immediately post-AFVR)		24.31	28.14	3.83	75.15		
	5/11/12 (20 minutes post-AFVR)		24.31	28.14	3.83	75.15		
MW-3	5/10/12 (pre-AFVR)	100.44	--	25.04	--	75.40	34	15
	5/11/12 (immediately post-AFVR)		--	25.11	--	75.33		
	5/11/12 (20 minutes post-AFVR)		--	25.12	--	75.32		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-4	5/10/12 (pre-AFVR)	98.61	22.41	26.85	4.44	75.09	29	10
	5/11/12 (immediately post-AFVR)		22.50	26.98	4.48	74.99		
	5/11/12 (20 minutes post-AFVR)		22.50	27.00	4.50	74.99		
MW-5	5/10/12 (pre-AFVR)	98.05	21.50	26.15	4.65	75.39	29	10
	5/11/12 (immediately post-AFVR)		21.98	25.93	3.95	75.08		
	5/11/12 (20 minutes post-AFVR)		22.02	26.01	3.99	75.03		
MW-6	5/10/12 (pre-AFVR)	99.82	--	24.44	--	75.38	29	10
	5/11/12 (immediately post-AFVR)		--	24.61	--	75.21		
	5/11/12 (20 minutes post-AFVR)		--	24.62	--	75.20		
MW-19	5/10/12 (pre-AFVR)	100.01	23.66	27.73	4.07	75.33	28	10
	5/11/12 (immediately post-AFVR)		23.76	27.74	3.98	75.26		
	5/11/12 (20 minutes post-AFVR)		23.77	27.75	3.98	75.25		
MW-24	5/10/12 (pre-AFVR)	100.23	--	24.97	--	75.26	30	10
	5/11/12 (immediately post-AFVR)		--	25.11	--	75.12		
	5/11/12 (20 minutes post-AFVR)		--	25.11	--	75.12		
MW-25	5/10/12 (pre-AFVR)	99.95	23.50	28.34	4.84	75.24	30	10
	5/11/12 (immediately post-AFVR)		23.61	28.55	4.94	75.11		
	5/11/12 (20 minutes post-AFVR)		23.60	28.53	4.93	75.12		
MW-26	5/10/12 (pre-AFVR)	99.89	--	25.84	--	74.05	30	10
	5/11/12 (immediately post-AFVR)		--	25.88	--	74.01		
	5/11/12 (20 minutes post-AFVR)		--	25.87	--	74.02		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-2	5/31/12 (pre-AFVR)	100.42	24.39	28.16	3.77	75.09	34	15
	6/1/12 (immediately post-AFVR)		25.14	25.31	0.17	75.24		
	6/1/12 (20 minutes post-AFVR)		25.30	25.61	0.31	75.04		
MW-1	5/31/12 (pre-AFVR)	98.51	22.06	27.26	5.20	75.15	35	15
	6/1/12 (immediately post-AFVR)		22.13	27.33	5.20	75.08		
	6/1/12 (20 minutes post-AFVR)		22.13	27.33	5.20	75.08		
MW-5	5/31/12 (pre-AFVR)	98.05	21.68	26.32	4.64	75.21	29	10
	6/1/12 (immediately post-AFVR)		21.75	26.27	4.52	75.17		
	6/1/12 (20 minutes post-AFVR)		21.75	26.27	4.52	75.17		
MW-19	5/31/12 (pre-AFVR)	100.01	23.80	27.74	3.94	75.23	28	10
	6/1/12 (immediately post-AFVR)		23.87	27.75	3.88	75.17		
	6/1/12 (20 minutes post-AFVR)		23.87	27.74	3.87	75.17		
MW-24	5/31/12 (pre-AFVR)	100.23	--	25.13	--	75.10	30	10
	6/1/12 (immediately post-AFVR)		--	25.18	--	75.05		
	6/1/12 (20 minutes post-AFVR)		--	25.20	--	75.03		
MW-25	5/31/12 (pre-AFVR)	99.95	23.60	28.84	5.24	75.04	30	10
	6/1/12 (immediately post-AFVR)		23.65	28.73	5.08	75.03		
	6/1/12 (20 minutes post-AFVR)		23.65	28.74	5.09	75.03		
MW-26	5/31/12 (pre-AFVR)	99.89	--	25.97	--	73.92	30	10
	6/1/12 (immediately post-AFVR)		--	25.96	--	73.93		
	6/1/12 (20 minutes post-AFVR)		--	25.96	--	73.93		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-5	6/13/12 (pre-AFVR)	98.05	21.72	26.43	4.71	75.15	29	10
	6/14/12 (immediately post-AFVR)		--	26.35	--	71.70		
	6/14/12 (20 minutes post-AFVR)		24.32	24.67	0.35	73.64		
MW-1	6/13/12 (pre-AFVR)	98.51	22.13	27.56	5.43	75.02	35	15
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		22.13	27.58	5.45	75.02		
MW-2	6/13/12 (pre-AFVR)	100.42	25.21	25.82	0.61	75.06	34	15
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		25.21	25.82	0.61	75.06		
MW-3	6/13/12 (pre-AFVR)	100.44	--	25.28	--	75.16	34	15
	6/14/12 (immediately post-AFVR)		--	25.30	--	75.14		
	6/14/12 (20 minutes post-AFVR)		--	25.30	--	75.14		
MW-4	6/13/12 (pre-AFVR)	98.61	22.59	27.09	4.50	74.90	29	10
	6/14/12 (immediately post-AFVR)		22.61	27.11	4.50	74.88		
	6/14/12 (20 minutes post-AFVR)		22.61	27.11	4.50	74.88		
MW-6	6/13/12 (pre-AFVR)	99.82	--	24.67	--	75.15	29	10
	6/14/12 (immediately post-AFVR)		--	24.75	--	75.07		
	6/14/12 (20 minutes post-AFVR)		--	24.73	--	75.09		
MW-19	6/13/12 (pre-AFVR)	100.01	23.86	27.74	3.88	75.18	28	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		23.88	27.79	3.91	75.15		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-24	6/13/12 (pre-AFVR)	100.23	--	25.18	--	75.05	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		--	25.22	--	75.01		
MW-25	6/13/12 (pre-AFVR)	99.95	23.67	28.71	5.04	75.02	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		23.68	28.71	5.03	75.01		
MW-26	6/13/12 (pre-AFVR)	99.89	--	26.00	--	73.89	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		--	26.00	--	73.89		
MW-19	6/28/12 (pre-AFVR)	100.01	23.87	27.75	3.88	75.17	28	10
	6/29/12 (immediately post-AFVR)		--	27.21	--	72.80		
	6/29/12 (20 minutes post-AFVR)		25.38	25.70	0.32	74.55		
MW-1	6/28/12 (pre-AFVR)	98.51	22.16	27.38	5.22	75.05	35	15
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		22.17	27.38	5.21	75.04		
MW-2	6/28/12 (pre-AFVR)	100.42	25.19	25.94	0.75	75.04	34	15
	6/29/12 (immediately post-AFVR)		25.24	25.99	0.75	74.99		
	6/29/12 (20 minutes post-AFVR)		25.22	25.97	0.75	75.01		
MW-5	6/28/12 (pre-AFVR)	98.05	21.95	25.94	3.99	75.10	29	10
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		21.95	25.94	3.99	75.10		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
MW-24	6/28/12 (pre-AFVR)	100.23	--	25.19	--	75.04	30	10
	6/29/12 (immediately post-AFVR)		--	25.23	--	75.00		
	6/29/12 (20 minutes post-AFVR)		--	25.27	--	74.96		
MW-25	6/28/12 (pre-AFVR)	99.95	23.68	28.70	5.02	75.02	30	10
	6/29/12 (immediately post-AFVR)		23.74	28.76	5.02	74.96		
	6/29/12 (20 minutes post-AFVR)		23.77	28.79	5.02	74.93		
MW-26	6/28/12 (pre-AFVR)	99.89	--	25.98	--	73.91	30	10
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		--	26.00	--	73.89		
MW-1	7/30/2012 (gauging event)	98.51	22.44	27.95	5.51	74.69	35	15
MW-2	7/30/2012 (gauging event)	100.42	25.47	26.25	0.78	74.76	34	15
MW-5	7/30/2012 (gauging event)	98.05	22.17	26.71	4.54	74.75	29	10
MW-19	7/30/2012 (gauging event)	100.01	24.24	27.94	3.70	74.85	28	10
MW-24	7/30/2012 (gauging event)	100.23	--	25.50	--	74.73	30	10
MW-25	7/30/2012 (gauging event)	99.95	23.96	29.04	5.08	74.72	30	10
MW-26	7/30/2012 (gauging event)	99.89	--	26.28	--	73.61	30	10

Notes:

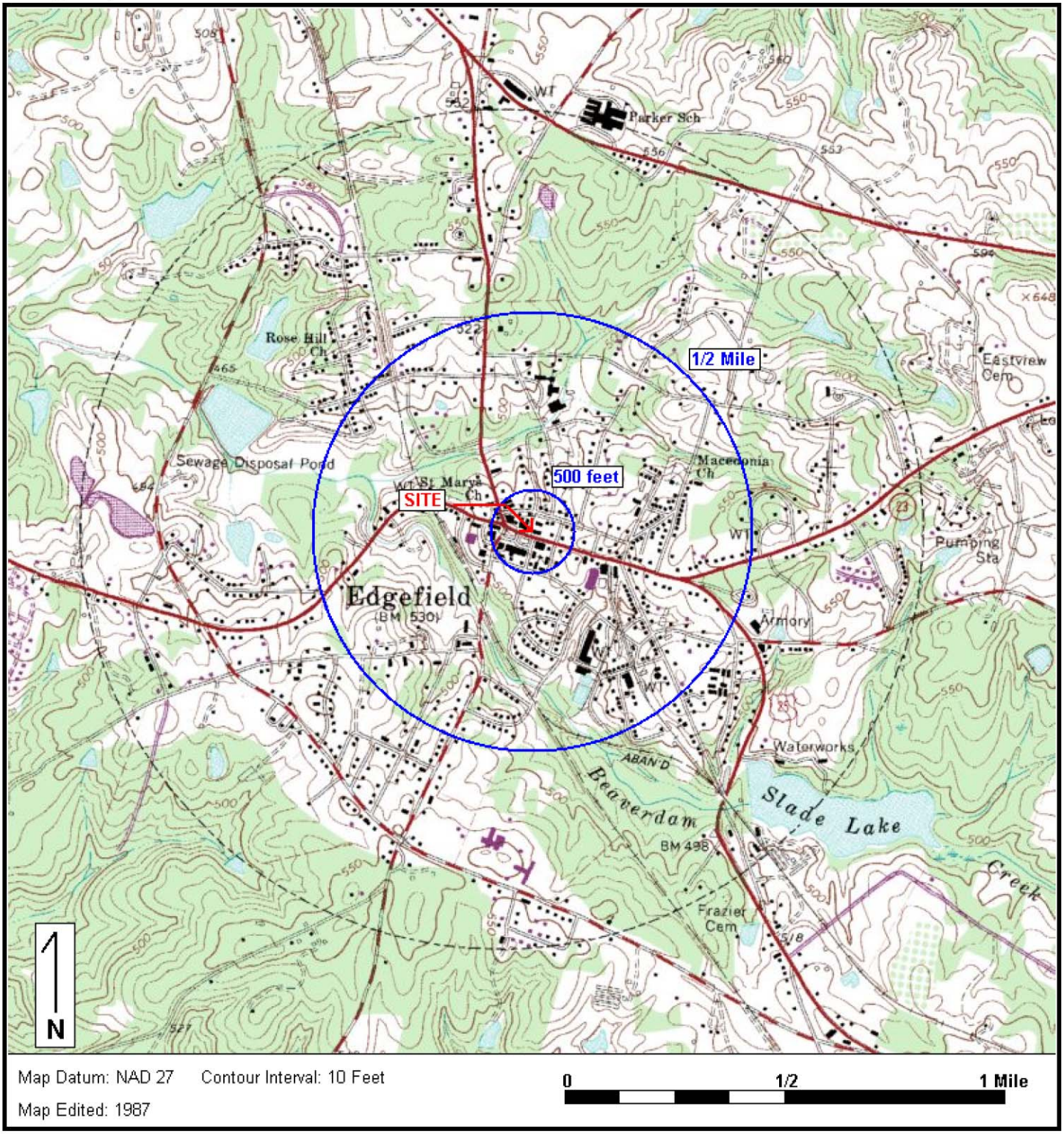
1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product, where present, with an assumed density of 0.75 g/cm^3.
3. NM represents Not Measured.

FIGURES

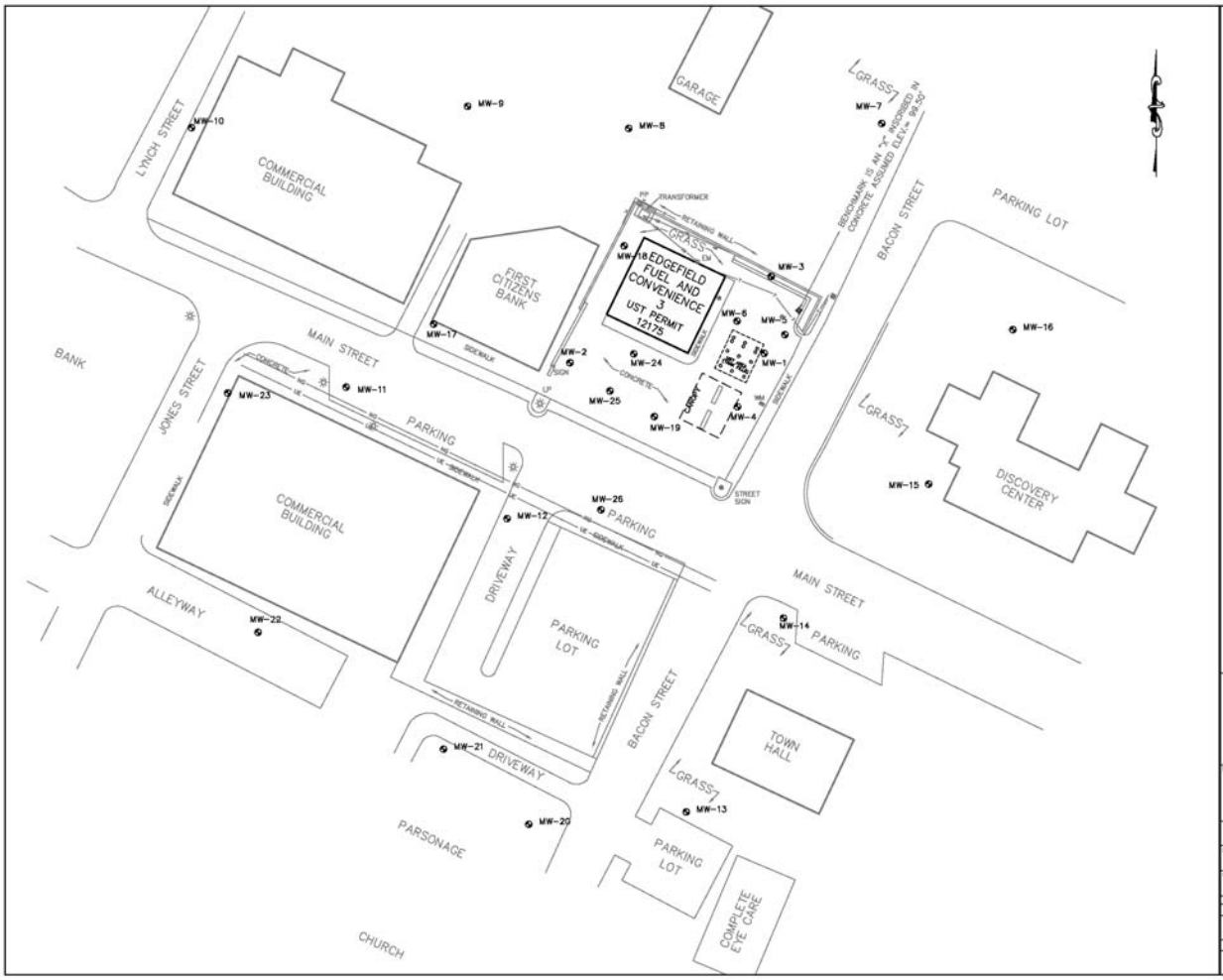
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

- UE — Underground Electric Line
- X — Wood Fence Line
- T — Underground Telephone Line
- SAN — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- MW-1 — Shallow (Water Table) Monitoring Well

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 08-14-12.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	5/2/12	14-211631	2

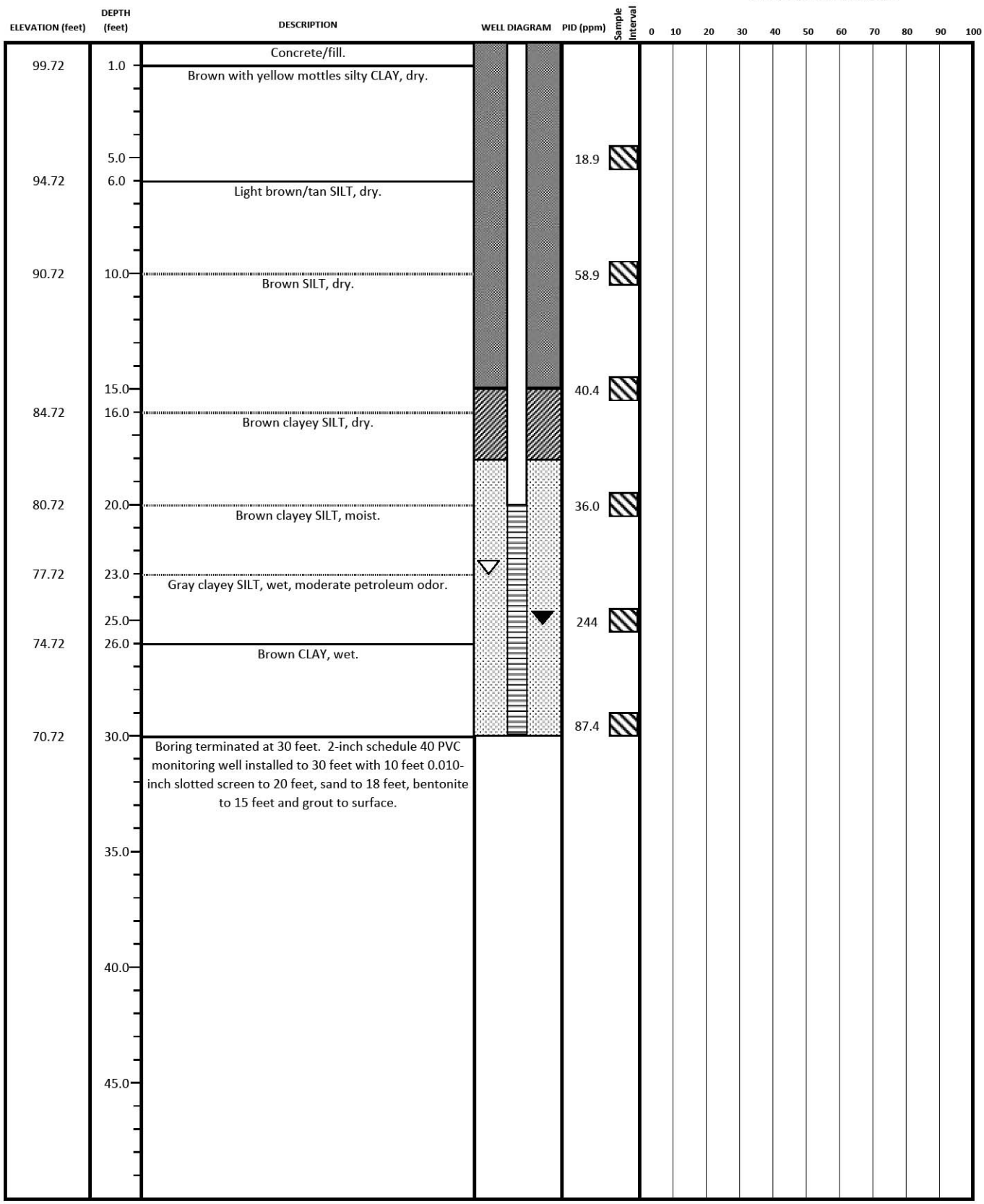
APPENDIX A

Boring Logs

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.72 feet
Height of Riser: 100.23 feet



REMARKS: Drilled with Geoprobe 6620DT using 3.25" ID HS augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 4/30/12.
Geologic Exploration - GEX

DRILLED BY: GEX - James Hess
LOGGED BY: ECS - A. Williamson

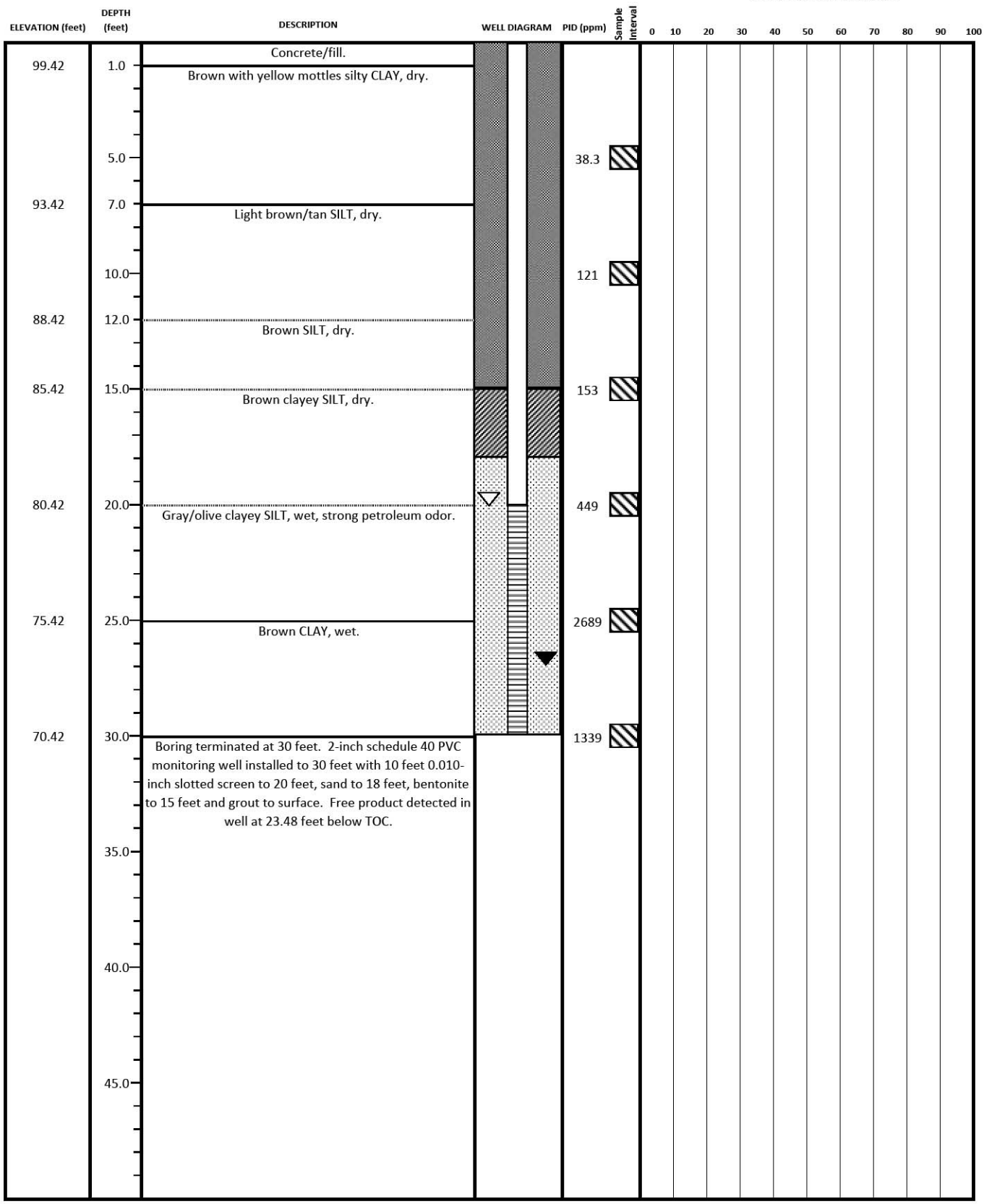
BORING NUMBER: MW-24
DATE STARTED: 4/30/2012
DATE COMPLETED: 4/30/2012
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.42 feet
Height of Riser: 99.95 feet



REMARKS: Drilled with Geoprobe 6620DT using 3.25" ID HS augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 4/30/12
Geologic Exploration - GEX

DRILLED BY: GEX - James Hess
LOGGED BY: ECS - A. Williamson

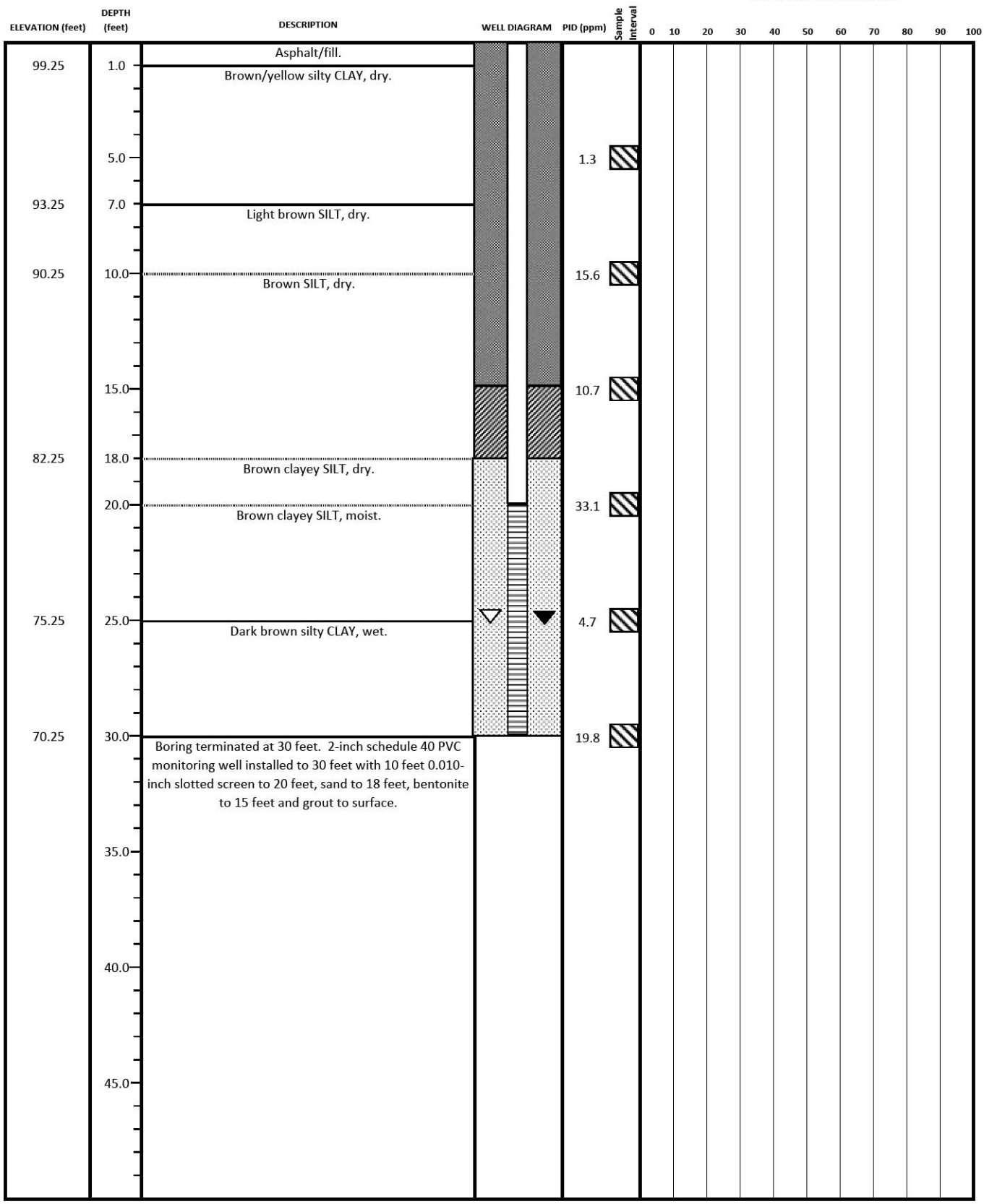
BORING NUMBER: MW-25
DATE STARTED: 4/30/2012
DATE COMPLETED: 4/30/2012
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fuel & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.25 feet
Height of Riser: 99.89 feet



REMARKS: Drilled with Geoprobe 6620DT using 3.25" ID HS augers.
Borehole diameter approximately 6.5".
Flush-mount cover and locking cap installed on 5/1/12
Geologic Exploration - GEX

DRILLED BY: GEX - James Hess
LOGGED BY: ECS - A. Williamson

BORING NUMBER: MW-26
DATE STARTED: 5/1/2012
DATE COMPLETED: 5/1/2012
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

APPENDIX B

Well Construction Records

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE. PROTECT. PROSPER.

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: 33° 47' 21.64" Longitude: 81° 55' 40.34"

3. PUBLIC SYSTEM NAME: UST Permit 12175 **PUBLIC SYSTEM NUMBER:** 12175-MW24

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN/YELLOW SILTY CLAY	7.0	7.0
LIGHT BROWN SILT	4.0	11.0
BROWN SILT	5.0	16.0
BROWN CLAYEY SILT	9.0	25.0
BROWN CLAY	5.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-24 BENTONITE SEAL FROM 15.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER: UMW-24483

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30.0 ft. Date Started: 04/30/12 Date Completed: 05/01/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 26.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 15.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JAMES HESS **CERT. NO.:** 01929
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☑ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: James T. Hess Jr. Well Driller Date: 05/02/12

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: 33° 47' 21.44" Longitude: 81° 55' 40.40"

3. PUBLIC SYSTEM NAME: UST Permit 12175 **PUBLIC SYSTEM NUMBER:** 12175-MW25

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN/YELLOW SILTY CLAY	7.0	7.0
LIGHT BROWN SILT	4.0	11.0
BROWN SILT	5.0	16.0
BROWN CLAYEY SILT	9.0	25.0
BROWN CLAY	5.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-25 BENTONITE SEAL FROM 15.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER: UMW-24483

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30.0 ft. Date Started: 04/30/12 Date Completed: 05/01/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 26.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 15.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JAMES HESS **CERT. NO.:** 01929
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☑ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: James T. Hess Jr. Date: 05/02/12
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE (last) (first)
Address: PO BOX 388
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Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: EDGEFIELD FUEL & CONV - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: 33° 47' 20.89" Longitude: 81° 55' 40.20"

3. PUBLIC SYSTEM NAME: UST Permit 12175 **PUBLIC SYSTEM NUMBER:** 12175-MW26

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN/YELLOW SILTY CLAY	7.0	7.0
LIGHT BROWN SILT	4.0	11.0
BROWN SILT	5.0	16.0
BROWN CLAYEY SILT	9.0	25.0
BROWN CLAY	5.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-26 BENTONITE SEAL FROM 15.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER: UMW-24483

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30.0 ft. Date Started: 04/30/12 Date Completed: 05/01/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 26.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 15.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JAMES HESS **CERT. NO.:** 01929
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☐ C ☑ D ☐ (circle one)
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If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

APPENDIX C

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – May 10-11, 2012

APPENDIX C
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	A. Williamson
Date:	5/10/12-5/11/12		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	6	
VT Tank Capacity:	3,500	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Yes	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	674	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
MW-1	21.91	27.13	24.97	25.06	23.90	24.24	27.50
MW-3	NP	25.04	NP	25.11	NP	25.12	--
MW-4	22.41	26.85	22.50	26.98	22.50	27.00	--
MW-6	NP	24.44	NP	24.61	NP	24.62	--
MW-2	24.23	28.02	24.31	28.14	24.31	28.14	--
MW-5	21.50	26.15	21.98	25.93	22.02	26.01	--
MW-19	23.66	27.73	23.76	27.74	23.77	27.75	--
MW-24	NP	24.97	NP	25.11	NP	25.11	--
MW-25	23.50	28.34	23.61	28.55	23.60	28.53	--
MW-26	NP	25.84	NP	25.88	NP	25.87	--

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX C

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	5/10/12-5/11/12	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						MW-3		MW-4		MW-6	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:10											
20:25	3,514	192.2	2.4	4,000	24	NM	NM	NM	NM	NM	NM
20:40	3,683	195.1	2.2	3,800	23	NM	0.00	NM	0.40	NM	0.40
20:55	3,601	194.2	2.2	3,600	23	NM	NM	NM	NM	NM	NM
21:10	3,783	192.6	2.2	3,400	22	NM	0.00	NM	0.40	NM	0.40
21:25	3,777	190.9	2.2	3,400	22	NM	NM	NM	NM	NM	NM
21:40	3,668	190.0	2.2	3,400	22	NM	0.00	NM	0.40	NM	0.40
21:55	3,740	189.1	2.3	3,400	22	NM	NM	NM	NM	NM	NM
22:10	3,633	189.0	2.3	3,400	21	NM	0.00	NM	0.40	NM	0.40
22:40	3,481	188.5	2.3	3,200	21	NM	0.00	NM	0.40	NM	0.40
23:10	3,685	186.8	2.3	3,400	21	NM	0.00	NM	0.40	NM	0.40
23:40	3,565	187.3	2.3	3,200	21	NM	0.00	NM	0.40	NM	0.40
0:10	3,667	187.2	2.2	3,200	20	NM	0.00	NM	0.40	NM	0.40
0:40	3,607	185.4	2.3	3,200	20	NM	0.00	NM	0.40	NM	0.40
1:10	3,525	185.5	2.3	3,200	20	NM	0.00	NM	0.40	NM	0.40
1:40	3,414	183.0	2.4	3,000	20	NM	0.00	NM	0.40	NM	0.40
2:10	3,390	182.3	2.5	3,000	20	NM	0.00	NM	0.40	NM	0.40
2:40	3,463	180.1	2.4	3,000	20	NM	0.00	NM	0.40	NM	0.40
3:10	3,418	179.8	2.4	3,000	20	NM	0.00	NM	0.40	NM	0.40
3:40	3,503	178.9	2.4	2,900	20	NM	0.00	NM	0.40	NM	0.40
4:10	3,457	175.8	2.5	2,900	20	NM	0.00	NM	0.40	NM	0.40

APPENDIX C
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 26.45
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: MW-1
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	20:10	Connection to MW-1. Stinger set at 27.50 feet below top of casing.							
05/10/12	20:25	24	3,514	6	192.2	2.4	0.010314	0.016	549
05/10/12	20:40	23	3,683	6	195.1	2.2	0.010048	0.016	574
05/10/12	20:55	23	3,601	6	194.2	2.2	0.009856	0.016	562
05/10/12	21:10	22	3,783	6	192.6	2.2	0.009523	0.015	592
05/10/12	21:25	22	3,777	6	190.9	2.2	0.009180	0.014	593
05/10/12	21:40	22	3,668	6	190.0	2.2	0.009002	0.014	577
05/10/12	21:55	22	3,740	6	189.1	2.3	0.009235	0.015	589
05/10/12	22:10	21	3,633	6	189.0	2.3	0.009215	0.015	572
05/10/12	22:40	21	3,481	6	188.5	2.3	0.009115	0.014	548
05/10/12	23:10	21	3,685	6	186.8	2.3	0.008782	0.014	582
05/10/12	23:40	21	3,565	6	187.3	2.3	0.008879	0.014	563
05/11/12	0:10	20	3,667	6	187.2	2.2	0.008469	0.013	580
05/11/12	0:40	20	3,607	6	185.4	2.3	0.008348	0.013	572
05/11/12	1:10	20	3,525	6	185.5	2.3	0.008535	0.013	559
05/11/12	1:40	20	3,414	6	183.0	2.4	0.008431	0.013	543
05/11/12	2:10	20	3,390	6	182.3	2.5	0.008651	0.014	540
05/11/12	2:40	20	3,463	6	180.1	2.4	0.007902	0.013	554
05/11/12	3:10	20	3,418	6	179.8	2.4	0.007849	0.012	547
05/11/12	3:40	20	3,503	6	178.9	2.4	0.007692	0.012	562
05/11/12	4:10	20	3,457	6	175.8	2.5	0.007472	0.012	557
Averages		21	3,579	6	186.7	2.3	0.008825	0.014	566

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) based on an elevation of 526 feet above sea level.
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

APPENDIX C
EMISSIONS CALCULATIONS

Q_{std} = (1-Water Vapor) * velocity * (PI * (diameter/24)^2) * (528°R/(Temp + 460))

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 10-May-2012

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	549	4,000	4,000	4,066	1.02	4,147	2,069	0.00013	4.26	4.93	1.23
30	574	3,800	3,800	3,861	1.02	3,938	1,965	0.00012	4.22	4.89	1.22
45	562	3,600	3,600	3,657	1.02	3,730	1,861	0.00012	3.92	4.53	1.13
60	592	3,400	3,400	3,452	1.02	3,521	1,757	0.00011	3.90	4.51	1.13
75	593	3,400	3,400	3,450	1.02	3,519	1,756	0.00011	3.90	4.51	1.13
90	577	3,400	3,400	3,449	1.02	3,518	1,755	0.00011	3.79	4.39	1.10
105	589	3,400	3,400	3,450	1.02	3,519	1,756	0.00011	3.87	4.48	1.12
120	572	3,400	3,400	3,450	1.02	3,519	1,756	0.00011	3.76	4.35	1.09
150	548	3,200	3,200	3,247	1.02	3,312	1,652	0.00010	3.39	3.93	1.96
180	582	3,400	3,400	3,448	1.02	3,517	1,755	0.00011	3.83	4.43	2.22
210	563	3,200	3,200	3,246	1.02	3,310	1,652	0.00010	3.48	4.03	2.02
240	580	3,200	3,200	3,243	1.02	3,308	1,651	0.00010	3.58	4.15	2.07
270	572	3,200	3,200	3,243	1.02	3,308	1,650	0.00010	3.53	4.09	2.05
300	559	3,200	3,200	3,244	1.02	3,309	1,651	0.00010	3.45	4.00	2.00
330	543	3,000	3,000	3,041	1.02	3,101	1,547	0.00010	3.15	3.64	1.82
360	540	3,000	3,000	3,042	1.02	3,102	1,548	0.00010	3.13	3.62	1.81
390	554	3,000	3,000	3,038	1.02	3,099	1,546	0.00010	3.21	3.71	1.86
420	547	3,000	3,000	3,038	1.02	3,098	1,546	0.00010	3.17	3.67	1.83
450	562	2,900	2,900	2,936	1.02	2,994	1,494	0.00009	3.14	3.64	1.82
480	557	2,900	2,900	2,935	1.02	2,993	1,494	0.00009	3.12	3.61	1.80
Averages	566	3,280	3,280	3,327	1.02	3,393	1,693	0.00011	3.59	4.16	1.62

Total emissions in pounds: 32.40
Total emissions in gallons: 5.18

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 dsm^3/10^6 mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

APPENDIX C
EMISSIONS CALCULATIONS

PMR = lb, pollutant mass removal of VOC's as gasoline

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

Please print or type.
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	
2. Page 1 of	
3. Emergency Response Phone	803-957-9175
4. Waste Tracking Number	[illegible] 25

GENERATOR

5. Generator's Name and Mailing Address

Edgefield Fuel & Convenience LLC
311 Main Street
Edgefield, SC

Generator's Phone: 704.583.2711 Randall Hutchins ECS

Generator's Site Address (if different than mailing address)

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address

A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

Facility's Phone: 803-957-9175

U.S. EPA ID Number: SCD987598331

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water	01	TT	674	G
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 A&D (SC) Job #12030
ECS Project #14-211661

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	[illegible]		12

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

	Printed/Typed Name	Signature	Month	Day	Year
Transporter 1	JOHN WALKER	John Walker	5	[illegible]	12
Transporter 2					

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name	Signature	Month	Day	Year

APPENDIX D

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – May 31 – June 1, 2012

APPENDIX D
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	A. Williamson
Date:	5/31/12-6/1/12		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	6	
VT Tank Capacity:	3,500	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Yes	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	330	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
MW-2	24.39	28.16	25.14	25.31	25.30	25.61	28.50
MW-19	23.80	27.74	23.87	27.75	23.87	27.74	--
MW-24	NP	25.13	NP	25.18	NP	25.20	--
MW-25	23.60	28.84	23.65	28.73	23.65	28.74	--
MW-1	22.06	27.26	22.13	27.33	22.13	27.33	--
MW-5	21.68	26.32	21.75	26.27	21.75	26.27	--
MW-26	NP	25.97	NP	25.96	NP	25.96	--

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX D

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	5/31/12-6/1/12	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						MW-19		MW-24		MW-25	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:10											
20:25	3,405	200.5	2.9	2,200	24	NM	NM	NM	NM	NM	NM
20:40	3,370	198.1	3.2	1,800	24	NM	0.00	NM	2.00	NM	1.00
20:55	3,561	195.4	3.3	1,600	22	NM	NM	NM	NM	NM	NM
21:10	3,578	192.4	3.4	1,500	22	NM	0.00	NM	2.00	NM	1.00
21:25	3,561	192.4	3.7	1,500	22	NM	NM	NM	NM	NM	NM
21:40	3,457	191.8	3.7	1,400	22	NM	0.00	NM	2.00	NM	1.00
21:55	3,561	190.6	3.7	1,400	22	NM	NM	NM	NM	NM	NM
22:10	3,457	190.0	3.8	1,400	22	NM	0.00	NM	2.00	NM	1.00
22:40	3,641	188.4	4.1	1,300	22	NM	0.00	NM	2.00	NM	1.00
23:10	3,387	187.0	4.4	1,300	22	NM	0.00	NM	2.00	NM	1.00
23:40	3,318	187.3	4.3	1,200	22	NM	0.00	NM	2.00	NM	1.00
0:10	3,353	166.5	6.8	1,200	22	NM	0.00	NM	2.00	NM	1.00
0:40	3,561	180.8	5.5	1,200	22	NM	0.00	NM	2.00	NM	1.00
1:10	3,491	183.4	4.6	1,200	22	NM	0.00	NM	2.00	NM	1.00
1:40	3,595	195.1	3.4	1,200	21	NM	0.00	NM	2.00	NM	1.00
2:10	3,335	181.9	4.4	1,100	21	NM	0.00	NM	2.00	NM	1.00
2:40	3,526	184.1	4.1	1,000	21	NM	0.00	NM	2.00	NM	1.00
3:10	3,542	185.2	3.8	1,000	21	NM	0.00	NM	2.00	NM	1.00
3:40	3,561	185.2	3.7	1,000	21	NM	0.00	NM	2.00	NM	1.00
4:10	3,353	186.6	3.3	1,000	21	NM	0.00	NM	2.00	NM	1.00

APPENDIX D
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 27.06
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: MW-2
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	20:10	Connection to MW-2. Stinger set at 28.50 feet below top of casing.							
05/10/12	20:25	24	3,405	6	200.5	2.9	0.014935	0.023	522
05/10/12	20:40	24	3,370	6	198.1	3.2	0.015700	0.025	518
05/10/12	20:55	22	3,561	6	195.4	3.3	0.015292	0.024	550
05/10/12	21:10	22	3,578	6	192.4	3.4	0.014777	0.023	555
05/10/12	21:25	22	3,561	6	192.4	3.7	0.016115	0.025	552
05/10/12	21:40	22	3,457	6	191.8	3.7	0.015905	0.025	536
05/10/12	21:55	22	3,561	6	190.6	3.7	0.015494	0.024	554
05/10/12	22:10	22	3,457	6	190.0	3.8	0.015715	0.025	538
05/10/12	22:40	22	3,641	6	188.4	4.1	0.016401	0.026	567
05/10/12	23:10	22	3,387	6	187.0	4.4	0.017096	0.027	528
05/10/12	23:40	22	3,318	6	187.3	4.3	0.016809	0.026	517
05/11/12	0:10	22	3,353	6	166.5	6.8	0.016666	0.026	540
05/11/12	0:40	22	3,561	6	180.8	5.5	0.018707	0.029	559
05/11/12	1:10	22	3,491	6	183.4	4.6	0.016511	0.026	548
05/11/12	1:40	21	3,595	6	195.1	3.4	0.015666	0.024	555
05/11/12	2:10	21	3,335	6	181.9	4.4	0.015251	0.024	526
05/11/12	2:40	21	3,526	6	184.1	4.1	0.014906	0.023	554
05/11/12	3:10	21	3,542	6	185.2	3.8	0.013374	0.021	557
05/11/12	3:40	21	3,561	6	185.2	3.7	0.013753	0.022	560
05/11/12	4:10	21	3,353	6	186.6	3.3	0.012623	0.020	527
Averages		22	3,481	6	188.1	4.0	0.015585	0.024	543

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) based on an elevation of 526 feet above sea level.
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

APPENDIX D
EMISSIONS CALCULATIONS

Q_{std} = (1-Water Vapor) * velocity * (PI * (diameter/24)^2) * (528°R/(Temp + 460))

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 10-May-2012

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	522	2,200	2,200	2,253	1.02	2,298	1,146	0.00007	2.24	2.59	0.65
30	518	1,800	1,800	1,845	1.02	1,882	939	0.00006	1.82	2.11	0.53
45	550	1,600	1,600	1,639	1.02	1,672	834	0.00005	1.72	1.99	0.50
60	555	1,500	1,500	1,536	1.02	1,566	781	0.00005	1.63	1.88	0.47
75	552	1,500	1,500	1,539	1.02	1,570	783	0.00005	1.62	1.87	0.47
90	536	1,400	1,400	1,436	1.02	1,464	731	0.00005	1.47	1.70	0.42
105	554	1,400	1,400	1,435	1.02	1,463	730	0.00005	1.51	1.75	0.44
120	538	1,400	1,400	1,435	1.02	1,464	730	0.00005	1.47	1.70	0.43
150	567	1,300	1,300	1,334	1.02	1,361	679	0.00004	1.44	1.67	0.83
180	528	1,300	1,300	1,336	1.02	1,362	680	0.00004	1.35	1.56	0.78
210	517	1,200	1,200	1,232	1.02	1,257	627	0.00004	1.22	1.41	0.70
240	540	1,200	1,200	1,232	1.02	1,257	627	0.00004	1.27	1.47	0.73
270	559	1,200	1,200	1,236	1.02	1,261	629	0.00004	1.32	1.53	0.76
300	548	1,200	1,200	1,232	1.02	1,256	627	0.00004	1.29	1.49	0.74
330	555	1,200	1,200	1,230	1.02	1,255	626	0.00004	1.30	1.51	0.75
360	526	1,100	1,100	1,127	1.02	1,149	574	0.00004	1.13	1.31	0.65
390	554	1,000	1,000	1,024	1.02	1,044	521	0.00003	1.08	1.25	0.63
420	557	1,000	1,000	1,021	1.02	1,042	520	0.00003	1.08	1.26	0.63
450	560	1,000	1,000	1,022	1.02	1,042	520	0.00003	1.09	1.26	0.63
480	527	1,000	1,000	1,020	1.02	1,041	519	0.00003	1.02	1.19	0.59
Averages	543	1,325	1,325	1,358	1.02	1,385	691	0.00004	1.40	1.62	0.62

Total emissions in pounds: 12.34
Total emissions in gallons: 1.97

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 dsm^3/10^6 mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

APPENDIX D
EMISSIONS CALCULATIONS

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}$ lb-m^3/mg-ft^3)

$PMR_c = (C_c)(Q_{std})(60$ min/hr)

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

Please print or type.
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			800-957-9175	

GENERATOR

5. Generator's Name and Mailing Address: Edgefield Fuel & Convenience LLC
311 Main Street
Edgefield, SC

Generator's Site Address (if different than mailing address):
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC

Generator's Phone: 704.583.2711 Randall Hutchins ECS

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987569331

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address:
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number: SCD987569331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water			330	gal	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 800-957-9175
ECS Project #14-211651

A&D (SC) Job #12030

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name — Signature — Month Day Year

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month Day Year

GENERATOR'S/SHIPPER'S INITIAL COPY

APPENDIX E

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – June 13-14, 2012

APPENDIX E
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	P. Pike
Date:	6/13/12 & 6/14/12		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	6	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Y	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	155	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
MW-5	21.72	26.43	NP	26.35	24.32	24.67	27.0'
MW-3	NP	25.28	NP	25.30	NP	25.30	
MW-4	22.59	27.09	22.61	27.11	22.61	27.11	
MW-6	NP	24.67	NP	24.75	NP	24.73	
MW-1	22.13	27.56	NM	NM	22.13	27.58	
MW-2	25.21	25.82	NM	NM	25.21	25.82	
MW-19	23.86	27.74	NM	NM	23.88	27.79	
MW-24	NP	25.18	NM	NM	NP	25.22	
MW-25	23.67	28.71	NM	NM	23.68	28.71	
MW-26	NP	26.00	NM	NM	NP	26.00	

NP denotes no measurable free product
NM denotes not measured.

APPENDIX E
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P. Pike
Date:	6/13/12 & 6/14/12	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						MW-3		MW-4		MW-6	
	Air Flow (ft^3/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:00											
20:15	2,778	200.8	2.9	3,600	26	--	--	--	--	--	--
20:30	2,802	210.6	1.9	2,400	26	--	0.00	--	0.00	--	0.00
20:45	2,912	206.1	2.3	2,300	25	--	--	--	--	--	--
21:00	2,769	205.7	2.0	2,200	25	--	0.00	--	0.00	--	0.00
21:15	3,012	203.2	2.2	2,200	25	--	--	--	--	--	--
21:30	2,832	204.8	2.1	2,000	25	--	0.00	--	0.00	--	0.00
21:45	2,911	203.1	2.1	2,000	25	--	--	--	--	--	--
22:00	2,862	200.5	2.3	2,000	25	--	0.00	--	0.00	--	0.00
22:30	2,949	200.3	2.2	2,200	25	--	0.00	--	0.00	--	0.00
23:00	3,013	198.9	2.4	2,200	25	--	0.00	--	0.00	--	0.00
23:30	2,914	200.3	2.3	2,000	25	--	0.00	--	0.00	--	0.00
0:00	2,791	202.1	2.1	1,800	25	--	0.00	--	0.00	--	0.00
0:30	2,822	204.8	1.8	1,700	25	--	0.00	--	0.00	--	0.00
1:00	2,937	203.2	1.7	1,700	25	--	0.00	--	0.00	--	0.00
1:30	3,051	204.8	1.7	1,800	25	--	0.00	--	0.00	--	0.00
2:00	2,944	206.4	1.5	1,700	25	--	0.00	--	0.00	--	0.00
2:30	2,998	209.3	1.4	1,600	25	--	0.00	--	0.00	--	0.00
3:00	2,861	209.1	1.4	1,600	25	--	0.00	--	0.00	--	0.00
3:30	2,950	207.0	1.6	1,600	25	--	0.00	--	0.00	--	0.00
4:00	2,864	206.1	1.7	1,600	25	--	0.00	--	0.00	--	0.00

APPENDIX E
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 25.87
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: MW-5
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	20:00	Connection to MW-19. Stinger set at 9.8 feet below top of casing.							
06/13/12	20:15	26	2,778	6	200.8	2.9	0.011398	0.018	428
06/13/12	20:30	26	2,802	6	210.6	1.9	0.01212	0.019	425
06/13/12	20:45	25	2,912	6	206.1	2.3	0.011124	0.018	445
06/13/12	21:00	25	2,769	6	205.7	2.0	0.011715	0.018	423
06/13/12	21:15	25	3,012	6	203.2	2.2	0.011585	0.018	462
06/13/12	21:30	25	2,832	6	204.8	2.1	0.011379	0.018	434
06/13/12	21:45	25	2,911	6	203.1	2.1	0.011666	0.018	447
06/13/12	22:00	25	2,862	6	200.5	2.3	0.011326	0.018	441
06/13/12	22:30	25	2,949	6	200.3	2.2	0.011481	0.018	455
06/13/12	23:00	25	3,013	6	198.9	2.4	0.010864	0.017	466
06/13/12	23:30	25	2,914	6	200.3	2.3	0.010915	0.017	450
06/14/12	0:00	25	2,791	6	202.1	2.1	0.011188	0.018	429
06/14/12	0:30	25	2,822	6	204.8	1.8	0.011441	0.018	432
06/14/12	1:00	25	2,937	6	203.2	1.7	0.012131	0.019	450
06/14/12	1:30	25	3,051	6	204.8	1.7	0.012474	0.020	466
06/14/12	2:00	25	2,944	6	206.4	1.5	0.012396	0.019	449
06/14/12	2:30	25	2,998	6	209.3	1.4	0.012927	0.020	455
06/14/12	3:00	25	2,861	6	209.1	1.4	0.012679	0.020	434
06/14/12	3:30	25	2,950	6	207.0	1.6	0.012183	0.019	450
06/14/12	4:00	25	2,864	6	206.1	1.7	0.011816	0.019	437
Averages		25	2,899	6	204.4	2.0	0.01174	0.018	444

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX E
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/13/12 & 6/14/12

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	428	3,600	3,600	3,666	1.02	3,739	1,866	0.00012	2.99	3.46	0.87
30	425	2,400	2,400	2,447	1.02	2,496	1,245	0.00008	1.98	2.29	0.57
45	445	2,300	2,300	2,341	1.02	2,388	1,191	0.00007	1.99	2.30	0.57
60	423	2,200	2,200	2,241	1.02	2,286	1,141	0.00007	1.81	2.09	0.52
75	462	2,200	2,200	2,241	1.02	2,286	1,140	0.00007	1.97	2.29	0.57
90	434	2,000	2,000	2,036	1.02	2,077	1,036	0.00006	1.68	1.95	0.49
105	447	2,000	2,000	2,037	1.02	2,078	1,037	0.00006	1.74	2.01	0.50
120	441	2,000	2,000	2,036	1.02	2,077	1,036	0.00006	1.71	1.98	0.50
150	455	2,200	2,200	2,240	1.02	2,285	1,140	0.00007	1.94	2.25	1.12
180	466	2,200	2,200	2,238	1.02	2,283	1,139	0.00007	1.99	2.30	1.15
210	450	2,000	2,000	2,035	1.02	2,076	1,036	0.00006	1.74	2.02	1.01
240	429	1,800	1,800	1,832	1.02	1,869	933	0.00006	1.50	1.74	0.87
270	432	1,700	1,700	1,731	1.02	1,766	881	0.00006	1.43	1.65	0.83
300	450	1,700	1,700	1,733	1.02	1,768	882	0.00006	1.49	1.72	0.86
330	466	1,800	1,800	1,836	1.02	1,873	934	0.00006	1.63	1.89	0.94
360	449	1,700	1,700	1,734	1.02	1,768	882	0.00006	1.48	1.72	0.86
390	455	1,600	1,600	1,633	1.02	1,666	831	0.00005	1.42	1.64	0.82
420	434	1,600	1,600	1,633	1.02	1,665	831	0.00005	1.35	1.56	0.78
450	450	1,600	1,600	1,631	1.02	1,664	830	0.00005	1.40	1.62	0.81
480	437	1,600	1,600	1,630	1.02	1,663	830	0.00005	1.36	1.57	0.79
Averages	444	2,010	2,010	2,048	1.02	2,089	1,042	0.00007	1.73	2.00	0.77

Total emissions in pounds: 15.43
Total emissions in gallons: 2.47

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX E
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone 803-957-9175	**4. Waste Tracking Number**

5. Generator's Name and Mailing Address
Edgefield Fuel & Convenience LLC
311 Main Street
Edgefield, SC
Generator's Phone: 704 583 2711 Randall Hutchins ECS

Generator's Site Address (if different than mailing address)
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073
Facility's Phone: 803-957-9175
U.S. EPA ID Number: SCD987598331

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water	01	TT	155	G	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 A&D (SC) Job #12030
ECS Project #14-211651

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Signature: Month 6 Day 19 Year 12

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: JOHN WALKER Signature: John Walker Month 6 Day 19 Year 12
Transporter 2 Printed/Typed Name Signature Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name Signature Month Day Year

GENERATOR – TRANSPORTER – DESIGNATED FACILITY

APPENDIX F

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – June 28-29, 2012

APPENDIX F
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	EF&C #3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	P.Pike
Date:	6/28/12 & 6/29/12		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Y	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	167	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
MW-19	23.87	27.75	NP	27.21	25.38	25.70	27.5
MW-2	25.19	25.94	25.24	25.99	25.22	25.97	
MW-24	NP	25.19	NP	25.23	NP	25.27	
MW-25	23.68	28.70	23.74	28.76	23.77	28.79	
MW-1	22.16	27.38	NM	NM	NP	26.00	
MW-5	21.95	25.94	NM	NM	21.95	25.94	
MW-26	NP	25.98	NM	NM	22.17	27.38	

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX F
AFVR EVENT FIELD DATA SHEETS

Project Name:	EF&C #3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P.Pike
Date:	6/28/12 & 6/29/12	Subcontractor	A&D

Measurements During AFVR Event

	Stack Outlet				Vac Truck	Non-AFVR Wells					
Time						MW-2		MW-24		MW-25	
	Air Flow (ft^3/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:15											
20:30	4,986	208.6	2.5	3,600	24	--	--	--	--	--	--
20:45	5,001	228.9	1.0	3,600	24	--	0.00	--	0.00	--	0.00
21:00	5,121	236.7	0.8	3,600	24	--	--	--	--	--	--
21:15	4,837	235.4	0.9	3,500	24	--	0.00	--	0.00	--	0.00
21:30	4,969	240.1	0.7	3,400	24	--	--	--	--	--	--
21:45	4,888	238.7	0.5	3,200	24	--	0.00	--	0.00	--	0.00
22:00	4,927	238.1	0.5	3,000	24	--	--	--	--	--	--
22:15	5,161	237.6	0.2	3,000	24	--	0.00	--	0.00	--	0.00
22:45	5,090	235.4	0.1	3,000	24	--	0.00	--	0.00	--	0.00
23:15	4,841	233.0	0.1	2,800	24	--	0.00	--	0.00	--	0.00
23:45	4,736	231.8	0.1	2,600	24	--	0.00	--	0.00	--	0.00
0:15	5,239	224.8	0.1	2,500	24	--	0.00	--	0.00	--	0.00
0:45	4,873	224.1	0.2	2,400	24	--	0.00	--	0.00	--	0.00
1:15	4,635	223.5	0.2	2,400	24	--	0.00	--	0.00	--	0.00
1:45	5,161	226.4	0.1	2,300	24	--	0.00	--	0.00	--	0.00
2:15	4,823	230.5	0.0	2,300	24	--	0.00	--	0.00	--	0.00
2:45	4,929	228.7	0.0	2,200	24	--	0.00	--	0.00	--	0.00
3:15	4,540	227.3	0.0	2,200	24	--	0.00	--	0.00	--	0.00
3:45	4,712	226.4	0.0	2,100	24	--	0.00	--	0.00	--	0.00
4:15	4,546	225.8	0.0	2,100	24	--	0.00	--	0.00	--	0.00

APPENDIX F
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: EF&C #3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 26.70
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: MW-19
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	20:15	Connection to MW-3. Stinger set at 48.5 feet below top of casing.							
06/28/12	20:30	24	4,986	6	208.6	2.5	0.011398	0.018	759
06/28/12	20:45	24	5,001	6	228.9	1.0	0.01212	0.019	738
06/28/12	21:00	24	5,121	6	236.7	0.8	0.011124	0.018	749
06/28/12	21:15	24	4,837	6	235.4	0.9	0.011715	0.018	708
06/28/12	21:30	24	4,969	6	240.1	0.7	0.011585	0.018	722
06/28/12	21:45	24	4,888	6	238.7	0.5	0.011379	0.018	712
06/28/12	22:00	24	4,927	6	238.1	0.5	0.011666	0.018	718
06/28/12	22:15	24	5,161	6	237.6	0.2	0.011326	0.018	753
06/28/12	22:45	24	5,090	6	235.4	0.1	0.011481	0.018	745
06/28/12	23:15	24	4,841	6	233.0	0.1	0.010864	0.017	712
06/28/12	23:45	24	4,736	6	231.8	0.1	0.010915	0.017	698
06/29/12	0:15	24	5,239	6	224.8	0.1	0.011188	0.018	779
06/29/12	0:45	24	4,873	6	224.1	0.2	0.011441	0.018	725
06/29/12	1:15	24	4,635	6	223.5	0.2	0.012131	0.019	690
06/29/12	1:45	24	5,161	6	226.4	0.1	0.012474	0.020	764
06/29/12	2:15	24	4,823	6	230.5	0.0	0.012396	0.019	710
06/29/12	2:45	24	4,929	6	228.7	0.0	0.012927	0.020	727
06/29/12	3:15	24	4,540	6	227.3	0.0	0.012679	0.020	671
06/29/12	3:45	24	4,712	6	226.4	0.0	0.012183	0.019	698
06/29/12	4:15	24	4,546	6	225.8	0.0	0.011816	0.019	674
Averages		24	4,901	6	230.1	0.4	0.01174	0.018	723

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX F
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: EF&C #3 AFVR EVENT DATE: 6/28/12 & 6/29/12

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	759	3,600	3,600	3,666	1.02	3,739	1,866	0.00012	5.31	6.14	1.54
30	738	3,600	3,600	3,670	1.02	3,743	1,868	0.00012	5.17	5.98	1.49
45	749	3,600	3,600	3,664	1.02	3,737	1,865	0.00012	5.23	6.05	1.51
60	708	3,500	3,500	3,566	1.02	3,637	1,815	0.00011	4.81	5.57	1.39
75	722	3,400	3,400	3,463	1.02	3,532	1,763	0.00011	4.77	5.52	1.38
90	712	3,200	3,200	3,258	1.02	3,324	1,658	0.00010	4.42	5.12	1.28
105	718	3,000	3,000	3,056	1.02	3,117	1,555	0.00010	4.18	4.84	1.21
120	753	3,000	3,000	3,054	1.02	3,116	1,555	0.00010	4.39	5.08	1.27
150	745	3,000	3,000	3,055	1.02	3,116	1,555	0.00010	4.34	5.02	2.51
180	712	2,800	2,800	2,849	1.02	2,906	1,450	0.00009	3.87	4.47	2.24
210	698	2,600	2,600	2,645	1.02	2,698	1,346	0.00008	3.52	4.07	2.04
240	779	2,500	2,500	2,545	1.02	2,596	1,295	0.00008	3.78	4.37	2.19
270	725	2,400	2,400	2,444	1.02	2,493	1,244	0.00008	3.38	3.91	1.96
300	690	2,400	2,400	2,447	1.02	2,496	1,245	0.00008	3.22	3.72	1.86
330	764	2,300	2,300	2,346	1.02	2,393	1,194	0.00007	3.42	3.96	1.98
360	710	2,300	2,300	2,346	1.02	2,393	1,194	0.00007	3.18	3.67	1.84
390	727	2,200	2,200	2,246	1.02	2,290	1,143	0.00007	3.11	3.60	1.80
420	671	2,200	2,200	2,245	1.02	2,290	1,142	0.00007	2.87	3.32	1.66
450	698	2,100	2,100	2,141	1.02	2,184	1,090	0.00007	2.85	3.30	1.65
480	674	2,100	2,100	2,140	1.02	2,183	1,089	0.00007	2.75	3.18	1.59
Averages	723	2,790	2,790	2,842	1.02	2,899	1,447	0.00009	3.93	4.55	1.72

Total emissions in pounds: 34.38
Total emissions in gallons: 5.50

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX F
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

Please print or type.
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone 803-957-9175	4. Waste Tracking Number

5. Generator's Name and Mailing Address
Edgefield Fuel & Convenience LLC
311 Main Street
Edgefield, SC
Generator's Phone: 704 583 2711 Randall Hutchins ECS

Generator's Site Address (if different than mailing address)
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073
Facility's Phone: 803-957-9175
U.S. EPA ID Number: SCD987598331

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON-HAZARDOUS NON REGULATED MATERIAL Oily Water	1		Approx. 167		0 Free Product (Sheen)
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

In Case of Emergency Call 803-957-9175 — A&D (SC) Job #12030
ECS Project #14-211661

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: [illegible] — Signature: [signature] — Month [illegible] Day [illegible] Year [illegible]

GENERATOR

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Bryan Richardson — Signature: [signature] — Month 6 Day 29 Year 12
Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name — Signature — Month Day Year

APPENDIX G

Gauge Report – July 30, 2012

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convience 3 | Location: Edgefield, SC

Project No.: 14-211651 | Date: 7/30/12

Measured By: A. Williamson | Weather: Sunny, 80s

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Measured Well Depth (feet)	Volume Purged (gallons)
MW-1	22.44	27.95	5.51	-----	-----	-----
MW-2	25.47	26.25	0.78	-----	-----	-----
MW-5	22.17	26.71	4.54	-----	-----	-----
MW-19	24.24	27.94	3.70	-----	-----	-----
MW-24	-----	25.50	-----	-----	-----	-----
MW-25	23.96	29.04	5.08	-----	-----	-----
MW-26	-----	26.28	-----	-----	-----	-----

Remarks:

APPENDIX H

Disposal Manifest - IDW

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone: 803-957-9175

4. Waste Tracking Number: 32589

5. Generator's Name and Mailing Address: ~~Edgefield Fuel & Convenience, LLC~~
PO Box 388
Edgefield, SC 29824
Generator's Phone: 704-583-2711 ECS - Randall Hutchins

Generator's Site Address (if different than mailing address):
Edgefield Fuel & Convenience #3
311 Main Street
Edgefield, SC 29824

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC
U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address:
A&D Environmental Services (NC), Inc
2718 Uhwarrie Road
Archdale, NC 27263
Facility's Phone: 336-434-7750
U.S. EPA ID Number: NCD986232221

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Purge Water Profile # 110910EFCW-SF	1	DM	55	G	
2.	NON-HAZARDOUS NON-REGULATED MATERIAL Soil Cuttings Profile # 110910EFCS-SF	6	DM	4200	P	
3.	NON-HAZARDOUS NON-REGULATED MATERIAL Plastic Profile # 110910EFCP-SF		DM		P	
4.						

13. Special Handling Instructions and Additional Information

A&D (SC) Job # 12035 Project #:14-211651.00

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Randall Hutchins, ECS Agent for EF&C
Signature: Randall Hutchins
Month: 4 Day: 03 Year: 12

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Peter
Signature: Chris Peter
Month: 5 Day: 7 Year: 12

Transporter 2 Printed/Typed Name
Signature
Month: Day: Year:

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name
Signature
Month: Day: Year:

Designed & Printed in the USA
DESIGNATED FACILITY TO GENERATOR

Contractor Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	✓		
2	Is UST Owner/Operator name, address, & phone number provided?	✓		
3	Is name, address, & phone number of current property owner provided?	✓		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	✓		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	✓		
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?			✓
7	Has the facility history been summarized?	✓		
8	Has the regional geology and hydrogeology been described?			✓
9	Are the receptor survey results provided as required?			✓
10	Has current use of the site and adjacent land been described?			✓
11	Has the site-specific geology and hydrogeology been described?			✓
12	Has the primary soil type been described?			✓
13	Have field screening results been described?			✓
14	Has a description of the soil sample collection and preservation been detailed?			✓
15	Has the field screening methodology and procedure been detailed?			✓
16	Has the monitoring well installation and development dates been provided?	✓		
17	Has the method of well development been detailed?	✓		
18	Has justification been provided for the locations of the monitoring wells?	✓		
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	✓		
20	Has the groundwater sampling methodology been detailed?			✓
21	Have the groundwater sampling dates and groundwater measurements been provided?	✓		
22	Has the purging methodology been detailed?			✓
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?			✓
24	If free-product is present, has the thickness been provided?	✓		
25	Does the report include a brief discussion of the assessment done and the results?	✓		
26	Does the report include a brief discussion of the aquifer evaluation and results?			✓
27	Does the report include a brief discussion of the fate & transport models used?			✓

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			✓
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			✓
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			✓
31	Have recommendations for further action been provided and explained?	✓		
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			✓
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)			✓
34	Has the current and historical laboratory data been provided in tabular format?			✓
35	Have the aquifer characteristics been provided and summarized on the appropriate form?			✓
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			✓
37	Has the topographic map been provided with all required elements? (Figure 1)	✓		
38	Has the site base map been provided with all required elements? (Figure 2)	✓		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)			✓
40	Has the site potentiometric map been provided? (Figure 5)			✓
41	Have the geologic cross-sections been provided? (Figure 6)			✓
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			✓
43	Has the site survey been provided and include all necessary elements? (Appendix A)			✓
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)			✓
45	Is the laboratory performing the analyses properly certified?			✓
46	Has the tax map been included with all necessary elements? (Appendix C)			✓
47	Have the soil boring/field screening logs been provided? (Appendix D)	✓		
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)	✓		
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			✓
50	Have the disposal manifests been provided? (Appendix G)	✓		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			✓
52	Has all fate and transport modeling been provided? (Appendix I)			✓
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			✓
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	✓		

Explanation for missing and incomplete information?

Contractor Checklist provided as separate document to the Assessment Report for Edgefield Fuel & Convenience 3, UST Permit 12175.

UST DOCKETING 20 dec

DEC 20 2012

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

Re: **AFVR Directive**
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 45022
Release reported December 31, 2008
AFVR Report received August 20, 2012
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) recognizes your commitment to continue work at this site using Environmental Compliance Services, Inc. as your contractor. The next appropriate scope of work is to conduct aggressive fluid and vapor recovery (AFVR) events to remove free-phase product from monitoring wells MW-1, MW-2, MW-5, MW-19 and MW-25. Please have your contractor conduct two simultaneous (or as close together in time as possible) twenty-four hour AFVRs. One event should be conducted using monitoring wells MW-2, MW-19, and MW-25; the other event should be conducted using monitoring wells MW-1 and MW-5. Thirty days following the last AFVR event, please gauge monitoring wells MW-1, MW-2, MW-5, MW-19, MW-24, MW-25, and MW-26. The events should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP). A copy of the QAPP is available at http://www.dhec.sc.gov/environment/lwm/usthome/Qapp.htm.

Cost Agreement #45022 has been approved in the amount shown on the enclosed cost agreement form for the AFVR events. AFVR activities may proceed immediately upon receipt of this letter, and must be performed by a South Carolina-Certified Underground Storage Tank Site Rehabilitation Contractor. All applicable South Carolina certification requirements apply to preparation of an AFVR report.

An AFVR report and invoice must be submitted to the Division within 90 days from the date of this letter. Your contractor may directly bill the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Interim invoices may be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Agency is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Agency grants pre-approval for transportation of up to 7,000 gallons of free-phase product and petroleum-contaminated groundwater from the referenced facility to a permitted treatment facility for disposal. The transport and disposal must be conducted in accordance with the QAPP.

On all correspondence concerning this facility, please reference UST Permit #12175. If there are any questions concerning this project, feel free to contact me by telephone at (803) 896-6633, by fax at (803) 896-6245, or by e-mail at ridglect@dhec.sc.gov.

Sincerely,

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved cost agreement form

cc: ECS, Inc., PO Box 3528, Fort Mill, SC 29708 (with enc)
Technical File (with enc)

Approved Cost Agreement 45022

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3

RIDGLECT

PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	2.0000	575.00	1,150.00
		B	PERSONNEL	4.0000	290.00	1,160.00
10 SAMPLE COLLECTION						
		E	GAUGE WELL ONLY	7.0000	20.00	140.00
17 DISPOSAL						
		B1	FREE PRODUCT	7,000.0000	0.85	5,950.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	22,608.00	3,391.20
23 EFR						
		A	8 HOUR EVENT	2.0000	3,000.00	6,000.00
		B	ADDITIONAL HOUR	32.0000	204.00	6,528.00
		C	OFF GAS TREATMENT	48.0000	35.00	1,680.00
				Total Amount		25,999.20

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

AGGRESSIVE FLUID & VAPOR RECOVERY REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651.00
March 13, 2013

Prepared by:
ECS
PO Box 3528
Fort Mill, SC 29708-3528
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

AGGRESSIVE FLUID & VAPOR RECOVERY REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

March 13, 2013

Randall Hutchins
Project Manager

CRAIG L. KENNEDY
REGISTERED
No. 2425
SOUTH CAROLINA
PROFESSIONAL GEOLOGIST

Craig L. Kennedy, P.G.
SC Registration No. 2425

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APPENDICES

Appendix A: AFVR Event Field Data Sheets, Emissions Calculations, and Disposal Manifest – February 9-10, 2013
Appendix B: AFVR Event Field Data Sheets, Emissions Calculations, and Disposal Manifest – February 10-11, 2013
Appendix C: Gauge Report – July 30, 2012

1.0 INTRODUCTION

This report presents the results of the corrective action and assessment activities conducted at the Edgefield Fuel & Convenience 3 site between February 9, 2013 and March 12, 2013. These activities were conducted in accordance with Cost Agreement Number 45022 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated December 20, 2012.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc.
Address: Post Office Box 3528
Fort Mill, South Carolina 29708
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	Not reported

UST Permit 12175

UST #	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Premium	Unknown	Not In Use	Not applicable
2	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable
3	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable

No additional releases reported at the Edgefield Fuel & Convenience 3 (UST Permit 12175) facility.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of our site visits between February and March 2013 for these corrective action activities. The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs (one 3,000-gallon premium gasoline UST and two 3,000-gallon regular unleaded gasoline USTs) were previously listed at the site and only the premium unleaded gasoline UST was not in use during these corrective action activities.

Historical site assessment activities previously conducted at the site include the Tier I assessment, conducted and reported to the SCDHEC in March 2009, and the Tier II assessment, conducted in December 2009 through May 2010 and reported to the SCDHEC in June 2010. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. The Tier II assessment included two separate rounds of field screening activities to assist with the placement of 13 shallow monitoring wells (MW-4 through MW-16) and an 8-hour AFVR event at monitoring well MW-1 to assist with free-phase product removal. Between July and September 2011 AFVR events and a groundwater sampling event were completed and a report of findings and recommendations was submitted to the SCDHEC in December 2011. Recovery well installations and additional AFVR events were completed between April and July 2012 with report of findings and recommendations submitted to the SCDHEC in August 2012.

2.0 CORRECTIVE ACTION INFORMATION

The SCDHEC directive for this corrective action included free-phase product removal by conducting two simultaneous (or as close together as possible) 24-hour Aggressive Fluid & Vapor Recovery (AFVR) events on select monitoring wells, followed by a gauging event at free-phase product monitoring wells. The AFVR events were conducted consecutively with the first 24-hour AFVR including connections to monitoring wells 12175-MW2, 12175-MW19, and 12175-MW25; the second 24-hour AFVR included connections to monitoring wells 12175-MW1, 12175-MW4, and 12175-MW5. Eight select monitoring wells (12175-MW1, 12175-MW2, 12175-MW4, 12175-MW5, 12175-MW19, 12175-MW24, 12175-MW25, and 12175-MW26 were gauged for free-phase product approximately 30 days after the last AFVR event.

2.1 CORRECTIVE ACTION ACTIVITIES

2.1.1 AFVR Event – February 9-10, 2013

This AFVR event was initiated on February 9, 2013 and completed on Februray 10, 2013 by A&D Environmental Services, Inc. (A&D) with activity monitoring provided by Aaron Williamson of ECS and Bryan Richardson of A&D. Prior to the start of the event, the depths to free-phase product and groundwater were measured in targeted extraction monitoring wells 12175-MW2, 12175-MW19, 12175-MW25, and in observation monitoring wells 12175-MW4, 12175-MW24 and 12175-MW26. Free product was detected in monitoring wells 12175-MW2 (thickness of 1.03 feet), 12175-MW19 (thickness of 2.73 feet), 12175-MW25 (thickness of 4.69 feet), and 12175-MW4 (thickness of 4.95 feet). Connection to monitoring well 12175-MW4 was initially not scheduled for this AFVR event; however, connection to 12175-MW4 was scheduled for the following day to assist with free-phase product removal.

This AFVR event consisted of one vacuum truck extracting vapors and fluids from monitoring wells 12175-MW2, 12175-MW19, and 12175-MW25 for approximately 24 hours. The drop tube (also known as stinger pipe) was lowered to a depth of approximately 6-inches below the free product/water table interface for each well. The depth of the stinger piping was not adjusted throughout the AFVR event. Monitoring wells 12175-MW4, 12175-MW24, and 12175-MW26 were used as observation wells to monitor the depths to groundwater and collect vacuum radius of influence measurements.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 22 inches of mercury (in Hg) at monitoring wells 12175-MW2, 12175-MW19, and 12175-MW25 over the course of the event. The air velocity rates averaged 3,762 feet per minute (ft/min) from the discharge stack over the course of the event. The organic vapor concentrations were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 7,963 parts per million (ppm) during the event. The exhaust stack gas temperatures averaged 173.1 degrees Fahrenheit (°F).

Free product was detected immediately after the first 24-hour AFVR event in targeted extraction wells. Free product was detected 20-minutes after the AFVR event in monitoring well 12175-MW19 with a thickness of 0.10 feet. A summary of free product and AFVR data collected from monitoring wells 12175-MW2, 12175-MW19, and 12175-MW25 is presented in **Table 1**. A summary of groundwater elevation data collected during this AFVR event is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 24 hours of organic vapor measurements and using a conversion factory of 1.02 for benzene, was 252.03 pounds (40.29 gallons). Approximately 1,675 gallons of liquid were removed from monitoring wells 12175-MW2, 12175-MW19, and 12175-MW25 during the February 9-10, 2013 AFVR event. A sheen was reported in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the February 9-10, 2013 AFVR event are included in **Appendix A**.

2.1.2 AFVR Event – February 10-11, 2013

This AFVR event was initiated on February 10, 2013 and completed on February 11, 2013 by A&D with activity monitoring provided by Aaron Williamson of ECS and Bryan Richardson of A&D. Prior to the start of the event, the depths to free-phase product and groundwater were measured in targeted extraction monitoring wells 12175-MW1, 12175-MW4, 12175-MW5, and in observation monitoring wells 12175-MW3, 12175-MW26 and 12175-MW15. Free product was detected in monitoring wells 12175-MW1 (thickness of 5.24 feet), 12175-MW4 (thickness of 4.17 feet), and 12175-MW5 (thickness of 4.74 feet).

This AFVR event consisted of one vacuum truck extracting vapors and fluids from monitoring wells 12175-MW1, 12175-MW4, and 12175-MW5 for approximately 20.67 hours. The AFVR event was scheduled for 24 hours; however, the tank of the vacuum truck reached capacity 3.33 hours before the end of the AFVR event. The stinger pipe was lowered to a depth of approximately 6-inches below the free product/water table interface for each well. The depth of the stinger piping was adjusted during this second 24-hour AFVR event due to the large volume of liquids generated and in consideration of the tank capacity. Field representative noted yellowish-colored liquid continued to be visible in transparent section of hose connection, as well no noticeable decrease in stack outlet measurements, after raising the stinger pipe. Monitoring wells 12175-MW3, 12175-MW6, and 12175-MW15 were used as observation wells to monitor the depths to groundwater and collect vacuum radius of influence measurements.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 22 in Hg at monitoring wells 12175-MW1, 12175-MW4, and 12175-MW5 over the course of the event. The air velocity rates averaged 3,473 ft/min from the discharge stack over the course of the event. The organic vapor concentrations were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 5,649 ppm during the event. The exhaust stack gas temperatures averaged 176.3 °F.

Depths to free product or groundwater were not measured immediately after the abrupt end of the AFVR event. Free product was detected 20-minutes after the AFVR event in monitoring wells 12175-MW1 (thickness of 0.60 feet), 12175-MW4 (thickness of 0.06 feet), and 12175-MW5 (thickness of 0.01 feet). A summary of free product and AFVR data collected from monitoring wells 12175-MW1, 12175-MW4, and 12175-MW5 is presented in **Table 1**. A summary of groundwater elevation data collected during this AFVR event is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 24 hours of organic vapor measurements, was 138.39 pounds (22.12 gallons). Approximately 1,525 gallons of liquid were removed from monitoring wells 12175-MW1, 12175-MW4, and 12175-MW5 during the February 10-11, 2013 AFVR event. A sheen was reported in the tank of the vacuum truck by A&D after the AFVR event. Field data sheets, emissions calculations and the disposal manifest for the February 10-11, 2013 AFVR event are included in **Appendix B**.

2.1.3 Well Gauging Event – March 12, 2013

Eight monitoring wells (12175-MW1, 12175-MW2, 12175-MW4, 12175-MW5, 12175-MW19, 12175-MW24, 12175-MW25, and 12175-MW26) were gauged for depths to free product and depths to groundwater on March 12, 2013. Free product was detected in site monitoring wells 12175-MW1 (thickness of 4.58 feet), 12175-MW2 (thickness of 0.03 feet), 12175-MW4 (thickness of 0.30 feet), 12175-MW5 (thickness of 1.70 feet), 12175-MW19 (thickness of 3.42 feet), and 12175-MW25 (thickness of 3.84 feet). Free product was not detected in monitoring wells 12175-MW24 and 12175-MW26. Groundwater elevation data is presented in **Table 2**. A Gauge Report has been included in **Appendix C**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

- Free product was detected in on-site monitoring wells 12175-MW2 (thickness of 1.03 feet), 12175-MW19 (thickness of 2.73 feet), and 12175-MW25 (thickness of 4.69 feet) on February 9, 2013 prior to initiating the first 24-houar AFVR event.
- Approximately 1,675 gallons of fluids were removed from monitoring wells 12175-MW2, 12175-MW19, and 12175-MW25 during the 24-hour AFVR event completed on February 10, 2013. Stack emission calculations indicated 40.29 gallons of petroleum vapors were emitted during this AFVR event.
- Free product was detected in on-site monitoring wells 12175-MW1 (thickness of 5.24 feet), 12175-MW4 (thickness of 4.17 feet), and 12175-MW5 (thickness of 4.74 feet) on February 10, 2013 prior to initiating the second 24-houar AFVR event.
- Approximately 1,525 gallons of fluids were removed from monitoring wells 12175-MW1, 12175-MW4, and 12175-MW5 during the 24-hour AFVR event completed on February 11, 2013. Stack emission calculations indicated 22.12 gallons of petroleum vapors were emitted during this AFVR event.
- Thirty days following the last AFVR event, free product was detected in on-site monitoring wells 12175-MW1 (thickness of 4.58 feet), 12175-MW2 (thickness of 0.03 feet), 12175-MW4 (thickness of 0.30 feet), 12175-MW5 (thickness of 1.70 feet), 12175-MW19 (thickness of 3.42 feet), and 12175-MW25 (thickness of 3.84 feet). Free product was not detected in monitoring wells 12175-MW24 and 12175-MW26.

3.2 RECOMMENDATIONS

- ECS recommends continuing AFVR events in monitoring wells 12175-MW1, 12175-MW2, 12175-MW4, 12175-MW5, 12175-MW19, and 12175-MW25 to remove free product from the site.
- ECS also recommends continuing to monitor CoC in groundwater, provided monitored natural attenuation is considered as a viable option for corrective action.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience LLC for specific application to the referenced site in Edgefield County, South Carolina. The corrective action and assessment were conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

TABLES

TABLE 1
SUMMARY OF AFVR INFORMATION[1]
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F°)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
12175-MW1	4/6/10 - 4/7/10	8	4,419	194.3	626	1.33	0	1.33	314
12175-MW1 12175-MW5	7/12/11 - 7/13/11	12	4,456	232.3	2,454	4.88	0	4.88	1,503
12175-MW2	8/2/11 - 8/3/11	12	4,069	244.6	923	1.65	0	1.65	580
12175-MW19	8/11/11 - 8/12/11	12	4,274	216.4	2,804	5.30	0	5.30	740
12175-MW1	5/10/12- 5/11/12	8	3,579	186.7	3,280	5.18	0	5.18	674
12175-MW2	5/31/12- 6/1/12	8	3,481	188.1	1,325	1.97	0	1.97	330
12175-MW5	6/13/12- 6/14/12	8	2,899	204.4	2,010	2.47	0	2.47	155
12175-MW19	6/28/12- 6/29/12	8	4,901	230.1	2,790	5.50	0	5.50	167
12175-MW2 12175-MW19 12175-MW25	2/9/13 - 2/10/13	24	3,762	173.1	7,963	40.29	Sheen	40.29	1,675
12175-MW1 12175-MW4 12175-MW5	2/10/13 - 2/11/13	20.67	3,473	176.3	5,649	22.12	Sheen	22.12	1,525
Totals		120.67	--	--	--	90.69	0	90.69	7,663

Notes:

1. Aggressive Fluid Vapor Recovery (AFVR) events using vacuum trucks provided by A & D Environmental and Industrial Services, Inc. (April 2010, August 2011, May 2012, June 2012, February 2013) and Zebra Environmental (July 2011).
2. Duration of the AFVR event at well location.

TABLE 1

SUMMARY OF AFVR INFORMATION[1]
EDGEFIELD FUEL & CONVENIENCE 3

3. Cross-sectional area of exhaust stack is 0.785 sq. ft.
4. Total Volatized in gallons = Air emissions in pounds/(6.25 lbs./gal.)
5. Total Free Product as Fluid is obtained from disposal manifest and/or correspondence with subcontractors from each AFVR event.
6. Total Free Product Recovered = Total Free Product Volatized + Total Free Product as Fluid.

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW1	4/6/10 (pre-AFVR)	98.51	17.61	22.24	4.63	79.74	35	15
	4/7/10 (immediately post-AFVR)		--	21.42	--	77.09		
	4/7/10 (20 minutes post-AFVR)		20.37	20.42	0.05	78.13		
12175-MW3	4/6/10 (pre-AFVR)	100.44	--	20.74	--	79.70	34	15
	4/7/10 (immediately post-AFVR)		--	20.78	--	79.66		
	4/7/10 (20 minutes post-AFVR)		--	20.78	--	79.66		
12175-MW4	4/6/10 (pre-AFVR)	98.61	--	19.14	--	79.47	29	10
	4/7/10 (immediately post-AFVR)		--	19.22	--	79.39		
	4/7/10 (20 minutes post-AFVR)		--	19.23	--	79.38		
12175-MW5	4/6/10 (pre-AFVR)	98.05	--	18.24	--	79.81	29	10
	4/7/10 (immediately post-AFVR)		--	18.95	--	79.10		
	4/7/10 (20 minutes post-AFVR)		--	18.82	--	79.23		
12175-MW6	4/6/10 (pre-AFVR)	99.82	--	20.14	--	79.68	29	10
	4/7/10 (immediately post-AFVR)		--	20.28	--	79.54		
	4/7/10 (20 minutes post-AFVR)		--	20.29	--	79.53		
12175-MW1	7/12/11 (pre-AFVR)	98.51	19.61	24.75	5.14	77.62	35	15
	7/13/11 (immediately post-AFVR)		--	25.35	--	73.16		
	7/13/11 (20 minutes post-AFVR)		22.92	23.03	0.11	75.56		
12175-MW5	7/12/11 (pre-AFVR)	98.05	19.3	23.6	4.30	77.68	29	10
	7/13/11 (immediately post-AFVR)		23.16	23.25	0.09	74.87		
	7/13/11 (20 minutes post-AFVR)		22.31	22.51	0.20	75.69		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW3	7/12/11 (pre-AFVR)	100.44	--	22.84	--	77.60	34	15
	7/13/11 (immediately post-AFVR)		--	22.89	--	77.55		
	7/13/11 (20 minutes post-AFVR)		--	22.84	--	77.60		
12175-MW4	7/12/11 (pre-AFVR)	98.61	--	21.21	--	77.40	29	10
	7/13/11 (immediately post-AFVR)		--	21.31	--	77.30		
	7/13/11 (20 minutes post-AFVR)		--	21.32	--	77.29		
12175-MW6	7/12/11 (pre-AFVR)	99.82	--	22.20	--	77.62	29	10
	7/13/11 (immediately post-AFVR)		--	22.50	--	77.32		
	7/13/11 (20 minutes post-AFVR)		--	22.51	--	77.31		
12175-MW2	8/2/11 (pre-AFVR)	100.42	22.45	26.65	4.20	76.92	34	15
	8/3/11 (immediately post-AFVR)		--	25.67	--	74.75		
	8/3/11 (20 minutes post-AFVR)		24.03	24.13	0.10	76.37		
12175-MW17	8/2/11 (pre-AFVR)	101.09	--	24.07	--	77.02	28	10
	8/3/11 (immediately post-AFVR)		--	24.19	--	76.90		
	8/3/11 (20 minutes post-AFVR)		--	24.18	--	76.91		
12175-MW18	8/2/11 (pre-AFVR)	101.51	--	24.51	--	77.00	28	10
	8/3/11 (immediately post-AFVR)		--	24.56	--	76.95		
	8/3/11 (20 minutes post-AFVR)		--	24.56	--	76.95		
12175-MW19	8/2/11 (pre-AFVR)	100.01	21.98	26.81	4.83	76.82	28	10
	8/3/11 (immediately post-AFVR)		22.05	26.90	4.85	76.75		
	8/3/11 (20 minutes post-AFVR)		22.05	26.89	4.84	76.75		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW19	8/11/11 (pre-AFVR)	100.01	22.13	27.05	4.92	76.65	28	10
	8/12/11 (immediately post-AFVR)		--	27.42	--	72.59		
	8/12/11 (20 minutes post-AFVR)		24.42	24.51	0.09	75.57		
12175-MW1	8/11/11 (pre-AFVR)	98.51	20.25	25.86	5.61	76.86	35	15
	8/12/11 (immediately post-AFVR)		20.37	25.97	5.60	76.74		
	8/12/11 (20 minutes post-AFVR)		20.41	26.02	5.61	76.70		
12175-MW2	8/11/11 (pre-AFVR)	100.42	23.05	25.47	2.42	76.77	34	15
	8/12/11 (immediately post-AFVR)		23.12	25.97	2.85	76.59		
	8/12/11 (20 minutes post-AFVR)		23.13	25.58	2.45	76.68		
12175-MW4	8/11/11 (pre-AFVR)	98.61	--	21.90	--	76.71	29	10
	8/12/11 (immediately post-AFVR)		--	22.32	--	76.29		
	8/12/11 (20 minutes post-AFVR)		--	22.32	--	76.29		
12175-MW1	5/10/12 (pre-AFVR)	98.51	21.91	27.13	5.22	75.30	35	15
	5/11/12 (immediately post-AFVR)		24.97	25.06	0.09	73.52		
	5/11/12 (20 minutes post-AFVR)		23.90	24.24	0.34	74.53		
12175-MW2	5/10/12 (pre-AFVR)	100.42	24.23	28.02	3.79	75.24	34	15
	5/11/12 (immediately post-AFVR)		24.31	28.14	3.83	75.15		
	5/11/12 (20 minutes post-AFVR)		24.31	28.14	3.83	75.15		
12175-MW3	5/10/12 (pre-AFVR)	100.44	--	25.04	--	75.40	34	15
	5/11/12 (immediately post-AFVR)		--	25.11	--	75.33		
	5/11/12 (20 minutes post-AFVR)		--	25.12	--	75.32		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW4	5/10/12 (pre-AFVR)	98.61	22.41	26.85	4.44	75.09	29	10
	5/11/12 (immediately post-AFVR)		22.50	26.98	4.48	74.99		
	5/11/12 (20 minutes post-AFVR)		22.50	27.00	4.50	74.99		
12175-MW5	5/10/12 (pre-AFVR)	98.05	21.50	26.15	4.65	75.39	29	10
	5/11/12 (immediately post-AFVR)		21.98	25.93	3.95	75.08		
	5/11/12 (20 minutes post-AFVR)		22.02	26.01	3.99	75.03		
12175-MW6	5/10/12 (pre-AFVR)	99.82	--	24.44	--	75.38	29	10
	5/11/12 (immediately post-AFVR)		--	24.61	--	75.21		
	5/11/12 (20 minutes post-AFVR)		--	24.62	--	75.20		
12175-MW19	5/10/12 (pre-AFVR)	100.01	23.66	27.73	4.07	75.33	28	10
	5/11/12 (immediately post-AFVR)		23.76	27.74	3.98	75.26		
	5/11/12 (20 minutes post-AFVR)		23.77	27.75	3.98	75.25		
12175-MW24	5/10/12 (pre-AFVR)	100.23	--	24.97	--	75.26	30	10
	5/11/12 (immediately post-AFVR)		--	25.11	--	75.12		
	5/11/12 (20 minutes post-AFVR)		--	25.11	--	75.12		
12175-MW25	5/10/12 (pre-AFVR)	99.95	23.50	28.34	4.84	75.24	30	10
	5/11/12 (immediately post-AFVR)		23.61	28.55	4.94	75.11		
	5/11/12 (20 minutes post-AFVR)		23.60	28.53	4.93	75.12		
12175-MW26	5/10/12 (pre-AFVR)	99.89	--	25.84	--	74.05	30	10
	5/11/12 (immediately post-AFVR)		--	25.88	--	74.01		
	5/11/12 (20 minutes post-AFVR)		--	25.87	--	74.02		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW2	5/31/12 (pre-AFVR)	100.42	24.39	28.16	3.77	75.09	34	15
	6/1/12 (immediately post-AFVR)		25.14	25.31	0.17	75.24		
	6/1/12 (20 minutes post-AFVR)		25.30	25.61	0.31	75.04		
12175-MW1	5/31/12 (pre-AFVR)	98.51	22.06	27.26	5.20	75.15	35	15
	6/1/12 (immediately post-AFVR)		22.13	27.33	5.20	75.08		
	6/1/12 (20 minutes post-AFVR)		22.13	27.33	5.20	75.08		
12175-MW5	5/31/12 (pre-AFVR)	98.05	21.68	26.32	4.64	75.21	29	10
	6/1/12 (immediately post-AFVR)		21.75	26.27	4.52	75.17		
	6/1/12 (20 minutes post-AFVR)		21.75	26.27	4.52	75.17		
12175-MW19	5/31/12 (pre-AFVR)	100.01	23.80	27.74	3.94	75.23	28	10
	6/1/12 (immediately post-AFVR)		23.87	27.75	3.88	75.17		
	6/1/12 (20 minutes post-AFVR)		23.87	27.74	3.87	75.17		
12175-MW24	5/31/12 (pre-AFVR)	100.23	--	25.13	--	75.10	30	10
	6/1/12 (immediately post-AFVR)		--	25.18	--	75.05		
	6/1/12 (20 minutes post-AFVR)		--	25.20	--	75.03		
12175-MW25	5/31/12 (pre-AFVR)	99.95	23.60	28.84	5.24	75.04	30	10
	6/1/12 (immediately post-AFVR)		23.65	28.73	5.08	75.03		
	6/1/12 (20 minutes post-AFVR)		23.65	28.74	5.09	75.03		
12175-MW26	5/31/12 (pre-AFVR)	99.89	--	25.97	--	73.92	30	10
	6/1/12 (immediately post-AFVR)		--	25.96	--	73.93		
	6/1/12 (20 minutes post-AFVR)		--	25.96	--	73.93		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW5	6/13/12 (pre-AFVR)	98.05	21.72	26.43	4.71	75.15	29	10
	6/14/12 (immediately post-AFVR)		--	26.35	--	71.70		
	6/14/12 (20 minutes post-AFVR)		24.32	24.67	0.35	73.64		
12175-MW1	6/13/12 (pre-AFVR)	98.51	22.13	27.56	5.43	75.02	35	15
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		22.13	27.58	5.45	75.02		
12175-MW2	6/13/12 (pre-AFVR)	100.42	25.21	25.82	0.61	75.06	34	15
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		25.21	25.82	0.61	75.06		
12175-MW3	6/13/12 (pre-AFVR)	100.44	--	25.28	--	75.16	34	15
	6/14/12 (immediately post-AFVR)		--	25.30	--	75.14		
	6/14/12 (20 minutes post-AFVR)		--	25.30	--	75.14		
12175-MW4	6/13/12 (pre-AFVR)	98.61	22.59	27.09	4.50	74.90	29	10
	6/14/12 (immediately post-AFVR)		22.61	27.11	4.50	74.88		
	6/14/12 (20 minutes post-AFVR)		22.61	27.11	4.50	74.88		
12175-MW6	6/13/12 (pre-AFVR)	99.82	--	24.67	--	75.15	29	10
	6/14/12 (immediately post-AFVR)		--	24.75	--	75.07		
	6/14/12 (20 minutes post-AFVR)		--	24.73	--	75.09		
12175-MW19	6/13/12 (pre-AFVR)	100.01	23.86	27.74	3.88	75.18	28	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		23.88	27.79	3.91	75.15		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW24	6/13/12 (pre-AFVR)	100.23	--	25.18	--	75.05	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		--	25.22	--	75.01		
12175-MW25	6/13/12 (pre-AFVR)	99.95	23.67	28.71	5.04	75.02	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		23.68	28.71	5.03	75.01		
12175-MW26	6/13/12 (pre-AFVR)	99.89	--	26.00	--	73.89	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		--	26.00	--	73.89		
12175-MW19	6/28/12 (pre-AFVR)	100.01	23.87	27.75	3.88	75.17	28	10
	6/29/12 (immediately post-AFVR)		--	27.21	--	72.80		
	6/29/12 (20 minutes post-AFVR)		25.38	25.70	0.32	74.55		
12175-MW1	6/28/12 (pre-AFVR)	98.51	22.16	27.38	5.22	75.05	35	15
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		22.17	27.38	5.21	75.04		
12175-MW2	6/28/12 (pre-AFVR)	100.42	25.19	25.94	0.75	75.04	34	15
	6/29/12 (immediately post-AFVR)		25.24	25.99	0.75	74.99		
	6/29/12 (20 minutes post-AFVR)		25.22	25.97	0.75	75.01		
12175-MW5	6/28/12 (pre-AFVR)	98.05	21.95	25.94	3.99	75.10	29	10
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		21.95	25.94	3.99	75.10		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW24	6/28/12 (pre-AFVR)	100.23	--	25.19	--	75.04	30	10
	6/29/12 (immediately post-AFVR)		--	25.23	--	75.00		
	6/29/12 (20 minutes post-AFVR)		--	25.27	--	74.96		
12175-MW25	6/28/12 (pre-AFVR)	99.95	23.68	28.70	5.02	75.02	30	10
	6/29/12 (immediately post-AFVR)		23.74	28.76	5.02	74.96		
	6/29/12 (20 minutes post-AFVR)		23.77	28.79	5.02	74.93		
12175-MW26	6/28/12 (pre-AFVR)	99.89	--	25.98	--	73.91	30	10
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		--	26.00	--	73.89		
12175-MW1	7/30/2012 (gauging event)	98.51	22.44	27.95	5.51	74.69	35	15
12175-MW2	7/30/2012 (gauging event)	100.42	25.47	26.25	0.78	74.76	34	15
12175-MW5	7/30/2012 (gauging event)	98.05	22.17	26.71	4.54	74.75	29	10
12175-MW19	7/30/2012 (gauging event)	100.01	24.24	27.94	3.70	74.85	28	10
12175-MW24	7/30/2012 (gauging event)	100.23	--	25.50	--	74.73	30	10
12175-MW25	7/30/2012 (gauging event)	99.95	23.96	29.04	5.08	74.72	30	10
12175-MW26	7/30/2012 (gauging event)	99.89	--	26.28	--	73.61	30	10
12175-MW2	2/9/13 (pre-AFVR)	100.42	26.27	27.30	1.03	73.89	34	15
	2/10/13 (immediately post-AFVR)		--	27.20	--	73.22		
	2/10/13 (20 minutes post-AFVR)		--	27.25	--	73.17		
12175-MW19	2/9/13 (pre-AFVR)	100.01	25.19	27.92	2.73	74.14	28	10
	2/10/13 (immediately post-AFVR)		--	27.05	--	72.96		
	2/10/13 (20 minutes post-AFVR)		26.70	26.80	0.10	73.29		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW25	2/9/13 (pre-AFVR)	99.95	24.92	29.61	4.69	73.86	30	10
	2/10/13 (immediately post-AFVR)		--	27.83	--	72.12		
	2/10/13 (20 minutes post-AFVR)		--	26.41	--	73.54		
12175-MW4	2/9/13 (pre-AFVR)	98.61	23.90	28.85	4.95	73.47	29	10
	2/10/13 (immediately post-AFVR)		24.06	28.23	4.17	73.51		
	2/10/13 (20 minutes post-AFVR)		24.06	28.21	4.15	73.51		
12175-MW24	2/9/13 (pre-AFVR)	100.23	--	26.35	--	73.88	30	10
	2/10/13 (immediately post-AFVR)		--	26.54	--	73.69		
	2/10/13 (20 minutes post-AFVR)		--	26.57	--	73.66		
12175-MW26	2/9/13 (pre-AFVR)	99.89	--	27.06	--	72.83	30	10
	2/10/13 (immediately post-AFVR)		--	27.11	--	72.78		
	2/10/13 (20 minutes post-AFVR)		--	27.12	--	72.77		
12175-MW1	2/10/13 (pre-AFVR)	98.51	23.47	28.71	5.24	73.73	35	15
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		24.63	25.23	0.60	73.73		
12175-MW4	2/10/13 (pre-AFVR)	98.61	24.06	28.23	4.17	73.51	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		25.11	25.17	0.06	73.49		
12175-MW5	2/10/13 (pre-AFVR)	98.05	23.06	27.80	4.74	73.81	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		23.88	23.89	0.01	74.17		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW3	2/10/13 (pre-AFVR)	100.44	--	26.56	--	73.88	34	15
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	26.56	--	73.88		
12175-MW6	2/10/13 (pre-AFVR)	99.82	--	26.01	--	73.81	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	26.03	--	73.79		
12175-MW15	2/10/13 (pre-AFVR)	98.47	--	25.24	--	73.23	27	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	25.23	--	73.24		
12175-MW1	3/12/2013 (gauging event)	98.51	22.42	27.00	4.58	74.95	35	15
12175-MW2	3/12/2013 (gauging event)	100.42	25.53	25.56	0.03	74.88	34	15
12175-MW4	3/12/2013 (gauging event)	98.61	23.82	24.12	0.30	74.72	29	10
12175-MW5	3/12/2013 (gauging event)	98.05	22.65	24.35	1.70	74.98	29	10
12175-MW19	3/12/2013 (gauging event)	100.01	24.53	27.95	3.42	74.63	28	10
12175-MW24	3/12/2013 (gauging event)	100.23	--	25.37	--	74.86	30	10
12175-MW25	3/12/2013 (gauging event)	99.95	24.18	28.02	3.84	74.81	30	10
12175-MW26	3/12/2013 (gauging event)	99.89	--	26.01	--	73.88	30	10

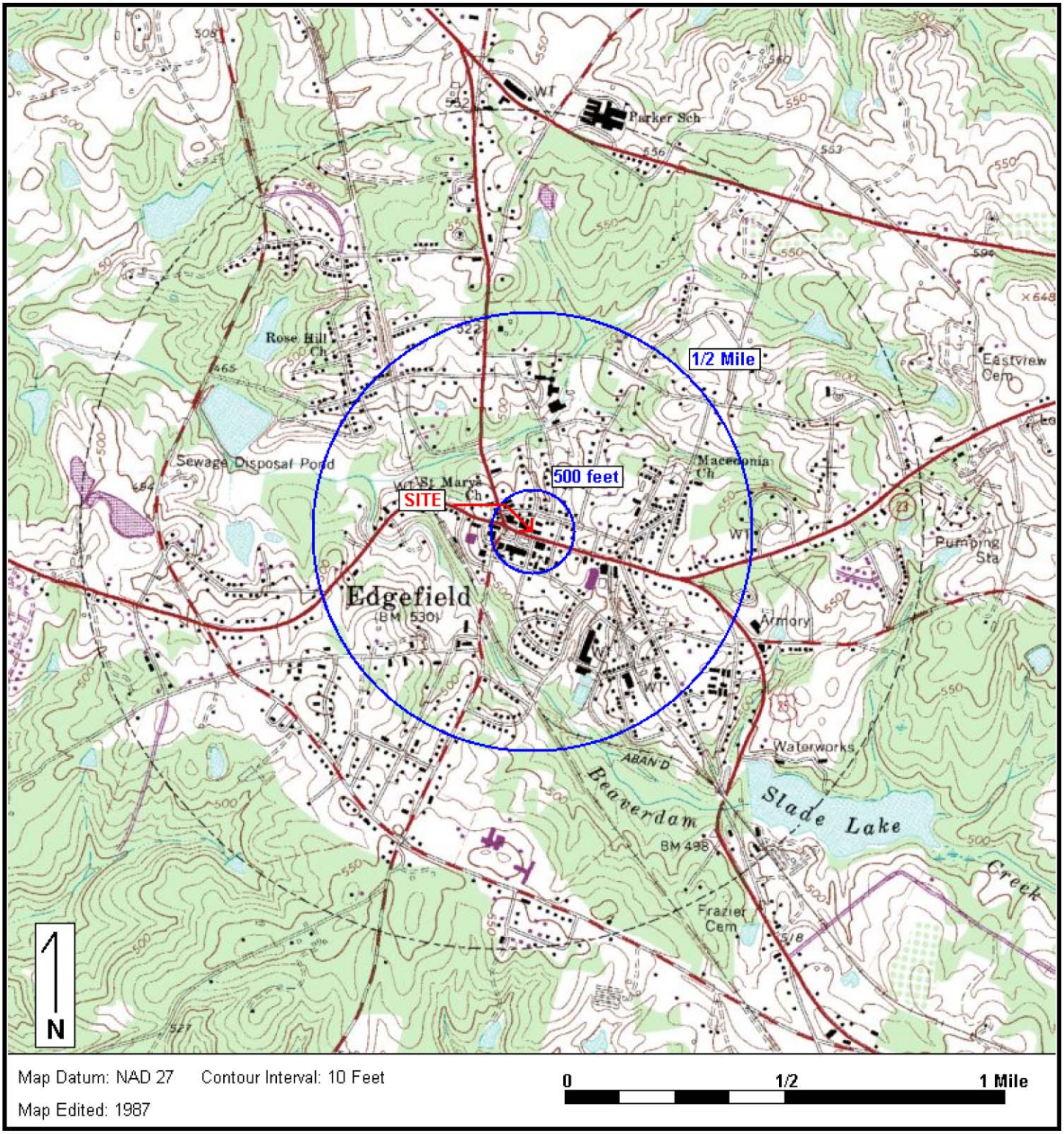
Notes:
1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product, where present, with an assumed density of 0.75 g/cm^3.
3. NM represents Not Measured.

FIGURES

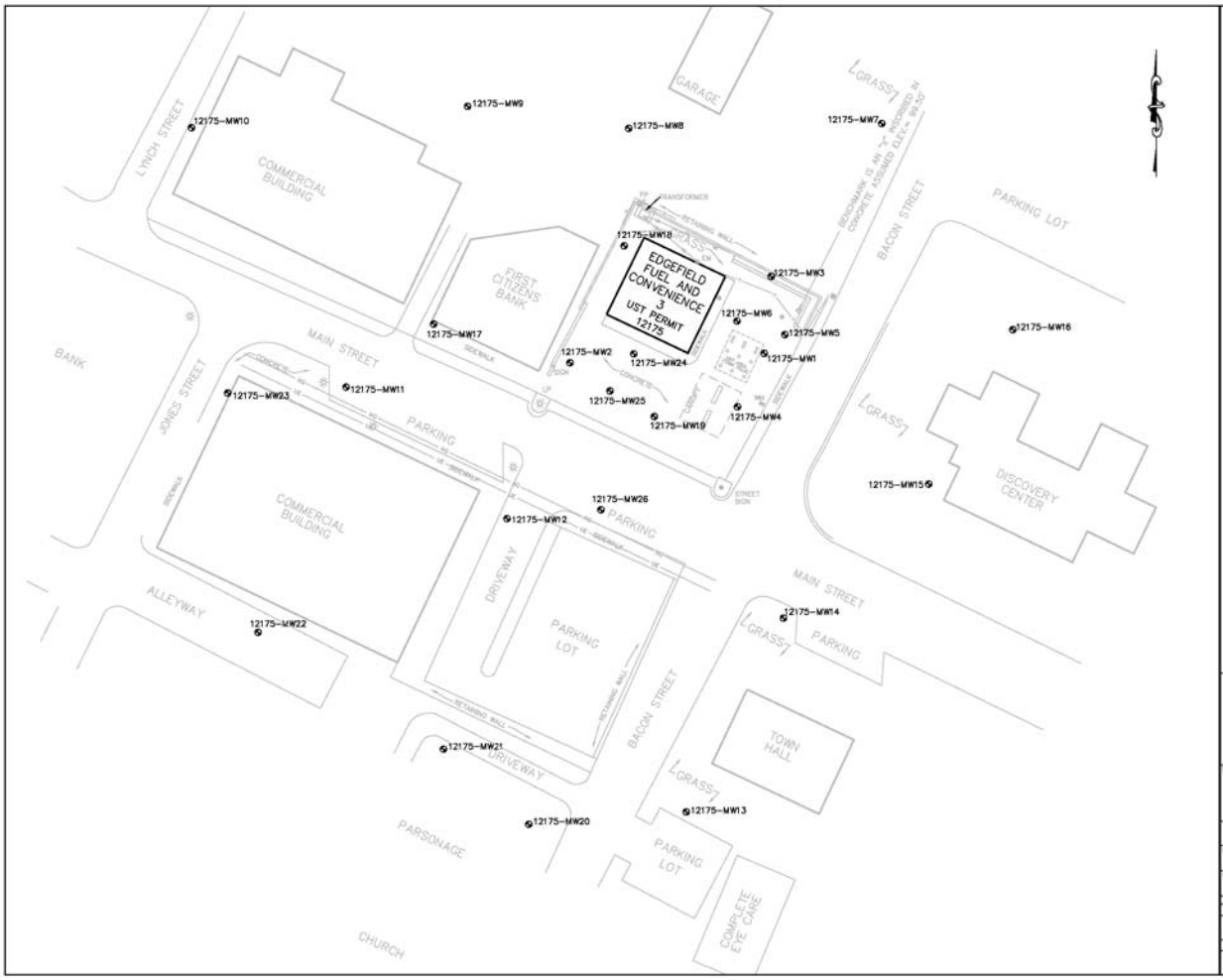
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- 12175-MW Shallow (Water Table) Monitoring Well

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 03-13-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	CK
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	3/13/13	14-211631	2

APPENDIX A

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – February 9-10, 2013

APPENDIX A
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	A. Williamson
Date:	2/9/13-2/10/13		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Yes	

Measurements After AFVR Event

VT Tank Product volume	Sheen	gallons
VT Tank Water volume	1,675	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
12175-MW2	26.27	27.30	NP	27.20	NP	27.25	27.75
12175-MW19	25.19	27.92	NP	27.05	26.70	26.80	28.50
12175-MW25	24.92	29.61	NP	27.83	NP	26.41	30.00
12175-MW4	23.90	28.85	24.06	28.23	24.06	28.21	--
12175-MW24	NP	26.35	NP	26.54	NP	26.57	--
12175-MW26	NP	27.06	NP	27.11	NP	27.12	--

Notes:
NP denotes no measurable free product.
NM denotes not measured.

APPENDIX A
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	2/9/13-2/10/13	Subcontractor	A&D

Measurements During AFVR Event

	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW4		12175-MW24		12175-MW26	
Time	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
6:45											
7:00	3,337	127.8	6.2	>10,000	20	NM	NM	NM	NM	NM	NM
7:15	3,639	141.4	4.4	>10,000	20	NM	0.20	NM	2.20	NM	0.50
7:30	3,614	148.1	3.9	>10,000	20	NM	NM	NM	NM	NM	NM
7:45	3,397	152.8	3.4	>10,000	20	NM	0.20	NM	2.20	NM	0.75
8:00	3,490	151.9	3.7	>10,000	20	NM	NM	NM	NM	NM	NM
8:15	3,384	157.5	3.3	>10,000	20	NM	0.25	NM	2.20	NM	0.85
8:30	3,496	158.9	3.4	>10,000	20	NM	NM	NM	NM	NM	NM
8:45	3,254	161.8	3.3	>10,000	22	NM	0.25	NM	2.40	NM	0.85
9:15	3,505	163.9	3.2	>10,000	22	NM	0.25	NM	2.40	NM	0.85
9:45	3,823	169.0	3.3	>10,000	22	NM	0.25	NM	2.40	NM	0.85
10:15	3,553	174.4	2.5	>10,000	24	NM	0.25	NM	2.40	NM	1.00
10:45	3,645	177.6	2.4	>10,000	24	NM	0.25	NM	2.40	NM	1.00
11:15	3,513	175.6	2.7	>10,000	24	NM	0.30	NM	2.60	NM	0.95
11:45	3,398	177.3	2.3	>10,000	24	NM	0.25	NM	2.60	NM	0.95
12:15	3,371	182.7	0.3	>10,000	24	NM	0.25	NM	2.60	NM	0.85
12:45	3,898	182.1	2.0	10,000	24	NM	0.25	NM	2.80	NM	0.85
13:15	3,885	182.1	1.8	9,600	24	NM	0.30	NM	2.80	NM	0.85
13:45	3,857	188.8	1.4	9,500	24	NM	0.35	NM	2.80	NM	0.85
14:15	3,614	189.7	1.3	9,300	24	NM	0.35	NM	3.00	NM	1.00
14:45	3,244	192.4	1.1	9,200	24	NM	0.35	NM	2.80	NM	0.85
15:15	3,277	195.4	0.9	9,000	24	NM	0.25	NM	2.80	NM	0.85

APPENDIX A
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	2/9/13-2/10/13	Subcontractor	A&D

Measurements During AFVR Event (continued)

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW4		12175-MW24		12175-MW26	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
15:45	3,427	188.1	1.1	8,600	24	NM	0.25	NM	3.00	NM	0.90
16:15	3,722	187.3	1.1	8,500	24	NM	0.26	NM	3.00	NM	1.00
16:45	3,387	186.6	1.1	8,200	24	NM	0.25	NM	3.00	NM	1.00
17:15	3,228	181.4	1.3	7,800	24	NM	0.25	NM	3.00	NM	0.95
17:45	3,641	182.7	1.2	7,800	22	NM	0.25	NM	3.00	NM	1.00
18:15	3,482	182.1	1.5	7,400	22	NM	0.25	NM	3.00	NM	1.10
18:45	3,387	182.5	1.4	7,400	22	NM	0.25	NM	3.00	NM	1.00
19:15	4,255	181.0	1.5	7,300	21	NM	0.25	NM	3.70	NM	1.40
19:45	3,564	174.0	2.4	7,200	21	NM	0.25	NM	3.60	NM	1.40
20:15	3,645	176.0	2.4	7,200	21	NM	0.25	NM	3.60	NM	1.40
20:45	3,719	176.0	2.4	7,000	21	NM	0.25	NM	3.60	NM	1.40
21:15	3,851	176.0	2.4	6,400	21	NM	0.25	NM	3.60	NM	1.40
21:45	3,921	175.0	2.4	6,600	21	NM	0.25	NM	3.60	NM	1.40
22:15	3,738	175.0	2.3	6,400	21	NM	0.25	NM	3.60	NM	1.40
22:45	3,685	173.0	2.3	6,400	21	NM	0.25	NM	3.60	NM	1.40
23:15	3,670	170.0	2.2	6,200	21	NM	0.25	NM	3.60	NM	1.40
23:45	3,745	167.0	2.2	6,000	21	NM	0.25	NM	3.60	NM	1.40
0:15	3,572	170.0	2.2	6,000	21	NM	0.26	NM	3.60	NM	1.40
0:45	3,688	170.0	2.2	5,800	21	NM	0.26	NM	3.60	NM	1.40
1:15	3,945	169.0	2.2	5,700	21	NM	0.26	NM	3.60	NM	1.40
1:45	3,672	169.0	2.2	5,600	21	NM	0.26	NM	3.60	NM	1.40
2:15	3,844	167.0	2.0	6,200	21	NM	0.26	NM	3.60	NM	1.40

APPENDIX A
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	2/9/13-2/10/13	Subcontractor	A&D

Measurements During AFVR Event (continued)

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW4		12175-MW24		12175-MW26	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
2:45	4,721	177.0	2.1	6,200	21	NM	0.26	NM	3.60	NM	1.40
3:15	4,950	175.0	2.0	6,200	21	NM	0.26	NM	3.60	NM	1.40
3:45	4,971	176.0	2.0	6,200	21	NM	0.26	NM	3.60	NM	1.40
4:15	5,047	178.0	2.2	6,000	21	NM	0.26	NM	3.60	NM	1.40
4:45	3,736	171.1	2.1	6,000	21	NM	0.26	NM	3.60	NM	1.40
5:15	3,495	170.0	2.0	6,600	21	NM	0.26	NM	3.60	NM	1.40
5:45	4,322	172.0	2.1	6,200	21	NM	0.26	NM	3.60	NM	1.40
6:15	4,775	175.0	1.9	6,000	21	NM	0.26	NM	3.60	NM	1.40
6:45	4,629	178.0	1.9	6,400	21	NM	0.26	NM	3.60	NM	1.40

APPENDIX A
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 27.85
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-MW2, -MW19, -MW25
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Q_{std})

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	6:45	Connections to 12175-MW2, 12175-MW19 & 12175-MW25. Stingers set at							
		27.75, 28.50 & 30.00 feet below top of casing, respectively.							
02/09/13	7:00	20	3,337	6	127.8	6.2	0.005663	0.009	583
02/09/13	7:15	20	3,639	6	141.4	4.4	0.005744	0.009	622
02/09/13	7:30	20	3,614	6	148.1	3.9	0.006033	0.010	610
02/09/13	7:45	20	3,397	6	152.8	3.4	0.005906	0.009	569
02/09/13	8:00	20	3,490	6	151.9	3.7	0.006291	0.010	585
02/09/13	8:15	20	3,384	6	157.5	3.3	0.006431	0.010	562
02/09/13	8:30	20	3,496	6	158.9	3.4	0.006857	0.011	579
02/09/13	8:45	22	3,254	6	161.8	3.3	0.007152	0.011	536
02/09/13	9:15	22	3,505	6	163.9	3.2	0.007272	0.012	576
02/09/13	9:45	22	3,823	6	169.0	3.3	0.008461	0.013	622
02/09/13	10:15	24	3,553	6	174.4	2.5	0.007237	0.011	574
02/09/13	10:45	24	3,645	6	177.6	2.4	0.007469	0.012	586
02/09/13	11:15	24	3,513	6	175.6	2.7	0.008041	0.013	566
02/09/13	11:45	24	3,398	6	177.3	2.3	0.007106	0.011	547
02/09/13	12:15	24	3,371	6	182.7	0.3	0.001035	0.002	543
02/09/13	12:45	24	3,898	6	182.1	2.0	0.006871	0.011	623
02/09/13	13:15	24	3,885	6	182.1	1.8	0.006177	0.010	621
02/09/13	13:45	24	3,857	6	188.8	1.4	0.005553	0.009	611
02/09/13	14:15	24	3,614	6	189.7	1.3	0.005254	0.008	572
02/09/13	14:45	24	3,244	6	192.4	1.1	0.004705	0.007	512
02/09/13	15:15	24	3,277	6	195.4	0.9	0.004097	0.007	515
02/09/13	15:45	24	3,427	6	188.1	1.1	0.004289	0.007	544
02/09/13	16:15	24	3,722	6	187.3	1.1	0.004215	0.007	592
02/09/13	16:45	24	3,387	6	186.6	1.1	0.004151	0.007	539
02/09/13	17:15	24	3,228	6	181.4	1.3	0.004381	0.007	518
02/09/13	17:45	22	3,641	6	182.7	1.2	0.004160	0.007	583
02/09/13	18:15	22	3,482	6	182.1	1.5	0.005139	0.008	558
02/09/13	18:45	22	3,387	6	182.5	1.4	0.004837	0.008	542
02/09/13	19:15	21	4,255	6	181.0	1.5	0.005015	0.008	683
02/09/13	19:45	21	3,564	6	174.0	2.4	0.006881	0.011	576
02/09/13	20:15	21	3,645	6	176.0	2.4	0.007203	0.011	587
02/09/13	20:45	21	3,719	6	176.0	2.4	0.007203	0.011	599
02/09/13	21:15	21	3,851	6	176.0	2.4	0.007203	0.011	621
02/09/13	21:45	21	3,921	6	175.0	2.4	0.007040	0.011	633
02/09/13	22:15	21	3,738	6	175.0	2.3	0.006744	0.011	604
02/09/13	22:45	21	3,685	6	173.0	2.3	0.006442	0.010	597

APPENDIX A
EMISSIONS CALCULATIONS

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Q_{std}) (continued)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
02/09/13	23:15	21	3,670	6	170.0	2.2	0.005747	0.009	598
02/09/13	23:45	21	3,745	6	167.0	2.2	0.005359	0.009	614
02/10/13	0:15	21	3,572	6	170.0	2.2	0.005747	0.009	582
02/10/13	0:45	21	3,688	6	170.0	2.2	0.005747	0.009	601
02/10/13	1:15	21	3,945	6	169.0	2.2	0.005615	0.009	644
02/10/13	1:45	21	3,672	6	169.0	2.2	0.005615	0.009	600
02/10/13	2:15	21	3,844	6	167.0	2.0	0.004868	0.008	631
02/10/13	2:45	21	4,721	6	177.0	2.1	0.006437	0.010	761
02/10/13	3:15	21	4,950	6	175.0	2.0	0.005856	0.009	801
02/10/13	3:45	21	4,971	6	176.0	2.0	0.005561	0.009	803
02/10/13	4:15	21	5,047	6	178.0	2.2	0.006902	0.011	811
02/10/13	4:45	21	3,736	6	171.1	2.1	0.005625	0.009	608
02/10/13	5:15	21	3,495	6	170.0	2.0	0.00522	0.008	570
02/10/13	5:45	21	4,322	6	172.0	2.1	0.005743	0.009	703
02/10/13	6:15	21	4,775	6	175.0	1.9	0.00556	0.009	773
02/10/13	6:45	21	4,629	6	178.0	1.9	0.005952	0.009	745
Averages		22	3,762	6	173.1	2.3	0.005881	0.009	610

NOTES

Qstd = Flow at DSCFM

Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)

Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)

Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)

Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)

Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping

B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) at an elevation of 526 feet above sea level.

B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX A
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 9-Feb-2013

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	583	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.24	13.01	3.25
30	622	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.98	13.86	3.47
45	610	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.76	13.61	3.40
60	569	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	10.97	12.70	3.17
75	585	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.28	13.06	3.26
90	562	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	10.84	12.54	3.14
105	579	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.16	12.92	3.23
120	536	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	10.34	11.96	2.99
150	576	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.10	12.84	6.42
180	622	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.98	13.87	6.93
210	574	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.06	12.80	6.40
240	586	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	11.29	13.06	6.53
270	566	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	10.90	12.62	6.31
300	547	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	10.53	12.19	6.10
330	543	>10,000	>10,000	10,110	1.02	10,312	5,145	0.00032	10.46	12.11	6.05
360	623	10,000	10,000	10,110	1.02	10,312	5,145	0.00032	12.00	13.89	6.94
390	621	9,600	9,600	9,695	1.02	9,889	4,934	0.00031	11.48	13.29	6.64
420	611	9,500	9,500	9,585	1.02	9,776	4,878	0.00030	11.16	12.92	6.46
450	572	9,300	9,300	9,378	1.02	9,566	4,773	0.00030	10.22	11.83	5.92
480	512	9,200	9,200	9,269	1.02	9,455	4,718	0.00029	9.04	10.46	5.23
510	515	9,000	9,000	9,059	1.02	9,240	4,611	0.00029	8.89	10.29	5.15
540	544	8,600	8,600	8,659	1.02	8,832	4,407	0.00028	8.99	10.40	5.20
570	592	8,500	8,500	8,557	1.02	8,729	4,355	0.00027	9.66	11.18	5.59
600	539	8,200	8,200	8,255	1.02	8,420	4,201	0.00026	8.49	9.82	4.91
630	518	7,800	7,800	7,855	1.02	8,012	3,998	0.00025	7.76	8.98	4.49
660	583	7,800	7,800	7,852	1.02	8,009	3,996	0.00025	8.73	10.11	5.05
690	558	7,400	7,400	7,461	1.02	7,610	3,797	0.00024	7.93	9.18	4.59
720	542	7,400	7,400	7,457	1.02	7,606	3,795	0.00024	7.71	8.92	4.46
750	683	7,300	7,300	7,359	1.02	7,506	3,745	0.00023	9.58	11.08	5.54
780	576	7,200	7,200	7,279	1.02	7,425	3,705	0.00023	8.00	9.26	4.63
810	587	7,200	7,200	7,283	1.02	7,429	3,707	0.00023	8.16	9.44	4.72
840	599	7,000	7,000	7,081	1.02	7,222	3,604	0.00022	8.09	9.36	4.68
870	621	6,400	6,400	6,474	1.02	6,603	3,295	0.00021	7.66	8.86	4.43
900	633	6,600	6,600	6,674	1.02	6,808	3,397	0.00021	8.05	9.32	4.66
930	604	6,400	6,400	6,469	1.02	6,599	3,292	0.00021	7.45	8.62	4.31
960	597	6,400	6,400	6,466	1.02	6,595	3,291	0.00021	7.36	8.52	4.26
990	598	6,200	6,200	6,257	1.02	6,382	3,184	0.00020	7.14	8.26	4.13
1020	614	6,000	6,000	6,052	1.02	6,173	3,080	0.00019	7.08	8.20	4.10
1050	582	6,000	6,000	6,055	1.02	6,176	3,082	0.00019	6.72	7.78	3.89
1080	601	5,800	5,800	5,853	1.02	5,970	2,979	0.00019	6.71	7.77	3.88
1110	644	5,700	5,700	5,751	1.02	5,866	2,927	0.00018	7.07	8.18	4.09
1140	600	5,600	5,600	5,650	1.02	5,763	2,876	0.00018	6.46	7.48	3.74
1170	631	6,200	6,200	6,248	1.02	6,373	3,180	0.00020	7.51	8.69	4.35

APPENDIX A
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS (continued)

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 9-Feb-2013

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
1200	761	6,200	6,200	6,264	1.02	6,389	3,188	0.00020	9.08	10.51	5.26
1230	801	6,200	6,200	6,258	1.02	6,383	3,185	0.00020	9.55	11.05	5.53
1260	803	6,200	6,200	6,255	1.02	6,380	3,184	0.00020	9.58	11.08	5.54
1290	811	6,000	6,000	6,066	1.02	6,188	3,087	0.00019	9.38	10.86	5.43
1320	608	6,000	6,000	6,054	1.02	6,175	3,081	0.00019	7.02	8.12	4.06
1350	570	6,600	6,600	6,655	1.02	6,788	3,387	0.00021	7.24	8.37	4.19
1380	703	6,200	6,200	6,257	1.02	6,382	3,184	0.00020	8.38	9.70	4.85
1410	773	6,000	6,000	6,053	1.02	6,175	3,081	0.00019	8.92	10.32	5.16
1440	745	6,400	6,400	6,461	1.02	6,590	3,288	0.00021	9.18	10.62	5.31
Averages	610	7,963	7,963	8,041	1.02	8,202	4,092	0.00026	788.57	10.69	4.85

Total emissions in pounds: 252.03
Total emissions in gallons: 40.29

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

APPENDIX B

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – February 10-11, 2013

APPENDIX B
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	A. Williamson
Date:	2/10/13-2/11/13		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	18	inches
Is Tank Empty & Clean (Y/N)	Yes	

Measurements After AFVR Event

VT Tank Product volume	Sheen	gallons
VT Tank Water volume	1,525	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
12175-MW1	23.47	28.71	NM	NM	24.63	25.23	29.00
12175-MW4	24.06	28.23	NM	NM	25.11	25.17	28.75
12175-MW5	23.06	27.80	NM	NM	23.88	23.89	28.25
12175-MW3	NP	26.56	NM	NM	NP	26.56	--
12175-MW6	NP	26.01	NM	NM	NP	26.03	--
12175-MW15	NP	25.24	NM	NM	NP	25.23	--

Notes:
NP denotes no measurable free product.
NM denotes not measured.

APPENDIX B
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	2/10/13-2/11/13	Subcontractor	A&D

Measurements During AFVR Event

	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW3		12175-MW6		12175-MW15	
Time	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
7:20											
7:35	3,474	154.9	2.5	10,000	22	NM	NM	NM	NM	NM	NM
7:50	3,437	159.1	2.3	8,500	22	NM	0.00	NM	0.60	NM	0.00
8:05	3,193	159.6	2.3	8,000	22	NM	NM	NM	NM	NM	NM
8:20	3,276	161.8	2.3	7,500	22	NM	0.00	NM	0.60	NM	0.00
8:35	3,264	162.5	2.2	7,400	22	NM	NM	NM	NM	NM	NM
8:50	3,299	169.3	1.7	7,400	22	NM	0.00	NM	0.60	NM	0.00
9:05	3,527	170.2	1.9	7,400	22	NM	NM	NM	NM	NM	NM
9:20	3,207	168.3	2.0	7,200	22	NM	0.00	NM	0.60	NM	0.00
9:50	3,194	167.9	2.0	6,900	22	NM	0.00	NM	0.40	NM	0.00
10:20	3,206	172.8	1.6	6,500	22	NM	0.00	NM	0.50	NM	0.00
10:50	3,342	178.0	1.2	6,600	22	NM	0.00	NM	0.50	NM	0.00
11:20	3,387	180.3	1.4	6,400	24	NM	0.00	NM	0.40	NM	0.00
11:50	3,160	181.6	1.5	6,400	24	NM	0.00	NM	0.40	NM	0.00
12:20	3,501	180.9	1.4	6,400	24	NM	0.05	NM	0.40	NM	0.00
12:50	3,220	180.3	1.9	6,400	24	NM	0.05	NM	0.40	NM	0.00
13:20	3,156	181.9	1.9	6,400	24	NM	0.05	NM	0.40	NM	0.00
13:50	3,421	179.1	2.1	6,400	24	NM	0.05	NM	0.40	NM	0.00
14:20	3,507	179.6	2.2	6,000	24	NM	0.05	NM	0.40	NM	0.00
14:50	3,558	183.7	1.8	5,400	24	NM	0.05	NM	0.40	NM	0.00
15:20	3,676	180.1	2.2	5,400	24	NM	0.05	NM	0.40	NM	0.00
15:50	3,654	178.0	2.4	5,500	24	NM	0.05	NM	0.40	NM	0.00

APPENDIX B
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	2/10/13-2/11/13	Subcontractor	A&D

Measurements During AFVR Event (continued)

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW3		12175-MW6		12175-MW15	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
16:20	3,333	181.4	2.4	5,300	24	NM	0.05	NM	0.40	NM	0.00
16:50	3,400	182.4	2.1	5,000	24	NM	0.05	NM	0.40	NM	0.00
17:20	3,677	181.8	2.2	4,800	24	NM	0.05	NM	0.40	NM	0.00
17:50	3,384	178.5	2.5	4,800	24	NM	0.05	NM	0.40	NM	0.00
18:20	3,385	178.3	2.4	4,700	24	NM	0.05	NM	0.40	NM	0.00
18:50	3,188	176.4	2.7	4,500	24	NM	0.00	NM	0.40	NM	0.00
19:20	3,602	177.6	2.7	4,500	24	NM	0.00	NM	0.40	NM	0.00
19:50	3,567	181.0	2.4	4,600	21	NM	0.23	NM	0.03	NM	0.00
20:20	3,633	181.0	2.4	5,000	21	NM	0.23	NM	0.03	NM	0.00
20:50	3,654	181.0	2.4	4,600	21	NM	0.23	NM	0.03	NM	0.00
21:20	3,584	179.0	2.4	4,600	21	NM	0.23	NM	0.03	NM	0.00
21:50	3,597	176.0	2.7	4,800	21	NM	0.23	NM	0.03	NM	0.00
22:20	3,649	176.0	2.8	4,200	21	NM	0.23	NM	0.03	NM	0.00
22:50	3,660	177.0	2.6	4,600	21	NM	0.23	NM	0.03	NM	0.00
23:20	3,570	177.0	2.6	4,600	21	NM	0.23	NM	0.03	NM	0.00
23:50	3,658	177.0	2.6	4,600	21	NM	0.23	NM	0.03	NM	0.00
0:20	3,670	178.0	2.7	4,200	21	NM	0.23	NM	0.03	NM	0.00
0:50	3,645	178.0	2.7	4,600	21	NM	0.23	NM	0.03	NM	0.00
1:20	3,568	179.0	2.7	4,400	21	NM	0.23	NM	0.03	NM	0.00
1:50	3,661	181.0	2.4	4,400	21	NM	0.23	NM	0.03	NM	0.00
2:20	3,577	181.0	2.4	4,400	21	NM	0.23	NM	0.03	NM	0.00
2:50	3,650	181.0	2.4	4,200	21	NM	0.23	NM	0.03	NM	0.00

APPENDIX B
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	2/10/13-2/11/13	Subcontractor	A&D

Measurements During AFVR Event (continued)

	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW3		12175-MW6		12175-MW15	
Time	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
3:20	3,642	181.0	2.1	4,100	21	NM	0.23	NM	0.03	NM	0.00
3:50	3,668	181.0	2.1	4,600	21	NM	0.23	NM	0.03	NM	0.00
4:20	AFVR ended at 04:00 due to full truck.										
4:50											
5:20											
5:50											
6:20											
6:50											
7:20											

APPENDIX B
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 27.09
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-MW1, -MW4, -MW5
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Q_{std})

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	7:20	Connections to 12175-MW1, 12175-MW4 & 12175-MW5. Stingers set at 29.00,							
		28.75 & 28.25 feet below top of casing, respectively.							
02/09/13	7:35	22	3,474	6	154.9	2.5	0.004561	0.007	581
02/09/13	7:50	22	3,437	6	159.1	2.3	0.004645	0.007	571
02/09/13	8:05	22	3,193	6	159.6	2.3	0.004701	0.007	530
02/09/13	8:20	22	3,276	6	161.8	2.3	0.004955	0.008	542
02/09/13	8:35	22	3,264	6	162.5	2.2	0.004818	0.008	539
02/09/13	8:50	22	3,299	6	169.3	1.7	0.004360	0.007	540
02/09/13	9:05	22	3,527	6	170.2	1.9	0.004980	0.008	576
02/09/13	9:20	22	3,207	6	168.3	2.0	0.005018	0.008	525
02/09/13	9:50	22	3,194	6	167.9	2.0	0.004971	0.008	523
02/09/13	10:20	22	3,206	6	172.8	1.6	0.004447	0.007	522
02/09/13	10:50	22	3,342	6	178.0	1.2	0.003746	0.006	540
02/09/13	11:20	24	3,387	6	180.3	1.4	0.004606	0.007	544
02/09/13	11:50	24	3,160	6	181.6	1.5	0.005083	0.008	506
02/09/13	12:20	24	3,501	6	180.9	1.4	0.004668	0.007	562
02/09/13	12:50	24	3,220	6	180.3	1.9	0.006267	0.010	516
02/09/13	13:20	24	3,156	6	181.9	1.9	0.006495	0.010	504
02/09/13	13:50	24	3,421	6	179.1	2.1	0.006750	0.011	549
02/09/13	14:20	24	3,507	6	179.6	2.2	0.007155	0.011	562
02/09/13	14:50	24	3,558	6	183.7	1.8	0.006400	0.010	567
02/09/13	15:20	24	3,676	6	180.1	2.2	0.007236	0.011	589
02/09/13	15:50	24	3,654	6	178.0	2.4	0.007537	0.012	587
02/09/13	16:20	24	3,333	6	181.4	2.4	0.008136	0.013	532
02/09/13	16:50	24	3,400	6	182.4	2.1	0.007267	0.012	542
02/09/13	17:20	24	3,677	6	181.8	2.2	0.007516	0.012	587
02/09/13	17:50	24	3,384	6	178.5	2.5	0.007944	0.013	543
02/09/13	18:20	24	3,385	6	178.3	2.4	0.007588	0.012	543
02/09/13	18:50	24	3,188	6	176.4	2.7	0.008189	0.013	513
02/09/13	19:20	24	3,602	6	177.6	2.7	0.008415	0.013	578
02/09/13	19:50	21	3,567	6	181.0	2.4	0.008063	0.013	570
02/09/13	20:20	21	3,633	6	181.0	2.4	0.008063	0.013	580
02/09/13	20:50	21	3,654	6	181.0	2.4	0.008063	0.013	583
02/09/13	21:20	21	3,584	6	179.0	2.4	0.007709	0.012	574
02/09/13	21:50	21	3,597	6	176.0	2.7	0.008115	0.013	579
02/09/13	22:20	21	3,649	6	176.0	2.8	0.008419	0.013	587
02/09/13	22:50	21	3,660	6	177.0	2.6	0.007990	0.013	588

APPENDIX B
EMISSIONS CALCULATIONS

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Q_{std}) (continued)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
02/09/13	23:20	21	3,570	6	177.0	2.6	0.007990	0.013	574
02/09/13	23:50	21	3,658	6	177.0	2.6	0.007990	0.013	588
02/09/13	0:20	21	3,670	6	178.0	2.7	0.008173	0.013	589
02/10/13	0:50	21	3,645	6	178.0	2.7	0.008173	0.013	585
02/10/13	1:20	21	3,568	6	179.0	2.7	0.008360	0.013	571
02/10/13	1:50	21	3,661	6	181.0	2.4	0.008063	0.013	585
02/10/13	2:20	21	3,577	6	181.0	2.4	0.008063	0.013	571
02/10/13	2:50	21	3,650	6	181.0	2.4	0.008063	0.013	583
02/10/13	3:20	21	3,642	6	181.0	2.1	0.007044	0.011	582
02/10/13	3:50	21	3,668	6	181.0	2.1	0.007044	0.011	587
02/10/13	4:20	AFVR ended at 04:00 due to full truck.							
02/10/13	4:50								
02/10/13	5:20								
02/10/13	5:50								
02/10/13	6:20								
02/10/13	6:50								
02/10/13	7:20								
Averages		22	3,473	6	176.3	2.2	0.006752	0.011	560

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) at an elevation of 526 feet above sea level.
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX B
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 9-Feb-2013

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	581	10,000	10,000	10,073	1.02	10,275	5,127	0.00032	11.17	12.92	3.23
30	571	8,500	8,500	8,563	1.02	8,735	4,358	0.00027	9.33	10.79	2.70
45	530	8,000	8,000	8,060	1.02	8,221	4,102	0.00026	8.15	9.43	2.36
60	542	7,500	7,500	7,560	1.02	7,711	3,847	0.00024	7.81	9.04	2.26
75	539	7,400	7,400	7,457	1.02	7,606	3,795	0.00024	7.67	8.87	2.22
90	540	7,400	7,400	7,452	1.02	7,601	3,792	0.00024	7.67	8.87	2.22
105	576	7,400	7,400	7,459	1.02	7,608	3,796	0.00024	8.19	9.47	2.37
120	525	7,200	7,200	7,258	1.02	7,403	3,694	0.00023	7.26	8.41	2.10
150	523	6,900	6,900	6,955	1.02	7,094	3,540	0.00022	6.94	8.03	4.01
180	522	6,500	6,500	6,546	1.02	6,677	3,332	0.00021	6.51	7.53	3.77
210	540	6,600	6,600	6,640	1.02	6,772	3,379	0.00021	6.83	7.91	3.95
240	544	6,400	6,400	6,447	1.02	6,576	3,281	0.00020	6.69	7.74	3.87
270	506	6,400	6,400	6,452	1.02	6,581	3,284	0.00021	6.23	7.21	3.60
300	562	6,400	6,400	6,448	1.02	6,577	3,282	0.00020	6.91	8.00	4.00
330	516	6,400	6,400	6,464	1.02	6,594	3,290	0.00021	6.36	7.36	3.68
360	504	6,400	6,400	6,467	1.02	6,596	3,291	0.00021	6.22	7.20	3.60
390	549	6,400	6,400	6,469	1.02	6,599	3,292	0.00021	6.77	7.84	3.92
420	562	6,000	6,000	6,069	1.02	6,190	3,089	0.00019	6.50	7.52	3.76
450	567	5,400	5,400	5,455	1.02	5,564	2,776	0.00017	5.90	6.83	3.41
480	589	5,400	5,400	5,463	1.02	5,572	2,780	0.00017	6.13	7.09	3.55
510	587	5,500	5,500	5,566	1.02	5,678	2,833	0.00018	6.23	7.20	3.60
540	532	5,300	5,300	5,369	1.02	5,476	2,733	0.00017	5.44	6.30	3.15
570	542	5,000	5,000	5,058	1.02	5,159	2,574	0.00016	5.23	6.05	3.03
600	587	4,800	4,800	4,858	1.02	4,955	2,472	0.00015	5.44	6.29	3.15
630	543	4,800	4,800	4,861	1.02	4,958	2,474	0.00015	5.03	5.82	2.91
660	543	4,700	4,700	4,757	1.02	4,852	2,421	0.00015	4.93	5.70	2.85
690	513	4,500	4,500	4,559	1.02	4,650	2,320	0.00014	4.46	5.16	2.58
720	578	4,500	4,500	4,561	1.02	4,652	2,321	0.00014	5.02	5.81	2.91
750	570	4,600	4,600	4,659	1.02	4,753	2,371	0.00015	5.06	5.85	2.93
780	580	5,000	5,000	5,065	1.02	5,166	2,578	0.00016	5.60	6.48	3.24
810	583	4,600	4,600	4,659	1.02	4,753	2,371	0.00015	5.18	6.00	3.00
840	574	4,600	4,600	4,657	1.02	4,750	2,370	0.00015	5.10	5.90	2.95
870	579	4,800	4,800	4,862	1.02	4,960	2,475	0.00015	5.37	6.21	3.10
900	587	4,200	4,200	4,257	1.02	4,342	2,166	0.00014	4.76	5.51	2.76
930	588	4,600	4,600	4,659	1.02	4,752	2,371	0.00015	5.22	6.05	3.02
960	574	4,600	4,600	4,659	1.02	4,752	2,371	0.00015	5.10	5.90	2.95
990	588	4,600	4,600	4,659	1.02	4,752	2,371	0.00015	5.22	6.04	3.02
1020	589	4,200	4,200	4,255	1.02	4,340	2,166	0.00014	4.77	5.53	2.76
1050	585	4,600	4,600	4,660	1.02	4,753	2,372	0.00015	5.19	6.01	3.01
1080	571	4,400	4,400	4,459	1.02	4,548	2,269	0.00014	4.86	5.62	2.81
1110	585	4,400	4,400	4,457	1.02	4,546	2,268	0.00014	4.97	5.75	2.87
1140	571	4,400	4,400	4,457	1.02	4,546	2,268	0.00014	4.85	5.62	2.81
1170	583	4,200	4,200	4,254	1.02	4,339	2,165	0.00014	4.73	5.47	2.74

APPENDIX B
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS (continued)

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 9-Feb-2013

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
1200	582	4,100	4,100	4,146	1.02	4,229	2,110	0.00013	4.60	5.33	2.66
1230	587	4,600	4,600	4,652	1.02	4,745	2,368	0.00015	5.20	6.02	3.01
1260	AFVR ended at 1240 minutes due to tank capacity.										
1290											
1320											
1350											
1380											
1410											
1440											
Averages	560	5,649	5,649	5,707	1.02	5821	2,905	0.00018	904.06	7.02	3.08

Total emissions in pounds: 138.39
Total emissions in gallons: 22.12

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}$ lb-m^3/mg-$ft^3)$

$PMR_c = (C_c)(Q_{std})(60$ min/hr)

$PMR_g = (PMR_c)(M_g/M_{cg})$

PMR = (PMR_g)(#minutes/60)

APPENDIX C

Gauge Report – March 12, 2013

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convience 3 | Location: Edgefield, SC

Project No.: 14-211651 | Date: 3/12/13

Measured By: Phil Pike | Weather: Cloudy & 60°F

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Measured Well Depth (feet)	Volume Purged (gallons)
12175-MW1	22.42	27.00	4.58	-----	-----	-----
12175-MW2	25.53	25.56	0.03	-----	-----	-----
12175-MW4	23.82	24.12	0.30	-----	-----	-----
12175-MW5	22.65	24.35	1.70	-----	-----	-----
12175-MW19	24.53	27.95	3.42	-----	-----	-----
12175-MW24	-----	25.37	-----	-----	-----	-----
12175-MW25	24.18	28.02	3.84	-----	-----	-----
12175-MW26	-----	26.01	-----			

Remarks: Replaced 2 new well bolts in 12175-MW1

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

UST DOCKETING

MAR 22 2013

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

Re: QAPP Contractor Addendum Directive
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175
Release reported December 31, 2008
AFVR Report received March 19, 2013
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report. The report indicates the presence of chemicals of concern in the groundwater and soil.

To determine what risk the referenced release may pose to the environment and public health, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of recovery well installation and aggressive fluid and vapor recovery (AFVR) events as outlined in the UST Quality Assurance Program Plan (QAPP) is necessary. This scope of work should be conducted in accordance with the UST Quality Assurance Program Plan and must be conducted in compliance with all applicable regulations. A copy of the Agency's QAPP for the Underground Storage Tank Division is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm.

Three four-inch diameter recovery wells should be installed to aid in the removal of free product. One recovery well should be installed between monitoring wells MW-1 and MW-5; one should be installed between monitoring wells MW-19 and MW-25; and finally, one should be installed adjacent to monitoring well MW-2. Following the installation of these monitoring wells, three AFVR events should be conducted on each of the newly installed recovery wells. The AFVR events should be conducted for twelve hours on each well, and the events should be separated by 15 days. Thirty days after the last AFVR event, please gauge all monitoring and recovery wells.

Please have your contractor complete and submit the QAPP Contractor Addendum and Cost Agreement within thirty days of the date of this letter. Every component may not be necessary to complete the above scope of work. The State Underground Petroleum Environmental Response Bank (SUPERB) Account allowable cost for each component is included on the Assessment Component Cost Agreement Form. **Please note that technical and financial preapproval from the Agency must be issued before work begins.**

On all correspondence regarding this site, please reference UST Permit #12175. If you have questions or need additional information, feel free to call me at (803) 896-6633.

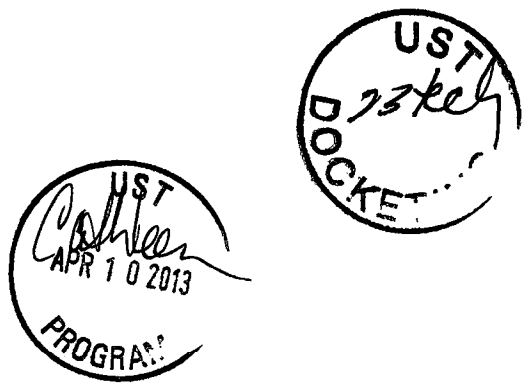
Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: ECS, Inc., PO Box 3528, Fort Mill, SC 29708
Technical File

12175



Appendix B: Contractor Addendum

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Edgefield Fuel & Convenience 3; UST Permit #12175

311 Main Street, Edgefield, SC

Prepared by:
Randall Hutchins
Environmental Compliance Services, Inc.
13504 South Point Blvd, Ste F
Charlotte, NC 28273

Date: April 9, 2013
Certified UST Site Rehabilitation Contractor #358
Environmental Compliance Services, Inc.

Approvals:

Cathleen Ridgley SC DHEC Project Manager	_____ Signature	Date_____
Randall Hutchins Contractor Project Manager	Randall Hutchins Signature	Date 4/9/2013
Kurt Blevins Site Rehabilitation Contractor	Kurt Blevins Signature	Date 4/9/2013
Craig L. Kennedy, PG Project Verifier/QA Manager	Craig L. Kennedy Signature	Date 4/9/2013

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A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Cathleen Ridgley	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6633	803-896-6245	ridglect@dhec.sc.gov
Kurt Blevins	Site Rehabilitation Contractor	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	kblevins@ecsconsult.com
Randall Hutchins	Contractor Project Manager	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	rhutchins@ecsconsult.com
Craig L. Kennedy, PG	Project Verifier/QA Manager	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	ckennedy@ecsconsult.com
Steve Taylor	Well Services/Driller	Geologic Exploration Inc. 176 Commerce Blvd Statesville, NC 28625	800-752-8853		staylor@gexnc.com

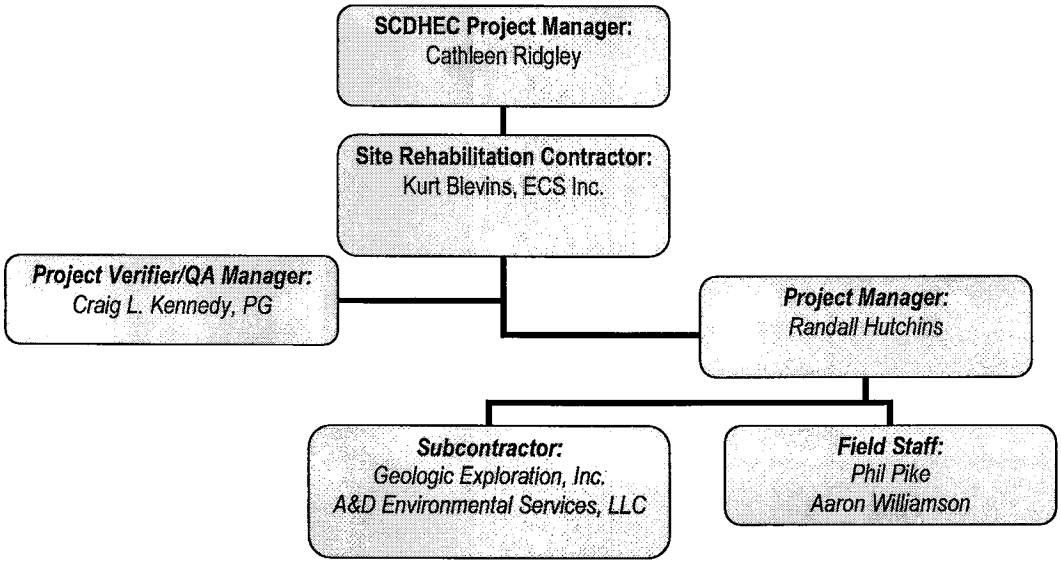
Table 1A Addendum Distribution List

A4 Project Organization

Role from the UST Master QAPP	Person in this Role for Project	Organization/Address	Telephone Number	Fax Number	Email Address
Project Manager	Cathleen Ridgley	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6633	803-896-6245	ridglect@dhec.sc.gov
Site Rehabilitation Contractor	Kurt Blevins	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	kblevins@ecsconsult.com
Contractor Project Manager	Randall Hutchins	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	rhutchins@ecsconsult.com
Well Services/Driller	Steve Taylor	Geologic Exploration Inc. 176 Commerce Blvd Statesville, NC 28625	800-752-8853	800-752-8853	staylor@gexnc.com
Investigative-Derived Waste Disposal Services	Bill Aikins	A&D Environmental Services, LLC 1741 Calks Ferry Road Lexington, SC 29703	803-957-9175	803-821-6021	baikins@adenviro.com
Project Verifier/QA Manager	Craig L. Kennedy, PG	ECS Inc. PO Box 3528 Fort Mill, SC 29708	800-627-0493	704-583-2744	ckennedy@ecsconsult.com

Table 2A Addendum Role Identification and Contact Information

Figure 1A Organizational Chart:



Definitions of Project Roles

Site Rehabilitation Contractor

Kurt Blevins is the local Branch Manager of ECS Inc and will be responsible for overseeing adherence to the site specific QAPP during all phases of work. The Site Rehabilitation Contractor is responsible for maintaining the original, approved QAPP.

Project QA Officer

The project QA Officer (Craig L. Kennedy, PG) provides review of field work, documentation of calibration for field instruments, lab data, and technical review of reports produced utilizing this data. The QA Officer will independently review data generated from this project and determine if the data meets QA/QC criteria as set forth in the SCDHEC UST Programmatic QAPP.

Project Manager

The Project Manager (Randall Hutchins) will be responsible for work conducted during this scope of work and the primary point of contact. His duties will include development of the site specific QAPP, supervising field work, documenting and QA failures, determining corrective actions to QA failures, and preparing reports for submission to SCDHEC.

Field Staff

The contractor field staff will perform sampling and field activities per the QAPP document under the direction of the Project Manager. Field staff will be responsible for collection and sampling of related data and calibration of field instruments. The Project Manager in certain situations may also be a member of the Field Staff.

A5 Problem Definition/Background

Discuss the background (as much as is known) of the site and appropriate historical information, and why this site is being assessed.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of our previous corrective action activities between February and March 2013. The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs (one 3,000-gallon premium gasoline UST and two 3,000-gallon regular unleaded gasoline USTs) were previously listed at the site and only the premium unleaded gasoline UST was not in use during the 1st Quarter 2013 corrective action activities.

Historical site assessment activities previously conducted at the site include the Tier I assessment, conducted and reported to the SCDHEC in March 2009, and the Tier II assessment, conducted in December 2009 through May 2010 and reported to the SCDHEC in June 2010. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. The Tier II assessment included two separate rounds of field screening activities to assist with the placement of 13 shallow monitoring wells (MW-4 through MW-16) and an 8-hour AFVR event at monitoring well MW-1 to assist with free-phase product removal. Between July and September 2011 AFVR events and a groundwater sampling event were

completed and a report of findings and recommendations was submitted to the SCDHEC in December 2011. Free Phase Product delineation monitoring well installations and additional AFVR events were completed between April and July 2012 with report of findings and recommendations submitted to the SCDHEC in August 2012. Two 24-hour AFVR events were completed in the 1st Quarter of 2013.

The purpose of these corrective actions (recovery well installations and AFVR events) is to assist with free product removal in the subsurface.

Please answer the following: Does this project fall under UST or Brownfields area?

Yes, UST Area.

A6 Project/Task Description

1. ***Summarize what is known about the work to be done. This can be a short sentence indicating what the Scope of this project is (see Master QAPP Section A6).***

   The UST Management Division has requested the following:
   1. installation of three 4-inch recovery wells
      (a) one between MW1 and MW5,
      (b) one between MW19 & MW25, and
      (c) one adjacent to MW2;
   2. following well installations, conduct three separate 12-hour AFVRs on each recovery well approximately 15 days apart; and,
   3. conduct a gauging event on monitoring wells and recovery wells approximately 30 days after the last AFVR event.

2. ***The work will begin within*** approximately one month ***after cost approval and the Well Installations & AFVRs (including report) should be complete (and submitted)*** within approximately 120 days after cost approval receipt by ECS, Inc.

3. ***Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.***

   Potential issues may arise from inclement weather, access issues, unpredicted site or equipment problems or schedule conflicts.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Detail the geographical area that is to be part of the project. Maps should be included to show not only the topography and the geographical area of the State, but also to show more detail of the site itself including property lines.

As shown in **Figure 1**, the Edgefield Fuel & Convenience 3 site was located in a primarily business and commercial area within the town limits of Edgefield, South Carolina. The site was bordered to the north by an access road and parking lot for the west abutting Carolina First Bank. The site was bordered to the east by Bacon Street followed by the South Carolina National Heritage Corridor Discovery Center. The site was bordered to the south by Main Street (US Highway 25) followed by a parking lot for the downtown district of Edgefield. Edgefield Town Hall was located diagonally across the cross streets of Bacon Street and Main Street.

The site was located approximately 525 feet above mean sea level (MSL) with an approximate total site topographic relief of three feet. Storm water runoff at the site primarily drained toward the south and east. Retaining walls were observed to the north and northeast corner of the site with an approximate 6-foot grade elevation difference at the greatest point. The area around the site was generally characterized by broad ridges and gentle slopes to narrow ridges and side slopes adjacent to drainage ways. Beaverdam Creek was located approximately 1,375 feet southwest of the site and a tributary to Beaverdam Creek was located approximately 1,380 feet northwest of the site. The tributary flowed in a general northeast to southwest direction before discharging into Beavedam Creek. Beaverdam Creek flowed in a general northwest to southeast direction.

The surface at the site was generally covered by asphalt, and some smaller areas of concrete and grass. The active site USTs were covered with concrete. Underground utility conduits marked by the utility companies included a water meter for a municipal water line, electrical lines, and a telephone line. A sanitary sewer cleanout for a sanitary sewer line and drop inlets for a storm drainage system were observed during our site visit. A water meter was located on the eastern side of the property. Electrical lines were marked along the eastern side of the property beneath the sidewalk and marked along the northern property limits of the site. A telephone line was marked along the northeastern portion of the site. The sewer cleanout was located on the east side of the site building. The storm drains were located along Bacon Street next to the site property limits. A natural gas line and municipal water line were marked across Main Street from the site.

See attached **Figure 1** for topographic information, **Figure 2** for site vicinity information, **Figure 3** for UST location and pre-existing monitoring well locations; and **Figure 4** for proposed well locations.

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Project Manager	Randall Hutchins	40 Hr HAZWOPER & Refresher	40 Hr: 2000 Refresher: January 2013	-	-
Project Verifier/ QA Manager	Craig L. Kennedy, PG	40 Hr HAZWOPER & Refresher	40 Hr: 1995 Refresher: January 2013	PG	2425
Field Staff	Phil Pike	40 Hr HAZWOPER & Refresher	40 Hr: 1990 Refresher: January 2013	-	-
Field Staff	Aaron Williamson	40 Hr HAZWOPER & Refresher	40 Hr: 2009 Refresher: January 2013	-	-

Table 3A Required Training and Licenses

Kurt Blevins of **ECS, Inc.** is responsible for ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: **588 Silver St, Agawam, MA**.

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Well Driller	Jonathan Burr	Continuing Ed.		Well Driller	1740
Well Driller	Brian Cornell	Continuing Ed.		Well Driller	1299
Well Driller	Vincent Federle	Continuing Ed.		Well Driller	1930
Well Driller	Mark Gettys	Continuing Ed.		Well Driller	1086
Well Driller	Nicholas Hayes	Continuing Ed.		Well Driller	1983
Well Driller	James Hess	Continuing Ed.		Well Driller	1929
Well Driller	Mark Ireland	Continuing Ed.		Well Driller	2055
Well Driller	Jason Mantak	Continuing Ed.		Well Driller	1494
Well Driller	Sherrill Pardue	Continuing Ed.		Well Driller	881
Well Driller	Stephen Sloan	Continuing Ed.		Well Driller	1681
Well Driller	Daniel Summers	Continuing Ed.		Well Driller	1430
Well Driller	Stephen Taylor	Continuing Ed.		Well Driller	1066
Well Driller	Jerry Watkins	Continuing Ed.		Well Driller	1979

Steve Taylor of **Geologic Exploration Inc.** is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location:
176 Commerce Blvd, Statesville, NC 28625.

It is understood that training records will be produced if requested by SC DHEC.

The Following Laboratory(ies) will be used for this Project:

Commercial Lab(s)

None.

Please note: SC DHEC may require that the contractor submit some or all of the Laboratory's SOPs as part of this QAPP.

A9 Documents and Records

Personnel will receive the most current version of the QAPP Addendum via: (Check all that apply)

X US Mail X Courier X Hand delivered

Other (please specify):_____

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Field Measurements	ECS, Inc.	Hard Copy: Field Book Electronic: PDF File	Hard Copy & PDF File: ≥5yrs	Yes
Well Construction Records	Geologic Exploration, Inc.	Hard Copy	GEX Storage Facility: ≥5yrs	Yes
Waste Manifests	Transporter/Disposal Facility	Hard Copy & Electronic Copy	Transporter/Disposal Facility: ≥5yrs	Yes
Well Installations & AFVRs Report	ECS, Inc.	Hard Copy & Electronic	≥5yrs	Yes

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Item	Start Date	End Date	Comments
QAPP Preparation	Within approx. 15 days of receiving directive	Within approx. 30 days after receiving directive	End date dependent upon QAPP finalization
Access Agreements	Within approx. 15 Days of CA receipt	Within approx. 45 days after receipt of CA	End Date depends on approved or denied access agreements and/or encroachment permits
Utility Locate Request	Within approx. 10 Days of Access Agreements	Within approx. 30 days of Access Agreements	End Date depends on approved or denied access agreements and/or encroachment permits
Recovery Well Installations	Within approx. 10 Days of Access Agreements	Within approx.30 days of Access Agreements	End Date depends on date of Access Agreements received
Subsequent Survey	Within approx. 15 Days of well installation	Within approx. 30 days after well installation	End Date depends on completion of well installation
AFVR Event	First AFVR event within approx. 5 days of well installations	Last AFVR event approx. 35 days after well installations	Three AFVR events scheduled approximately 15 days apart
Disposal of IDW	Within approx 1 days of well installs; Within approx. 1 day of each AFVR event	Within approx 30 days of well installs; Within approx. 15 days after each AFVR event	End date depends on completion of well installs; End date depends on date of receiving IDW at permitted disposal facility
Gauging Event	Within approx. 30 days of third AFVR event	Within approx. 35 days of third AFVR event	End Date depends on completion of third AFVR event
Report Prep/Submittal	Within approx. 1 day of gauging event	Within approximately 15 days after gauging event	End date depends on date of gauging event

Table 5A Sampling Activities

B2 Sampling Methods

Please note: The contractor must follow sampling protocols as given in the UST QAPP.

***Estimate* the number of samples of each matrix that are expected to be collected:**

Soil	0
Ground Water from monitoring wells	0
From Drinking/Irrigation water wells	0
From surface water features	0
Total number of Water samples	0

The samples will be (check as many as apply): ____Homogenized ____Split

For the sample matrices indicated above, please describe how samples will be collected and the equipment needed.

Not applicable.

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable?

Not applicable.

If sampling equipment must be cleaned please give a detailed description of how this is done and the disposal of by-products from the cleaning and decontamination.

No samples scheduled for collection.

The water level/interface probe meter will be cleaned between monitoring wells with a solution of alconox and deionized water and rinsed with deionized water.

Please see attached ECS SOP 10.00 Decontamination.

Decontamination water will be containerized in properly labeled; DOT approved 55-gallon drums and disposed as non-hazardous waste at an approved facility.

Investigative Derived Waste from drilling activities shall be placed in a 55 gallon drum, labeled with the proper labeling (Non-hazardous or Hazardous) following RCRA regulations and left onsite to be picked up by A&D Environmental Services.

Identify any equipment and support facilities needed. This may include such things as Fed-ex to ship the samples, a Geoprobe, field analysis done by another contractor (who must be certified), and electricity to run sampling equipment.

The following drilling equipment shall be utilized and maintained by Geologic Exploration Inc. for field screening and monitoring well installation purposes: Geoprobe 7822DT, Geoprobe 7822DT, Geoprobe 6620DT, Diedrich D-120 (truck mounted), DrillMax 2400, Mobil B-58 (truck mounted), Diedrich D-120 (atv), Drilltech D25KW.

Investigative Derived Wastes (soil & water) shall be received by A&D Environmental Services.

Subsequent surveying activities shall be performed by ECS personnel.

Address the actions to be taken when problems occur in the field, and the person responsible for taking corrective action and how the corrective action will be documented.

Failure	Response	Documentation	Individual Responsible
Property & well location access	Call property owner/acquire SCDOT right of way permit access	Document in report or contact SCDHEC PM for assistance	Contractor PM
Drilling Equipment failure	Contact Steve Taylor	Note problem schedule date to remobilize to site.	Phil Pike Aaron Williamson
Vacuum Truck Failure	Contact Bill Aikins	Note problem & schedule date to remobilize to site	Phil Pike Aaron Williamson
Interface Probe/Water Level Meter Fails	Use Back up meter	Change serial number on sampling sheets	Phil Pike Aaron Williamson

Table 6A Field Corrective Action

B3 Sample Handling and Custody

1. ***How will the samples get from the Site to the Lab to ensure holding requirements are met?***

Not applicable.

2. ***How will the contactors cool the samples and keep the samples cool?***

Not applicable.

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***

Not applicable.

4. ***Where will the samples be stored in the Lab once they are received?***

Not applicable.

5. ***Describe the chain of custody procedure and attach a copy of each chain of custody that will be used. If a Chain of Custody SOP exists from the Lab and the Contractor is willing to adhere to it, then this may be attached.***

Not applicable.

B4 Analytical Methods

1. ***Identify the SOPs which will be used to analyze the samples, the method which the SOP references and the equipment or instrumentation that is needed:***

Parameter	SOP ID*	Method Referenced	Equipment	Comments
Not Applicable	N/A	N/A	N/A	Samples not scheduled for collection

Table 7A Analytical SOPs and Referenced Methods

- **This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

Abbreviation	Lab Identification of this SOP	Full Name of the SOP
N/A	N/A	N/A

Table 8A SOP Abbreviation Key

2. Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:

Quality Control	Failure	Response	Documented Where?	Individual Responsible
N/A	N/A	N/A	N/A	N/A

Table 9A Corrective Action Procedures

3. Identify sample disposal procedures.

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
N/A	N/A	N/A	N/A	N/A

Table 10A Sample Disposal

4. ***Provide SOPs for the Kerr Method or the Ferrous Iron Method if these are parameters for this study. This can be attached or written here. If attached please note that it is an attachment and where it is located (if applicable).***

   Not Applicable.

B5 Quality Control Requirements:

All QC will follow the requirements laid out in Section B5 of the UST Programmatic QAPP.

B6 Field Instrument and Equipment Testing, Inspection and Maintenance

1. Identify all fields and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Note the availability and location of spare parts.

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
In-Field PID Instrument	MiniRae 2000 PGM 7600	As recommended in attached MiniRae O&M Manual Doc #011-4001-000 pp 4-5 through 4-10	Periodic	Manufacturer/Rental Equipment Supplier	Phil Pike Aaron Williamson
Groundwater Level Indicator	Heron WLI - 11614	As recommended in attached Heron Instrument O&M Manual	Periodic	Manufacturer/Rental Equipment Supplier	Phil Pike Aaron Williamson
Interface Probe	1220056491	As recommended in attached Heron Interface O&M Manual	Periodic	Manufacturer/Rental Equipment Supplier	Phil Pike Aaron Williamson

Table 11A Instrument and Equipment Maintenance

2. Identify the testing criteria for each lab or field instrument that is used to ensure the equipment is performing properly. Indicate how deficiencies, if found, will be resolved, re-inspections performed, and effectiveness of corrective action determined and documented. Give the person responsible for this.

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
In-Field PID Instrument MiniRae 2000 PGM 7600	Daily prior to use	Calibration as discussed in attached MiniRae O&M Manual Doc #011-4001-000 pp 4-5 through 4-10	Phil Pike Aaron Williamson	Recalibrate or instrument maintenance
Groundwater Level Indicator Heron WLI 11614	Daily prior to use	Calibration as discussed in attached Heron Instrument O&M Manual	Phil Pike Aaron Williamson	Recalibrate or instrument maintenance
Interface Probe Heron 1220056491	Daily prior to use	Calibration as discussed in attached Heron Interface O&M Manual	Phil Pike Aaron Williamson	Recalibrate or instrument maintenance

Table 12A Instrument and Equipment Inspection

B7 Instrument Calibration and Frequency

1. Identify equipment, tools, and instruments for field or lab work that should be calibrated and the frequency.
2. Describe how the calibrations should be performed and documented, indicating test criteria and standards or certified equipment.
3. Identify how deficiencies should be resolved and documented. Identify the person responsible for corrective action.

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
In-Field PID/FID Instrument	Operator's Manual and/or Rental Equipment Supplier	Daily prior to use	Operator's Manual and/or Rental Equipment Supplier	Operator's Manual and/or Rental Equipment Supplier	Phil Pike Aaron Williamson	MiniRae O&M Manual Doc #011-4001-000 pp 4-5 through 4-10
Groundwater Level Indicator	Check against standard	Daily prior to use	0.01-ft per 10-ft	Replace instrument	Phil Pike Aaron Williamson	See attached Heron Instrument O&M Manual
Interface Probe	Check against standard	Daily prior to use	0.01-ft per 10-ft	Replace instrument	Phil Pike Aaron Williamson	See attached Heron Interface O&M Manual

Table 13A Instrument Calibration Criteria and Corrective Action

*** This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

B8 Inspection/Acceptance Requirements for Supplies and Consumables

1. Identify critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials.
2. Identify the individual(s) responsible for this.

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Span gas for PID	Liquid Technology Corp.	Attached pressure gauge reads what sticker on span gas can details.	Cool dry cabinet	Phil Pike Aaron Williamson
Leather Gloves	Home Depot	New & Undamaged	Cool dry cabinet	Phil Pike Aaron Williamson
Nitrile Gloves	Zee Medical	New & Undamaged	Sealed boxes	Phil Pike Aaron Williamson

Table 14A List of Consumables and Acceptance Criteria

B9 Data Acquisition Requirements (Non-Direct Measurements)

1. Identify data sources, for example, computer databases or literature files, or models that should be accessed or used.
2. Describe the intended use of this information and the rationale for their selection, i.e., its relevance to project.
3. Indicate the acceptance criteria for these data sources and/or models.

Data Source	Used for	Justification for use in this project	Comments
Previously submitted assessment reports, tax maps, topographic maps	Historic GW depth/GW Quality & values	Establishes the DTW; Establishes materials needed.	Documents provided by SCDHEC will be considered an acceptable data source.
-	-	-	-
-	-	-	-

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed.

Not support facilities will be anticipated for this scope of work.

B10 Data Management

1. Describe the data management scheme from field to final use and storage.

Field notes are recorded in bound, water resistant log books using indelible ink. Pages are dated at the start of the field day, and the name or initials of the field staff, weather, and required activities for the day are recorded. Data collected in the field is also entered into a limited access database.

Project related computer files are stored on a restricted access network server. Information is backed-up daily. Logbooks are scanned into the network server.

2. How does the lab and field staff ensure that no unauthorized changes are made to the chain of custody, sampling notebooks, laboratory notebooks and computer records?

No samples scheduled for laboratory analysis, therefore, no laboratory anticipated for this scope of work.
Field notes are kept in dedicated field notebooks with no pages removed and nothing erased. If an error is made field notes, a mark will be made through the error with one strike and initials next to strike.

3. How does the lab ensure that there are no errors in samples records including times when sample information is compiled, data calculated and/or transmitted?

Not applicable.

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Hard copies will remain in the office for a minimum of 5 years. The electronic copies will be maintained for a minimum 5 years.

Section C Assessment and Oversight

C1 Assessment and Response Actions

1. *The Contractor is supposed to observe field personnel daily during sampling activities to ensure samples are collected and handled properly and report problems to DHEC within 24 hours. Please state who is responsible for doing this and what observations will be made. Will this person have the authority to stop work if severe problems are seen?*

The Contractor Project Manager will supervise field personnel during site activities to ensure procedures are followed according to the requirements of the QAPP. The Contractor Project Manager shall provide oversight and will have the authority to stop work when necessary. The contractor's project manager will check to ensure compliance with the contractor's SOPs detailed in the QAPP Addendum.

2. *The SCDHEC UST QAPP states that the Lab will receive an Offsite Technical System Audit. For this project, what assessments will be done on the Commercial Lab(s) that are being used—other than their certification audit? When or how often are these done? Who will the results be given to and who has the ability to stop work if problems are severe?*

Not applicable.

C2 Reports to Management

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

Section D Data Validation and Usability

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

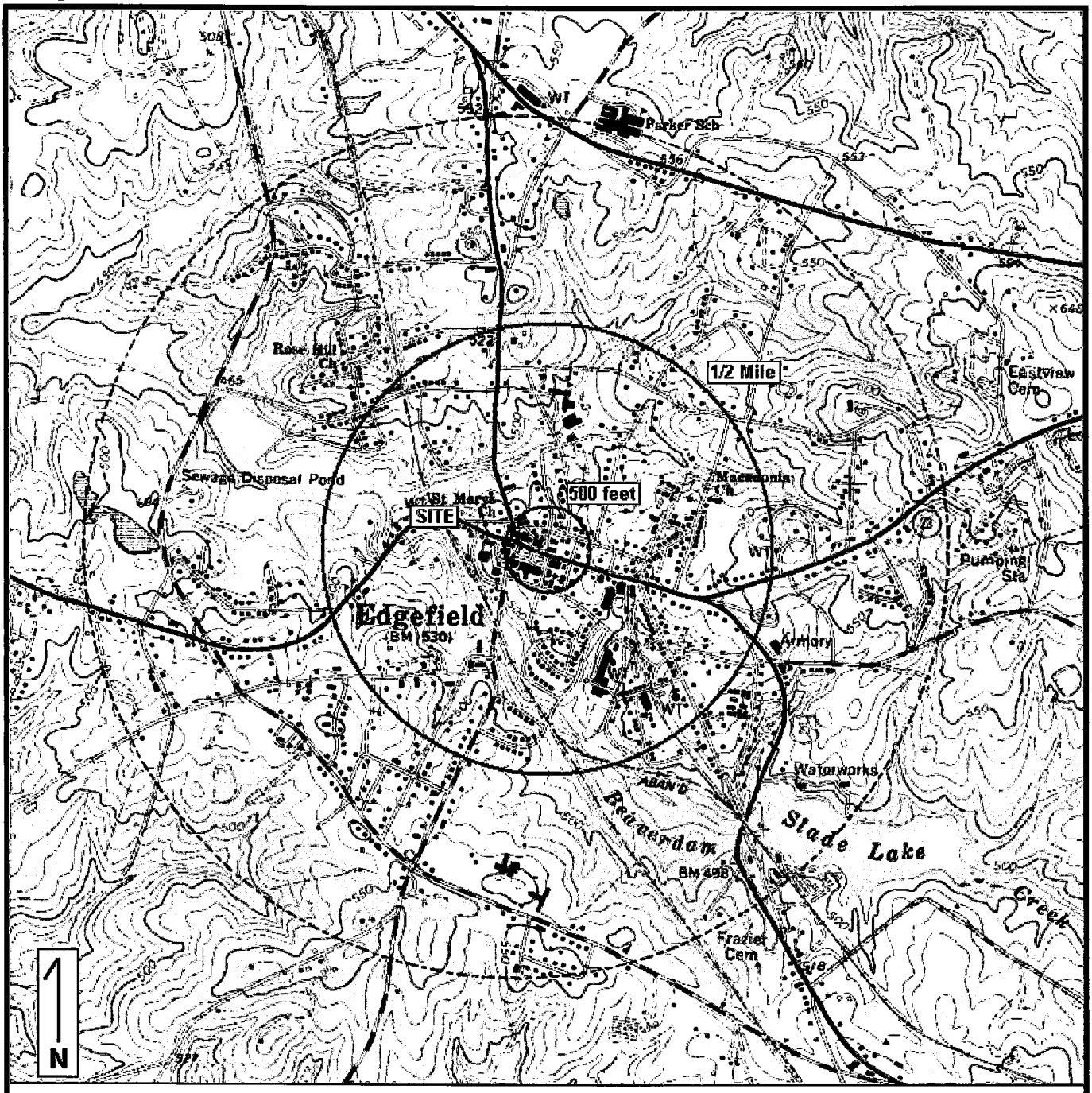
QAPP APPENDIX B ATTACHMENTS

Figures, Equipment O&M Manuals, ECS SOPs, Cost Proposal

Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC

Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH

Generated By: Kevin Collins

Legend

137-07-5-07 TAX MAP PARCEL I.D. NUMBER

PROPERTY LINE

WATER SUPPLY WELL (NOT ACTIVE)

WET WEATHER DRAINAGE FEATURE

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Reference: Edgefield County Tax Office

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

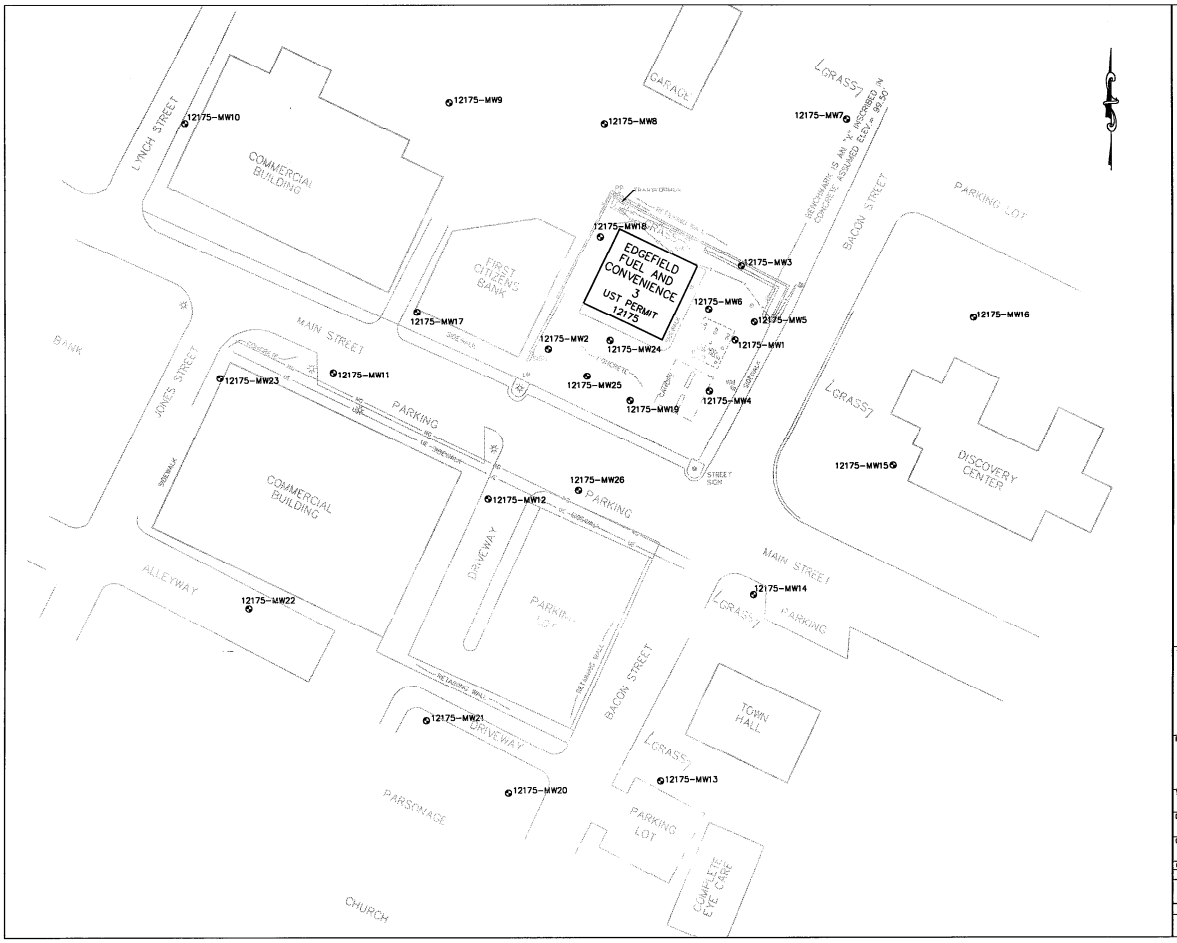
TITLE:
Site Vicinity Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 200 100 0 100 200

COMPUTER CADFILE 15-10-10

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	RH
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=200'	11/9/10	14-211651	2



Legend

- UE — Underground Electric Line
- X — Wood Fence Line
- T — Underground Telephone Line
- SCO — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- 12175-MW5 — Shallow (Water Table) Monitoring Well

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

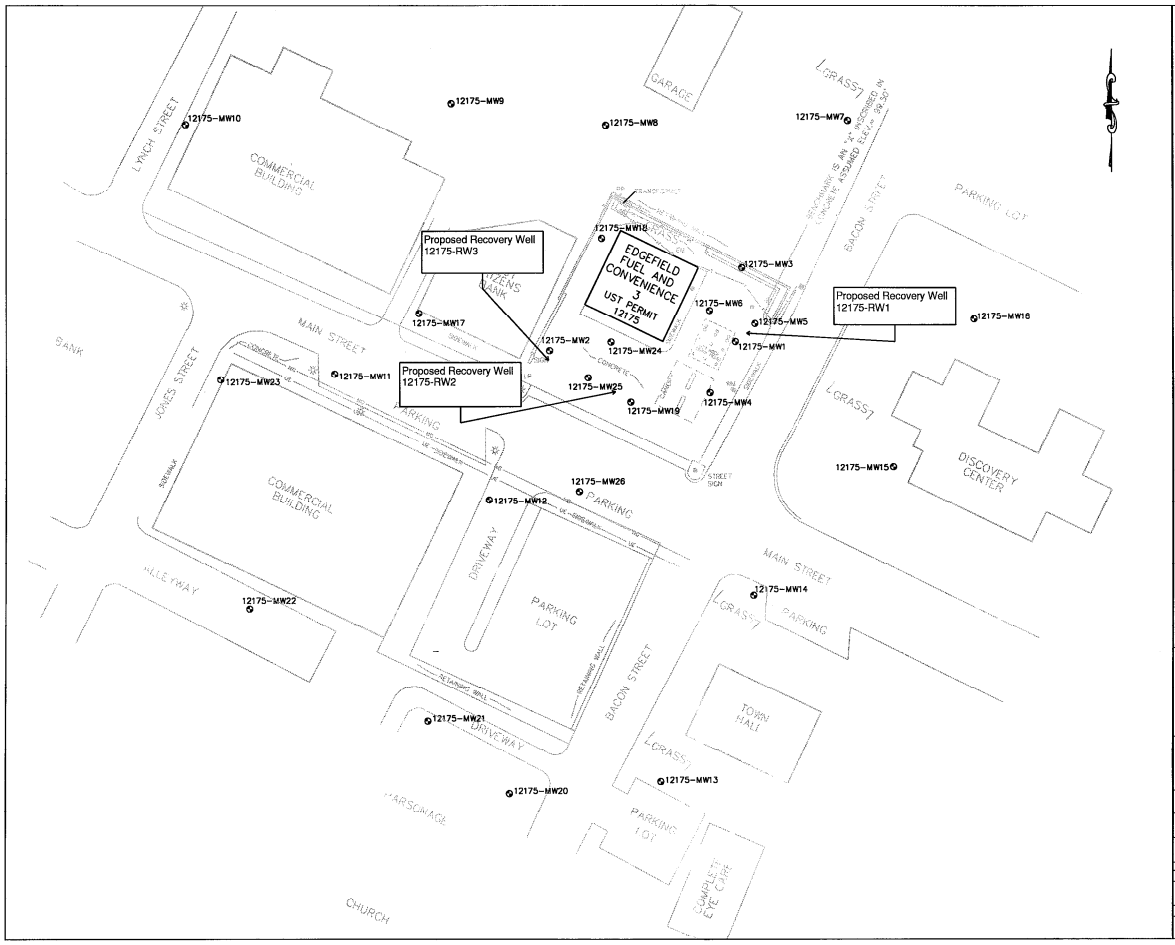
TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 03-13-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	CK
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	3/13/13	14-211651	3



Legend

- UE — Underground Electric Line
- Wood Fence Line
- T — Underground Telephone Line
- SS — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- 12175-MW — Shallow (Water Table) Monitoring Well

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

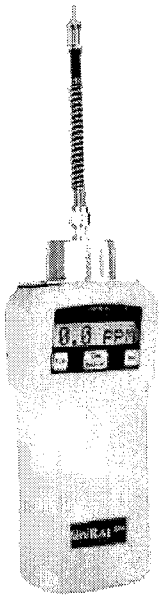
GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE: 03-13-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KDP	KDP	RH	CK
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	3/13/13	14-211651	4

MiniRAE 2000

Portable VOC Monitor
PGM-7600



OPERATION AND MAINTENANCE MANUAL

(Document No.: 011-4001-000)
Revision E, May 2005

RAE SYSTEMS

ISO 9001 CERTIFIED

4.4 Calibrate and Select Gas

WARNINGS

The calibration of all newly purchased RAE Systems instruments should be tested by exposing the sensor(s) to known concentration calibration gas before the instrument is put into service for the first time.

For maximum safety, the accuracy of the MiniRAE 2000 should be checked by exposing it to known concentration calibration gas before each day's use.

In the first menu of the programming mode, the user can perform functions such as calibration of the MiniRAE 2000 Monitor, select default cal memories, and modify cal memories (see Table 4.4).

Table 4.4

Calibrate/Select Gas Sub-Menu
Fresh Air Cal?
Span Cal?
Select Cal Memory?
Change Span Value?
Modify Cal Memory?
Change Correction Factor?

Calibrating the MiniRAE 2000 monitor is a two-point process using "fresh air " and the standard reference gas (also known as span gas). First a "Fresh air" calibration, which contains no detectable VOC (0.0 ppm), is used to set the zero point for the sensor. Then a standard reference gas that contains a known concentration of a given gas is used to set the second point of reference.

Note: The span value must be set prior to calibrating for fresh air or span.

The user can store calibrations for up to 8 different measurement gases. The default gas selections are as follows:

Cal Memory #0.....Isobutylene

Cal Memory #1.....Hexane

Cal Memory #2.....Xylene

Cal Memory #3.....Benzene

Cal Memory #4.....Styrene

Cal Memory #5.....Toluene

Cal Memory #6.....Vinyl Chloride

Cal Memory #7.....Custom?

Memory #0 functions differently than the other 7 memories. For Memory #0, isobutylene is always the calibration gas. When the gas is changed in Memory #0 to one of 100 other preprogrammed chemicals or to a user-defined custom gas, a correction factor is applied to all the readings. During calibration, the unit requests isobutylene gas and displays the isobutylene concentration immediately following calibration, but when the unit is returned to the normal reading mode, it displays the selected gas and applies the correction factor.

The other 7 cal memories require the same calibration gas as the measurement gas. These memories may also be modified to a preprogrammed chemical or to a user-defined custom gas. In the gas library, only the gases that can be detected by the installed UV lamp will actually be displayed. Note that although the correction factor for the new gas will be displayed and can be modified, this factor is not applied when Memories #1-7 are

used. Therefore the factor will not affect the readings in these memories.

Once each of the memories has been calibrated, the user can switch between the calibrated gases by changing the cal memory without the need to recalibrate. Or the user can switch the measurement gas in Memory #0 and the appropriate correction factor will automatically be applied without the need to recalibrate. If the gas is changed in Memories #1-7, it is necessary to recalibrate.

To change a default gas from the list above to a library or custom gas, first go to Select Cal Memory (Section 4.4.3) and then proceed to Modify Cal Memory (Section 4.4.5) to enter the desired gas. If the desired compound does not appear in the preprogrammed library, the user can use the Custom_VOC entry in the library, or the name and correction factor of any of the existing compounds can be changed as described in Section 4.4.5. A list of some 300 correction factors is given in Technical Note 106, available at the website www.raesystems.com.

4.4.1 Fresh Air Calibration

This procedure determines the zero point of the sensor calibration curve. To perform a fresh air calibration, use the calibration adapter to connect the MiniRAE 2000 to a "fresh" air source such as from a cylinder or Tedlar bag (option accessory). The "fresh" air is clean dry air without any organic impurities. If such an air cylinder is not available, any clean ambient air without detectable contaminant or a charcoal filter can be used.

1. The first sub-menu shows: "Fresh air Cal?"
2. Make sure that the MiniRAE 2000 is connected to one of the "fresh" air sources described above.
3. Press the **[Y/+]** key, the display shows "zero in progress" followed by "wait.." and a countdown timer.

After about 15 seconds pause, the display will show the message "update data...zeroed... reading = X.X ppm..." Press any key or wait about 20 seconds, the monitor will return back to "Fresh air Calibration?" submenu.

4.4.2 Span Calibration

This procedure determines the second point of the sensor calibration curve for the sensor. A cylinder of standard reference gas (span gas) fitted with a 500 cc/min. flow-limiting regulator or a flow-matching regulator is the simplest way to perform this procedure. Choose the 500 cc/min. regulator only if the flow rate matches or slightly exceeds the flow rate of the instrument pump. Alternatively, the span gas can first be filled into a Tedlar Bag, or delivered through a demand-flow regulator. Connect the calibration adapter to the inlet port of the MiniRAE 2000 Monitor, and connect the tubing to the regulator or Tedlar bag.

Another alternative is to use a regulator with >500 cc/min flow but allow the excess flow to escape through a T or an open tube. In the latter method, the span gas flows out through an open tube slightly wider than the probe, and the probe is inserted into the calibration tube.

Before executing a span calibration, make sure the span value has been set correctly (see next sub-menu).

1. Make sure the monitor is connected to one of the span gas sources described above.
2. Press the **[Y/+]** key at the "Span Cal?" to start the calibration. The display shows the gas name and the span value of the corresponding gas.
3. The display shows "Apply gas now!" Turn on the valve of the span gas supply.

4. Display shows "wait.... 30" with a count down timer showing the number of remaining seconds while the monitor performs the calibration.
5. To abort the calibration, press any key during the count down. The display shows "Aborted!" and return to "Span Cal?" sub-menu.
6. When the count down timer reaches 0, the display shows the calibrated value.

   Note: The reading should be very close to the span gas value.
7. During calibration, the monitor waits for an increased signal before starting the countdown timer. If a minimal response is not obtained after 35 seconds, the monitor displays "No Gas!" Check the span gas valve is on and for lamp or sensor failure before trying again.
8. The calibration can be started manually by pressing any key while the "Apply gas now!" is displayed.
9. After a span calibration is completed, the display will show the message "Update Data Span Cal Done! Turn Off Gas."
10. Turn off the flow of gas. Disconnect the calibration adapter or Tedlar bag from the MiniRAE 2000 Monitor.
11. Press any key and it returns back to "Span Gas Cal?"

7. TROUBLESHOOTING

To aid the user in diagnosing the monitor, a special diagnostic mode can be used displays critical, low level parameters. Section 7.1 describes the operation of the diagnostic mode. Section 7.2 summarizes the frequently encountered problems and suggested solutions. By turning on the MiniRAE 2000 monitor in diagnostic mode and by using the troubleshooting table in Section 7.2, the user can usually correct the problem without having to return the monitor for repair.

WARNING

This function should be used by qualified personnel only! The diagnostic mode allows the user to set several low-level parameters that are very critical to the operation of the monitor. Extra care should be taken when setting these parameters. If the user is not familiar with the function of these parameters and sets them incorrectly, it may cause the monitor to shut down or malfunction.

7.1 Troubleshooting Table

Problem	Possible Reasons & Solutions
Cannot turn on power after charging the battery	**Reasons:** Discharged battery. Defective battery. Microcomputer hang-up. **Solutions:** Charge or replace battery. Disconnect, then connect battery to reset computer.
No LCD back light	**Reasons:** Trigger level too low, the current mode is not user mode, and the mode does not support automatic turn on back light. **Solutions:** Adjust trigger level. Verify the back light can be turned on in user mode. Call authorized service center.
Lost password	**Solutions:** Call Technical Support at +1.408 .752 .0723 or +1. 888 .723 .4800
Reading abnormally High	**Reasons:** Dirty sensor module. Dirty water trap filter. Excessive moisture and water condensation. **Solutions:** Clean sensor module and lamp housing. Replace water trap filter. Blow dry the sensor module.
Buzzer Inoperative	**Reasons:** Bad buzzer. **Solutions:** Call authorized service center.

Inlet flow too low	**Reasons:**	Pump diaphragm damaged or has debris. Flow path leaks.
	Solutions:	Check flow path for leaks; sensor module O-ring, tube connectors, Teflon tube compression fitting. Replace pump or diaphragm.
"Lamp" message during operation	**Reasons:**	Lamp drive circuit. Weak or defective PID lamp, defective.
	Solutions:	Turn the unit off and back on Replace UV lamp
Full scale measurement in humid environment	**Reasons:**	Dirty or wet sensor.
	Solutions:	Clean and dry sensor and lamp housing. Adjust sensor fingers to ensure not touching Teflon. Use water trap filter.
Reading abnormally low	**Reasons:**	Incorrect calibration. Low sensitivity to the specific gas. Weak or dirty lamp. Air leakage.
	Solutions:	Calibrate the monitor. Replace sensor. Clean or replace lamp. Check air leakage.

Contact Heron Instruments Inc.

T 1-800-331-2032
905-634-4449

F 905-634-9657

E info@heroninstruments.com

www.heroninstruments.com

Heron also carries:

- dipper-log groundwater dataloggers
- H.OIL Interface Meters
- Sm.OIL Interface Meters

HERON INSTRUMENTS Groundwater Monitoring INC.
Your obvious choice

Warranty

Heron Instruments Inc warrants to repair or replace any such defective equipment or part (determined to our satisfaction to have a defect in workmanship or original material) upon receipt and inspection of such defective equipment to Heron Instruments Inc. with all shipping pre paid by the user.

In no event shall Heron be liable for any direct, indirect or consequential damages, abuse, acts of third parties (rental equipment) environmental conditions or other expenses which may arise in connection with such defective equipment. This warranty shall not apply to damage of equipment caused by incorrect installation, usage, storage alteration or inadequate care.

Heron Warranty coverage does not extend to the following:

- Tape, bag or batteries used with the product.
- Products used as rental equipment.
- Products contaminated by materials which are hazardous and as such have rendered the unit unserviceable as outlined in the maintenance guide and warranty manual.
- Parts failure due to neglect in cleaning or servicing.
- Failure of parts caused by misuse or inappropriate use.

All probe tips (excluding dipper-T 5/8 probe tip) warranted for 1 year.

When returning a product under warranty, please review service options available or advise Heron Instruments in advance, by telephone at 1-800-331-2032 or 905-634-4449; by fax at 905-634-9657 or by e-mail at info@heroninstruments.com

Accurate. Efficient.

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Groundwater monitoring instruments

Operating/Maintenance Instructions & Warranty for

dipper-T, little dipper, SKINNY DIPPER, WATER TAPE & potable water meter

Water Level Meters

HERON INSTRUMENTS Groundwater Monitoring INC.
Your obvious choice

General

Avoid sharp edged casing

Avoid entanglement with other equipment in boreholes and wells.

Do not use to plumb borehole depths

Do not use as guide to backfilling with sand etc. Instrument may get locked in sand.

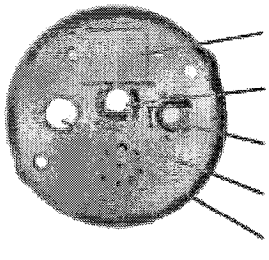
Rewind tape onto reel after each use

Warranty is conditional upon adherence to these guide lines.

Maintenance continued inside

Water Level Meter Instructions

dipper-T, little dipper, potable water meter, SKINNY DIPPER



Battery Box

Sensitivity Knob for Cascading Water

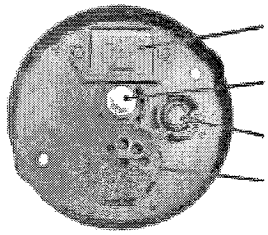
Signal LED

Signal Buzzer

Test Button Only

IMPORTANT
This is not an ON/OFF switch

WATER TAPE



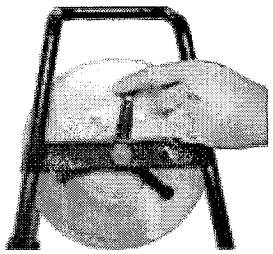
Battery Box

ON/TEST Button

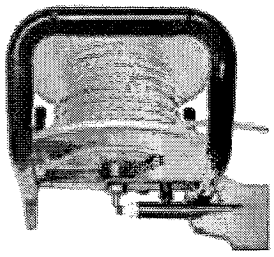
Signal LED

Signal Buzzer

NOTE: WATER TAPE does not have a sensitivity control.



Reel Lock
To unlock the reel turn the plastic lock handle in the direction shown until it touches the frame.



To Test Entire System
Hold the centre pin on the probe against the stud on the back of the axle at the same time touch the probe body against the screw on the frame. The buzzer will sound if the system is ok. **Make sure unit is on.**

Equipment Check

1 Test circuit and battery by pressing the **white** button. Make sure the panel securing knobs are tight. If the unit does not sound, replace the battery (one 9 volt) in the drawer on the faceplate and repeat.

2 Test tape and probe by shorting out the centre conductor and probe body on the stud on the back axle of the unit as shown. The buzzer and light should activate; if not, adjust the sensitivity and repeat. **Make sure unit is on.**

3 Test the unit in tap water before going out to the field. **DO NOT** use distilled or deionized water.

Use in the Field - Important*

1 Reel the tape down the well carefully, avoiding the edge of the casing. Hang the unit on the casing where possible and run the tape over the tape guide on the frame leg to avoid cuts and nicks.

2 When the unit sounds, carefully measure the depth to water from your reference point by slowly lowering and raising the probe to the air/water interface. Raise the probe, shake off the water and repeat the measurement. In wells with cascading water, reduce the sensitivity by turning the Sensitivity Knob anti-clockwise.

3 The dipper-T, little dipper and WATER TAPE probes are rated to full depth and can be used to measure depth to bottom of well. Reel the tape until the probe touches bottom and the tape becomes slack. **DO NOT** let the probe fall under gravity or it will be damaged when it hits the bottom of the well. **DO NOT** use the unit to measure sand backfill as the tape and probe may get "locked" in the backfill.

4 Wind the tape back onto the reel, removing any excess moisture and dirt.

Cleaning the Meters

1 Always the clean the meters after use in the field to maintain optimal performance and extend the life of the unit.

2 Unwind the tape and probe and wash with a mild detergent. Rinse well, wipe and rewind onto the reel. The tape and probe can be cleaned and degreased with the following: soap solution, naptha alcanox 10%, Joy detergent 10%, Lestoil; methyl, isopropyl and isobutyl alcohols; hexane, heptane and fully halogenated freon. Rinse thoroughly with water afterwards.

3 Wash reel if necessary. The central electronic panel can be removed and the reel washed down. Unthread the panel securing knobs and carefully pull out the central panel. Disconnect the panel from the tape. The reel may be cleaned with the following: soap solution, naptha alcanox 10%, Fantastic, Windex, Joy, Top Job, Mr. Clean, Formula 409; hexane, heptane, white kerosene, mineral spirits; methyl, isopropyl, isobutyl and 1 + 3 denatured alcohols; freons TF + TE. Rinse well with water and let dry before putting the panel back in. DO NOT use abrasives, partially halogenated hydrocarbons or ketones to clean the reel.

Trouble Shooting

No Sound when the unit is tested

1 Check battery by pressing the **white** button. Replace battery if low and make sure panel securing knobs are tight. If unit still does not sound, remove central panel and check all connections.

2 Check probe conductor to make sure it is clean and not crusted with mineral deposits. Check tape/probe connection for any breaks.

Continuous Sound when the unit is turned on or probe removed from water.

1 Make sure probe conductor tip is clean.

2 Check for excess moisture on the back of the electronic panel.

3 Check probe/tape connection and tape for any breaks or leaks where water might get in.

General

- Avoid sharp edged casing
- Avoid entanglement with other equipment in boreholes and wells.
- Do not use as guide to backfilling with sand etc., Instrument may get locked in sand.
- Rewind tape onto reel after each use

Warranty is conditional upon adherence to these guide lines.

*Important: Ensure that the Panel Securing Nuts are tight before use.

Environmental Compliance Services, Inc.

STANDARD OPERATING PROCEDURES
FOR
ENVIRONMENTAL COMPLIANCE SERVICES, INC.
AT
SOUTH CAROLINA UST SITES

Prepared For:
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F:\Forms & Templates\SC Forms\QAPP
Revised February 2013

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STANDARD OPERATING PROCEDURES

This document details the standard operating procedures (SOPs) employed by Environmental Compliance Services, Inc. (ECS), a SCDHEC UST Site Rehabilitation Contractor (Certification No. 358). These SOPs are employed by ECS when performing environmental assessments, hydrogeological investigations, and remedial activities on properties with releases of oil and hazardous materials. These SOPs are based on current commonly accepted professional standards and practices in the environmental field.

These SOPs cover the technical aspects of drilling, installation of monitoring wells, sampling of environmental media, and hydrogeological investigations. These activities will be conducted in general accordance with the SOPs unless site-specific conditions are encountered. Any changes in SOPs due to site specific conditions will be specified within a scope of services prior to the performance of the work, if known. If conditions are encountered during the performance of the work, the changes will be duly noted within the report documenting the work. Alternative methods are discussed for jobs requiring a lesser level of quality assurance and quality control (QA/QC).

These SOPs are based on established procedures included within the following: guidance documents produced by the American Society for Testing and Materials (ASTM), United States Environmental Protection Agency (USEPA), and South Carolina Department of Health and Environmental Control (SCDHEC); published professional papers; and current professional standards and practices. References for cited documents and papers are attached.

WATER-LEVEL MEASUREMENT PROCEDURES

Depths to water-level measurements are taken to determine the elevation of the potentiometric surface. Water level measurements will be performed in each monitoring well prior to sampling. Because of fluctuating groundwater levels, all wells will be measured prior to sampling and within the same day, if possible. If the presence of NAPL is suspected, measurements will be made with an oil/water interface probe, otherwise, an electronic water level indicator will be used. These instruments are accurate to 0.01 feet. The following procedures are based on USAEPA Region 4 Environmental Investigation guidelines (SOP & QAM, 2001) and ASTM Designations D 5092 - 90 and D 4750 - 87.

- The measuring instrument will be decontaminated prior to use and between wells according to the standard decontamination procedures.

- Measurements will progress from the least contaminated wells to the most contaminated wells.

- An interface probe will be lowered to the air-water interface and the depth to water will be recorded. The interface probe will be lowered to the bottom of the well to measure the depth of the well and in wells where chlorinated hydrocarbons were detected to determine if dense non-aqueous phase liquid (DNAPL) is present. If the presence of a free phase product (LNAPL) is indicated, the probe will be lowered to the product-water interface and the thickness of the product will be recorded but the depth of the well will not be measured.

- One water-level measurement will be made from a reference point on the PVC well riser pipe and another from the top of the protective well casing at the surface elevation. The reference point on the PVC will be a marking (V-notch cut into or permanent marker located on) the top edge of the riser pipe at the highest point. This will be the surveyed point on the riser. The reference point on the well riser is preferred for determining depth to water-level due to its stability. The protective well casing is more susceptible to movement through settling, frost heaving, or displacement by impact.

- The volume of standing water in the well (static volume) will be calculated and used during well purging prior to sampling.

- The total depth of the well, depth to product, depth to water, standing water height, and static volume will be recorded on the groundwater sampling log (attached).

DECONTAMINATION

Decontamination will be performed in order to: minimize the spread of contaminants on the Site and from one sampling location to another; reduce the potential exposure of field personnel to contaminants; and to ensure good data quality and reliability. Decontamination of all field analytical testing and sampling equipment will be performed according to the following procedures. These procedures are based on ASTM Designation D 5088-90, USEPA CERCLA QAPP Review Guidance, 1987, and USAEPA Region 4 Environmental Investigation guidelines (SOP & QAM, 2001).

Equipment cleaning procedures include pre-field, field, and post-field decontamination. Non-disposable equipment will be decontaminated after completing each sampling event. In cases of gross contamination (free phase product), rinse water will be contained for proper disposal according to municipal, state, and federal regulations. Decontamination procedures will be monitored through sampling and analysis when quality assurance/quality control checks are necessary.

Equipment will be dedicated to each sampling point and decontamination will be performed at the off-site facility as much as possible.

Decontaminated equipment will be rested on polyethylene sheeting at each sampling point.

Samplers will use new disposable gloves at each sampling point.

Potable water from the public water supply will be used for control rinse water.

A certified laboratory supply of deionized water will be used for decontamination of field testing and sampling equipment and for the collection of rinsate blanks. Deionized water will be stored in Nalgene, glass, or Teflon containers. The storage area containing the deionized water will be separated from the storage area for solvents.

Equipment rinsate blanks will be collected when a quality control check of the decontamination procedure is necessary. This check will not be performed if dedicated equipment is used. One blank will be collected at least once during a sampling event for each different piece of sampling equipment used. Rinsate blanks will be prepared by pouring deionized water over the decontaminated piece of equipment and collecting it in the sample container. The equipment rinsate blank will be analyzed for the same analytes as the samples that have been collected with that piece of equipment.

1.0 MATERIALS

- health and safety equipment;
- laboratory-supplied deionized water;
- phosphate-free detergent (Alconox, Liquinox);
- potable water (municipal water source);
- methanol;
- Hexane;
- Acetone;
- nitric acid rinse solution;
- wash basins;
- inert brushes;
- polyethylene sheeting;
- large heavy duty garbage bags;
- spray bottles;
- zip-lock bags;
- paper towels/Handiwipes;
- disposable gloves.

2.0 DECONTAMINATION PROCEDURES

- Soil and sediment sampling equipment (stainless steel sampling scoop, tool, and bowl, split-spoon and macro-core sampler, knife) will be decontaminated in the field after each use.

- Soil and sediment sampling equipment will be decontaminated as follows: scrubbed with inert brushes in a bucket containing phosphate-free detergent and potable water; rinsed with potable water; rinsed with pesticide grade methanol; and finally rinsed with deionized water. The final potable water and deionized water rinse volumes will equal 5 times the volume of the methanol rinse. The equipment will be allowed to air dry and will be stored in a clean environment until reused.

- Water quality instruments (e.g. Horiba Water Quality Meter), interface probe, down-hole slug test equipment, well development equipment, and other measuring instruments will be decontaminated between uses by rinsing with Alconox or Liquinox, followed by potable water and deionized water rinses. A methanol rinse will be utilized prior to the deionized water rinse in the event of gross contamination such as contact with free-phase product.

- The drill rig, direct-push technology equipment, and all drilling equipment and associated tools, including but not limited to augers, drill casing, drill rods, sampling equipment, and wrenches, will be steam cleaned prior to beginning the drilling on the Site. This cleaning will consist of using a high pressure detergent steam cleaning equipment, followed by a nanograde methanol swabbing if gross contamination was present. This will be followed by a controlled water rinse. Any down-hole equipment (auger flights, rods, sampling equipment, etc.) coming in contact with gross contamination (i.e. free phase product) will be steam-cleaned between uses. Otherwise equipment will be scrubbed manually with potable water and Alconox as needed to remove soil between uses.

- Sampling equipment and probes will be decontaminated in an area covered by polyethylene sheeting adjacent to the sampling location.

- In cases of gross contamination (i.e. free phase product) rinse water will be collected for proper disposal according to municipal, state or federal regulations. Contaminated solids (disposable

gloves, clothing, polyethylene tubing and sheeting, etc.) will be collected and characterized for proper disposal.

- Decontamination procedures will be fully documented in the field notebook. The following information should be recorded: Site location, date, time and weather; sample location where equipment used; location where decontamination was performed; field personnel performing the decontamination; decontamination procedures; disposal of rinse water if necessary; samples collected for QA/QC and analytical results.

- Health and safety procedures associated with decontamination are found in the Health and Safety Plan.

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

July 1, 2011

ASSESSMENT COMPONENT COST AGREEMENT
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account

Facility Name: Edgefield Fuel & Convenience 3

UST Permit #: 12175 **Cost Agreement #:** TBD

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. **Plan***				
B. Tax Map		x	$50.00	$0.00
C. Tier II or Comp. Plan /QAPP Appendix B	1	x	$525.00	$525.00
2. **Receptor Survey ***		x	$500.00	$0.00
3. **Survey (500 x 500 feet)**				–
A. Comprehensive Survey		x	$1,000.00	$0.00
B. Subsurface Geophysical Survey				
1. < 10 meters below grade		x	$2,750.00	$0.00
2. > 10 meters below grade		x	$3,250.00	$0.00
C. Geophysical UST or Drum Survey		x	$1,125.00	$0.00
4. **Mob/Demob (Each)**				
A. Equipment	4	x	$575.00	$2,300.00
B. Personnel	5	x	$290.00	$1,450.00
C. Adverse Terrain Vehicle to install wells		x	$575.00	$0.00
5. **Soil Borings (hand auger)* (Feet)**		feet x	$14.00	$0.00
6. **Soil Borings (drilled) & Field Screening ***				
Rate includes collection of water sample or soil sample, and lab or other analyses				
A. Standard		feet x	$17.00	$0.00
C. Fractured Rock		feet x	$27.50	$0.00
7. **Soil Leachability Model (Each)**		each x	$200.00	$0.00
8. **Abandonment* (per foot)**				
A. 2" diameter or less		feet x	$5.00	$0.00
B. Greater than 2" to 6" diameter		feet x	$5.50	$0.00
C. Dug/Bored well (up to 6 foot diameter)		feet x	$18.00	$0.00
9. **Well Installation* (per foot)**				
A. Water Table (hand augered)		feet x	$20.00	$0.00
B. Water Table (drill rig)		feet x	$38.00	$0.00
C. Telescoping/ Pit Cased		feet x	$58.00	$0.00
D. Rock Drilling		feet x	$58.00	$0.00
E. 2" Rock Coring		feet x	$45.00	$0.00
G. Rock Multi-sampling ports/screens		feet x	$47.20	$0.00
H. Recovery Well (4 inch diameter)	90	each x	$45.00	$4,050.00
I. Pushed Pre-packed screen (1.25 diameter)		each x	$18.50	$0.00
J. Rotosonic (2 inch diameter)		each x	$45.00	$0.00
10. **Groundwater Sample Collection / Gauge Depth to Water or Product (Each)**				
A. Groundwater Purge		wells x	$55.00	$0.00
B. Air or Vapors		samples x	$90.00	$0.00
C. Water Supply		samples x	$30.00	$0.00
D. Groundwater No Purge or Duplicate		samples x	$35.00	$0.00
E. Gauge Well only	29	per well x	$20.00	$580.00
F. Sample Below Product		wells x	$50.00	$0.00
G. Pasive Diffusion Bag		each x	$40.00	$0.00
H. Field Blank		each x	$5.00	$0.00

11. Laboratory Analyses-Groundwater (Each Sample)					
A1. BTEX+Naphth.+ Oxyg's+ 1,2 DCA + Ethanol		samples x	$100.00		$0.00
AA. Lead, Filtered		samples x	$46.00		$0.00
B1. Rush EPA Method 8260B (All of item A.)		samples x	$143.00		$0.00
C1. Trimethal, Butyl, and Isopropyl Benzenes		samples x	$40.00		$0.00
D. PAH's		samples x	$120.00		$0.00
E. Lead, Unfiltered		samples x	$20.00		$0.00
F. EDB by EPA 8011		samples x	$55.00		$0.00
FF. EDB by EPA Method 8011 Rush		samples x	$75.00		$0.00
G. 8 RCRA Metals		samples x	$140.00		$0.00
H. TPH (9070)		samples x	$55.00		$0.00
I. pH		samples x	$10.00		$0.00
J. BOD		samples x	$40.00		$0.00
P1. Ethanol		samples x	$21.50		$0.00
11. **Analyses-Soil (Each Sample)**					
Q. BTEX + Naphth.		samples x	$100.00		$0.00
R. PAH's		samples x	$120.00		$0.00
S. 8 RCRA Metals		samples x	$150.00		$0.00
T. Oil & Grease (9071)		samples x	$60.00		$0.00
U. TPH-DRO (3550B/8015B)		samples x	$65.00		$0.00
V. TPH- GRO (5030B/8015B)		samples x	$65.00		$0.00
W. Grain size/hydrometer		samples x	$99.00		$0.00
X. Total Organic Carbon		samples x	$35.00		$0.00
11. **Analyses-Air (Each Sample)**					
Y. BTEX + Naphthalene		samples x	$247.50		$0.00
11. **Analyses-Free Phase Product (Each Sample)**					
Z. Hydrocarbon Fuel Identification		samples x	$620.00		$0.00
12. **Aquifer Characterization***					
A. Pumping Test		hours x	$120.00		$0.00
B. Slug Test*		tests x	$150.00		$0.00
C. Fractured Rock		tests x	$500.00		$0.00
13. **Free Product Recovery Rate Test* (Each)**		tests x	$120.00		$0.00
14. **Fate/Transport Modeling**					
A. Mathematical Model		each x	$300.00		$0.00
B. Computer Model		each x	$500.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		x	$300.00		$0.00
B. Tier II Risk Evaluation		x	$500.00		$0.00
16. **Subsequent Survey***	1	x	$300.00		$300.00
17. **Disposal* (gallons or tons)**					
A. Wastewater	3500	gallons x	$0.80		$2,800.00
B1. Free Product	500	gallons x	$0.85		$425.00
C. Soil Treatment/Disposal	4	tons x	$72.50		$290.00
D. Drilling fluids		gallons x	$0.80		$0.00
18. **Miscellaneous (attach receipts)**					
		x			$0.00
		x			$0.00
		x			$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		x			$0.00
21. **IGWA (Use DHEC 3666 form)**		x			$0.00
22. **Corrective Action (Use DHEC 3667 form)**		x			$0.00

23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A. 8-hour Event*	3	each x	$3,000.00		$9,000.00
B. AFVR per-hour Continuance	12	per hour x	$204.00		$2,448.00
C. Off-gas treatment per-hour Continuance	36	per hour x	$35.00		$1,260.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A. New GAC System Installation*		each x	$2,500.00		$0.00
B1. Refurbished GAC Sys. Install*		each x	$1,180.00		$0.00
C. Filter replacement/removal*		each x	$450.00		$0.00
D1. GAC System removal, cleaning, & refurbishment*		each x	$720.00		$0.00
E. GAC System housing		each x	$450.00		$0.00
F. In-line particulate filter		each x	$150.00		$0.00
G. Additional piping & fittings		feet x	$4.00		$0.00
25. **Well Repair**					
A. Additional Copies of the Report Delivered		each x	$32.50		$0.00
B. Repair 2x2 MW pad		each x	$100.00		$0.00
C. Repair 4x4 MW pad		each x	$150.00		$0.00
D. Repair well vault		each x	$225.00		$0.00
F. Replace well cover bolts		each x	$10.00		$0.00
G. Replace locking well cap & lock		each x	$15.00		$0.00
H. Replace/Repair stick-up		each x	$137.50		$0.00
I. Convert Flush-mount to Stick-up		each x	$175.00		$0.00
J. Convert Stick-up to Flush-mount		each x	$125.00		$0.00
K. Replace missing/illegible well ID plate		each x	$22.50		$0.00
Report Prep & Project Management	15%	x	$25,428.00		$3,814.20
TOTAL					$29,242.20

*The appropriate mobilization cost can be added to complete these tasks, as necessary

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

APR 29 2013

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

Re: **Recovery Well Installation and AFVR Directive**
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 45602; MWA # UMW-25045
Release reported December 31, 2008
AFVR Report received March 19, 2013
Site Specific QAPP Contractor Addendum and Cost Agreement received April 10, 2013
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced addendum submitted on your behalf by Environmental Compliance Services, Inc. The previous assessment work for this release indicates that petroleum Chemicals of Concern (CoC) are present in the groundwater and soil at concentrations that exceed risk-based screening levels. In order to reduce free product and dissolved CoC, the installation of recovery wells is necessary. All work should be conducted in accordance with the UST Quality Assurance Division Plan and must be conducted in compliance with all applicable regulations. A copy of the Agency's Quality Assurance Program Plan (QAPP) for the UST Management Division is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm.

Assessment activities at the site should begin immediately upon receipt of this letter. Cost agreement # 45602 has been approved for the amount shown on the enclosed cost agreement form for the following scope of work. Three four-inch diameter recovery wells should be installed to aid in the removal of free product. One recovery well should be installed between monitoring wells MW-1 and MW-5; one should be installed between monitoring wells MW-19 and MW-25; and finally, one should be installed adjacent to monitoring well MW-2. Following the installation of these monitoring wells, three AFVR events should be conducted on each of the newly installed recovery wells. The AFVR events should be conducted for twelve hours on each well, and the events should be separated by 15 days. Thirty days after the last AFVR event, please gauge all monitoring and recovery wells. This scope of work should be conducted in accordance with the UST Quality Assurance Program Plan and must be conducted in compliance with all applicable regulations.

In accordance with the QAPP, a weekly status report of the project should be provided via e-mail. If any quality assurance problems arise, you must contact me within 24 hours via phone or e-mail. In addition, a discussion of the problem(s) encountered including quality assurance problems, the actions taken, and the results must be included in the final report submitted to the Agency.

The Assessment Report, contractor checklist (Appendix K), and invoice are due within 90 days from the date of this letter. The report submitted at the completion of these activities should include the required information outlined in the QAPP. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Environmental Compliance Services, Inc. can submit an invoice for direct payment from State Underground Petroleum Environmental Response Bank (SUPERB) Account for pre-approved costs. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Agency is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

Please note, if unnecessary dilutions are completed resulting in reporting limits of individual CoC in excess of Risk-Based Screening Levels (RBSLs), the data cannot be used. In those cases, the Agency may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The Agency encourages the use of 'J' values as necessary so the appropriate action can be determined for a release.

The Agency grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The transport and disposal must be conducted in accordance with the QAPP. If the CoC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit #12175. If you have any questions regarding this correspondence, please contact me by telephone at (803) 896-6633, by fax at (803) 896-6245, or by e-mail at ridglect@dhec.sc.gov.

Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement
Monitoring Well Approval UMW-25045
Signed Site Specific QAPP Contractor Addendum

cc: Environmental Compliance Services, Inc., P O Box 3528, Fort Mill, SC29708 (with enc)
Technical File (with enc)

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

Monitoring Well Approval

Approval is hereby granted to:	Environmental Compliance Services, Inc.
(On behalf of):	Edgefield Fuel & Convenience, LLC
Facility:	Edgefield Fuel & Convenience 3, 311 Main St., Edgefield, SC
UST Permit Number:	12175
County:	Edgefield

This approval is for the installation of three four-inch diameter recovery wells. The recovery wells are to be installed in the approved locations. Recovery wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the Agency shall be completed and submitted to the Agency within 30 days after well completion or abandonment unless another schedule has been approved by the Agency. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Agency within 30 days of receipt of laboratory results unless another schedule has been approved by the Agency as required by R.61-71.H.1.d.
5. If any of the information provided to the Agency changes, notification to the project manager (tel: 803-896-6633 or e-mail: ridglect@dhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.
6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.
7. Agency approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: April 24, 2013 **Approval #: UMW-25045**

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Edgefield Fuel & Convenience 3; UST Permit #12175

311 Main Street, Edgefield, SC

Prepared by:
Randall Hutchins
Environmental Compliance Services, Inc.
13504 South Point Blvd, Ste F
Charlotte, NC 28273

Date: April 9, 2013
Certified UST Site Rehabilitation Contractor #358
Environmental Compliance Services, Inc.

Approvals:

Cathleen Ridgley SC DHEC Project Manager	Signature	Date 4/24/13
Randall Hutchins Contractor Project Manager	Signature	Date 4/9/2013
Kurt Blevins Site Rehabilitation Contractor	Signature	Date 4/9/2013
Craig L. Kennedy, PG Project Verifier/QA Manager	Signature	Date 4/9/2013

Approved Cost Agreement 45602

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3
RIDGLECT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		C	TIER II/COMP. PLAN/QAPP APP B	1.0000	525.00	525.00
04 MOB/DEMOB						
		A	EQUIPMENT	4.0000	575.00	2,300.00
		B	PERSONNEL	5.0000	290.00	1,450.00
09 WELL INSTALLATION						
		H	RECOVERY WELL (4 INCH DIA)	90.0000	45.00	4,050.00
10 SAMPLE COLLECTION						
		E	GAUGE WELL ONLY	29.0000	20.00	580.00
16 SUBSEQUENT SURVEY						
			SUBSEQUENT SURVEY	1.0000	300.00	300.00
17 DISPOSAL						
		A	WASTEWATER	3,500.0000	0.80	2,800.00
		B1	FREE PRODUCT	500.0000	0.85	425.00
		C	SOIL (TREATMENT/DISPOSAL)	4.0000	72.50	290.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	25,428.00	3,814.20
23 EFR						
		A	8 HOUR EVENT	3.0000	3,000.00	9,000.00
		B	ADDITIONAL HOUR	12.0000	204.00	2,448.00
		C	OFF GAS TREATMENT	36.0000	35.00	1,260.00
				Total Amount		29,242.20

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

AGGRESSIVE FLUID & VAPOR RECOVERY REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651.00
August 19, 2013

Prepared by:
Environmental Compliance Services, Inc.
PO Box 3528
Fort Mill, SC 29708-3528
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

AGGRESSIVE FLUID VAPOR RECOVERY REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

August 16, 2013

Randall Hutchins
Project Manager

Craig L. Kennedy, P.G.
SC Registration No. 2425

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1.0 INTRODUCTION

This report presents the results of the corrective action activities conducted at the Edgefield Fuel & Convenience 3 site between June 1, 2013 and August 16, 2013. The activities were conducted in accordance with the Underground Storage Tank (UST) Quality Assurance Program Plan (QAPP) Contractor Addendum April 9, 2013, and Cost Agreement Number 45602 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated April 29, 2013.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc.
Address: Post Office Box 3528
Fort Mill, South Carolina 29708
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 WELL DRILLER INFORMATION

Name: Mark Gettys
Company Name: Geologic Exploration, Inc.
Address: 176 Commerce Boulevard
Statesville, North Carolina 28625
Certification Number: 01086

1.6 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	Not reported

UST Permit 12175

UST #	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Premium	Unknown	Not In Use	Not applicable
2	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable
3	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable

No additional releases reported at the Edgefield Fuel & Convenience 3 (UST Permit 12175) facility.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of our site visits between June and August 2013 for these corrective action activities. The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs (one 3,000-gallon premium gasoline UST and two 3,000-gallon regular unleaded gasoline USTs) were previously listed at the site and only the premium unleaded gasoline UST was not in use during these corrective action activities.

Historical site assessment activities previously conducted at the site include the Tier I assessment, conducted and reported to the SCDHEC in March 2009, and the Tier II assessment, conducted in December 2009 through May 2010 and reported to the SCDHEC in June 2010. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. The Tier II assessment included two separate rounds of field screening activities to assist with the placement of 13 shallow monitoring wells (MW-4 through MW-16) and an 8-hour Aggressive Fluid & Vapor Recovery (AFVR) event at monitoring well MW-1 to assist with free phase product removal. Between July and September 2011 AFVR events and a groundwater sampling event were completed at the site. Additional monitoring wells were installed to assist with free phase product delineation, followed by AFVR events to assist with free phase product removal between April and July 2012. Two 24-hour AFVR events were conducted in February 2013 to remove free phase product.

2.0 CORRECTIVE ACTION

The SCDHEC directive for this corrective action included the installation of three 4-inch recovery wells (one between monitoring wells 12715-MW1 and 12175-MW5, one between monitoring wells 12175-MW19 and 12175-MW25, and one adjacent to 12175-MW2), three separate 12-hour AFVR events on newly installed recovery wells, followed by a gauging event to include all site monitoring wells. The AFVR events were initially scheduled 15 days apart, while the gauging event was completed 30 days after the last AFVR event.

2.1 CORRECTIVE ACTION ACTIVITIES

2.1.1 Recovery Well Installation

Three 4-inch recovery wells (12175-RW1, 12175-RW2, and 12175-RW3) were installed on June 1, 2013. The locations for these three recovery wells were pre-approved by the SCDHEC Project Manager. Recovery well and monitoring well locations are shown on **Figure 2**.

Recovery wells 12175-RW1, 12175-RW2, and 12175-RW3 were each completed to a depth of 30 feet below ground surface (bgs). Each recovery well was constructed with a 4-inch schedule 40 PVC riser and 10 feet of well screen with 0.010-inch slots. The three recovery wells were each completed with flush-mounted traffic bearing well covers.

Boring logs for recovery wells 12175-RW1 through 12175-RW3 are included in **Appendix A**. Well construction records for the three recovery wells are included in **Appendix B**. Following installation, each recovery well was developed, using a decontaminated submersible pump between each well, until the groundwater appeared sediment free.

2.1.2 Surveying Well Locations and Top-of-Casing Elevations

On June 1, 2013, ECS measured horizontal distances and top of casing elevations of the newly installed recovery wells at the site using pre-existing locations and elevations as reference points. One station was used to complete the subsequent survey with fore shot and back shot distances less than 98 feet from the instrument setup location. Monitoring well locations are shown on **Figure 2**.

2.1.3 AFVR Event – June 5-6, 2013

The first of three AFVR events was initiated on June 5, 2013 and completed on June 6, 2013. This AFVR event was completed by A & D Environmental and Industrial Services (A&D) with activity monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction recovery well 12175-RW1, and in observation monitoring wells 12175-MW3, 12175-MW4, and 12175-MW6. Free phase product was measured with a thickness of 0.68 feet in 12175-RW1 and 1.48 feet in 12175-MW4. Free phase product was not detected in recovery wells 12175-MW3 or 12175-MW6.

This AFVR event consisted of one vacuum truck extracting vapors and fluids from recovery well 12175-RW1 for approximately 12 hours. The drop tube (also known as stinger pipe) was lowered to a depth of approximately 6-inches below the free phase product/water table interface. Monitoring wells 12175-MW3, 12175-MW4, and 12175-MW6 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 24 inches of mercury at recovery well 12175-RW1 over the course of the event. The air velocity rates averaged 4,331 feet per minute (ft/min) from the discharge stack over the course of the event. The organic vapor concentrations recovered from recovery well 12175-RW1 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 1.536 parts per million (ppm) during the event. The exhaust stack gas temperatures averaged 195.7 degrees Fahrenheit (°F).

Free phase product was not detected in recovery well 12175-RW1 immediately after the AFVR event; however, free phase product was detected with a thickness of 0.05 feet approximately 20 minutes after. A summary of free phase product and AFVR data collected from recovery well 12175-RW1 during the AFVR activities is presented in **Table 1**. A summary of groundwater elevation data collected during AFVR activities is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor, based on 12 hours of organic vapor measurements and using a conversion factor of 1.02 for benzene, was 27.91 pounds (4.46 gallons). Emission calculations were determined using the manufacture's conversion factor to convert the TLV readings into gas concentrations for benzene. Approximately 920 gallons of liquid were removed from recovery well 12175-RW1 during the June 5-6, 2013 AFVR event. A measurable amount of free phase product was not detected in the tank of the vacuum truck during post-AFVR measurements. Field data sheets, emissions calculations and the disposal manifest for the June 5-6, 2013 AFVR event are included in **Appendix C**.

2.1.4 AFVR Event – June 20-21, 2013

The second of three AFVR events was initiated on June 20, 2013 and completed on June 21, 2013. This AFVR event was completed by A&D with monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction recovery well 12175-RW2, and in observation monitoring wells 12175-MW19, 12175-MW24, and 12175-MW25. Free phase product was measured with a thickness of 3.28 feet in 12175-RW2, 3.04 feet in 12175-MW19, and 3.25 feet in 12175-MW25. Free phase product was not detected in observation well 12175-MW24.

This AFVR event consisted of one vacuum truck extracting fluids and vapors from recovery well 12175-RW2 for approximately 12 hours. The stinger pipe was lowered to a depth of approximately 6-inches below the free phase product/water table interface. Monitoring wells 12175-MW19, 12175-MW24, and 12175-MW25 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 22 inches of mercury at recovery well 12175-RW2. The air velocity rates averaged 4,532 ft/min from the discharge stack over the course of the event. The organic vapor concentrations averaged 7,807 ppm during the event. The exhaust stack gas temperatures averaged 173.5°F.

Free phase product was not detected in recovery well 12175-RW2 immediately after the AFVR event; however, free phase product was detected with a thickness of 0.13 feet approximately 20 minutes after. A summary of free phase product and AFVR data collected from recovery well

12175-RW2 during the AFVR activities is presented in **Table 1**. A summary of groundwater elevation data collected during AFVR activities is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor was 123.25 pounds (19.70 gallons). Approximately 314 gallons of liquid were removed from recovery well 12175-RW2 during the June 20-21, 2013 AFVR event. A measurable amount of free phase product was not detected in the tank of the vacuum truck during post-AFVR measurements. Field data sheets, emissions calculations and the disposal manifest for the June 20-21, 2013 AFVR event are included in **Appendix D**.

2.1.5 AFVR Event – July 15-16, 2013

The third AFVR event was initiated on July 15, 2013 and completed on July 16, 2013. This AFVR event was completed by A&D with monitoring provided by Aaron Williamson of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction recovery well 12175-RW3, and in observation monitoring wells 12175-MW18, 12175-MW24, and 12175-MW25. Free phase product was measured with a thickness of 2.50 feet in observation monitoring well 12175-MW25. Free phase product was not detected in recovery well 12175-RW3, or in observation monitoring wells 12175-MW18 and 12175-MW24.

This AFVR event consisted of one vacuum truck extracting fluids and vapors from recovery well 12175-RW3 for approximately 12 hours. The stinger pipe was lowered to a depth of approximately 6-inches below the free phase product/water table interface. Monitoring wells 12175-MW19, 12175-MW24, and 12175-MW25 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 24 inches of mercury at recovery well 12175-RW3. The air velocity rates averaged 3,487 ft/min from the discharge stack over the course of the event. The organic vapor concentrations averaged 479 ppm during the event. The exhaust stack gas temperatures averaged 186.2°F.

Free phase product was not detected in recovery well 12175-RW3 during post-AFVR measurements on July 16, 2013. A summary of free phase product and AFVR data collected is presented in **Table 1**. A summary of groundwater elevation data is presented in **Table 2**.

The total estimated amount of petroleum products removed as a vapor was 6.94 pounds (1.11 gallons). Approximately 747 gallons of liquid were removed from recovery well 12175-RW3 during the July 15-16, 2013 AFVR event. A measurable amount of free phase product was not detected in the tank of the vacuum truck during post-AFVR measurements. Field data sheets, emissions calculations and the disposal manifest for the July 15-16, 2013 AFVR event are included in **Appendix E**.

2.1.6 Well Gauging Event – August 16, 2013

Twenty-six monitoring wells and three recovery wells (12175-MW1 through 12175-MW26 and 12175-RW1 through 12175-RW3) were gauged for depths to free phase product and depths to groundwater on August 16, 2013. Free phase product was detected in site monitoring wells 12175-MW1 (thickness of 3.39 feet), 12175-MW2 (thickness of 0.32 feet), 12175-MW4 (thickness of 1.00 feet), 12175-MW5 (thickness of 2.44 feet), 12175-MW17 (thickness of 2.04

feet), 12175-MW19 (thickness of 2.62 feet), 12175-MW23 (thickness of 3.88 feet), 12175-MW25 (thickness of 2.47 feet), and recovery well 12175-RW2 (thickness of 0.12 feet). A Gauge Report has been included in **Appendix F**.

2.2 INVESTIGATIVE DERIVED WASTE

Investigative derived waste (IDW) generated during the installation of recovery wells was placed in 55-gallon drums for disposal by a permitted treatment facility. A copy of the disposal manifest for 3.08 tons of soils from drilling and 100 gallons of purged groundwater from well development has been included in **Appendix G**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

- Recovery wells 12175-RW1, 12175-RW2, and 12175-RW3 were installed on June 1, 2013 at on-site locations adjacent to pre-existing monitoring wells with free phase product.
- Approximately 920 gallons of fluids were removed from recovery well 12175-RW1 during the 12-hour AFVR event conducted on June 5-6, 2013. Stack emission calculations indicated 4.46 gallons of petroleum vapors were emitted during this AFVR event.
- Approximately 314 gallons of fluids were removed from recovery well 12175-RW2 during the 12-hour AFVR event conducted on June 20-21, 2013. Stack emission calculations indicated 19.70 gallons of petroleum vapors were emitted during this AFVR event.
- Approximately 747 gallons of fluids were removed from recovery well 12175-RW3 during the 12-hour AFVR event conducted on July 15-16, 2013. Stack emission calculations indicated 1.11 gallons of petroleum vapors were emitted during this AFVR event.
- Free phase product was detected in monitoring wells 12175-MW1 (thickness of 3.39 feet), 12175-MW2 (thickness of 0.32 feet), 12175-MW4 (thickness of 1.00 feet), 12175-MW5 (thickness of 2.44 feet), 12175-MW17 (thickness of 2.04 feet), 12175-MW19 (thickness of 2.62 feet), 12175-MW23 (thickness of 3.88 feet), 12175-MW25 (thickness of 2.47 feet), and recovery well 12175-RW2 (thickness of 0.12 feet) during the gauging event on August 16, 2013.

3.2 RECOMMENDATIONS

- Additional AFVR events should be performed in recovery wells 12175-RW1, 12175-RW2, and 12175-RW3 and monitoring wells where free phase product is detected to continue the reduction of both free phase product and dissolved-phase product in site monitoring wells.
- ECS recommends conducting a groundwater sampling event to evaluate the effectiveness of the AFVR events, and to continue monitoring CoC in groundwater.

4.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience, LLC for specific application to the referenced site in Edgefield County, South Carolina. The assessment was conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

TABLES

TABLE 1
SUMMARY OF AFVR INFORMATION[1]
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F°)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
12175-MW1	4/6/10 - 4/7/10	8	4,419	194.3	626	1.33	0	1.33	314
12175-MW1 12175-MW5	7/12/11 - 7/13/11	12	4,456	232.3	2,454	4.88	0	4.88	1,503
12175-MW2	8/2/11 - 8/3/11	12	4,069	244.6	923	1.65	0	1.65	580
12175-MW19	8/11/11 - 8/12/11	12	4,274	216.4	2,804	5.30	0	5.30	740
12175-MW1	5/10/12 - 5/11/12	8	3,579	186.7	3,280	5.18	0	5.18	674
12175-MW2	5/31/12 - 6/1/12	8	3,481	188.1	1,325	1.97	0	1.97	330
12175-MW5	6/13/12 - 6/14/12	8	2,899	204.4	2,010	2.47	0	2.47	155
12175-MW19	6/28/12 - 6/29/12	8	4,901	230.1	2,790	5.50	0	5.50	167
12175-MW2 12175-MW19 12175-MW25	2/9/13 - 2/10/13	24	3,762	173.1	7,963	40.29	Sheen	40.29	1,675
12175-MW1 12175-MW4 12175-MW5	2/10/13 - 2/11/13	20.67	3,473	176.3	5,649	22.12	Sheen	22.12	1,525
12175-RW1	6/5/13 -6/6/13	12	4,332	195.7	1,536	4.46	Sheen	4.46	920
12175-RW2	6/20/13- 6/21/13	12	4,532	173.5	7,807	19.70	0	19.70	314

TABLE 1
SUMMARY OF AFVR INFORMATION[1]
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F°)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
12175-RW3	7/15/13-7/16/13	12	3,350	179.4	465	1.11	0	1.11	747
Totals		156.67	--	--	--	115.96	0	115.96	9,644

Notes:

1. Aggressive Fluid Vapor Recovery (AFVR) events using vacuum trucks provided by A & D Environmental and Industrial Services, Inc. (2010, August 2011, 2012, 2013) and Zebra Environmental (July 2011).
2. Duration of the AFVR event at well location.
3. Cross-sectional area of exhaust stack is 0.785 sq. ft.
4. Total Volatized in gallons = Air emissions in pounds/(6.25 lbs./gal.)
5. Total Free Product as Fluid is obtained from disposal manifest and/or correspondence with subcontractors from each AFVR event.
6. Total Free Product Recovered = Total Free Product Volatized + Total Free Product as Fluid.

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW1	4/6/10 (pre-AFVR)	98.51	17.61	22.24	4.63	79.74	35	15
	4/7/10 (immediately post-AFVR)		--	21.42	--	77.09		
	4/7/10 (20 minutes post-AFVR)		20.37	20.42	0.05	78.13		
12175-MW3	4/6/10 (pre-AFVR)	100.44	--	20.74	--	79.70	34	15
	4/7/10 (immediately post-AFVR)		--	20.78	--	79.66		
	4/7/10 (20 minutes post-AFVR)		--	20.78	--	79.66		
12175-MW4	4/6/10 (pre-AFVR)	98.61	--	19.14	--	79.47	29	10
	4/7/10 (immediately post-AFVR)		--	19.22	--	79.39		
	4/7/10 (20 minutes post-AFVR)		--	19.23	--	79.38		
12175-MW5	4/6/10 (pre-AFVR)	98.05	--	18.24	--	79.81	29	10
	4/7/10 (immediately post-AFVR)		--	18.95	--	79.10		
	4/7/10 (20 minutes post-AFVR)		--	18.82	--	79.23		
12175-MW6	4/6/10 (pre-AFVR)	99.82	--	20.14	--	79.68	29	10
	4/7/10 (immediately post-AFVR)		--	20.28	--	79.54		
	4/7/10 (20 minutes post-AFVR)		--	20.29	--	79.53		
12175-MW1	7/12/11 (pre-AFVR)	98.51	19.61	24.75	5.14	77.62	35	15
	7/13/11 (immediately post-AFVR)		--	25.35	--	73.16		
	7/13/11 (20 minutes post-AFVR)		22.92	23.03	0.11	75.56		
12175-MW5	7/12/11 (pre-AFVR)	98.05	19.3	23.6	4.30	77.68	29	10
	7/13/11 (immediately post-AFVR)		23.16	23.25	0.09	74.87		
	7/13/11 (20 minutes post-AFVR)		22.31	22.51	0.20	75.69		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW3	7/12/11 (pre-AFVR)	100.44	--	22.84	--	77.60	34	15
	7/13/11 (immediately post-AFVR)		--	22.89	--	77.55		
	7/13/11 (20 minutes post-AFVR)		--	22.84	--	77.60		
12175-MW4	7/12/11 (pre-AFVR)	98.61	--	21.21	--	77.40	29	10
	7/13/11 (immediately post-AFVR)		--	21.31	--	77.30		
	7/13/11 (20 minutes post-AFVR)		--	21.32	--	77.29		
12175-MW6	7/12/11 (pre-AFVR)	99.82	--	22.20	--	77.62	29	10
	7/13/11 (immediately post-AFVR)		--	22.50	--	77.32		
	7/13/11 (20 minutes post-AFVR)		--	22.51	--	77.31		
12175-MW2	8/2/11 (pre-AFVR)	100.42	22.45	26.65	4.20	76.92	34	15
	8/3/11 (immediately post-AFVR)		--	25.67	--	74.75		
	8/3/11 (20 minutes post-AFVR)		24.03	24.13	0.10	76.37		
12175-MW17	8/2/11 (pre-AFVR)	101.09	--	24.07	--	77.02	28	10
	8/3/11 (immediately post-AFVR)		--	24.19	--	76.90		
	8/3/11 (20 minutes post-AFVR)		--	24.18	--	76.91		
12175-MW18	8/2/11 (pre-AFVR)	101.51	--	24.51	--	77.00	28	10
	8/3/11 (immediately post-AFVR)		--	24.56	--	76.95		
	8/3/11 (20 minutes post-AFVR)		--	24.56	--	76.95		
12175-MW19	8/2/11 (pre-AFVR)	100.01	21.98	26.81	4.83	76.82	28	10
	8/3/11 (immediately post-AFVR)		22.05	26.90	4.85	76.75		
	8/3/11 (20 minutes post-AFVR)		22.05	26.89	4.84	76.75		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW19	8/11/11 (pre-AFVR)	100.01	22.13	27.05	4.92	76.65	28	10
	8/12/11 (immediately post-AFVR)		--	27.42	--	72.59		
	8/12/11 (20 minutes post-AFVR)		24.42	24.51	0.09	75.57		
12175-MW1	8/11/11 (pre-AFVR)	98.51	20.25	25.86	5.61	76.86	35	15
	8/12/11 (immediately post-AFVR)		20.37	25.97	5.60	76.74		
	8/12/11 (20 minutes post-AFVR)		20.41	26.02	5.61	76.70		
12175-MW2	8/11/11 (pre-AFVR)	100.42	23.05	25.47	2.42	76.77	34	15
	8/12/11 (immediately post-AFVR)		23.12	25.97	2.85	76.59		
	8/12/11 (20 minutes post-AFVR)		23.13	25.58	2.45	76.68		
12175-MW4	8/11/11 (pre-AFVR)	98.61	--	21.90	--	76.71	29	10
	8/12/11 (immediately post-AFVR)		--	22.32	--	76.29		
	8/12/11 (20 minutes post-AFVR)		--	22.32	--	76.29		
12175-MW1	5/10/12 (pre-AFVR)	98.51	21.91	27.13	5.22	75.30	35	15
	5/11/12 (immediately post-AFVR)		24.97	25.06	0.09	73.52		
	5/11/12 (20 minutes post-AFVR)		23.90	24.24	0.34	74.53		
12175-MW2	5/10/12 (pre-AFVR)	100.42	24.23	28.02	3.79	75.24	34	15
	5/11/12 (immediately post-AFVR)		24.31	28.14	3.83	75.15		
	5/11/12 (20 minutes post-AFVR)		24.31	28.14	3.83	75.15		
12175-MW3	5/10/12 (pre-AFVR)	100.44	--	25.04	--	75.40	34	15
	5/11/12 (immediately post-AFVR)		--	25.11	--	75.33		
	5/11/12 (20 minutes post-AFVR)		--	25.12	--	75.32		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW4	5/10/12 (pre-AFVR)	98.61	22.41	26.85	4.44	75.09	29	10
	5/11/12 (immediately post-AFVR)		22.50	26.98	4.48	74.99		
	5/11/12 (20 minutes post-AFVR)		22.50	27.00	4.50	74.99		
12175-MW5	5/10/12 (pre-AFVR)	98.05	21.50	26.15	4.65	75.39	29	10
	5/11/12 (immediately post-AFVR)		21.98	25.93	3.95	75.08		
	5/11/12 (20 minutes post-AFVR)		22.02	26.01	3.99	75.03		
12175-MW6	5/10/12 (pre-AFVR)	99.82	--	24.44	--	75.38	29	10
	5/11/12 (immediately post-AFVR)		--	24.61	--	75.21		
	5/11/12 (20 minutes post-AFVR)		--	24.62	--	75.20		
12175-MW19	5/10/12 (pre-AFVR)	100.01	23.66	27.73	4.07	75.33	28	10
	5/11/12 (immediately post-AFVR)		23.76	27.74	3.98	75.26		
	5/11/12 (20 minutes post-AFVR)		23.77	27.75	3.98	75.25		
12175-MW24	5/10/12 (pre-AFVR)	100.23	--	24.97	--	75.26	30	10
	5/11/12 (immediately post-AFVR)		--	25.11	--	75.12		
	5/11/12 (20 minutes post-AFVR)		--	25.11	--	75.12		
12175-MW25	5/10/12 (pre-AFVR)	99.95	23.50	28.34	4.84	75.24	30	10
	5/11/12 (immediately post-AFVR)		23.61	28.55	4.94	75.11		
	5/11/12 (20 minutes post-AFVR)		23.60	28.53	4.93	75.12		
12175-MW26	5/10/12 (pre-AFVR)	99.89	--	25.84	--	74.05	30	10
	5/11/12 (immediately post-AFVR)		--	25.88	--	74.01		
	5/11/12 (20 minutes post-AFVR)		--	25.87	--	74.02		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW2	5/31/12 (pre-AFVR)	100.42	24.39	28.16	3.77	75.09	34	15
	6/1/12 (immediately post-AFVR)		25.14	25.31	0.17	75.24		
	6/1/12 (20 minutes post-AFVR)		25.30	25.61	0.31	75.04		
12175-MW1	5/31/12 (pre-AFVR)	98.51	22.06	27.26	5.20	75.15	35	15
	6/1/12 (immediately post-AFVR)		22.13	27.33	5.20	75.08		
	6/1/12 (20 minutes post-AFVR)		22.13	27.33	5.20	75.08		
12175-MW5	5/31/12 (pre-AFVR)	98.05	21.68	26.32	4.64	75.21	29	10
	6/1/12 (immediately post-AFVR)		21.75	26.27	4.52	75.17		
	6/1/12 (20 minutes post-AFVR)		21.75	26.27	4.52	75.17		
12175-MW19	5/31/12 (pre-AFVR)	100.01	23.80	27.74	3.94	75.23	28	10
	6/1/12 (immediately post-AFVR)		23.87	27.75	3.88	75.17		
	6/1/12 (20 minutes post-AFVR)		23.87	27.74	3.87	75.17		
12175-MW24	5/31/12 (pre-AFVR)	100.23	--	25.13	--	75.10	30	10
	6/1/12 (immediately post-AFVR)		--	25.18	--	75.05		
	6/1/12 (20 minutes post-AFVR)		--	25.20	--	75.03		
12175-MW25	5/31/12 (pre-AFVR)	99.95	23.60	28.84	5.24	75.04	30	10
	6/1/12 (immediately post-AFVR)		23.65	28.73	5.08	75.03		
	6/1/12 (20 minutes post-AFVR)		23.65	28.74	5.09	75.03		
12175-MW26	5/31/12 (pre-AFVR)	99.89	--	25.97	--	73.92	30	10
	6/1/12 (immediately post-AFVR)		--	25.96	--	73.93		
	6/1/12 (20 minutes post-AFVR)		--	25.96	--	73.93		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW5	6/13/12 (pre-AFVR)	98.05	21.72	26.43	4.71	75.15	29	10
	6/14/12 (immediately post-AFVR)		--	26.35	--	71.70		
	6/14/12 (20 minutes post-AFVR)		24.32	24.67	0.35	73.64		
12175-MW1	6/13/12 (pre-AFVR)	98.51	22.13	27.56	5.43	75.02	35	15
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		22.13	27.58	5.45	75.02		
12175-MW2	6/13/12 (pre-AFVR)	100.42	25.21	25.82	0.61	75.06	34	15
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		25.21	25.82	0.61	75.06		
12175-MW3	6/13/12 (pre-AFVR)	100.44	--	25.28	--	75.16	34	15
	6/14/12 (immediately post-AFVR)		--	25.30	--	75.14		
	6/14/12 (20 minutes post-AFVR)		--	25.30	--	75.14		
12175-MW4	6/13/12 (pre-AFVR)	98.61	22.59	27.09	4.50	74.90	29	10
	6/14/12 (immediately post-AFVR)		22.61	27.11	4.50	74.88		
	6/14/12 (20 minutes post-AFVR)		22.61	27.11	4.50	74.88		
12175-MW6	6/13/12 (pre-AFVR)	99.82	--	24.67	--	75.15	29	10
	6/14/12 (immediately post-AFVR)		--	24.75	--	75.07		
	6/14/12 (20 minutes post-AFVR)		--	24.73	--	75.09		
12175-MW19	6/13/12 (pre-AFVR)	100.01	23.86	27.74	3.88	75.18	28	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		23.88	27.79	3.91	75.15		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW24	6/13/12 (pre-AFVR)	100.23	--	25.18	--	75.05	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		--	25.22	--	75.01		
12175-MW25	6/13/12 (pre-AFVR)	99.95	23.67	28.71	5.04	75.02	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		23.68	28.71	5.03	75.01		
12175-MW26	6/13/12 (pre-AFVR)	99.89	--	26.00	--	73.89	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		--	26.00	--	73.89		
12175-MW19	6/28/12 (pre-AFVR)	100.01	23.87	27.75	3.88	75.17	28	10
	6/29/12 (immediately post-AFVR)		--	27.21	--	72.80		
	6/29/12 (20 minutes post-AFVR)		25.38	25.70	0.32	74.55		
12175-MW1	6/28/12 (pre-AFVR)	98.51	22.16	27.38	5.22	75.05	35	15
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		22.17	27.38	5.21	75.04		
12175-MW2	6/28/12 (pre-AFVR)	100.42	25.19	25.94	0.75	75.04	34	15
	6/29/12 (immediately post-AFVR)		25.24	25.99	0.75	74.99		
	6/29/12 (20 minutes post-AFVR)		25.22	25.97	0.75	75.01		
12175-MW5	6/28/12 (pre-AFVR)	98.05	21.95	25.94	3.99	75.10	29	10
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		21.95	25.94	3.99	75.10		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW24	6/28/12 (pre-AFVR)	100.23	--	25.19	--	75.04	30	10
	6/29/12 (immediately post-AFVR)		--	25.23	--	75.00		
	6/29/12 (20 minutes post-AFVR)		--	25.27	--	74.96		
12175-MW25	6/28/12 (pre-AFVR)	99.95	23.68	28.70	5.02	75.02	30	10
	6/29/12 (immediately post-AFVR)		23.74	28.76	5.02	74.96		
	6/29/12 (20 minutes post-AFVR)		23.77	28.79	5.02	74.93		
12175-MW26	6/28/12 (pre-AFVR)	99.89	--	25.98	--	73.91	30	10
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		--	26.00	--	73.89		
12175-MW1	7/30/2012 (gauging event)	98.51	22.44	27.95	5.51	74.69	35	15
12175-MW2	7/30/2012 (gauging event)	100.42	25.47	26.25	0.78	74.76	34	15
12175-MW5	7/30/2012 (gauging event)	98.05	22.17	26.71	4.54	74.75	29	10
12175-MW19	7/30/2012 (gauging event)	100.01	24.24	27.94	3.70	74.85	28	10
12175-MW24	7/30/2012 (gauging event)	100.23	--	25.50	--	74.73	30	10
12175-MW25	7/30/2012 (gauging event)	99.95	23.96	29.04	5.08	74.72	30	10
12175-MW26	7/30/2012 (gauging event)	99.89	--	26.28	--	73.61	30	10
12175-MW2	2/9/13 (pre-AFVR)	100.42	26.27	27.30	1.03	73.89	34	15
	2/10/13 (immediately post-AFVR)		--	27.20	--	73.22		
	2/10/13 (20 minutes post-AFVR)		--	27.25	--	73.17		
12175-MW19	2/9/13 (pre-AFVR)	100.01	25.19	27.92	2.73	74.14	28	10
	2/10/13 (immediately post-AFVR)		--	27.05	--	72.96		
	2/10/13 (20 minutes post-AFVR)		26.70	26.80	0.10	73.29		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW25	2/9/13 (pre-AFVR)	99.95	24.92	29.61	4.69	73.86	30	10
	2/10/13 (immediately post-AFVR)		--	27.83	--	72.12		
	2/10/13 (20 minutes post-AFVR)		--	26.41	--	73.54		
12175-MW4	2/9/13 (pre-AFVR)	98.61	23.90	28.85	4.95	73.47	29	10
	2/10/13 (immediately post-AFVR)		24.06	28.23	4.17	73.51		
	2/10/13 (20 minutes post-AFVR)		24.06	28.21	4.15	73.51		
12175-MW24	2/9/13 (pre-AFVR)	100.23	--	26.35	--	73.88	30	10
	2/10/13 (immediately post-AFVR)		--	26.54	--	73.69		
	2/10/13 (20 minutes post-AFVR)		--	26.57	--	73.66		
12175-MW26	2/9/13 (pre-AFVR)	99.89	--	27.06	--	72.83	30	10
	2/10/13 (immediately post-AFVR)		--	27.11	--	72.78		
	2/10/13 (20 minutes post-AFVR)		--	27.12	--	72.77		
12175-MW1	2/10/13 (pre-AFVR)	98.51	23.47	28.71	5.24	73.73	35	15
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		24.63	25.23	0.60	73.73		
12175-MW4	2/10/13 (pre-AFVR)	98.61	24.06	28.23	4.17	73.51	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		25.11	25.17	0.06	73.49		
12175-MW5	2/10/13 (pre-AFVR)	98.05	23.06	27.80	4.74	73.81	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		23.88	23.89	0.01	74.17		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW3	2/10/13 (pre-AFVR)	100.44	--	26.56	--	73.88	34	15
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	26.56	--	73.88		
12175-MW6	2/10/13 (pre-AFVR)	99.82	--	26.01	--	73.81	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	26.03	--	73.79		
12175-MW15	2/10/13 (pre-AFVR)	98.47	--	25.24	--	73.23	27	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	25.23	--	73.24		
12175-MW1	3/12/2013 (gauging event)	98.51	22.42	27.00	4.58	74.95	35	15
12175-MW2	3/12/2013 (gauging event)	100.42	25.53	25.56	0.03	74.88	34	15
12175-MW4	3/12/2013 (gauging event)	98.61	23.82	24.12	0.30	74.72	29	10
12175-MW5	3/12/2013 (gauging event)	98.05	22.65	24.35	1.70	74.98	29	10
12175-MW19	3/12/2013 (gauging event)	100.01	24.53	27.95	3.42	74.63	28	10
12175-MW24	3/12/2013 (gauging event)	100.23	--	25.37	--	74.86	30	10
12175-MW25	3/12/2013 (gauging event)	99.95	24.18	28.02	3.84	74.81	30	10
12175-MW26	3/12/2013 (gauging event)	99.89	--	26.01	--	73.88	30	10
12175-RW1	6/5/13 (pre-AFVR)	98.05	21.34	22.02	0.68	76.54	30	10
	6/6/13 (immediately post-AFVR)		--	23.07	--	74.98		
	6/6/13 (20 minutes post-AFVR)		22.93	22.98	0.05	75.11		
12175-MW3	6/5/13 (pre-AFVR)	100.44	--	23.90	--	76.54	34	15
	6/6/13 (immediately post-AFVR)		--	23.95	--	76.49		
	6/6/13 (20 minutes post-AFVR)		--	23.95	--	76.49		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW4	6/5/13 (pre-AFVR)	98.61	22.02	23.50	1.48	76.22	29	10
	6/6/13 (immediately post-AFVR)		22.09	23.65	1.56	76.13		
	6/6/13 (20 minutes post-AFVR)		22.10	23.62	1.52	76.13		
12175-MW6	6/5/13 (pre-AFVR)	99.82	--	23.28	--	76.54	29	10
	6/6/13 (immediately post-AFVR)		--	23.47	--	76.35		
	6/6/13 (20 minutes post-AFVR)		--	23.48	--	76.34		
12175-RW2	6/20/13 (pre-AFVR)	100.05	22.64	25.92	3.28	76.59	30	10
	6/21/13 (immediately post-AFVR)		--	26.90	--	73.15		
	6/21/13 (20 minutes post-AFVR)		25.44	25.57	0.13	74.58		
12175-MW19	6/20/13 (pre-AFVR)	100.01	22.85	25.89	3.04	76.40	28	10
	6/21/13 (immediately post-AFVR)		23.04	26.02	2.98	76.23		
	6/21/13 (20 minutes post-AFVR)		23.15	26.13	2.98	76.12		
12175-MW24	6/20/13 (pre-AFVR)	100.23	--	23.60	--	76.63	30	10
	6/21/13 (immediately post-AFVR)		--	23.68	--	76.55		
	6/21/13 (20 minutes post-AFVR)		--	23.72	--	76.51		
12175-MW25	6/20/13 (pre-AFVR)	99.95	22.55	25.80	3.25	76.59	30	10
	6/21/13 (immediately post-AFVR)		23.86	23.89	0.03	76.08		
	6/21/13 (20 minutes post-AFVR)		23.78	23.82	0.04	76.16		
12175-RW3	7/15/13 (pre-AFVR)	100.16	--	22.91	--	77.25	30	10
	7/16/13 (immediately post-AFVR)		--	24.52	--	75.64		
	7/16/13 (20 minutes post-AFVR)		--	24.28	--	75.88		

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW18	7/15/13 (pre-AFVR)	101.51	--	24.12	--	77.39	28	10
	7/16/13 (immediately post-AFVR)		--	24.16	--	77.35		
	7/16/13 (20 minutes post-AFVR)		--	24.15	--	77.36		
12175-MW24	7/15/13 (pre-AFVR)	100.23	--	23.01	--	77.22	30	10
	7/16/13 (immediately post-AFVR)		--	23.27	--	76.96		
	7/16/13 (20 minutes post-AFVR)		--	23.27	--	76.96		
12175-MW25	7/15/13 (pre-AFVR)	99.95	22.14	24.64	2.50	77.19	30	10
	7/16/13 (immediately post-AFVR)		22.23	25.02	2.79	77.02		
	7/16/13 (20 minutes post-AFVR)		22.23	24.97	2.74	77.04		
12175-MW1	8/16/2013 (gauging event)	98.51	19.33	22.72	3.39	78.33	35	15
12175-MW2	8/16/2013 (gauging event)	100.42	22.35	22.67	0.32	77.99	34	15
12175-MW3	8/16/2013 (gauging event)	100.44	--	22.32	--	78.12	34	15
12175-MW4	8/16/2013 (gauging event)	98.61	20.49	21.49	1.00	77.87	29	10
12175-MW5	8/16/2013 (gauging event)	98.05	19.39	21.83	2.44	78.05	29	10
12175-MW6	8/16/2013 (gauging event)	99.82	--	21.75	--	78.07	29	10
12175-MW7	8/16/2013 (gauging event)	93.32	--	15.18	--	78.14	20	10
12175-MW8	8/16/2013 (gauging event)	100.59	--	22.87	--	77.72	27	10
12175-MW9	8/16/2013 (gauging event)	97.55	--	20.03	--	77.52	27	10
12175-MW10	8/16/2013 (gauging event)	101.31	--	23.86	--	77.45	30	10
12175-MW11	8/16/2013 (gauging event)	101.65	--	23.69	--	77.96	31	10
12175-MW12	8/16/2013 (gauging event)	100.55	--	23.35	--	77.20	30	10
12175-MW13	8/16/2013 (gauging event)	93.20	--	19.20	--	74.00	25	10
12175-MW14	8/16/2013 (gauging event)	100.05	--	24.06	--	75.99	30	10

TABLE 2
SUMMARY OF GROUNDWATER ELEVATION DATA[1]
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW15	8/16/2013 (gauging event)	98.47	--	20.66	--	77.81	27	10
12175-MW16	8/16/2013 (gauging event)	93.01	--	14.68	--	78.33	20	10
12175-MW17	8/16/2013 (gauging event)	101.09	22.62	24.66	2.04	77.96	28	10
12175-MW18	8/16/2013 (gauging event)	101.51	--	23.45	--	78.06	28	10
12175-MW19	8/16/2013 (gauging event)	100.01	20.73	23.35	2.62	78.63	28	10
12175-MW20	8/16/2013 (gauging event)	91.80	--	18.98	--	72.82	27	10
12175-MW21	8/16/2013 (gauging event)	94.30	--	20.70	--	73.60	29	10
12175-MW22	8/16/2013 (gauging event)	99.82	--	24.64	--	75.18	30	10
12175-MW23	8/16/2013 (gauging event)	102.29	20.47	24.35	3.88	80.85	31	10
12175-MW24	8/16/2013 (gauging event)	100.23	--	22.27	--	77.96	30	10
12175-MW25	8/16/2013 (gauging event)	99.95	21.40	23.87	2.47	77.93	30	10
12175-MW26	8/16/2013 (gauging event)	99.89	--	22.81	--	77.08	30	10
12175-RW1	8/16/2013 (gauging event)	98.05	--	19.80	--	78.25	30	10
12175-RW2	8/16/2013 (gauging event)	100.05	20.75	20.87	0.12	79.27	30	10
12175-RW3	8/16/2013 (gauging event)	100.16	--	22.16	--	78.00	30	10

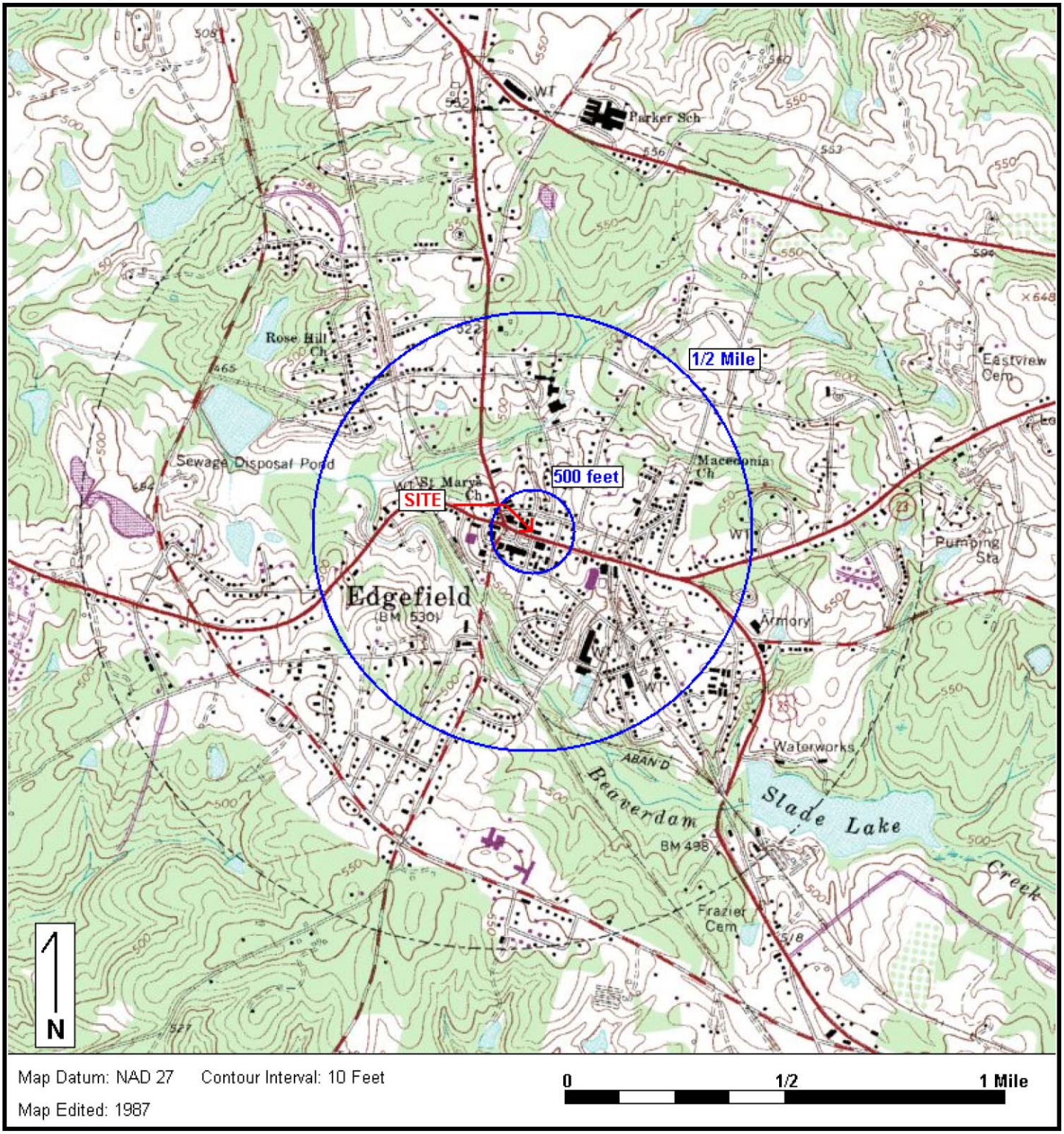
Notes:
1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product, where present, with an assumed density of 0.75 g/cm^3.
3. NM represents Not Measured.

FIGURES

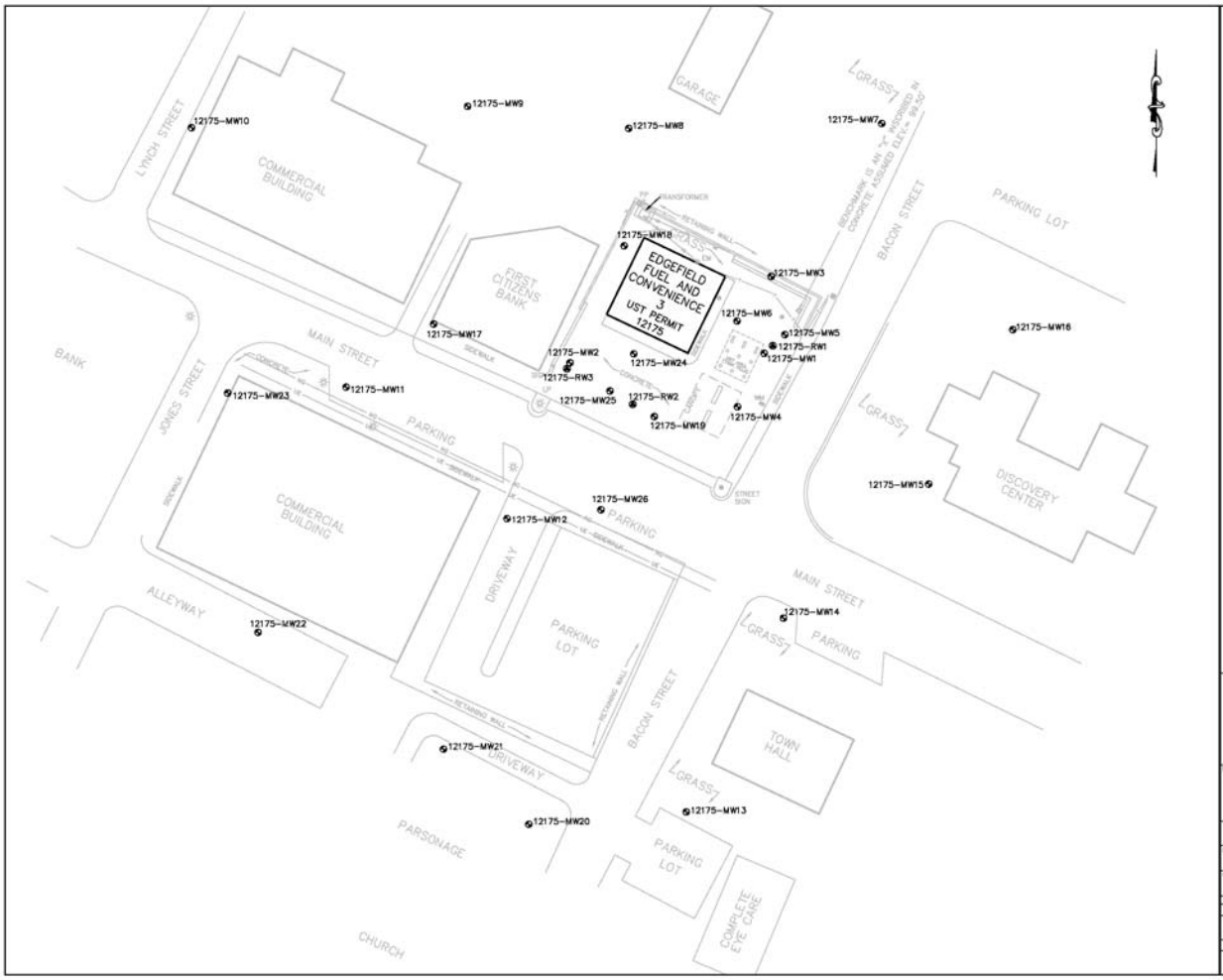
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- Shallow (Water Table) Monitoring Well
- Recovery Well
- 12175-MW1 Well ID

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 06-25-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	CK
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	6/10/13	14-211631	2

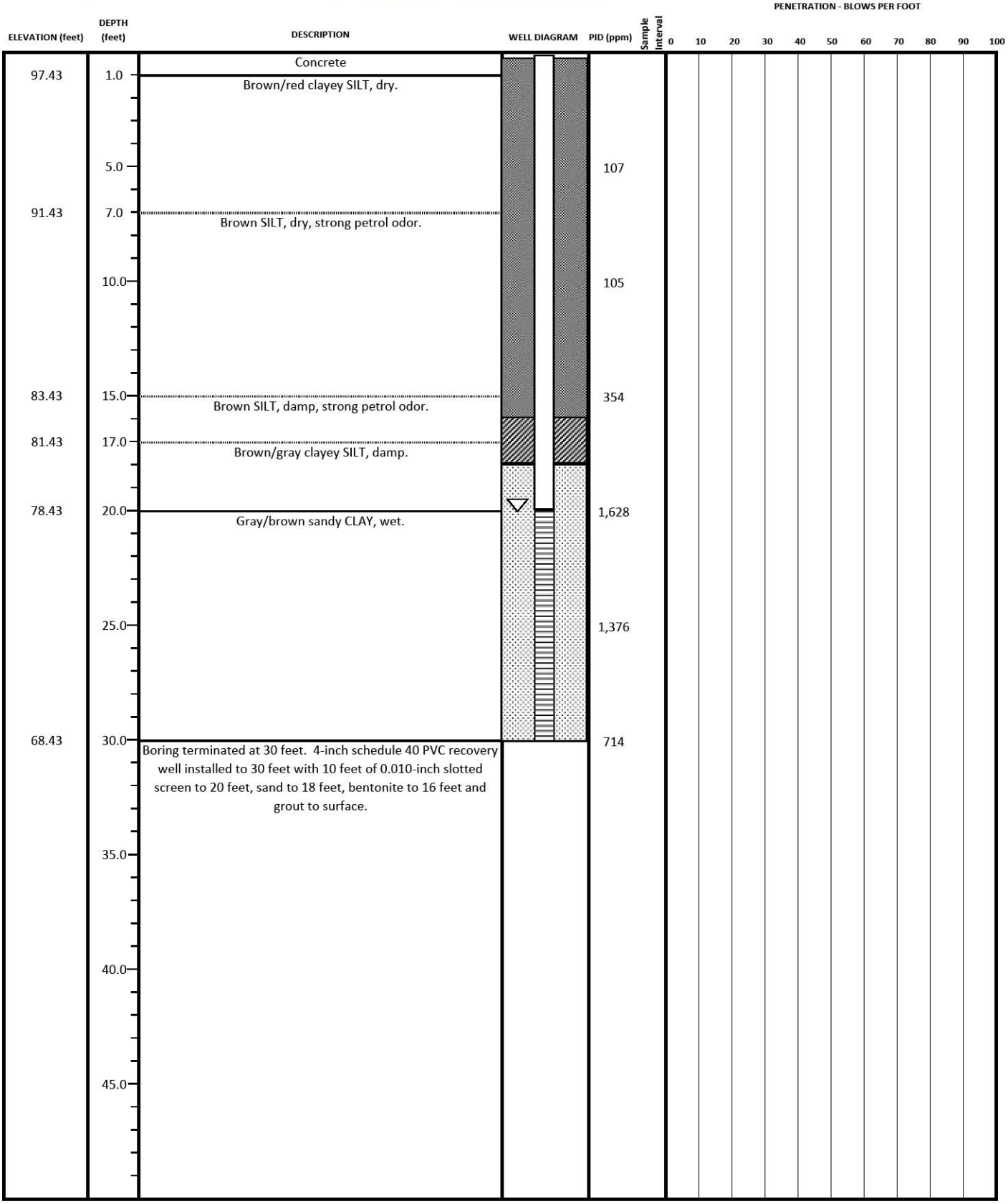
APPENDIX A

Boring Logs

BORING LOG

Job Name: Edgefield Fual & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 98.43 feet
Height of Riser: 98.05 feet



REMARKS: Drilled with Diedrich D120 using 6 5/8" HS augers.
Borehole diameter approximately 10".
Flush-mount cover and locking cap installed on 6/2/13.
Geologic Exploration - GEX

DRILLED BY: GEX - Mark Gettys
LOGGED BY: ECS - A. Williamson

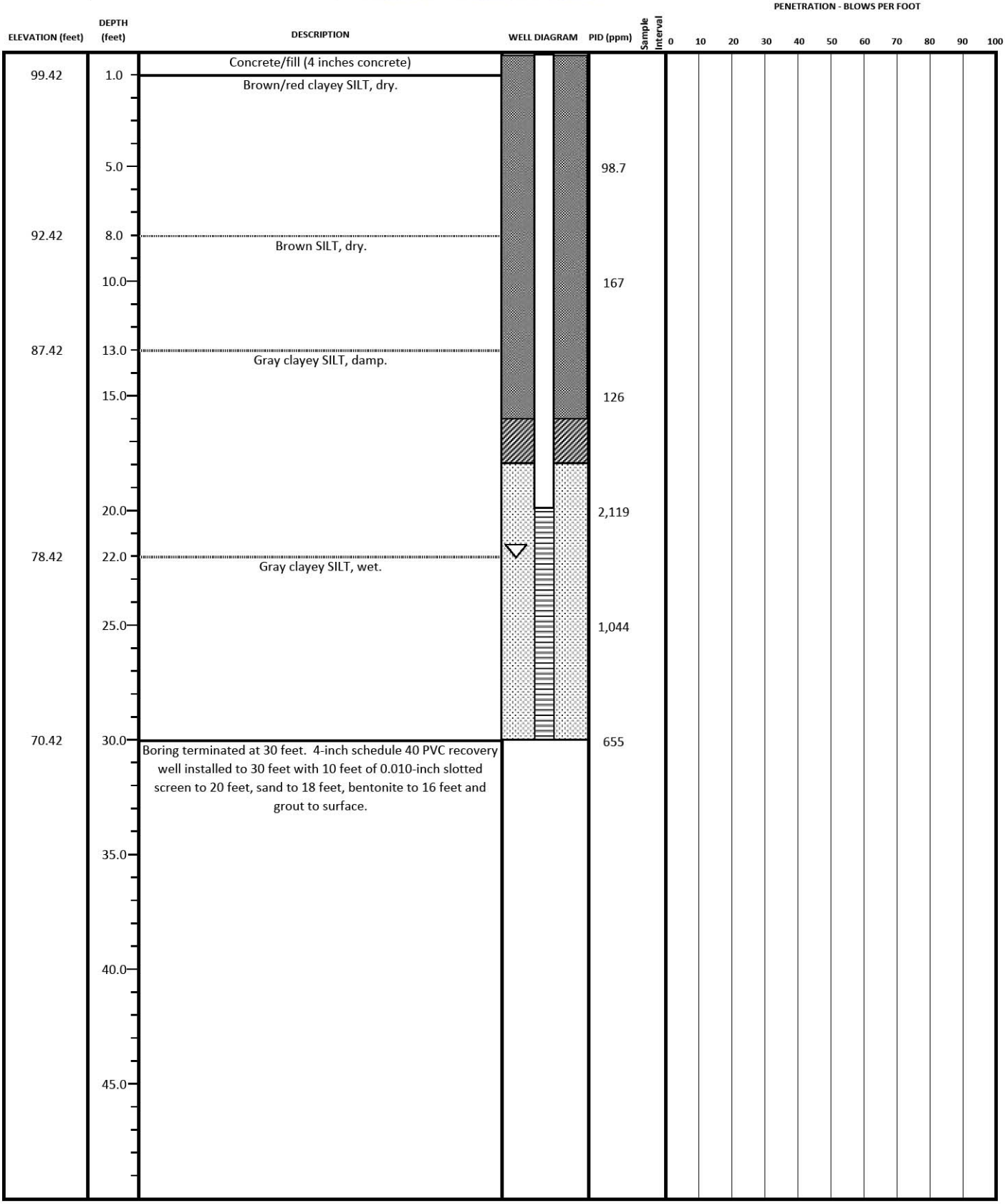
BORING NUMBER: 12175-RW1
DATE STARTED: 6/1/2013
DATE COMPLETED: 6/2/2013
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fual & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.42 feet
Height of Riser: 100.05 feet



REMARKS: Drilled with Diedrich D120 using 6 5/8" HS augers.
Borehole diameter approximately 10".
Flush-mount cover and locking cap installed on 6/2/13.
Geologic Exploration - GEX

DRILLED BY: GEX - Mark Gettys
LOGGED BY: ECS - A. Williamson

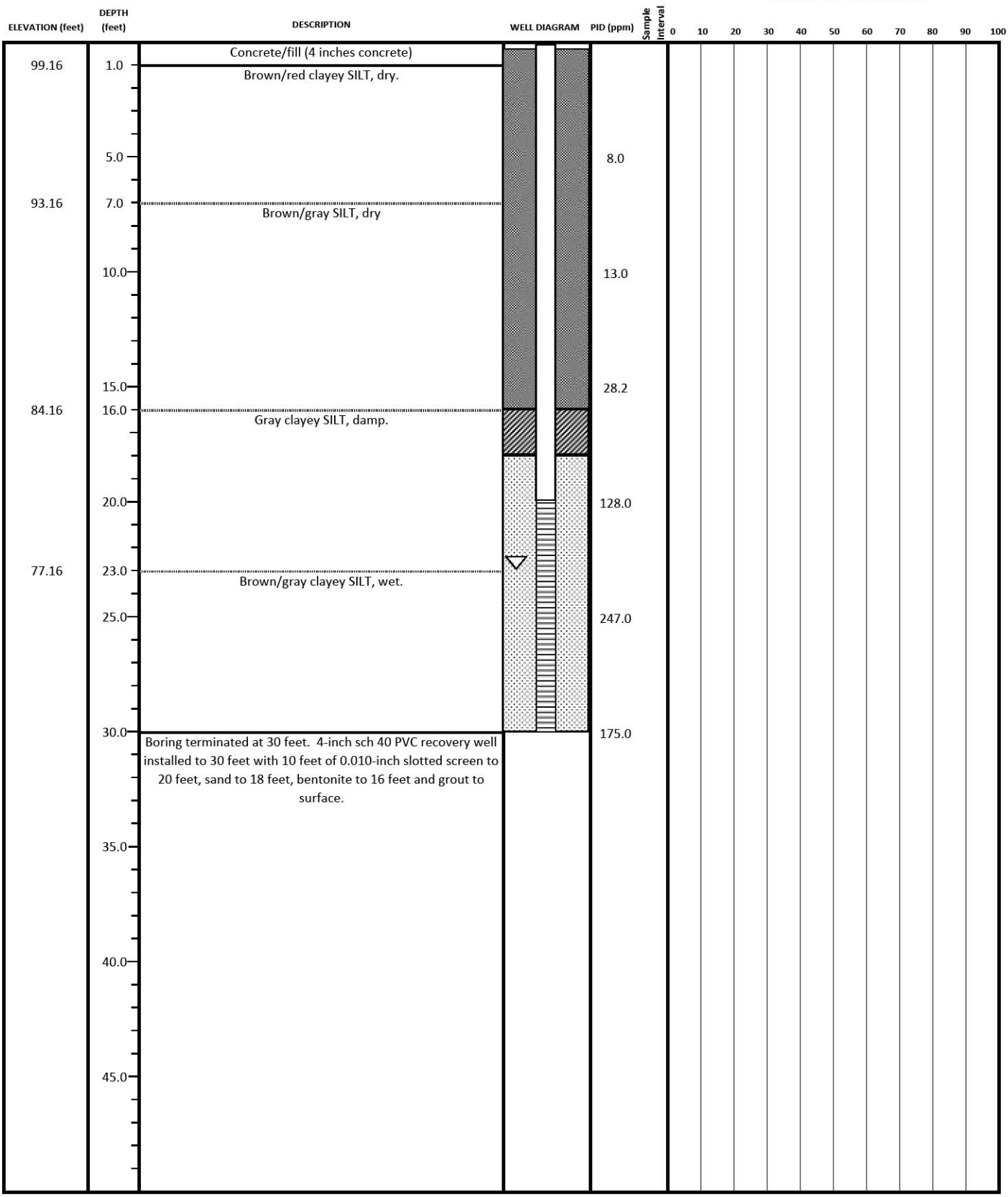
BORING NUMBER: 12175-RW2
DATE STARTED: 6/1/2013
DATE COMPLETED: 6/2/2013
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

BORING LOG

Job Name: Edgefield Fual & Convenience 3
Location: 311 Main Street
Edgefield, SC

Datum Elevation: 100.16 feet
Height of Riser: 100.84 feet



REMARKS: Drilled with Diedrich D120 using 6 5/8" HS augers.
Borehole diameter approximately 10".
Flush-mount cover and locking cap installed on 6/2/13.
Geologic Exploration - GEX

DRILLED BY: GEX - Mark Gettys
LOGGED BY: ECS - A. Williamson

BORING NUMBER: 12175-RW3
DATE STARTED: 6/1/2013
DATE COMPLETED: 6/2/2013
PROJECT NUMBER: 14-211651

GW level @ time of boring
GW level measured after well installation
Grout
Bentonite
Sand
Riser
Screen
Hand Auger
Standard Penetration Test
Drill Cuttings

APPENDIX B

Well Construction Records

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: FUEL & CONVENIENCE - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: 33° 47' 21.59" Longitude: 81° 55' 39.70"

3. PUBLIC SYSTEM NAME: 12175 **PUBLIC SYSTEM NUMBER:** RW-1

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
RED CLAY	5.0	5.0
BROWN SILTY CLAY	17.0	22.0
BROWN CLAYEY SAND	8.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
BENTONITE SEAL FROM 16.0 TO 18.0 FEET.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER: UMW-25045

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30.0 ft. Date Started: 06/01/13 Date Completed: 06/01/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 4 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
4.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 4 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 16.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MARK GETTYS **CERT. NO.:** 01086
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A B C D (circle one) ☑ ☐ ☐ ☐
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Mark K Gettys Well Driller Date: 06/05/13

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: FUEL & CONVENIENCE - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: 33° 47' 21.45" Longitude: 81° 55' 40.72"

3. PUBLIC SYSTEM NAME: 12175 **PUBLIC SYSTEM NUMBER:** RW-2

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
RED CLAY	5.0	5.0
BROWN SILTY CLAY	17.0	22.0
BROWN CLAYEY SAND	8.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
BENTONITE SEAL FROM 16.0 TO 18.0 FEET.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER: UMW-25045

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30.0 ft. Date Started: 06/01/13 Date Completed: 06/01/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 4 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
4.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 4 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 16.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MARK GETTYS **CERT. NO.:** 01086
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A B C D (circle one) ☑ ☐ ☐ ☐
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Mark K Gettys Well Driller Date: 06/05/13

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: EDGEFIELD FUEL & CONVENIENCE, LLC (last) (first)
Address: PO BOX 388
City: EDGEFIELD State: SC Zip: 29824
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** EDGEFIELD
Name: FUEL & CONVENIENCE - 3
Street Address: 311 MAIN STREET
City: EDGEFIELD Zip: 29824
Latitude: 33° 47' 21.46" Longitude: 81° 55' 40.72"

3. PUBLIC SYSTEM NAME: 12175 **PUBLIC SYSTEM NUMBER:** RW-3

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
RED CLAY	5.0	5.0
BROWN SILTY CLAY	17.0	22.0
BROWN CLAYEY SAND	8.0	30.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
BENTONITE SEAL FROM 16.0 TO 18.0 FEET.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER: UMW-25045

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30.0 ft. Date Started: 06/01/13 Date Completed: 06/01/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 4 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
4.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 4 INCH
Slot/Gauge: .010 Length: 10.0 FEET
Set Between: 20.0 ft. and 30.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 30.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 16.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MARK GETTYS **CERT. NO.:** 01086
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A B C D (circle one) ☑ ☐ ☐ ☐
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Mark K Gettys Well Driller Date: 06/05/13

If D Level Driller, provide supervising driller's name:

APPENDIX C

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – June 5-6, 2013

APPENDIX C
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	P. Pike
Date:	6/5/13-6/6/13		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,000	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Y	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	920	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product (ft)	Depth to Water (ft)	Depth to Product (ft)	Depth to Water (ft)	Depth to Product (ft)	Depth to Water (ft)	Depth of Stinger (ft)
12175-RW1	21.34	22.02	NP	23.07	22.93	22.98	22.52
12175-MW3	NP	23.90	NP	23.95	NP	23.95	
12175-MW4	22.02	23.50	22.09	23.65	22.10	23.62	
12175-MW6	NP	23.28	NP	23.47	NP	23.48	

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX C
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P. Pike
Date:	6/5/13-6/6/13	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW3		12175-MW4		12175-MW6	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
19:45						23.90	NM	23.50	NM	23.28	NM
20:00	4,132	178.9	5.1	1,600	24	NM	NM	NM	NM	NM	NM
20:15	4,427	187.9	3.8	1,600	24	NM	0.0	NM	0.2	NM	0.4
20:30	4,479	192.9	3.2	1,500	24	NM	NM	NM	NM	NM	NM
20:45	4,326	194.7	3.0	1,500	24	NM	0.0	NM	0.2	NM	0.4
21:00	4,202	196.7	2.8	1,500	24	NM	NM	NM	NM	NM	NM
21:15	4,254	199.9	2.6	1,400	24	NM	0.0	NM	0.2	NM	0.4
21:30	4,369	197.9	2.6	1,500	24	NM	NM	NM	NM	NM	NM
21:45	4,427	196.7	2.7	1,500	24	NM	0.0	NM	0.2	NM	0.4
22:15	4,271	195.6	2.8	1,500	24	NM	0.0	NM	0.2	NM	0.4
22:45	4,254	198.1	2.6	1,600	24	NM	0.0	NM	0.2	NM	0.4
23:15	4,375	194.7	3.0	1,600	24	NM	0.0	NM	0.2	NM	0.4
23:45	4,439	198.1	2.7	1,600	24	NM	0.0	NM	0.2	NM	0.4
0:15	4,241	198.4	2.7	1,500	24	NM	0.0	NM	0.0	NM	0.2
0:45	4,184	198.0	2.6	1,500	24	NM	0.0	NM	0.0	NM	0.2
1:15	4,341	198.7	2.5	1,600	24	NM	0.0	NM	0.2	NM	0.2
1:45	4,496	199.2	2.4	1,600	24	NM	0.0	NM	0.2	NM	0.2
2:15	4,444	199.1	2.4	1,600	24	NM	0.0	NM	0.0	NM	0.0
2:45	4,565	199.4	2.4	1,600	24	NM	0.0	NM	0.2	NM	0.2
3:15	4,177	198.8	2.4	1,500	24	NM	0.0	NM	0.0	NM	0.0
3:45	4,271	198.1	2.5	1,500	24	NM	0.0	NM	0.0	NM	0.0
4:15	4,566	195.2	2.6	1,500	24	NM	0.0	NM	0.0	NM	0.0
4:45	4,340	193.6	2.8	1,500	24	NM	0.0	NM	0.0	NM	0.0
5:15	4,119	193.7	2.8	1,500	24	NM	0.0	NM	0.0	NM	0.0
5:45	4,357	194.0	2.8	1,600	24	NM	0.0	NM	0.0	NM	0.0
6:15	4,202	196.2	2.7	1,600	24	NM	0.0	NM	0.0	NM	0.0
6:45	4,467	195.8	2.7	1,500	24	NM	0.0	NM	0.0	NM	0.0
7:15	4,219	194.9	2.9	1,500	24	NM	0.0	NM	0.0	NM	0.0
7:45	4,331	194.5	2.9	1,500	24	NM	0.0	NM	0.0	NM	0.0

APPENDIX C
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 23.18
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-RW1
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
		Connection to 12175-RW1							
Start	19:45	Stinger set at 22.52 ft. below top of casing.							
06/05/13	20:00	24	4,132	6	178.9	5.1	0.016575	0.026	653
06/05/13	20:15	24	4,427	6	187.9	3.8	0.015005	0.023	692
06/05/13	20:30	24	4,479	6	192.9	3.2	0.014039	0.022	696
06/05/13	20:45	24	4,326	6	194.7	3.0	0.013664	0.021	670
06/05/13	21:00	24	4,202	6	196.7	2.8	0.013291	0.021	650
06/05/13	21:15	24	4,254	6	199.9	2.6	0.013189	0.021	654
06/05/13	21:30	24	4,369	6	197.9	2.6	0.012642	0.020	675
06/05/13	21:45	24	4,427	6	196.7	2.7	0.012807	0.020	685
06/05/13	22:15	24	4,271	6	195.6	2.8	0.012982	0.020	662
06/05/13	22:45	24	4,254	6	198.1	2.6	0.012696	0.020	657
06/05/13	23:15	24	4,375	6	194.7	3.0	0.013664	0.021	678
06/05/13	23:45	24	4,439	6	198.1	2.7	0.013194	0.021	685
06/06/13	0:15	24	4,241	6	198.4	2.7	0.013279	0.021	654
06/06/13	0:45	24	4,184	6	198.0	2.6	0.012669	0.020	646
06/06/13	1:15	24	4,341	6	198.7	2.5	0.012354	0.019	670
06/06/13	1:45	24	4,496	6	199.2	2.4	0.011976	0.019	694
06/06/13	2:15	24	4,444	6	199.1	2.4	0.011951	0.019	686
06/06/13	2:45	24	4,565	6	199.4	2.4	0.012027	0.019	704
06/06/13	3:15	24	4,177	6	198.8	2.4	0.011875	0.019	645
06/06/13	3:45	24	4,271	6	198.1	2.5	0.012198	0.019	660
06/06/13	4:15	24	4,566	6	195.2	2.6	0.011934	0.019	709
06/06/13	4:45	24	4,340	6	193.6	2.8	0.012436	0.020	675
06/06/13	5:15	24	4,119	6	193.7	2.8	0.012463	0.020	640
06/06/13	5:45	24	4,357	6	194.0	2.8	0.012544	0.020	677
06/06/13	6:15	24	4,202	6	196.2	2.7	0.012671	0.020	651
06/06/13	6:45	24	4,467	6	195.8	2.7	0.012563	0.020	692
06/06/13	7:15	24	4,219	6	194.9	2.9	0.013255	0.021	654
06/06/13	7:45	24	4,331	6	194.5	2.9	0.013142	0.021	672
Averages		24	4,331	6	195.7	2.8	0.012967	0.020	671

NOTES
Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) at an elevation of 526 feet above mean sea level.
B_{ws} = water vapor % by volume

EQUATIONS
$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$
$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX C
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convience 3 AFVR EVENT DATE: 6/5/13-6/6/13

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	653	1,600	1,600	1,642	1.02	1,675	836	0.00005	2.05	2.37	0.59
30	692	1,600	1,600	1,638	1.02	1,671	834	0.00005	2.16	2.50	0.63
45	696	1,500	1,500	1,534	1.02	1,564	781	0.00005	2.03	2.35	0.59
60	670	1,500	1,500	1,533	1.02	1,563	780	0.00005	1.96	2.27	0.57
75	650	1,500	1,500	1,532	1.02	1,563	780	0.00005	1.90	2.20	0.55
90	654	1,400	1,400	1,430	1.02	1,458	728	0.00005	1.78	2.06	0.52
105	675	1,500	1,500	1,530	1.02	1,561	779	0.00005	1.97	2.28	0.57
120	685	1,500	1,500	1,531	1.02	1,561	779	0.00005	2.00	2.31	0.58
150	662	1,500	1,500	1,531	1.02	1,562	779	0.00005	1.93	2.24	1.12
180	657	1,600	1,600	1,633	1.02	1,665	831	0.00005	2.04	2.37	1.18
210	678	1,600	1,600	1,635	1.02	1,668	832	0.00005	2.11	2.45	1.22
240	685	1,600	1,600	1,634	1.02	1,667	832	0.00005	2.13	2.47	1.23
270	654	1,500	1,500	1,532	1.02	1,563	780	0.00005	1.91	2.21	1.10
300	646	1,500	1,500	1,530	1.02	1,561	779	0.00005	1.89	2.18	1.09
330	670	1,600	1,600	1,632	1.02	1,664	830	0.00005	2.08	2.41	1.21
360	694	1,600	1,600	1,631	1.02	1,663	830	0.00005	2.16	2.50	1.25
390	686	1,600	1,600	1,631	1.02	1,663	830	0.00005	2.13	2.47	1.23
420	704	1,600	1,600	1,631	1.02	1,663	830	0.00005	2.19	2.53	1.27
450	645	1,500	1,500	1,529	1.02	1,559	778	0.00005	1.88	2.18	1.09
480	660	1,500	1,500	1,529	1.02	1,560	778	0.00005	1.92	2.23	1.11
510	709	1,500	1,500	1,529	1.02	1,559	778	0.00005	2.07	2.39	1.20
540	675	1,500	1,500	1,530	1.02	1,560	779	0.00005	1.97	2.28	1.14
570	640	1,500	1,500	1,530	1.02	1,561	779	0.00005	1.87	2.16	1.08
600	677	1,600	1,600	1,632	1.02	1,665	831	0.00005	2.11	2.44	1.22
630	651	1,600	1,600	1,632	1.02	1,665	831	0.00005	2.02	2.34	1.17
660	692	1,500	1,500	1,530	1.02	1,561	779	0.00005	2.02	2.34	1.17
690	654	1,500	1,500	1,532	1.02	1,562	780	0.00005	1.91	2.21	1.11
720	672	1,500	1,500	1,532	1.02	1,562	779	0.00005	1.96	2.27	1.14
Averages	671	1,536	1,536	1,568	1.02	1,599	798	0.00005	2.01	2.32	1.00

Total emissions in pounds: 27.91
Total emissions in gallons: 4.46

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX C
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone: 803-957-9175

4. Waste Tracking Number: 33473

5. Generator's Name and Mailing Address: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC
704-583-2711 Randy Hutchins ECS

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC

U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water	1	TT	Appx 920	G	0 Free Product (Sheen)
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175
ECS Project #14-211651

A&D (SC) Job #13484

GENERATOR

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Phyllis Pike

Signature

Month: 6 Day: 6 Year: 13

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Bryan Richardson

Signature

Month: 6 Day: 6 Year: 13

Transporter 2 Printed/Typed Name

Signature

Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Bill Atkins

Signature

Month: 6 Day: 7 Year: 13

DESIGNATED FACILITY'S COPY

APPENDIX D

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – June 20-21, 2013

APPENDIX D
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	P. Pike
Date:	6/20/13 - 6/21/13		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,000	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Y	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	314	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product (ft)	Depth to Water (ft)	Depth to Product (ft)	Depth to Water (ft)	Depth to Product (ft)	Depth to Water (ft)	Depth of Stinger (ft)
12175-RW2	22.64	25.92	NP	26.90	25.44	25.57	26.42
12175-MW19	22.85	25.89	23.04	26.02	23.15	26.13	
12175-MW24	NP	23.60	NP	23.68	NP	23.72	
12175-MW25	22.55	25.80	23.86	23.89	23.78	23.82	

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX D
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P. Pike
Date:	6/20/13 - 6/21/13	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW19		12175-MW24		12175-MW25	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:45						25.89	NM	23.60	NM	25.80	NM
21:00	4,603	166.3	7.2	24,000	22	NM	NM	NM	NM	NM	NM
21:15	6,612	169.9	0.0	18,000	22	NM	0.0	NM	0.0	NM	0.00
21:30	4,413	176.2	5.1	20,000	22	NM	NM	NM	NM	NM	NM
21:45	4,517	176.9	4.9	18,000	22	NM	0.0	NM	0.0	NM	0.00
22:00	5,034	177.4	4.8	14,000	22	NM	NM	NM	NM	NM	NM
22:15	4,379	175.3	4.8	16,000	22	NM	0.1	NM	0.0	NM	0.00
22:30	4,381	174.4	4.7	15,000	22	NM	NM	NM	NM	NM	NM
22:45	4,444	172.9	4.6	15,000	22	NM	0.2	NM	0.0	NM	0.20
23:15	4,369	175.3	4.7	11,000	22	NM	0.2	NM	0.0	NM	0.30
23:45	4,272	177.1	4.7	8,900	22	NM	0.2	NM	0.0	NM	0.30
0:15	4,626	172.2	5.0	4,000	22	NM	0.2	NM	0.0	NM	0.35
0:45	4,327	171.8	5.4	3,800	22	NM	0.2	NM	0.0	NM	0.35
1:15	4,400	170.6	5.7	3,600	22	NM	0.2	NM	0.0	NM	0.35
1:45	4,564	172.6	5.2	3,800	22	NM	0.2	NM	0.0	NM	0.35
2:15	4,391	173.1	5.0	3,600	22	NM	0.2	NM	0.0	NM	0.35
2:45	4,512	173.7	5.0	3,600	22	NM	0.2	NM	0.0	NM	0.35
3:15	4,316	171.7	5.1	3,500	22	NM	0.2	NM	0.0	NM	0.35
3:45	4,297	171.3	5.0	3,300	22	NM	0.2	NM	0.0	NM	0.35
4:15	4,361	171.9	5.1	3,200	22	NM	0.2	NM	0.0	NM	0.35
4:45	4,414	172.0	5.3	3,200	22	NM	0.2	NM	0.0	NM	0.35
5:15	4,387	173.4	5.0	3,200	22	NM	0.2	NM	0.0	NM	0.35
5:45	4,590	174.6	4.7	3,000	22	NM	0.2	NM	0.0	NM	0.35
6:15	4,443	172.3	5.0	3,000	22	NM	0.2	NM	0.0	NM	0.35
6:45	4,420	170.4	5.3	3,000	22	NM	0.2	NM	0.0	NM	0.35
7:15	4,355	172.0	5.0	2,900	22	NM	0.2	NM	0.0	NM	0.35
7:45	4,626	173.7	4.9	2,800	22	NM	0.2	NM	0.0	NM	0.35
8:15	4,532	177.8	4.4	2,600	22	NM	0.2	NM	0.0	NM	0.35
8:45	4,321	180.7	3.6	2,600	22	NM	0.2	NM	0.0	NM	0.35

APPENDIX D
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 25.30
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-RW2
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
		Connection to 12175-RW2							
Start	20:45	Stinger set at 26.46 ft. below top of casing.							
06/20/13	21:00	22	4,603	6	166.3	7.2	0.01759	0.027	741
06/20/13	21:15	22	6,612	6	169.9	0.0	0	0.000	1088
06/20/13	21:30	22	4,413	6	176.2	5.1	0.01558	0.024	702
06/20/13	21:45	22	4,517	6	176.9	4.9	0.015197	0.024	718
06/20/13	22:00	22	5,034	6	177.4	4.8	0.015051	0.024	799
06/20/13	22:15	22	4,379	6	175.3	4.8	0.014341	0.022	699
06/20/13	22:30	22	4,381	6	174.4	4.7	0.013747	0.022	701
06/20/13	22:45	22	4,444	6	172.9	4.6	0.012989	0.020	713
06/20/13	23:15	22	4,369	6	175.3	4.7	0.014035	0.022	697
06/20/13	23:45	22	4,272	6	177.1	4.7	0.014629	0.023	679
06/21/13	0:15	22	4,626	6	172.2	5.0	0.013915	0.022	742
06/21/13	0:45	22	4,327	6	171.8	5.4	0.014915	0.023	693
06/21/13	1:15	22	4,400	6	170.6	5.7	0.015327	0.024	706
06/21/13	1:45	22	4,564	6	172.6	5.2	0.01462	0.023	731
06/21/13	2:15	22	4,391	6	173.1	5.0	0.01421	0.022	703
06/21/13	2:45	22	4,512	6	173.7	5.0	0.014409	0.023	721
06/21/13	3:15	22	4,316	6	171.7	5.1	0.014035	0.022	693
06/21/13	3:45	22	4,297	6	171.3	5.0	0.013626	0.021	691
06/21/13	4:15	22	4,361	6	171.9	5.1	0.014101	0.022	700
06/21/13	4:45	22	4,414	6	172.0	5.3	0.014701	0.023	707
06/21/13	5:15	22	4,387	6	173.4	5.0	0.014309	0.022	702
06/21/13	5:45	22	4,590	6	174.6	4.7	0.01381	0.022	734
06/21/13	6:15	22	4,443	6	172.3	5.0	0.013947	0.022	713
06/21/13	6:45	22	4,420	6	170.4	5.3	0.01416	0.022	711
06/21/13	7:15	22	4,355	6	172.0	5.0	0.01385	0.022	699
06/21/13	7:45	22	4,626	6	173.7	4.9	0.014114	0.022	740
06/21/13	8:15	22	4,532	6	177.8	4.4	0.013895	0.022	721
06/21/13	8:45	22	4,321	6	180.7	3.6	0.012092	0.019	686
Averages		22	4,532	6	173.5	4.8	0.013828	0.022	726

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) at an elevation of 526 feet above mean sea level.
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX D
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/20/13 - 6/21/13

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	741	24,000	24,000	24,676	1.02	25,170	12,559	0.00078	34.86	40.35	10.09
30	1088	18,000	18,000	18,000	1.02	18,360	9,161	0.00057	37.34	43.22	10.80
45	702	20,000	20,000	20,499	1.02	20,909	10,433	0.00065	27.42	31.73	7.93
60	718	18,000	18,000	18,438	1.02	18,807	9,384	0.00059	25.23	29.20	7.30
75	799	14,000	14,000	14,338	1.02	14,624	7,297	0.00046	21.85	25.29	6.32
90	699	16,000	16,000	16,368	1.02	16,695	8,330	0.00052	21.80	25.23	6.31
105	701	15,000	15,000	15,330	1.02	15,637	7,802	0.00049	20.47	23.69	5.92
120	713	15,000	15,000	15,312	1.02	15,618	7,793	0.00049	20.82	24.09	6.02
150	697	11,000	11,000	11,247	1.02	11,472	5,724	0.00036	14.95	17.30	8.65
180	679	8,900	8,900	9,109	1.02	9,291	4,636	0.00029	11.79	13.65	6.83
210	742	4,000	4,000	4,089	1.02	4,171	2,081	0.00013	5.78	6.69	3.35
240	693	3,800	3,800	3,891	1.02	3,969	1,980	0.00012	5.14	5.95	2.98
270	706	3,600	3,600	3,688	1.02	3,762	1,877	0.00012	4.96	5.75	2.87
300	731	3,800	3,800	3,889	1.02	3,967	1,979	0.00012	5.42	6.27	3.14
330	703	3,600	3,600	3,682	1.02	3,756	1,874	0.00012	4.93	5.71	2.86
360	721	3,600	3,600	3,683	1.02	3,757	1,874	0.00012	5.07	5.86	2.93
390	693	3,500	3,500	3,579	1.02	3,650	1,821	0.00011	4.73	5.47	2.73
420	691	3,300	3,300	3,372	1.02	3,439	1,716	0.00011	4.44	5.14	2.57
450	700	3,200	3,200	3,272	1.02	3,338	1,665	0.00010	4.36	5.05	2.53
480	707	3,200	3,200	3,275	1.02	3,341	1,667	0.00010	4.42	5.11	2.56
510	702	3,200	3,200	3,273	1.02	3,339	1,666	0.00010	4.38	5.07	2.53
540	734	3,000	3,000	3,066	1.02	3,128	1,561	0.00010	4.29	4.96	2.48
570	713	3,000	3,000	3,067	1.02	3,128	1,561	0.00010	4.17	4.82	2.41
600	711	3,000	3,000	3,068	1.02	3,129	1,561	0.00010	4.16	4.81	2.41
630	699	2,900	2,900	2,964	1.02	3,024	1,509	0.00009	3.95	4.57	2.29
660	740	2,800	2,800	2,863	1.02	2,921	1,457	0.00009	4.04	4.68	2.34
690	721	2,600	2,600	2,658	1.02	2,711	1,353	0.00008	3.65	4.23	2.11
720	686	2,600	2,600	2,650	1.02	2,703	1,349	0.00008	3.47	4.01	2.01
Averages	726	7,807	7,807	7,977	1.02	8,136	4,060	0.00025	11.35	13.14	4.40

Total emissions in pounds: 123.25
Total emissions in gallons: 19.70

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX D
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

Please print or type.
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			33524

5. Generator's Name and Mailing Address
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name 803-275-2791 Randy Hutchins ECS — U.S. EPA ID Number

7. Transporter 2 Company Name A&D Environmental Services (SC) LLC — U.S. EPA ID Number SCD987693331

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073
Facility's Phone:

U.S. EPA ID Number SCD987693331

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water		TT	314	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
In Case of Emergency Call: 803-957-9175 A&D (SC) Job #3484

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Philip Pike — Signature — Month: 6 Day: 21 Year: 13

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Hallman — Signature: Chris Hallman — Month: 6 Day: 21 Year: 13

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Bill Atkins — Signature — Month: 6 Day: 21 Year: 13

DESIGNATED FACILITY TO GENERATOR

APPENDIX E

AFVR Event Field Data Sheets, Emissions Calculations
And Disposal Manifest – July 15-16, 2013

APPENDIX E
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	A. Williamson
Date:	7/15/13-7/16/13		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Yes	

Measurements After AFVR Event

VT Tank Product volume		gallons
VT Tank Water volume	747	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
12175-RW3	NP	22.91	NP	24.52	NP	24.28	23.50
12175-MW18	NP	24.12	NP	24.16	NP	24.15	--
12175-MW24	NP	23.01	NP	23.27	NP	23.27	--
12175-MW25	22.14	24.64	22.23	25.02	22.23	24.97	--

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX E

AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	A. Williamson
Date:	7/15/13-7/16/13	Subcontractor	A&D

Measurements During AFVR Event

	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW18		12175-MW24		12175-MW25	
Time	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:20						24.12	NM	23.01	NM	24.64	NM
20:35	3,242	151.1	11.9	480	23	NM	NM	NM	NM	NM	NM
20:50	3,398	183.6	5.7	540	24	NM	0.00	NM	1.20	NM	0.60
21:05	3,218	189.3	4.9	580	24	NM	NM	NM	NM	NM	NM
21:20	3,234	182.7	4.9	580	24	NM	0.00	NM	1.30	NM	0.60
21:35	3,395	182.3	4.8	580	24	NM	NM	NM	NM	NM	NM
21:50	3,341	190.6	4.7	580	24	NM	0.00	NM	1.30	NM	0.60
22:05	3,812	190.4	4.3	540	24	NM	NM	NM	NM	NM	NM
22:20	3,309	185.3	5.1	540	24	NM	0.00	NM	1.30	NM	0.60
22:50	3,817	188.8	4.7	540	24	NM	0.00	NM	1.30	NM	0.60
23:20	3,477	187.5	4.7	520	24	NM	0.00	NM	1.30	NM	0.60
23:50	3,608	186.8	4.7	520	24	NM	0.00	NM	1.30	NM	0.60
0:20	3,311	187.0	4.6	500	24	NM	0.00	NM	1.30	NM	0.60
0:50	3,423	187.9	4.6	480	24	NM	0.00	NM	1.30	NM	0.60
1:20	3,603	188.2	4.5	480	24	NM	0.00	NM	1.30	NM	0.60
1:50	3,587	187.9	4.5	460	24	NM	0.00	NM	1.30	NM	0.60
2:20	3,397	188.2	4.5	460	24	NM	0.00	NM	1.30	NM	0.60
2:50	3,459	188.8	4.4	460	24	NM	0.00	NM	1.30	NM	0.60
3:20	3,487	188.4	4.4	440	24	NM	0.00	NM	1.30	NM	0.60
3:50	3,426	187.9	4.3	440	24	NM	0.00	NM	1.30	NM	0.60
4:20	3,497	187.3	4.3	440	24	NM	0.00	NM	1.30	NM	0.60
4:50	3,756	187.2	4.3	420	24	NM	0.00	NM	1.30	NM	0.60
5:20	3,573	187.2	4.4	420	24	NM	0.00	NM	1.30	NM	0.60
5:50	3,340	186.8	4.5	420	24	NM	0.00	NM	1.30	NM	0.60
6:20	3,504	186.6	4.5	400	24	NM	0.00	NM	1.30	NM	0.60
6:50	3,351	188.4	4.2	400	24	NM	0.00	NM	1.30	NM	0.60
7:20	3,485	188.4	4.1	400	24	NM	0.00	NM	1.30	NM	0.60
7:50	3,762	188.2	4.2	400	24	NM	0.00	NM	1.30	NM	0.60
8:20	3,824	189.5	4.2	400	24	NM	0.00	NM	1.30	NM	0.60

APPENDIX E
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 23.67
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-RW3
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	20:20	Connection to 12175-RW3. Stinger set at 23.50 feet below top of casing.							
07/15/13	20:35	23	3,242	6	151.1	11.9	0.020280	0.031	533
07/15/13	20:50	24	3,398	6	183.6	5.7	0.020683	0.032	530
07/15/13	21:05	24	3,218	6	189.3	4.9	0.020100	0.031	498
07/15/13	21:20	24	3,234	6	182.7	4.9	0.017342	0.027	508
07/15/13	21:35	24	3,395	6	182.3	4.8	0.016826	0.026	534
07/15/13	21:50	24	3,341	6	190.6	4.7	0.019815	0.031	516
07/15/13	22:05	24	3,812	6	190.4	4.3	0.018000	0.028	591
07/15/13	22:20	24	3,309	6	185.3	5.1	0.019160	0.030	516
07/15/13	22:50	24	3,817	6	188.8	4.7	0.019042	0.030	592
07/15/13	23:20	24	3,477	6	187.5	4.7	0.018501	0.029	541
07/15/13	23:50	24	3,608	6	186.8	4.7	0.018215	0.028	562
07/16/13	0:20	24	3,311	6	187.0	4.6	0.017896	0.028	516
07/16/13	0:50	24	3,423	6	187.9	4.6	0.018257	0.028	532
07/16/13	1:20	24	3,603	6	188.2	4.5	0.017968	0.028	560
07/16/13	1:50	24	3,587	6	187.9	4.5	0.017849	0.028	558
07/16/13	2:20	24	3,397	6	188.2	4.5	0.017968	0.028	528
07/16/13	2:50	24	3,459	6	188.8	4.4	0.017792	0.028	537
07/16/13	3:20	24	3,487	6	188.4	4.4	0.017635	0.027	542
07/16/13	3:50	24	3,426	6	187.9	4.3	0.017034	0.027	534
07/16/13	4:20	24	3,497	6	187.3	4.3	0.016809	0.026	545
07/16/13	4:50	24	3,756	6	187.2	4.3	0.016771	0.026	586
07/16/13	5:20	24	3,573	6	187.2	4.4	0.017172	0.027	557
07/16/13	5:50	24	3,340	6	186.8	4.5	0.017418	0.027	521
07/16/13	6:20	24	3,504	6	186.6	4.5	0.017341	0.027	547
07/16/13	6:50	24	3,351	6	188.4	4.2	0.016812	0.026	522
07/16/13	7:20	24	3,485	6	188.4	4.1	0.016401	0.026	543
07/16/13	7:50	24	3,762	6	188.2	4.2	0.016738	0.026	586
07/16/13	8:20	24	3,824	6	189.5	4.2	0.017225	0.027	594
Averages		24	3,487	6	186.2	4.8	0.017966	0.028	544

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) at an elevation of 526 feet above mean sea level.
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX E
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 7/15/13-7/16/13

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	533	480	480	496	1.02	506	252	0.00002	0.50	0.58	0.15
30	530	540	540	558	1.02	569	284	0.00002	0.56	0.65	0.16
45	498	580	580	599	1.02	611	305	0.00002	0.57	0.66	0.16
60	508	580	580	596	1.02	608	303	0.00002	0.58	0.67	0.17
75	534	580	580	596	1.02	608	303	0.00002	0.61	0.70	0.18
90	516	580	580	598	1.02	610	305	0.00002	0.59	0.68	0.17
105	591	540	540	556	1.02	567	283	0.00002	0.63	0.72	0.18
120	516	540	540	557	1.02	568	283	0.00002	0.55	0.63	0.16
150	592	540	540	556	1.02	568	283	0.00002	0.63	0.73	0.36
180	541	520	520	535	1.02	546	272	0.00002	0.55	0.64	0.32
210	562	520	520	535	1.02	546	272	0.00002	0.57	0.66	0.33
240	516	500	500	514	1.02	525	262	0.00002	0.51	0.59	0.29
270	532	480	480	494	1.02	504	251	0.00002	0.50	0.58	0.29
300	560	480	480	494	1.02	504	251	0.00002	0.53	0.61	0.31
330	558	460	460	473	1.02	483	241	0.00002	0.50	0.58	0.29
360	528	460	460	473	1.02	483	241	0.00002	0.48	0.55	0.28
390	537	460	460	473	1.02	483	241	0.00002	0.48	0.56	0.28
420	542	440	440	452	1.02	461	230	0.00001	0.47	0.54	0.27
450	534	440	440	452	1.02	461	230	0.00001	0.46	0.53	0.27
480	545	440	440	452	1.02	461	230	0.00001	0.47	0.54	0.27
510	586	420	420	431	1.02	440	219	0.00001	0.48	0.56	0.28
540	557	420	420	432	1.02	440	220	0.00001	0.46	0.53	0.27
570	521	420	420	432	1.02	440	220	0.00001	0.43	0.50	0.25
600	547	400	400	411	1.02	419	209	0.00001	0.43	0.50	0.25
630	522	400	400	411	1.02	419	209	0.00001	0.41	0.47	0.24
660	543	400	400	411	1.02	419	209	0.00001	0.42	0.49	0.25
690	586	400	400	411	1.02	419	209	0.00001	0.46	0.53	0.27
720	594	400	400	411	1.02	419	209	0.00001	0.47	0.54	0.27
Averages	544	479	479	493	1.02	503	251	0.00002	0.51	0.59	0.25

Total emissions in pounds: 6.94
Total emissions in gallons: 1.11

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX E
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

Please print or type
(Form designed for use on elite (12-pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			803-957-9175	71663

GENERATOR

5. Generator's Name and Mailing Address: Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
Generator's Phone: 704-513-2711 Randy Hutchins ECS
Generator's Site Address (if different than mailing address):

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC
U.S. EPA ID Number: SCD987493331

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073
U.S. EPA ID Number: SCD987493331
Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water		TT	747	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 A&D (SC) Job #13484
ECS Project #14-211651

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Aaron W. Harrison (C3 Agent for Edgefield Fuel & Convenience LLC) Signature: Aaron W. Harrison Month: 7 Day: 16 Year: 13

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Terry Kelly Signature: Terry Kelly Month: 7 Day: 16 Year: 13

Transporter 2 Printed/Typed Name: Signature: Month: Day: Year:

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Bill Atkins Signature: Month: 7 Day: 16 Year: 13

APPENDIX F

Gauge Report – August 16, 2013

APPENDIX G

IDW Disposal Manifest

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number 33479

5. Generator's Name and Mailing Address: Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
Generator's Site Address (if different than mailing address)
Generator's Phone: 704-692-3744 Randy Hutchins ECS

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number SCD987599331

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073 — U.S. EPA ID Number SCD987599331
Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt/Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Soil Cuttings/PPE	~~3~~ 11	DM	6163	P	6163 pounds 3.08 Tons
2.	NON-HAZARDOUS NON-REGULATED MATERIAL Development/Purge Water	2	DM	100	G	
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 — A&D (SC) Job #13555
ECS Project #14-211651.00

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: Randall Hutchins, ECS (Agent for) Edgefield Fuel & Convenience — Signature — Month 5 Day 31 Year 13

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: Date leaving U.S.:
Transporter Signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Brian Buteyage — Signature — Month 6 Day 3 Year 13
Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Travis Clapp — Signature — Month 06 Day 14 Year 13

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

APPENDIX H

Data Verification Checklist

Contractor Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	✓		
2	Is UST Owner/Operator name, address, & phone number provided?	✓		
3	Is name, address, & phone number of current property owner provided?	✓		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	✓		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	✓		
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?			✓
7	Has the facility history been summarized?	✓		
8	Has the regional geology and hydrogeology been described?			✓
9	Are the receptor survey results provided as required?			✓
10	Has current use of the site and adjacent land been described?			✓
11	Has the site-specific geology and hydrogeology been described?			✓
12	Has the primary soil type been described?			✓
13	Have field screening results been described?			✓
14	Has a description of the soil sample collection and preservation been detailed?			✓
15	Has the field screening methodology and procedure been detailed?			✓
16	Has the monitoring well installation and development dates been provided?	✓		
17	Has the method of well development been detailed?	✓		
18	Has justification been provided for the locations of the monitoring wells?	✓		
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	✓		
20	Has the groundwater sampling methodology been detailed?			✓
21	Have the groundwater sampling dates and groundwater measurements been provided?			✓
22	Has the purging methodology been detailed?			✓
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?			✓
24	If free-product is present, has the thickness been provided?	✓		
25	Does the report include a brief discussion of the assessment done and the results?	✓		
26	Does the report include a brief discussion of the aquifer evaluation and results?			✓
27	Does the report include a brief discussion of the fate & transport models used?			✓

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			✓
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			✓
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			✓
31	Have recommendations for further action been provided and explained?	✓		
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			✓
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	✓		
34	Has the current and historical laboratory data been provided in tabular format?			✓
35	Have the aquifer characteristics been provided and summarized on the appropriate form?			✓
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			✓
37	Has the topographic map been provided with all required elements? (Figure 1)	✓		
38	Has the site base map been provided with all required elements? (Figure 2)	✓		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)			✓
40	Has the site potentiometric map been provided? (Figure 5)	✓		
41	Have the geologic cross-sections been provided? (Figure 6)			✓
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			✓
43	Has the site survey been provided and include all necessary elements? (Appendix A)			✓
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)			✓
45	Is the laboratory performing the analyses properly certified?			✓
46	Has the tax map been included with all necessary elements? (Appendix C)			✓
47	Have the soil boring/field screening logs been provided? (Appendix D)	✓		
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)	✓		
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			✓
50	Have the disposal manifests been provided? (Appendix G)	✓		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			✓
52	Has all fate and transport modeling been provided? (Appendix I)			✓
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			✓
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	✓		

Explanation for missing and incomplete information?

Based on the scope of work requested, Table & Figure numbers and Appendix lettering deviated from designations in Programmitc QAPP.

Project Verifier (signature) _____

(print name) Craig L. Kennedy, P.G.

Date _____

D H E C

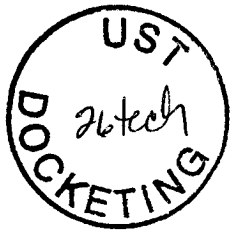
PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

OCT 16 2013



Re: AFVR Directive
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 46922
Release reported December 31, 2008
Assessment Report received September 19, 2013
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) recognizes your commitment to continue work at this site using Environmental Compliance Services (ECS), Inc. as your contractor. The next appropriate scope of work is to continue aggressive fluid and vapor recovery (AFVR) events to remove free-phase product from the groundwater. Please have your contractor conduct three separate eight-hour AFVR events on recovery wells RW-1 and RW-2 and monitoring well MW-23. Each AFVR event should be separated by ten days. Thirty days after the last AFVR event, all monitoring and recovery wells should be gauged. The events should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) Revision 2.0. A copy of the revised QAPP is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm.

Cost Agreement #46922 has been approved in the amount shown on the enclosed cost agreement form for the AFVR events. AFVR activities may proceed immediately upon receipt of this letter, and must be performed by a South Carolina-Certified Underground Storage Tank Site Rehabilitation Contractor. All applicable South Carolina certification requirements apply to preparation of an AFVR report.

An AFVR report and invoice must be submitted to the Division within 90 days from the date of this letter. Your contractor may directly bill the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Interim invoices may be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Agency is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the

Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Agency grants pre-approval for transportation of free-phase product and petroleum-contaminated groundwater from the referenced facility to a permitted treatment facility for disposal. The transport and disposal must be conducted in accordance with the QAPP.

On all correspondence concerning this facility, please reference UST Permit #12175. If there are any questions concerning this project, feel free to contact me by telephone at (803) 898-0610, by fax at (803) 898-0673, or by e-mail at ridglect@dhec.sc.gov.

Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved cost agreement form

cc: Environmental Compliance Services, Inc., P O Box 3528, Fort Mill, SC29708 (with enc)
Technical File (with enc)

Approved Cost Agreement 46922

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3
RIDGLECT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	3.0000	575.00	1,725.00
		B	PERSONNEL	4.0000	290.00	1,160.00
10 SAMPLE COLLECTION						
		E	GAUGE WELL ONLY	29.0000	20.00	580.00
17 DISPOSAL						
		A	WASTEWATER	5,000.0000	0.80	4,000.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	17,305.00	2,595.75
23 EFR						
		A	8 HOUR EVENT	3.0000	3,000.00	9,000.00
		C	OFF GAS TREATMENT	24.0000	35.00	840.00
				Total Amount		19,900.75

Document Receipt Information

☐ Hard Copy ☒ CD ☐ Email

Date Received 2-5-14

Permit Number 12175

Project Manager Cathleen Ridgley

Name of Contractor ACS

UST Certification Number _____

Docket Number 2Tech

Scanned _____

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

AGGRESSIVE FLUID & VAPOR RECOVERY REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651.00
January 29, 2014

Prepared by:
Environmental Compliance Services, Inc.
PO Box 3528
Fort Mill, SC 29708-3528
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

AGGRESSIVE FLUID VAPOR RECOVERY REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

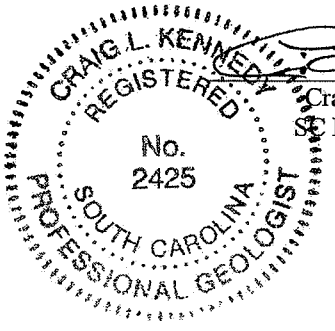
Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

January 29, 2014

Randall Hutchins
Project Manager



Craig L. Kennedy, P.G.
SC Registration No. 2425

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1.0 INTRODUCTION

This report presents the results of the corrective action activities conducted at the Edgefield Fuel & Convenience 3 site between November 4, 2013 and January 9, 2014. The activities were conducted in accordance with the Underground Storage Tank (UST) Quality Assurance Program Plan (QAPP) Revision 2.0, and Cost Agreement Number 46922 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated October 16, 2013.

1.1 SITE INFORMATION

UST Facility Name:	Edgefield Fuel & Convenience 3
UST Permit Number:	12175
Facility Address:	311 Main Street Edgefield, South Carolina 29824
Telephone Number:	(803) 637-5425

1.2 UST OWNER/OPERATOR

Name:	Edgefield Fuel & Convenience, LLC
Address:	P.O. Box 388 Edgefield, South Carolina 29824
Telephone Number:	(803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name:	Edgefield Fuel & Convenience, LLC
Address:	P.O. Box 388 Edgefield, South Carolina 29824
Telephone Number:	(803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name:	Environmental Compliance Services, Inc.
Address:	Post Office Box 3528 Fort Mill, South Carolina 29708
Telephone Number:	(800) 627-0493
Certification Number:	358

1.5 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	Not reported

UST Permit 12175

UST #	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Premium	Unknown	Not In Use	Not applicable
2	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable
3	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable

No additional releases reported at the Edgefield Fuel & Convenience 3 (UST Permit 12175) facility.

The site operated as Edgefield Fuel & Convenience 3, a gasoline retail and convenience store, at the time of our site visits between June and August 2013 for these corrective action activities. The site previously operated as Amoco Food Mart 3, also a petroleum retail and convenience store. A release from the underground storage tank (UST) system at the site was reported to the South Carolina Department of Health and Environmental Control (SCDHEC) on December 31, 2008. Three USTs (one 3,000-gallon premium gasoline UST and two 3,000-gallon regular unleaded gasoline USTs) were previously listed at the site and only the premium unleaded gasoline UST was not in use during these corrective action activities.

Historical site assessment activities previously conducted at the site include the Tier I assessment, conducted and reported to the SCDHEC in March 2009, and the Tier II assessment, conducted in December 2009 through May 2010 and reported to the SCDHEC in June 2010. Eight soil borings (SB-1 through SB-8) and three shallow monitoring wells (MW-1 through MW-3) were installed during the Tier I assessment. The Tier II assessment included two separate rounds of field screening activities to assist with the placement of 13 shallow monitoring wells (MW-4 through MW-16) and an 8-hour Aggressive Fluid & Vapor Recovery (AFVR) event at monitoring well MW-1 to assist with free phase product removal. Between July and September 2011 AFVR events and a groundwater sampling event were completed at the site. Additional monitoring wells were installed to assist with free phase product delineation, followed by AFVR events to assist with free phase product removal between April and July 2012. Two 24-hour AFVR events were conducted in February 2013 to remove free phase product. Three 4-inch recovery wells were installed in June 2013 followed by three separate 12-hour AFVR events in June and July 2013 to assist with free phase product removal.

1.6 REGIONAL GEOLOGY/HYDROGEOLOGY

The area was located in the Carolina Terrane of the Piedmont Physiographic Province. The Carolina Terrane consisted of upper Precambrian to Cambrian greenschist facies metasedimentary and metavolcanic rocks intruded by numerous granitic and gabbroic plutons ranging in age from 265 to 650 million years. A mantle of residual soil and saprolite has been reported to typically overlie the crystalline rocks of the Carolina Terrane. The thickness of the mantle has ranged from approximately six to 60 feet, although it apparently has been absent in places and thicker than 60 feet in others. The surface layers reported to be composed chiefly of sandy clay. The clay content of most saprolites typically ranges from 10 to 25 percent, with some containing as little as three percent and others as much as 70 percent.

The mantle that covers the underlying fractured bedrock in most places has provided an intergranular medium through which recharge into, and discharge of water from, the fractured rocks commonly occur. As a result, groundwater flow has been reported to occur within a composite two-media system. The top of the system has been the water table surface, which has been typically located within the saprolite. The

fractured bedrock is expected to generally grade downward into unfractured rock below a depth of approximately 300 feet. The base of the groundwater system is therefore indistinct.

2.0 RECEPTOR SURVEY & SITE DATA

2.1 RECEPTOR SURVEY

The Edgefield Fuel & Convenience 3 site was located in a primarily business and commercial area within the town limits of Edgefield, SC (**Figure 1**). The site was bordered to the north by an access road and parking lot for the west abutting Carolina First Bank. The site was bordered to the east by Bacon Street followed by the South Carolina National Heritage Corridor Discovery Center. The site was bordered to the south by Main Street (US Highway 25) followed by a parking lot for the downtown district of Edgefield. Edgefield Town Hall was located diagonally across the cross streets of Bacon Street and Main Street.

Potable water to the site and surrounding properties was provided by the Edgefield County Water and Sewer Authority. The Edgefield County Water and Sewer Authority utilized potable water from portions of the Savannah River located within the Savannah-Salkehatchie Basin. One private water supply well was identified within a 1,000-foot radius of the site. The private water supply well was located approximately 860 feet southeast of the active site UST basin. This private water supply well located at the community college, however, was not in operation.

One wet weather drainage feature was identified approximately 1,000 feet southeast of the site. This wet weather drainage feature flowed in a general east to west direction before a turn and began flowing toward the southwest. The wet weather drainage feature drained into the Beaverdam Creek. The two closest surface water bodies identified in relation to the site were Beaverdam Creek and a tributary to Beaverdam Creek. Beaverdam Creek was located approximately 1,375 feet southwest of the site and flowed in a general northwest to southeast direction. The tributary to Beaverdam Creek was located approximately 1,380 feet northwest of the site and flowed in a general northeast to southwest direction.

Underground utility conduits marked by the utility company were present on-site and in the immediate vicinity. Utilities marked included a water meter for a municipal water line, electrical lines, and a telephone line. Additionally, a sanitary sewer cleanout for a sanitary sewer line and drop inlets for a storm drainage system were observed during our site visit. A water meter was located on the eastern side of the property. Electrical lines were marked along the eastern side of the property beneath the sidewalk and marked along the northern property limits of the site. A telephone line was marked along the northeastern portion of the site. The sewer cleanout was located on the east side of the site building. The storm drains were located along Bacon Street next to the site property limits. A natural gas line and municipal water line were marked across Main Street from the site.

2.2 SITE GEOLOGY/HYDROGEOLOGY

The site was located approximately 525 feet above mean sea level (MSL) with an approximate total site topographic relief of three feet. Storm water runoff at the site primarily drained toward the south and east. Retaining walls were observed to the north and northeast corner of the site with an approximate 6-foot grade elevation difference at the greatest point. The area around the site was generally characterized by broad ridges and gentle slopes to narrow ridges and side slopes adjacent to drainage ways. As previously discussed in **Section 1.8**, Beaverdam Creek was located approximately 1,375 feet southwest of the site and a tributary to Beaverdam Creek was located approximately 1,380 feet northwest of the site. The tributary flowed in a general northeast to southwest direction before discharging into Beaverdam Creek. Beaverdam Creek flowed in a general northwest to southeast direction.

The surface at the site was generally covered by asphalt, and some smaller areas of concrete and grass. The active site USTs were covered with concrete. The boring logs provided a general characterization of

the geological formations encountered at the location of each monitoring well installed during assessment activities. In general, the site subsurface was characterized by asphalt and concrete ranging from four to six inches in thickness followed by fill material consisting of ABC stone and clayey to silty sand to depths of approximately 2 feet below ground surface (bgs). Native soils (residuum), below the fill material, were characterized as tan to brown to red silty sand and silty clay to depths of 6 feet bgs. Soils encountered in the boreholes 6 feet bgs were characterized as yellow to orange and tan to gray silty sand to the termination depths of the boreholes.

Based on the sieve and hydrometer analyses, the site was underlain at shallow depths by clayey silty sand. The percentages of sand, silt and clay in a soil sample collected from SB-2 (MW-1) at a depth of 20 feet during Tier I assessment activities (March 2009) were 64.1%, 24.5%, and 11.4%, respectively. The percentages of gravel, sand, and combination of silt & clay in the soil sample collected during Tier II activities (April 2010) from on-site monitoring well MW-6 at a depth of 20 feet were 0.6%, 52.2%, and 47.2%, respectively. A hydrometer analysis was not performed on the soil sample collected from monitoring well MW-6 to determine the percentages of silt and clay.

Historical depths to groundwater measured in shallow monitoring wells at the site ranged from 18.09 feet (12175-MW5 in May 2010) to 25.61 feet (12175-MW2 in October 2010 with 3.65 feet of free product), and averaged 22.24 feet in on-site monitoring wells over time. Historical groundwater elevation data is presented in **Table 2**. Groundwater beneath the site was historically reported to flow radially from the northwest to south beneath the site.

Slug tests were previously performed on shallow monitoring wells 12175-MW2 and 12175-MW3 in March 2009 during Tier I activities and shallow monitoring wells 12175-MW6 and 12175-MW11 in May 2010 during Tier II activities. Hydraulic conductivities for these four shallow monitoring wells, calculated using the Bouwer and Rice method, ranged between 0.11 feet per day (ft/day) and 0.73 ft/day. Seepage velocities ranged between 1.66 feet per year (ft/yr) to 3.81 ft/yr.

3.0 ASSESSMENT INFORMATION

The SCDHEC directive for this assessment included completion of field screening points and monitoring well installations to define the horizontal and vertical extent of CoC following the Tier II Assessment Plan, QAPP, and subsequent communications with the SCDHEC. Also completed activities during this assessment included a comprehensive survey, a comprehensive groundwater sampling event; and, slug tests for aquifer characterizations.

3.1 SOIL ASSESSMENT

3.1.1 Soil Borings

Soil borings were not installed during this assessment.

3.1.2 Soil Sampling and Analyses

Soil samples were not collected during this assessment.

3.1.3 Soil Analytical Data

No soil samples were submitted for laboratory analysis during this assessment.

3.2 GROUNDWATER FIELD SCREENING

3.2.1 Field Screening Points

Field screening points were not installed during this assessment.

3.3 MONITORING WELL INFORMATION

3.3.1 Monitoring Well Installations

Monitoring wells were not installed during this assessment.

3.3.2 Surveying Well Locations and Top-of-Casing Elevations

Neither a comprehensive survey nor a subsequent survey was conducted during this assessment.

3.4 GROUNDWATER ASSESSMENT

3.4.1 Water Level Measurements

Water level measurements were recorded for select monitoring wells during three separate AFVR events in November and December 2013, and for all site wells 30 days after the last AFVR event on January 9, 2014, see Section 4.0.

The water level measurements recorded on January 9, 2014 included twenty-six monitoring wells and three recovery wells. Free phase product was detected in site wells 12175-MW1 (thickness of 3.40 feet), 12175-MW2 (thickness of 0.83 feet), 12175-MW4 (thickness of 0.88 feet), 12175-MW5 (thickness of 1.72 feet), 12175-MW19 (thickness of 1.67 feet), 12175-MW25 (thickness of 2.53 feet), 12175-RW1 (thickness of 0.03 feet), and 12175-RW2 (thickness of 3.02 feet). A

Gauge Report has been included in **Appendix L**. Groundwater Elevation Data is presented in **Table 2**.

3.4.2 Water Sampling and Analyses

Groundwater samples were not collected during this assessment.

3.4.3 Groundwater Analytical Data

No groundwater samples were submitted for laboratory analysis during this assessment.

3.4.4 Aquifer Characterization

Aquifer characteristics determinations were not requested for this assessment.

4.0 CORRECTIVE ACTION

The SCDHEC directive for this corrective action included the three separate 8-hour AFVR events to remove free phase product followed by a gauging event to include all site monitoring wells. The AFVR events were initially scheduled 15 days apart, while the gauging event was completed 30 days after the last AFVR event.

4.1 CORRECTIVE ACTION ACTIVITIES

4.1.1 AFVR Event – November 4-5, 2013

The first of three AFVR events was initiated on November 4, 2013 and completed on November 5, 2013. This AFVR event was completed by A & D Environmental and Industrial Services (A&D) with activity monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction recovery well 12175-RW1, and in observation monitoring wells 12175-MW3, 12175-MW4, and 12175-MW6. Free phase product was measured with a thickness of 1.10 feet in 12175-RW1 and 1.19 feet in 12175-MW4. Free phase product was not detected in recovery wells 12175-MW3 or 12175-MW6.

This AFVR event consisted of one vacuum truck extracting vapors and fluids from recovery well 12175-RW1 for approximately 8 hours. The drop tube (also known as stinger pipe) was lowered to the depth of the free phase product/water table interface. The depth of the stinger pipe was a deviation from the work plan, which was requested for the level of fluid encountered in the well. Field personnel have been advised of the proper procedure. Monitoring wells 12175-MW3, 12175-MW4, and 12175-MW6 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 21 inches of mercury at recovery well 12175-RW1 over the course of the event. The air velocity rates averaged 5,278 feet per minute (ft/min) from the discharge stack over the course of the event. The organic vapor concentrations recovered from recovery well 12175-RW1 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 863 parts per million (ppm) during the event. The exhaust stack gas temperatures averaged 184.5 degrees Fahrenheit (°F).

Free phase product was not detected in recovery well 12175-RW1 during post-AFVR measurements on November 5, 2013. A summary of free phase product and AFVR data collected is presented in **Table 6**. A summary of groundwater elevation data is presented in **Table 7**.

The total estimated amount of petroleum products removed as a vapor, based on 8 hours of organic vapor measurements and using a conversion factor of 1.02 for benzene, was 12.41 pounds (1.98 gallons). Emission calculations were determined using the manufacture's conversion factor to convert the TLV readings into gas concentrations for benzene. Approximately 911 gallons of liquid were removed from recovery well 12175-RW1 during the November 4-5, 2013 AFVR event. A measurable amount of free phase product was not detected in the tank of the vacuum truck during post-AFVR measurements. The disposal manifest for the November 4-5, 2013 AFVR event is included in **Appendix G**. Field data sheets and emissions calculations for the AFVR event are included in **Appendix L**.

4.1.2 AFVR Event – November 18-19, 2013

The second of three AFVR events was initiated on November 18, 2013 and completed on November 19, 2013. This AFVR event was completed by A&D with monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction recovery well 12175-RW2, and in observation monitoring wells 12175-MW19, 12175-MW24, and 12175-MW25. Free phase product was measured with a thickness of 3.54 feet in 12175-RW2, 2.01 feet in 12175-MW19, and 3.61 feet in 12175-MW25. Free phase product was not detected in observation well 12175-MW24.

This AFVR event consisted of one vacuum truck extracting fluids and vapors from recovery well 12175-RW2 for approximately 8 hours. The stinger pipe was lowered to a depth of the free phase product/water table interface. Monitoring wells 12175-MW19, 12175-MW24, and 12175-MW25 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 22 inches of mercury at recovery well 12175-RW2. The air velocity rates averaged 4,424 ft/min from the discharge stack over the course of the event. The organic vapor concentrations averaged 3,790 ppm during the event. The exhaust stack gas temperatures averaged 174.8°F.

Free phase product was not detected in recovery well 12175-RW2 immediately after the AFVR event; however, free phase product was detected with a thickness of 0.15 feet approximately 20 minutes after. A summary of free phase product and AFVR data collected from recovery well 12175-RW2 during the AFVR activities is presented in **Table 6**. A summary of groundwater elevation data collected during AFVR activities is presented in **Table 7**.

The total estimated amount of petroleum products removed as a vapor was 46.63 pounds (7.46 gallons). Approximately 209 gallons of liquid were removed from recovery well 12175-RW2 during the November 18-19, 2013 AFVR event. A measurable amount of free phase product was not detected in the tank of the vacuum truck during post-AFVR measurements. The disposal manifest for the November 18-19, 2013 AFVR event is included in **Appendix G**. Field data sheets and emissions calculations for the AFVR event are included in **Appendix L**.

4.1.3 AFVR Event – December 2-3, 2013

The third AFVR event was scheduled to start on December 2, 2013; however, the subcontracted vacuum truck did not show. The subcontractor mistakenly had missed the event. The third AFVR event was rescheduled for the next available date, December 9-10, 2013.

4.1.4 AFVR Event – December 9-10, 2013

The third AFVR event was initiated on December 9, 2013 and completed on December 10, 2013. This AFVR event was completed by A&D with monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction monitoring well 12175-MW17, and in observation monitoring wells 12175-MW11, 12175-MW23, and 12175-RW2. Free phase product was measured with a thickness of 1.99 feet in targeted extraction monitoring well 12175-MW17. Free phase product was not detected in observation monitoring wells 12175-MW11, 12175-MW23, or in observation recovery well 12175-RW2.

This AFVR event consisted of one vacuum truck extracting fluids and vapors from recovery well 12175-MW17 for approximately 8 hours. The stinger pipe was lowered to a depth of the free phase product/water table interface. Wells 12175-MW11, 12175-MW23, and 12175-RW2 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 15-minute intervals during the first two hours and at 30-minute intervals during the remainder of the event. The vacuum readings averaged 21 inches of mercury at monitoring well 12175-MW17. The air velocity rates averaged 4,772 ft/min from the discharge stack over the course of the event. The organic vapor concentrations averaged 198 ppm during the event. The exhaust stack gas temperatures averaged 180.8°F.

Free phase product was not detected in monitoring well 12175-MW17 during post-AFVR measurements on December 10, 2013. A summary of free phase product and AFVR data collected is presented in **Table 6**. A summary of groundwater elevation data is presented in **Table 7**.

The total estimated amount of petroleum products removed as a vapor was 2.54 pounds (0.41 gallons). Approximately 450 gallons of liquid were removed from monitoring well 12175-MW17 during the December 9-10, 2013 AFVR event. A measurable amount of free phase product was not detected in the tank of the vacuum truck during post-AFVR measurements. The disposal manifest for the November 18-19, 2013 AFVR event is included in **Appendix G**. Field data sheets and emissions calculations for the AFVR event are included in **Appendix L**.

4.1.5 Well Gauging Event – January 9, 2014

Twenty-six monitoring wells and three recovery wells (12175-MW1 through 12175-MW26 and 12175-RW1 through 12175-RW3) were gauged for depths to free phase product and depths to groundwater on January 9, 2014. Free phase product was detected in site wells 12175-MW1 (thickness of 3.40 feet), 12175-MW2 (thickness of 0.83 feet), 12175-MW4 (thickness of 0.88 feet), 12175-MW5 (thickness of 1.72 feet), 12175-MW19 (thickness of 1.67 feet), 12175-MW25 (thickness of 2.53 feet), 12175-RW1 (thickness of 0.03 feet), and 12175-RW2 (thickness of 3.02 feet). A Gauge Report has been included in **Appendix L**.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

- Approximately 911 gallons of fluids were removed from recovery well 12175-RW1 during the 8-hour AFVR event conducted on November 11-12, 2013. Stack emission calculations indicated 1.98 gallons of petroleum vapors were emitted during this AFVR event.
- Approximately 209 gallons of fluids were removed from recovery well 12175-RW2 during the 8-hour AFVR event conducted on November 18-19, 2013. Stack emission calculations indicated 7.46 gallons of petroleum vapors were emitted during this AFVR event.
- Approximately 450 gallons of fluids were removed from monitoring well 12175-MW17 during the 8-hour AFVR event conducted on December 9-10, 2013. Stack emission calculations indicated 0.41 gallons of petroleum vapors were emitted during this AFVR event.
- Free phase product was detected in site wells 12175-MW1 (thickness of 3.40 feet), 12175-MW2 (thickness of 0.83 feet), 12175-MW4 (thickness of 0.88 feet), 12175-MW5 (thickness of 1.72 feet), 12175-MW19 (thickness of 1.67 feet), 12175-MW25 (thickness of 2.53 feet), 12175-RW1 (thickness of 0.03 feet), and 12175-RW2 (thickness of 3.02 feet) during the gauging event on January 9, 2014.

5.2 RECOMMENDATIONS

- Additional AFVR events should be performed in recovery wells 12175-RW1, 12175-RW2, and 12175-RW3 and monitoring wells where free phase product is detected to continue the reduction of both free phase product and dissolved-phase product in site monitoring wells.
- ECS recommends conducting a groundwater sampling event to evaluate the effectiveness of the AFVR events, and to continue monitoring CoC in groundwater.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience, LLC for specific application to the referenced site in Edgefield County, South Carolina. The assessment was conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

TABLES

TABLE 1
SOIL ANALYTICAL DATA
EDGEFIELD FUEL & CONVIENENCE 3

Soil analysis was not requested for this assessment.

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW1	35	20-35	98.51	12/17/04	22.13	23.68	1.55	75.99
				05/10/10	17.83	21.00	3.17	79.89
				10/20/10	19.38	25.07	5.69	77.71
				09/12/11	20.59	26.35	5.76	76.48
				08/16/13	19.33	22.72	3.39	78.33
				01/09/14	19.37	22.77	3.40	78.29
12175-MW2	34	19-34	100.42	12/17/04	---	24.55	---	75.87
				05/10/10	20.27	22.73	2.46	79.54
				10/20/10	21.96	25.61	3.65	77.55
				09/12/11	23.01	27.06	4.05	76.40
				08/16/13	22.35	22.67	0.32	77.99
				01/09/14	22.08	22.91	0.83	78.13
12175-MW3	34	19-34	100.44	12/17/04	---	24.38	---	76.06
				05/10/10	---	20.54	---	79.90
				10/20/10	---	22.71	---	77.73
				09/12/11	---	23.90	---	76.54
				08/16/13	---	22.32	---	78.12
				01/09/14	---	22.11	---	78.33
12175-MW4	29	19-29	98.61	05/10/10	---	18.92	---	79.69
				10/20/10	---	21.04	---	77.57
				09/12/11	---	22.22	---	76.39
				08/16/13	20.49	21.49	1.00	77.87
				01/09/14	20.27	21.15	0.88	78.12
12175-MW5	29	19-29	98.05	05/10/10	---	18.09	---	79.96
				10/20/10	20.22	20.57	0.35	77.74
				09/12/11	20.66	24.05	3.39	76.54
				08/16/13	19.39	21.83	2.44	78.05
				01/09/14	19.24	20.96	1.72	78.38
12175-MW6	29	19-29	99.82	05/10/10	---	19.94	---	79.88
				10/20/10	---	22.09	---	77.73
				09/12/11	---	23.27	---	76.55
				08/16/13	---	21.75	---	78.07
				01/09/14	---	21.51	---	78.31

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW7	20	10-20	93.32	05/10/10	---	13.51	---	79.81
				10/20/10	---	15.91	---	77.41
				09/12/11	---	17.00	---	76.32
				08/16/13	---	15.18	---	78.14
				01/09/14	---	14.95	---	78.37
12175-MW8	27	17-27	100.59	05/10/10	---	21.61	---	78.98
				10/20/10	---	23.83	---	76.76
				09/12/11	---	24.89	---	75.70
				08/16/13	---	22.87	---	77.72
				01/09/14	---	22.73	---	77.86
12175-MW9	27	17-27	97.55	05/10/10	---	18.81	---	78.74
				10/20/10	---	21.12	---	76.43
				09/12/11	---	22.16	---	75.39
				08/16/13	---	20.03	---	77.52
				01/09/14	---	19.75	---	77.80
12175-MW10	30	20-30	101.31	05/10/10	---	22.88	---	78.43
				10/20/10	---	24.90	---	76.41
				09/12/11	---	25.87	---	75.44
				08/16/13	---	23.86	---	77.45
				08/16/13	---	23.74	---	77.57
12175-MW11	31	21-31	101.65	05/10/10	---	22.16	---	79.49
				10/20/10	---	24.10	---	77.55
				09/12/11	---	25.25	---	76.40
				08/16/13	---	23.69	---	77.96
				01/09/14	---	23.61	---	78.04
12175-MW12	30	20-30	100.55	05/10/10	---	21.78	---	78.77
				10/20/10	---	23.75	---	76.80
				09/12/11	---	25.00	---	75.55
				08/16/13	---	23.35	---	77.20
				01/09/14	---	23.24	---	77.31
12175-MW13	25	15-25	93.20	05/10/10	---	17.82	---	75.38
				10/20/10	---	20.26	---	72.94
				09/12/11	---	21.60	---	71.60
				08/16/13	---	19.20	---	74.00
				01/09/14	---	18.87	---	74.33

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW14	30	20-30	100.05	05/10/10	---	22.47	---	77.58
				10/20/10	---	24.77	---	75.28
				09/12/11	---	25.97	---	74.08
				08/16/13	---	24.06	---	75.99
				01/09/14	---	23.70	---	76.35
12175-MW15	27	17-27	98.47	05/10/10	---	18.81	---	79.66
				10/20/10	---	21.16	---	77.31
				09/12/11	---	22.10	---	76.37
				08/16/13	---	20.66	---	77.81
				01/09/14	---	20.24	---	78.23
12175-MW16	20	10-20	93.01	05/10/10	---	12.34	---	80.67
				10/20/10	---	14.97	---	78.04
				09/12/11	---	16.15	---	76.86
				08/16/13	---	14.68	---	78.33
				01/09/14	---	14.28	---	78.73
12175-MW17	28	18-28	101.09	10/20/10	---	23.52	---	77.57
				09/12/11	---	24.67	---	76.42
				08/16/13	22.62	24.66	2.04	77.96
				01/09/14	---	23.00	---	78.09
12175-MW18	28	18-28	101.51	10/20/10	---	24.01	---	77.50
				09/12/11	---	25.14	---	76.37
				08/16/13	---	23.45	---	78.06
				01/09/14	---	23.33	---	78.18
12175-MW19	28	18-28	100.01	10/20/10	22.35	23.19	0.84	77.45
				09/12/11	22.57	27.18	4.61	76.29
				08/16/13	20.73	23.35	2.62	78.63
				01/09/14	21.58	23.25	1.67	78.01
12175-MW20	27	17-27	91.80	10/20/10	---	20.28	---	71.52
				09/12/11	---	21.66	---	70.14
				08/16/13	---	18.98	---	72.82
				01/09/14	---	18.42	---	73.38
12175-MW21	29	19-29	94.30	10/20/10	---	21.70	---	72.60
				09/12/11	---	22.94	---	71.36
				08/16/13	---	20.70	---	73.60
				01/09/14	---	20.33	---	73.97

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW22	30	20-30	99.82	10/20/10	---	25.99	---	73.83
				09/12/11	---	26.94	---	72.88
				08/16/13	---	24.04	---	75.78
				01/09/14	---	23.98	---	75.84
12175-MW23	31	21-31	102.29	10/20/10	---	24.86	---	77.43
				09/12/11	---	25.99	---	76.30
				08/16/13	20.87	24.35	3.48	80.55
				01/09/14	---	24.32	---	77.97
12175-MW24	30	20-30	100.23	08/16/13	---	22.07	---	78.16
				01/09/14	---	22.08	---	78.15
12175-MW25	30	20-30	99.95	08/16/13	21.40	23.87	2.47	77.93
				08/16/13	21.22	23.75	2.53	78.10
12175-MW26	30	20-30	99.89	08/16/13	---	22.81	---	77.08
				08/16/13	---	22.68	---	77.21
12175-RW1	30	20-30	98.05	08/16/13	---	19.80	---	78.25
				08/16/13	19.64	19.67	0.03	78.40
12175-RW2	30	20-30	100.05	08/16/13	20.75	20.87	0.12	79.27
				08/16/13	21.16	24.18	3.02	78.14
12175-RW3	30	20-30	100.16	08/16/13	---	22.16	---	78.00
				01/09/14	---	22.00	---	78.16

Notes:

1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of product, where present, with an assumed density of 0.75g/cm^3.
3. Well depths and screened intervals based on well construction records.

TABLE 3
GROUNDWATER ANALYTICAL DATA
EDGEFIELD FUEL & CONVIENENCE 3

Groundwater analysis was not requested for this assessment.

TABLE 4
AQUIFER CHARACTERISTICS
EDGEFIELD FUEL & CONVENIENCE 3

Aquifer characteristics determinations were not requested for this assessment.

TABLE 5
SITE CONCEPTUAL MODEL
EDGEFIELD FUEL & CONVENIENCE 3

Site Conceptual Model was not requested by the SCDHEC for this assessment.

TABLE 6
SUMMARY OF AFVR INFORMATION
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F°)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
12175-MW1	4/6/10 - 4/7/10	8	4,419	194.3	626	1.33	0	1.33	314
12175-MW1 12175-MW5	7/12/11 - 7/13/11	12	4,456	232.3	2,454	4.88	0	4.88	1,503
12175-MW2	8/2/11 - 8/3/11	12	4,069	244.6	923	1.65	0	1.65	580
12175-MW19	8/11/11 - 8/12/11	12	4,274	216.4	2,804	5.30	0	5.30	740
12175-MW1	5/10/12 - 5/11/12	8	3,579	186.7	3,280	5.18	0	5.18	674
12175-MW2	5/31/12 - 6/1/12	8	3,481	188.1	1,325	1.97	0	1.97	330
12175-MW5	6/13/12 - 6/14/12	8	2,899	204.4	2,010	2.47	0	2.47	155
12175-MW19	6/28/12 - 6/29/12	8	4,901	230.1	2,790	5.50	0	5.50	167
12175-MW2 12175-MW19 12175-MW25	2/9/13 - 2/10/13	24	3,762	173.1	7,963	40.29	Sheen	40.29	1,675
12175-MW1 12175-MW4 12175-MW5	2/10/13 - 2/11/13	20.67	3,473	176.3	5,649	22.12	Sheen	22.12	1,525
12175-RW1	6/5/13 -6/6/13	12	4,332	195.7	1,536	4.46	Sheen	4.46	920
12175-RW2	6/20/13- 6/21/13	12	4,532	173.5	7,807	19.70	0	19.70	314
12175-RW3	7/15/13- 7/16/13	12	3,350	179.4	465	1.11	0	1.11	747

TABLE 6
SUMMARY OF AFVR INFORMATION
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F^o)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
12175-RW1	11/4/13-11/5/13	8	5,278	184.5	863	1.98	0	1.98	911
12175-RW2	11/18/13-11/19/13	8	4,424	174.8	3,790	7.46	0	7.46	209
12175-MW17	12/9/13-12/10/13	8	4,772	180.8	198	0.41	0	0.41	450
Totals		180.67	--	--	--	125.81	0	125.81	11,214

Notes:

1. Aggressive Fluid Vapor Recovery (AFVR) events using vacuum trucks provided by A & D Environmental and Industrial Services, Inc. (2010, August 2011, 2012, 2013) and Zebra Environmental (July 2011).
2. Duration of the AFVR event at well location.
3. Cross-sectional area of exhaust stack is 0.785 sq. ft.
4. Total Volatized in gallons = Air emissions in pounds/(6.25 lbs./gal.)
5. Total Free Product as Fluid is obtained from disposal manifest and/or correspondence with subcontractors from each AFVR event.
6. Total Free Product Recovered = Total Free Product Volatized + Total Free Product as Fluid.

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW1	4/6/10 (pre-AFVR)	98.51	17.61	22.24	4.63	79.74	35	15
	4/7/10 (immediately post-AFVR)		--	21.42	--	77.09		
	4/7/10 (20 minutes post-AFVR)		20.37	20.42	0.05	78.13		
12175-MW3	4/6/10 (pre-AFVR)	100.44	--	20.74	--	79.70	34	15
	4/7/10 (immediately post-AFVR)		--	20.78	--	79.66		
	4/7/10 (20 minutes post-AFVR)		--	20.78	--	79.66		
12175-MW4	4/6/10 (pre-AFVR)	98.61	--	19.14	--	79.47	29	10
	4/7/10 (immediately post-AFVR)		--	19.22	--	79.39		
	4/7/10 (20 minutes post-AFVR)		--	19.23	--	79.38		
12175-MW5	4/6/10 (pre-AFVR)	98.05	--	18.24	--	79.81	29	10
	4/7/10 (immediately post-AFVR)		--	18.95	--	79.10		
	4/7/10 (20 minutes post-AFVR)		--	18.82	--	79.23		
12175-MW6	4/6/10 (pre-AFVR)	99.82	--	20.14	--	79.68	29	10
	4/7/10 (immediately post-AFVR)		--	20.28	--	79.54		
	4/7/10 (20 minutes post-AFVR)		--	20.29	--	79.53		
12175-MW1	7/12/11 (pre-AFVR)	98.51	19.61	24.75	5.14	77.62	35	15
	7/13/11 (immediately post-AFVR)		--	25.35	--	73.16		
	7/13/11 (20 minutes post-AFVR)		22.92	23.03	0.11	75.56		
12175-MW5	7/12/11 (pre-AFVR)	98.05	19.3	23.6	4.30	77.68	29	10
	7/13/11 (immediately post-AFVR)		23.16	23.25	0.09	74.87		
	7/13/11 (20 minutes post-AFVR)		22.31	22.51	0.20	75.69		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW3	7/12/11 (pre-AFVR)	100.44	--	22.84	--	77.60	34	15
	7/13/11 (immediately post-AFVR)		--	22.89	--	77.55		
	7/13/11 (20 minutes post-AFVR)		--	22.84	--	77.60		
12175-MW4	7/12/11 (pre-AFVR)	98.61	--	21.21	--	77.40	29	10
	7/13/11 (immediately post-AFVR)		--	21.31	--	77.30		
	7/13/11 (20 minutes post-AFVR)		--	21.32	--	77.29		
12175-MW6	7/12/11 (pre-AFVR)	99.82	--	22.20	--	77.62	29	10
	7/13/11 (immediately post-AFVR)		--	22.50	--	77.32		
	7/13/11 (20 minutes post-AFVR)		--	22.51	--	77.31		
12175-MW2	8/2/11 (pre-AFVR)	100.42	22.45	26.65	4.20	76.92	34	15
	8/3/11 (immediately post-AFVR)		--	25.67	--	74.75		
	8/3/11 (20 minutes post-AFVR)		24.03	24.13	0.10	76.37		
12175-MW17	8/2/11 (pre-AFVR)	101.09	--	24.07	--	77.02	28	10
	8/3/11 (immediately post-AFVR)		--	24.19	--	76.90		
	8/3/11 (20 minutes post-AFVR)		--	24.18	--	76.91		
12175-MW18	8/2/11 (pre-AFVR)	101.51	--	24.51	--	77.00	28	10
	8/3/11 (immediately post-AFVR)		--	24.56	--	76.95		
	8/3/11 (20 minutes post-AFVR)		--	24.56	--	76.95		
12175-MW19	8/2/11 (pre-AFVR)	100.01	21.98	26.81	4.83	76.82	28	10
	8/3/11 (immediately post-AFVR)		22.05	26.90	4.85	76.75		
	8/3/11 (20 minutes post-AFVR)		22.05	26.89	4.84	76.75		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW19	8/11/11 (pre-AFVR)	100.01	22.13	27.05	4.92	76.65	28	10
	8/12/11 (immediately post-AFVR)		--	27.42	--	72.59		
	8/12/11 (20 minutes post-AFVR)		24.42	24.51	0.09	75.57		
12175-MW1	8/11/11 (pre-AFVR)	98.51	20.25	25.86	5.61	76.86	35	15
	8/12/11 (immediately post-AFVR)		20.37	25.97	5.60	76.74		
	8/12/11 (20 minutes post-AFVR)		20.41	26.02	5.61	76.70		
12175-MW2	8/11/11 (pre-AFVR)	100.42	23.05	25.47	2.42	76.77	34	15
	8/12/11 (immediately post-AFVR)		23.12	25.97	2.85	76.59		
	8/12/11 (20 minutes post-AFVR)		23.13	25.58	2.45	76.68		
12175-MW4	8/11/11 (pre-AFVR)	98.61	--	21.90	--	76.71	29	10
	8/12/11 (immediately post-AFVR)		--	22.32	--	76.29		
	8/12/11 (20 minutes post-AFVR)		--	22.32	--	76.29		
12175-MW1	5/10/12 (pre-AFVR)	98.51	21.91	27.13	5.22	75.30	35	15
	5/11/12 (immediately post-AFVR)		24.97	25.06	0.09	73.52		
	5/11/12 (20 minutes post-AFVR)		23.90	24.24	0.34	74.53		
12175-MW2	5/10/12 (pre-AFVR)	100.42	24.23	28.02	3.79	75.24	34	15
	5/11/12 (immediately post-AFVR)		24.31	28.14	3.83	75.15		
	5/11/12 (20 minutes post-AFVR)		24.31	28.14	3.83	75.15		
12175-MW3	5/10/12 (pre-AFVR)	100.44	--	25.04	--	75.40	34	15
	5/11/12 (immediately post-AFVR)		--	25.11	--	75.33		
	5/11/12 (20 minutes post-AFVR)		--	25.12	--	75.32		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW4	5/10/12 (pre-AFVR)	98.61	22.41	26.85	4.44	75.09	29	10
	5/11/12 (immediately post-AFVR)		22.50	26.98	4.48	74.99		
	5/11/12 (20 minutes post-AFVR)		22.50	27.00	4.50	74.99		
12175-MW5	5/10/12 (pre-AFVR)	98.05	21.50	26.15	4.65	75.39	29	10
	5/11/12 (immediately post-AFVR)		21.98	25.93	3.95	75.08		
	5/11/12 (20 minutes post-AFVR)		22.02	26.01	3.99	75.03		
12175-MW6	5/10/12 (pre-AFVR)	99.82	--	24.44	--	75.38	29	10
	5/11/12 (immediately post-AFVR)		--	24.61	--	75.21		
	5/11/12 (20 minutes post-AFVR)		--	24.62	--	75.20		
12175-MW19	5/10/12 (pre-AFVR)	100.01	23.66	27.73	4.07	75.33	28	10
	5/11/12 (immediately post-AFVR)		23.76	27.74	3.98	75.26		
	5/11/12 (20 minutes post-AFVR)		23.77	27.75	3.98	75.25		
12175-MW24	5/10/12 (pre-AFVR)	100.23	--	24.97	--	75.26	30	10
	5/11/12 (immediately post-AFVR)		--	25.11	--	75.12		
	5/11/12 (20 minutes post-AFVR)		--	25.11	--	75.12		
12175-MW25	5/10/12 (pre-AFVR)	99.95	23.50	28.34	4.84	75.24	30	10
	5/11/12 (immediately post-AFVR)		23.61	28.55	4.94	75.11		
	5/11/12 (20 minutes post-AFVR)		23.60	28.53	4.93	75.12		
12175-MW26	5/10/12 (pre-AFVR)	99.89	--	25.84	--	74.05	30	10
	5/11/12 (immediately post-AFVR)		--	25.88	--	74.01		
	5/11/12 (20 minutes post-AFVR)		--	25.87	--	74.02		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW2	5/31/12 (pre-AFVR)	100.42	24.39	28.16	3.77	75.09	34	15
	6/1/12 (immediately post-AFVR)		25.14	25.31	0.17	75.24		
	6/1/12 (20 minutes post-AFVR)		25.30	25.61	0.31	75.04		
12175-MW1	5/31/12 (pre-AFVR)	98.51	22.06	27.26	5.20	75.15	35	15
	6/1/12 (immediately post-AFVR)		22.13	27.33	5.20	75.08		
	6/1/12 (20 minutes post-AFVR)		22.13	27.33	5.20	75.08		
12175-MW5	5/31/12 (pre-AFVR)	98.05	21.68	26.32	4.64	75.21	29	10
	6/1/12 (immediately post-AFVR)		21.75	26.27	4.52	75.17		
	6/1/12 (20 minutes post-AFVR)		21.75	26.27	4.52	75.17		
12175-MW19	5/31/12 (pre-AFVR)	100.01	23.80	27.74	3.94	75.23	28	10
	6/1/12 (immediately post-AFVR)		23.87	27.75	3.88	75.17		
	6/1/12 (20 minutes post-AFVR)		23.87	27.74	3.87	75.17		
12175-MW24	5/31/12 (pre-AFVR)	100.23	--	25.13	--	75.10	30	10
	6/1/12 (immediately post-AFVR)		--	25.18	--	75.05		
	6/1/12 (20 minutes post-AFVR)		--	25.20	--	75.03		
12175-MW25	5/31/12 (pre-AFVR)	99.95	23.60	28.84	5.24	75.04	30	10
	6/1/12 (immediately post-AFVR)		23.65	28.73	5.08	75.03		
	6/1/12 (20 minutes post-AFVR)		23.65	28.74	5.09	75.03		
12175-MW26	5/31/12 (pre-AFVR)	99.89	--	25.97	--	73.92	30	10
	6/1/12 (immediately post-AFVR)		--	25.96	--	73.93		
	6/1/12 (20 minutes post-AFVR)		--	25.96	--	73.93		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW5	6/13/12 (pre-AFVR)	98.05	21.72	26.43	4.71	75.15	29	10
	6/14/12 (immediately post-AFVR)		--	26.35	--	71.70		
	6/14/12 (20 minutes post-AFVR)		24.32	24.67	0.35	73.64		
12175-MW1	6/13/12 (pre-AFVR)	98.51	22.13	27.56	5.43	75.02	35	15
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		22.13	27.58	5.45	75.02		
12175-MW2	6/13/12 (pre-AFVR)	100.42	25.21	25.82	0.61	75.06	34	15
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		25.21	25.82	0.61	75.06		
12175-MW3	6/13/12 (pre-AFVR)	100.44	--	25.28	--	75.16	34	15
	6/14/12 (immediately post-AFVR)		--	25.30	--	75.14		
	6/14/12 (20 minutes post-AFVR)		--	25.30	--	75.14		
12175-MW4	6/13/12 (pre-AFVR)	98.61	22.59	27.09	4.50	74.90	29	10
	6/14/12 (immediately post-AFVR)		22.61	27.11	4.50	74.88		
	6/14/12 (20 minutes post-AFVR)		22.61	27.11	4.50	74.88		
12175-MW6	6/13/12 (pre-AFVR)	99.82	--	24.67	--	75.15	29	10
	6/14/12 (immediately post-AFVR)		--	24.75	--	75.07		
	6/14/12 (20 minutes post-AFVR)		--	24.73	--	75.09		
12175-MW19	6/13/12 (pre-AFVR)	100.01	23.86	27.74	3.88	75.18	28	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		23.88	27.79	3.91	75.15		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW24	6/13/12 (pre-AFVR)	100.23	--	25.18	--	75.05	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		--	25.22	--	75.01		
12175-MW25	6/13/12 (pre-AFVR)	99.95	23.67	28.71	5.04	75.02	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		23.68	28.71	5.03	75.01		
12175-MW26	6/13/12 (pre-AFVR)	99.89	--	26.00	--	73.89	30	10
	6/14/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/14/12 (20 minutes post-AFVR)		--	26.00	--	73.89		
12175-MW19	6/28/12 (pre-AFVR)	100.01	23.87	27.75	3.88	75.17	28	10
	6/29/12 (immediately post-AFVR)		--	27.21	--	72.80		
	6/29/12 (20 minutes post-AFVR)		25.38	25.70	0.32	74.55		
12175-MW1	6/28/12 (pre-AFVR)	98.51	22.16	27.38	5.22	75.05	35	15
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		22.17	27.38	5.21	75.04		
12175-MW2	6/28/12 (pre-AFVR)	100.42	25.19	25.94	0.75	75.04	34	15
	6/29/12 (immediately post-AFVR)		25.24	25.99	0.75	74.99		
	6/29/12 (20 minutes post-AFVR)		25.22	25.97	0.75	75.01		
12175-MW5	6/28/12 (pre-AFVR)	98.05	21.95	25.94	3.99	75.10	29	10
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		21.95	25.94	3.99	75.10		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW24	6/28/12 (pre-AFVR)	100.23	--	25.19	--	75.04	30	10
	6/29/12 (immediately post-AFVR)		--	25.23	--	75.00		
	6/29/12 (20 minutes post-AFVR)		--	25.27	--	74.96		
12175-MW25	6/28/12 (pre-AFVR)	99.95	23.68	28.70	5.02	75.02	30	10
	6/29/12 (immediately post-AFVR)		23.74	28.76	5.02	74.96		
	6/29/12 (20 minutes post-AFVR)		23.77	28.79	5.02	74.93		
12175-MW26	6/28/12 (pre-AFVR)	99.89	--	25.98	--	73.91	30	10
	6/29/12 (immediately post-AFVR)		NM	NM	NM	NM		
	6/29/12 (20 minutes post-AFVR)		--	26.00	--	73.89		
12175-MW1	7/30/2012 (gauging event)	98.51	22.44	27.95	5.51	74.69	35	15
12175-MW2	7/30/2012 (gauging event)	100.42	25.47	26.25	0.78	74.76	34	15
12175-MW5	7/30/2012 (gauging event)	98.05	22.17	26.71	4.54	74.75	29	10
12175-MW19	7/30/2012 (gauging event)	100.01	24.24	27.94	3.70	74.85	28	10
12175-MW24	7/30/2012 (gauging event)	100.23	--	25.50	--	74.73	30	10
12175-MW25	7/30/2012 (gauging event)	99.95	23.96	29.04	5.08	74.72	30	10
12175-MW26	7/30/2012 (gauging event)	99.89	--	26.28	--	73.61	30	10
12175-MW2	2/9/13 (pre-AFVR)	100.42	26.27	27.30	1.03	73.89	34	15
	2/10/13 (immediately post-AFVR)		--	27.20	--	73.22		
	2/10/13 (20 minutes post-AFVR)		--	27.25	--	73.17		
12175-MW19	2/9/13 (pre-AFVR)	100.01	25.19	27.92	2.73	74.14	28	10
	2/10/13 (immediately post-AFVR)		--	27.05	--	72.96		
	2/10/13 (20 minutes post-AFVR)		26.70	26.80	0.10	73.29		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW25	2/9/13 (pre-AFVR)	99.95	24.92	29.61	4.69	73.86	30	10
	2/10/13 (immediately post-AFVR)		--	27.83	--	72.12		
	2/10/13 (20 minutes post-AFVR)		--	26.41	--	73.54		
12175-MW4	2/9/13 (pre-AFVR)	98.61	23.90	28.85	4.95	73.47	29	10
	2/10/13 (immediately post-AFVR)		24.06	28.23	4.17	73.51		
	2/10/13 (20 minutes post-AFVR)		24.06	28.21	4.15	73.51		
12175-MW24	2/9/13 (pre-AFVR)	100.23	--	26.35	--	73.88	30	10
	2/10/13 (immediately post-AFVR)		--	26.54	--	73.69		
	2/10/13 (20 minutes post-AFVR)		--	26.57	--	73.66		
12175-MW26	2/9/13 (pre-AFVR)	99.89	--	27.06	--	72.83	30	10
	2/10/13 (immediately post-AFVR)		--	27.11	--	72.78		
	2/10/13 (20 minutes post-AFVR)		--	27.12	--	72.77		
12175-MW1	2/10/13 (pre-AFVR)	98.51	23.47	28.71	5.24	73.73	35	15
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		24.63	25.23	0.60	73.73		
12175-MW4	2/10/13 (pre-AFVR)	98.61	24.06	28.23	4.17	73.51	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		25.11	25.17	0.06	73.49		
12175-MW5	2/10/13 (pre-AFVR)	98.05	23.06	27.80	4.74	73.81	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		23.88	23.89	0.01	74.17		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW3	2/10/13 (pre-AFVR)	100.44	--	26.56	--	73.88	34	15
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	26.56	--	73.88		
12175-MW6	2/10/13 (pre-AFVR)	99.82	--	26.01	--	73.81	29	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	26.03	--	73.79		
12175-MW15	2/10/13 (pre-AFVR)	98.47	--	25.24	--	73.23	27	10
	2/11/13 (immediately post-AFVR)		NM	NM	NM	NM		
	2/11/13 (20 minutes post-AFVR)		--	25.23	--	73.24		
12175-MW1	3/12/2013 (gauging event)	98.51	22.42	27.00	4.58	74.95	35	15
12175-MW2	3/12/2013 (gauging event)	100.42	25.53	25.56	0.03	74.88	34	15
12175-MW4	3/12/2013 (gauging event)	98.61	23.82	24.12	0.30	74.72	29	10
12175-MW5	3/12/2013 (gauging event)	98.05	22.65	24.35	1.70	74.98	29	10
12175-MW19	3/12/2013 (gauging event)	100.01	24.53	27.95	3.42	74.63	28	10
12175-MW24	3/12/2013 (gauging event)	100.23	--	25.37	--	74.86	30	10
12175-MW25	3/12/2013 (gauging event)	99.95	24.18	28.02	3.84	74.81	30	10
12175-MW26	3/12/2013 (gauging event)	99.89	--	26.01	--	73.88	30	10
12175-RW1	6/5/13 (pre-AFVR)	98.05	21.34	22.02	0.68	76.54	30	10
	6/6/13 (immediately post-AFVR)		--	23.07	--	74.98		
	6/6/13 (20 minutes post-AFVR)		22.93	22.98	0.05	75.11		
12175-MW3	6/5/13 (pre-AFVR)	100.44	--	23.90	--	76.54	34	15
	6/6/13 (immediately post-AFVR)		--	23.95	--	76.49		
	6/6/13 (20 minutes post-AFVR)		--	23.95	--	76.49		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW4	6/5/13 (pre-AFVR)	98.61	22.02	23.50	1.48	76.22	29	10
	6/6/13 (immediately post-AFVR)		22.09	23.65	1.56	76.13		
	6/6/13 (20 minutes post-AFVR)		22.10	23.62	1.52	76.13		
12175-MW6	6/5/13 (pre-AFVR)	99.82	--	23.28	--	76.54	29	10
	6/6/13 (immediately post-AFVR)		--	23.47	--	76.35		
	6/6/13 (20 minutes post-AFVR)		--	23.48	--	76.34		
12175-RW2	6/20/13 (pre-AFVR)	100.05	22.64	25.92	3.28	76.59	30	10
	6/21/13 (immediately post-AFVR)		--	26.90	--	73.15		
	6/21/13 (20 minutes post-AFVR)		25.44	25.57	0.13	74.58		
12175-MW19	6/20/13 (pre-AFVR)	100.01	22.85	25.89	3.04	76.40	28	10
	6/21/13 (immediately post-AFVR)		23.04	26.02	2.98	76.23		
	6/21/13 (20 minutes post-AFVR)		23.15	26.13	2.98	76.12		
12175-MW24	6/20/13 (pre-AFVR)	100.23	--	23.60	--	76.63	30	10
	6/21/13 (immediately post-AFVR)		--	23.68	--	76.55		
	6/21/13 (20 minutes post-AFVR)		--	23.72	--	76.51		
12175-MW25	6/20/13 (pre-AFVR)	99.95	22.55	25.80	3.25	76.59	30	10
	6/21/13 (immediately post-AFVR)		23.86	23.89	0.03	76.08		
	6/21/13 (20 minutes post-AFVR)		23.78	23.82	0.04	76.16		
12175-RW3	7/15/13 (pre-AFVR)	100.16	--	22.91	--	77.25	30	10
	7/16/13 (immediately post-AFVR)		--	24.52	--	75.64		
	7/16/13 (20 minutes post-AFVR)		--	24.28	--	75.88		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW18	7/15/13 (pre-AFVR)	101.51	--	24.12	--	77.39	28	10
	7/16/13 (immediately post-AFVR)		--	24.16	--	77.35		
	7/16/13 (20 minutes post-AFVR)		--	24.15	--	77.36		
12175-MW24	7/15/13 (pre-AFVR)	100.23	--	23.01	--	77.22	30	10
	7/16/13 (immediately post-AFVR)		--	23.27	--	76.96		
	7/16/13 (20 minutes post-AFVR)		--	23.27	--	76.96		
12175-MW25	7/15/13 (pre-AFVR)	99.95	22.14	24.64	2.50	77.19	30	10
	7/16/13 (immediately post-AFVR)		22.23	25.02	2.79	77.02		
	7/16/13 (20 minutes post-AFVR)		22.23	24.97	2.74	77.04		
12175-RW1	11/4/13 (pre-AFVR)	98.05	20.05	21.15	1.10	77.73	30	10
	11/5/13 (immediately post-AFVR)		--	24.02	--	74.03		
	11/5/13 (20 minutes post-AFVR)		--	22.71	--	75.34		
12175-MW3	11/4/13 (pre-AFVR)	100.44	--	22.56	--	77.88	34	15
	11/5/13 (immediately post-AFVR)		--	22.64	--	77.80		
	11/5/13 (20 minutes post-AFVR)		--	22.66	--	77.78		
12175-MW4	11/4/13 (pre-AFVR)	98.61	20.85	22.04	1.19	77.46	29	10
	11/5/13 (immediately post-AFVR)		20.94	22.15	1.21	77.37		
	11/5/13 (20 minutes post-AFVR)		20.93	22.14	1.21	77.38		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW6	11/4/13 (pre-AFVR)	99.82	--	21.93	--	77.89	29	10
	11/5/13 (immediately post-AFVR)		--	22.16	--	77.66		
	11/5/13 (20 minutes post-AFVR)		--	22.15	--	77.67		
12175-RW2	11/18/13 (pre-AFVR)	100.05	21.68	25.22	3.54	77.49	30	10
	11/19/13 (immediately post-AFVR)		--	25.82	--	74.23		
	11/19/13 (20 minutes post-AFVR)		24.57	24.72	0.15	75.44		
12175-MW19	11/18/13 (pre-AFVR)	100.01	22.22	24.23	2.01	77.29	28	10
	11/19/13 (immediately post-AFVR)		22.11	24.20	2.09	77.38		
	11/19/13 (20 minutes post-AFVR)		22.56	24.72	2.16	76.91		
12175-MW24	11/18/13 (pre-AFVR)	100.23	--	22.71	--	77.52	30	10
	11/19/13 (immediately post-AFVR)		--	22.86	--	77.37		
	11/19/13 (20 minutes post-AFVR)		--	22.88	--	77.35		
12175-MW25	11/18/13 (pre-AFVR)	99.95	21.44	25.05	3.61	77.61	30	10
	11/19/13 (immediately post-AFVR)		22.36	23.38	1.02	77.34		
	11/19/13 (20 minutes post-AFVR)		22.70	23.41	0.71	77.07		
12175-MW17	12/9/13 (pre-AFVR)	101.09	23.18	25.17	1.99	77.41	28	10
	12/10/13 (immediately post-AFVR)		--	25.69	--	75.40		
	12/10/13 (20 minutes post-AFVR)		--	24.13	--	76.96		
12175-MW11	12/9/13 (pre-AFVR)	101.65	--	24.25	--	77.40	31	10
	12/10/13 (immediately post-AFVR)		--	24.30	--	77.35		
	12/10/13 (20 minutes post-AFVR)		--	24.32	--	77.33		

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date Measured	Top of Casing Elevation (feet)	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation[2] (feet)	Well Depth (feet)	Well Screen Length (feet)
12175-MW23	12/9/13 (pre-AFVR)	102.29	--	24.97	--	77.32	31	10
	12/10/13 (immediately post-AFVR)		--	24.97	--	77.32		
	12/10/13 (20 minutes post-AFVR)		--	24.97	--	77.32		
12175-RW2	12/9/13 (pre-AFVR)	100.05	--	22.65	--	77.40	30	10
	12/10/13 (immediately post-AFVR)		--	22.68	--	77.37		
	12/10/13 (20 minutes post-AFVR)		--	22.67	--	77.38		

Notes:

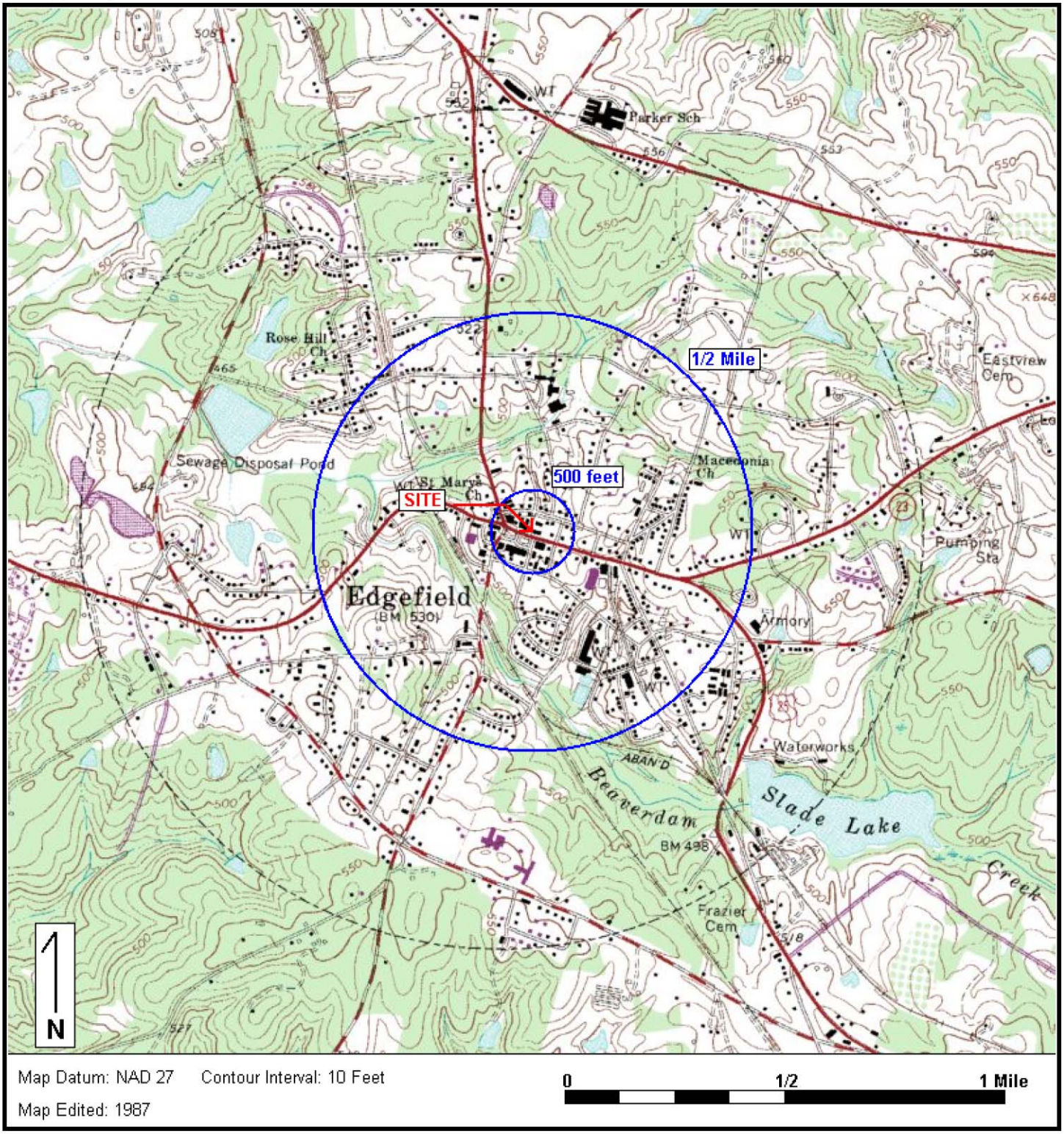
1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product, where present, with an assumed density of 0.75 g/cm^3.
3. NM represents Not Measured.

FIGURES

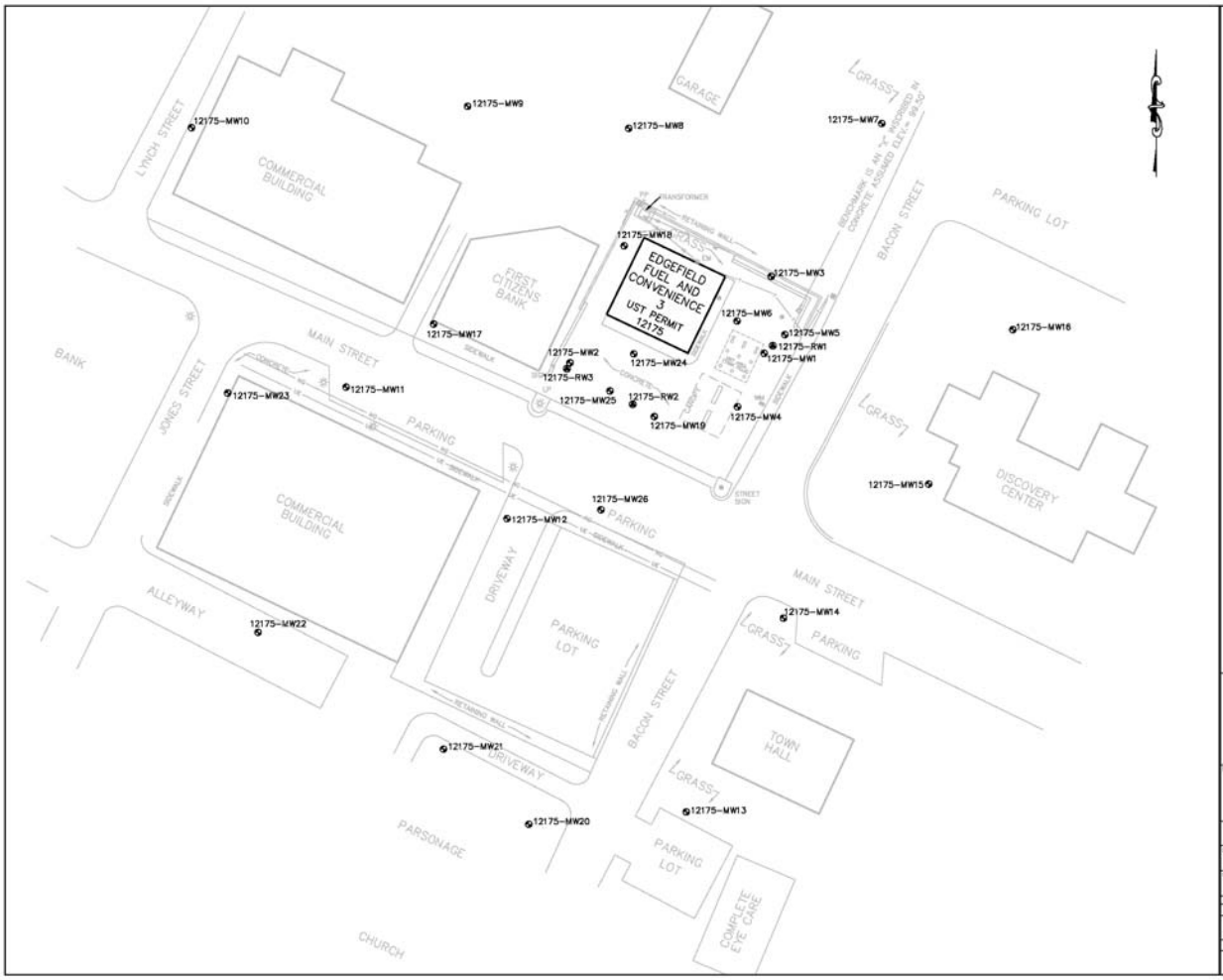
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- Shallow (Water Table) Monitoring Well
- Recovery Well
- 12175-MW1 Well ID

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 06-25-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	CK
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	6/10/13	14-211631	2

FIGURE 3
SOIL CoC MAP
EDGEFIELD FUEL & CONVENIENCE 3

Soil analysis was not requested for this assessment.

FIGURE 4
GROUNDWATER CoC MAP
EDGEFIELD FUEL & CONVENIENCE 3

Soil analysis was not requested for this assessment.

FIGURE 5
GROUNDWATER ELEVATION MAP
EDGEFIELD FUEL & CONVENIENCE 3

A groundwater elevation map was not required for this assessment.

FIGURE 6
CROSS-SECTION
EDGEFIELD FUEL & CONVENIENCE 3

Cross-section drawings were not required for this assessment.

FIGURE 7
PREDICTED MIGRATION
EDGEFIELD FUEL & CONVENIENCE 3

Maps showing the predicted migration of CoC through time were not requested by the SCDHEC for this assessment.

APPENDIX B

Sampling Logs and Laboratory Reports

Soil and groundwater samples were not collected for this assessment. No laboratory analysis was completed during this assessment.

APPENDIX C

Tax Map Information

Tax Map Information was not requested by the SCDHEC for this assessment.

APPENDIX D

Boring Logs

Boring logs were not completed during this assessment.

APPENDIX E

Well Construction Records

Well construction records were not required for preparation during this assessment.

APPENDIX F

Aquifer Evaluation Data

Aquifer characteristics determinations were not requested for this assessment.

APPENDIX G

Disposal Manifest

Please print or type
(Form designed for use on elite (12-pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			800 967 9175	

GENERATOR

5. Generator's Name and Mailing Address: Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC

Generator's Site Address (if different than mailing address):

Generator's Phone: 704 583-2711 Randy Hutchins ECS

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987989331

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073 — U.S. EPA ID Number: SCD987989331

Facility's Phone: 800-967-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS NON REGULATED MATERIAL Oily Water	1		Apprx. 911		@ Free Product (Sheen)
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 800 967 9175 — A&D (SC) Job #14178
ECS Project #14-211051

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Randy Hutchins — Signature — Month: 11 — Day: — Year: 13

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Bryan Richardson — Signature — Month: 11 — Day: 5 — Year: 13

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month — Day — Year

GENERATOR'S/SHIPPER'S INITIAL COPY

Please print or type.
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	**4. Waste Tracking Number**
		803 957 9175	

5. Generator's Name and Mailing Address
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC

Generator's Site Address (if different than mailing address)

Generator's Phone: 704-583-2711 Randy Hutchins ECS

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC
U.S. EPA ID Number: SCD987598301

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073
U.S. EPA ID Number: SCD987598301

Facility's Phone: [illegible]

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON HAZARDOUS NON-REGULATED MATERIAL Oily Water			[illegible]	[illegible]	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 A&D (SC) Job #14178
ECS Project #14-211651

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	11	19	13

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

	Printed/Typed Name	Signature	Month	Day	Year
Transporter 1	[illegible]	[illegible]	11	19	13
Transporter 2					

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR · INT'L · TRANSPORTER · DESIGNATED FACILITY

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
		803-957-9175	[illegible]

5. Generator's Name and Mailing Address: Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
Generator's Site Address (if different than mailing address):
Generator's Phone: 704-583-2711 Randy Hutchins ECS

6. Transporter 1 Company Name: A&D Environmental Services (SC) LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073 — U.S. EPA ID Number: SCD987598331
Facility's Phone: 803-957-9175

9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1. NON-HAZARDOUS NON-REGULATED MATERIAL Oily Water	1	[illegible]	Appx. 450	[illegible]	0 Free Product (Sheen)
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information
In Case of Emergency Call: 803 957-9175 A&D (SC) Job #14178
ECS Project #14-211651

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
Philip Pike (Agent [illegible])	[signature]	12	10	13

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

	Printed/Typed Name	Signature	Month	Day	Year
Transporter 1	Bryan Richardson	[signature]	12	10	13
Transporter 2					

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name Signature Month Day Year

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

APPENDIX H

Local Zoning Regulations

Local Zoning Regulations were not requested for this assessment.

APPENDIX I

Fate & Transport Modeling Data

Fate and Transport Modeling was not requested by the SCDHEC for this assessment.

APPENDIX J

Access Agreements

Additional access agreements were not requested during this assessment.

APPENDIX K

Data Verification Checklist

Contractor Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	✓		
2	Is UST Owner/Operator name, address, & phone number provided?	✓		
3	Is name, address, & phone number of current property owner provided?	✓		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	✓		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	✓		
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?			✓
7	Has the facility history been summarized?	✓		
8	Has the regional geology and hydrogeology been described?	✓		
9	Are the receptor survey results provided as required?	✓		
10	Has current use of the site and adjacent land been described?	✓		
11	Has the site-specific geology and hydrogeology been described?	✓		
12	Has the primary soil type been described?	✓		
13	Have field screening results been described?			✓
14	Has a description of the soil sample collection and preservation been detailed?			✓
15	Has the field screening methodology and procedure been detailed?			✓
16	Has the monitoring well installation and development dates been provided?			✓
17	Has the method of well development been detailed?			✓
18	Has justification been provided for the locations of the monitoring wells?			✓
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	✓		
20	Has the groundwater sampling methodology been detailed?			✓
21	Have the groundwater sampling dates and groundwater measurements been provided?	✓		
22	Has the purging methodology been detailed?			✓
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?			✓
24	If free-product is present, has the thickness been provided?	✓		
25	Does the report include a brief discussion of the assessment done and the results?	✓		
26	Does the report include a brief discussion of the aquifer evaluation and results?			✓
27	Does the report include a brief discussion of the fate & transport models used?			✓

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			✓
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			✓
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			✓
31	Have recommendations for further action been provided and explained?	✓		
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)	✓		
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	✓		
34	Has the current and historical laboratory data been provided in tabular format?	✓		
35	Have the aquifer characteristics been provided and summarized on the appropriate form?			✓
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			✓
37	Has the topographic map been provided with all required elements? (Figure 1)	✓		
38	Has the site base map been provided with all required elements? (Figure 2)	✓		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)			✓
40	Has the site potentiometric map been provided? (Figure 5)			✓
41	Have the geologic cross-sections been provided? (Figure 6)			✓
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			✓
43	Has the site survey been provided and include all necessary elements? (Appendix A)			✓
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)			✓
45	Is the laboratory performing the analyses properly certified?			✓
46	Has the tax map been included with all necessary elements? (Appendix C)			✓
47	Have the soil boring/field screening logs been provided? (Appendix D)			✓
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)			✓
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			✓
50	Have the disposal manifests been provided? (Appendix G)	✓		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			✓
52	Has all fate and transport modeling been provided? (Appendix I)			✓
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			✓
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	✓		

Explanation for missing and incomplete information?

Project Verifier (signature) _____

(print name) Craig L. Kennedy, P.G.

Date 2/3/2014

APPENDIX L

AFVR Event Field Data Sheets & Emissions Calculations

APPENDIX L
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	P. Pike
Date:	11/4/13 - 11/5/13		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Y	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	911	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger*
12175-RW1	20.05	21.15	NP	24.02	NP	22.71	21.15
12175-MW3	NP	22.56	NP	22.64	NP	22.66	
12175-MW4	20.85	22.04	20.94	22.15	20.93	22.14	
12175-MW6	NP	21.93	NP	22.16	NP	22.15	

NP denotes no measurable free product
NM denotes not measured.
Stinger lowered one time, 6-inches at 22:00

APPENDIX L
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P. Pike
Date:	11/4/13 - 11/5/13	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW3		12175-MW4		12175-MW6	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:00											
20:15	5,279	163.7	2.4	1,100	21	--	--	--	--	--	--
20:30	5,552	166.1	2.0	1,100	21	--	0.00	--	0.00	--	0.00
20:45	5,389	178.2	1.3	1,000	21	--	--	--	--	--	--
21:00	5,748	182.1	1.1	1,000	21	--	0.00	--	0.00	--	0.00
21:15	5,203	184.1	1.0	1,000	21	--	--	--	--	--	--
21:30	5,369	185.7	0.9	1,000	21	--	0.00	--	0.00	--	0.00
21:45	5,327	186.9	0.7	900	21	--	--	--	--	--	--
22:00	5,151	188.8	0.6	800	21	--	0.00	--	0.00	--	0.00
22:30	5,222	191.5	0.5	740	21	--	0.00	--	0.00	--	0.00
23:00	5,331	191.1	0.5	800	21	--	0.00	--	0.00	--	0.00
23:30	5,130	189.9	0.5	780	21	--	0.00	--	0.00	--	0.00
0:00	5,211	189.4	0.5	780	21	--	0.00	--	0.00	--	0.00
0:30	5,069	188.1	0.6	800	21	--	0.00	--	0.00	--	0.00
1:00	5,271	187.9	0.6	790	21	--	0.00	--	0.00	--	0.00
1:30	4,828	187.2	0.4	800	21	--	0.00	--	0.00	--	0.00
2:00	5,269	187.9	0.3	780	21	--	0.00	--	0.00	--	0.00
2:30	5,480	188.8	0.3	760	21	--	0.00	--	0.00	--	0.00
3:00	5,111	186.7	0.4	780	21	--	0.00	--	0.00	--	0.00
3:30	5,270	184.6	0.5	760	21	--	0.00	--	0.00	--	0.00
4:00	5,343	182.1	0.7	780	21	--	0.00	--	0.00	--	0.00

APPENDIX L
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 21.92
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-RW1
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	20:00	Connection to RW-1. Stinger set at 21.15 feet below top of casing.							
11/04/13	20:15	21	5,279	6	163.7	2.4	0.005412	0.009	870
11/04/13	20:30	21	5,552	6	166.1	2.0	0.004766	0.008	912
11/04/13	20:45	21	5,389	6	178.2	1.3	0.004078	0.006	870
11/04/13	21:00	21	5,748	6	182.1	1.1	0.00376	0.006	923
11/04/13	21:15	21	5,203	6	184.1	1.0	0.003571	0.006	833
11/04/13	21:30	21	5,369	6	185.7	0.9	0.003326	0.005	857
11/04/13	21:45	21	5,327	6	186.9	0.7	0.002653	0.004	850
11/04/13	22:00	21	5,151	6	188.8	0.6	0.002368	0.004	820
11/04/13	22:30	21	5,222	6	191.5	0.5	0.002089	0.003	828
11/04/13	23:00	21	5,331	6	191.1	0.5	0.002072	0.003	846
11/04/13	23:30	21	5,130	6	189.9	0.5	0.002019	0.003	816
11/05/13	0:00	21	5,211	6	189.4	0.5	0.001997	0.003	829
11/05/13	0:30	21	5,069	6	188.1	0.6	0.002332	0.004	808
11/05/13	1:00	21	5,271	6	187.9	0.6	0.002322	0.004	840
11/05/13	1:30	21	4,828	6	187.2	0.4	0.001523	0.002	771
11/05/13	2:00	21	5,269	6	187.9	0.3	0.001159	0.002	842
11/05/13	2:30	21	5,480	6	188.8	0.3	0.001182	0.002	874
11/05/13	3:00	21	5,111	6	186.7	0.4	0.001506	0.002	817
11/05/13	3:30	21	5,270	6	184.6	0.5	0.0018	0.003	845
11/05/13	4:00	21	5,343	6	182.1	0.7	0.002388	0.004	859
Averages		21	5,278	6	184.5	0.8	0.002616	0.004	846

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX L
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 11/4/13 - 11/5/13

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	870	1,100	1,100	1,110	1.02	1,132	565	0.00004	1.84	2.13	0.53
30	912	1,100	1,100	1,108	1.02	1,131	564	0.00004	1.93	2.23	0.56
45	870	1,000	1,000	1,007	1.02	1,027	512	0.00003	1.67	1.93	0.48
60	923	1,000	1,000	1,006	1.02	1,026	512	0.00003	1.77	2.05	0.51
75	833	1,000	1,000	1,006	1.02	1,026	512	0.00003	1.60	1.85	0.46
90	857	1,000	1,000	1,005	1.02	1,025	512	0.00003	1.64	1.90	0.48
105	850	900	900	904	1.02	922	460	0.00003	1.46	1.70	0.42
120	820	800	800	803	1.02	819	409	0.00003	1.26	1.45	0.36
150	828	740	740	742	1.02	757	378	0.00002	1.17	1.36	0.68
180	846	800	800	803	1.02	819	409	0.00003	1.29	1.50	0.75
210	816	780	780	783	1.02	798	398	0.00002	1.22	1.41	0.70
240	829	780	780	782	1.02	798	398	0.00002	1.24	1.43	0.72
270	808	800	800	803	1.02	819	409	0.00003	1.24	1.43	0.72
300	840	790	790	793	1.02	809	404	0.00003	1.27	1.47	0.74
330	771	800	800	802	1.02	818	408	0.00003	1.18	1.37	0.68
360	842	780	780	781	1.02	797	398	0.00002	1.25	1.45	0.73
390	874	760	760	761	1.02	777	388	0.00002	1.27	1.47	0.73
420	817	780	780	782	1.02	798	398	0.00002	1.22	1.41	0.70
450	845	760	760	762	1.02	777	388	0.00002	1.23	1.42	0.71
480	859	780	780	783	1.02	799	398	0.00002	1.28	1.48	0.74
Averages	846	863	863	866	1.02	884	441	0.00003	1.40	1.62	0.62

Total emissions in pounds: 12.41
Total emissions in gallons: 1.98

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX L
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

APPENDIX L
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	P. Pike
Date:	11/18/13 - 11/19/13		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Y	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	209	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
12175-RW2	21.68	25.22	NP	25.82	24.57	24.72	25.22
12175-MW19	22.22	24.23	22.11	24.20	22.56	24.65	
12175-MW24	NP	22.71	NP	22.86	NP	22.88	
12175-MW25	21.44	25.05	22.36	23.38	22.70	23.41	

NP denotes no measurable free product
NM denotes not measured.

APPENDIX L
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P. Pike
Date:	11/18/13 - 11/19/13	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						12175-MW19		12175-MW24		12175-MW25	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:00											
20:15	4,132	159.2	2.7	7,200	22	--	--	--	--	--	--
20:30	4,912	172.2	1.5	4,800	22	--	4.6	--	0.0	--	8.0
20:45	4,566	179.4	1.4	4,200	22	--	--	--	--	--	--
21:00	4,271	183.2	1.2	3,800	22	--	4.8	--	0.0	--	9.0
21:15	4,392	181.9	1.3	3,800	22	--	--	--	--	--	--
21:30	4,150	179.4	1.5	3,600	22	--	5.0	--	0.0	--	9.2
21:45	4,617	179.8	1.4	3,600	22	--	--	--	--	--	--
22:00	4,427	180.0	1.3	3,600	22	--	5.0	--	0.0	--	9.4
22:30	4,063	179.4	1.5	3,600	22	--	5.0	--	0.0	--	9.4
23:00	4,617	174.0	2.1	3,400	22	--	5.0	--	0.0	--	9.4
23:30	4,721	174.6	1.8	3,400	22	--	5.0	--	0.0	--	9.6
0:00	4,098	172.9	1.9	3,400	22	--	5.0	--	0.0	--	9.6
0:30	4,375	173.0	1.8	3,200	22	--	5.0	--	0.0	--	9.6
1:00	4,548	174.4	1.8	3,200	22	--	5.0	--	0.0	--	9.6
1:30	4,111	174.5	1.9	3,600	22	--	5.0	--	0.0	--	9.6
2:00	4,254	175.3	1.9	3,400	22	--	5.0	--	0.0	--	9.6
2:30	4,569	172.6	2.0	3,600	22	--	5.0	--	0.0	--	9.6
3:00	4,808	169.7	2.3	3,600	22	--	5.0	--	0.0	--	9.6
3:30	4,381	169.3	2.1	3,400	22	--	5.0	--	0.0	--	9.6
4:00	4,470	170.4	2.1	3,400	22	--	5.0	--	0.0	--	9.6

APPENDIX L
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 24.30
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-RW2
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	20:00	Connection to RW-2. Stinger set at 25.22 feet below top of casing.							
11/18/13	20:15	22	4,132	6	159.2	2.7	0.005473	0.009	686
11/18/13	20:30	22	4,912	6	172.2	1.5	0.00411	0.007	800
11/18/13	20:45	22	4,566	6	179.4	1.4	0.004514	0.007	735
11/18/13	21:00	22	4,271	6	183.2	1.2	0.004206	0.007	684
11/18/13	21:15	22	4,392	6	181.9	1.3	0.004429	0.007	704
11/18/13	21:30	22	4,150	6	179.4	1.5	0.004839	0.008	668
11/18/13	21:45	22	4,617	6	179.8	1.4	0.004555	0.007	743
11/18/13	22:00	22	4,427	6	180.0	1.3	0.004246	0.007	712
11/18/13	22:30	22	4,063	6	179.4	1.5	0.004839	0.008	654
11/18/13	23:00	22	4,617	6	174.0	2.1	0.006013	0.010	748
11/18/13	23:30	22	4,721	6	174.6	1.8	0.005218	0.008	765
11/19/13	0:00	22	4,098	6	172.9	1.9	0.0053	0.008	666
11/19/13	0:30	22	4,375	6	173.0	1.8	0.00503	0.008	711
11/19/13	1:00	22	4,548	6	174.4	1.8	0.005194	0.008	737
11/19/13	1:30	22	4,111	6	174.5	1.9	0.005498	0.009	666
11/19/13	2:00	22	4,254	6	175.3	1.9	0.005599	0.009	688
11/19/13	2:30	22	4,569	6	172.6	2.0	0.005543	0.009	742
11/19/13	3:00	22	4,808	6	169.7	2.3	0.005969	0.009	784
11/19/13	3:30	22	4,381	6	169.3	2.1	0.005395	0.009	716
11/19/13	4:00	22	4,470	6	170.4	2.1	0.005535	0.009	729
Averages		22	4,424	6	174.8	1.8	0.005075	0.008	717

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX L
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 11/18/13 - 11/19/

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	686	7,200	7,200	7,263	1.02	7,408	3,697	0.00023	9.50	10.99	2.75
30	800	4,800	4,800	4,832	1.02	4,928	2,459	0.00015	7.37	8.53	2.13
45	735	4,200	4,200	4,230	1.02	4,315	2,153	0.00013	5.93	6.86	1.72
60	684	3,800	3,800	3,826	1.02	3,902	1,947	0.00012	4.99	5.77	1.44
75	704	3,800	3,800	3,827	1.02	3,904	1,948	0.00012	5.14	5.95	1.49
90	668	3,600	3,600	3,628	1.02	3,700	1,846	0.00012	4.62	5.34	1.34
105	743	3,600	3,600	3,626	1.02	3,699	1,846	0.00012	5.13	5.94	1.49
120	712	3,600	3,600	3,624	1.02	3,697	1,845	0.00012	4.92	5.70	1.42
150	654	3,600	3,600	3,628	1.02	3,700	1,846	0.00012	4.52	5.23	2.62
180	748	3,400	3,400	3,433	1.02	3,501	1,747	0.00011	4.89	5.66	2.83
210	765	3,400	3,400	3,428	1.02	3,497	1,745	0.00011	5.00	5.79	2.89
240	666	3,400	3,400	3,429	1.02	3,497	1,745	0.00011	4.35	5.04	2.52
270	711	3,200	3,200	3,226	1.02	3,290	1,642	0.00010	4.37	5.06	2.53
300	737	3,200	3,200	3,227	1.02	3,291	1,642	0.00010	4.53	5.25	2.62
330	666	3,600	3,600	3,632	1.02	3,704	1,848	0.00012	4.61	5.34	2.67
360	688	3,400	3,400	3,430	1.02	3,499	1,746	0.00011	4.50	5.21	2.60
390	742	3,600	3,600	3,632	1.02	3,705	1,848	0.00012	5.14	5.95	2.97
420	784	3,600	3,600	3,634	1.02	3,707	1,850	0.00012	5.43	6.29	3.14
450	716	3,400	3,400	3,429	1.02	3,498	1,745	0.00011	4.68	5.41	2.71
480	729	3,400	3,400	3,430	1.02	3,499	1,746	0.00011	4.76	5.51	2.76
Averages	717	3,790	3,790	3,821	1.02	3,897	1,945	0.00012	5.22	6.04	2.33

Total emissions in pounds: 46.63
Total emissions in gallons: 7.46

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX L
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

APPENDIX L
AFVR EVENT FIELD DATA SHEETS

AFVR Measurements Prior to and After Event

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep.:	P. Pike
Date:	12/9/13 - 12/10/13		

Measurements Prior to AFVR Event

Vac. Truck (VT) Co.	A&D	
VT No.:	18	
VT Tank Capacity:	3,200	gallons
Inside Diameter of VT Outlet Stack	6	inches
Is Tank Empty & Clean (Y/N)	Y	

Measurements After AFVR Event

VT Tank Product volume	0	gallons
VT Tank Water volume	450	gallons

	Prior to AFVR -		Immediately After -		20-min After AFVR -		
Well ID	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth to Product	Depth to Water	Depth of Stinger
12175-MW17	23.18	25.17	NP	25.69	NP	24.13	25.17
12175-MW11	NP	24.25	NP	24.30	NP	24.32	
12175-MW23	NP	24.97	NP	24.97	NP	24.97	
12175-RW2	NP	22.65	NP	22.68	NP	22.67	

NP denotes no measurable free product
NM denotes not measured.

APPENDIX L
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	ECS Project No:	14-211651
UST Permit No:	12175	Field Operative:	P. Pike
Date:	12/9/13 - 12/10/13	Subcontractor	A&D

Measurements During AFVR Event

Time	Stack Outlet				Vac Truck	Non-AFVR Wells					
						MW-11		MW-23		RW-2	
	Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)	Vacuum (in. of Hg)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)	DTW (ft)	Vacuum (in of H2O)
20:00											
20:15	4,947	161.4	7.3	370	21	--	--	--	--	--	--
20:30	4,874	165.9	7.1	340	21	--	0.0	--	0.00	--	0.00
20:45	5,120	176.5	5.7	220	21	--	--	--	--	--	--
21:00	4,830	176.9	5.7	200	21	--	0.5	--	0.20	--	0.00
21:15	4,765	177.4	5.7	200	21	--	--	--	--	--	--
21:30	4,912	178.5	5.5	200	21	--	0.5	--	0.20	--	0.00
21:45	5,001	179.0	5.4	200	22	--	--	--	--	--	--
22:00	4,753	179.4	5.4	180	22	--	0.5	--	0.20	--	0.00
22:30	4,608	177.6	5.8	180	21	--	0.5	--	0.20	--	0.00
23:00	4,869	180.3	5.3	180	21	--	0.6	--	0.20	--	0.00
23:30	4,536	185.7	4.9	180	22	--	0.6	--	0.20	--	0.00
0:00	4,900	185.9	4.8	160	22	--	0.6	--	0.20	--	0.00
0:30	4,732	185.7	4.7	170	22	--	0.6	--	0.25	--	0.00
1:00	4,807	186.1	4.6	170	21	--	0.6	--	0.25	--	0.00
1:30	4,747	186.9	4.5	170	21	--	0.6	--	0.25	--	0.00
2:00	4,515	188.8	4.2	160	21	--	0.6	--	0.25	--	0.00
2:30	4,433	188.1	4.2	170	21	--	0.6	--	0.25	--	0.00
3:00	4,769	187.5	4.4	160	21	--	0.6	--	0.25	--	0.00
3:30	4,623	188.3	4.2	170	21	--	0.6	--	0.25	--	0.00
4:00	4,702	180.3	5.2	170	21	--	0.6	--	0.25	--	0.00

APPENDIX L
EMISSIONS CALCULATIONS

AGGRESSIVE FLUID VAPOR RECOVERY EVENT

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 24.26
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-MW17
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM TRUCK (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	20:00	Connection to MW-17. Stinger set at 25.17 feet below top of casing.							
11/18/13	20:15	21	4,947	6	161.4	7.3	0.01585	0.025	805
11/18/13	20:30	21	4,874	6	165.9	7.1	0.017173	0.027	786
11/18/13	20:45	21	5,120	6	176.5	5.7	0.017585	0.027	811
11/18/13	21:00	21	4,830	6	176.9	5.7	0.017748	0.028	764
11/18/13	21:15	21	4,765	6	177.4	5.7	0.017953	0.028	753
11/18/13	21:30	21	4,912	6	178.5	5.5	0.017749	0.028	775
11/18/13	21:45	22	5,001	6	179.0	5.4	0.017618	0.027	789
11/18/13	22:00	22	4,753	6	179.4	5.4	0.01778	0.028	749
11/18/13	22:30	21	4,608	6	177.6	5.8	0.016737	0.026	730
11/18/13	23:00	21	4,869	6	180.3	5.3	0.017803	0.028	766
11/18/13	23:30	22	4,536	6	185.7	4.9	0.018551	0.029	707
11/19/13	0:00	22	4,900	6	185.9	4.8	0.018243	0.028	764
11/19/13	0:30	22	4,732	6	185.7	4.7	0.017772	0.028	739
11/19/13	1:00	21	4,807	6	186.1	4.6	0.01754	0.027	750
11/19/13	1:30	21	4,747	6	186.9	4.5	0.017456	0.027	740
11/19/13	2:00	21	4,515	6	188.8	4.2	0.016961	0.026	702
11/19/13	2:30	21	4,433	6	188.1	4.2	0.0167	0.026	691
11/19/13	3:00	21	4,769	6	187.5	4.4	0.017286	0.027	743
11/19/13	3:30	21	4,623	6	188.3	4.2	0.016774	0.026	720
11/19/13	4:00	21	4,702	6	180.3	5.2	0.017458	0.027	741
Averages		21	4,772	6	180.8	5.2	0.017437	0.027	751

NOTES

Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded from the vacuum truck tank (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity)
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX L
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 12/9/13 - 12/10/1

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
15	805	370	370	379	1.02	387	193	0.00001	0.58	0.67	0.17
30	786	340	340	349	1.02	356	178	0.00001	0.52	0.61	0.15
45	811	220	220	226	1.02	231	115	0.00001	0.35	0.40	0.10
60	764	200	200	206	1.02	210	105	0.00001	0.30	0.35	0.09
75	753	200	200	206	1.02	210	105	0.00001	0.30	0.34	0.09
90	775	200	200	206	1.02	210	105	0.00001	0.30	0.35	0.09
105	789	200	200	206	1.02	210	105	0.00001	0.31	0.36	0.09
120	749	180	180	185	1.02	189	94	0.00001	0.26	0.31	0.08
150	730	180	180	185	1.02	189	94	0.00001	0.26	0.30	0.15
180	766	180	180	185	1.02	189	94	0.00001	0.27	0.31	0.16
210	707	180	180	185	1.02	189	94	0.00001	0.25	0.29	0.14
240	764	160	160	165	1.02	168	84	0.00001	0.24	0.28	0.14
270	739	170	170	175	1.02	178	89	0.00001	0.25	0.28	0.14
300	750	170	170	175	1.02	178	89	0.00001	0.25	0.29	0.14
330	740	170	170	175	1.02	178	89	0.00001	0.25	0.29	0.14
360	702	160	160	164	1.02	168	84	0.00001	0.22	0.25	0.13
390	691	170	170	175	1.02	178	89	0.00001	0.23	0.27	0.13
420	743	160	160	164	1.02	168	84	0.00001	0.23	0.27	0.13
450	720	170	170	175	1.02	178	89	0.00001	0.24	0.28	0.14
480	741	170	170	175	1.02	178	89	0.00001	0.25	0.29	0.14
Averages	751	198	198	203	1.02	207	103	0.00001	0.29	0.34	0.13

Total emissions in pounds: 2.54
Total emissions in gallons: 0.41

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX L
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convenience 3 | Location: Edgefield, SC

Project No.: 14-211651 | UST Permit #: 12175 | Date: 1/9/2014

Measured By: A. Williamson | Weather: Mostly Cloudy, 40s-50s

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Well Depth (feet)	Volume Purged (gallons)
12175-MW1	19.37	22.77	3.40	-----	-----	-----
12175-MW2	22.08	22.91	0.83	-----	-----	-----
12175-MW3	-----	22.11	-----	-----	33.93	-----
12175-MW4	20.27	21.15	0.88	-----	-----	-----
12175-MW5	19.24	20.96	1.72	-----	-----	-----
12175-MW6	-----	21.51	-----	-----	29.08	-----
12175-MW7	-----	14.95	-----	-----	20.42	-----
12175-MW8	-----	22.73	-----	-----	26.90	-----
12175-MW9	-----	19.75	-----	-----	26.73	-----
12175-MW10	-----	23.74	-----	-----	30.40	-----
12175-MW11	-----	23.61	-----	-----	30.81	-----
12175-MW12	-----	23.24	-----	-----	30.08	-----
12175-MW13	-----	18.87	-----	-----	25.29	-----
12175-MW14	-----	23.70	-----	-----	29.65	-----
12175-MW15	-----	20.24	-----	-----	27.03	-----
12175-MW16	-----	14.28	-----	-----	19.35	-----
12175-MW17	-----	23.00	-----	-----	28.72	-----
12175-MW18	-----	23.33	-----	-----	28.65	-----
12175-MW19	21.58	23.25	1.67	-----	-----	-----
12175-MW20	-----	18.42	-----	-----	26.31	-----

Remarks:

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convenience 3 | Location: Edgefield, SC

Project No.: 14-211651 | UST Permit #: 12175 | Date: 1/9/2014

Measured By: A. Williamson | Weather: Mostly Cloudy, 40s-50s

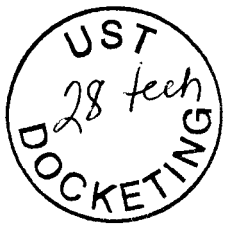
Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Well Depth (feet)	Volume Purged (gallons)
12175-MW21	-----	20.33	-----	-----	29.45	-----
12175-MW22	-----	23.98	-----	-----	29.94	-----
12175-MW23	-----	24.32	-----	-----	31.37	-----
12175-MW24	-----	22.08	-----	-----	30.21	-----
12175-MW25	21.22	23.75	2.53	-----	-----	-----
12175-MW26	-----	22.68	-----	-----	30.13	-----
12175-RW1	19.64	19.67	0.03	-----	-----	-----
12175-RW2	21.16	24.18	3.02	-----	-----	-----
12175-RW3	-----	22.00	-----	-----	30.05	-----

Remarks:

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

FEB 2 5 2014

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388



Re: AFVR Directive
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 47538
Release reported December 31, 2008
AFVR Report received February 5, 2014
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) recognizes your commitment to continue work at this site using Environmental Compliance Services (ECS), Inc. as your contractor. The next appropriate scope of work is to continue aggressive fluid and vapor recovery (AFVR) events to remove free-phase product from the groundwater. Please have your contractor conduct two separate 96-hour AFVR events on recovery wells RW-1 and RW-2. The first AFVR event should be conducted using recovery well RW-2 as an extraction point, and the second event should be conducted using recovery well RW-1 as an extraction point. The events should be separated by 30 days and must be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) Revision 2.0. **Please note that AFVR procedures have been updated in the revised QAPP**. A copy of the revised QAPP is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm.

Cost Agreement #47538 has been approved in the amount shown on the enclosed cost agreement form for the AFVR events. AFVR activities may proceed immediately upon receipt of this letter, and must be performed by a South Carolina-Certified Underground Storage Tank Site Rehabilitation Contractor. All applicable South Carolina certification requirements apply to preparation of an AFVR report.

An AFVR report and invoice must be submitted to the Division within 90 days from the date of this letter. Your contractor may directly bill the State Underground Petroleum Environmental Response Bank (SUPERB) Account. **Interim invoices may be submitted for this scope of work.** If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Agency is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the

Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Agency grants pre-approval for transportation of free-phase product and petroleum-contaminated groundwater from the referenced facility to a permitted treatment facility for disposal. The transport and disposal must be conducted in accordance with the QAPP.

On all correspondence concerning this facility, please reference UST Permit #12175. If there are any questions concerning this project, feel free to contact me by telephone at (803) 898-0610, by fax at (803) 898-0673, or by e-mail at ridglect@dhec.sc.gov.

Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved cost agreement form

cc: Environmental Compliance Services, Inc., P O Box 3528, Fort Mill, SC29708 (with enc)
Technical File (with enc)

Approved Cost Agreement 47538

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3
RIDGLECT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
19 RPT/PROJECT MNGT & COORDINATIO						
			PERC REPORT PREPARATION	0.1000	33,681.25	3,368.13
23 EFR						
			A4 96 HOUR EVENT	2.0000	12,567.50	25,135.00
			C4 OFF GAS TREATMENT 96 HOUR	2.0000	780.00	1,560.00
			D SITE RECONNAISSANCE	1.0000	203.25	203.25
			F EFFLUENT DISPOSAL	20,000.0000	0.30	6,000.00
			G AFVR EQUIPMENT MOB	2.0000	391.50	783.00
				Total Amount		37,049.38

Document Receipt Information

☐ Hard Copy ☒ CD ☐ Email

Date Received 8/18/14

Permit Number 12175

Project Manager Cathleen Ridley

Name of Contractor: ECS

UST Certification Number UCC-0358

Docket Number 29 tech

Scanned

AFVR Report

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

AGGRESSIVE FLUID VAPOR RECOVERY REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651
August 15, 2014

Prepared by:
Environmental Compliance Services, Inc.
PO Box 3528
Fort Mill, SC 29708-3528
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

AGGRESSIVE FLUID VAPOR RECOVERY REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

August 15, 2014

Randall Hutchins
Project Manager

David R. Mazorra, PE
SC Licensed Professional Engineer #31409
Date August 15, 2014

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1.0 INTRODUCTION

This report presents the results of the corrective action activities conducted at the Edgefield Fuel & Convenience 3 site between April 3, 2014 and June 6, 2014. The activities were conducted in accordance with the Underground Storage Tank (UST) Quality Assurance Program Plan (QAPP) Revision 2.0, and Cost Agreement Number 47538 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated February 25, 2014.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc. (ECS)
Address: Post Office Box 3528
Fort Mill, South Carolina 29708
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	Not reported

UST Permit 12175

UST	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Premium Unleaded Gasoline	Unknown	Not In Use	Not applicable
2	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable
3	3,000	Regular Unleaded Gasoline	Unknown	Yes	Not applicable

The site operates as Edgefield Fuel & Convenience 3, a retail gasoline and convenience store. The site previously operated as Amoco Food Mart 3, also a retail petroleum and convenience store. A release from the UST system at the site was reported to the SCDHEC on December 31, 2008. Three USTs (one 3,000-gallon premium unleaded gasoline UST and two 3,000-gallon regular unleaded gasoline USTs) were listed at the site and the premium unleaded gasoline UST was not in use during these corrective action activities.

1.6 REGIONAL GEOLOGY/HYDROGEOLOGY

The area is located in the Modoc shear zone of the Piedmont physiographic province. The Modoc zone is an example of a ductile fault in the Eastern Piedmont fault system (zone). The Modoc zone separates the high grade and older Savannah River terrane (Kiokee belt) from the low-grade metavolcanics and metasediments of the Carolina terrane (Slate belt) to the northwest. The Modoc shear zone was interpreted to be of late Paleozoic. Carolina Terrane consists of upper Precambrian to Cambrian greenschist facies metasedimentary and metavolcanic rocks intruded by numerous granitic and gabbroic plutons ranging in age from 265 to 650 million years. A mantle of residual soil and saprolite typically overlie the crystalline rocks of the Carolina Terrane. The thickness of the mantle has ranges from approximately six to 60 feet, although it apparently has been absent in places and thicker than 60 feet in others. The surface layers are reportedly composed chiefly of sandy clay. The clay content of most saprolites typically ranges from 10 to 25 percent, with some containing as little as three percent and others as much as 70 percent.

The mantle that covers the underlying fractured bedrock in most places provides an intergranular medium through which recharge into, and discharge of water from, the fractured rocks commonly occur. As a result, groundwater flow occurs within a composite two-media system. The top of the system is the water table surface, which is typically located within the saprolite. The fractured bedrock is expected to generally grade downward into unfractured rock below a depth of approximately 300 feet. The base of the groundwater system is therefore indistinct.

2.0 RECEPTOR SURVEY & SITE DATA

2.1 RECEPTOR SURVEY

The Edgefield Fuel & Convenience 3 site is located in a primarily business and commercial area within the town limits of Edgefield, South Carolina, see **Figure 1**. The site is bordered to the north by an access road and parking lot for the west abutting Carolina First Bank. The site is bordered to the east by Bacon Street followed by the South Carolina National Heritage Corridor Discovery Center. The site is bordered to the south by Main Street (US Highway 25) followed by a parking lot for the downtown district of Edgefield. Edgefield Town Hall is located diagonally across the cross streets of Bacon Street and Main Street.

Potable water to the site and surrounding properties is provided by the Edgefield County Water and Sewer Authority. The Edgefield County Water and Sewer Authority utilize potable water from portions of the Savannah River located within the Savannah-Salkehatchie Basin. One private water supply well was previously identified within a 1,000-foot radius of the site. The private water supply well is located approximately 860 feet southeast of the active site UST basin at the community college; however, this well is not in operation.

One wet weather drainage feature was previously identified approximately 1,000 feet southeast of the site. This wet weather drainage feature flows in a general east to west direction before a turn and then flows toward the southwest. The wet weather drainage feature drains into the Beaverdam Creek. The two closest surface water bodies previously identified in relation to the site were Beaverdam Creek and a tributary to Beaverdam Creek. Beaverdam Creek is located approximately 1,375 feet southwest of the site and flows in a general northwest to southeast direction. The tributary to Beaverdam Creek is located approximately 1,380 feet northwest of the site and flowed in a general northeast to southwest direction.

Underground utility conduits previously marked by area utility companies include a water meter for a municipal water line, electrical lines, and a telephone line. Additionally, a sanitary sewer cleanout for a sanitary sewer line and drop inlets for a storm drainage system are located on-site. The water meter is located on the eastern side of the property. Electrical lines are located along the eastern side of the property beneath the sidewalk and along the northern property limits of the site. A telephone line is located along the northeastern portion of the site. The sewer cleanout is located on the east side of the site building. The storm drains are located along Bacon Street next to the site property limits. A natural gas line and municipal water line are located across Main Street from the site. A Site Plan showing the utilities and the current UST system is included as **Figure 2**.

2.2 SITE GEOLOGY/HYDROGEOLOGY

The site is located approximately 525 feet above mean sea level (MSL) with an approximate total site topographic relief of three feet. The surface at the site is generally covered by asphalt, and some smaller areas of concrete and grass. The active site USTs were covered with concrete. The boring logs provide a general characterization of the geological formations encountered at the location of each monitoring well installed during assessment activities. In general, the site subsurface is characterized by asphalt and concrete ranging from 4 to 6 inches in thickness followed by fill material consisting of aggregate base course (ABC) stone and clayey to silty sand to depths of approximately 2 feet below ground surface (bgs). Native soils (residuum), below the fill material, are characterized as tan to brown to red silty sand and silty clay to depths of 6 feet bgs. Soils encountered in the boreholes 6 feet bgs are characterized as yellow to orange and tan to gray silty sand to the termination depths of the boreholes.

The percentages of sand, silt and clay in a soil sample collected from SB-2 (12175-MW1) at a depth of 20 feet during Tier I assessment activities (March 2009) were 64.1%, 24.5%, and 11.4%, respectively. The percentages of gravel, sand, and combination of silt & clay in the soil sample collected during Tier II activities (April 2010) from on-site monitoring well 12175-MW6 at a depth of 20 feet were 0.6%, 52.2%, and 47.2%, respectively. A hydrometer analysis was not performed on the soil sample collected from monitoring well 12175-MW6 to determine the percentages of silt and clay. Based on the sieve and hydrometer analyses, the site was underlain at shallow depths by clayey silty sand.

Historical depths to groundwater measured in shallow monitoring wells at the site ranged from 18.09 feet bgs (12175-MW5 in May 2010) to 25.61 feet bgs (12175-MW2 in October 2010 with 3.65 feet of free product), and averaged 22.24 feet bgs in on-site monitoring wells over time. Historical groundwater elevation data is presented in **Table 2**. Groundwater beneath the site was historically reported to flow radially from the northwest to south beneath the site.

Slug tests were previously performed on shallow monitoring wells 12175-MW2 and 12175-MW3 in March 2009 during Tier I activities and shallow monitoring wells 12175-MW6 and 12175-MW11 in May 2010 during Tier II activities. Hydraulic conductivities for these four shallow monitoring wells, calculated using the Bouwer and Rice method, ranged between 0.11 feet per day (ft/day) and 0.73 ft/day. Seepage velocities ranged between 1.66 feet per year (ft/yr) to 3.81 ft/yr.

3.0 ASSESSMENT INFORMATION

3.1 SOIL ASSESSMENT

Soil assessment was not required for the scope of work outlined in the February 25, 2014 directive.

3.2 GROUNDWATER FIELD SCREENING

Groundwater field screening was not required for the scope of work outlined in the February 25, 2014 directive.

3.3 MONITORING WELL INFORMATION

Monitoring well installation was not required for the scope of work outlined in the February 25, 2014 directive.

3.4 GROUNDWATER ASSESSMENT

3.4.1 Product/Water Level Measurements

Monitoring wells 12175-RW1 and 12175-RW2 were gauged for depths to free phase product and depth to groundwater during the site reconnaissance activities on April 3, 2014. Free phase product was detected at 18.31 feet below the top of casing (TOC) in 12175-RW1 (thickness of 0.04 feet) and 19.79 feet below the TOC in 12175-RW2 (thickness of 2.59 feet). Measurements made in May and June 2014 during the AFVR event are presented in **Table 7**.

3.4.2 Water Sampling and Analyses

Groundwater samples were not required for the scope of work outlined in the AFVR directive dated February 25, 2014.

3.4.3 Groundwater Analytical Data

Groundwater analysis was not required for the scope of work outlined in the AFVR directive dated February 25, 2014.

3.4.4 Aquifer Characterization

Aquifer characteristics determinations were not required for the scope of work outlined in the AFVR directive dated February 25, 2014.

4.0 CORRECTIVE ACTION

The SCDHEC directive included two separate 96-hour aggressive fluid vapor recovery (AFVR) event to remove free phase product from site monitoring wells 12175-RW1 and 12175-RW2.

4.1 CORRECTIVE ACTION ACTIVITIES

4.1.1 Abbreviated AFVR Event – May 27, 2014

This AFVR event was initiated on May 27 2014 and concluded early on May 27, 2014 due to equipment malfunction. The SCDHEC Project Manager was notified and the 96-hour AFVR event was rescheduled for June 2, 2014.

The abbreviated AFVR event was conducted by ECS with activity monitoring provided by Phil Pike of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction recovery well 12175-RW2 and in observation monitoring wells 12175-MW2, 12175-MW6, and 12175-MW24. Free phase product was detected in targeted extraction recovery well 12175-RW2 with a product thickness of 2.37 feet. Free phase product was detected in observation monitoring well 12175-MW with a product thickness of 0.57 feet. Free phase product was not detected in observation monitoring wells 12175-MW6 and 12175-MW24.

This event consisted of one vacuum system extracting vapors and fluids from recovery well 12175-RW2 for approximately 3 hours and was scheduled to include a thermal oxidizer for off-gas treatment. The thermal oxidizer, however, was not operational for this AFVR event due to an equipment malfunction.

The trailer mounted AFVR equipment consisted of one Dekker VMX0303K oil-sealed vacuum system capable of extracting dry vapors from the subsurface at a rate of 275 cubic feet per minute (CFM) at 25 inches Mercury (in.Hg) vacuum. The vacuum blower is connected to a manifold, air/water separator, and magnehelic gauges for system monitoring. A water discharge line is connected from the air/ water separator, flow meter, and transfer pump that pumps the water to a holding tank temporarily stored onsite.

The drop tube (also known as stinger pipe) was initially lowered to the depth of fluid encountered in recovery well 12175-RW2. The stinger pipe was lowered 2 feet in the first 3 hours of the event. Monitoring wells 12175-MW2, 12175-MW6, and 12175-MW24 were used as observation wells to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 30-minute intervals during the first three hours of the event. Approximately 160 gallons of liquid were removed from recovery well 12175-RW2 during this event. The total estimated amount of pre-treated petroleum products removed as a vapor, using the 100,000 ppm measurements where exceeding the maximum range of the vapor readings instrument, was 15.69 pounds (2.61 gallons). Field data sheets and emissions calculations for the AFVR event are included in **Appendix L**.

4.1.2 AFVR Event 1 – June 2-6, 2014

This AFVR event was initiated on June 2, 2014 and completed on June 6, 2014. The AFVR event was completed by ECS with activity monitoring provided by Aaron Williamson and Brian Peay, both of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction recovery well 12175-RW2, and in observation monitoring wells 12175-MW2, 12175-MW6, and 12175-MW24. Free phase product was detected in targeted extraction recovery well 12175-RW2 (product thickness of 0.61 feet) and in observation monitoring well 12175-MW2 (product thickness of 0.51 feet). Free phase product was not detected in observation monitoring wells 12175-MW6 and 12175-MW24. Approximately 12 hours after initiating this AFVR event, monitoring well 12175-MW26 was utilized as an observation well in-place of 12175-MW24 at the request of the store manager. Free phase product was not detected in monitoring well 12175-MW26.

This AFVR event consisted of one vacuum system extracting vapors and fluids from recovery well 12175-RW2 for approximately 96 hours and included granular activated carbon (GAC) for off-gas treatment. The initial 300 lbs. of GAC was exchanged with 300 lbs. reactivated vapor phase carbon after approximately 19 hours. Another two 300 lbs. of reactivated vapor phase carbon was exchanged after approximately 44 hours from initiating the AFVR event. In total, 900 lbs. of carbon were utilized during this 96-hour AFVR event. The trailer mounted AFVR equipment was the same equipment described in Section 4.1.1.

The drop tube was initially lowered to the depth of fluid encountered in recovery well 12175-RW2. The stinger pipe was lowered periodically throughout the first 8 hours of the event and then adjusted to levels with higher vapor concentrations recorded from the exhaust stack. Observation wells were used to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 30-minute intervals during the first eight hours, 1-hour intervals for hours 9-24, and 2-hour intervals for the remainder of the event.

The vacuum readings averaged 26.91 inches of mercury over the course of the event. The air velocity rates averaged 347 feet per minute (ft/min) from the discharge stack over the course of the event. The organic vapor concentrations recovered from recovery well 12175-RW2 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 90,015 parts per million (ppm) for the 96 hour event. The Bacharach TLV Sniffer maximum range of 100,000 ppm was exceeded during this event and, when exceeded, 100,000 ppm was used in calculating the average. The exhaust stack gas temperatures averaged 119.5 degrees Fahrenheit (°F).

Free phase product was not detected in recovery well 12175-RW2 during post-AFVR measurements on June 6, 2014. Free phase product was detected in observation well 12175-MW2 with a thickness of 0.65 feet. A summary of free phase product and AFVR data collected is presented in **Table 6**. A summary of groundwater elevation data is presented in **Table 7**.

The total estimated amount of pre-treated petroleum products removed as a vapor, using the 100,000 ppm measurements where exceeding the maximum range of the vapor readings instrument, was 287.31 pounds. The total estimated amount of post-treated petroleum products emitted to the atmosphere, using a total of 900 lbs. of carbon, was 21.28 gallons.

Approximately 4,569 gallons of liquid were removed from recovery well 12175-RW2 during the June 2-6, 2014 AFVR event. A measurable amount of free phase product was not detected in the

holding tank during post-AFVR measurements. Field data sheets and emissions calculations for the AFVR event are included in **Appendix M**.

4.1.3 AFVR Event 2 – June 16-20, 2014

This AFVR event was initiated on June 16, 2014 and completed on June 20, 2014. The AFVR event was completed by ECS with activity monitoring provided by Aaron Williamson and Brian Peay, both of ECS. Prior to the start of the event, the depths to free phase product and groundwater were measured in targeted extraction recovery well 12175-RW1, and in observation monitoring wells 12175-MW3, 12175-MW6, and 12175-MW15. Free phase product was detected in targeted extraction recovery well 12175-RW1 with a product thickness of 0.02 feet. Free phase product was not detected in observation monitoring wells 12175-MW3, 12175-MW6, and 12175-MW15.

This AFVR event consisted of one vacuum system extracting vapors and fluids from recovery well 12175-RW1 for approximately 96 hours and included a thermal oxidizer for off-gas treatment. The trailer mounted AFVR equipment used during this event is the same equipment described in Section 4.1.1. A trailer mounter ThermTech VAC-50 thermal oxidation system, capable of treating 25% of the Lower Explosive Limit at 500 CFM, was used to reduce the off-gas emission concentrations from the AFVR blower to the atmosphere. The thermal oxidizer was non-operational during a five hour period due to an equipment malfunction and repairs.

The drop tube was initially lowered to the depth of fluid encountered in recovery well 12175-RW1. The stinger pipe was lowered periodically throughout the first 8 hours of the event and then adjusted to levels with higher vapor concentrations recorded from the exhaust stack. Observation wells were used to monitor the depth to groundwater and collect vacuum radius of influence measurements throughout the AFVR event.

Measurements of vacuum, air velocities, temperature, and off-gas concentration readings were collected at 30-minute intervals during the first eight hours, 1-hour intervals for hours 9-24, and 2-hour intervals for the remainder of the event.

The vacuum readings averaged 27.63 inches of mercury over the course of the event. The air velocity rates averaged 357 ft/min from the discharge stack over the course of the event. The organic vapor concentrations recovered from recovery well 12175-RW1 were measured at the discharge stack using the Bacharach TLV Sniffer, and averaged 40,064 ppm for the 96 hour event. The Bacharach TLV Sniffer maximum range of 100,000 ppm was exceeded during this event and, when exceeded, 100,000 ppm was used in calculating the average. The exhaust stack gas temperatures averaged 118.0°F.

Free phase product was not detected in recovery well 12175-RW1 or observations wells (12175-MW3, 12175-MW6, and 12175-MW15) during post-AFVR measurements on June 20, 2014. A summary of free phase product and AFVR data collected is presented in **Table 6**. A summary of groundwater elevation data is presented in **Table 7**.

The total estimated amount of pre-treated petroleum products removed as a vapor, using the 100,000 ppm measurements where exceeding the maximum range of the vapor readings instrument, was 177.35 pounds (29.53 gallons). The total estimated amount of post-treated petroleum products emitted to the atmosphere, using the thermal oxidizer, was 0.78 pounds (0.13 gallons).

The thermal oxidizer was successful in removing 99.56% of the off-gas emissions. Emission calculations were determined using the manufacture's conversion factor to convert the TLV readings into gas concentrations for benzene.

Approximately 8,634 gallons of liquid were removed from recovery well 12175-RW1 during the June 16-20, 2014 AFVR event. A measurable amount of free phase product was not detected in the holding tank during post-AFVR measurements. Field data sheets and emissions calculations for the AFVR event are included in **Appendix N**.

4.2 INVESTIGATIVE DERIVED WASTE

Investigative derived waste (IDW) generated during these activities was temporarily stored in a 9,600-gallon tanker staged on-site. Liquids were transported to a licensed disposal facility for proper disposal. A copy of the disposal manifest for each AFVR event is included in **Appendix G**.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

- Free phase product was detected in site monitoring wells 12175-RW1 (product thickness of 0.04 feet) and 12175-RW2 (product thickness of 2.59 feet) during site reconnaissance activities on April 3, 2014.
- The first 96-hour AFVR event was initially scheduled to start May 27, 2014; however, due to equipment failure, the AFVR event ended after 3 hours and was rescheduled. The State Project Manager was notified of the postponement of this event. Approximately 160 gallons of fluids were removed from recovery well 12175-RW2 during this abbreviated AFVR event conducted on May 27, 2014. Free phase product was detected in 12175-MW2 after fluids were removed.
- The first 96-hour AFVR event was completed between June 2-6, 2014 with connection to recovery well 12175-RW2.
- A total of 900 lbs. of carbon were utilized for off-gas treatment during the June 2-6, 2014 AFVR event.
- Approximately 4,569 gallons of fluids were removed from recovery well 12175-RW2 during the June 2-6, 2014 AFVR event.
- Using the maximum range of 100,000 ppm where the vapor analyzer range of 100,000 ppm was exceeded, the emission calculations indicated that 287.31 pounds of petroleum vapors were removed from the subsurface and 21.28 gallons of petroleum vapors were emitted into the atmosphere during the June 2-6, 2014 AFVR event.
- Free phase product was not detected in recovery well 12175-RW2 during post-AFVR measurements on June 6, 2014. Free phase product was detected in observation well 12175-MW2 with a thickness of 0.65 feet on June 6, 2014.
- A second 96-hour AFVR event was completed between June 16-20, 2014 with connection to recovery well 12175-RW1.
- A thermal oxidizer was utilized for off-gas treatment during the June 16-20, 2014 AFVR event.
- Approximately 8,634 gallons of fluids were removed from recovery well 12175-RW1 during the June 16-20, 2014 AFVR event.
- Using the maximum range of 100,000 ppm where the vapor analyzer range of 100,000 ppm was exceeded, the emission calculations indicated that 29.53 gallons of petroleum vapors were removed from the subsurface and 0.13 gallons of petroleum vapors were emitted into the atmosphere during the June 16-20, 2014 AFVR event.
- Free phase product was not detected in recovery well 12175-RW1 during post-AFVR measurements on June 20, 2014. Free phase product was not detected in observation wells 12175-MW3, 12175-MW6, and 12175-MW15 during post-AFVR measurements on June 20, 2014.

5.2 RECOMMENDATIONS

- Additional AFVR events should be performed in recovery wells 12175-RW1, 12175-RW2, and 12175-RW3 and monitoring wells where free phase product is detected to continue the reduction of both free phase product and dissolved-phase product in site monitoring wells.
- ECS recommends conducting a groundwater sampling event to evaluate the effectiveness of the AFVR events, and to continue monitoring free phase product and dissolved-phase hydrocarbons in groundwater.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience, LLC for specific application to the referenced site in Edgefield County, South Carolina. The assessment was conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

6.1 DATA VERIFICATION

The Project Verifier/Quality Assurance Manager has reviewed this report and provided any additional comments if applicable in **Appendix K**.

TABLES

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW1	35	20-35	98.51	12/17/04	22.13	23.68	1.55	75.99
				05/10/10	17.83	21.00	3.17	79.89
				10/20/10	19.38	25.07	5.69	77.71
				09/12/11	20.59	26.35	5.76	76.48
				08/16/13	19.33	22.72	3.39	78.33
				01/09/14	19.37	22.77	3.40	78.29
12175-MW2	34	19-34	100.42	12/17/04	---	24.55	---	75.87
				05/10/10	20.27	22.73	2.46	79.54
				10/20/10	21.96	25.61	3.65	77.55
				09/12/11	23.01	27.06	4.05	76.40
				08/16/13	22.35	22.67	0.32	77.99
				01/09/14	22.08	22.91	0.83	78.13
12175-MW3	34	19-34	100.44	12/17/04	---	24.38	---	76.06
				05/10/10	---	20.54	---	79.90
				10/20/10	---	22.71	---	77.73
				09/12/11	---	23.90	---	76.54
				08/16/13	---	22.32	---	78.12
				01/09/14	---	22.11	---	78.33
12175-MW4	29	19-29	98.61	05/10/10	---	18.92	---	79.69
				10/20/10	---	21.04	---	77.57
				09/12/11	---	22.22	---	76.39
				08/16/13	20.49	21.49	1.00	77.87
				01/09/14	20.27	21.15	0.88	78.12
12175-MW5	29	19-29	98.05	05/10/10	---	18.09	---	79.96
				10/20/10	20.22	20.57	0.35	77.74
				09/12/11	20.66	24.05	3.39	76.54
				08/16/13	19.39	21.83	2.44	78.05
				01/09/14	19.24	20.96	1.72	78.38
12175-MW6	29	19-29	99.82	05/10/10	---	19.94	---	79.88
				10/20/10	---	22.09	---	77.73
				09/12/11	---	23.27	---	76.55
				08/16/13	---	21.75	---	78.07
				01/09/14	---	21.51	---	78.31

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW7	20	10-20	93.32	05/10/10	---	13.51	---	79.81
				10/20/10	---	15.91	---	77.41
				09/12/11	---	17.00	---	76.32
				08/16/13	---	15.18	---	78.14
				01/09/14	---	14.95	---	78.37
12175-MW8	27	17-27	100.59	05/10/10	---	21.61	---	78.98
				10/20/10	---	23.83	---	76.76
				09/12/11	---	24.89	---	75.70
				08/16/13	---	22.87	---	77.72
				01/09/14	---	22.73	---	77.86
12175-MW9	27	17-27	97.55	05/10/10	---	18.81	---	78.74
				10/20/10	---	21.12	---	76.43
				09/12/11	---	22.16	---	75.39
				08/16/13	---	20.03	---	77.52
				01/09/14	---	19.75	---	77.80
12175-MW10	30	20-30	101.31	05/10/10	---	22.88	---	78.43
				10/20/10	---	24.90	---	76.41
				09/12/11	---	25.87	---	75.44
				08/16/13	---	23.86	---	77.45
				08/16/13	---	23.74	---	77.57
12175-MW11	31	21-31	101.65	05/10/10	---	22.16	---	79.49
				10/20/10	---	24.10	---	77.55
				09/12/11	---	25.25	---	76.40
				08/16/13	---	23.69	---	77.96
				01/09/14	---	23.61	---	78.04
12175-MW12	30	20-30	100.55	05/10/10	---	21.78	---	78.77
				10/20/10	---	23.75	---	76.80
				09/12/11	---	25.00	---	75.55
				08/16/13	---	23.35	---	77.20
				01/09/14	---	23.24	---	77.31
12175-MW13	25	15-25	93.20	05/10/10	---	17.82	---	75.38
				10/20/10	---	20.26	---	72.94
				09/12/11	---	21.60	---	71.60
				08/16/13	---	19.20	---	74.00
				01/09/14	---	18.87	---	74.33

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW14	30	20-30	100.05	05/10/10	---	22.47	---	77.58
				10/20/10	---	24.77	---	75.28
				09/12/11	---	25.97	---	74.08
				08/16/13	---	24.06	---	75.99
				01/09/14	---	23.70	---	76.35
12175-MW15	27	17-27	98.47	05/10/10	---	18.81	---	79.66
				10/20/10	---	21.16	---	77.31
				09/12/11	---	22.10	---	76.37
				08/16/13	---	20.66	---	77.81
				01/09/14	---	20.24	---	78.23
12175-MW16	20	10-20	93.01	05/10/10	---	12.34	---	80.67
				10/20/10	---	14.97	---	78.04
				09/12/11	---	16.15	---	76.86
				08/16/13	---	14.68	---	78.33
				01/09/14	---	14.28	---	78.73
12175-MW17	28	18-28	101.09	10/20/10	---	23.52	---	77.57
				09/12/11	---	24.67	---	76.42
				08/16/13	22.62	24.66	2.04	77.96
				01/09/14	---	23.00	---	78.09
12175-MW18	28	18-28	101.51	10/20/10	---	24.01	---	77.50
				09/12/11	---	25.14	---	76.37
				08/16/13	---	23.45	---	78.06
				01/09/14	---	23.33	---	78.18
12175-MW19	28	18-28	100.01	10/20/10	22.35	23.19	0.84	77.45
				09/12/11	22.57	27.18	4.61	76.29
				08/16/13	20.73	23.35	2.62	78.63
				01/09/14	21.58	23.25	1.67	78.01
12175-MW20	27	17-27	91.80	10/20/10	---	20.28	---	71.52
				09/12/11	---	21.66	---	70.14
				08/16/13	---	18.98	---	72.82
				01/09/14	---	18.42	---	73.38
12175-MW21	29	19-29	94.30	10/20/10	---	21.70	---	72.60
				09/12/11	---	22.94	---	71.36
				08/16/13	---	20.70	---	73.60
				01/09/14	---	20.33	---	73.97

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW22	30	20-30	99.82	10/20/10	---	25.99	---	73.83
				09/12/11	---	26.94	---	72.88
				08/16/13	---	24.04	---	75.78
				01/09/14	---	23.98	---	75.84
12175-MW23	31	21-31	102.29	10/20/10	---	24.86	---	77.43
				09/12/11	---	25.99	---	76.30
				08/16/13	20.87	24.35	3.48	80.55
				01/09/14	---	24.32	---	77.97
12175-MW24	30	20-30	100.23	08/16/13	---	22.07	---	78.16
				01/09/14	---	22.08	---	78.15
12175-MW25	30	20-30	99.95	08/16/13	21.40	23.87	2.47	77.93
				08/16/13	21.22	23.75	2.53	78.10
12175-MW26	30	20-30	99.89	08/16/13	---	22.81	---	77.08
				08/16/13	---	22.68	---	77.21
12175-RW1	30	20-30	98.05	08/16/13	---	19.80	---	78.25
				08/16/13	19.64	19.67	0.03	78.40
				04/03/14	18.31	18.35	0.04	79.73
12175-RW2	30	20-30	100.05	08/16/13	20.75	20.87	0.12	79.27
				08/16/13	21.16	24.18	3.02	78.14
				04/03/14	19.79	22.38	2.59	79.61
12175-RW3	30	20-30	100.16	08/16/13	---	22.16	---	78.00
				01/09/14	---	22.00	---	78.16

Notes:

1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of product, where present, with an assumed density of 0.75g/cm^3.
3. Well depths and screened intervals based on well construction records referencing ground surface.
4. Depths to fluid measured using top of casing as measuring point.

TABLE 6
SUMMARY OF AFVR DATA
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F°)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
12175-MW1	4/6/10 - 4/7/10	8	4,419	194.3	626	1.33	0	1.33	314
12175-MW1 12175-MW5	7/12/11 - 7/13/11	12	4,456	232.3	2,454	4.88	0	4.88	1,503
12175-MW2	8/2/11 - 8/3/11	12	4,069	244.6	923	1.65	0	1.65	580
12175-MW19	8/11/11 - 8/12/11	12	4,274	216.4	2,804	5.30	0	5.30	740
12175-MW1	5/10/12 - 5/11/12	8	3,579	186.7	3,280	5.18	0	5.18	674
12175-MW2	5/31/12 - 6/1/12	8	3,481	188.1	1,325	1.97	0	1.97	330
12175-MW5	6/13/12 - 6/14/12	8	2,899	204.4	2,010	2.47	0	2.47	155
12175-MW19	6/28/12 - 6/29/12	8	4,901	230.1	2,790	5.50	0	5.50	167
12175-MW2 12175-MW19 12175-MW25	2/9/13 - 2/10/13	24	3,762	173.1	7,963	40.29	Sheen	40.29	1,675
12175-MW1 12175-MW4 12175-MW5	2/10/13 - 2/11/13	20.67	3,473	176.3	5,649	22.12	Sheen	22.12	1,525
12175-RW1	6/5/13 - 6/6/13	12	4,332	195.7	1,536	4.46	Sheen	4.46	920
12175-RW2	6/20/13- 6/21/13	12	4,532	173.5	7,807	19.70	0	19.70	314
12175-RW3	7/15/13- 7/16/13	12	3,350	179.4	465	1.11	0	1.11	747

TABLE 6
SUMMARY OF AFVR DATA
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Date	Time[2] (hours)	Average Effluent Velocity[3] (fpm)	Average Effluent Temperature (F°)	Average Effluent Concentration (ppm)	Total Free Product Volatized[4] (gallons)	Total Free Product as Fluid[5] (gallons)	Total Free Product Recovered[6] (gallons)	Total Volume of Fluid Removed (gallons)
12175-RW1	11/4/13-11/5/13	8	5,278	184.5	863	1.98	0	1.98	911
12175-RW2	11/18/13-11/19/13	8	4,424	174.8	3,790	7.46	0	7.46	209
12175-MW17	12/9/13-12/10/13	8	4,772	180.8	198	0.41	0	0.41	450
12175-RW2	5/27/2014	3	520	133.4	99,667	15.69	Sheen	15.69	601
12175-RW2	6/2/14 - 6/6/14	96	347	119.5	90,015	47.85	Sheen	47.85	4,569
12175-RW1	6/16/14-6/20/14	96	357	118	40,064	29.53	Sheen	29.53	8,634
Totals		375.67	--	--	--	218.88	0	218.88	25,018

Notes:

1. Aggressive Fluid Vapor Recovery (AFVR) events using vacuum trucks provided by A & D Environmental and Industrial Services, Inc. (2010, August 2011, 2012, 2013); Zebra Environmental (July 2011); and, ECS remediation system trailer with Dekker VMX0303K oil-sealed vacuum system (2014).
2. Duration of the AFVR event at well location.
3. Dry Standard Cubic Feet Per Minute (DSCFM) is calculated in Appendix L with cross-sectional area of exhaust stack (0.785 square feet x diameter ^{2}).
4. Total Volatized in gallons = Air emissions in pounds/(6.25 lbs./gal.)
5. Total Free Product as Fluid is obtained from disposal manifest, flow meter, and/or correspondence with subcontractors from each AFVR event.
6. Total Free Product Recovered = Total Free Product Volatized + Total Free Product as Fluid.
7. Average Effluent Concentration (before off-gas treatment) calculated using 100,000 ppm for measaurments exceeding maximum range of 100,000 ppm of organic vapor instrument.

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW1	35	15	98.51	4/6/10 (pre-AFVR)	17.61	22.24	4.63	79.74
				4/7/10 (immediately post-AFVR)	--	21.42	--	77.09
				4/7/10 (20 minutes post-AFVR)	20.37	20.42	0.05	78.13
12175-MW3	34	15	100.44	4/6/10 (pre-AFVR)	--	20.74	--	79.70
				4/7/10 (immediately post-AFVR)	--	20.78	--	79.66
				4/7/10 (20 minutes post-AFVR)	--	20.78	--	79.66
12175-MW4	29	10	98.61	4/6/10 (pre-AFVR)	--	19.14	--	79.47
				4/7/10 (immediately post-AFVR)	--	19.22	--	79.39
				4/7/10 (20 minutes post-AFVR)	--	19.23	--	79.38
12175-MW5	29	10	98.05	4/6/10 (pre-AFVR)	--	18.24	--	79.81
				4/7/10 (immediately post-AFVR)	--	18.95	--	79.10
				4/7/10 (20 minutes post-AFVR)	--	18.82	--	79.23
12175-MW6	29	10	99.82	4/6/10 (pre-AFVR)	--	20.14	--	79.68
				4/7/10 (immediately post-AFVR)	--	20.28	--	79.54
				4/7/10 (20 minutes post-AFVR)	--	20.29	--	79.53
12175-MW1	35	15	98.51	7/12/11 (pre-AFVR)	19.61	24.75	5.14	77.62
				7/13/11 (immediately post-AFVR)	--	25.35	--	73.16
				7/13/11 (20 minutes post-AFVR)	22.92	23.03	0.11	75.56
12175-MW5	29	10	98.05	7/12/11 (pre-AFVR)	19.3	23.6	4.30	77.68
				7/13/11 (immediately post-AFVR)	23.16	23.25	0.09	74.87
				7/13/11 (20 minutes post-AFVR)	22.31	22.51	0.20	75.69

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW3	34	15	100.44	7/12/11 (pre-AFVR)	--	22.84	--	77.60
				7/13/11 (immediately post-AFVR)	--	22.89	--	77.55
				7/13/11 (20 minutes post-AFVR)	--	22.84	--	77.60
12175-MW4	29	10	98.61	7/12/11 (pre-AFVR)	--	21.21	--	77.40
				7/13/11 (immediately post-AFVR)	--	21.31	--	77.30
				7/13/11 (20 minutes post-AFVR)	--	21.32	--	77.29
12175-MW6	29	10	99.82	7/12/11 (pre-AFVR)	--	22.20	--	77.62
				7/13/11 (immediately post-AFVR)	--	22.50	--	77.32
				7/13/11 (20 minutes post-AFVR)	--	22.51	--	77.31
12175-MW2	34	15	100.42	8/2/11 (pre-AFVR)	22.45	26.65	4.20	76.92
				8/3/11 (immediately post-AFVR)	--	25.67	--	74.75
				8/3/11 (20 minutes post-AFVR)	24.03	24.13	0.10	76.37
12175-MW17	28	10	101.09	8/2/11 (pre-AFVR)	--	24.07	--	77.02
				8/3/11 (immediately post-AFVR)	--	24.19	--	76.90
				8/3/11 (20 minutes post-AFVR)	--	24.18	--	76.91
12175-MW18	28	10	101.51	8/2/11 (pre-AFVR)	--	24.51	--	77.00
				8/3/11 (immediately post-AFVR)	--	24.56	--	76.95
				8/3/11 (20 minutes post-AFVR)	--	24.56	--	76.95
12175-MW19	28	10	100.01	8/2/11 (pre-AFVR)	21.98	26.81	4.83	76.82
				8/3/11 (immediately post-AFVR)	22.05	26.90	4.85	76.75
				8/3/11 (20 minutes post-AFVR)	22.05	26.89	4.84	76.75

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW19	28	10	100.01	8/11/11 (pre-AFVR)	22.13	27.05	4.92	76.65
				8/12/11 (immediately post-AFVR)	--	27.42	--	72.59
				8/12/11 (20 minutes post-AFVR)	24.42	24.51	0.09	75.57
12175-MW1	35	15	98.51	8/11/11 (pre-AFVR)	20.25	25.86	5.61	76.86
				8/12/11 (immediately post-AFVR)	20.37	25.97	5.60	76.74
				8/12/11 (20 minutes post-AFVR)	20.41	26.02	5.61	76.70
12175-MW2	34	15	100.42	8/11/11 (pre-AFVR)	23.05	25.47	2.42	76.77
				8/12/11 (immediately post-AFVR)	23.12	25.97	2.85	76.59
				8/12/11 (20 minutes post-AFVR)	23.13	25.58	2.45	76.68
12175-MW4	29	10	98.61	8/11/11 (pre-AFVR)	--	21.90	--	76.71
				8/12/11 (immediately post-AFVR)	--	22.32	--	76.29
				8/12/11 (20 minutes post-AFVR)	--	22.32	--	76.29
12175-MW1	35	15	98.51	5/10/12 (pre-AFVR)	21.91	27.13	5.22	75.30
				5/11/12 (immediately post-AFVR)	24.97	25.06	0.09	73.52
				5/11/12 (20 minutes post-AFVR)	23.90	24.24	0.34	74.53
12175-MW2	34	15	100.42	5/10/12 (pre-AFVR)	24.23	28.02	3.79	75.24
				5/11/12 (immediately post-AFVR)	24.31	28.14	3.83	75.15
				5/11/12 (20 minutes post-AFVR)	24.31	28.14	3.83	75.15
12175-MW3	34	15	100.44	5/10/12 (pre-AFVR)	--	25.04	--	75.40
				5/11/12 (immediately post-AFVR)	--	25.11	--	75.33
				5/11/12 (20 minutes post-AFVR)	--	25.12	--	75.32

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW4	29	10	98.61	5/10/12 (pre-AFVR)	22.41	26.85	4.44	75.09
				5/11/12 (immediately post-AFVR)	22.50	26.98	4.48	74.99
				5/11/12 (20 minutes post-AFVR)	22.50	27.00	4.50	74.99
12175-MW5	29	10	98.05	5/10/12 (pre-AFVR)	21.50	26.15	4.65	75.39
				5/11/12 (immediately post-AFVR)	21.98	25.93	3.95	75.08
				5/11/12 (20 minutes post-AFVR)	22.02	26.01	3.99	75.03
12175-MW6	29	10	99.82	5/10/12 (pre-AFVR)	--	24.44	--	75.38
				5/11/12 (immediately post-AFVR)	--	24.61	--	75.21
				5/11/12 (20 minutes post-AFVR)	--	24.62	--	75.20
12175-MW19	28	10	100.01	5/10/12 (pre-AFVR)	23.66	27.73	4.07	75.33
				5/11/12 (immediately post-AFVR)	23.76	27.74	3.98	75.26
				5/11/12 (20 minutes post-AFVR)	23.77	27.75	3.98	75.25
12175-MW24	30	10	100.23	5/10/12 (pre-AFVR)	--	24.97	--	75.26
				5/11/12 (immediately post-AFVR)	--	25.11	--	75.12
				5/11/12 (20 minutes post-AFVR)	--	25.11	--	75.12
12175-MW25	30	10	99.95	5/10/12 (pre-AFVR)	23.50	28.34	4.84	75.24
				5/11/12 (immediately post-AFVR)	23.61	28.55	4.94	75.11
				5/11/12 (20 minutes post-AFVR)	23.60	28.53	4.93	75.12
12175-MW26	30	10	99.89	5/10/12 (pre-AFVR)	--	25.84	--	74.05
				5/11/12 (immediately post-AFVR)	--	25.88	--	74.01
				5/11/12 (20 minutes post-AFVR)	--	25.87	--	74.02

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW2	34	15	100.42	5/31/12 (pre-AFVR)	24.39	28.16	3.77	75.09
				6/1/12 (immediately post-AFVR)	25.14	25.31	0.17	75.24
				6/1/12 (20 minutes post-AFVR)	25.30	25.61	0.31	75.04
12175-MW1	35	15	98.51	5/31/12 (pre-AFVR)	22.06	27.26	5.20	75.15
				6/1/12 (immediately post-AFVR)	22.13	27.33	5.20	75.08
				6/1/12 (20 minutes post-AFVR)	22.13	27.33	5.20	75.08
12175-MW5	29	10	98.05	5/31/12 (pre-AFVR)	21.68	26.32	4.64	75.21
				6/1/12 (immediately post-AFVR)	21.75	26.27	4.52	75.17
				6/1/12 (20 minutes post-AFVR)	21.75	26.27	4.52	75.17
12175-MW19	28	10	100.01	5/31/12 (pre-AFVR)	23.80	27.74	3.94	75.23
				6/1/12 (immediately post-AFVR)	23.87	27.75	3.88	75.17
				6/1/12 (20 minutes post-AFVR)	23.87	27.74	3.87	75.17
12175-MW24	30	10	100.23	5/31/12 (pre-AFVR)	--	25.13	--	75.10
				6/1/12 (immediately post-AFVR)	--	25.18	--	75.05
				6/1/12 (20 minutes post-AFVR)	--	25.20	--	75.03
12175-MW25	30	10	99.95	5/31/12 (pre-AFVR)	23.60	28.84	5.24	75.04
				6/1/12 (immediately post-AFVR)	23.65	28.73	5.08	75.03
				6/1/12 (20 minutes post-AFVR)	23.65	28.74	5.09	75.03
12175-MW26	30	10	99.89	5/31/12 (pre-AFVR)	--	25.97	--	73.92
				6/1/12 (immediately post-AFVR)	--	25.96	--	73.93
				6/1/12 (20 minutes post-AFVR)	--	25.96	--	73.93

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW5	29	10	98.05	6/13/12 (pre-AFVR)	21.72	26.43	4.71	75.15
				6/14/12 (immediately post-AFVR)	--	26.35	--	71.70
				6/14/12 (20 minutes post-AFVR)	24.32	24.67	0.35	73.64
12175-MW1	35	15	98.51	6/13/12 (pre-AFVR)	22.13	27.56	5.43	75.02
				6/14/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/14/12 (20 minutes post-AFVR)	22.13	27.58	5.45	75.02
12175-MW2	34	15	100.42	6/13/12 (pre-AFVR)	25.21	25.82	0.61	75.06
				6/14/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/14/12 (20 minutes post-AFVR)	25.21	25.82	0.61	75.06
12175-MW3	34	15	100.44	6/13/12 (pre-AFVR)	--	25.28	--	75.16
				6/14/12 (immediately post-AFVR)	--	25.30	--	75.14
				6/14/12 (20 minutes post-AFVR)	--	25.30	--	75.14
12175-MW4	29	10	98.61	6/13/12 (pre-AFVR)	22.59	27.09	4.50	74.90
				6/14/12 (immediately post-AFVR)	22.61	27.11	4.50	74.88
				6/14/12 (20 minutes post-AFVR)	22.61	27.11	4.50	74.88
12175-MW6	29	10	99.82	6/13/12 (pre-AFVR)	--	24.67	--	75.15
				6/14/12 (immediately post-AFVR)	--	24.75	--	75.07
				6/14/12 (20 minutes post-AFVR)	--	24.73	--	75.09
12175-MW19	28	10	100.01	6/13/12 (pre-AFVR)	23.86	27.74	3.88	75.18
				6/14/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/14/12 (20 minutes post-AFVR)	23.88	27.79	3.91	75.15

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW24	30	10	100.23	6/13/12 (pre-AFVR)	--	25.18	--	75.05
				6/14/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/14/12 (20 minutes post-AFVR)	--	25.22	--	75.01
12175-MW25	30	10	99.95	6/13/12 (pre-AFVR)	23.67	28.71	5.04	75.02
				6/14/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/14/12 (20 minutes post-AFVR)	23.68	28.71	5.03	75.01
12175-MW26	30	10	99.89	6/13/12 (pre-AFVR)	--	26.00	--	73.89
				6/14/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/14/12 (20 minutes post-AFVR)	--	26.00	--	73.89
12175-MW19	28	10	100.01	6/28/12 (pre-AFVR)	23.87	27.75	3.88	75.17
				6/29/12 (immediately post-AFVR)	--	27.21	--	72.80
				6/29/12 (20 minutes post-AFVR)	25.38	25.70	0.32	74.55
12175-MW1	35	15	98.51	6/28/12 (pre-AFVR)	22.16	27.38	5.22	75.05
				6/29/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/29/12 (20 minutes post-AFVR)	22.17	27.38	5.21	75.04
12175-MW2	34	15	100.42	6/28/12 (pre-AFVR)	25.19	25.94	0.75	75.04
				6/29/12 (immediately post-AFVR)	25.24	25.99	0.75	74.99
				6/29/12 (20 minutes post-AFVR)	25.22	25.97	0.75	75.01
12175-MW5	29	10	98.05	6/28/12 (pre-AFVR)	21.95	25.94	3.99	75.10
				6/29/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/29/12 (20 minutes post-AFVR)	21.95	25.94	3.99	75.10

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW24	30	10	100.23	6/28/12 (pre-AFVR)	--	25.19	--	75.04
				6/29/12 (immediately post-AFVR)	--	25.23	--	75.00
				6/29/12 (20 minutes post-AFVR)	--	25.27	--	74.96
12175-MW25	30	10	99.95	6/28/12 (pre-AFVR)	23.68	28.70	5.02	75.02
				6/29/12 (immediately post-AFVR)	23.74	28.76	5.02	74.96
				6/29/12 (20 minutes post-AFVR)	23.77	28.79	5.02	74.93
12175-MW26	30	10	99.89	6/28/12 (pre-AFVR)	--	25.98	--	73.91
				6/29/12 (immediately post-AFVR)	NM	NM	NM	NM
				6/29/12 (20 minutes post-AFVR)	--	26.00	--	73.89
12175-MW1	35	15	98.51	7/30/2012 (gauging event)	22.44	27.95	5.51	74.69
12175-MW2	34	15	100.42	7/30/2012 (gauging event)	25.47	26.25	0.78	74.76
12175-MW5	29	10	98.05	7/30/2012 (gauging event)	22.17	26.71	4.54	74.75
12175-MW19	28	10	100.01	7/30/2012 (gauging event)	24.24	27.94	3.70	74.85
12175-MW24	30	10	100.23	7/30/2012 (gauging event)	--	25.50	--	74.73
12175-MW25	30	10	99.95	7/30/2012 (gauging event)	23.96	29.04	5.08	74.72
12175-MW26	30	10	99.89	7/30/2012 (gauging event)	--	26.28	--	73.61
12175-MW2	34	15	100.42	2/9/13 (pre-AFVR)	26.27	27.30	1.03	73.89
				2/10/13 (immediately post-AFVR)	--	27.20	--	73.22
				2/10/13 (20 minutes post-AFVR)	--	27.25	--	73.17
12175-MW19	28	10	100.01	2/9/13 (pre-AFVR)	25.19	27.92	2.73	74.14
				2/10/13 (immediately post-AFVR)	--	27.05	--	72.96
				2/10/13 (20 minutes post-AFVR)	26.70	26.80	0.10	73.29

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW25	30	10	99.95	2/9/13 (pre-AFVR)	24.92	29.61	4.69	73.86
				2/10/13 (immediately post-AFVR)	--	27.83	--	72.12
				2/10/13 (20 minutes post-AFVR)	--	26.41	--	73.54
12175-MW4	29	10	98.61	2/9/13 (pre-AFVR)	23.90	28.85	4.95	73.47
				2/10/13 (immediately post-AFVR)	24.06	28.23	4.17	73.51
				2/10/13 (20 minutes post-AFVR)	24.06	28.21	4.15	73.51
12175-MW24	30	10	100.23	2/9/13 (pre-AFVR)	--	26.35	--	73.88
				2/10/13 (immediately post-AFVR)	--	26.54	--	73.69
				2/10/13 (20 minutes post-AFVR)	--	26.57	--	73.66
12175-MW26	30	10	99.89	2/9/13 (pre-AFVR)	--	27.06	--	72.83
				2/10/13 (immediately post-AFVR)	--	27.11	--	72.78
				2/10/13 (20 minutes post-AFVR)	--	27.12	--	72.77
12175-MW1	35	15	98.51	2/10/13 (pre-AFVR)	23.47	28.71	5.24	73.73
				2/11/13 (immediately post-AFVR)	NM	NM	NM	NM
				2/11/13 (20 minutes post-AFVR)	24.63	25.23	0.60	73.73
12175-MW4	29	10	98.61	2/10/13 (pre-AFVR)	24.06	28.23	4.17	73.51
				2/11/13 (immediately post-AFVR)	NM	NM	NM	NM
				2/11/13 (20 minutes post-AFVR)	25.11	25.17	0.06	73.49
12175-MW5	29	10	98.05	2/10/13 (pre-AFVR)	23.06	27.80	4.74	73.81
				2/11/13 (immediately post-AFVR)	NM	NM	NM	NM
				2/11/13 (20 minutes post-AFVR)	23.88	23.89	0.01	74.17

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW3	34	15	100.44	2/10/13 (pre-AFVR)	--	26.56	--	73.88
				2/11/13 (immediately post-AFVR)	NM	NM	NM	NM
				2/11/13 (20 minutes post-AFVR)	--	26.56	--	73.88
12175-MW6	29	10	99.82	2/10/13 (pre-AFVR)	--	26.01	--	73.81
				2/11/13 (immediately post-AFVR)	NM	NM	NM	NM
				2/11/13 (20 minutes post-AFVR)	--	26.03	--	73.79
12175-MW15	27	10	98.47	2/10/13 (pre-AFVR)	--	25.24	--	73.23
				2/11/13 (immediately post-AFVR)	NM	NM	NM	NM
				2/11/13 (20 minutes post-AFVR)	--	25.23	--	73.24
12175-MW1	35	15	98.51	3/12/2013 (gauging event)	22.42	27.00	4.58	74.95
12175-MW2	34	15	100.42	3/12/2013 (gauging event)	25.53	25.56	0.03	74.88
12175-MW4	29	10	98.61	3/12/2013 (gauging event)	23.82	24.12	0.30	74.72
12175-MW5	29	10	98.05	3/12/2013 (gauging event)	22.65	24.35	1.70	74.98
12175-MW19	28	10	100.01	3/12/2013 (gauging event)	24.53	27.95	3.42	74.63
12175-MW24	30	10	100.23	3/12/2013 (gauging event)	--	25.37	--	74.86
12175-MW25	30	10	99.95	3/12/2013 (gauging event)	24.18	28.02	3.84	74.81
12175-MW26	30	10	99.89	3/12/2013 (gauging event)	--	26.01	--	73.88
12175-RW1	30	10	98.05	6/5/13 (pre-AFVR)	21.34	22.02	0.68	76.54
				6/6/13 (immediately post-AFVR)	--	23.07	--	74.98
				6/6/13 (20 minutes post-AFVR)	22.93	22.98	0.05	75.11
12175-MW3	34	15	100.44	6/5/13 (pre-AFVR)	--	23.90	--	76.54
				6/6/13 (immediately post-AFVR)	--	23.95	--	76.49
				6/6/13 (20 minutes post-AFVR)	--	23.95	--	76.49

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW4	29	10	98.61	6/5/13 (pre-AFVR)	22.02	23.50	1.48	76.22
				6/6/13 (immediately post-AFVR)	22.09	23.65	1.56	76.13
				6/6/13 (20 minutes post-AFVR)	22.10	23.62	1.52	76.13
12175-MW6	29	10	99.82	6/5/13 (pre-AFVR)	--	23.28	--	76.54
				6/6/13 (immediately post-AFVR)	--	23.47	--	76.35
				6/6/13 (20 minutes post-AFVR)	--	23.48	--	76.34
12175-RW2	30	10	100.05	6/20/13 (pre-AFVR)	22.64	25.92	3.28	76.59
				6/21/13 (immediately post-AFVR)	--	26.90	--	73.15
				6/21/13 (20 minutes post-AFVR)	25.44	25.57	0.13	74.58
12175-MW19	28	10	100.01	6/20/13 (pre-AFVR)	22.85	25.89	3.04	76.40
				6/21/13 (immediately post-AFVR)	23.04	26.02	2.98	76.23
				6/21/13 (20 minutes post-AFVR)	23.15	26.13	2.98	76.12
12175-MW24	30	10	100.23	6/20/13 (pre-AFVR)	--	23.60	--	76.63
				6/21/13 (immediately post-AFVR)	--	23.68	--	76.55
				6/21/13 (20 minutes post-AFVR)	--	23.72	--	76.51
12175-MW25	30	10	99.95	6/20/13 (pre-AFVR)	22.55	25.80	3.25	76.59
				6/21/13 (immediately post-AFVR)	23.86	23.89	0.03	76.08
				6/21/13 (20 minutes post-AFVR)	23.78	23.82	0.04	76.16
12175-RW3	30	10	100.16	7/15/13 (pre-AFVR)	--	22.91	--	77.25
				7/16/13 (immediately post-AFVR)	--	24.52	--	75.64
				7/16/13 (20 minutes post-AFVR)	--	24.28	--	75.88

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW18	28	10	101.51	7/15/13 (pre-AFVR)	--	24.12	--	77.39
				7/16/13 (immediately post-AFVR)	--	24.16	--	77.35
				7/16/13 (20 minutes post-AFVR)	--	24.15	--	77.36
12175-MW24	30	10	100.23	7/15/13 (pre-AFVR)	--	23.01	--	77.22
				7/16/13 (immediately post-AFVR)	--	23.27	--	76.96
				7/16/13 (20 minutes post-AFVR)	--	23.27	--	76.96
12175-MW25	30	10	99.95	7/15/13 (pre-AFVR)	22.14	24.64	2.50	77.19
				7/16/13 (immediately post-AFVR)	22.23	25.02	2.79	77.02
				7/16/13 (20 minutes post-AFVR)	22.23	24.97	2.74	77.04
12175-RW1	30	10	98.05	11/4/13 (pre-AFVR)	20.05	21.15	1.10	77.73
				11/5/13 (immediately post-AFVR)	--	24.02	--	74.03
				11/5/13 (20 minutes post-AFVR)	--	22.71	--	75.34
12175-MW3	34	15	100.44	11/4/13 (pre-AFVR)	--	22.56	--	77.88
				11/5/13 (immediately post-AFVR)	--	22.64	--	77.80
				11/5/13 (20 minutes post-AFVR)	--	22.66	--	77.78
12175-MW4	29	10	98.61	11/4/13 (pre-AFVR)	20.85	22.04	1.19	77.46
				11/5/13 (immediately post-AFVR)	20.94	22.15	1.21	77.37
				11/5/13 (20 minutes post-AFVR)	20.93	22.14	1.21	77.38

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW6	29	10	99.82	11/4/13 (pre-AFVR)	--	21.93	--	77.89
				11/5/13 (immediately post-AFVR)	--	22.16	--	77.66
				11/5/13 (20 minutes post-AFVR)	--	22.15	--	77.67
12175-RW2	30	10	100.05	11/18/13 (pre-AFVR)	21.68	25.22	3.54	77.49
				11/19/13 (immediately post-AFVR)	--	25.82	--	74.23
				11/19/13 (20 minutes post-AFVR)	24.57	24.72	0.15	75.44
12175-MW19	28	10	100.01	11/18/13 (pre-AFVR)	22.22	24.23	2.01	77.29
				11/19/13 (immediately post-AFVR)	22.11	24.20	2.09	77.38
				11/19/13 (20 minutes post-AFVR)	22.56	24.72	2.16	76.91
12175-MW24	30	10	100.23	11/18/13 (pre-AFVR)	--	22.71	--	77.52
				11/19/13 (immediately post-AFVR)	--	22.86	--	77.37
				11/19/13 (20 minutes post-AFVR)	--	22.88	--	77.35
12175-MW25	30	10	99.95	11/18/13 (pre-AFVR)	21.44	25.05	3.61	77.61
				11/19/13 (immediately post-AFVR)	22.36	23.38	1.02	77.34
				11/19/13 (20 minutes post-AFVR)	22.70	23.41	0.71	77.07
12175-MW17	28	10	101.09	12/9/13 (pre-AFVR)	23.18	25.17	1.99	77.41
				12/10/13 (immediately post-AFVR)	--	25.69	--	75.40
				12/10/13 (20 minutes post-AFVR)	--	24.13	--	76.96
12175-MW11	31	10	101.65	12/9/13 (pre-AFVR)	--	24.25	--	77.40
				12/10/13 (immediately post-AFVR)	--	24.30	--	77.35
				12/10/13 (20 minutes post-AFVR)	--	24.32	--	77.33

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW23	31	10	102.29	12/9/13 (pre-AFVR)	--	24.97	--	77.32
				12/10/13 (immediately post-AFVR)	--	24.97	--	77.32
				12/10/13 (20 minutes post-AFVR)	--	24.97	--	77.32
12175-RW2	30	10	100.05	12/9/13 (pre-AFVR)	--	22.65	--	77.40
				12/10/13 (immediately post-AFVR)	--	22.68	--	77.37
				12/10/13 (20 minutes post-AFVR)	--	22.67	--	77.38
12175-RW2	30	10	100.05	5/27/14 (pre-AFVR)	19.33	21.70	2.37	80.13
12175-MW2	34	15	100.42	5/27/14 (pre-AFVR)	20.12	20.69	0.57	80.16
12175-MW6	29	10	99.82	5/27/14 (pre-AFVR)	--	19.41	--	80.41
12175-MW24	30	10	100.23	5/27/14 (pre-AFVR)	--	20.14	--	80.09
12175-RW2	30	10	100.05	6/2/14 (pre-AFVR)	19.71	20.32	0.61	80.19
				6/6/14 (immediately post-AFVR)	--	24.30	--	75.75
				6/6/14 (20 minutes post-AFVR)	--	22.91	--	77.14
12175-MW2	34	15	100.42	6/2/14 (pre-AFVR)	20.10	20.61	0.51	80.19
				6/6/14 (immediately post-AFVR)	20.29	20.93	0.64	79.97
				6/6/14 (20 minutes post-AFVR)	20.29	20.94	0.65	79.97
12175-MW6	29	10	99.82	6/2/14 (pre-AFVR)	--	19.37	--	80.45
				6/6/14 (immediately post-AFVR)	--	19.67	--	80.15
				6/6/14 (20 minutes post-AFVR)	--	19.67	--	80.15
12175-MW24	30	10	100.23	6/2/14 (pre-AFVR)	--	20.07	--	80.16
				6/6/14 (immediately post-AFVR)	--	20.28	--	79.95
				6/6/14 (20 minutes post-AFVR)	--	20.20	--	80.03

TABLE 7
SUMMARY OF GROUNDWATER ELEVATION DATA
FOR AFVR EVENTS
EDGEFIELD FUEL & CONVENIENCE 3

Well ID	Well Depth (feet)	Well Screen Length (feet)	Top of Casing Elevation (feet)	Date Measured	Depth to Free Product (feet)	Depth to Groundwater (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
12175-MW26	30	10	99.89	6/2/14 (pre-AFVR)	NM	NM	NM	NM
				6/6/14 (immediately post-AFVR)	--	20.76	--	79.13
				6/6/14 (20 minutes post-AFVR)	--	20.78	--	79.11
12175-RW1	30	10	98.05	6/16/14 (pre-AFVR)	17.65	17.67	0.02	80.40
				6/20/14 (immediately post-AFVR)	--	22.29	--	75.76
				6/20/14 (20 minutes post-AFVR)	--	21.00	--	77.05
12175-MW3	34	15	100.44	6/16/14 (pre-AFVR)	--	20.10	--	80.34
				6/20/14 (immediately post-AFVR)	--	20.24	--	80.20
				6/20/14 (20 minutes post-AFVR)	--	20.24	--	80.20
12175-MW6	29	10	99.82	6/16/14 (pre-AFVR)	--	19.48	--	80.34
				6/20/14 (immediately post-AFVR)	--	19.79	--	80.03
				6/20/14 (20 minutes post-AFVR)	--	19.79	--	80.03
12175-MW15	27	10	98.47	6/16/14 (pre-AFVR)	--	18.19	--	80.28
				6/20/14 (immediately post-AFVR)	--	18.16	--	80.31
				6/20/14 (20 minutes post-AFVR)	--	18.15	--	80.32

Notes:

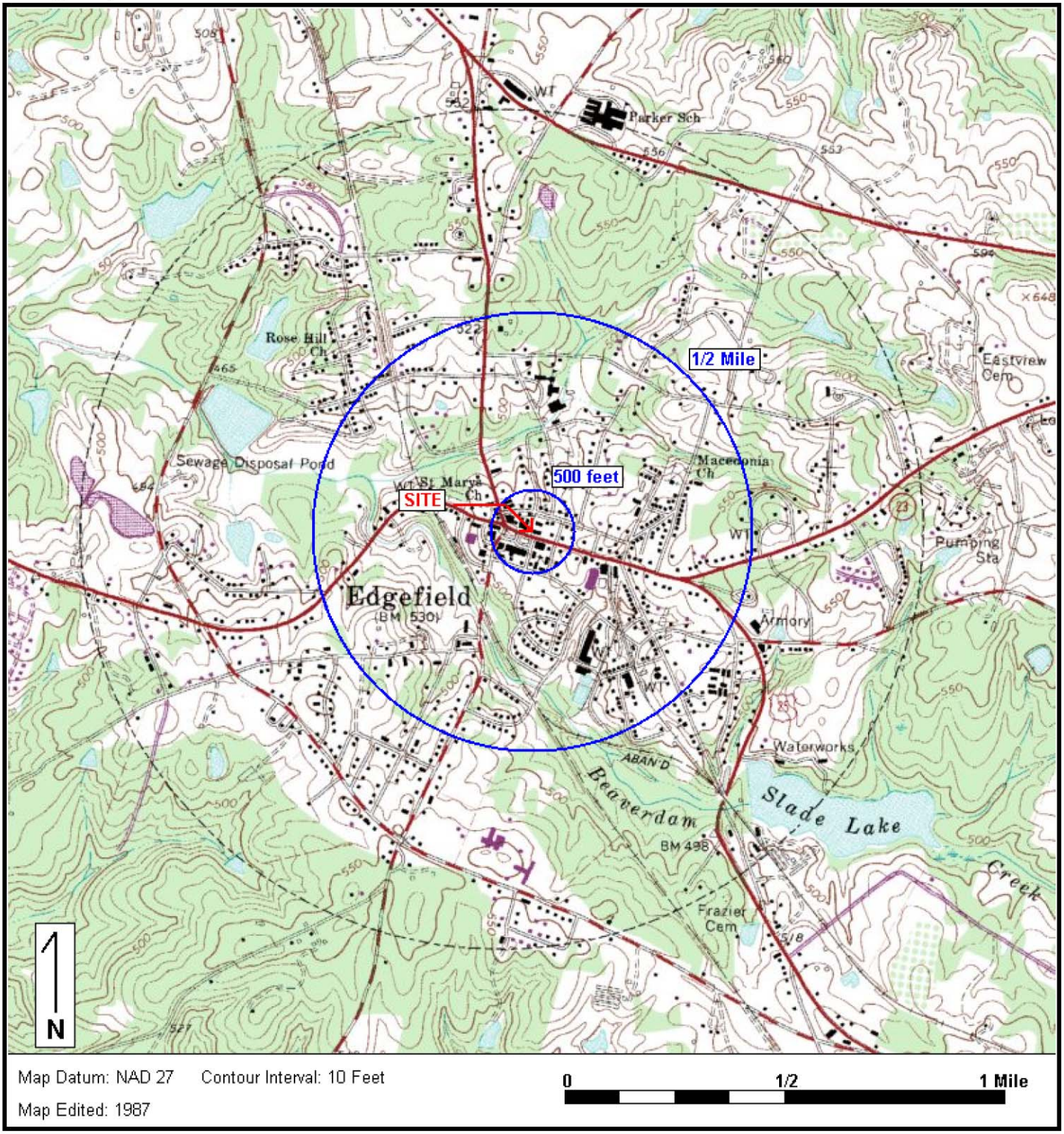
1. Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
2. Groundwater elevation adjusted for the presence of free product, where present, with an assumed density of 0.75 g/cm^3.
3. Well depths and screened intervals based on well construction records referencing ground surface.
4. Depths to fluid measured referencing top of casing as measuring point.
5. NM represents not measured.
6. "--" represents free phase product was not detected.

FIGURES

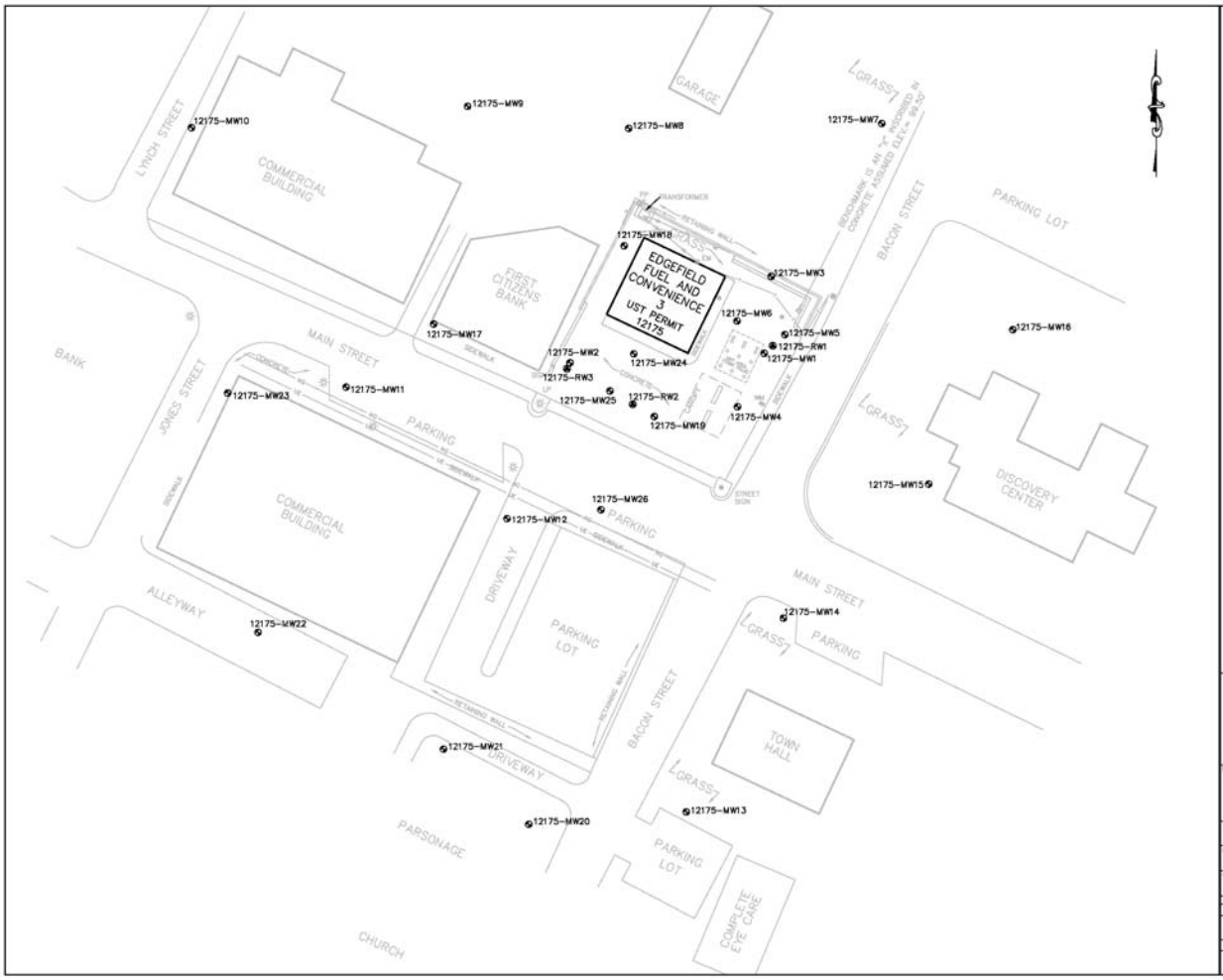
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- Shallow (Water Table) Monitoring Well
- Recovery Well
- 12175-MW1 Well ID

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 06-25-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	CK
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	6/10/13	14-211631	2

APPENDIX G

Disposal Manifest

MATERIAL MANIFEST

Zebra Environmental & Industrial Services

EMERGENCY PHONE NO. (336) 841-5276

POST OFFICE BOX 357 HIGH POINT, NC 27261

TEL (336) 841-5276 FAX (336) 841-5509

Manifest Document No.	001
Page	1 of 1
Zebra Job No.	

GENERATOR INFORMATION

Name: EDGEFIELD FUEL & CONVENIENCE 3

US EPA ID No.:

Street Address: 311 MAIN STREET EDGEFIELD S.C. 29824

Mailing Address:

Phone No.: 980-253-4537

Contact: RANDALL HUTCHINS

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class or Div	UN / NA ID No.	Packing Group	Containers Qty.	Containers Type	Total Quantity	Unit Wt./Vol.
a.		NON-HAZ LIQUID N.O.S.	N/A	N/A	N/A	1	TT	160	G
b.									
c.									

ADDITIONAL INFORMATION		ERG No.	Zebra Profile Code	Facility Use
a.	PETRO CONTACT GROUND WATER			
b.				
c.				

GENERATOR'S CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed / Typed Name | Signature | Mo. / Day / Yr.

TRANSPORTER INFORMATION

Transporter: Zebra Environmental & Industrial Services Inc

Address: 901 East Springfield Road, High Point, NC 27263

Transporter or EPA ID No.: NC0991302669 Unit No.: ET-4/T-4

Phone: (336) 841-5276

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: David Tedder Shipment Date: 5/27/14

I hereby acknowledge receipt of the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: David Tedder Delivery Date: 5/27/14

FACILITY INFORMATION

Facility: Zebra Environmental & Industrial Services, Inc.

Address: 901 East Springfield Road, High Point, NC 27263

Facility or EPA ID No.: NC0991302669

Phone: (336) 841-5276

Contact: David Tedder

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: David Tedder Receipt Date: 5/27/14

Discrepancies / Routing Codes / Handing Methods

a.

b.

c.

ORIGINAL - Facility Retain COPY 2 - Return to Generator COPY 3 - Transporter Retain COPY 4 - Generator Retain

MATERIAL MANIFEST

Zebra Environmental & Industrial Services

EMERGENCY PHONE NO. (336) 841-5276

POST OFFICE BOX 357 HIGH POINT, NC 27261

TEL (336) 841-5276 FAX (336) 841-5509

Manifest Document No. 001

Page 1 of 1

Zebra Job No.

GENERATOR INFORMATION

Name: EDGEFIELD FUEL & CONVENIENCE 3

US EPA ID No.:

Street Address: 311 MAIN ST EDGEFIELD S.C, 29824

Mailing Address:

Phone No.: 980-253-4537

Contact: RANDALL HUTCHINS

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class or Div	UN / NA ID No.	Packing Group	Containers Qty.	Containers Type	Total Quantity	Unit Wt./Vol.
a.		NON-HAZ LIQUID NOS	N/A	N/A	N/A	1	TT	4569	G
b.									
c.									

ADDITIONAL INFORMATION		ERG No.	Zebra Profile Code	Facility Use
a.	PETRO CONTACT WATER			
b.				
c.				

GENERATOR'S CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed / Typed Name | Signature | Mo. / Day / Yr.

TRANSPORTER INFORMATION

Transporter: Zebra Environmental & Industrial Services Inc

Address: 901 East Springfield Road, High Point, NC 27263

Transporter or EPA ID No.: NC0991302669 | Unit No.:

Phone: (336) 841-5276

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: David McTedder Shipment Date: 6/2/2014

I hereby acknowledge receipt of the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: David McTedder Delivery Date: 6/2/2014

FACILITY INFORMATION

Facility: Zebra Environmental & Industrial Services, Inc.

Address: 901 East Springfield Road, High Point, NC 27263

Facility or EPA ID No.: NC0991302669

Phone: (336) 841-5276

Contact: David Tedder

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: David McTedder Receipt Date: 6/2/2014

Discrepancies / Routing Codes / Handing Methods

a.

b.

c.

ORIGINAL - Facility Retain COPY 2 - Return to Generator COPY 3 - Transporter Retain COPY 4 - Generator Retain

MATERIAL MANIFEST

Zebra Environmental & Industrial Services

EMERGENCY PHONE NO. (336) 841-5276

POST OFFICE BOX 357 HIGH POINT, NC 27261

TEL (336) 841-5276 FAX (336) 841-5509

Manifest Document No.	001
Page	1 of 1
Zebra Job No.	

GENERATOR INFORMATION

Name: EDGEFIELD FUEL + CONVENIENCE 3		US EPA ID No.
Street Address: 311 MAIN ST. EDGEFIELD S.C 29824	Mailing Address	Phone No.: 980-253-4537
		Contact: RANDALL HUTCHINS

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class or Div	UN / NA ID No.	Packing Group	Containers Qty.	Containers Type	Total Quantity	Unit Wt./Vol.
a.		NON HAZ LIQUID NOS	N/A	N/A	N/A	1	TT	8634	G
b.									
c.									

ADDITIONAL INFORMATION	ERG No.	Zebra Profile Code	Facility Use
a. RETRO CONTACT WATER			
b.			
c.			

GENERATOR'S CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed / Typed Name	Signature	Mo. / Day / Yr.

TRANSPORTER INFORMATION

Transporter: Zebra Environmental & Industrial Services Inc

Address: 901 East Springfield Road, High Point, NC 27263

Transporter or EPA ID No.: NC0991302669 Unit No.:

Phone: (336) 841-5276

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: David Tedder 6/16/2014 Shipment Date

I hereby acknowledge receipt of the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: David Tedder 6/16/2014 Delivery Date

FACILITY INFORMATION

Facility: Zebra Environmental & Industrial Services, Inc.

Address: 901 East Springfield Road, High Point, NC 27263

Facility or EPA ID No.: NC0991302669

Phone: (336) 841-5276

Contact: David Tedder

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: David Tedder 6/16/2014 Receipt Date

Discrepancies / Routing Codes / Handing Methods

a.

b.

c.

ORIGINAL - Facility Retain COPY 2 - Return to Generator COPY 3 - Transporter Retain COPY 4 - Generator Retain

APPENDIX K

Data Verification Checklist

Contractor Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	✓		
2	Is UST Owner/Operator name, address, & phone number provided?	✓		
3	Is name, address, & phone number of current property owner provided?	✓		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	✓		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?			✓
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?			✓
7	Has the facility history been summarized?	✓		
8	Has the regional geology and hydrogeology been described?	✓		
9	Are the receptor survey results provided as required?			✓
10	Has current use of the site and adjacent land been described?	✓		
11	Has the site-specific geology and hydrogeology been described?			✓
12	Has the primary soil type been described?			✓
13	Have field screening results been described?			✓
14	Has a description of the soil sample collection and preservation been detailed?			✓
15	Has the field screening methodology and procedure been detailed?			✓
16	Has the monitoring well installation and development dates been provided?			✓
17	Has the method of well development been detailed?			✓
18	Has justification been provided for the locations of the monitoring wells?			✓
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	✓		
20	Has the groundwater sampling methodology been detailed?			✓
21	Have the groundwater sampling dates and groundwater measurements been provided?			✓
22	Has the purging methodology been detailed?			✓
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?			✓
24	If free-product is present, has the thickness been provided?			✓
25	Does the report include a brief discussion of the assessment done and the results?	✓		
26	Does the report include a brief discussion of the aquifer evaluation and results?			✓
27	Does the report include a brief discussion of the fate & transport models used?			✓

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			✓
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			✓
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			✓
31	Have recommendations for further action been provided and explained?	✓		
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			✓
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	✓		
34	Has the current and historical laboratory data been provided in tabular format?			✓
35	Have the aquifer characteristics been provided and summarized on the appropriate form?			✓
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			✓
37	Has the topographic map been provided with all required elements? (Figure 1)	✓		
38	Has the site base map been provided with all required elements? (Figure 2)	✓		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)			✓
40	Has the site potentiometric map been provided? (Figure 5)			✓
41	Have the geologic cross-sections been provided? (Figure 6)			✓
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			✓
43	Has the site survey been provided and include all necessary elements? (Appendix A)			✓
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)			✓
45	Is the laboratory performing the analyses properly certified?			✓
46	Has the tax map been included with all necessary elements? (Appendix C)			✓
47	Have the soil boring/field screening logs been provided? (Appendix D)			✓
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)			✓
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			✓
50	Have the disposal manifests been provided? (Appendix G)	✓		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			✓
52	Has all fate and transport modeling been provided? (Appendix I)			✓
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			✓
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	✓		

Explanation for missing and incomplete information?

Project Verifier (signature) _____

(print name) David R. Mazorra, PE

Date August 15, 2014

APPENDIX L

AFVR Event Field Data Sheets & Emissions Calculations – May 27, 2014

APPENDIX L
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep. 1:	A. Williamson
Start Date:	5/27/2014	ECS Field Rep. 2:	B. Peay
End Date:	5/27/2014	ECS Field Rep. 3:	P. Pike

AFVR Measurements Prior to and After Event

Measurements Prior to AFVR Event

Blower Model	Dekker Vmax 3030	
Water Tank Storage Capacity:	9,600	gallons
Inside Diameter of Blower Outlet S	3.068	inches
Is Tank Empty & Clean (Y/N)		

Measurements Before AFVR Event	**5/27/2014**	
Tanker Product volume		gallons
Tanker Water volume		gallons
Transfer Pump Flow Meter	44,137	gallons
Measurements After AFVR Event	**5/27/2014**	
Tanker Product volume		gallons
Tanker Water volume		gallons
Transfer Pump Flow Meter	44,297	gallons

	Prior to AFVR -		Immediately Post AFVR		20-min Post AFVR	
Well ID	**Depth to Product**	**Depth to Water**	**Depth to Product**	**Depth to Water**	**Depth to Product**	**Depth to Water**
12175-RW2	19.33	21.70	NM	NM	NM	NM
12175-MW2	20.12	20.69	NM	NM	NM	NM
12175-MW6	NP	19.41	NM	NM	NM	NM
12175-MW24	NP	20.14	NM	NM	NM	NM

NP denotes no measurable free product.
NM denotes not measured.

APPENDIX L
AFVR EVENT FIELD DATA SHEETS

Project Name: Edgefield Fuel & Convenience 3
Project No: 14-211651
Date: 5/27/2014
UST Permit No: 12175
ECS Field Rep. 1: A. Williamson
ECS Field Rep. 2: B. Peay
ECS Field Rep. 3: P. Pike

Measurements During AFVR Event 1

Elapsed Time (Hours)	Reading Interval (Mins.)	Date & Time	Stack Outlet					Blower	AFVR Wells		Non-AFVR Wells					
			Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm)		Vacuum (in. of Hg)	12175-RW2		12175-MW2		12175-MW6		12175-MW24	
						Pre-Treatment	Post-Treatment		Vacuum (inHg)	Stinger Depth	DTW (ft)	Vacuum (in.wc)	DTW (ft)	Vacuum (in.wc)	DTW (ft)	Vacuum (in.wc)
		5/27/14 14:30	←	Start time						21.70	20.61	--	19.41		20.14	--
1 hr	30	5/27/14 15:00	450	131.5	88.5	>100,000	--	29	13	21.70	--	0	--	0	--	0
	30	5/27/14 15:30	487	137.3	51.6	98,000	--	29	13.5	22.70	--	0	--	0	--	0
2 hr	30	5/27/14 16:00	398	141.4	74.5	>100,000	--	29	13.5	23.70	--	0	--	0	--	0
	30	5/27/14 16:30	427	135.2	71.3	>100,000	--	29	13.5	23.70	--	0	--	0	--	0
3 hr	30	5/27/14 17:00	735	130.5	78.8	>100,000	--	27	12.5	23.70	--	0	--	0	--	0
	30	5/27/14 17:30	621	124.7	86.0	>100,000	--	27.5	13	23.70	--	0.2	--	0	--	0
4 hr	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5 hr	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6 hr	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7 hr	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8 hr	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

APPENDIX L
EMISSIONS CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 20.49
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-RW2
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM PUMP (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (flow)
Start	14:30								
05/27/14	15:00	29.00	450	3	131.5	88.5	0.1031	0.142	18
05/27/14	15:30	29.00	487	3	137.3	51.6	0.066471	0.096	20
05/27/14	16:00	29.00	398	3	141.4	74.5	0.114039	0.154	15
05/27/14	16:30	29.00	427	3	135.2	71.3	0.089913	0.126	17
05/27/14	17:00	27.00	735	3	130.5	78.8	0.087461	0.123	30
05/27/14	17:30	27.50	621	3	124.7	86.0	0.08087	0.115	25
Averages		28.42	520	3	133.4	75.1	0.090309	0.126	21

NOTES
Qstd = Flow at DSCFM
Vacuum = The level of vacuum being applied recorded at the Blower (inches of Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the vacuum truck)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) based on an elevation of 525 feet above sea level.
B_{ws} = water vapor % by volume

EQUATIONS
$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$
$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX L
EMISSIONS CALCULATIONS

EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 5/27/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
30	18	100,000	100,000	116,519	1.02	118,849	59,301	0.00370	3.93	4.55	2.27
60	20	98,000	98,000	108,437	1.02	110,606	55,188	0.00345	4.13	4.78	2.39
90	15	100,000	100,000	118,272	1.02	120,637	60,193	0.00376	3.42	3.96	1.98
120	17	100,000	100,000	114,406	1.02	116,694	58,226	0.00364	3.71	4.29	2.15
150	30	100,000	100,000	114,013	1.02	116,293	58,026	0.00362	6.43	7.44	3.72
180	25	100,000	100,000	112,957	1.02	115,216	57,489	0.00359	5.49	6.35	3.18
Averages	21	99,667	99,667	114,101	1.02	116,383	58,070	0.00363	4.52	5.23	2.61

Total emissions in pounds: 15.69
Total emissions in gallons: 2.61

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^o$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}$ lb-m^3/mg-$ft^3)$

$PMR_c = (C_c)(Q_{std})(60$ min/hr)

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

APPENDIX M

AFVR Event Field Data Sheets & Emissions Calculations – June 2-6, 2014

APPENDIX M
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep. 1:	A. Williamson
Start Date:	6/2/2014	ECS Field Rep. 2:	B. Peay
End Date:	6/6/2014	ECS Field Rep. 3:	P. Pike

AFVR Measurements Prior to and After Event

Measurements Prior to AFVR Event

Blower Model	Dekker Vmax 3030	
Water Tank Storage Capacity:	9,600	gallons
Inside Diameter of Blower Outlet S	3.068	inches
Is Tank Empty & Clean (Y/N)	N	

Measurements Before AFVR Event	**6/2/2014**	
Tanker Product volume	(sheen)	gallons
Tanker Water volume	160	gallons
Transfer Pump Flow Meter	44,298	gallons
Measurements After AFVR Event	**6/6/2014**	
Tanker Product volume	(sheen)	gallons
Tanker Water volume	4,729	gallons
Transfer Pump Flow Meter	48,867	gallons

	Prior to AFVR -		Immediately Post AFVR		20-min Post AFVR	
Well ID	**Depth to Product**	**Depth to Water**	**Depth to Product**	**Depth to Water**	**Depth to Product**	**Depth to Water**
12175-RW2	19.71	20.32	NP	24.3	NP	22.91
12175-MW2	20.10	20.61	20.29	20.93	20.29	20.94
12175-MW6	NP	19.37	NP	19.67	NP	19.67
12175-MW24	NP	20.07	NP	20.28	NP	20.20
12175-MW26	NM	NM	NP	20.76	NP	20.78

NP denotes no measurable free product.
NM denotes not measured.

Project Name: Edgefield Fuel & Convenience 3 | **APPENDIX M** | UST Permit No: 12175

Project No: 14-211651 | **AFVR EVENT FIELD DATA SHEETS** | ECS Field Rep. 1: A. Williamson

Date: 6/2/2014 - 6/6/2014 | ECS Field Rep. 2: B. Peay

Measurements During AFVR Event 1 | ECS Field Rep. 3: P. Pike

Elapsed Time (Hours)	Reading Interval (Min	Date & Time	Stack Outlet					Blower	AFVR Wells		Non-AFVR Wells							
						TLV (ppm)			12175-RW2		12175-MW2		12175-MW6		12175-MW24		12175-MW26	
			Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	Pre-Treatment	Post-Treatment	Vacuum (in. of Hg)	Vacuum (inHg)	Stinger Depth	DTW (ft)	Vacuum (in.wc)	DTW (ft)	Vacuum (in.wc)	DTW (ft)	Vacuum (in.wc)	DTW (ft)	Vacuum (in.wc)
		6/2/14 20:00	←	Start time					--	20	20.61	--	19.37	--	20.07		--	--
1 hr	30	6/2/14 20:30	370	107.4	89.6	>100,000	40	26	13	20	--	0	--	0	--	0	--	--
	30	6/2/14 21:00	360	108.9	89.5	>100,000	90	26	14	20	--	0	--	0	--	0	--	--
2 hr	30	6/2/14 21:30	350	107.6	89.5	>100,000	1,000	26	14	20.5	--	0	--	0	--	0	--	--
	30	6/2/14 22:00	456	107.1	87.1	>100,000	1,200	27	14	20.5	--	0	--	0	--	0	--	--
3 hr	30	6/2/14 22:30	490	106.9	87.2	>100,000	1,300	27	14	20.5	--	0	--	0	--	0	--	--
	30	6/2/14 23:00	404	113.9	92.6	>100,000	90	27	14	21	--	0	--	0	--	0	--	--
4 hr	30	6/2/14 23:30	350	109.1	93.0	>100,000	90	27	14	21	--	0	--	0	--	0	--	--
	30	6/3/14 0:00	325	108.5	99.9	>100,000	100	27	14	21.5	--	0.5	--	0	--	0.1	--	--
5 hr	30	6/3/14 0:30	337	111.6	99.9	>100,000	90	27	14	21.5	--	0.5	--	0	--	0.1	--	--
	30	6/3/14 1:00	343	112.5	96.5	>100,000	100	27	14	22	--	0.5	--	0	--	0.1	--	--
6 hr	30	6/3/14 1:30	351	107.1	96.1	>100,000	2,000	27	14	22	--	0.3	--	0	--	0	--	--
	30	6/3/14 2:00	341	108.3	97.2	>100,000	5,000	27	14	22.5	--	0.3	--	0	--	0	--	--
7 hr	30	6/3/14 2:30	378	105.4	95.5	>100,000	6,000	27	14	23	--	0.3	--	0	--	0	--	--
	30	6/3/14 3:00	389	106.1	95.4	>100,000	7,000	27	14	23.5	--	0.3	--	0	--	0	--	--
8 hr	30	6/3/14 3:30	373	107.1	96.1	>100,000	10,000	27	14	24	--	0	--	0	--	0	--	--
	30	6/3/14 4:00	369	107.8	96.5	>100,000	30,000	27	13	24.5	--	0	--	0	--	0	--	--
9 hr	60	6/3/14 5:00	373	106.9	99.9	>100,000	50,000	26.5	13	25	--	0	--	0	--	0	--	--
10 hr	60	6/3/14 6:00	382	107.1	99.9	>100,000	72,000	26.5	12.5	21	--	0.1	--	0	--	0.2	--	--
11 hr	60	6/3/14 7:00	375	107.3	99.9	>100,000	72,000	26.75	12.5	21	--	0.1	--	0	--	0.1	--	--
12 hr	60	6/3/14 8:00	359	111.1	95.7	>100,000	62,000	26.75	12.5	21	--	0.1	--	0	--	0.2	20.21	--
13 hr	60	6/3/14 9:00	359	112.6	92.9	>100,000	76,000	26.5	13	21	--	0.1	--	0	--	--	--	0.1
14 hr	60	6/3/14 10:00	380	114.8	88.1	>100,000	40,000	26.5	12.5	21	--	0.1	--	0	--	--	--	0.1
15 hr	60	6/3/14 11:00	372	115.9	88.4	>100,000	66,000	26.5	15	20.0	--	0.2	--	0	--	--	--	0.1
16 hr	60	6/3/14 12:00	302	123.3	86.6	>100,000	86,000	27	15	20.0	--	0.2	--	0	--	--	--	0.1
17 hr	60	6/3/14 13:00	323	126.0	90.5	>100,000	96,000	27	15	21.0	--	0.2	--	0	--	--	--	0.1
18 hr	60	6/3/14 14:00	340	131.7	87.3	>100,000	92,000	27	15	21.0	--	0.2	--	0	--	--	--	0.1
19 hr	60	6/3/14 15:00	317	128.7	89.8	>100,000	340	27	15	21.0	--	0.2	--	0	--	--	--	0.1
20 hr	60	6/3/14 16:00	353	133.7	83.0	>100,000	440	27	15	22.0	--	0.2	--	0	--	--	--	0.1
21 hr	60	6/3/14 17:00	359	131.5	86.1	>100,000	380	27	14.5	22.0	--	0.2	--	0	--	--	--	0.1
22 hr	60	6/3/14 18:00	354	125.2	87.7	>100,000	380	27	14.5	23.0	--	0.2	--	0	--	--	--	0.1
23 hr	60	6/3/14 19:00	332	122.9	88.1	>100,000	360	27	14.5	23.0	--	0.2	--	0	--	--	--	0.1
24 hr	60	6/3/14 20:00	365	122.9	88.1	>100,000	440	27	14	24.0	--	0.2	--	0	--	--	--	0.1

Project Name: Edgefield Fuel & Convenience 3 **APPENDIX M** UST Permit No: 12175

Project No: 14-211651 **AFVR EVENT FIELD DATA SHEETS** ECS Field Rep. 1: A. Williamson

Date: 6/2/2014 - 6/6/2014 ECS Field Rep. 2: B. Peay

Measurements During AFVR Event 1 ECS Field Rep. 3: P. Pike

...sed Time (Hours)	...ding Interval (Min	Date & Time	Stack Outlet					Blower	AFVR Wells		Non-AFVR Wells							
						TLV (ppm)			12175-RW2		12175-MW2		12175-MW6		12175-MW24		12175-MW26	
			Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	Pre-Treatment	Post-Treatment	Vacuum (in. of Hg)	Vacuum (inHg)	Stinger Depth	DTW (ft)	Vacuum (in.wc)	DTW (ft)	Vacuum (in.wc)	DTW (ft)	Vacuum (in.wc)	DTW (ft)	Vacuum (in.wc)
26 hr	120	6/3/14 22:00	290	118.4	88.6	>100,000	200	27	14	24.0	--	0.2	--	0	--	--	--	0.1
28 hr	120	6/4/14 0:00	362	119.0	89.2	>100,000	15,000	27	14	24.0	--	0.1	--	0	--	--	--	0
30 hr	120	6/4/14 2:00	285	114.5	88.5	>100,000	40,000	27	14	24.0	--	0.1	--	0	--	--	--	0
32 hr	120	6/4/14 4:00	236	112.3	89.3	99,000	55,000	27	14	24	--	0.1	--	0	--	--	--	0
34 hr	120	6/4/14 6:00	280	112.6	88.4	98,000	55,000	27	14	25	--	0.1	--	0	--	--	--	0.1
36 hr	120	6/4/14 8:00	255	116.2	88.9	96,000	62,000	27	14	25	--	0.1	--	0	--	--	--	0.1
38 hr	120	6/4/14 10:00	340	126.0	89.0	92,000	86,000	27	15.5	20	--	0.25	--	0	--	--	--	0.1
40 hr	120	6/4/14 12:00	351	131.5	87.5	89,000	69,000	27	15	21	--	0.3	--	0	--	--	--	0.1
42 hr	120	6/4/14 14:00	346	133.9	86.3	98,000	66,000	27	15	22	--	0.3	--	0	--	--	--	0.1
44 hr	120	6/4/14 16:00	351	132.6	89.2	82,000	200	27	15	23	--	0.3	--	0	--	--	--	0.1
46 hr	120	6/4/14 18:00	362	129.0	88.8	76,000	180	27	14.5	24	--	0.2	--	0	--	--	--	0.1
48 hr	120	6/4/14 20:00	352	124.0	88.5	80,000	200	27	14.5	25	--	0.2	--	0	--	--	--	0.1
50 hr	120	6/4/14 22:00	318	117.5	88.7	82,000	380	27	14.5	26	--	0.2	--	0	--	--	--	0.1
52 hr	120	6/5/14 0:00	325	120.2	92.3	78,000	10,000	27	14.5	26.7	--	0.2	--	0	--	--	--	0.1
54 hr	120	6/5/14 2:00	365	121.6	89.7	80,000	19,000	27	14.5	26.7	--	0.2	--	0	--	--	--	0.1
56 hr	120	6/5/14 4:00	381	120.9	91.6	78,000	30,000	27	14	26.7	--	0.2	--	0	--	--	--	0.1
58 hr	120	6/5/14 6:00	320	119.8	89.4	80,000	34,000	27	14.5	26.7	--	0.2	--	0	--	--	--	0.1
60 hr	120	6/5/14 8:00	324	120.8	88.4	82,000	46,000	27	14	26.7	--	0.2	--	0	--	--	--	0.1
62 hr	120	6/5/14 10:00	350	126.9	88.4	79,000	56,000	27	15.5	21.0	--	0.2	--	0	--	--	--	0.1
64 hr	120	6/5/14 12:00	317	131.5	88.4	82,000	56,000	27	14.5	23.0	--	0.2	--	0	--	--	--	0.1
66 hr	120	6/5/14 14:00	365	137.7	83.3	69,000	56,000	27	14.5	24.0	--	0.2	--	0	--	--	--	0.1
68 hr	120	6/5/14 16:00	346	136.9	88.1	72,000	56,000	27	14.5	25.0	--	0.2	--	0	--	--	--	0.1
70 hr	120	6/5/14 18:00	321	129.2	88.6	80,000	44,000	27	14.5	26.0	--	0.2	--	0	--	--	--	0.1
72 hr	120	6/5/14 20:00	330	125.1	89.1	78,000	48,000	27	14.5	26.9	--	0.2	--	0	--	--	--	0.1
74 hr	120	6/5/14 22:00	329	121.3	88.5	78,000	48,000	27	14.5	26.9	--	0.3	--	0	--	--	--	0.2
76 hr	120	6/6/14 0:00	320	121.4	88.1	78,000	48,000	27	14.5	26.9	--	0.2	--	0	--	--	--	0.2
78 hr	120	6/6/14 2:00	315	121.2	89.3	76,000	46,000	27	14.5	26.9	--	0.2	--	0	--	--	--	0.2
80 hr	120	6/6/14 4:00	380	120.7	89.7	72,000	48,000	27	14.5	26.9	--	0.2	--	0	--	--	--	0.2
82 hr	120	6/6/14 6:00	345	120.4	89.6	72,000	50,000	27	14	26.9	--	0.2	--	0	--	--	--	0.2
84 hr	120	6/6/14 8:00	335	120.2	89.3	78,000	52,000	27	14.5	26.9	--	0.2	--	0	--	--	--	0.2
86 hr	120	6/6/14 10:00	358	123.3	89.0	72,000	52,000	27	15	23.0	--	0.2	--	0	--	--	--	0.1
88 hr	120	6/6/14 12:00	340	126.9	88.6	70,000	50,000	27	14.5	23.0	--	0.2	--	0	--	--	--	0.1
90 hr	120	6/6/14 14:00	354	131.0	88.5	69,000	54,000	27	15	23.0	--	0.2	--	0	--	--	--	0.1
92 hr	120	6/6/14 16:00	344	131.9	88.3	70,000	48,000	27	15	24.0	--	0.2	--	0	--	--	--	0.1
94 hr	120	6/6/14 18:00	321	127.9	88.2	67,000	46,000	27	15	24.0	--	0.2	--	0	--	--	--	0.1
96 hr	120	6/6/14 20:00	360	125.6	90.1	69,000	40,000	27	15	24.0	--	0.2	--	0	--	--	--	0.1

APPENDIX M
EMISSIONS CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 20.09
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-RW2
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM PUMP (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (DSCFM)
Start	20:00								
06/02/14	20:30	26.00	370	3	107.4	89.6	0.049382	0.073	16
06/02/14	21:00	26.00	360	3	108.9	89.5	0.051709	0.077	16
06/02/14	21:30	26.00	350	3	107.6	89.5	0.049635	0.074	15
06/02/14	22:00	27.00	456	3	107.1	87.1	0.047448	0.071	20
06/02/14	22:30	27.00	490	3	106.9	87.2	0.047209	0.070	22
06/02/14	23:00	27.00	404	3	113.9	92.6	0.062788	0.091	17
06/02/14	23:30	27.00	350	3	109.1	93.0	0.054248	0.080	15
06/03/14	0:00	27.00	325	3	108.5	99.9	0.057545	0.084	14
06/03/14	0:30	27.00	337	3	111.6	99.9	0.06349	0.092	15
06/03/14	1:00	27.00	343	3	112.5	96.5	0.062877	0.092	15
06/03/14	1:30	27.00	351	3	107.1	96.1	0.052767	0.078	15
06/03/14	2:00	27.00	341	3	108.3	97.2	0.055497	0.082	15
06/03/14	2:30	27.00	378	3	105.4	95.5	0.049655	0.074	17
06/03/14	3:00	27.00	389	3	106.1	95.4	0.050715	0.075	17
06/03/14	3:30	27.00	373	3	107.1	96.1	0.052767	0.078	16
06/03/14	4:00	27.00	369	3	107.8	96.5	0.054196	0.080	16
06/03/14	5:00	26.50	373	3	106.9	99.9	0.054689	0.081	16
06/03/14	6:00	26.50	382	3	107.1	99.9	0.055038	0.081	17
06/03/14	7:00	26.75	375	3	107.3	99.9	0.05539	0.082	16
06/03/14	8:00	26.75	359	3	111.1	95.7	0.059614	0.087	16
06/03/14	9:00	26.50	359	3	112.6	92.9	0.060493	0.088	15
06/03/14	10:00	26.50	380	3	114.8	88.1	0.061136	0.089	16
06/03/14	11:00	26.50	372	3	115.9	88.4	0.063503	0.092	16
06/03/14	12:00	27.00	302	3	123.3	86.6	0.078062	0.111	12
06/03/14	13:00	27.00	323	3	126.0	90.5	0.089212	0.125	13
06/03/14	14:00	27.00	340	3	131.7	87.3	0.102103	0.141	13
06/03/14	15:00	27.00	317	3	128.7	89.8	0.096145	0.133	13
06/03/14	16:00	27.00	353	3	133.7	83.0	0.102387	0.141	14
06/03/14	17:00	27.00	359	3	131.5	86.1	0.099856	0.138	14
06/03/14	18:00	27.00	354	3	125.2	87.7	0.083969	0.119	14
06/03/14	19:00	27.00	332	3	122.9	88.1	0.078608	0.112	14
06/03/14	20:00	27.00	365	3	122.9	88.1	0.078608	0.112	15
06/03/14	22:00	27.00	290	3	118.4	88.6	0.068808	0.099	12
06/04/14	0:00	27.00	362	3	119.0	89.2	0.07063	0.102	15
06/04/14	2:00	27.00	285	3	114.5	88.5	0.060869	0.089	12
06/04/14	4:00	27.00	236	3	112.3	89.3	0.05739	0.084	10
06/04/14	6:00	27.00	280	3	112.6	88.4	0.057293	0.084	12
06/04/14	8:00	27.00	255	3	116.2	88.9	0.064499	0.094	11
06/04/14	10:00	27.00	340	3	126.0	89.0	0.087526	0.123	14
06/04/14	12:00	27.00	351	3	131.5	87.5	0.101745	0.140	14
06/04/14	14:00	27.00	346	3	133.9	86.3	0.107823	0.147	13
06/04/14	16:00	27.00	351	3	132.6	89.2	0.107664	0.147	14
06/04/14	18:00	27.00	362	3	129.0	88.8	0.095796	0.133	14
06/04/14	20:00	27.00	352	3	124.0	88.5	0.081747	0.116	14
06/04/14	22:00	27.00	318	3	117.5	88.7	0.066994	0.097	13

APPENDIX M
EMISSIONS CALCULATIONS

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (DSCFM)
06/05/14	0:00	27.00	325	3	120.2	92.3	0.076172	0.109	14
06/05/14	2:00	27.00	365	3	121.6	89.7	0.077049	0.110	15
06/05/14	4:00	27.00	381	3	120.9	91.6	0.077188	0.110	16
06/05/14	6:00	27.00	320	3	119.8	89.4	0.072588	0.104	13
06/05/14	8:00	27.00	324	3	120.8	88.4	0.07394	0.106	14
06/05/14	10:00	27.00	350	3	126.9	88.4	0.089305	0.125	14
06/05/14	12:00	27.00	317	3	131.5	88.4	0.102965	0.142	12
06/05/14	14:00	27.00	365	3	137.7	83.3	0.116269	0.157	14
06/05/14	16:00	27.00	346	3	136.9	88.1	0.121253	0.163	13
06/05/14	18:00	27.00	321	3	129.2	88.6	0.09614	0.133	13
06/05/14	20:00	27.00	330	3	125.1	89.1	0.085229	0.120	13
06/05/14	22:00	27.00	329	3	121.3	88.5	0.07519	0.108	14
06/06/14	0:00	27.00	320	3	121.4	88.1	0.075041	0.107	13
06/06/14	2:00	27.00	315	3	121.2	89.3	0.075717	0.108	13
06/06/14	4:00	27.00	380	3	120.7	89.7	0.074926	0.107	16
06/06/14	6:00	27.00	345	3	120.4	89.6	0.074138	0.106	14
06/06/14	8:00	27.00	335	3	120.2	89.3	0.073404	0.105	14
06/06/14	10:00	27.00	358	3	123.3	89.0	0.080505	0.114	15
06/06/14	12:00	27.00	340	3	126.9	88.6	0.089536	0.125	14
06/06/14	14:00	27.00	354	3	131.0	88.5	0.101516	0.140	14
06/06/14	16:00	27.00	344	3	131.9	88.3	0.10411	0.143	14
06/06/14	18:00	27.00	321	3	127.9	88.2	0.091871	0.128	13
06/06/14	20:00	27.00	360	3	125.6	90.1	0.087668	0.123	15
Averages		26.91	347	3	119.5	90.4	0.075018	0.107	15

NOTES

Qstd = Flow of air measured in dry standard cubic feet per minute (DSCFM)
Vacuum = The level of vacuum measured at the Blower recorded in inches of mercury (in. Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the blower)
Temp = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative Humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) based on an elevation of 525 feet above sea level.
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX M
EMISSIONS CALCULATIONS

PRE-TREATMENT EMISSION CALCULATIONS
EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/2/2014 - 6/6/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
30	16	100,000	100,000	107,912	1.02	110,070	54,921	0.00343	3.37	3.90	1.95
60	16	100,000	100,000	108,285	1.02	110,451	55,111	0.00344	3.27	3.78	1.89
90	15	100,000	100,000	107,953	1.02	110,112	54,941	0.00343	3.19	3.69	1.84
120	20	100,000	100,000	107,602	1.02	109,754	54,763	0.00342	4.16	4.81	2.40
150	22	100,000	100,000	107,564	1.02	109,715	54,744	0.00342	4.47	5.17	2.58
180	17	100,000	100,000	110,060	1.02	112,261	56,014	0.00350	3.64	4.21	2.10
210	15	100,000	100,000	108,692	1.02	110,866	55,318	0.00345	3.18	3.68	1.84
240	14	100,000	100,000	109,220	1.02	111,404	55,586	0.00347	2.95	3.42	1.71
270	15	100,000	100,000	110,173	1.02	112,376	56,071	0.00350	3.05	3.53	1.76
300	15	100,000	100,000	110,074	1.02	112,276	56,021	0.00350	3.10	3.58	1.79
330	15	100,000	100,000	108,454	1.02	110,624	55,197	0.00345	3.20	3.70	1.85
360	15	100,000	100,000	108,892	1.02	111,070	55,419	0.00346	3.10	3.59	1.79
390	17	100,000	100,000	107,956	1.02	110,115	54,943	0.00343	3.45	4.00	2.00
420	17	100,000	100,000	108,126	1.02	110,288	55,030	0.00344	3.55	4.11	2.05
450	16	100,000	100,000	108,454	1.02	110,624	55,197	0.00345	3.40	3.93	1.97
480	16	100,000	100,000	108,683	1.02	110,857	55,313	0.00345	3.36	3.89	1.94
540	16	100,000	100,000	108,762	1.02	110,938	55,354	0.00346	3.40	3.93	3.93
600	17	100,000	100,000	108,818	1.02	110,995	55,382	0.00346	3.48	4.03	4.03
660	16	100,000	100,000	108,875	1.02	111,052	55,411	0.00346	3.42	3.95	3.95
720	16	100,000	100,000	109,551	1.02	111,742	55,755	0.00348	3.25	3.76	3.76
780	15	100,000	100,000	109,692	1.02	111,886	55,827	0.00349	3.24	3.75	3.75
840	16	100,000	100,000	109,795	1.02	111,991	55,879	0.00349	3.42	3.95	3.95
900	16	100,000	100,000	110,175	1.02	112,378	56,072	0.00350	3.34	3.86	3.86
960	12	100,000	100,000	112,507	1.02	114,757	57,259	0.00357	2.68	3.10	3.10
1020	13	100,000	100,000	114,294	1.02	116,580	58,169	0.00363	2.85	3.30	3.30
1080	13	100,000	100,000	116,359	1.02	118,686	59,220	0.00370	2.97	3.44	3.44
1140	13	100,000	100,000	115,404	1.02	117,713	58,734	0.00367	2.78	3.22	3.22
1200	14	100,000	100,000	116,405	1.02	118,733	59,243	0.00370	3.07	3.56	3.56
1260	14	100,000	100,000	115,999	1.02	118,319	59,037	0.00369	3.14	3.63	3.63
1320	14	100,000	100,000	113,454	1.02	115,723	57,741	0.00360	3.13	3.62	3.62
1380	14	100,000	100,000	112,595	1.02	114,847	57,304	0.00358	2.94	3.41	3.41
1440	15	100,000	100,000	112,595	1.02	114,847	57,304	0.00358	3.24	3.74	3.74
1560	12	100,000	100,000	111,025	1.02	113,245	56,505	0.00353	2.59	3.00	6.00
1680	15	100,000	100,000	111,317	1.02	113,543	56,654	0.00354	3.23	3.74	7.48
1800	12	100,000	100,000	109,753	1.02	111,948	55,858	0.00349	2.56	2.97	5.93
1920	10	99,000	99,000	108,103	1.02	110,265	55,018	0.00343	2.11	2.44	4.88
2040	12	98,000	98,000	106,996	1.02	109,136	54,455	0.00340	2.48	2.87	5.73
2160	11	96,000	96,000	105,921	1.02	108,039	53,907	0.00337	2.20	2.54	5.08
2280	14	92,000	92,000	104,902	1.02	107,000	53,389	0.00333	2.76	3.19	6.38
2400	14	89,000	89,000	103,509	1.02	105,579	52,680	0.00329	2.73	3.16	6.32
2520	13	98,000	98,000	114,930	1.02	117,229	58,493	0.00365	2.95	3.41	6.83
2640	14	82,000	82,000	96,145	1.02	98,068	48,932	0.00305	2.51	2.90	5.81
2760	14	76,000	76,000	87,665	1.02	89,418	44,616	0.00279	2.41	2.79	5.59
2880	14	80,000	80,000	90,478	1.02	92,288	46,048	0.00287	2.49	2.88	5.77
3000	13	82,000	82,000	90,802	1.02	92,618	46,213	0.00289	2.33	2.70	5.40

APPENDIX M
EMISSIONS CALCULATIONS

PRE-TREATMENT EMISSION CALCULATIONS
EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/2/2014 - 6/6/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
3120	14	78,000	78,000	87,519	1.02	89,270	44,542	0.00278	2.26	2.61	5.23
3240	15	80,000	80,000	89,876	1.02	91,673	45,741	0.00286	2.59	3.00	6.01
3360	16	78,000	78,000	87,646	1.02	89,399	44,607	0.00278	2.64	3.06	6.12
3480	13	80,000	80,000	89,304	1.02	91,090	45,451	0.00284	2.28	2.64	5.28
3600	14	82,000	82,000	91,714	1.02	93,549	46,677	0.00291	2.36	2.74	5.47
3720	14	79,000	79,000	90,304	1.02	92,110	45,959	0.00287	2.43	2.82	5.63
3840	12	82,000	82,000	95,528	1.02	97,438	48,618	0.00304	2.27	2.63	5.26
3960	14	69,000	69,000	81,854	1.02	83,491	41,659	0.00260	2.18	2.52	5.04
4080	13	72,000	72,000	85,988	1.02	87,707	43,763	0.00273	2.16	2.50	4.99
4200	13	80,000	80,000	92,323	1.02	94,170	46,987	0.00293	2.25	2.61	5.21
4320	13	78,000	78,000	88,651	1.02	90,424	45,118	0.00282	2.27	2.63	5.26
4440	14	78,000	78,000	87,397	1.02	89,145	44,480	0.00278	2.28	2.64	5.28
4560	13	78,000	78,000	87,378	1.02	89,126	44,470	0.00278	2.22	2.57	5.13
4680	13	76,000	76,000	85,220	1.02	86,924	43,372	0.00271	2.13	2.46	4.93
4800	16	72,000	72,000	80,643	1.02	82,256	41,043	0.00256	2.43	2.82	5.64
4920	14	72,000	72,000	80,553	1.02	82,164	40,996	0.00256	2.21	2.56	5.12
5040	14	78,000	78,000	87,174	1.02	88,917	44,366	0.00277	2.33	2.69	5.39
5160	15	72,000	72,000	81,287	1.02	82,913	41,370	0.00258	2.28	2.64	5.29
5280	14	70,000	70,000	80,042	1.02	81,643	40,737	0.00254	2.10	2.43	4.85
5400	14	69,000	69,000	80,223	1.02	81,827	40,829	0.00255	2.14	2.47	4.94
5520	14	70,000	70,000	81,677	1.02	83,310	41,569	0.00260	2.10	2.43	4.87
5640	13	67,000	67,000	76,862	1.02	78,400	39,118	0.00244	1.89	2.19	4.38
5760	15	69,000	69,000	78,692	1.02	80,266	40,050	0.00250	2.19	2.54	5.07
Averages	15	90,015	90,015	100,629	1.02	102,642	51,214	0.00320	2.80	3.24	4.23

Total emissions in pounds: 287.31
Total emissions in gallons: 47.85

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

100,000 ppm applied in calculation where measurement was greater than TLV instrument range of 100,000 ppm

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^b$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX M
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

APPENDIX M
EMISSIONS CALCULATIONS

POST-TREATMENT EMISSION CALCULATIONS
EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/2/2014 - 6/6/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
30	16	40	40	43	1.02	44	22	0.00000	0.00	0.00	0.00
60	16	90	90	97	1.02	99	50	0.00000	0.00	0.00	0.00
90	15	1,000	1,000	1,080	1.02	1,101	549	0.00003	0.03	0.04	0.02
120	20	1,200	1,200	1,291	1.02	1,317	657	0.00004	0.05	0.06	0.03
150	22	1,300	1,300	1,398	1.02	1,426	712	0.00004	0.06	0.07	0.03
180	17	90	90	99	1.02	101	50	0.00000	0.00	0.00	0.00
210	15	90	90	98	1.02	100	50	0.00000	0.00	0.00	0.00
240	14	100	100	109	1.02	111	56	0.00000	0.00	0.00	0.00
270	15	90	90	99	1.02	101	50	0.00000	0.00	0.00	0.00
300	15	100	100	110	1.02	112	56	0.00000	0.00	0.00	0.00
330	15	2,000	2,000	2,169	1.02	2,212	1,104	0.00007	0.06	0.07	0.04
360	15	5,000	5,000	5,445	1.02	5,553	2,771	0.00017	0.16	0.18	0.09
390	17	6,000	6,000	6,477	1.02	6,607	3,297	0.00021	0.21	0.24	0.12
420	17	7,000	7,000	7,569	1.02	7,720	3,852	0.00024	0.25	0.29	0.14
450	16	10,000	10,000	10,845	1.02	11,062	5,520	0.00034	0.34	0.39	0.20
480	16	30,000	30,000	32,605	1.02	33,257	16,594	0.00104	1.01	1.17	0.58
540	16	50,000	50,000	54,381	1.02	55,469	27,677	0.00173	1.70	1.97	1.97
600	17	72,000	72,000	78,349	1.02	79,916	39,875	0.00249	2.51	2.90	2.90
660	16	72,000	72,000	78,390	1.02	79,958	39,896	0.00249	2.46	2.85	2.85
720	16	62,000	62,000	67,922	1.02	69,280	34,568	0.00216	2.01	2.33	2.33
780	15	76,000	76,000	83,366	1.02	85,034	42,428	0.00265	2.46	2.85	2.85
840	16	40,000	40,000	43,918	1.02	44,797	22,352	0.00140	1.37	1.58	1.58
900	16	66,000	66,000	72,715	1.02	74,170	37,008	0.00231	2.20	2.55	2.55
960	12	86,000	86,000	96,756	1.02	98,691	49,243	0.00307	2.30	2.66	2.66
1020	13	96,000	96,000	109,722	1.02	111,917	55,842	0.00349	2.73	3.16	3.16
1080	13	92,000	92,000	107,050	1.02	109,192	54,482	0.00340	2.73	3.16	3.16
1140	13	340	340	392	1.02	400	200	0.00001	0.01	0.01	0.01
1200	14	440	440	512	1.02	522	261	0.00002	0.01	0.02	0.02
1260	14	380	380	441	1.02	450	224	0.00001	0.01	0.01	0.01
1320	14	380	380	431	1.02	440	219	0.00001	0.01	0.01	0.01
1380	14	360	360	405	1.02	413	206	0.00001	0.01	0.01	0.01
1440	15	440	440	495	1.02	505	252	0.00002	0.01	0.02	0.02
1560	12	200	200	222	1.02	226	113	0.00001	0.01	0.01	0.01
1680	15	15,000	15,000	16,697	1.02	17,031	8,498	0.00053	0.48	0.56	1.12
1800	12	40,000	40,000	43,901	1.02	44,779	22,343	0.00139	1.03	1.19	2.37
1920	10	55,000	55,000	60,057	1.02	61,258	30,566	0.00191	1.17	1.36	2.71
2040	12	55,000	55,000	60,049	1.02	61,250	30,561	0.00191	1.39	1.61	3.22
2160	11	62,000	62,000	68,407	1.02	69,775	34,815	0.00217	1.42	1.64	3.28
2280	14	86,000	86,000	98,060	1.02	100,021	49,907	0.00312	2.58	2.98	5.97
2400	14	69,000	69,000	80,248	1.02	81,853	40,842	0.00255	2.12	2.45	4.90
2520	13	66,000	66,000	77,402	1.02	78,950	39,393	0.00246	1.99	2.30	4.60
2640	14	200	200	235	1.02	239	119	0.00001	0.01	0.01	0.01
2760	14	180	180	208	1.02	212	106	0.00001	0.01	0.01	0.01
2880	14	200	200	226	1.02	231	115	0.00001	0.01	0.01	0.01

APPENDIX M
EMISSIONS CALCULATIONS

POST-TREATMENT EMISSION CALCULATIONS
EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/2/2014 - 6/6/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
3000	13	380	380	421	1.02	429	214	0.00001	0.01	0.01	0.03
3120	14	10,000	10,000	11,220	1.02	11,445	5,711	0.00036	0.29	0.33	0.67
3240	15	19,000	19,000	21,346	1.02	21,772	10,864	0.00068	0.62	0.71	1.43
3360	16	30,000	30,000	33,710	1.02	34,384	17,156	0.00107	1.02	1.18	2.35
3480	13	34,000	34,000	37,954	1.02	38,713	19,316	0.00121	0.97	1.12	2.24
3600	14	46,000	46,000	51,450	1.02	52,479	26,185	0.00163	1.33	1.53	3.07
3720	14	56,000	56,000	64,013	1.02	65,293	32,579	0.00203	1.73	2.00	3.99
3840	12	56,000	56,000	65,238	1.02	66,543	33,202	0.00207	1.55	1.79	3.59
3960	14	56,000	56,000	66,432	1.02	67,761	33,810	0.00211	1.77	2.05	4.09
4080	13	56,000	56,000	66,879	1.02	68,217	34,038	0.00212	1.68	1.94	3.88
4200	13	44,000	44,000	50,778	1.02	51,793	25,843	0.00161	1.24	1.43	2.87
4320	13	48,000	48,000	54,555	1.02	55,646	27,765	0.00173	1.40	1.62	3.24
4440	14	48,000	48,000	53,783	1.02	54,858	27,372	0.00171	1.40	1.62	3.25
4560	13	48,000	48,000	53,771	1.02	54,847	27,366	0.00171	1.37	1.58	3.16
4680	13	46,000	46,000	51,581	1.02	52,612	26,251	0.00164	1.29	1.49	2.98
4800	16	48,000	48,000	53,762	1.02	54,838	27,362	0.00171	1.62	1.88	3.76
4920	14	50,000	50,000	55,939	1.02	57,058	28,470	0.00178	1.54	1.78	3.55
5040	14	52,000	52,000	58,116	1.02	59,278	29,577	0.00185	1.55	1.80	3.59
5160	15	52,000	52,000	58,707	1.02	59,881	29,879	0.00187	1.65	1.91	3.82
5280	14	50,000	50,000	57,173	1.02	58,316	29,098	0.00182	1.50	1.73	3.46
5400	14	54,000	54,000	62,783	1.02	64,039	31,953	0.00199	1.67	1.93	3.87
5520	14	48,000	48,000	56,007	1.02	57,127	28,504	0.00178	1.44	1.67	3.34
5640	13	46,000	46,000	52,771	1.02	53,827	26,857	0.00168	1.30	1.50	3.00
5760	15	40,000	40,000	45,619	1.02	46,531	23,217	0.00145	1.27	1.47	2.94
Averages	15	33,303	33,303	37,566	1.02	38,318	19,119	0.00119	1.00	1.16	1.88

Total emissions in pounds: 127.76
Total emissions in gallons: 21.28

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX M
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

APPENDIX N

AFVR Event Field Data Sheets & Emissions Calculations – June 16-20, 2014

APPENDIX N
AFVR EVENT FIELD DATA SHEETS

Project Name:	Edgefield Fuel & Convenience 3	UST Permit No:	12175
Project No:	14-211651	ECS Field Rep. 1:	A. Williamson
Start Date:	6/16/2014	ECS Field Rep. 2:	B. Peay
End Date:	6/20/2014	ECS Field Rep. 3:	

AFVR Measurements Prior to and After Event

Measurements Prior to AFVR Event

Blower Model	Dekker Vmax 3030	
Water Tank Storage Capacity:	9,600	gallons
Inside Diameter of Blower Outlet S	3.068	inches
Is Tank Empty & Clean (Y/N)	N	

Measurements Before AFVR Event	**6/16/2014**	
Tanker Product volume	NR	gallons
Tanker Water volume	4,472	gallons
Transfer Pump Flow Meter	48,870	gallons
Measurements After AFVR Event	**6/20/2014**	
Tanker Product volume	(sheen)	gallons
Tanker Water volume	2,722	gallons
Transfer Pump Flow Meter	57,504	gallons

	Prior to AFVR -		Immediately Post AFVR		20-min Post AFVR	
Well ID	**Depth to Product**	**Depth to Water**	**Depth to Product**	**Depth to Water**	**Depth to Product**	**Depth to Water**
12175-RW1	17.65	17.67	NP	22.29	NP	21.00
12175-MW3	NP	20.10	NP	20.24	NP	20.24
12175-MW6	NP	19.48	NP	19.79	NP	19.79
12175-MW15	NP	18.19	NP	18.16	NP	18.15

NP denotes no measurable free product.
NM denotes not measured.

Project Name: Edgefield Fuel & Convenience 3 **APPENDIX N** UST Permit No: 12175

Project No: 14-211651 **AFVR EVENT FIELD DATA SHEETS** ECS Field Rep. 1: A. Williamson

Date: 6/16/2014 - 6/20/2014 ECS Field Rep. 2: B. Peay

Measurements During AFVR Event 1

Elapsed Time (Hours)	Reading Interval (Mins.)	Date & Time	Stack Outlet					Blower	AFVR Wells		Non-AFVR Wells					
			Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm) Pre-Treatment	TLV (ppm) Post-Treatment	Vacuum (in. of Hg)	12175-RW1 Vacuum (inHg)	12175-RW1 Stinger Depth	12175-MW3 DTW (ft)	12175-MW3 Vacuum (in.wc)	12175-MW6 DTW (ft)	12175-MW6 Vacuum (in.wc)	12175-MW15 DTW (ft)	12175-MW15 Vacuum (in.wc)
		6/16/14 16:15	← Start time							17.75	20.10	--	19.48	--	18.19	--
1 hr	30	6/16/14 16:45	581	118.9	99.9	880	77	25	11	17.75	--	0	--	0	--	0
	30	6/16/14 17:15	460	123.4	99.8	1,600	90	26	11	18.75	--	0	--	0	--	0
2 hr	30	6/16/14 17:45	443	117.0	99.9	2,200	42	26	10	19.75	--	0	--	0	--	0
	30	6/16/14 18:15	425	114.8	86.3	2,600	28	26	10.5	20.75	--	0	--	0	--	0
3 hr	30	6/16/14 18:45	373	115.2	99.9	3,800	36	27	11	20.75	--	0	--	0	--	0
	30	6/16/14 19:15	356	113.4	96.8	4,400	24	27	10.5	21.75	--	0	--	0	--	0
4 hr	30	6/16/14 19:45	308	111.6	95.1	5,800	18	27.75	11	21.75	--	0	--	0	--	0
	30	6/16/14 20:15	321	110.8	99.9	4,200	15	27.75	11	21.75	--	0	--	0	--	0
5 hr	30	6/16/14 20:45	308	111.2	99.9	5,500	19	27.75	11	21.75	--	0	--	0	--	0
	30	6/16/14 21:15	315	108.9	99.9	6,000	0	27.75	10.5	22.75	--	0.10	--	0	--	0
6 hr	30	6/16/14 21:45	320	108.7	99.9	6,200	0	27.75	10.5	22.75	--	0.10	--	0	--	0
	30	6/16/14 22:15	317	109.2	99.9	6,200	0	27.75	10.5	23.75	--	0.10	--	0	--	0
7 hr	30	6/16/14 22:45	321	110.3	99.9	8,200	8	27.75	10.5	23.75	--	0.10	--	0	--	0
	30	6/16/14 23:15	350	110.2	99.9	8,000	8	27.75	10	23.75	--	0.15	--	0	--	0
8 hr	30	6/16/14 23:45	338	115.0	99.9	9,000	8	27.75	10	24.75	--	0.15	--	0	--	0
	30	6/17/14 0:15	336	117.6	99.9	9,000	8	27.75	10	25.0	--	0.15	--	0	--	0
9 hr	60	6/17/14 1:15	303	117.1	99.9	9,000	6	27.75	10.5	25.0	--	0.15	--	0	--	0
10 hr	60	6/17/14 2:15	320	116.2	99.9	8,200	38	27.5	10	25.0	--	0.15	--	0	--	0
11 hr	60	6/17/14 3:15	318	115.1	99.9	8,500	36	27.5	10	25.0	--	0.15	--	0	--	0
12 hr	60	6/17/14 4:15	321	114.6	99.9	7,500	40	27.5	10	25.0	--	0.15	--	0	--	0
13 hr	60	6/17/14 5:15	342	113.9	99.9	9,000	42	27.5	10	25.0	--	0.10	--	0	--	0
14 hr	60	6/17/14 6:15	356	113.4	99.9	9,200	42	27.5	10	25.0	--	0.10	--	0	--	0
15 hr	60	6/17/14 7:15	351	113.6	99.9	9,000	40	27.5	10	25.0	--	0.10	--	0	--	0
16 hr	60	6/17/14 8:15	425	107.9	99.9	10,000	8	28	10.5	25.0	--	0.05	--	0	--	0
17 hr	60	6/17/14 9:15	345	109.0	99.9	10,000	6	28	10.5	24.0	--	0.05	--	0	--	0
18 hr	60	6/17/14 10:15	304	106.5	99.9	15,000	14	28	11	24.0	--	0.05	--	0	--	0
19 hr	60	6/17/14 11:15	373	114.8	99.9	76,000	2	28.5	11	24.0	--	0.05	--	0	--	0
20 hr	60	6/17/14 12:15	391	118.4	99.9	84,000	0	29	11	23.0	--	0.05	--	0	--	0
21 hr	60	6/17/14 13:15	408	123.1	99.9	82,000	2	28	11.5	21.0	--	0.05	--	0	--	0
22 hr	60	6/17/14 14:15	373	124.3	99.9	72,000	2	28	12	19.0	--	0.05	--	0	--	0
23 hr	60	6/17/14 15:15	408	126.3	99.9	78,000	22	28	11.5	19.0	--	0.05	--	0	--	0
24 hr	60	6/17/14 16:15	356	126.7	99.9	75,000	4	28	12	19.0	--	0.05	--	0	--	0
26 hr	120	6/17/14 18:15	321	122.5	99.9	>100,000	2	28	11.5	18.0	--	0.05	--	0	--	0
28 hr	120	6/17/14 20:15	321	129.0	99.9	>100,000	8	28	11.5	18.0	--	0.05	--	0	--	0
30 hr	120	6/17/14 22:15	423	125.0	99.9	>100,000	8	28	11.5	17.0	--	0.05	--	0	--	0
32 hr	120	6/18/14 0:15	401	124.5	99.9	>100,000	40	28	14.5	16	--	0.05	--	0	--	0

Project Name: Edgefield Fuel & Convenience 3 **APPENDIX N** UST Permit No: 12175

Project No: 14-211651 **AFVR EVENT FIELD DATA SHEETS** ECS Field Rep. 1: A. Williamson

Date: 6/16/2014 - 6/20/2014 ECS Field Rep. 2: B. Peay

Measurements During AFVR Event 1

Elapsed Time (Hours)	Reading Interval (Mins.)	Date & Time	Stack Outlet					Blower	AFVR Wells		Non-AFVR Wells					
			Air Flow (ft/min)	Temperature (Fahrenheit)	R.H. (%)	TLV (ppm) Pre-Treatment	TLV (ppm) Post-Treatment	Vacuum (in. of Hg)	12175-RW1 Vacuum (inHg)	12175-RW1 Stinger Depth	12175-MW3 DTW (ft)	12175-MW3 Vacuum (in.wc)	12175-MW6 DTW (ft)	12175-MW6 Vacuum (in.wc)	12175-MW15 DTW (ft)	12175-MW15 Vacuum (in.wc)
		6/16/14 16:15	← Start time							17.75	20.10	--	19.48	--	18.19	--
34 hr	120	6/18/14 2:15	351	121.6	99.9	>100,000	70	28	14	15	--	0	--	0	--	0
36 hr	120	6/18/14 4:15	339	119.8	99.9	90,000	4	28	14	13	--	0.01	--	0	--	0
38 hr	120	6/18/14 6:15	425	119.9	99.9	90,000	8	28	10	12	--	0.01	--	0	--	0
40 hr	120	6/18/14 8:15	425	108.1	99.9	26,000	0	27	5	12	--	0	--	0	--	0
42 hr	120	6/18/14 10:15	287	113.4	99.9	10,000	12	27	5	12	--	0	--	0	--	0
44 hr	120	6/18/14 12:15	252	115.7	99.9	5,000	**	25	10	12	--	0	--	0	--	0
46 hr	120	6/18/14 14:15	276	125.9	99.9	8,200	**	27	11	18	--	0	--	0	--	0
48 hr	120	6/18/14 16:15	301	129.6	99.9	98,000	16	27.75	13	18	--	0	--	0	--	0
50 hr	120	6/18/14 18:15	408	119.7	99.9	56,000	4	27.75	11	20	--	0	--	0	--	0
52 hr	120	6/18/14 20:15	373	127.2	99.9	62,000	21	27.75	12	22	--	0.05	--	0	--	0
54 hr	120	6/18/14 22:15	410	126.8	99.9	>100,000	41	27.75	12	23	--	0.05	--	0	--	0
56 hr	120	6/19/14 0:15	415	123.1	99.9	>100,000	38	27.75	13	24	--	0.05	--	0	--	0
58 hr	120	6/19/14 2:15	365	119.4	99.9	90,000	12	27.75	11.5	24	--	0.05	--	0	--	0
60 hr	120	6/19/14 4:15	384	118.2	99.9	90,000	8	27.5	11.5	24	--	0.05	--	0	--	0
62 hr	120	6/19/14 6:15	285	122.5	99.9	92,000	10	27.5	11.5	24	--	0.05	--	0	--	0
64 hr	120	6/19/14 8:15	391	111.6	99.9	90,000	12	27.75	12	24	--	0.1	--	0	--	0
66 hr	120	6/19/14 10:15	361	123.3	99.9	>100,000	7	27.75	11	18	--	0.1	--	0	--	0
68 hr	120	6/19/14 12:15	321	121.5	99.9	74,000	4	27.75	11	20	--	0.05	--	0	--	0
70 hr	120	6/19/14 14:15	321	127.8	99.9	52,000	14	27.75	10	20	--	0.05	--	0	--	0
72 hr	120	6/19/14 16:15	321	128.3	99.9	40,000	10	27.75	10	22	--	0.05	--	0	--	0
74 hr	120	6/19/14 18:15	373	120.0	99.9	12,000	10	28	11	23	--	0.05	--	0	--	0
76 hr	120	6/19/14 20:15	339	129.0	99.9	10,000	30	28	11	23	--	0.05	--	0	--	0
78 hr	120	6/19/14 22:15	420	109.0	99.9	10,000	32	28	9	24	--	0.05	--	0	--	0
80 hr	120	6/20/14 0:15	410	111.8	99.9	12,000	30	28	9	24	--	0.05	--	0	--	0
82 hr	120	6/20/14 2:15	323	114.8	99.9	10,000	14	28	9	24	--	0.05	--	0	--	0
84 hr	120	6/20/14 4:15	318	115.6	99.9	80,000	10	28	9.5	24	--	0.05	--	0	--	0
86 hr	120	6/20/14 6:15	356	115.2	99.9	75,000	12	28	9.5	24	--	0.05	--	0	--	0
88 hr	120	6/20/14 8:15	339	111.4	99.9	30,000	6	28	9	24	--	0.05	--	0	--	0
90 hr	120	6/20/14 10:15	356	115.7	99.9	28,000	4	28	10	24	--	0.05	--	0	--	0
92 hr	120	6/20/14 12:15	287	121.3	99.9	20,000	2	28	10	24	--	0.05	--	0	--	0
94 hr	120	6/20/14 14:15	391	130.1	99.9	9,200	6	27.75	10	22.0	--	0.05	--	0	--	0
96 hr	120	6/20/14 16:15	321	127.1	99.9	9,000	4	27.75	10	22.0	--	0.05	--	0	--	0

NOTES

** = Off-gas treatment system not in operation at this time interval; pre-treatment value applied in post-treatment emission calculation during this time interval.

APPENDIX N
EMISSIONS CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3
UST PERMIT NUMBER: 12175
AVERAGE DEPTH TO GROUNDWATER: 18.86
DESCRIBE SOIL IN THE SATURATED ZONE: silty SAND
INDICATE AVERAGE HYDRAULIC CONDUCTIVITY (if known): 0.57 ft/day
IDENTIFY THE WELL AND THE I.D. OF EACH WELL USED FOR AFVR: 12175-RW1
PROVIDE BLOWER SPECIFICATIONS OF THE VACUUM PUMP (cfm @ in Hg): 492 cfm @ 24 in Hg

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (DSCFM)
Start	16:15								
06/16/14	16:45	25.00	581	3	118.9	99.9	0.079943	0.114	24
06/16/14	17:15	25.75	460	3	123.4	99.8	0.092004	0.128	19
06/16/14	17:45	26.00	443	3	117.0	99.9	0.075298	0.108	19
06/16/14	18:15	26.00	425	3	114.8	86.3	0.059767	0.087	18
06/16/14	18:45	27.00	373	3	115.2	99.9	0.071142	0.102	16
06/16/14	19:15	27.25	356	3	113.4	96.8	0.064907	0.094	15
06/16/14	19:45	27.75	308	3	111.6	95.1	0.060145	0.088	13
06/16/14	20:15	27.75	321	3	110.8	99.9	0.061902	0.090	14
06/16/14	20:45	27.75	308	3	111.2	99.9	0.062691	0.091	13
06/16/14	21:15	27.75	315	3	108.9	99.9	0.058281	0.085	14
06/16/14	21:45	27.75	320	3	108.7	99.9	0.057912	0.085	14
06/16/14	22:15	27.75	317	3	109.2	99.9	0.058839	0.086	14
06/16/14	22:45	27.75	321	3	110.3	99.9	0.060928	0.089	14
06/16/14	23:15	27.75	350	3	110.2	99.9	0.060735	0.089	15
06/16/14	23:45	27.75	338	3	115.0	99.9	0.070694	0.102	14
06/17/14	0:15	27.75	336	3	117.6	99.9	0.076735	0.109	14
06/17/14	1:15	27.75	303	3	117.1	99.9	0.075535	0.108	13
06/17/14	2:15	27.50	320	3	116.2	99.9	0.073422	0.105	13
06/17/14	3:15	27.50	318	3	115.1	99.9	0.070918	0.102	13
06/17/14	4:15	27.50	321	3	114.6	99.9	0.069807	0.101	14
06/17/14	5:15	27.50	342	3	113.9	99.9	0.068281	0.099	15
06/17/14	6:15	27.50	356	3	113.4	99.9	0.06721	0.097	15
06/17/14	7:15	27.50	351	3	113.6	99.9	0.067637	0.098	15
06/17/14	8:15	28.00	425	3	107.9	99.9	0.056457	0.083	19
06/17/14	9:15	28.00	345	3	109.0	99.9	0.058466	0.086	15
06/17/14	10:15	28.25	304	3	106.5	99.9	0.053996	0.080	13
06/17/14	11:15	28.50	373	3	114.8	99.9	0.070249	0.101	16
06/17/14	12:15	29.00	391	3	118.4	99.9	0.078694	0.112	16
06/17/14	13:15	28.00	408	3	123.1	99.9	0.091244	0.128	17
06/17/14	14:15	28.00	373	3	124.3	99.9	0.094757	0.132	15
06/17/14	15:15	28.00	408	3	126.3	99.9	0.100917	0.139	16
06/17/14	16:15	28.00	356	3	126.7	99.9	0.102197	0.141	14
06/17/14	18:15	28.00	321	3	122.5	99.9	0.089537	0.125	13
06/17/14	20:15	28.00	321	3	129.0	99.9	0.109886	0.150	13
06/17/14	22:15	28.00	423	3	125.0	99.9	0.096868	0.134	17
06/18/14	0:15	28.00	401	3	124.5	99.9	0.095355	0.133	16
06/18/14	2:15	28.00	351	3	121.6	99.9	0.087036	0.122	14
06/18/14	4:15	28.00	339	3	119.8	99.9	0.082241	0.116	14
06/18/14	6:15	28.00	425	3	119.9	99.9	0.0825	0.117	18

APPENDIX N
EMISSIONS CALCULATIONS

DRY STANDARD CUBIC FEET PER MINUTE (DSCFM) AIR FLOW CALCULATIONS (Qstd)

Date	Time	Vacuum (in. of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (°F)	Relative Humidity	B_{wsw} (Wt/Wt)	B_{ws} (vol/vol)	Q_{std} (DSCFM)
06/18/14	8:15	27.25	425	3	108.1	99.9	0.056818	0.083	19
06/18/14	10:15	27.00	287	3	113.4	99.9	0.06721	0.097	12
06/18/14	12:15	25.00	252	3	115.7	99.9	0.072273	0.104	11
06/18/14	14:15	27.00	276	3	125.9	99.9	0.099654	0.138	11
06/18/14	16:15	27.75	301	3	129.6	99.9	0.111988	0.152	12
06/18/14	18:15	27.75	408	3	119.7	99.9	0.081983	0.116	17
06/18/14	20:15	27.75	373	3	127.2	99.9	0.103821	0.143	15
06/18/14	22:15	27.75	410	3	126.8	99.9	0.10252	0.141	16
06/19/14	0:15	27.75	415	3	123.1	99.9	0.091244	0.128	17
06/19/14	2:15	27.75	365	3	119.4	99.9	0.081212	0.115	15
06/19/14	4:15	27.50	384	3	118.2	99.9	0.0782	0.111	16
06/19/14	6:15	27.50	285	3	122.5	99.9	0.089537	0.125	12
06/19/14	8:15	27.75	391	3	111.6	99.9	0.06349	0.092	17
06/19/14	10:15	27.75	361	3	123.3	99.9	0.09182	0.128	15
06/19/14	12:15	27.75	321	3	121.5	99.9	0.086762	0.122	13
06/19/14	14:15	27.75	321	3	127.8	99.9	0.105804	0.145	13
06/19/14	16:15	27.75	321	3	128.3	99.9	0.107485	0.147	13
06/19/14	18:15	28.00	373	3	120.0	99.9	0.082761	0.117	15
06/19/14	20:15	28.00	339	3	129.0	99.9	0.109886	0.150	13
06/19/14	22:15	28.00	420	3	109.0	99.9	0.058466	0.086	18
06/20/14	0:15	28.00	410	3	111.8	99.9	0.063894	0.093	18
06/20/14	2:15	28.00	323	3	114.8	99.9	0.070249	0.101	14
06/20/14	4:15	28.00	318	3	115.6	99.9	0.072045	0.103	13
06/20/14	6:15	28.00	356	3	115.2	99.9	0.071142	0.102	15
06/20/14	8:15	28.00	339	3	111.4	99.9	0.06309	0.092	15
06/20/14	10:15	28.00	356	3	115.7	99.9	0.072273	0.104	15
06/20/14	12:15	28.00	287	3	121.3	99.9	0.086218	0.121	12
06/20/14	14:15	27.75	391	3	130.1	99.9	0.11377	0.154	15
06/20/14	16:15	27.75	321	3	127.1	99.9	0.103494	0.142	13
Averages		27.63	357	3	118.0	99.6	0.079033	0.112	15

NOTES

Qstd = Flow of air measured in dry standard cubic feet per minute (DSCFM)
Vacuum = The level of vacuum measured at the Blower recorded in inches of mercury (in. Hg)
Velocity = The rate at which air flows is measured at the blower discharge piping (anemometer or pitot tube)
Pipe ID = The inside diameter of the blower discharge piping (from the blower)
Temperature = The temperature of the air stream exiting the blower discharge piping (dry bulb temp., in deg.°F)
Relative humidity = The % relative humidity of the air stream exiting the blower discharge piping
B_{wsw} = water vapor % by weight, i.e., pounds of water per pound of dry air, derived from the Psychrometric chart (temp Vs relative humidity) based on an elevation of 525 feet above sea level.
B_{ws} = water vapor % by volume

EQUATIONS

$B_{ws} = (B_{wsw}/18 \text{ lb-mole } H_20)/[(1/28.84 \text{ lb-mole dry air}) + (B_{wsw}/18 \text{ lb-mole } H_2O)]$

$Q_{std} = (1\text{-Water Vapor}) * \text{velocity} * (PI * (\text{diameter}/24)^2) * (528°R/(\text{Temp} + 460))$

APPENDIX N
EMISSIONS CALCULATIONS

PRE-TREATMENT EMISSION CALCULATIONS
EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/16/2014 - 6/20/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
30	24	880	880	993	1.02	1,013	505	0.00003	0.05	0.05	0.03
60	19	1,600	1,600	1,836	1.02	1,873	934	0.00006	0.07	0.08	0.04
90	19	2,200	2,200	2,465	1.02	2,515	1,255	0.00008	0.09	0.10	0.05
120	18	2,600	2,600	2,849	1.02	2,906	1,450	0.00009	0.10	0.11	0.06
150	16	3,800	3,800	4,233	1.02	4,318	2,154	0.00013	0.13	0.15	0.07
180	15	4,400	4,400	4,858	1.02	4,955	2,472	0.00015	0.14	0.16	0.08
210	13	5,800	5,800	6,359	1.02	6,486	3,236	0.00020	0.16	0.19	0.09
240	14	4,200	4,200	4,617	1.02	4,709	2,350	0.00015	0.12	0.14	0.07
270	13	5,500	5,500	6,052	1.02	6,173	3,080	0.00019	0.15	0.18	0.09
300	14	6,000	6,000	6,560	1.02	6,691	3,339	0.00021	0.17	0.20	0.10
330	14	6,200	6,200	6,775	1.02	6,911	3,448	0.00022	0.18	0.21	0.10
360	14	6,200	6,200	6,784	1.02	6,920	3,453	0.00022	0.18	0.21	0.10
390	14	8,200	8,200	9,000	1.02	9,181	4,581	0.00029	0.24	0.28	0.14
420	15	8,000	8,000	8,778	1.02	8,954	4,468	0.00028	0.25	0.29	0.15
450	14	9,000	9,000	10,019	1.02	10,220	5,099	0.00032	0.27	0.32	0.16
480	14	9,000	9,000	10,107	1.02	10,309	5,144	0.00032	0.27	0.31	0.16
540	13	9,000	9,000	10,089	1.02	10,291	5,135	0.00032	0.24	0.28	0.28
600	13	8,200	8,200	9,165	1.02	9,348	4,664	0.00029	0.24	0.27	0.27
660	13	8,500	8,500	9,466	1.02	9,655	4,818	0.00030	0.24	0.28	0.28
720	14	7,500	7,500	8,339	1.02	8,506	4,244	0.00026	0.22	0.25	0.25
780	15	9,000	9,000	9,985	1.02	10,184	5,082	0.00032	0.28	0.32	0.32
840	15	9,200	9,200	10,191	1.02	10,395	5,186	0.00032	0.30	0.34	0.34
900	15	9,000	9,000	9,975	1.02	10,175	5,077	0.00032	0.28	0.33	0.33
960	19	10,000	10,000	10,905	1.02	11,123	5,550	0.00035	0.39	0.45	0.45
1020	15	10,000	10,000	10,937	1.02	11,155	5,566	0.00035	0.31	0.36	0.36
1080	13	15,000	15,000	16,298	1.02	16,624	8,295	0.00052	0.42	0.48	0.48
1140	16	76,000	76,000	84,554	1.02	86,245	43,033	0.00269	2.55	2.95	2.95
1200	16	84,000	84,000	94,591	1.02	96,483	48,141	0.00301	2.93	3.40	3.40
1260	17	82,000	82,000	93,988	1.02	95,868	47,834	0.00299	2.96	3.43	3.43
1320	15	72,000	72,000	82,931	1.02	84,590	42,207	0.00263	2.38	2.75	2.75
1380	16	78,000	78,000	90,612	1.02	92,424	46,116	0.00288	2.80	3.25	3.25
1440	14	75,000	75,000	87,281	1.02	89,026	44,421	0.00277	2.35	2.72	2.72
1560	13	100,000	100,000	114,346	1.02	116,633	58,195	0.00363	2.85	3.30	6.59
1680	13	100,000	100,000	117,606	1.02	119,958	59,855	0.00374	2.82	3.26	6.52
1800	17	100,000	100,000	115,520	1.02	117,831	58,793	0.00367	3.74	4.32	8.65
1920	16	100,000	100,000	115,278	1.02	117,584	58,670	0.00366	3.55	4.10	8.21
2040	14	100,000	100,000	113,945	1.02	116,224	57,991	0.00362	3.12	3.61	7.22
2160	14	90,000	90,000	101,859	1.02	103,896	51,840	0.00324	2.72	3.15	6.29
2280	18	90,000	90,000	101,897	1.02	103,934	51,859	0.00324	3.41	3.94	7.89
2400	19	26,000	26,000	28,367	1.02	28,934	14,437	0.00090	1.01	1.16	2.33
2520	12	10,000	10,000	11,077	1.02	11,298	5,637	0.00035	0.26	0.30	0.60
2640	11	5,000	5,000	5,579	1.02	5,691	2,839	0.00018	0.11	0.13	0.26
2760	11	8,200	8,200	9,509	1.02	9,699	4,840	0.00030	0.20	0.23	0.46
2880	12	98,000	98,000	115,584	1.02	117,896	58,825	0.00367	2.59	2.99	5.98
3000	17	56,000	56,000	63,356	1.02	64,623	32,244	0.00201	2.04	2.36	4.71

APPENDIX N
EMISSIONS CALCULATIONS

PRE-TREATMENT EMISSION CALCULATIONS
EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/16/2014 - 6/20/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
3120	15	62,000	62,000	72,313	1.02	73,760	36,803	0.00230	2.04	2.36	4.71
3240	16	100,000	100,000	116,426	1.02	118,755	59,254	0.00370	3.61	4.18	8.36
3360	17	100,000	100,000	114,619	1.02	116,912	58,334	0.00364	3.68	4.26	8.51
3480	15	90,000	90,000	101,711	1.02	103,745	51,765	0.00323	2.93	3.39	6.78
3600	16	90,000	90,000	101,276	1.02	103,302	51,544	0.00322	3.09	3.57	7.15
3720	12	92,000	92,000	105,198	1.02	107,302	53,540	0.00334	2.33	2.69	5.38
3840	17	90,000	90,000	99,155	1.02	101,138	50,464	0.00315	3.18	3.68	7.36
3960	15	100,000	100,000	114,712	1.02	117,006	58,381	0.00364	3.20	3.70	7.40
4080	13	74,000	74,000	84,287	1.02	85,973	42,897	0.00268	2.11	2.44	4.89
4200	13	52,000	52,000	60,815	1.02	62,031	30,951	0.00193	1.47	1.70	3.40
4320	13	40,000	40,000	46,889	1.02	47,826	23,864	0.00149	1.13	1.31	2.61
4440	15	12,000	12,000	13,591	1.02	13,863	6,917	0.00043	0.40	0.46	0.92
4560	13	10,000	10,000	11,761	1.02	11,996	5,985	0.00037	0.30	0.34	0.69
4680	18	10,000	10,000	10,937	1.02	11,155	5,566	0.00035	0.38	0.44	0.88
4800	18	12,000	12,000	13,228	1.02	13,493	6,733	0.00042	0.44	0.51	1.03
4920	14	10,000	10,000	11,126	1.02	11,348	5,662	0.00035	0.29	0.34	0.67
5040	13	80,000	80,000	89,235	1.02	91,019	45,415	0.00284	2.28	2.64	5.29
5160	15	75,000	75,000	83,549	1.02	85,220	42,521	0.00265	2.40	2.78	5.55
5280	15	30,000	30,000	33,033	1.02	33,693	16,812	0.00105	0.92	1.06	2.13
5400	15	28,000	28,000	31,242	1.02	31,867	15,900	0.00099	0.89	1.04	2.07
5520	12	20,000	20,000	22,763	1.02	23,218	11,585	0.00072	0.51	0.59	1.18
5640	15	9,200	9,200	10,877	1.02	11,095	5,536	0.00035	0.32	0.36	0.73
5760	13	9,000	9,000	10,492	1.02	10,702	5,340	0.00033	0.25	0.29	0.59
Averages	15	40,064	40,064	45,658	1.02	46,571	23,237	0.00145	1.29	1.50	2.61

Total emissions in pounds: 177.35
Total emissions in gallons: 29.53

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

100,000 ppm applied in calculation where measurement was greater than TLV instrument range of 100,000 ppm

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^6$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX N
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

APPENDIX N
EMISSIONS CALCULATIONS

POST-TREATMENT EMISSION CALCULATIONS
EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/16/2014 - 6/20/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
0	--	--	--	--	--	--	--	--	--	--	
30	24	77	77	87	1.02	89	44	0.00000	0.00	0.00	0.00
60	19	90	90	103	1.02	105	53	0.00000	0.00	0.00	0.00
90	19	42	42	47	1.02	48	24	0.00000	0.00	0.00	0.00
120	18	28	28	31	1.02	31	16	0.00000	0.00	0.00	0.00
150	16	36	36	40	1.02	41	20	0.00000	0.00	0.00	0.00
180	15	24	24	26	1.02	27	13	0.00000	0.00	0.00	0.00
210	13	18	18	20	1.02	20	10	0.00000	0.00	0.00	0.00
240	14	15	15	16	1.02	17	8	0.00000	0.00	0.00	0.00
270	13	19	19	21	1.02	21	11	0.00000	0.00	0.00	0.00
300	14	0	0	0	1.02	0	0	0.00000	0.00	0.00	0.00
330	14	0	0	0	1.02	0	0	0.00000	0.00	0.00	0.00
360	14	0	0	0	1.02	0	0	0.00000	0.00	0.00	0.00
390	14	8	8	9	1.02	9	4	0.00000	0.00	0.00	0.00
420	15	8	8	9	1.02	9	4	0.00000	0.00	0.00	0.00
450	14	8	8	9	1.02	9	5	0.00000	0.00	0.00	0.00
480	14	8	8	9	1.02	9	5	0.00000	0.00	0.00	0.00
540	13	6	6	7	1.02	7	3	0.00000	0.00	0.00	0.00
600	13	38	38	42	1.02	43	22	0.00000	0.00	0.00	0.00
660	13	36	36	40	1.02	41	20	0.00000	0.00	0.00	0.00
720	14	40	40	44	1.02	45	23	0.00000	0.00	0.00	0.00
780	15	42	42	47	1.02	48	24	0.00000	0.00	0.00	0.00
840	15	42	42	47	1.02	47	24	0.00000	0.00	0.00	0.00
900	15	40	40	44	1.02	45	23	0.00000	0.00	0.00	0.00
960	19	8	8	9	1.02	9	4	0.00000	0.00	0.00	0.00
1020	15	6	6	7	1.02	7	3	0.00000	0.00	0.00	0.00
1080	13	14	14	15	1.02	16	8	0.00000	0.00	0.00	0.00
1140	16	2	2	2	1.02	2	1	0.00000	0.00	0.00	0.00
1200	16	0	0	0	1.02	0	0	0.00000	0.00	0.00	0.00
1260	17	2	2	2	1.02	2	1	0.00000	0.00	0.00	0.00
1320	15	2	2	2	1.02	2	1	0.00000	0.00	0.00	0.00
1380	16	22	22	26	1.02	26	13	0.00000	0.00	0.00	0.00
1440	14	4	4	5	1.02	5	2	0.00000	0.00	0.00	0.00
1560	13	2	2	2	1.02	2	1	0.00000	0.00	0.00	0.00
1680	13	8	8	9	1.02	10	5	0.00000	0.00	0.00	0.00
1800	17	8	8	9	1.02	9	5	0.00000	0.00	0.00	0.00
1920	16	40	40	46	1.02	47	23	0.00000	0.00	0.00	0.00
2040	14	70	70	80	1.02	81	41	0.00000	0.00	0.00	0.01
2160	14	4	4	5	1.02	5	2	0.00000	0.00	0.00	0.00
2280	18	8	8	9	1.02	9	5	0.00000	0.00	0.00	0.00
2400	19	0	0	0	1.02	0	0	0.00000	0.00	0.00	0.00
2520	12	12	12	13	1.02	14	7	0.00000	0.00	0.00	0.00
2640	11	5,000	5,000	5,579	1.02	5,691	2,839	0.00018	0.11	0.13	0.26
2760	11	8,200	8,200	9,509	1.02	9,699	4,840	0.00030	0.20	0.23	0.46
2880	12	16	16	19	1.02	19	10	0.00000	0.00	0.00	0.00

APPENDIX N
EMISSIONS CALCULATIONS

POST-TREATMENT EMISSION CALCULATIONS
EMISSION CALCULATIONS

SITE NAME: Edgefield Fuel & Convenience 3 AFVR EVENT DATE: 6/16/2014 - 6/20/2014

Elapsed Time (min)	Flow (DSCFM)	$PPM_{measured}$ (ppm)	PPM_{wet}	PPM_{dry}	RF	PPM_{conc}	$C_{c:m}$ (mg/dsm^3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR (lb)
3000	17	4	4	5	1.02	5	2	0.00000	0.00	0.00	0.00
3120	15	21	21	24	1.02	25	12	0.00000	0.00	0.00	0.00
3240	16	41	41	48	1.02	49	24	0.00000	0.00	0.00	0.00
3360	17	38	38	44	1.02	44	22	0.00000	0.00	0.00	0.00
3480	15	12	12	14	1.02	14	7	0.00000	0.00	0.00	0.00
3600	16	8	8	9	1.02	9	5	0.00000	0.00	0.00	0.00
3720	12	10	10	11	1.02	12	6	0.00000	0.00	0.00	0.00
3840	17	12	12	13	1.02	13	7	0.00000	0.00	0.00	0.00
3960	15	7	7	8	1.02	8	4	0.00000	0.00	0.00	0.00
4080	13	4	4	5	1.02	5	2	0.00000	0.00	0.00	0.00
4200	13	14	14	16	1.02	17	8	0.00000	0.00	0.00	0.00
4320	13	10	10	12	1.02	12	6	0.00000	0.00	0.00	0.00
4440	15	10	10	11	1.02	12	6	0.00000	0.00	0.00	0.00
4560	13	30	30	35	1.02	36	18	0.00000	0.00	0.00	0.00
4680	18	32	32	35	1.02	36	18	0.00000	0.00	0.00	0.00
4800	18	30	30	33	1.02	34	17	0.00000	0.00	0.00	0.00
4920	14	14	14	16	1.02	16	8	0.00000	0.00	0.00	0.00
5040	13	10	10	11	1.02	11	6	0.00000	0.00	0.00	0.00
5160	15	12	12	13	1.02	14	7	0.00000	0.00	0.00	0.00
5280	15	6	6	7	1.02	7	3	0.00000	0.00	0.00	0.00
5400	15	4	4	4	1.02	5	2	0.00000	0.00	0.00	0.00
5520	12	2	2	2	1.02	2	1	0.00000	0.00	0.00	0.00
5640	15	6	6	7	1.02	7	4	0.00000	0.00	0.00	0.00
5760	13	4	4	5	1.02	5	2	0.00000	0.00	0.00	0.00
Averages	15	212	212	242	1.02	247	123	0.00001	0.01	0.01	0.01

Total emissions in pounds: 0.78
Total emissions in gallons: 0.13

NOTES

$PPM_{measured}$ = Actual measurements (ppm) taken with TLV at the blower discharge piping

PPM_{wet} = "wet" concentration

PPM_{dry} = "dry" concentration

RF (Response Factor) = Multiplying factor for converting ppm meter readings of hexane-calibrated instruments to ppm concentrations of other gases: 1.02 for benzene; 1.03 for toluene; 1.64 for o-xylene. Multiplying factor obtained from Instruction Manual for TLV Sniffer® by Bacharach, Inc., Instruction 23-9613, rev.2, January 1990.

K = Number of carbons in calibration gas: (Methane K = 1, or Propane K = 3, or Hexane K = 6)

PPM_c= PPM_v, Volumetric concentration of VOC emissions as carbon, dry basis at STP

$C_{c:m}$ = mg/dsm^3, mass concentration of VOC emissions as carbon

M_c = 12.01 mg/mg-mole, molecular weight of carbon

K_3 = 24.07 $dsm^3/10^b$ mg-mole, mass to volume conversion factor at STP

C_c = lb/dcsf, mass concentration of VOC emissions as carbon, dry basis at STP

PMR_c = lb/hr, pollutant mass removal rate of VOC's as carbon

PMR_g = lb/hr, pollutant mass removal rate of of VOC's as gasoline

PMR = lb, pollutant mass removal of VOC's as gasoline

APPENDIX N
EMISSIONS CALCULATIONS

EQUATIONS

$PPM_{wet} = PPM_{measured}$

$PPM_{dry} = (PPM_{wet})/(1-B_{ws})$

$PPM_c = (PPM_d)(K)$

$C_{c:m} = (PPM_c)(M_c / K_3)$

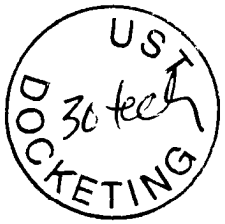
$C_c = (C_{c:m})(62.43x10^{-9}\ lb\text{-}m^3/mg\text{-}ft^3)$

$PMR_c = (C_c)(Q_{std})(60\ min/hr)$

$PMR_g = (PMR_c)(M_g/M_{cg})$

$PMR = (PMR_g)(\#minutes/60)$

D H E C
PROMOTE PROTECT PROSPER
Catherine B Templeton, Director
Promoting and protecting the health of the public and the environment



MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

AUG 2 0 2014

Re: Site Specific Work Plan Request
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175
Release reported December 31, 2008
AFVR Report received August 18, 2014
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report. The report indicates the presence of chemicals of concern in the groundwater.

To determine what risk the referenced release may pose to the environment and public health, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a groundwater sampling event is necessary. Please have your contractor conduct a groundwater sampling event of all monitoring wells associated with the release. Groundwater should be sampled for BTEX, naphthalene, MtBE, 1,2-DCA, the oxygenates, and EDB. This scope of work must be conducted in accordance with the UST Quality Assurance Programmatic Plan (QAPP) Revision 2.0 and in compliance with all applicable regulations. A copy of the Agency's QAPP for the UST Division is available at http://www.scdhec.gov/environment/docs/QAPP_Rev-2_April2013.pdf.

Please have your contractor complete and submit the Site Specific Work Plan (SSWP) and Cost Agreement within thirty (30) days of the date of this letter. The SSWP form can be found at http://www.scdhec.gov/library/D-0653.pdf.
Every component may not be necessary to complete the above scope of work. The State Underground Petroleum Environmental Response Bank (SUPERB) Account allowable cost for each component is included on the Assessment Component Cost Agreement Form. **Please note that new SUPERB rates went into effect starting May 15, 2014 and that technical and financial preapproval from the Agency must be issued before work begins.**

On all correspondence regarding this site, please reference UST Permit #12175. If you have questions or need additional information, feel free to call me at (803) 898-0610.

Sincerely,

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Environmental Compliance Services, Inc., P O Box 3528, Fort Mill, SC29708 (w/ enc)
Technical File (w/ enc)

D H E C
PROMOTE PROTECT PROSPER

Site-Specific Work Plan for Approved ACQAP
Underground Storage Tank Management Division

UST SEP 2 2 2014 PROGRAM

To: Cathleen Ridgley (SCDHEC Project Manager)
From: Randall Hutchins (Contractor Project Manager)
Contractor: Environmental Compliances Services, Inc UST Contractor Certification Number: 358

Facility Name: Edgefield Fuel & Convenience 3 UST Permit #: 12175
Facility Address: 311 Main Street
Responsible Party: Edgefield Fuel & Convenience, LLC Phone: (803) 637-1900
RP Address: PO Box 388, Edgefield, SC 29824
Property Owner (if different): v.s.
Property Owner Address: v.s.
Current Use of Property: Gas Station

UST 31 tech KETING

Scope of Work (Please check all that apply)

- ☐ IGWA
- ☐ Tier II
- ☑ Groundwater Sampling
- ☐ GAC
- ☐ Tier I
- ☐ Monitoring Well Installation
- ☐ Other _____

Analyses (Please check all that apply)

Groundwater/Surface Water:

- ☑ BTEXNMDCA (8260B)
- ☑ Oxygenates (8260B)
- ☑ EDB (8011)
- ☐ PAH (8270D)
- ☐ Lead
- ☐ 8 RCRA Metals
- ☐ TPH
- ☐ pH
- ☐ BOD
- ☐ Nitrate
- ☐ Sulfate
- ☐ Other _____
- ☐ Methane
- ☐ Ethanol
- ☐ Dissolved Iron

Soil:

- ☐ BTEXN
- ☐ PAH
- ☐ 8 RCRA Metals
- ☐ Oil & Grease (9071)
- ☐ TPH-DRO (3550B/8015B)
- ☐ TPH-GRO (5030B/8015B)
- ☐ Grain Size
- ☐ TOC

Air:

- ☐ BTEXN

Sample Collection (Estimate the number of samples of each matrix that are expected to be collected.)

_____ Soil	_____ Water Supply Wells	_____ Air	4 Field Blank
29 Monitoring Wells	_____ Surface Water	2 Duplicate	2 Trip Blank

Field Screening Methodology

Estimate number and total completed depth for each point, and include their proposed locations on the attached map.

# of shallow points proposed: _____ Estimated Footage: _____ feet per point
# of deep points proposed: _____ Estimated Footage: _____ feet per point
Field Screening Methodology: _____

Permanent Monitoring Wells

Estimate number and total completed depth for each well, and include their proposed locations on the attached map.

# of shallow wells: _____ Estimated Footage: _____ feet per point
# of deep wells: _____ Estimated Footage: _____ feet per point
# of recovery wells: _____ Estimated Footage: _____ feet per point
Monitoring Well development method (consistent with SOP): _____
Comments, if warranted:

UST Permit #: 12175 Facility Name: Edgefield Fuel & Convenience 3

Implementation Schedule (Number of calendar days from approval)
Field Work Start-Up: 5 Field Work Completion: 60
Report Submittal: 75 # of Copies Provided to Property Owners: 5

Aquifer Characterization
Pump Test: ☐ Slug Test: ☐ (Check one and provide explanation below for choice)

Investigation Derived Waste Disposal
Soil: _____ Tons Purge Water: 250 Gallons
Drilling Fluids: _____ Gallons Free-Phase Product: _____ Gallons

Additional Details For This Scope of Work
For example, list wells to be sampled, wells to be abandoned/repaired, well pads/bolts/caps to replace, details of AFVR event, etc.
12175-MW1 through 12175-MW26 and 12175-RW1 through 12175-RW3 for groundwater sample collection, except where free phase product is detected

Compliance With Annual Contractor Quality Assurance Plan (ACQAP)
Yes Laboratory as indicated in ACQAP? (Yes/No) If no, indicate laboratory information below.
Name of Laboratory: _____
SCDHEC Certification Number: _____
Name of Laboratory Director: _____

____ Well Driller as indicated in ACQAO? (Yes/No) If no, indicate driller information below.
Name of Well Driller: _____
SCLLR Certification Number: _____

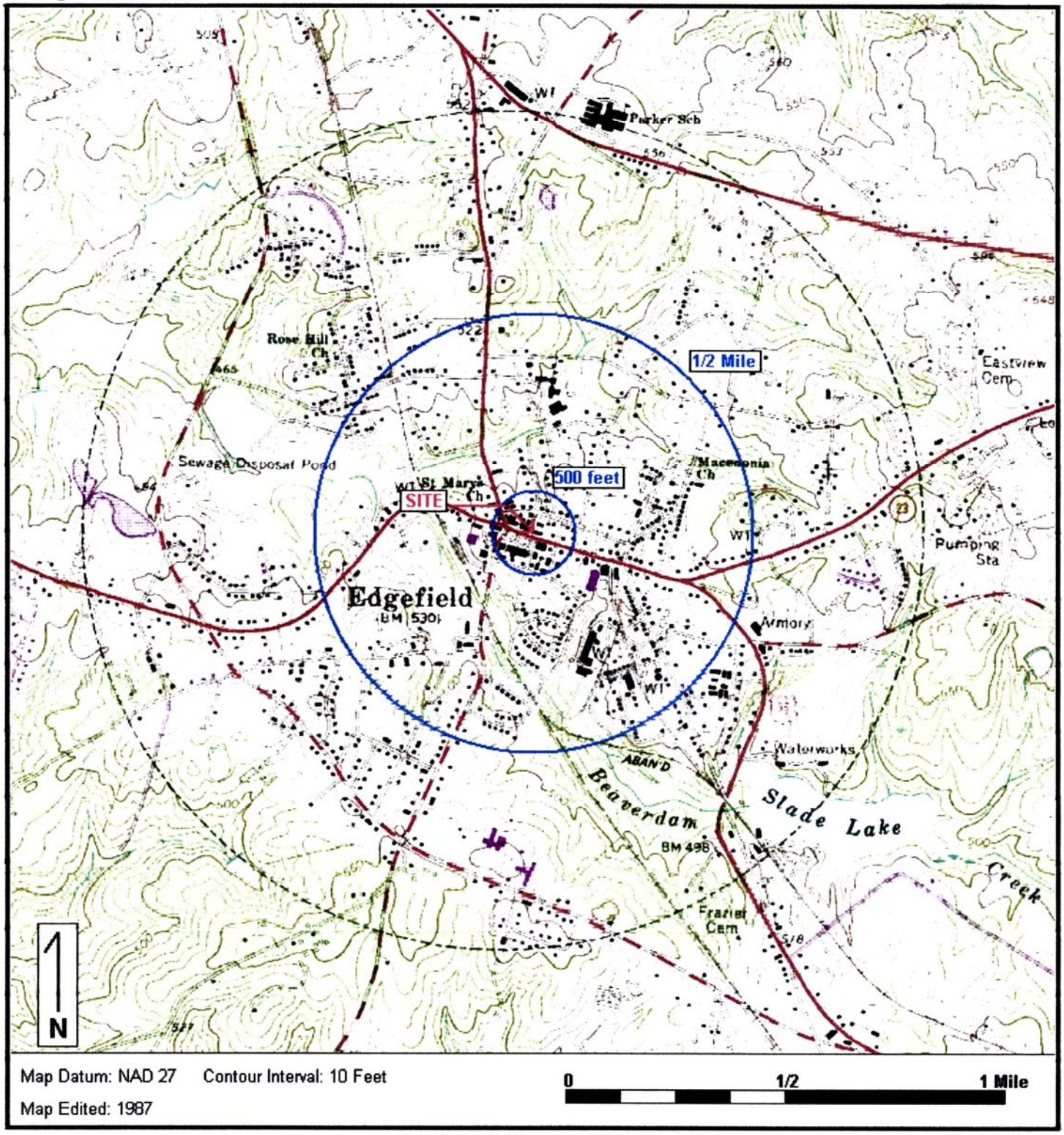
____ Other variations from ACQAP. Please describe below.

Attachments
1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:
   - North Arrow
   - Location of property lines
   - Location of buildings
   - Previous soil sampling locations
   - Previous monitoring well locations
   - Proposed soil boring locations
   - Proposed monitoring well locations
   - Legend with facility name and address, UST permit number, and bar scale
   - Streets or highways (indicate names and numbers)
   - Location of all present and former ASTs and USTs
   - Location of all potential receptors
3. Assessment Component Cost Agreement, SCDHEC Form D-3664

Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

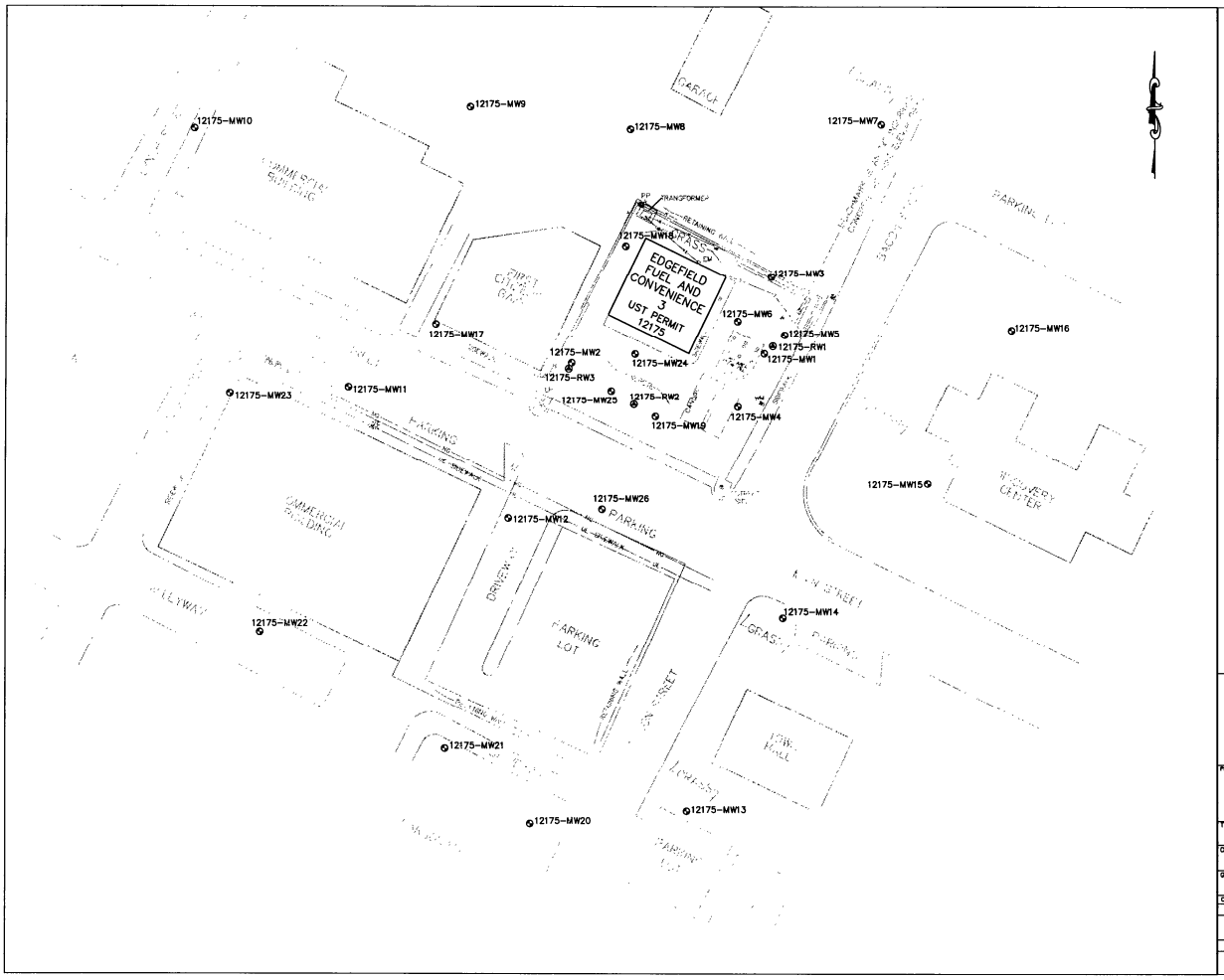
Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC

Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH

Generated By: Kevin Collins



Legend

- UE — Underground Electric Line
- X — Wood Fence Line
- T — Underground Telephone Line
- MH — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- Shallow (Water Table) Monitoring Well
- Recovery Well
- 12175-MW1 — Well ID

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE: 06-10-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	CK
SCALE:	**DATE:**	**JOB NO.:**	**FIGURE NO.:**
1"=50'	6/10/13	14-211651	2

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT COST AGREEMENT

SOUTH CAROLINA

Department of Health and Environmental Control

Underground Storage Tank Management Division

State Underground Petroleum Environmental Response Bank Account

May 15, 2014

Facility Name: Edgefield Fuel & Convenience 3

UST Permit #: 12175 **Cost Agreement #:** _____

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. **Plan Preparation**				
A1. Site-specific Work Plan	1	each	$150.00	$150.00
B1. Tax Map		each	$70.00	$0.00
C1. Tier II or Comp. Plan /QAPP Appendix B		each	$250.00	$0.00
2. A1. **Receptor Survey ***		each	$551.00	$0.00
3. **Survey (500 ft x 500 ft)**				
A1. Comprehensive Survey		each	$1,040.00	$0.00
B. Subsurface Geophysical Survey				
1B. < 10 meters below grade		each	$1,300.00	$0.00
2B. > 10 meters below grade		each	$2,310.00	$0.00
C1. Geophysical UST or Drum Survey		each	$910.00	$0.00
4. **Mob/Demob**				
A1. Equipment		each	$1,020.00	$0.00
B1. Personnel	2	each	$423.00	$846.00
C1. Adverse Terrain Vehicle		each	$500.00	$0.00
5. A1. **Soil Borings (hand auger)***		foot	$5.00	$0.00
6. **Soil Borings (requiring equipment, push technology, etc)* or Field Screening (including water ssample, soil sample, soil gas sample, etc.)***				
AA. Standard		per foot	$15.00	$0.00
C1. Fractured Rock		per foot	$20.20	$0.00
7. A1. **Soil Leachability Model**		each	$60.00	$0.00
8. **Abandonment (per foot)***				
A1. 2" diameter or less		per foot	$3.10	$0.00
B1. Greater than 2" to 6" diameter		per foot	$4.50	$0.00
C1. Dug/Bored well (up to 6 feet diameter)		per foot	$15.00	$0.00
9. **Well Installation (per foot)***				
A1. Water Table (hand augered)		per foot	$10.60	$0.00
B1. Water Table (drill rig)		per foot	$38.00	$0.00
CC. Telescoping		per foot	$50.00	$0.00
DD. Rock Drilling		per foot	$58.00	$0.00
E1. 2" Rock Coring		per foot	$30.90	$0.00
G1. Rock Multi-sampling ports/screens		per foot	$33.40	$0.00
HH. Recovery Well (4" diameter)		per foot	$45.00	$0.00
II. Pushed Pre-packed screen (1.25" dia)		per foot	$15.00	$0.00
J1. Rotosonic (2" diameter)		per foot	$44.00	$0.00
K. Re-develop Existing Well		per foot	$11.00	$0.00
10. **Groundwater Sample Collection / Gauge Depth to Water or Product ***				
A1. Groundwater Purge	29	er well/recept	$60.00	$1,740.00
B1. Air or Vapors		per recepto	$12.00	$0.00
C1. Water Supply		per well/recept	$22.00	$0.00
D1. Groundwater No Purge or Duplicate	2	er well/recept	$28.00	$56.00
E1. Gauge Well only		per well	$7.00	$0.00
F1. Sample Below Product		per well	$12.00	$0.00
G1. Passive Diffusion Bag		each	$26.00	$0.00
H1. Field Blank	4	each	$24.60	$98.40

11. Laboratory Analyses-Groundwater					
A2. BTEXNM+Oxyg's+1,2 DCA+Eth(82	37	per sample	$122.00		$4,514.00
AA1. Lead, Filtered		per sample	$13.80		$0.00
B2. Rush EPA Method 8260B (All of item A.)		per sample	$153.60		$0.00
C2. Trimethal, Butyl, and Isopropyl Benzenes		per sample	$36.40		$0.00
D1. PAH's		per sample	$60.60		$0.00
E1. Lead		per sample	$16.00		$0.00
F1. EDB by EPA 8011	35	per sample	$45.20		$1,582.00
FF1. EDB by EPA Method 8011 Rush		per sample	$68.20		$0.00
G1. 8 RCRA Metals		per sample	$63.40		$0.00
H1. TPH (9070)		per sample	$41.00		$0.00
II. pH		per sample	$5.20		$0.00
J1. BOD		per sample	$20.00		$0.00
PP. Ethanol		per sample	$14.80		$0.00
11. **Analyses-Soil**					
Q1. BTEX + Naphth.		per sample	$64.00		$0.00
R1. PAH's		per sample	$64.04		$0.00
S1. 8 RCRA Metals		per sample	$56.40		$0.00
U1. TPH-DRO (3550C/8015C)		per sample	$40.00		$0.00
V1. TPH- GRO (5030B/8015C)		per sample	$35.96		$0.00
W1. Grain size/hydrometer		per sample	$104.00		$0.00
X1. Total Organic Carbon		per sample	$30.60		$0.00
11. **Analyses-Air**					
Y1. BTEX + Naphthalene		per sample	$216.00		$0.00
11. **Analyses-Free Phase Product**					
Z1. Hydrocarbon Fuel Identification		per sample	$357.00		$0.00
12. **Aquifer Characterization**					
A1. Pumping Test*		per hour	$23.00		$0.00
B1. Slug Test*		per test	$191.00		$0.00
C1. Fractured Rock		per test	$100.00		$0.00
13. A1. **Free Product Recovery Rate Test***		each	$38.00		$0.00
14. **Fate/Transport Modeling**					
A1. Mathematical Model		each	$100.00		$0.00
B1. Computer Model		each	$100.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		each	$300.00		$0.00
B1. Tier II Risk Evaluation		each	$100.00		$0.00
16. A1. **Subsequent Survey***		each	$260.00		$0.00
17. **Disposal (gallons or tons)***					
AA. Wastewater	250	gallon	$0.56		$140.00
BB. Free Product		gallon	$0.50		$0.00
C1. Soil Treatment/Disposal		ton	$60.00		$0.00
D1. Drilling fluids		gallon	$0.42		$0.00
18. **Miscellaneous (attach receipts)**					
		each	$0.00		$0.00
		each	$0.00		$0.00
		each	$0.00		$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		standard			$0.00
21. **IGWA (Use DHEC 3666 form)**		standard			$0.00
22. **Corrective Action (Use DHEC 3667 form)**		PFP Bid			$0.00

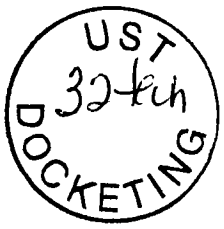
23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A1. 8-hour Event*		each	$1,375.00		$0.00
AA. 24-hour Event*		each	$3,825.00		$0.00
A3. 48-hour Event*		each	$6,265.00		$0.00
A4. 96-hour Event*		each	$12,567.50		$0.00
C1. Off-gas Treatment 8 hour		per event	$122.50		$0.00
C2. Off-gas Treatment 24 hour		per event	$241.50		$0.00
C3. Off-gas Treatment 48 hour		per event	$327.00		$0.00
C4. Off-gas Treatment 96 hour		per event	$780.00		$0.00
D. Site Reconnaissance		each	$203.25		$0.00
E1. Additional Hook-ups		each	$25.75		$0.00
F1. Effluent Disposal		gallon	$0.44		$0.00
G. AFVR Mobilization/Demobilization		each	$391.50		$0.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A1. New GAC System Installation*		each	$1,900.00		$0.00
BB. Refurbished GAC Sys. Install*		each	$900.00		$0.00
C1. Filter replacement/removal*		each	$350.00		$0.00
DD. GAC System removal, cleaning, & refurbishment*		each	$275.00		$0.00
E1. GAC System housing*		each	$250.00		$0.00
F. In-line particulate filter		each	$150.00		$0.00
G1. Additional piping & fittings		foot	$1.50		$0.00
25. **Well Repair**					
A1. Additional Copies of the Report Deli	5	each	$50.00		$250.00
B1. Repair 2x2 MW pad*		each	$50.00		$0.00
C1. Repair 4x4 MW pad*		each	$88.00		$0.00
D1. Repair well vault*		each	$118.00		$0.00
F1. Replace well cover bolts		each	$2.60		$0.00
G. Replace locking well cap & lock		each	$15.00		$0.00
H1. Replace/Repair stick-up*		each	$134.00		$0.00
I1. Convert Flush-mount to Stick-up*		each	$150.00		$0.00
J1. Convert Stick-up to Flush-mount*		each	$130.00		$0.00
K1. Replace missing/illegible well ID plate		each	$12.00		$0.00
Report Prep & Project Management	12%	percent	$9,376.40		$1,125.17
TOTAL					$10,501.57

*The appropriate mobilization cost can be added to complete these tasks, as necessary

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

OCT 15 2014



Re: Groundwater Sampling Directive
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; Cost Agreement # 48639
Release reported December 31, 2008
Site Specific Work Plan received September 4, 2014
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed and approved the referenced work plan submitted on your behalf by Environmental Compliance Services (ECS), Inc. The previous assessment work for this release indicates that petroleum Chemicals of Concern (CoC) are present in the groundwater at concentrations that exceed risk-based screening levels (RBSLs). In order to obtain current groundwater quality data, a groundwater sampling event is necessary. All work should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) Revision 2.0 and must be conducted in compliance with all applicable regulations. A copy of the Agency's QAPP for the UST Management Division is available at http://www.scdhec.gov/environment/docs/QAPP_Rev-2_April2013.pdf.

Groundwater sampling activities at the site should begin immediately upon receipt of this letter. Cost agreement # 48639 has been approved for the amount shown on the enclosed cost agreement form for the sampling of all monitoring wells associated with the release. Groundwater samples should be collected and analyzed for BTEX, naphthalene, MtBE, 1,2-DCA, EDB and the oxygenates. Analyses should be in accordance with Appendix E of the QAPP to include duplicate samples, field and trip blanks.

In accordance with the QAPP, **a weekly status report of the project should be provided via e-mail**. Once the date of the groundwater sampling event is scheduled, please email me the starting date. If any quality assurance problems arise or the scheduled sampling date changes, you must contact me within 24 hours via phone or e-mail. In addition, a discussion of the problem(s) encountered, including quality assurance problems, the actions taken, and the results must be included in the final report submitted to the Agency.

The Monitoring Report, contractor checklist from Appendix K of the QAPP, and invoice are due within 60 days from the date of this letter. The report submitted at the completion of these activities should include the required information outlined in the QAPP. Please note that all applicable South Carolina certification requirements apply to all site rehabilitation activities, laboratory services, and report preparation.

ECS, Inc. can submit an invoice for direct payment from the State Underground Petroleum Environmental Response Bank (SUPERB) Account for pre-approved costs. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Agency is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

Please note, if unnecessary dilutions are completed resulting in reporting limits of individual CoC in excess of RBSLs, the data cannot be used. In those cases, the Agency may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The Agency encourages the use of 'J' values as necessary so the appropriate action can be determined for a release.

The Agency grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The transport and disposal must be conducted in accordance with the QAPP. If the CoC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit #12175. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-0610, by fax at (803) 898-0673, or by e-mail at ridglect@dhec.sc.gov.

Sincerely,

Cathleen Ridgley

Cathleen Ridgley, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement

cc: Environmental Compliance Services, Inc., P O Box 3528, Fort Mill, SC 29708 (w/enc)
Technical File (w/enc)

Approved Cost Agreement 48639

Facility 12175 EDGEFIELD FUEL & CONVENIENCE 3
RIDGLECT
PO Number.

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		A1	SITE SPECIFIC WORK PLAN	1 0000	150.00	150.00
04 MOB/DEMOB						
		B1	PERSONNEL	2 0000	423 00	846.00
10 SAMPLE COLLECTION						
		A1	GROUNDWATER (PURGE)	29 0000	60.00	1,740.00
		D1	GROUNDWATER NO PURGE/DUPLICATE	2.0000	28 00	56 00
		H1	FIELD BLANK	4 0000	24 60	98 40
11 ANALYSES						
	GW GROUNDWATER	A2	BTEXNM+OXYGS+1,2-DCA+ETH-8260B	37.0000	122 00	4,514 00
		F1	EDB BY 8011	35 0000	45 20	1,582 00
17 DISPOSAL						
		AA	WASTEWATER	250 0000	0 56	140 00
19 RPT/PROJECT MNGT & COORDINATIO						
		PRT	REPORT PREPARATION	0 1200	9,376 40	1,125 17
25 WELL REPAIR						
		A1	ADDITIONAL COPIES OF REPORT	5.0000	50 00	250 00
				Total Amount		10,501 57

Document Receipt Information

☐ Hard Copy ☒ CD ☐ Email

Date Received 7-3-15

Permit Number ~~10295~~ 12175

Project Manager Cathleen Ridgley

Name of Contractor ECS

UST Certification Number

Docket Number 33Tech

Scanned

GWM

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

GROUNDWATER MONITORING REPORT

EDGEFIELD FUEL & CONVENIENCE 3
UST PERMIT 12175
EDGEFIELD, SOUTH CAROLINA

Prepared for:
Edgefield Fuel & Convenience, LLC
PO Box 388
Edgefield, SC 29824-0388

Project No. 14-211651
February 2, 2015

Prepared by:
Environmental Compliance Services, Inc.
PO Box 3528
Fort Mill, SC 29708-3528
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

GROUNDWATER MONITORING REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
Post Office Box 3528
Fort Mill, South Carolina 28273-3528

February 2, 2015

Randall Hutchins
Project Manager

David R. Mazorra, PE
SC Licensed Professional Engineer #31409

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APPENDICES

Appendix A: Site Survey (Not Required)
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Appendix C: Tax Map Information (Not Required)
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1.0 INTRODUCTION

This report presents the results of the corrective action activities conducted at the Edgefield Fuel & Convenience 3 site between December 22, 2014 and January 23, 2015. The activities were conducted in accordance with the Underground Storage Tank (UST) Quality Assurance Program Plan (QAPP) Revision 2.0, and Cost Agreement Number 48639 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated October 15, 2014.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc. (ECS)
Address: Post Office Box 3528
Fort Mill, South Carolina 29708
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 CERTIFIED LABORATORY INFORMATION

Company Name: Pace Analytical Services, Inc.
Address: 9800 Kincey Avenue, Suite 100
Huntersville, North Carolina 28078
SC Certification: 99006001

1.6 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	2BA

UST Permit 12175

UST	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Regular Unleaded Gasoline	10/11/1989	Yes	Not applicable
2	3,000	Regular Unleaded Gasoline	10/11/1989	Yes	Not applicable
3	3,000	Premium Unleaded Gasoline	10/11/1989	Not In Use	Not applicable

The site operates as Edgefield Fuel & Convenience 3, a retail gasoline and convenience store. The site previously operated as Amoco Food Mart 3, also a retail petroleum and convenience store. A release from the UST system at the site was reported to the SCDHEC on December 31, 2008. Three USTs (one 3,000-gallon premium unleaded gasoline UST and two 3,000-gallon regular unleaded gasoline USTs) were listed at the site and the premium unleaded gasoline UST was not in use during these activities.

1.7 REGIONAL GEOLOGY/HYDROGEOLOGY

The area is located in the Modoc shear zone of the Piedmont physiographic province. The Modoc zone is an example of a ductile fault in the Eastern Piedmont fault system (zone). The Modoc zone separates the high grade and older Savannah River terrane (Kiokee belt) from the low-grade metavolcanics and metasediments of the Carolina terrane (Slate belt) to the northwest. The Modoc shear zone was interpreted to be of late Paleozoic. Carolina Terrane consists of upper Precambrian to Cambrian greenschist facies metasedimentary and metavolcanic rocks intruded by numerous granitic and gabbroic plutons ranging in age from 265 to 650 million years. A mantle of residual soil and saprolite typically overlie the crystalline rocks of the Carolina Terrane. The thickness of the mantle has ranges from approximately six to 60 feet, although it apparently has been absent in places and thicker than 60 feet in others. The surface layers are reportedly composed chiefly of sandy clay. The clay content of most saprolites typically ranges from 10 to 25 percent, with some containing as little as three percent and others as much as 70 percent.

The mantle that covers the underlying fractured bedrock in most places provides an intergranular medium through which recharge into, and discharge of water from, the fractured rocks commonly occur. As a result, groundwater flow occurs within a composite two-media system. The top of the system is the water table surface, which is typically located within the saprolite. The fractured bedrock is expected to generally grade downward into unfractured rock below a depth of approximately 300 feet. The base of the groundwater system is therefore indistinct.

2.0 RECEPTOR SURVEY & SITE DATA

2.1 RECEPTOR SURVEY

The Edgefield Fuel & Convenience 3 site is located in a primarily business and commercial area within the town limits of Edgefield, South Carolina, see **Figure 1**. The site is bordered to the north by an access road and parking lot for the west abutting Carolina First Bank. The site is bordered to the east by Bacon Street followed by the South Carolina National Heritage Corridor Discovery Center. The site is bordered to the south by Main Street (US Highway 25) followed by a parking lot for the downtown district of Edgefield. Edgefield Town Hall is located diagonally across the cross streets of Bacon Street and Main Street.

Potable water to the site and surrounding properties is provided by the Edgefield County Water and Sewer Authority. The Edgefield County Water and Sewer Authority utilize potable water from portions of the Savannah River located within the Savannah-Salkehatchie Basin. One private water supply well was previously identified within a 1,000-foot radius of the site. The private water supply well is located approximately 860 feet southeast of the active site UST basin at the community college; however, this well is not in operation.

One wet weather drainage feature was previously identified approximately 1,000 feet southeast of the site. This wet weather drainage feature flows in a general east to west direction before a turn and then flows toward the southwest. The wet weather drainage feature drains into the Beaverdam Creek. The two closest surface water bodies previously identified in relation to the site were Beaverdam Creek and a tributary to Beaverdam Creek. Beaverdam Creek is located approximately 1,375 feet southwest of the site and flows in a general northwest to southeast direction. The tributary to Beaverdam Creek is located approximately 1,380 feet northwest of the site and flowed in a general northeast to southwest direction.

Underground utility conduits previously marked by area utility companies include a water meter for a municipal water line, electrical lines, and a telephone line. Additionally, a sanitary sewer cleanout for a sanitary sewer line and drop inlets for a storm drainage system are located on-site. The water meter is located on the eastern side of the property. Electrical lines are located along the eastern side of the property beneath the sidewalk and along the northern property limits of the site. A telephone line is located along the northeastern portion of the site. The sewer cleanout is located on the east side of the site building. The storm drains are located along Bacon Street next to the site property limits. A natural gas line and municipal water line are located across Main Street from the site. A Site Plan showing the utilities and the current UST system is included as **Figure 2**.

2.2 SITE GEOLOGY/HYDROGEOLOGY

The site is located approximately 525 feet above mean sea level (MSL) with an approximate total site topographic relief of three feet. The surface at the site is generally covered by asphalt, and some smaller areas of concrete and grass. The active site USTs were covered with concrete. The boring logs provide a general characterization of the geological formations encountered at the location of each monitoring well installed during assessment activities. In general, the site subsurface is characterized by asphalt and concrete ranging from 4 to 6 inches in thickness followed by fill material consisting of aggregate base course (ABC) stone and clayey to silty sand to depths of approximately 2 feet below ground surface (bgs). Native soils (residuum), below the fill material, are characterized as tan to brown to red silty sand and silty clay to depths of 6 feet bgs. Soils encountered in the boreholes 6 feet bgs are characterized as yellow to orange and tan to gray silty sand to the termination depths of the boreholes.

The percentages of sand, silt and clay in a soil sample collected from SB-2 (12175-MW1) at a depth of 20 feet during Tier I assessment activities (March 2009) were 64.1%, 24.5%, and 11.4%, respectively. The percentages of gravel, sand, and combination of silt & clay in the soil sample collected during Tier II activities (April 2010) from on-site monitoring well 12175-MW6 at a depth of 20 feet were 0.6%, 52.2%, and 47.2%, respectively. A hydrometer analysis was not performed on the soil sample collected from monitoring well 12175-MW6 to determine the percentages of silt and clay. Based on the sieve and hydrometer analyses, the site was underlain at shallow depths by clayey silty sand.

Historical depths to groundwater measured in shallow monitoring wells at the site ranged from 18.09 feet bgs (12175-MW5 in May 2010) to 25.61 feet bgs (12175-MW2 in October 2010 with 3.65 feet of free product), and averaged 22.24 feet bgs in on-site monitoring wells over time. Historical groundwater elevation data is presented in **Table 2**. Groundwater beneath the site was historically reported to flow radially from the northwest to south beneath the site.

Slug tests were previously performed on shallow monitoring wells 12175-MW2 and 12175-MW3 in March 2009 during Tier I activities and shallow monitoring wells 12175-MW6 and 12175-MW11 in May 2010 during Tier II activities. Hydraulic conductivities for these four shallow monitoring wells, calculated using the Bouwer and Rice method, ranged between 0.11 feet per day (ft/day) and 0.73 ft/day. Seepage velocities ranged between 1.66 feet per year (ft/yr) to 3.81 ft/yr.

3.0 ASSESSMENT INFORMATION

3.1 SOIL ASSESSMENT

Soil assessment was not required for the scope of work outlined in the October 15, 2014 directive.

3.2 GROUNDWATER FIELD SCREENING

Groundwater field screening was not required for the scope of work outlined in the October 15, 2014 directive.

3.3 MONITORING WELL INFORMATION

Monitoring well installation was not required for the scope of work outlined in the October 15, 2014 directive.

3.4 GROUNDWATER ASSESSMENT

3.4.1 Product/Water Level Measurements

Twenty-nine wells (12175-MW1 through 12175-MW26 and 12175-RW1 through 12175-RW3) were gauged for depths to free phase product (where present), depths to groundwater, and total well depths on December 22, 2014. A malfunction occurred with the interface probe on December 22, 2014 which prevented an accurate measurement of product thickness in wells with free phase product. The detection of free phase product was confirmed visually by use of a polyethylene bailer on December 22, 2014. The wells detected with free phase product on December 22, 2014 were re-measured for depths to free phase product and groundwater on January 23, 2015. On January 23, 2015, free phase product was detected in wells 12175-MW1 (thickness of 1.40 feet), 12175-MW2 (thickness of 0.80 feet), 12175-MW4 (thickness of 0.55 feet), 12175-MW5 (thickness of 0.35 feet), 12175-MW19 (thickness of 0.75 feet), 12175-MW25 (thickness of 2.00 feet), and 12175-RW2 (thickness of 2.50 feet).

Groundwater elevation maps are useful tools for identifying subsurface flow paths and the horizontal hydraulic gradient. In order to have the best representative data for a groundwater elevation map, the depth to water measurements should be made in a short period of time, typically one to two days. As such, only the data collected between December 2 and 3, 2014 was used for the horizontal hydraulic gradient calculations and contouring on the groundwater elevation map.

On December 22, 2014, the groundwater elevations measured in the shallow monitoring wells (screened intervals between 10 and 34 feet bgs), relative to a temporary benchmark with an assumed datum of 99.50 feet, ranged from 79.40 feet (12175-MW16) to 72.59 feet (12175-MW20). Based on these data, the groundwater flow direction was radially from the west-northwest to the east with a slightly more southward trending flow further south of the site.

The horizontal hydraulic gradient is estimated based on the change in hydraulic head per unit distance, calculated by using the formula $i = (h_2-h_1)/d$, referenced from the "EPA On-line Tools for Site Assessment Calculation" website <http://www.epa.gov/athens/learn2model/part-two/onsite/gradient.html>. In this calculation, i is the gradient, h is the hydraulic head at the up gradient monitoring well (h_1) and down gradient monitoring well (h_2), and d is the distance between the down gradient monitoring well and the up gradient monitoring well. The horizontal

hydraulic gradient is 0.00377 ft/ft between monitoring wells 12175-MW16 (off-site, hydraulically upgradient, not impacted) and 12175-MW17 (off-site, hydraulically downgradient, impacted). The horizontal hydraulic gradient is 0.0115 ft/ft between monitoring wells 12175-MW24 (on-site, impacted) and 12175-MW26 (off-site, hydraulically downgradient, impacted). The horizontal hydraulic gradient is 0.00316 ft/ft between monitoring wells 12175-MW24 (on-site, impacted) and 12175-MW18 (on-site, hydraulically downgradient, impacted). Historical groundwater elevation data is presented in **Table 2**. A groundwater elevation map for site monitoring wells is included as **Figure 5**.

3.4.2 Water Sampling and Analyses

Twenty-two monitoring wells (12175-MW3, 123175-MW6 through 12175-MW18, 12175-MW20 through 12175-MW24, 12175-MW26, 12175-RW1, and 12175-RW3) were sampled between December 22 & 23, 2014. Groundwater samples were not collected from monitoring wells 12175-MW1, 12175-MW2, 12175-MW4, 12175-MW5, 12175-MW19, 12175-MW25, and recovery well 12175-RW2 due to the presence of free phase product.

These 22 monitoring wells (12175-MW3, 123175-MW6 through 12175-MW18, 12175-MW20 through 12175-MW24, 12175-MW26, 12175-RW1, and 12175-RW3) were purged prior to sample collection using a new, disposable polyethylene bailer while wearing new, disposable nitrile gloves. Purging was accomplished by removing three to five well volumes and in-field groundwater quality parameters were stabilized or until the well was bailed dry and allowed to recharge.

Groundwater samples collected were containerized in laboratory-prepared glass bottles, packed on ice, and transported to Pace Analytical Services, Inc. (Huntersville, NC), a South Carolina certified laboratory. Standard chain-of-custody procedures were maintained, as documented in **Appendix B**.

A duplicate sample identified as Dup1 was collected from 12175-MW12 within 5 minutes of 12175-MW12 groundwater sample collection. A second duplicate sample, identified as Dup2, was collected from 12175-MW6 within 5 minutes of 12175-MW6 groundwater sample collection. The duplicate samples were assigned unique identification names with no time listed on the chain of custody to avoid potential laboratory analytical bias. The duplicate samples were identified in the field book. Two field blanks were also collected, one each day, during water sampling activities for quality assurance and quality control. Trip blanks, one set per cooler, were included for quality assurance and quality control.

Twenty-eight water samples (22 monitoring wells, two duplicates, two field blanks, and two trip blanks) were analyzed for benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX compounds), naphthalene, 1,2-dichloroethane (1,2-DCA), methyl tertiary butyl ether (MTBE), tertiary amyl alcohol (TAA), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), tertiary butyl formate (TBF), diisopropyl ether (DIPE), ethanol, ethyl tertiary butyl ether (ETBE), and 3,3-dimethyl-1-butanol by Environmental Protection Agency (EPA) Method 8260. Twenty-six water samples (22 monitoring wells, two duplicates, and two field blanks) were analyzed for ethylene dibromide (EDB) by EPA Method 8011.

3.4.3 Groundwater Analytical Data

Analytical results were compared to the Risk-Based Screening Levels (RBSLs), as defined in Appendix B of SCDHEC, Department of Health and Environmental Control, Bureau of Land and Waste Management, Underground Storage Tank Program, May 15, 2001, *South Carolina Risk-*

Based Corrective Action for Petroleum Release, and the Action Levels (ALs), as defined in SCDHEC, Department of Health and Environmental Control, Bureau of Land and Waste Management, Underground Storage Tank Program, October 22, 2008, *Certification of the Oxygenate Compounds*.

Detectable concentrations of benzene above the RBSL were reported in groundwater samples collected from on-site wells 12175-MW3, 12175-MW6, 12175-MW18, 12175-MW24, 12175-RW1 and 12175-RW3, and off-site wells 12175-MW11, 12175-MW12, 12175-MW17, 12175-MW23, and 12175-MW26.

Detectable concentrations of toluene and ethylbenzene above their respective RBSL were reported in groundwater samples collected from on-site wells 12175-MW18, 12175-MW24, 12175-RW1 and 12175-RW3, and off-site well 12175-MW17.

Detectable concentrations of total xylenes above the RBSL were reported in groundwater samples collected from on-site wells 12175-MW18, 12175-MW24, 12175-RW1 and 12175-RW3, and off-site well 12175-MW17.

Detectable concentrations of MTBE above the RBSL were reported in groundwater samples collected from on-site wells 12175-MW6, 12175-MW24 and 12175-RW1, and off-site wells 12175-MW11, 12175-MW17, and 12175-MW26.

Detectable concentrations of naphthalene above the RBSL were reported in groundwater samples collected from on-site wells 12175-MW6, 12175-MW18, 12175-MW24, and 12175-RW1, and off-site wells 12175-MW11, 12175-MW17, and 12175-MW26.

Detectable concentrations of EDB above the RBSL were reported in groundwater samples collected from on-site well 12175-RW1, and off-site well 12175-MW17.

A detectable concentration of 1,2-DCA above the RBSL was reported in the groundwater sample collected from off-site monitoring well 12175-MW26.

Detectable concentrations of TAA above the AL were reported in groundwater samples collected from on-site wells 12175-MW6, 12175-MW18, 12175-MW24, and 12175-RW1, and off-site wells 12175-MW11, 12175-MW12, 12175-MW17, and 12175-MW26.

Detectable concentrations of TAME above the AL were reported in groundwater samples collected from on-site well 12175-RW1, and off-site well 12175-MW17.

A detectable concentration of TBA above the AL was reported in the groundwater sample collected from on-site monitoring well 12175-RW1.

Chemicals of Concern were not detected in the field blanks or trip blanks from the December 2014 groundwater sampling event with one exception. Select compounds were reported in the field blank identified as 12175-FB2; however, the laboratory flagged these detections with a qualifier indicating results were biased due to carryover from the previously analyzed sample.

Historical groundwater analytical data are presented in **Table 3**. A groundwater quality map based on the December 2014 data is included as **Figure 4**. Groundwater Sampling Field Data Sheets have been included in **Appendix B**. The laboratory report for groundwater samples collected during this assessment is included in **Appendix B**. A quality assurance and quality control evaluation is also included in **Appendix B**.

Access agreements were previously obtained from off-site property owners for monitoring well installations and groundwater sampling events. As part of the access agreements, laboratory results of groundwater samples collected from off-site monitoring wells were forwarded to those off-site property owners with monitoring wells. Copies of the letters with laboratory results are included in **Appendix J**.

3.4.4 Aquifer Characterization

Aquifer characteristics determinations were not required for the scope of work outlined in the October 15, 2014 directive.

3.5 INVESTIGATIVE DERIVED WASTE

Investigative derived waste (IDW) generated during these activities was placed in three 55-gallon drums for disposal by a licensed facility. A copy of the disposal manifest for three drums of water is included in **Appendix G**. The manifest indicates 165 gallons as the total quantity for purge water on line one of the manifest. The total quantity reported in gallons, however, is inaccurate and was based on total capacity of the three drums. The water quantity was subsequently reported to ECS as 153 gallons of water (from decontamination of equipment and purge water) by the designated facility.

4.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

4.1 SUMMARY

- A groundwater sampling event was completed between December 22, 2014 and December 23, 2015 for site monitoring wells (12175-MW1 through 12175-MW26 and 12175-RW1 through 12175-RW3).
- Free phase product was visually detected in monitoring wells 12175-MW1, 12175-MW2, 12175-MW4, 12175-MW5, 12175-MW19, 12175-MW25, and recovery well 12175-RW2 during the December 22, 2014 gauging event.
- Free phase product thickness were confirmed in monitoring wells 12175-MW1 (thickness of 1.40 feet), 12175-MW2 (thickness of 0.80 feet), 12175-MW4 (thickness of 0.55 feet), 12175-MW5 (thickness of 0.35 feet), 12175-MW19 (thickness of 0.75 feet), 12175-MW25 (thickness of 2.00 feet), and recovery well 12175-RW2 (thickness of 2.50 feet) on January 23, 2015.
- Detectable concentrations of benzene above the RBSL were reported in groundwater samples collected from on-site wells 12175-MW3, 12175-MW6, 12175-MW18, 12175-MW18, 12175-MW24, 12175-RW1 and 12175-RW3, and off-site wells 12175-MW11, 12175-MW12, 12175-MW17, 12175-MW23, and 12175-MW26.
- Detectable concentrations of toluene and ethylbenzene above their respective RBSL were reported in groundwater samples collected from on-site wells 12175-MW18, 12175-MW24, 12175-RW1 and 12175-RW3, and off-site well 12175-MW17.
- Detectable concentrations of total xylenes above the RBSL were reported in groundwater samples collected from on-site wells 12175-MW18, 12175-MW24, 12175-RW1 and 12175-RW3, and off-site well 12175-MW17.
- Detectable concentrations of MTBE above the RBSL were reported in groundwater samples collected from on-site wells 12175-MW6, 12175-MW24 and 12175-RW1, and off-site wells 12175-MW11, 12175-MW17, and 12175-MW26.
- Detectable concentrations of naphthalene above the RBSL were reported in groundwater samples collected from on-site wells 12175-MW6, 12175-MW18, 12175-MW24, and 12175-RW1, and off-site wells 12175-MW11, 12175-MW17, and 12175-MW26.
- Detectable concentrations of EDB above the RBSL were reported in groundwater samples collected from on-site well 12175-RW1, and off-site well 12175-MW17.
- A detectable concentration of 1,2-DCA above the RBSL was reported in the groundwater sample collected from off-site monitoring well 12175-MW26.
- Detectable concentrations of TAA above the AL were reported in groundwater samples collected from on-site wells 12175-MW6, 12175-MW18, 12175-MW24, and 12175-RW1, and off-site wells 12175-MW11, 12175-MW12, 12175-MW17, and 12175-MW26.
- Detectable concentrations of TAME above the AL were reported in groundwater samples collected from on-site well 12175-RW1, and off-site well 12175-MW17.
- A detectable concentration of TBA above the AL was reported in the groundwater sample collected from on-site monitoring well 12175-RW1.
- A total of 153 gallons of purge water generated as IDW during this groundwater sampling event was temporarily stored on-site before being transported to a permitted treatment facility for disposal.

4.2 CONCLUSIONS

- Based on the December 22, 2014 groundwater level measurements, groundwater flow was radially from the west-northwest to the east with a slightly more southward trending flow further south of the site.

- Free phase product continues to be detected at the site from wells located at the UST system and westward across the front of the site.
- Based on the laboratory analytical results from the December 2014 groundwater sampling event, the distribution of dissolved-phase petroleum compounds in groundwater at concentrations above RBSLs/ALs was limited to on-site wells 12175-MW3, 12175-MW6, 12175-MW18, 12175-MW19, 12175-MW24, 12175-RW1 and 12175-RW3, and off-site wells 12175-MW11, 12175-MW12, 12175-MW17, 12175-MW23, and 12175-MW26.
- Benzene in groundwater is not completely defined to levels below the RBSL west of the site by monitoring well 12175-MW23, and further west-northwest of 12175-MW17 along Main Street.

4.3 RECOMMENDATIONS

- ECS recommends continuing with extended aggressive fluid vapor recovery (AFVR) events with connections to monitoring wells 12175-MW1, 12175-MW2, 12175-MW4, 12175-MW5, 12175-MW17, 12175-MW19, 12175-MW25, and recovery wells 12175-RW1, 12175-RW2, and 12175-RW3 to remove free phase product when product may be present, and to assist with removal of dissolved-phase petroleum hydrocarbon compounds in groundwater and vapor phase hydrocarbons.
- ECS recommends conducting a groundwater sampling event to evaluate the effectiveness of the AFVR event, and to continue monitoring CoC in groundwater.
- Additional monitoring wells appear appropriate to delineate CoC above RBSLs in groundwater.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience, LLC for specific application to the referenced site in Edgefield County, South Carolina. The assessment was conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

5.1 DATA VERIFICATION

The Project Verifier/Quality Assurance Manager has reviewed this report and provided any additional comments if applicable in **Appendix K**.

TABLES

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW1	35	20-35	98.51	12/17/04	22.13	23.68	1.55	75.99
				05/10/10	17.83	21.00	3.17	79.89
				10/20/10	19.38	25.07	5.69	77.71
				09/12/11	20.59	26.35	5.76	76.48
				08/16/13	19.33	22.72	3.39	78.33
				01/09/14	19.37	22.77	3.40	78.29
				01/23/15	18.70	20.10	1.40	79.46
12175-MW2	34	19-34	100.42	12/17/04	---	24.55	---	75.87
				05/10/10	20.27	22.73	2.46	79.54
				10/20/10	21.96	25.61	3.65	77.55
				09/12/11	23.01	27.06	4.05	76.40
				08/16/13	22.35	22.67	0.32	77.99
				01/09/14	22.08	22.91	0.83	78.13
				01/23/15	21.10	21.90	0.80	79.12
12175-MW3	34	19-34	100.44	12/17/04	---	24.38	---	76.06
				05/10/10	---	20.54	---	79.90
				10/20/10	---	22.71	---	77.73
				09/12/11	---	23.90	---	76.54
				08/16/13	---	22.32	---	78.12
				01/09/14	---	22.11	---	78.33
				12/22/14	---	21.90	---	78.54
12175-MW4	29	19-29	98.61	05/10/10	---	18.92	---	79.69
				10/20/10	---	21.04	---	77.57
				09/12/11	---	22.22	---	76.39
				08/16/13	20.49	21.49	1.00	77.87
				01/09/14	20.27	21.15	0.88	78.12
				01/23/15	19.30	19.85	0.55	79.17
12175-MW5	29	19-29	98.05	05/10/10	---	18.09	---	79.96
				10/20/10	20.22	20.57	0.35	77.74
				09/12/11	20.66	24.05	3.39	76.54
				08/16/13	19.39	21.83	2.44	78.05
				01/09/14	19.24	20.96	1.72	78.38
				01/23/15	18.55	18.90	0.35	79.41

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW6	29	19-29	99.82	05/10/10	---	19.94	---	79.88
				10/20/10	---	22.09	---	77.73
				09/12/11	---	23.27	---	76.55
				08/16/13	---	21.75	---	78.07
				01/09/14	---	21.51	---	78.31
				12/22/14	---	21.24	---	78.58
12175-MW7	20	10-20	93.32	05/10/10	---	13.51	---	79.81
				10/20/10	---	15.91	---	77.41
				09/12/11	---	17.00	---	76.32
				08/16/13	---	15.18	---	78.14
				01/09/14	---	14.95	---	78.37
				12/22/14	---	15.10	---	78.22
12175-MW8	27	17-27	100.59	05/10/10	---	21.61	---	78.98
				10/20/10	---	23.83	---	76.76
				09/12/11	---	24.89	---	75.70
				08/16/13	---	22.87	---	77.72
				01/09/14	---	22.73	---	77.86
				12/22/14	---	23.07	---	77.52
12175-MW9	27	17-27	97.55	05/10/10	---	18.81	---	78.74
				10/20/10	---	21.12	---	76.43
				09/12/11	---	22.16	---	75.39
				08/16/13	---	20.03	---	77.52
				01/09/14	---	19.75	---	77.80
				12/22/14	---	20.30	---	77.25
12175-MW10	30	20-30	101.31	05/10/10	---	22.88	---	78.43
				10/20/10	---	24.90	---	76.41
				09/12/11	---	25.87	---	75.44
				08/16/13	---	23.86	---	77.45
				01/09/14	---	23.74	---	77.57
				12/22/14	---	24.10	---	77.21
12175-MW11	31	21-31	101.65	05/10/10	---	22.16	---	79.49
				10/20/10	---	24.10	---	77.55
				09/12/11	---	25.25	---	76.40
				08/16/13	---	23.69	---	77.96
				01/09/14	---	23.61	---	78.04
				12/22/14	---	23.41	---	78.24

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW12	30	20-30	100.55	05/10/10	---	21.78	---	78.77
				10/20/10	---	23.75	---	76.80
				09/12/11	---	25.00	---	75.55
				08/16/13	---	23.35	---	77.20
				01/09/14	---	23.24	---	77.31
				12/22/14	---	22.98	---	77.57
12175-MW13	25	15-25	93.20	05/10/10	---	17.82	---	75.38
				10/20/10	---	20.26	---	72.94
				09/12/11	---	21.60	---	71.60
				08/16/13	---	19.20	---	74.00
				01/09/14	---	18.87	---	74.33
				12/22/14	---	19.44	---	73.76
12175-MW14	30	20-30	100.05	05/10/10	---	22.47	---	77.58
				10/20/10	---	24.77	---	75.28
				09/12/11	---	25.97	---	74.08
				08/16/13	---	24.06	---	75.99
				01/09/14	---	23.70	---	76.35
				12/22/14	---	23.90	---	76.15
12175-MW15	27	17-27	98.47	05/10/10	---	18.81	---	79.66
				10/20/10	---	21.16	---	77.31
				09/12/11	---	22.10	---	76.37
				08/16/13	---	20.66	---	77.81
				01/09/14	---	20.24	---	78.23
				12/22/14	---	20.09	---	78.38
12175-MW16	20	10-20	93.01	05/10/10	---	12.34	---	80.67
				10/20/10	---	14.97	---	78.04
				09/12/11	---	16.15	---	76.86
				08/16/13	---	14.68	---	78.33
				01/09/14	---	14.28	---	78.73
				12/22/14	---	13.61	---	79.40
12175-MW17	28	18-28	101.09	10/20/10	---	23.52	---	77.57
				09/12/11	---	24.67	---	76.42
				08/16/13	22.62	24.66	2.04	77.96
				01/09/14	---	23.00	---	78.09
				12/22/14	---	22.82	---	78.27

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW18	28	18-28	101.51	10/20/10	---	24.01	---	77.50
				09/12/11	---	25.14	---	76.37
				08/16/13	---	23.45	---	78.06
				01/09/14	---	23.33	---	78.18
				12/22/14	---	23.31	---	78.20
12175-MW19	28	18-28	100.01	10/20/10	22.35	23.19	0.84	77.45
				09/12/11	22.57	27.18	4.61	76.29
				08/16/13	20.73	23.35	2.62	78.63
				01/09/14	21.58	23.25	1.67	78.01
				01/23/15	20.05	20.80	0.75	79.77
12175-MW20	27	17-27	91.80	10/20/10	---	20.28	---	71.52
				09/12/11	---	21.66	---	70.14
				08/16/13	---	18.98	---	72.82
				01/09/14	---	18.42	---	73.38
				12/22/14	---	19.21	---	72.59
12175-MW21	29	19-29	94.30	10/20/10	---	21.70	---	72.60
				09/12/11	---	22.94	---	71.36
				08/16/13	---	20.70	---	73.60
				01/09/14	---	20.33	---	73.97
				12/22/14	---	20.81	---	73.49
12175-MW22	30	20-30	99.82	10/20/10	---	25.99	---	73.83
				09/12/11	---	26.94	---	72.88
				08/16/13	---	24.04	---	75.78
				01/09/14	---	23.98	---	75.84
				12/22/14	---	25.15	---	74.67
12175-MW23	31	21-31	102.29	10/20/10	---	24.86	---	77.43
				09/12/11	---	25.99	---	76.30
				08/16/13	20.87	24.35	3.48	80.55
				01/09/14	---	24.32	---	77.97
				12/22/14	---	24.21	---	78.08
12175-MW24	30	20-30	100.23	08/16/13	---	22.07	---	78.16
				01/09/14	---	22.08	---	78.15
				12/22/14	---	21.85	---	78.38

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)
12175-MW25	30	20-30	99.95	08/16/13	21.40	23.87	2.47	77.93
				01/09/14	21.22	23.75	2.53	78.10
				01/23/15	19.90	21.90	2.00	79.55
12175-MW26	30	20-30	99.89	08/16/13	---	22.81	---	77.08
				01/09/14	---	22.68	---	77.21
				12/22/14	---	22.45	---	77.44
12175-RW1	30	20-30	98.05	08/16/13	---	19.80	---	78.25
				08/16/13	19.64	19.67	0.03	78.40
				04/03/14	18.31	18.35	0.04	79.73
				12/22/14	---	19.38	---	78.67
12175-RW2	30	20-30	100.05	08/16/13	20.75	20.87	0.12	79.27
				08/16/13	21.16	24.18	3.02	78.14
				04/03/14	19.79	22.38	2.59	79.61
				01/23/15	20.00	22.50	2.50	79.43
12175-RW3	30	20-30	100.16	08/16/13	---	22.16	---	78.00
				01/09/14	---	22.00	---	78.16
				12/22/14	---	21.78	---	78.38

Notes:
Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
Groundwater elevation adjusted for the presence of free phase product with an assumed density of 0.75g/cm3, where present.
Well depths and screen lenghts based on well construction records referencing ground surface.
Measured depths to fluids reference top of casing as measuring point.

TABLE 3
GROUNDWATER ANALYTICAL DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
RBSL/Action Level		5	1,000	700	10,000	40	25	0.05	5	15	240	128	1,400	NE	150	10,000	47	NE
12175-MW1	03/04/09	**FREE PHASE PRODUCT**																
	05/10/10	**FREE PHASE PRODUCT**																
	10/20/10	**FREE PHASE PRODUCT**																
	09/12/11	**FREE PHASE PRODUCT**																
	12/22/14	**FREE PHASE PRODUCT**																
12175-MW2	03/04/09	**4,970**	**7,470**	**1,020**	4,400	**183**	**142**	**0.46**	NR	<5.0	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	**FREE PHASE PRODUCT**																
	10/20/10	**FREE PHASE PRODUCT**																
	09/12/11	**FREE PHASE PRODUCT**																
	12/22/14	**FREE PHASE PRODUCT**																
12175-MW3	03/04/09	**7.9**	33.9	<5.0	12.8	<5.0	<5.0	<0.019	NR	<5.0	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	<5.0	4.5J	<5.0	5.7J	<5.0	<5.0	<0.020	<5.0	<5.0	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/21/10	**7.5**	<5.0	<5.0	4.7J	<5.0	3.6J	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**21.4**	<1	<0.5	3.5	<1	<5	<0.0189	<0.5	NR	<20	<1	2.6 I	<160	<1	<800	<1	<40
	12/23/14	**43.1**	1.7 J	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW4	05/10/10	**411**	29.8	8.3	31.9J	**256**	<5.0	<0.020	<5.0	**17.6**	**3,120**	11.8	322	<50.0	<5.0	<200	<10.0	<100
	10/21/10	**1,360**	87.5	108	121.6	**630**	15.2	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**626**	10.6	9.5	19.2	**862**	<25	<0.019	<2.5	NR	**7,600**	30	350	<800	4.4 I	<4,000	<5	<200
	12/22/14	**FREE PHASE PRODUCT**																
12175-MW5	05/10/10	**20,900**	**30,900**	**1,090**	**12,100**	**11,400**	**316**	**0.93**	<5.0	**21.7**	**25,300**	**1,620**	<100	<50.0	131	<200	**47.1**	<100
	10/20/10	**FREE PHASE PRODUCT**																
	09/12/11	**FREE PHASE PRODUCT**																
	12/22/14	**FREE PHASE PRODUCT**																
12175-MW6	05/10/10	**270**	200	20.1	213.3	**59.4**	<5.0	<0.019	<5.0	9.4	**757**	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/21/10	**1,830**	**1,140**	110	677	**186**	9.1J	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**1,500**	351	19.5	353	**155**	<50	<0.0187	<5	NR	<200	6.7 I	<200	<1,600	<10	<8,000	<10	<400
	12/23/14	**2,350**	183	483	263	**459**	**26.6**	<0.019	<25.0	NR	**13,600**	<50.0	1,050	<250	<25.0	<1,000	<50.0	<500
12175-MW7	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**59.3**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0187	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW8	05/10/10	<5.0	3.7J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**57.2**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	1.9 I	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100

TABLE 3
GROUNDWATER ANALYTICAL DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
RBSL/Action Level		5	1,000	700	10,000	40	25	0.05	5	15	240	128	1,400	NE	150	10,000	47	NE
12175-MW9	05/10/10	<5.0	3.1J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**34.4**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0185	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW10	05/10/10	<5.0	1.8J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**41.6**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW11	05/10/10	**1,820**	522	33.1	522	**125**	**31.9**	**0.097**	<5.0	**40.5**	**310**	100	<100	<50.0	4.7J	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	4.4J	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**1,110**	**1,140**	155	3,610	<10	<50	<0.0191	<5	NR	<200	19.3	<200	<1,600	<10	<8,000	<10	<400
	12/22/14	**1,980**	519	62.7	2,470	**161**	**251**	<0.020	<5.0	NR	**1,340**	94.0	200	<50.0	5.9	<200	<10.0	<100
12175-MW12	05/10/10	**75.7**	3.5J	9.4	34.0J	<5.0	12.0	<0.020	<5.0	**61.5**	157	<10.0	570	<50.0	<5.0	<200	<10.0	<100
	10/20/10	**58.0**	2.6J	8.5	19.5	<5.0	14.6	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**53.6**	2.1	2.6	1.1 I	<1	5.9	<0.0188	<0.5	NR	**343**	<1	88.2	<160	<1	<800	<1	<40
	12/23/14	**44.7**	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	**1,120**	<10.0	75.6 J	<50.0	<5.0	<200	<10.0	<100
12175-MW13	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.021	<5.0	**96.0**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.019	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW14	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	7.2	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW15	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**128**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW16	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**146**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW17	10/21/10	**15,900**	**31,400**	**2,820**	**12,970**	**564**	**623**	**0.69**	<5.0	NR	**13,600**	**533J**	<100	<50.0	24.5	<200	8.5J	<100
	09/12/11	**9,220**	**19,500**	**1,530**	7,480	<100	**272 I**	**0.13**	<50	NR	**9,580**	**260**	<2,000	<16,000	<100	<80,000	<100	<4,000
	12/23/14	**15,600**	**40,400**	**3,430**	**18,500**	**545 J**	**843**	**0.23**	<625	NR	**18,000**	**490 J**	<12,500	<6,250	<625	<25,000	<1,250	<12,500
12175-MW18	10/21/10	**26.8**	101	9.3	42.7	2.8J	3.1J	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/23/14	**7,030**	**17,400**	**1,430**	8,170	18.7	**228**	<0.019	<10.0	NR	**1,540**	94.3	<200	<100	<10.0	<400	<20.0	<200

TABLE 3
GROUNDWATER ANALYTICAL DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
RBSL/Action Level		5	1,000	700	10,000	40	25	0.05	5	15	240	128	1,400	NE	150	10,000	47	NE
12175-MW19	10/20/10	**FREE PHASE PRODUCT**																
	09/12/11	**FREE PHASE PRODUCT**																
	12/22/14	**FREE PHASE PRODUCT**																
12175-MW20	10/21/10	**5.6**	7.0	1.1J	9.1J	9.5	2.9J	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	0.17 I	<0.5	<2	5	<5	<0.0188	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW21	10/21/10	2.5J	10.5	1.8J	8.2J	<5.0	5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/23/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW22	10/21/10	<5.0	4.5J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0191	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW23	10/21/10	<5.0	4.5J	<5.0	<15.0	3.8J	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	<1	<0.5	<2	0.66 I	<5	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	**18.9**	<5.0	<5.0	<10.0	6.4	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW24	12/23/14	**12,100**	**32,800**	**1,780**	**21,100**	**75.5**	**469**	<0.020	<50.0	NR	**17,400**	119	644 J	<500	<50.0	<2,000	<100	<1,000
12175-MW25	12/22/14	**FREE PHASE PRODUCT**																
12175-MW26	12/22/14	**967**	41.8	<25.0	<50.0	**84.6**	**25.6**	<0.019	**13.9 J**	NR	**1,310**	44.7 J	306 J	<250	16.0 J	<1,000	<50.0	161 J
12175-RW1	12/23/14	**27,900**	**44,800**	**2,900**	**17,000**	**4,540**	**525**	**1.2**	<100	NR	**18,100**	**2,010**	**1,550 J**	<1,000	145	<4,000	<200	<2,000
12175-RW2	12/22/14	**FREE PHASE PRODUCT**																
12175-RW3	12/23/14	**13,300**	**36,200**	**3,140**	**15,700**	<2,500	<2,500	0.028	<2,500	NR	<50,000	<5,000	<50,000	<25,000	<2,500	<100,000	<5,000	<50,000

Notes:

Analyses for BTEX constituents, MTBE, naphthalene, 1,2-DCA, and oxygenates by EPA Method 8260; analyses for EDB by EPA Method 8011; analyses for total lead by EPA Method 6010

Risk-Based Screening Level (RBSL) as defined in Appendix B of SCDHEC, Department of Health and Environmental Control, Bureau of Land and Waste Management, Underground Storage Tank Program, May 15, 2001, South Carolina Risk-Based Corrective Action for Petroleum Releases

Action Level (AL) as defined in SCDHEC, Department of Health and Environmental Control, Bureau of Land and Waste Management, Underground Storage Tank Program, October 22, 2008, Certification of the Oxygenate Compounds

Concentrations in bold face type exceeded the RBSL / Action Level

< = less than the reporting limit specified in the laboratory report

NR = analysis not requested

NS = not sampled

EDB = 1,2-Dibromoethane

TBF = *tert* -Butyl Formate

TAA = *tert* -Amyl Alcohol

1,2-DCA = 1,2-Dichloroethane

TBA = *tert* -Butyl Alcohol

MTBE = Methyl-*tert* -butyl ether

TAME = *tert* -Amyl methyl ether

DIPE = Diisopropyl ether

ETBE = Ethyl-*tert* -butyl ether

J value = an estimated value between the laboratory reporting limit and the method detection limit

I value = an estimated value between the laboratory method detection limit and the laboratory practical quantitation limit

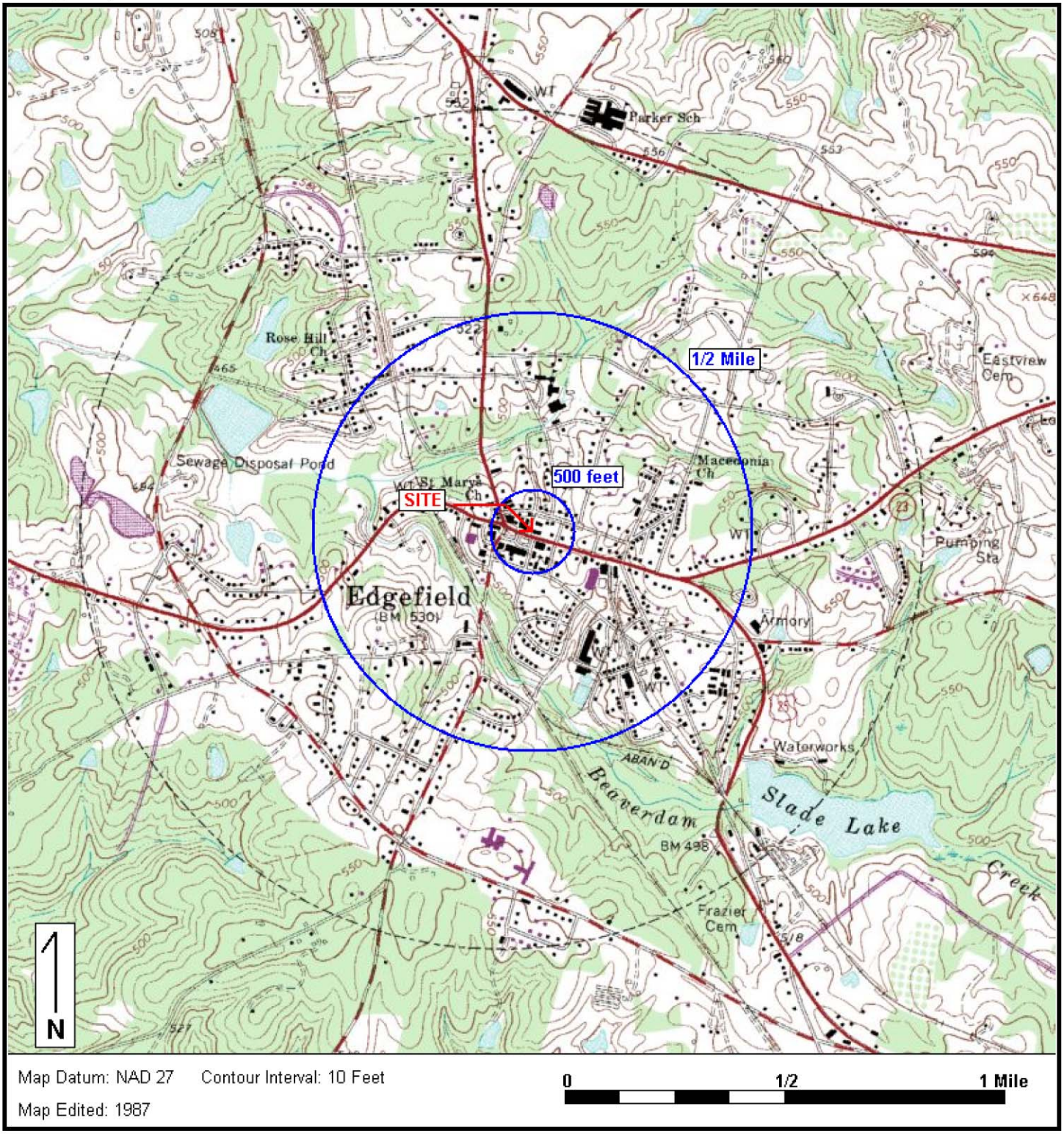
NE = not established

FIGURES

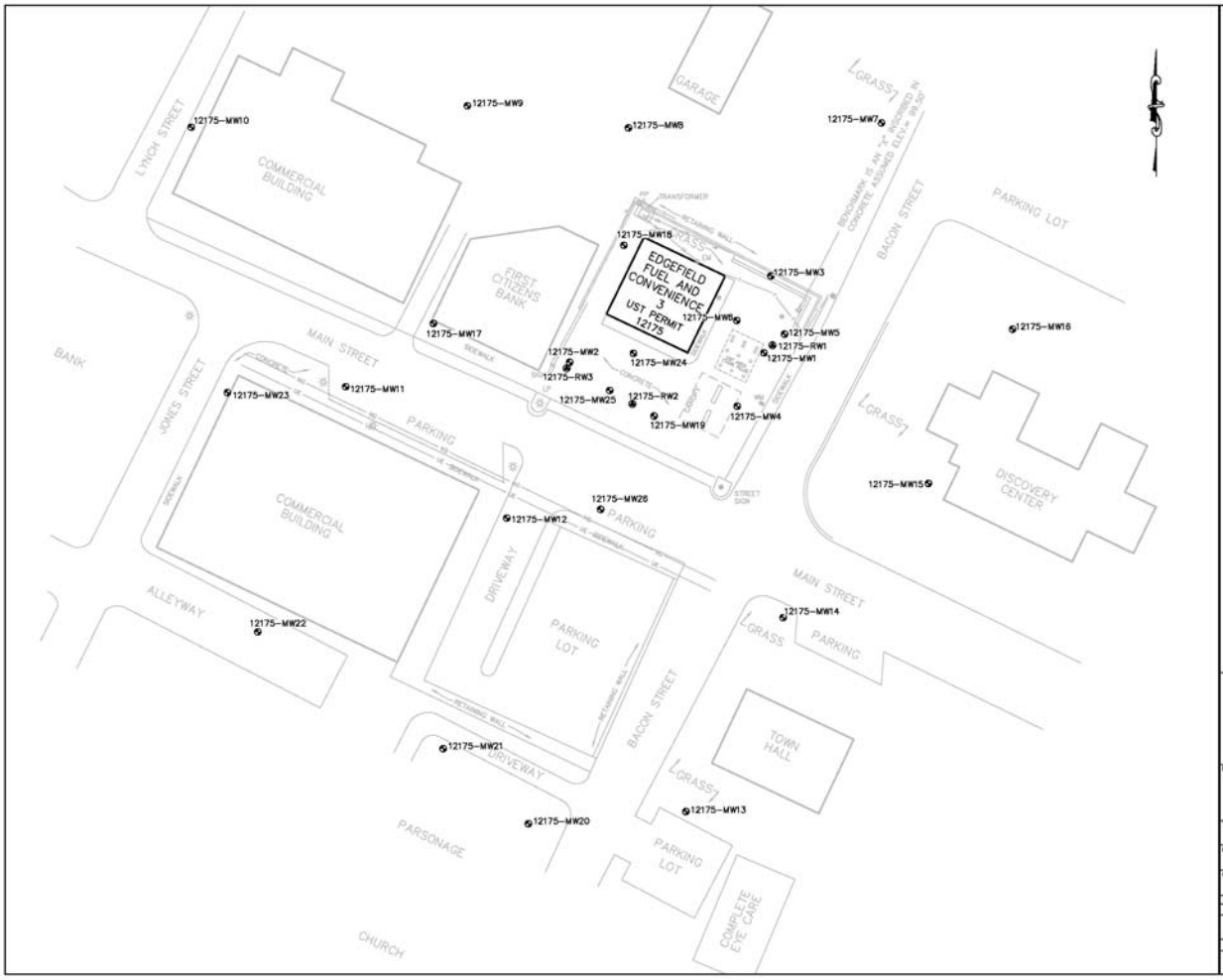
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- Shallow (Water Table) Monitoring Well
- Recovery Well
- 12175-MW1 Well ID

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

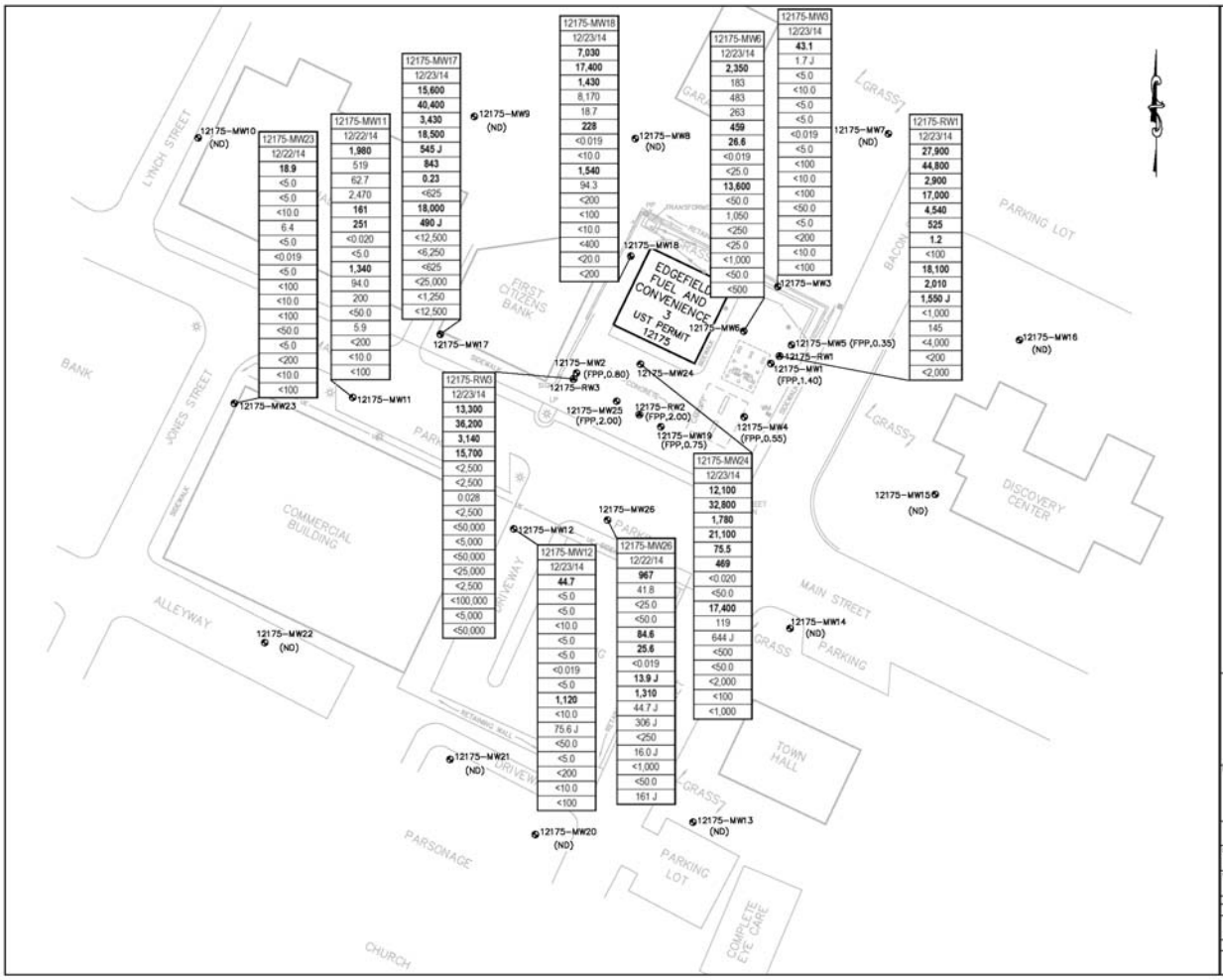
TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE \2014_Qtr4.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	JM
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	1/27/15	14-211651	2



Legend

- UE — Underground Electric Line
- X — Wood Fence Line
- T — Underground Telephone Line
- 12175-MW1 — Shallow (Water Table) Monitoring Well
- 12175-RW1 — Recovery Well

12175-MW3	Well ID
12/23/14	Sample Date
5	Benzene
1,000	Toluene
700	Ethylbenzene
10,000	Total Xylenes
40	MTBE
25	Naphthalene
0.05	EDB
5	1,2-DCA
240	TAA
128	TAME
1,400	TBA
NE	TBF
150	DIPE
10,000	Ethanol
47	ETBE
NE	3,3-Dimethyl-1-butanol

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L).

Above concentrations represent May 2001 Risk-Based Screening Levels and August 2006 Action Levels. Concentrations in **bold** face type exceeded the RBSL/AL.

FPP - Free Phase Product, thickness in feet.

<1.0 - Less than the reporting limit specified in the laboratory report.

J - Estimated value between the method detection limit and th reporting limit.

ND - Chemicals of concen not detected.

NE - Not established.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

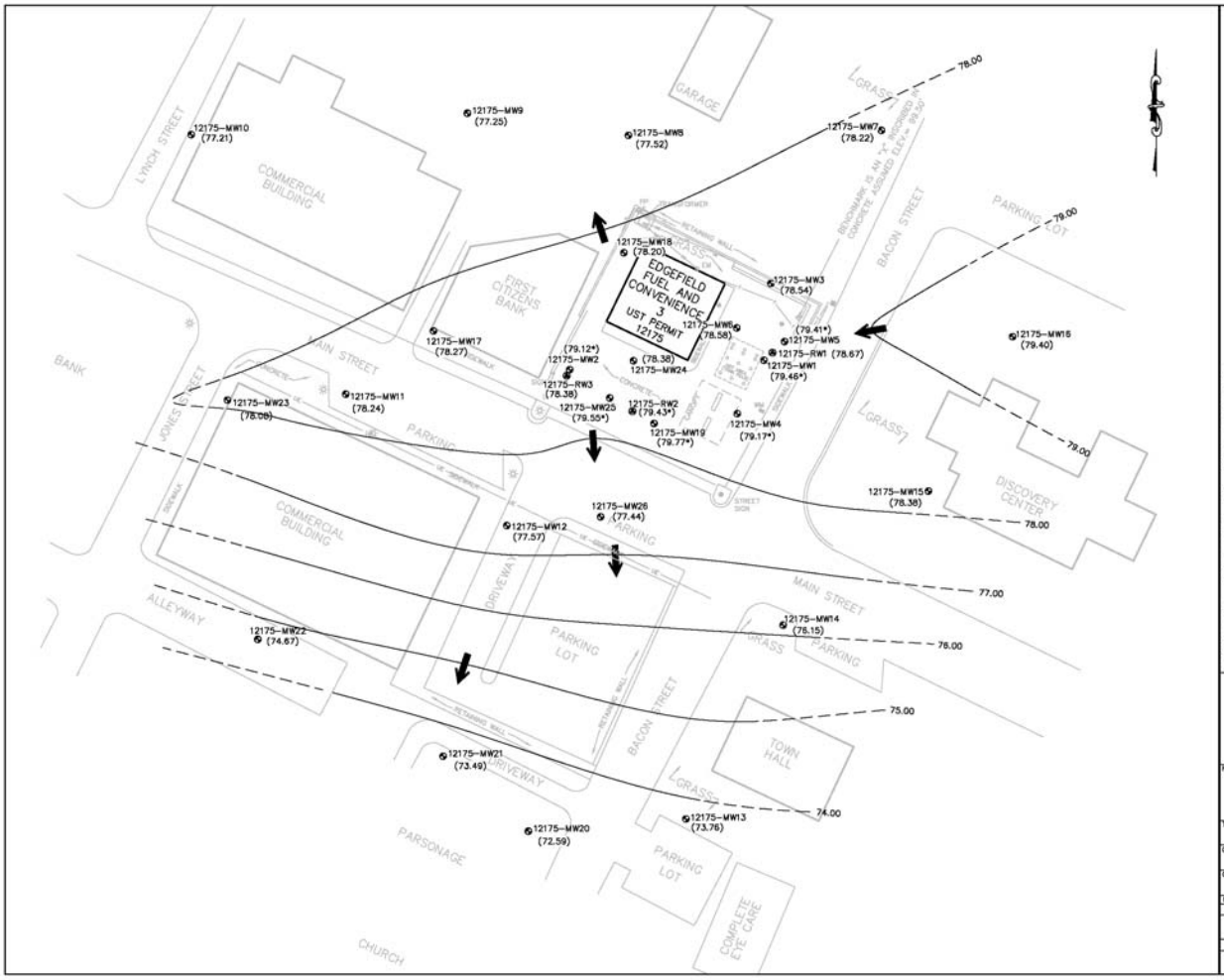
TITLE:
Groundwater Quality Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE: 2014_Sht4.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	DM
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	1/27/15	14-211631	4



Legend

- UE — Underground Electric Line
- W — Wood Fence Line
- T — Underground Telephone Line
- SS — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- 12175-MW1 — Shallow (Water Table) Monitoring Well
- 12175-RW1 — Recovery Well
- (78.54) — Groundwater Elevation (ft)
- 79.00 — Water Table Contour (Dashed where inferred)
- Flow Direction Indicator

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Groundwater elevations are relative to a temporary benchmark with an assumed datum of 99.50 feet.

Groundwater elevations are based on measurements made on December 22, 2014.

Water table contours, and flow directions assume homogeneous, isotropic aquifer conditions, and horizontal flow.

Fluctuations in the level of the water table may occure due to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

*Groundwater elevation corrected using estimated density of 0.75g/cm³ for free phase product, measured on January 23, 2015, therefore not used in contour lines.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Groundwater Elevation Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE \2014_Qtr4.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	JM
SCALE:	DATE:	JOB NO:	FIGURE NO:
1"=50'	2/2/15	14-211651	5

APPENDIX B

Sampling Logs, Laboratory Reports, COC Forms, QA/QC Evaluation

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convenience 3 | Location: Edgefield, SC

Project No.: 14-211651 | UST Permit #: 12175 | Date: 12/22/2014

Measured By: B. Peay, A. Williamson | Weather: Raining, 50's

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Well Depth (feet)	Volume Purged (gallons)
12175-MW1	-----	-----	1.57	-----	-----	-----
12175-MW2	-----	-----	0.68	-----	-----	-----
12175-MW3	-----	21.90	-----	-----	33.90	9.80
12175-MW4	-----	-----	0.64	-----	-----	-----
12175-MW5	-----	-----	0.13	-----	-----	-----
12175-MW6	-----	21.24	-----	-----	29.01	2.77
12175-MW7	-----	15.10	-----	-----	20.40	4.30
12175-MW8	-----	23.07	-----	-----	26.90	3.10
12175-MW9	-----	20.30	-----	-----	26.89	5.35
12175-MW10	-----	24.10	-----	-----	30.30	5.05
12175-MW11	-----	23.41	-----	-----	30.85	3.63
12175-MW12	-----	22.98	-----	-----	30.05	3.95
12175-MW13	-----	19.44	-----	-----	25.25	0.94
12175-MW14	-----	23.90	-----	-----	29.60	0.93
12175-MW15	-----	20.09	-----	-----	26.93	1.36
12175-MW16	-----	13.61	-----	-----	19.25	4.60
12175-MW17	-----	22.82	-----	-----	28.66	2.40
12175-MW18	-----	23.31	-----	-----	28.60	4.30
12175-MW19	-----	-----	0.41	-----	-----	-----
12175-MW20	-----	19.21	-----	-----	26.25	5.70

Remarks: Interface probe was not operable. Obtained free product thickness by visibly measuring in bailers.

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convenience 3 — Location: Edgefield, SC

Project No.: 14-211651 — UST Permit #: 12175 — Date: 12/22/2014

Measured By: B. Peay, A. Williamson — Weather: Raining, 50's

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Well Depth (feet)	Volume Purged (gallons)
12175-MW21	-----	20.81	-----	-----	29.37	4.17
12175-MW22	-----	25.15	-----	-----	29.90	3.85
12175-MW23	-----	24.21	-----	-----	31.35	5.80
12175-MW24	-----	21.85	-----	-----	30.15	4.55
12175-MW25	-----	-----	4.00	-----	-----	-----
12175-MW26	-----	22.45	-----	-----	30.09	3.00
12175-RW1	-----	19.38	-----	-----	29.18	32.00
12175-RW2	-----	-----	>4.00	-----	-----	-----
12175-RW3	-----	21.78	-----	-----	30.00	11.74

Remarks: Interface probe was not operable. Obtained free product thickness by visibly measuring in bailers.

GAUGE REPORT

Environmental Compliance Services, Inc.
13504 South Point Blvd., Unit F
Charlotte, North Carolina 28273

Project Name: Edgefield Fuel & Convenience 3 — Location: Edgefield, SC

Project No.: 14-211651 — UST Permit #: 12175 — Date: 1/23/2015

Measured By: B. Peay — Weather: Raining, 40's

Well ID	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Product Recovered (gallons)	Well Depth (feet)	Volume Purged (gallons)
12175-MW1	18.70	20.10	1.40	-----	33.30	-----
12175-MW2	21.10	21.90	0.80	-----	34.00	-----
12175-MW4	19.30	19.85	0.55	-----	29.00	-----
12175-MW5	18.55	18.90	0.35	-----	29.00	-----
12175-MW19	20.05	20.80	0.75	-----	28.30	-----
12175-MW25	19.90	21.90	2.00	-----	30.15	-----
12175-RW2	20.00	22.50	2.50	-----	30.10	-----

Remarks: Re-gauged wells previously detected with free product from December 2014 gauging event.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer _____ Pump Type --
Method of Sample Collection: Bailer _____ Pump Type --

Quality Assurance:

Water Quality Meter: _____ Serial Number: _____
Calibration Measurement Results
pH 4.0 = _____ Conductivity 4.49 = _____
Turbidity 0.0 = _____ Dissolved Oxygen 8.52 = _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW1**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 35 ft.
Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) ----- ft.
Depth to FP (Free product) ----- ft.
FP Thickness 1.57 ft.
Length of Water Column (LWC=TWD-DGW) _____ ft.

1Csg. Vol. (LWC*C)= _____ X 0.163 = _____ gal.
3Csg. Volume = 3x _____ = _____ gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling ----- gal.
Well Yield Low _____ Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vo.	Sampling
Volume Purged (gallons)									
Time (military)									
pH (s.u.)									
O.R.P. (mV)									
Temperature (°C)									
Specific Cond. (mS/cm)									
Dissolved Oxygen (mg/L)									
Turbidity (NTU)									

NR = Not Recorded

Remarks Free pruduct in well, well not sampled.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer _____ Pump Type --
Method of Sample Collection: Bailer _____ Pump Type --

Quality Assurance:
Water Quality Meter: _____ Serial Number: _____
Calibration Measurement Results
pH 4.0 = _____ Conductivity 4.49 = _____
Turbidity 0.0 = _____ Dissolved Oxygen 8.52 = _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW2**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 19 ft. to 34 ft.
Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) ----- ft.
Depth to FP (Free product) ----- ft.
FP Thickness 0.68 ft.
Length of Water Column (LWC=TWD-DGW) _____ ft.

1Csg. Vol. (LWC*C)= _____ X 0.163 = _____ gal.
3Csg. Volume = 3x _____ = _____ gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling ----- gal.
Well Yield Low _____ Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)									
Time (military)									
pH (s.u.)									
O.R.P. (mV)									
Temperature (°C)									
Specific Cond. (mS/cm)									
Dissolved Oxygen (mg/L)									
Turbidity (NTU)									

NR = Not Recorded

Remarks Free pruduct in well, well not sampled.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 8° C Conductivity 4.49 = 4.51
Turbidity 0.0 = 6.3 Dissolved Oxygen 8.52 = 10.56

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # 12175-MW3

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 19 ft. to 34 ft.
Total Well Depth (TWD) 33.90 ft.
Depth to GW(DGW) 21.90 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 12.00 ft.

1Csg. Vol. (LWC*C)= 12.00 X 0.163 = 1.96 gal.
3Csg. Volume = 3x 1.96 = 5.87 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 9.80 gal.
Well Yield Low _____ Medium _____ High X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.96	1.96	NR	1.96	NR	1.96	1.96	0.00
Time (military)	8:45	8:48	8:52	NR	8:56	NR	9:00	9:04	9:06
pH (s.u.)	5.89	5.90	5.86	NR	5.89	NR	5.89	5.88	5.87
O.R.P. (mV)	114	77	96	NR	107	NR	114	111	114
Temperature (°C)	19.14	20.60	20.52	NR	20.58	NR	20.49	20.35	20.25
Specific Cond. (mS/cm)	0.234	0.312	0.292	NR	0.293	NR	0.284	0.279	0.275
Dissolved Oxygen (mg/L)	1.33	1.53	2.07	NR	3.58	NR	3.63	4.05	4.01
Turbidity (NTU)	27.4	567.0	>999	NR	>999	NR	>999	>999	292.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer _____ Pump Type --
Method of Sample Collection: Bailer _____ Pump Type --

Quality Assurance:

Water Quality Meter: _____ Serial Number: _____

Calibration Measurement Results

pH 4.0 = _____ Conductivity 4.49 = _____
Turbidity 0.0 = _____ Dissolved Oxygen 8.52 = _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW4**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 19 ft. to 29 ft.
Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) ----- ft.
Depth to FP (Free product) ----- ft.
FP Thickness 0.64 ft.
Length of Water Column (LWC=TWD-DGW) _____ ft.

1Csg. Vol. (LWC*C)= _____ X 0.163 = _____ gal.
3Csg. Volume = 3x _____ = _____ gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling ----- gal.
Well Yield Low _____ Medium X High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)									
Time (military)									
pH (s.u.)									
O.R.P. (mV)									
Temperature (°C)									
Specific Cond. (mS/cm)									
Dissolved Oxygen (mg/L)									
Turbidity (NTU)									

NR = Not Recorded

Remarks Free pruduct in well, well not sampled.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer _____ Pump Type _____ --
Method of Sample Collection: Bailer _____ Pump Type _____ --

Quality Assurance:

Water Quality Meter: _____ Serial Number: _____

Calibration Measurement Results

pH 4.0 = _____ Conductivity 4.49 = _____
Turbidity 0.0 = _____ Dissolved Oxygen 8.52 = _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW5**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 19 ft. to 29 ft.
Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) ----- ft.
Depth to FP (Free product) ----- ft.
FP Thickness 0.13 ft.
Length of Water Column (LWC=TWD-DGW) _____ ft.

1Csg. Vol. (LWC*C)= _____ X 0.163 = _____ gal.
3Csg. Volume = 3x _____ = _____ gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling ----- gal.
Well Yield Low _____ Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)									
Time (military)									
pH (s.u.)									
O.R.P. (mV)									
Temperature (°C)									
Specific Cond. (mS/cm)									
Dissolved Oxygen (mg/L)									
Turbidity (NTU)									

NR = Not Recorded

Remarks Free pruduct in well, well not sampled.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 8° C Conductivity 4.49 = 4.51
Turbidity 0.0 = 6.3 Dissolved Oxygen 8.52 = 10.56

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW6**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 19 ft. to 29 ft.
Total Well Depth (TWD) 29.01 ft.
Depth to GW(DGW) 21.24 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 7.77 ft.

1Csg. Vol. (LWC*C)= 7.77 X 0.163 = 1.27 gal.
3Csg. Volume = 3x 1.27 = 3.80 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 2.77 gal.
Well Yield Low _____ Medium X High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.27	1.27	NR		NR			0.00
Time (military)	9:28	9:31	9:35	NR		NR			9:55
pH (s.u.)	6.19	6.20	6.31	NR		NR			6.33
O.R.P. (mV)	-25	-23	-29	NR		NR			-18
Temperature (°C)	19.82	20.99	20.32	NR		NR			19.42
Specific Cond. (mS/cm)	0.504	0.490	0.494	NR		NR			0.415
Dissolved Oxygen (mg/L)	1.57	1.28	2.44	NR		NR			2.78
Turbidity (NTU)	27.5	684.0	505.0	NR		NR			118.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Slight petroleum odor.
Duplicate 2 collected from 12175-MW6.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy)	12/22/14				
Field Personnel	A. Williamson				
General Weather Conditions	Rainy, 40's				
Ambient Air Temperature	45 F				
Facility Name	Edgefield Fuel & Convenience 3	Site ID#	12175		
Method of Well Purging:	Bailer X	Pump Type		--	
Method of Sample Collection:	Bailer X	Pump Type		--	
Quality Assurance:					
Water Quality Meter:	Horiba W22XD - U22	Serial Number:		T908007	
Calibration Measurement Results					
pH 4.0 =	3.99 @ 12° C	Conductivity 4.49 =		4.54	
Turbidity 0.0 =	0.1	Dissolved Oxygen 8.52 =		10.46	
Chain of Custody					
A. Williamson	12/23/14 17:00	ECS Office		12/23/14 17:00	
Relinquished by	Date/Time	Received by		Date/Time	
ECS Office	12/29/14 10:10	Pace		12/29/14 10:10	
Relinquished by	Date/Time	Received by		Date/Time	

Well #	12175-MW7				
Well Diameter (D)	2.0 inch			or feet	
conversion factor(C): 3.143*((D/2)/12)^2*7.48		for a 2 inch well C=	0.163		
for a 4 inch well C=	0.653	for a 6 inch well C=	1.469		
Screen Interval	10 ft.	to	20 ft.		
Total Well Depth (TWD)	20.40 ft.				
Depth to GW(DGW)	15.10 ft.				
Depth to FP (Free product)	----- ft.				
FP Thickness	----- ft.				
Length of Water Column (LWC=TWD-DGW)	5.30 ft.				
1Csg. Vol. (LWC*C)=	5.30	X	0.163	=	0.86 gal.
3Csg. Volume = 3x	0.86	=	2.59	gals.(Std. Purge Vol)	
Total Vol. of Water Purged Before Sampling	4.30 gal.				
Well Yield	Low	Medium	High X		

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	0.86	0.86	NR	0.86	NR	0.86	0.86	0.00
Time (military)	12:35	12:38	12:40	NR	12:43	NR	12:45	12:48	12:50
pH (s.u.)	5.38	4.75	4.93	NR	5.11	NR	5.24	5.41	5.63
O.R.P. (mV)	230	309	317	NR	316	NR	314	309	300
Temperature (°C)	19.45	20.22	20.22	NR	20.28	NR	20.5	20.3	20.19
Specific Cond. (mS/cm)	0.187	0.162	0.161	NR	0.170	NR	0.178	0.193	0.218
Dissolved Oxygen (mg/L)	6.75	2.44	7.34	NR	7.13	NR	6.88	6.12	5.81
Turbidity (NTU)	422.0	>999	>999	NR	>999	NR	>999	>999	>999

NR = Not Recorded

Remarks: Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy)	12/22/14				
Field Personnel	A. Williamson				
General Weather Conditions	Rainy, 40's				
Ambient Air Temperature	45 F				
Facility Name	Edgefield Fuel & Convenience 3	Site ID#	12175		
Method of Well Purging:	Bailer X	Pump Type		--	
Method of Sample Collection:	Bailer X	Pump Type		--	
Quality Assurance:					
Water Quality Meter:	Horiba W22XD - U22	Serial Number:		T908007	
Calibration Measurement Results					
pH 4.0 =	3.99 @ 12° C	Conductivity 4.49 =		4.54	
Turbidity 0.0 =	0.1	Dissolved Oxygen 8.52 =		10.46	
Chain of Custody					
A. Williamson	12/23/14 17:00	ECS Office		12/23/14 17:00	
Relinquished by	Date/Time	Received by		Date/Time	
ECS Office	12/29/14 10:10	Pace		12/29/14 10:10	
Relinquished by	Date/Time	Received by		Date/Time	

Well #	12175-MW8				
Well Diameter (D)	2.0 inch			or feet	
conversion factor(C): 3.143*((D/2)/12)^2*7.48		for a 2 inch well C=		0.163	
for a 4 inch well C=	0.653	for a 6 inch well C=		1.469	
Screen Interval	17 ft.	to	27	ft.	
Total Well Depth (TWD)	26.90 ft.				
Depth to GW(DGW)	23.07 ft.				
Depth to FP (Free product)	----- ft.				
FP Thickness	----- ft.				
Length of Water Column (LWC=TWD-DGW)	3.83 ft.				
1Csg. Vol. (LWC*C)=	3.83	X	0.163	=	0.62 gal.
3Csg. Volume = 3x	0.62	=	1.87	gals.(Std. Purge Vol)	
Total Vol. of Water Purged Before Sampling	3.10 gal.				
Well Yield	Low	Medium		High	X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	0.62	0.62	NR	0.62	NR	0.62	0.62	0.00
Time (military)	13:14	13:17	13:20	NR	13:22	NR	13:25	13.28	13:30
pH (s.u.)	5.78	5.66	5.72	NR	5.80	NR	5.87	5.91	5.91
O.R.P. (mV)	300	245	253	NR	256	NR	255	255	256
Temperature (°C)	20.19	20.42	20.40	NR	20.41	NR	20.3	20.6	19.91
Specific Cond. (mS/cm)	0.218	0.506	0.530	NR	0.540	NR	0.556	0.550	0.518
Dissolved Oxygen (mg/L)	5.81	5.30	5.48	NR	5.68	NR	5.86	5.52	5.78
Turbidity (NTU)	>999	>999	>999	NR	>999	NR	>999	>999	>999

NR = Not Recorded

Remarks: Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 12° C Conductivity 4.49 = 4.54
Turbidity 0.0 = 0.1 Dissolved Oxygen 8.52 = 10.46

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW9**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 17 ft. to 27 ft.
Total Well Depth (TWD) 26.89 ft.
Depth to GW(DGW) 20.30 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 6.59 ft.

1Csg. Vol. (LWC*C)= 6.59 X 0.163 = 1.07 gal.
3Csg. Volume = 3x 1.07 = 3.22 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 5.35 gal.
Well Yield Low _____ Medium X High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.07	1.07	NR	1.07	NR	1.07	1.07	0.00
Time (military)	13:55	13:58	14:01	NR	14:04	NR	14:08	14:12	14:15
pH (s.u.)	5.53	5.47	5.55	NR	5.63	NR	5.67	5.71	5.70
O.R.P. (mV)	313	512	308	NR	306	NR	263	159	195
Temperature (°C)	16.57	18.19	18.44	NR	18.25	NR	18.3	19.4	17.95
Specific Cond. (mS/cm)	0.170	0.170	0.175	NR	0.168	NR	0.189	0.157	0.590
Dissolved Oxygen (mg/L)	5.11	4.22	4.14	NR	4.80	NR	6.00	5.85	6.20
Turbidity (NTU)	83.1	>999	>999	NR	940.0	NR	216.0	>999	406.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 12° C Conductivity 4.49 = 4.54
Turbidity 0.0 = 0.1 Dissolved Oxygen 8.52 = 10.46

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW10**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) 30.30 ft.
Depth to GW(DGW) 24.10 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 6.20 ft.

1Csg. Vol. (LWC*C)= 6.20 X 0.163 = 1.01 gal.
3Csg. Volume = 3x 1.01 = 3.03 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 5.05 gal.
Well Yield Low _____ Medium _____ High X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.01	1.01	NR	1.01	NR	1.01	1.01	0.00
Time (military)	14:32	14:35	14>38	NR	14:42	NR	14:45	14:49	14:52
pH (s.u.)	5.44	5.27	5.38	NR	5.40	NR	5.39	5.41	5.41
O.R.P. (mV)	259	289	293	NR	298	NR	303	303	307
Temperature (°C)	18.34	18.98	18.84	NR	18.59	NR	18.2	18.4	18.42
Specific Cond. (mS/cm)	0.110	0.110	0.104	NR	0.100	NR	0.109	0.106	0.106
Dissolved Oxygen (mg/L)	8.54	8.74	9.42	NR	9.61	NR	9.42	9.41	9.37
Turbidity (NTU)	130.0	>999	>999	NR	>999	NR	>999	>999	>999

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 12° C Conductivity 4.49 = 4.54
Turbidity 0.0 = 0.1 Dissolved Oxygen 8.52 = 10.46

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW11**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 21 ft. to 31 ft.
Total Well Depth (TWD) 30.85 ft.
Depth to GW(DGW) 23.41 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 7.44 ft.

1Csg. Vol. (LWC*C)= 7.44 X 0.163 = 1.21 gal.
3Csg. Volume = 3x 1.21 = 3.64 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 3.63 gal.
Well Yield Low _____ Medium X High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.21	1.21	NR	1.21	NR			0.00
Time (military)	16:38	16:40	16:43	NR	16:47	NR			17:10
pH (s.u.)	5.94	5.99	6.06	NR	6.20	NR			6.17
O.R.P. (mV)	305	269	244	NR	242	NR			246
Temperature (°C)	18.19	20.05	20.35	NR	20.12	NR			19.89
Specific Cond. (mS/cm)	0.911	0.914	0.899	NR	0.850	NR			0.861
Dissolved Oxygen (mg/L)	1.81	1.27	1.84	NR	3.44	NR			3.33
Turbidity (NTU)	182.0	>999	>999	NR	>999	NR			765.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Field Blank 1 taken near 12175-MW11. Well purged dry after three well volumes.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy)	12/23/14				
Field Personnel	A. Williamson				
General Weather Conditions	Rainy, 40's				
Ambient Air Temperature	45 F				
Facility Name	Edgefield Fuel & Convenience 3	Site ID#	12175		
Method of Well Purging:	Bailer X	Pump Type		--	
Method of Sample Collection:	Bailer X	Pump Type		--	
Quality Assurance:					
Water Quality Meter:	Horiba W22XD - U22	Serial Number:		T908007	
Calibration Measurement Results					
pH 4.0 =	3.99 @ 8° C	Conductivity 4.49 =		4.51	
Turbidity 0.0 =	6.3	Dissolved Oxygen 8.52 =		10.56	
Chain of Custody					
A. Williamson	12/23/14 17:00	ECS Office		12/23/14 17:00	
Relinquished by	Date/Time	Received by		Date/Time	
ECS Office	12/29/14 10:10	Pace		12/29/14 10:10	
Relinquished by	Date/Time	Received by		Date/Time	

Well #	12175-MW12				
Well Diameter (D)	2.0 inch			or feet	
conversion factor(C): 3.143*((D/2)/12)^2*7.48		for a 2 inch well C=		0.163	
	for a 4 inch well C= 0.653	for a 6 inch well C=		1.469	
Screen Interval	20 ft.	to	30 ft.		
Total Well Depth (TWD)	30.05 ft.				
Depth to GW(DGW)	22.98 ft.				
Depth to FP (Free product)	----- ft.				
FP Thickness	----- ft.				
Length of Water Column (LWC=TWD-DGW)	7.07 ft.				
1Csg. Vol. (LWC*C)=	7.07	X	0.163	=	1.15 gal.
3Csg. Volume = 3x	1.15	=	3.46	gals.(Std. Purge Vol)	
Total Vol. of Water Purged Before Sampling	3.95 gal.				
Well Yield	Low	Medium	X	High	

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.15	1.15	NR	1.15	NR	0.50		0.00
Time (military)	7:58	8:02	8:05	NR	8:08	NR			8:30
pH (s.u.)	6.13	6.12	6.12	NR	6.13	NR			6.10
O.R.P. (mV)	-28	-25	-23	NR	-13	NR			9
Temperature (°C)	20.09	20.29	20.69	NR	20.62	NR			19.99
Specific Cond. (mS/cm)	0.479	0.478	0.471	NR	0.476	NR			0.485
Dissolved Oxygen (mg/L)	1.08	1.30	1.50	NR	1.90	NR			2.12
Turbidity (NTU)	26.0	>999	928.0	NR	>999	NR			184.0

NR = Not Recorded

Remarks: Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Duplicate 1 taken from 12175-MW12, well purged dry after 3 well volumes plus 0.5 gallons.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel B. Peay
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba U-22 U22XD Serial Number: 503058
Calibration Measurement Results
pH 4.0 = 4.03 @ 7.93° C Conductivity 4.49 = 0.033
Turbidity 0.0 = 0.0 Dissolved Oxygen 8.52 = 13.42

Chain of Custody

B. Peay	12/23/14 17:15	ECS Office	12/23/14 17:15
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW13**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 15 ft. to 25 ft.
Total Well Depth (TWD) 25.25 ft.
Depth to GW(DGW) 19.44 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 5.81 ft.

1Csg. Vol. (LWC*C)= 5.81 X 0.163 = 0.95 gal.
3Csg. Volume = 3x 0.95 = 2.84 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.94 gal.
Well Yield Low X Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	0.95		NR		NR			0.00
Time (military)	16:37	16:42		NR		NR			16:47
pH (s.u.)	4.80	4.93		NR		NR			4.95
O.R.P. (mV)	38	298		NR		NR			259
Temperature (°C)	17.60	19.49		NR		NR			19.04
Specific Cond. (mS/cm)	0.687	0.999		NR		NR			0.698
Dissolved Oxygen (mg/L)	6.31	5.41		NR		NR			6.48
Turbidity (NTU)	>999	470.0		NR		NR			>999

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Well purged dry after 1 well volume.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel B. Peay
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba U-22 U22XD Serial Number: 503058
Calibration Measurement Results
pH 4.0 = 4.03 @ 7.93° C Conductivity 4.49 = 0.033
Turbidity 0.0 = 0.0 Dissolved Oxygen 8.52 = 13.42

Chain of Custody

B. Peay	12/23/14 17:15	ECS Office	12/23/14 17:15
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW14**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) 29.60 ft.
Depth to GW(DGW) 23.90 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 5.70 ft.

1Csg. Vol. (LWC*C)= 5.70 X 0.163 = 0.93 gal.
3Csg. Volume = 3x 0.93 = 2.79 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 0.93 gal.
Well Yield Low X Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	0.93		NR		NR			0.00
Time (military)	16:01	16:05		NR		NR			16:12
pH (s.u.)	5.13	5.34		NR		NR			5.37
O.R.P. (mV)	329	316		NR		NR			320
Temperature (°C)	17.70	19.81		NR		NR			18.67
Specific Cond. (mS/cm)	0.653	0.790		NR		NR			0.237
Dissolved Oxygen (mg/L)	6.08	5.18		NR		NR			9.87
Turbidity (NTU)	0.0	0.0		NR		NR			>999

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Well purged dry after one well volume.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 12° C Conductivity 4.49 = 4.54
Turbidity 0.0 = 0.1 Dissolved Oxygen 8.52 = 10.46

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW15**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 17 ft. to 27 ft.
Total Well Depth (TWD) 26.93 ft.
Depth to GW(DGW) 20.09 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 6.84 ft.

1Csg. Vol. (LWC*C)= 6.84 X 0.163 = 1.11 gal.
3Csg. Volume = 3x 1.11 = 3.34 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 1.36 gal.
Well Yield Low X Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.11	0.25						0.00
Time (military)	11:36	11:40							12:25
pH (s.u.)	6.58	6.69							6.66
O.R.P. (mV)	298	292							84
Temperature (°C)	17.79	18.01							17.76
Specific Cond. (mS/cm)	1.150	1.130							1.100
Dissolved Oxygen (mg/L)	2.44	2.38							4.90
Turbidity (NTU)	4.2	>999							38.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Well purged dry after one well volume plus ¼ gallon.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 12° C Conductivity 4.49 = 4.54
Turbidity 0.0 = 0.1 Dissolved Oxygen 8.52 = 10.46

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW16**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 10 ft. to 20 ft.
Total Well Depth (TWD) 19.25 ft.
Depth to GW(DGW) 13.61 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 5.64 ft.

1Csg. Vol. (LWC*C)= 5.64 X 0.163 = 0.92 gal.
3Csg. Volume = 3x 0.92 = 2.76 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.60 gal.
Well Yield Low _____ Medium _____ High X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	0.92	0.92	NR	0.92	NR	0.92	0.92	0.00
Time (military)	11:53	11:56	11:58	NR	12:00	NR	12:03	12:05	12:09
pH (s.u.)	6.15	6.00	5.98	NR	5.98	NR	5.98	5.98	5.97
O.R.P. (mV)	293	122	105	NR	93	NR	96	97	97
Temperature (°C)	17.29	18.40	18.41	NR	18.46	NR	18.4	18.4	18.12
Specific Cond. (mS/cm)	0.510	0.518	0.510	NR	0.497	NR	0.494	0.483	0.500
Dissolved Oxygen (mg/L)	3.45	1.80	1.82	NR	1.85	NR	1.84	2.04	1.65
Turbidity (NTU)	20.2	>999	>999	NR	>999	NR	>999	>999	596.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel B. Peay
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba U-22 U22XD Serial Number: 503058
Calibration Measurement Results
pH 4.0 = 4.03 @ 7.93° C Conductivity 4.49 = 0.033
Turbidity 0.0 = 0.0 Dissolved Oxygen 8.52 = 13.42

Chain of Custody

B. Peay	12/23/14 17:15	ECS Office	12/23/14 17:15
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW17**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 18 ft. to 28 ft.
Total Well Depth (TWD) 28.66 ft.
Depth to GW(DGW) 22.82 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 5.84 ft.

1Csg. Vol. (LWC*C)= 5.84 X 0.163 = 0.95 gal.
3Csg. Volume = 3x 0.95 = 2.86 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 2.40 gal.
Well Yield Low ____ Medium X High ____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	0.95	0.95	NR	0.50	NR			0.00
Time (military)	10:50	10:55	11:00	NR		NR			11:08
pH (s.u.)	5.25	5.53	5.55	NR		NR			5.48
O.R.P. (mV)	196	163	173	NR		NR			192
Temperature (°C)	18.14	19.93	20.78	NR		NR			19.44
Specific Cond. (mS/cm)	0.286	1.050	0.981	NR		NR			0.247
Dissolved Oxygen (mg/L)	5.85	4.24	4.91	NR		NR			6.05
Turbidity (NTU)	0.0	0.0	0.0	NR		NR			0.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Well purged dry after 2 well volumes plus 0.5 gallons.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel B. Peay
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba U-22 U22XD Serial Number: 503058
Calibration Measurement Results
pH 4.0 = 4.03 @ 7.93° C Conductivity 4.49 = 0.033
Turbidity 0.0 = 0.0 Dissolved Oxygen 8.52 = 13.42

Chain of Custody

B. Peay	12/23/14 17:15	ECS Office	12/23/14 17:15
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW18**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 18 ft. to 28 ft.
Total Well Depth (TWD) 28.60 ft.
Depth to GW(DGW) 23.31 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 5.29 ft.

1Csg. Vol. (LWC*C)= 5.29 X 0.163 = 0.86 gal.
3Csg. Volume = 3x 0.86 = 2.59 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.30 gal.
Well Yield Low _____ Medium _____ High X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	0.86	0.86	NR	0.86	NR	0.86	0.86	0.00
Time (military)	9:00	9:03	9:06	NR	9:09	NR	9:12	9:15	9:18
pH (s.u.)	5.37	5.47	5.55	NR	5.53	NR	5.56	5.70	5.72
O.R.P. (mV)	84	82	79	NR	89	NR	86	85	88
Temperature (°C)	16.50	18.74	19.28	NR	19.22	NR	19.26	19.28	17.97
Specific Cond. (mS/cm)	0.360	1.690	40.100	NR	99.900	NR	99.900	99.900	0.249
Dissolved Oxygen (mg/L)	5.82	5.25	4.33	NR	0.76	NR	0.21	1.98	9.73
Turbidity (NTU)	0.0	>999	>999	NR	>999	NR	>999	>999	>999

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer _____ Pump Type --
Method of Sample Collection: Bailer _____ Pump Type --

Quality Assurance:
Water Quality Meter: _____ Serial Number: _____
Calibration Measurement Results
pH 4.0 = _____ Conductivity 4.49 = _____
Turbidity 0.0 = _____ Dissolved Oxygen 8.52 = _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW19**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 18 ft. to 28 ft.
Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) ----- ft.
Depth to FP (Free product) ----- ft.
FP Thickness 0.41 ft.
Length of Water Column (LWC=TWD-DGW) _____ ft.

1Csg. Vol. (LWC*C)= _____ X 0.163 = _____ gal.
3Csg. Volume = 3x _____ = _____ gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling ----- gal.
Well Yield Low _____ Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)									
Time (military)									
pH (s.u.)									
O.R.P. (mV)									
Temperature (°C)									
Specific Cond. (mS/cm)									
Dissolved Oxygen (mg/L)									
Turbidity (NTU)									

NR = Not Recorded

Remarks Free pruduct in well, well not sampled.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel B. Peay
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba U-22 U22XD Serial Number: 503058
Calibration Measurement Results
pH 4.0 = 4.03 @ 7.93° C Conductivity 4.49 = 0.033
Turbidity 0.0 = 0.0 Dissolved Oxygen 8.52 = 13.42

Chain of Custody

B. Peay	12/23/14 17:15	ECS Office	12/23/14 17:15
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW20**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 17 ft. to 27 ft.
Total Well Depth (TWD) 26.25 ft.
Depth to GW(DGW) 19.21 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 7.04 ft.

1Csg. Vol. (LWC*C)= 7.04 X 0.163 = 1.15 gal.
3Csg. Volume = 3x 1.15 = 3.44 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 5.70 gal.
Well Yield Low ____ Medium ____ High X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.15	1.15	NR	1.15	NR	1.15	1.15	0.00
Time (military)	17:12	17:15	17:20	NR	17:25	NR	17:28	17:32	17:36
pH (s.u.)	4.67	4.04	4.67	NR	4.69	NR	4.68	4.61	4.69
O.R.P. (mV)	360	350	351	NR	355	NR	363	367	377
Temperature (°C)	16.79	18.34	18.14	NR	18.77	NR	19.2	19.1	18.33
Specific Cond. (mS/cm)	0.289	0.320	0.819	NR	0.641	NR	0.666	0.417	0.528
Dissolved Oxygen (mg/L)	6.99	6.13	6.11	NR	6.02	NR	6.01	6.87	6.30
Turbidity (NTU)	0.0	0.0	0.0	NR	607.0	NR	721.0	502.0	350.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel B. Peay
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba U-22 U22XD Serial Number: 503058
Calibration Measurement Results
pH 4.0 = 4.03 @ 7.93° C Conductivity 4.49 = 0.033
Turbidity 0.0 = 0.0 Dissolved Oxygen 8.52 = 13.42

Chain of Custody

B. Peay	12/23/14 17:15	ECS Office	12/23/14 17:15
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW21**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 19 ft. to 29 ft.
Total Well Depth (TWD) 29.37 ft.
Depth to GW(DGW) 20.81 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 8.56 ft.

1Csg. Vol. (LWC*C)= 8.56 X 0.163 = 1.40 gal.
3Csg. Volume = 3x 1.40 = 4.19 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.17 gal.
Well Yield Low ____ Medium X High ____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.40	1.40	NR	1.40	NR			0.00
Time (military)	8:12	8:15	8:18	NR	8:22	NR			8:29
pH (s.u.)	6.14	5.23	5.12	NR	5.11	NR			5.00
O.R.P. (mV)	273	288	291	NR	297	NR			307
Temperature (°C)	15.80	17.80	18.87	NR	18.22	NR			17.90
Specific Cond. (mS/cm)	1.780	99.900	0.999	NR	0.583	NR			99.900
Dissolved Oxygen (mg/L)	5.44	0.07	6.41	NR	6.11	NR			0.12
Turbidity (NTU)	0.0	0.0	>999	NR	>999	NR			789.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Well purged dry after 3 well volumes.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 12° C Conductivity 4.49 = 4.54
Turbidity 0.0 = 0.1 Dissolved Oxygen 8.52 = 10.46

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW22**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) 29.90 ft.
Depth to GW(DGW) 25.15 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 4.75 ft.

1Csg. Vol. (LWC*C)= 4.75 X 0.163 = 0.77 gal.
3Csg. Volume = 3x 0.77 = 2.32 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 3.85 gal.
Well Yield Low _____ Medium _____ High X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	0.77	0.77	NR	0.77	NR	0.77	0.77	0.00
Time (military)	15:13	15:16	15:19	NR	15:23	NR	15:27	15:32	15:35
pH (s.u.)	6.18	6.28	6.33	NR	0.33	NR	6.40	6.39	6.42
O.R.P. (mV)	284	281	280	NR	278	NR	275	275	263
Temperature (°C)	18.15	18.94	19.27	NR	19.05	NR	19.0	18.7	18.75
Specific Cond. (mS/cm)	0.198	0.210	0.208	NR	0.209	NR	0.213	0.213	0.211
Dissolved Oxygen (mg/L)	7.59	7.72	8.01	NR	8.03	NR	8.34	8.82	8.01
Turbidity (NTU)	44.5	>999	>999	NR	>999	NR	935.0	>999	909.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 12° C Conductivity 4.49 = 4.54
Turbidity 0.0 = 0.1 Dissolved Oxygen 8.52 = 10.46

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW23**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 21 ft. to 31 ft.
Total Well Depth (TWD) 31.35 ft.
Depth to GW(DGW) 24.21 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 7.14 ft.

1Csg. Vol. (LWC*C)= 7.14 X 0.163 = 1.16 gal.
3Csg. Volume = 3x 1.16 = 3.49 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 5.80 gal.
Well Yield Low _____ Medium _____ High X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.16	1.16	NR	1.16	NR	1.16	1.16	0.00
Time (military)	15:52	15:56	16:00	NR	16:03	NR	16:07	16:11	16:14
pH (s.u.)	5.61	5.55	5.58	NR	5.60	NR	5.61	5.63	5.63
O.R.P. (mV)	292	303	311	NR	320	NR	328	330	345
Temperature (°C)	0.82	19.92	19.99	NR	19.88	NR	20.1	19.9	19.89
Specific Cond. (mS/cm)	0.495	0.471	0.446	NR	0.442	NR	0.446	0.430	0.440
Dissolved Oxygen (mg/L)	4.91	4.54	4.26	NR	4.43	NR	4.60	4.72	4.76
Turbidity (NTU)	285.0	>999	>999	NR	>999	NR	>999	>999	>999

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel B. Peay
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba U-22 U22XD Serial Number: 503058
Calibration Measurement Results
pH 4.0 = 4.03 @ 7.93° C Conductivity 4.49 = 0.033
Turbidity 0.0 = 0.0 Dissolved Oxygen 8.52 = 13.42

Chain of Custody

B. Peay	12/23/14 17:15	ECS Office	12/23/14 17:15
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW24**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) 30.15 ft.
Depth to GW(DGW) 21.85 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 8.30 ft.

1Csg. Vol. (LWC*C)= 8.30 X 0.163 = 1.35 gal.
3Csg. Volume = 3x 1.35 = 4.06 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 4.55 gal.
Well Yield Low _____ Medium X High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.35	1.35	NR	1.35	NR	0.50		0.00
Time (military)	9:45	9:50	9:55	NR	9:58	NR			10:05
pH (s.u.)	4.68	4.81	4.93	NR	4.93	NR			5.24
O.R.P. (mV)	227	223	189	NR	176	NR			150
Temperature (°C)	17.75	20.36	20.77	NR	21.67	NR			19.65
Specific Cond. (mS/cm)	6.940	99.900	99.900	NR	99.900	NR			0.421
Dissolved Oxygen (mg/L)	6.37	0.38	0.46	NR	0.61	NR			0.75
Turbidity (NTU)	0.0	0.0	0.0	NR	>999	NR			>999

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Well purged dry after 3 well volumes plus 0.5 gallons.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer _____ Pump Type _____ --
Method of Sample Collection: Bailer _____ Pump Type _____ --

Quality Assurance:

Water Quality Meter: _____ Serial Number: _____

Calibration Measurement Results

pH 4.0 = _____ Conductivity 4.49 = _____
Turbidity 0.0 = _____ Dissolved Oxygen 8.52 = _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW25**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) ----- ft.
Depth to FP (Free product) ----- ft.
FP Thickness 4.00 ft.
Length of Water Column (LWC=TWD-DGW) _____ ft.

1Csg. Vol. (LWC*C)= _____ X 0.163 = _____ gal.
3Csg. Volume = 3x _____ = _____ gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling ----- gal.
Well Yield Low _____ Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)									
Time (military)									
pH (s.u.)									
O.R.P. (mV)									
Temperature (°C)									
Specific Cond. (mS/cm)									
Dissolved Oxygen (mg/L)									
Turbidity (NTU)									

NR = Not Recorded

Remarks Free pruduct in well, well not sampled.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 8° C Conductivity 4.49 = 4.51
Turbidity 0.0 = 6.3 Dissolved Oxygen 8.52 = 10.56

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-MW26**

Well Diameter (D) 2.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) 30.09 ft.
Depth to GW(DGW) 22.45 ft.
Depth to FP (Free product) 0.00 ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 7.64 ft.

1Csg. Vol. (LWC*C)= 7.64 X 0.163 = 1.25 gal.
3Csg. Volume = 3x 1.25 = 3.74 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 3.00 gal.
Well Yield Low _____ Medium X High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.25	1.25	NR		NR			0.00
Time (military)	7:43	7:46	7:48	NR		NR			8:20
pH (s.u.)	6.29	6.37	6.43	NR		NR			6.42
O.R.P. (mV)	-26	-34	-37	NR		NR			-18
Temperature (°C)	19.45	21.36	21.54	NR		NR			20.93
Specific Cond. (mS/cm)	0.910	0.950	0.940	NR		NR			0.933
Dissolved Oxygen (mg/L)	1.96	1.31	1.50	NR		NR			2.30
Turbidity (NTU)	450.0	225.0	354.0	NR		NR			50.1

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Well purged dry after two well volumes.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba W22XD - U22 Serial Number: T908007
Calibration Measurement Results
pH 4.0 = 3.99 @ 8° C Conductivity 4.49 = 4.51
Turbidity 0.0 = 6.3 Dissolved Oxygen 8.52 = 10.56

Chain of Custody

A. Williamson	12/23/14 17:00	ECS Office	12/23/14 17:00
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-RW1**

Well Diameter (D) 4.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) 29.18 ft.
Depth to GW(DGW) 19.38 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 9.80 ft.

1Csg. Vol. (LWC*C)= 9.80 X 0.653 = 6.40 gal.
3Csg. Volume = 3x 6.40 = 19.20 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 32.00 gal.
Well Yield Low _____ Medium _____ High X

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	6.40	6.40	NR	6.40	NR	6.40	6.40	0.00
Time (military)	11:54	11:58	12:02	NR	12:09	NR	12:14	12:20	12:24
pH (s.u.)	5.64	6.00	6.18	NR	6.27	NR	6.30	6.33	6.28
O.R.P. (mV)	123	73	68	NR	75	NR	83	79	87
Temperature (°C)	18.05	20.69	20.75	NR	20.39	NR	20.24	20.41	20.19
Specific Cond. (mS/cm)	0.168	0.240	0.812	NR	0.570	NR	0.603	0.631	0.656
Dissolved Oxygen (mg/L)	2.03	1.72	1.86	NR	2.68	NR	2.80	2.88	2.72
Turbidity (NTU)	67.9	>999	>999	NR	>999	NR	>999	>999	731.0

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/22/14
Field Personnel A. Williamson
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer _____ Pump Type _____ --
Method of Sample Collection: Bailer _____ Pump Type _____ --

Quality Assurance:

Water Quality Meter: _____ Serial Number: _____

Calibration Measurement Results

pH 4.0 = _____ Conductivity 4.49 = _____
Turbidity 0.0 = _____ Dissolved Oxygen 8.52 = _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-RW2**

Well Diameter (D) 4.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) ----- ft.
Depth to GW(DGW) ----- ft.
Depth to FP (Free product) ----- ft.
FP Thickness >4.00 ft.
Length of Water Column (LWC=TWD-DGW) _____ ft.

1Csg. Vol. (LWC*C)= _____ X 0.163 = _____ gal.
3Csg. Volume = 3x _____ = _____ gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling ----- gal.
Well Yield Low _____ Medium _____ High _____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)									
Time (military)									
pH (s.u.)									
O.R.P. (mV)									
Temperature (°C)									
Specific Cond. (mS/cm)									
Dissolved Oxygen (mg/L)									
Turbidity (NTU)									

NR = Not Recorded

Remarks Free pruduct in well, well not sampled.

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 12/23/14
Field Personnel B. Peay
General Weather Conditions Rainy, 40's
Ambient Air Temperature 45 F

Facility Name Edgefield Fuel & Convenience 3 Site ID# 12175
Method of Well Purging: Bailer X Pump Type --
Method of Sample Collection: Bailer X Pump Type --

Quality Assurance:
Water Quality Meter: Horiba U-22 U22XD Serial Number: 503058
Calibration Measurement Results
pH 4.0 = 4.03 @ 7.93° C Conductivity 4.49 = 0.033
Turbidity 0.0 = 0.0 Dissolved Oxygen 8.52 = 13.42

Chain of Custody

B. Peay	12/23/14 17:15	ECS Office	12/23/14 17:15
Relinquished by	Date/Time	Received by	Date/Time
ECS Office	12/29/14 10:10	Pace	12/29/14 10:10
Relinquished by	Date/Time	Received by	Date/Time

Well # **12175-RW3**

Well Diameter (D) 4.0 inch _____ or feet
conversion factor(C): 3.143*((D/2)/12)^2*7.48 for a 2 inch well C= 0.163
for a 4 inch well C= 0.653 for a 6 inch well C= 1.469
Screen Interval 20 ft. to 30 ft.
Total Well Depth (TWD) 30.00 ft.
Depth to GW(DGW) 21.78 ft.
Depth to FP (Free product) ----- ft.
FP Thickness ----- ft.
Length of Water Column (LWC=TWD-DGW) 8.22 ft.

1Csg. Vol. (LWC*C)= 8.22 X 0.163 = 1.34 gal.
3Csg. Volume = 3x 1.34 = 4.02 gals.(Std. Purge Vol)
Total Vol. of Water Purged Before Sampling 11.74 gal.
Well Yield Low ____ Medium X High ____

	Initial	1st vol.	2nd vol.	2½ vol.	3rd vol.	3½ vol.	4th vol.	5th vol.	Sampling
Volume Purged (gallons)	0.00	1.34	1.34	NR	1.00	NR			0.00
Time (military)	11:58	12:03	12:09	NR		NR			12:17
pH (s.u.)	5.12	4.95	5.02	NR		NR			4.99
O.R.P. (mV)	203	211	223	NR		NR			224
Temperature (°C)	16.17	20.10	19.97	NR		NR			18.91
Specific Cond. (mS/cm)	0.209	0.301	0.228	NR		NR			0.999
Dissolved Oxygen (mg/L)	5.24	4.54	6.03	NR		NR			5.54
Turbidity (NTU)	0.0	19.0	0.0	NR		NR			

NR = Not Recorded

Remarks Purged and sampled using a new, clean, disposable polyethylene bailer with colorless nylon rope and nitrile gloves.
Well purged dry after 2 well volumes plus 1.0 gallons.

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

February 02, 2015

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EF&C3 14-211651
Pace Project No.: 92231138

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on December 29, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Benjamin
nicole.benjamin@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: EF&C3 14-211651
Pace Project No.: 92231138

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92231138001	12175-MW15	Water	12/22/14 12:25	12/29/14 12:55
92231138002	12175-MW16	Water	12/22/14 12:07	12/29/14 12:55
92231138003	12175-MW7	Water	12/22/14 12:50	12/29/14 12:55
92231138004	12175-MW8	Water	12/22/14 13:30	12/29/14 12:55
92231138005	12175-MW9	Water	12/22/14 14:15	12/29/14 12:55
92231138006	12175-MW10	Water	12/22/14 14:52	12/29/14 12:55
92231138007	12175-MW22	Water	12/22/14 15:35	12/29/14 12:55
92231138008	12175-MW23	Water	12/22/14 16:14	12/29/14 12:55
92231138009	12175-MW11	Water	12/22/14 17:10	12/29/14 12:55
92231138010	12175-FB1	Water	12/22/14 16:55	12/29/14 12:55
92231138011	12175-MW26	Water	12/23/14 08:20	12/29/14 12:55
92231138012	12175-MW12	Water	12/23/14 08:30	12/29/14 12:55
92231138013	12175-MW3	Water	12/23/14 09:06	12/29/14 12:55
92231138014	12175-MW6	Water	12/23/14 09:55	12/29/14 12:55
92231138015	12175-FB2	Water	12/23/14 09:45	12/29/14 12:55
92231138016	12175-RW1	Water	12/23/14 12:24	12/29/14 12:55
92231138017	TRIP BLANK	Water	12/23/14 00:00	12/29/14 12:55
92231138018	DUP1	Water	12/23/14 00:00	12/29/14 15:02
92231138019	DUP2	Water	12/23/14 00:00	12/29/14 15:02

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: EF&C3 14-211651
Pace Project No.: 92231138

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92231138001	12175-MW15	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138002	12175-MW16	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138003	12175-MW7	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138004	12175-MW8	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138005	12175-MW9	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138006	12175-MW10	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138007	12175-MW22	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138008	12175-MW23	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138009	12175-MW11	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138010	12175-FB1	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138011	12175-MW26	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138012	12175-MW12	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138013	12175-MW3	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138014	12175-MW6	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138015	12175-FB2	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138016	12175-RW1	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138017	TRIP BLANK	EPA 8260	CCL	18	PASI-C
92231138018	DUP1	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231138019	DUP2	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW15 **Lab ID: 92231138001** Collected: 12/22/14 12:25 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:24	12/30/14 20:27	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	89	%	60-140		1	12/30/14 12:24	12/30/14 20:27	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		12/31/14 23:57	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		12/31/14 23:57	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		12/31/14 23:57	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		12/31/14 23:57	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		12/31/14 23:57	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		12/31/14 23:57	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		12/31/14 23:57	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		12/31/14 23:57	108-20-3	
Ethanol	ND	ug/L	200	138	1		12/31/14 23:57	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		12/31/14 23:57	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		12/31/14 23:57	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		12/31/14 23:57	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		12/31/14 23:57	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		12/31/14 23:57	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		12/31/14 23:57	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-130		1		12/31/14 23:57	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130		1		12/31/14 23:57	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		12/31/14 23:57	2037-26-5	

Sample: 12175-MW16 **Lab ID: 92231138002** Collected: 12/22/14 12:07 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:25	12/30/14 21:26	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	95	%	60-140		1	12/30/14 12:25	12/30/14 21:26	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 00:14	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 00:14	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/01/15 00:14	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 00:14	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 00:14	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 00:14	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 00:14	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 00:14	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 00:14	64-17-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW16 **Lab ID: 92231138002** Collected: 12/22/14 12:07 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 00:14	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 00:14	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 00:14	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 00:14	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 00:14	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 00:14	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-130		1		01/01/15 00:14	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70-130		1		01/01/15 00:14	17060-07-0	
Toluene-d8 (S)	104	%	70-130		1		01/01/15 00:14	2037-26-5	

Sample: 12175-MW7 **Lab ID: 92231138003** Collected: 12/22/14 12:50 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:07	12/30/14 23:23	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	63	%	60-140		1	12/30/14 12:07	12/30/14 23:23	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 00:30	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 00:30	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/01/15 00:30	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 00:30	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 00:30	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 00:30	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 00:30	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 00:30	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 00:30	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 00:30	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 00:30	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 00:30	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 00:30	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 00:30	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 00:30	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	107	%	70-130		1		01/01/15 00:30	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		01/01/15 00:30	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 00:30	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW8 **Lab ID: 92231138004** Collected: 12/22/14 13:30 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/30/14 23:43	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	84	%	60-140		1	12/30/14 12:08	12/30/14 23:43	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 00:47	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 00:47	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/01/15 00:47	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 00:47	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 00:47	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 00:47	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 00:47	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 00:47	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 00:47	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 00:47	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 00:47	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 00:47	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 00:47	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 00:47	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 00:47	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-130		1		01/01/15 00:47	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		01/01/15 00:47	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 00:47	2037-26-5	

Sample: 12175-MW9 **Lab ID: 92231138005** Collected: 12/22/14 14:15 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/31/14 00:02	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	96	%	60-140		1	12/30/14 12:08	12/31/14 00:02	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 01:03	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 01:03	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/01/15 01:03	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 01:03	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 01:03	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 01:03	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 01:03	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 01:03	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 01:03	64-17-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW9 **Lab ID: 92231138005** Collected: 12/22/14 14:15 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 01:03	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 01:03	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 01:03	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 01:03	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 01:03	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 01:03	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	111	%	70-130		1		01/01/15 01:03	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	70-130		1		01/01/15 01:03	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 01:03	2037-26-5	

Sample: 12175-MW10 **Lab ID: 92231138006** Collected: 12/22/14 14:52 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/31/14 00:22	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	92	%	60-140		1	12/30/14 12:08	12/31/14 00:22	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 01:20	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 01:20	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/01/15 01:20	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 01:20	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 01:20	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 01:20	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 01:20	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 01:20	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 01:20	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 01:20	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 01:20	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 01:20	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 01:20	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 01:20	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 01:20	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	107	%	70-130		1		01/01/15 01:20	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-130		1		01/01/15 01:20	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 01:20	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW22 **Lab ID: 92231138007** Collected: 12/22/14 15:35 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:08	12/31/14 00:41	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	81	%	60-140		1	12/30/14 12:08	12/31/14 00:41	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/05/15 16:25	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/05/15 16:25	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/05/15 16:25	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/05/15 16:25	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/05/15 16:25	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/05/15 16:25	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/05/15 16:25	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/05/15 16:25	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/05/15 16:25	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/05/15 16:25	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/05/15 16:25	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/05/15 16:25	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/05/15 16:25	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/05/15 16:25	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/05/15 16:25	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		01/05/15 16:25	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		01/05/15 16:25	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		01/05/15 16:25	2037-26-5	

Sample: 12175-MW23 **Lab ID: 92231138008** Collected: 12/22/14 16:14 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/31/14 01:01	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	93	%	60-140		1	12/30/14 12:08	12/31/14 01:01	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 01:36	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 01:36	994-05-8	
Benzene	**18.9**	ug/L	5.0	1.7	1		01/01/15 01:36	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 01:36	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 01:36	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 01:36	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 01:36	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 01:36	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 01:36	64-17-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW23 **Lab ID: 92231138008** Collected: 12/22/14 16:14 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 01:36	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 01:36	637-92-3	
Methyl-tert-butyl ether	**6.4**	ug/L	5.0	1.7	1		01/01/15 01:36	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 01:36	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 01:36	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 01:36	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-130		1		01/01/15 01:36	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130		1		01/01/15 01:36	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		01/01/15 01:36	2037-26-5	

Sample: 12175-MW11 **Lab ID: 92231138009** Collected: 12/22/14 17:10 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:08	12/31/14 02:00	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	77	%	60-140		1	12/30/14 12:08	12/31/14 02:00	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**1340**	ug/L	100	76.8	1		01/01/15 04:40	75-85-4	
tert-Amylmethyl ether	**94.0**	ug/L	10.0	3.4	1		01/01/15 04:40	994-05-8	
Benzene	**1980**	ug/L	100	34.0	20		01/05/15 15:52	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 04:40	624-95-3	
tert-Butyl Alcohol	**200**	ug/L	100	57.7	1		01/01/15 04:40	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 04:40	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 04:40	107-06-2	
Diisopropyl ether	**5.9**	ug/L	5.0	1.7	1		01/01/15 04:40	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 04:40	64-17-5	
Ethylbenzene	**62.7**	ug/L	5.0	1.6	1		01/01/15 04:40	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 04:40	637-92-3	
Methyl-tert-butyl ether	**161**	ug/L	5.0	1.7	1		01/01/15 04:40	1634-04-4	
Naphthalene	**251**	ug/L	100	40.0	20		01/05/15 15:52	91-20-3	
Toluene	**519**	ug/L	100	32.0	20		01/05/15 15:52	108-88-3	
Xylene (Total)	**2470**	ug/L	200	54.0	20		01/05/15 15:52	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		01/01/15 04:40	460-00-4	
1,2-Dichloroethane-d4 (S)	87	%	70-130		1		01/01/15 04:40	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 04:40	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-FB1 **Lab ID: 92231138010** Collected: 12/22/14 16:55 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:08	12/31/14 02:38	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	92	%	60-140		1	12/30/14 12:08	12/31/14 02:38	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 01:53	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 01:53	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/01/15 01:53	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 01:53	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 01:53	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 01:53	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 01:53	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 01:53	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 01:53	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 01:53	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 01:53	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 01:53	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 01:53	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 01:53	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 01:53	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	110	%	70-130		1		01/01/15 01:53	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-130		1		01/01/15 01:53	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 01:53	2037-26-5	

Sample: 12175-MW26 **Lab ID: 92231138011** Collected: 12/23/14 08:20 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/31/14 02:58	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	94	%	60-140		1	12/30/14 12:08	12/31/14 02:58	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**1310**	ug/L	500	384	5		01/01/15 03:00	75-85-4	
tert-Amylmethyl ether	**44.7J**	ug/L	50.0	17.0	5		01/01/15 03:00	994-05-8	
Benzene	**967**	ug/L	25.0	8.5	5		01/01/15 03:00	71-43-2	
3,3-Dimethyl-1-Butanol	**161J**	ug/L	500	160	5		01/01/15 03:00	624-95-3	
tert-Butyl Alcohol	**306J**	ug/L	500	288	5		01/01/15 03:00	75-65-0	
tert-Butyl Formate	ND	ug/L	250	36.5	5		01/01/15 03:00	762-75-4	
1,2-Dichloroethane	**13.9J**	ug/L	25.0	9.0	5		01/01/15 03:00	107-06-2	
Diisopropyl ether	**16.0J**	ug/L	25.0	8.5	5		01/01/15 03:00	108-20-3	
Ethanol	ND	ug/L	1000	689	5		01/01/15 03:00	64-17-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW26 **Lab ID: 92231138011** Collected: 12/23/14 08:20 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Ethylbenzene	ND	ug/L	25.0	8.0	5		01/01/15 03:00	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	50.0	18.0	5		01/01/15 03:00	637-92-3	
Methyl-tert-butyl ether	**84.6**	ug/L	25.0	8.5	5		01/01/15 03:00	1634-04-4	
Naphthalene	**25.6**	ug/L	25.0	10.0	5		01/01/15 03:00	91-20-3	
Toluene	**41.8**	ug/L	25.0	8.0	5		01/01/15 03:00	108-88-3	
Xylene (Total)	ND	ug/L	50.0	13.5	5		01/01/15 03:00	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-130		5		01/01/15 03:00	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130		5		01/01/15 03:00	17060-07-0	
Toluene-d8 (S)	103	%	70-130		5		01/01/15 03:00	2037-26-5	

Sample: 12175-MW12 **Lab ID: 92231138012** Collected: 12/23/14 08:30 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/31/14 03:18	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	98	%	60-140		1	12/30/14 12:08	12/31/14 03:18	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**1120**	ug/L	100	76.8	1		01/05/15 16:58	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/05/15 16:58	994-05-8	
Benzene	**44.7**	ug/L	5.0	1.7	1		01/05/15 16:58	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/05/15 16:58	624-95-3	
tert-Butyl Alcohol	**75.6J**	ug/L	100	57.7	1		01/05/15 16:58	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/05/15 16:58	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/05/15 16:58	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/05/15 16:58	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/05/15 16:58	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/05/15 16:58	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/05/15 16:58	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/05/15 16:58	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/05/15 16:58	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/05/15 16:58	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/05/15 16:58	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		01/05/15 16:58	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		01/05/15 16:58	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		01/05/15 16:58	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(704)875-9092

ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW3 **Lab ID: 92231138013** Collected: 12/23/14 09:06 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/31/14 03:37	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	82	%	60-140		1	12/30/14 12:08	12/31/14 03:37	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 02:43	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 02:43	994-05-8	
Benzene	**43.1**	ug/L	5.0	1.7	1		01/01/15 02:43	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 02:43	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 02:43	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 02:43	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 02:43	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 02:43	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 02:43	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 02:43	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 02:43	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 02:43	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 02:43	91-20-3	
Toluene	**1.7J**	ug/L	5.0	1.6	1		01/01/15 02:43	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 02:43	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-130		1		01/01/15 02:43	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		01/01/15 02:43	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 02:43	2037-26-5	

Sample: 12175-MW6 **Lab ID: 92231138014** Collected: 12/23/14 09:55 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/31/14 03:56	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	107	%	60-140		1	12/30/14 12:08	12/31/14 03:56	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**13600**	ug/L	500	384	5		01/01/15 03:33	75-85-4	
tert-Amylmethyl ether	ND	ug/L	50.0	17.0	5		01/01/15 03:33	994-05-8	
Benzene	**2350**	ug/L	125	42.5	25		01/05/15 15:18	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	500	160	5		01/01/15 03:33	624-95-3	
tert-Butyl Alcohol	**1050**	ug/L	500	288	5		01/01/15 03:33	75-65-0	
tert-Butyl Formate	ND	ug/L	250	36.5	5		01/01/15 03:33	762-75-4	
1,2-Dichloroethane	ND	ug/L	25.0	9.0	5		01/01/15 03:33	107-06-2	
Diisopropyl ether	ND	ug/L	25.0	8.5	5		01/01/15 03:33	108-20-3	
Ethanol	ND	ug/L	1000	689	5		01/01/15 03:33	64-17-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-MW6 **Lab ID: 92231138014** Collected: 12/23/14 09:55 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Ethylbenzene	**483**	ug/L	25.0	8.0	5		01/01/15 03:33	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	50.0	18.0	5		01/01/15 03:33	637-92-3	
Methyl-tert-butyl ether	**459**	ug/L	25.0	8.5	5		01/01/15 03:33	1634-04-4	
Naphthalene	**26.6**	ug/L	25.0	10.0	5		01/01/15 03:33	91-20-3	
Toluene	**183**	ug/L	25.0	8.0	5		01/01/15 03:33	108-88-3	
Xylene (Total)	**263**	ug/L	50.0	13.5	5		01/01/15 03:33	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-130		5		01/01/15 03:33	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		5		01/01/15 03:33	17060-07-0	
Toluene-d8 (S)	103	%	70-130		5		01/01/15 03:33	2037-26-5	

Sample: 12175-FB2 **Lab ID: 92231138015** Collected: 12/23/14 09:45 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:08	12/31/14 04:16	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	89	%	60-140		1	12/30/14 12:08	12/31/14 04:16	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**84.7J**	ug/L	100	76.8	1		01/01/15 04:56	75-85-4	C8
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 04:56	994-05-8	
Benzene	**1.7J**	ug/L	5.0	1.7	1		01/01/15 04:56	71-43-2	C8
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 04:56	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 04:56	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 04:56	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 04:56	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 04:56	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 04:56	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 04:56	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 04:56	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 04:56	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 04:56	91-20-3	
Toluene	**2.1J**	ug/L	5.0	1.6	1		01/01/15 04:56	108-88-3	C8
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 04:56	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	107	%	70-130		1		01/01/15 04:56	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130		1		01/01/15 04:56	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 04:56	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: 12175-RW1 **Lab ID: 92231138016** Collected: 12/23/14 12:24 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**1.2**	ug/L	0.039	0.039	2	12/30/14 12:08	12/31/14 14:03	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	95	%	60-140		2	12/30/14 12:08	12/31/14 14:03	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**18100**	ug/L	2000	1540	20		01/01/15 03:50	75-85-4	
tert-Amylmethyl ether	**2010**	ug/L	200	68.0	20		01/01/15 03:50	994-05-8	
Benzene	**27900**	ug/L	1250	425	250		01/05/15 15:35	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	2000	642	20		01/01/15 03:50	624-95-3	
tert-Butyl Alcohol	**1550J**	ug/L	2000	1150	20		01/01/15 03:50	75-65-0	
tert-Butyl Formate	ND	ug/L	1000	146	20		01/01/15 03:50	762-75-4	
1,2-Dichloroethane	ND	ug/L	100	36.0	20		01/01/15 03:50	107-06-2	
Diisopropyl ether	**145**	ug/L	100	34.0	20		01/01/15 03:50	108-20-3	
Ethanol	ND	ug/L	4000	2760	20		01/01/15 03:50	64-17-5	
Ethylbenzene	**2900**	ug/L	100	32.0	20		01/01/15 03:50	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	200	72.0	20		01/01/15 03:50	637-92-3	
Methyl-tert-butyl ether	**4540**	ug/L	1250	425	250		01/05/15 15:35	1634-04-4	
Naphthalene	**525**	ug/L	100	40.0	20		01/01/15 03:50	91-20-3	
Toluene	**44800**	ug/L	1250	400	250		01/05/15 15:35	108-88-3	
Xylene (Total)	**17000**	ug/L	2500	675	250		01/05/15 15:35	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	70-130		20		01/01/15 03:50	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		20		01/01/15 03:50	17060-07-0	
Toluene-d8 (S)	104	%	70-130		20		01/01/15 03:50	2037-26-5	

Sample: TRIP BLANK **Lab ID: 92231138017** Collected: 12/23/14 00:00 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 08:00	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 08:00	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/01/15 08:00	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 08:00	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 08:00	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 08:00	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 08:00	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 08:00	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 08:00	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 08:00	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 08:00	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 08:00	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 08:00	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 08:00	108-88-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: TRIP BLANK **Lab ID: 92231138017** Collected: 12/23/14 00:00 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 08:00	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		01/01/15 08:00	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		01/01/15 08:00	17060-07-0	
Toluene-d8 (S)	104	%	70-130		1		01/01/15 08:00	2037-26-5	

Sample: DUP1 **Lab ID: 92231138018** Collected: 12/23/14 00:00 Received: 12/29/14 15:02 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:08	12/31/14 04:55	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	92	%	60-140		1	12/30/14 12:08	12/31/14 04:55	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**973**	ug/L	100	76.8	1		01/01/15 08:16	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 08:16	994-05-8	
Benzene	**48.0**	ug/L	5.0	1.7	1		01/01/15 08:16	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 08:16	624-95-3	
tert-Butyl Alcohol	**80.4J**	ug/L	100	57.7	1		01/01/15 08:16	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 08:16	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 08:16	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 08:16	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 08:16	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 08:16	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 08:16	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 08:16	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 08:16	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 08:16	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 08:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		01/01/15 08:16	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		01/01/15 08:16	17060-07-0	
Toluene-d8 (S)	104	%	70-130		1		01/01/15 08:16	2037-26-5	

Sample: DUP2 **Lab ID: 92231138019** Collected: 12/23/14 00:00 Received: 12/29/14 15:02 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:08	12/31/14 05:14	106-93-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: EF&C3 14-211651
Pace Project No.: 92231138

Sample: DUP2 **Lab ID: 92231138019** Collected: 12/23/14 00:00 Received: 12/29/14 15:02 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
Surrogates									
1-Chloro-2-bromopropane (S)	104	%	60-140		1	12/30/14 12:08	12/31/14 05:14	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**12100**	ug/L	2500	1920	25		01/05/15 16:08	75-85-4	
tert-Amylmethyl ether	**19.7J**	ug/L	20.0	6.8	2		01/01/15 12:27	994-05-8	
Benzene	**2370**	ug/L	125	42.5	25		01/05/15 16:08	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	200	64.2	2		01/01/15 12:27	624-95-3	
tert-Butyl Alcohol	**1080**	ug/L	200	115	2		01/01/15 12:27	75-65-0	
tert-Butyl Formate	ND	ug/L	100	14.6	2		01/01/15 12:27	762-75-4	
1,2-Dichloroethane	ND	ug/L	10.0	3.6	2		01/01/15 12:27	107-06-2	
Diisopropyl ether	ND	ug/L	10.0	3.4	2		01/01/15 12:27	108-20-3	
Ethanol	ND	ug/L	400	276	2		01/01/15 12:27	64-17-5	
Ethylbenzene	**484**	ug/L	125	40.0	25		01/05/15 16:08	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	20.0	7.2	2		01/01/15 12:27	637-92-3	
Methyl-tert-butyl ether	**351**	ug/L	125	42.5	25		01/05/15 16:08	1634-04-4	
Naphthalene	**24.2**	ug/L	10.0	4.0	2		01/01/15 12:27	91-20-3	
Toluene	**137**	ug/L	10.0	3.2	2		01/01/15 12:27	108-88-3	
Xylene (Total)	**201**	ug/L	20.0	5.4	2		01/01/15 12:27	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		2		01/01/15 12:27	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		2		01/01/15 12:27	17060-07-0	
Toluene-d8 (S)	103	%	70-130		2		01/01/15 12:27	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

QC Batch: MSV/29893 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92231138001, 92231138002, 92231138003, 92231138004, 92231138005, 92231138006, 92231138008, 92231138009, 92231138010, 92231138011, 92231138013, 92231138014, 92231138015, 92231138016

METHOD BLANK: 1362561 Matrix: Water
Associated Lab Samples: 92231138001, 92231138002, 92231138003, 92231138004, 92231138005, 92231138006, 92231138008, 92231138009, 92231138010, 92231138011, 92231138013, 92231138014, 92231138015, 92231138016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	12/31/14 23:24	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	12/31/14 23:24	
Benzene	ug/L	ND	5.0	12/31/14 23:24	
Diisopropyl ether	ug/L	ND	5.0	12/31/14 23:24	
Ethanol	ug/L	ND	200	12/31/14 23:24	
Ethyl-tert-butyl ether	ug/L	ND	10.0	12/31/14 23:24	
Ethylbenzene	ug/L	ND	5.0	12/31/14 23:24	
Methyl-tert-butyl ether	ug/L	ND	5.0	12/31/14 23:24	
Naphthalene	ug/L	ND	5.0	12/31/14 23:24	
tert-Amyl Alcohol	ug/L	ND	100	12/31/14 23:24	
tert-Amylmethyl ether	ug/L	ND	10.0	12/31/14 23:24	
tert-Butyl Alcohol	ug/L	ND	100	12/31/14 23:24	
tert-Butyl Formate	ug/L	ND	50.0	12/31/14 23:24	
Toluene	ug/L	ND	5.0	12/31/14 23:24	
Xylene (Total)	ug/L	ND	10.0	12/31/14 23:24	
1,2-Dichloroethane-d4 (S)	%	109	70-130	12/31/14 23:24	
4-Bromofluorobenzene (S)	%	102	70-130	12/31/14 23:24	
Toluene-d8 (S)	%	105	70-130	12/31/14 23:24	

LABORATORY CONTROL SAMPLE: 1362562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	50.5	101	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	875	88	70-130	
Benzene	ug/L	50	57.0	114	70-130	
Diisopropyl ether	ug/L	50	55.6	111	70-130	
Ethanol	ug/L	2000	2180	109	70-130	
Ethyl-tert-butyl ether	ug/L	100	120	120	70-130	
Ethylbenzene	ug/L	50	48.9	98	70-130	
Methyl-tert-butyl ether	ug/L	50	51.8	104	70-130	
Naphthalene	ug/L	50	46.1	92	70-130	
tert-Amyl Alcohol	ug/L	1000	994	99	70-130	
tert-Amylmethyl ether	ug/L	100	109	109	70-130	
tert-Butyl Alcohol	ug/L	500	587	117	70-130	
tert-Butyl Formate	ug/L	400	481	120	70-130	
Toluene	ug/L	50	55.3	111	70-130	
Xylene (Total)	ug/L	150	150	100	70-130	
1,2-Dichloroethane-d4 (S)	%			87	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

LABORATORY CONTROL SAMPLE: 1362562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			102	70-130	

MATRIX SPIKE SAMPLE: 1362565

Parameter	Units	92231138008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	22.3	111	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	313	78	70-130	
Benzene	ug/L	18.9	20	46.6	138	70-130	M0
Diisopropyl ether	ug/L	ND	20	24.6	122	70-130	
Ethanol	ug/L	ND	800	846	106	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	52.7	132	70-130	M0
Ethylbenzene	ug/L	ND	20	22.0	110	70-130	
Methyl-tert-butyl ether	ug/L	6.4	20	30.1	119	70-130	
Naphthalene	ug/L	ND	20	19.7	99	70-130	
tert-Amyl Alcohol	ug/L	ND	400	418	105	70-130	
tert-Amylmethyl ether	ug/L	ND	40	48.7	122	70-130	
tert-Butyl Alcohol	ug/L	ND	200	342	171	70-130	M0
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	P5
Toluene	ug/L	ND	20	26.2	131	70-130	M0
1,2-Dichloroethane-d4 (S)	%				88	70-130	
4-Bromofluorobenzene (S)	%				104	70-130	
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 1362566

Parameter	Units	92231138010 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	117	122	4		
4-Bromofluorobenzene (S)	%	110	110	0		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

SAMPLE DUPLICATE: 1362566

Parameter	Units	92231138010 Result	Dup Result	RPD	Max RPD	Qualifiers
Toluene-d8 (S)	%	103	103	0		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

QC Batch: MSV/29894 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92231138017, 92231138018, 92231138019

METHOD BLANK: 1362567 Matrix: Water
Associated Lab Samples: 92231138017, 92231138018, 92231138019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	01/01/15 07:26	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	01/01/15 07:26	
Benzene	ug/L	ND	5.0	01/01/15 07:26	
Diisopropyl ether	ug/L	ND	5.0	01/01/15 07:26	
Ethanol	ug/L	ND	200	01/01/15 07:26	
Ethyl-tert-butyl ether	ug/L	ND	10.0	01/01/15 07:26	
Ethylbenzene	ug/L	ND	5.0	01/01/15 07:26	
Methyl-tert-butyl ether	ug/L	ND	5.0	01/01/15 07:26	
Naphthalene	ug/L	ND	5.0	01/01/15 07:26	
tert-Amyl Alcohol	ug/L	ND	100	01/01/15 07:26	
tert-Amylmethyl ether	ug/L	ND	10.0	01/01/15 07:26	
tert-Butyl Alcohol	ug/L	ND	100	01/01/15 07:26	
tert-Butyl Formate	ug/L	ND	50.0	01/01/15 07:26	
Toluene	ug/L	ND	5.0	01/01/15 07:26	
Xylene (Total)	ug/L	ND	10.0	01/01/15 07:26	
1,2-Dichloroethane-d4 (S)	%	88	70-130	01/01/15 07:26	
4-Bromofluorobenzene (S)	%	104	70-130	01/01/15 07:26	
Toluene-d8 (S)	%	104	70-130	01/01/15 07:26	

LABORATORY CONTROL SAMPLE: 1362568

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	51.4	103	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	993	99	70-130	
Benzene	ug/L	50	59.2	118	70-130	
Diisopropyl ether	ug/L	50	57.8	116	70-130	
Ethanol	ug/L	2000	2180	109	70-130	
Ethyl-tert-butyl ether	ug/L	100	125	125	70-130	
Ethylbenzene	ug/L	50	48.9	98	70-130	
Methyl-tert-butyl ether	ug/L	50	54.3	109	70-130	
Naphthalene	ug/L	50	48.0	96	70-130	
tert-Amyl Alcohol	ug/L	1000	1150	115	70-130	
tert-Amylmethyl ether	ug/L	100	115	115	70-130	
tert-Butyl Alcohol	ug/L	500	678	136	70-130	L3
tert-Butyl Formate	ug/L	400	500	125	70-130	
Toluene	ug/L	50	57.4	115	70-130	
Xylene (Total)	ug/L	150	150	100	70-130	
1,2-Dichloroethane-d4 (S)	%			86	70-130	
4-Bromofluorobenzene (S)	%			103	70-130	
Toluene-d8 (S)	%			103	70-130	

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REPORT OF LABORATORY ANALYSIS

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(704)875-9092

QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

MATRIX SPIKE SAMPLE: 1362569

Parameter	Units	92231372001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	22.1	110	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	411	103	70-130	
Benzene	ug/L	ND	20	27.4	136	70-130	M0
Diisopropyl ether	ug/L	54.1	20	80.3	131	70-130	M0
Ethanol	ug/L	ND	800	855	107	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	53.7	133	70-130	M0
Ethylbenzene	ug/L	ND	20	22.1	109	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	24.8	117	70-130	
Naphthalene	ug/L	ND	20	21.3	107	70-130	
tert-Amyl Alcohol	ug/L	ND	400	535	123	70-130	
tert-Amylmethyl ether	ug/L	ND	40	48.5	121	70-130	
tert-Butyl Alcohol	ug/L	ND	200	324	139	70-130	M0
tert-Butyl Formate	ug/L	ND	160	209	131	70-130	M0
Toluene	ug/L	ND	20	25.8	127	70-130	
1,2-Dichloroethane-d4 (S)	%				86	70-130	
4-Bromofluorobenzene (S)	%				105	70-130	
Toluene-d8 (S)	%				102	70-130	

SAMPLE DUPLICATE: 1362570

Parameter	Units	92231372002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	10.6	10.6	0	30	
Diisopropyl ether	ug/L	4.4J	4.5J		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	101	105	3		
4-Bromofluorobenzene (S)	%	107	108	1		
Toluene-d8 (S)	%	105	104	0		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

QC Batch: MSV/29906 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92231138007, 92231138012

METHOD BLANK: 1363339 Matrix: Water
Associated Lab Samples: 92231138007, 92231138012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	01/05/15 14:45	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	01/05/15 14:45	
Benzene	ug/L	ND	5.0	01/05/15 14:45	
Diisopropyl ether	ug/L	ND	5.0	01/05/15 14:45	
Ethanol	ug/L	ND	200	01/05/15 14:45	
Ethyl-tert-butyl ether	ug/L	ND	10.0	01/05/15 14:45	
Ethylbenzene	ug/L	ND	5.0	01/05/15 14:45	
Methyl-tert-butyl ether	ug/L	ND	5.0	01/05/15 14:45	
Naphthalene	ug/L	ND	5.0	01/05/15 14:45	
tert-Amyl Alcohol	ug/L	ND	100	01/05/15 14:45	
tert-Amylmethyl ether	ug/L	ND	10.0	01/05/15 14:45	
tert-Butyl Alcohol	ug/L	ND	100	01/05/15 14:45	
tert-Butyl Formate	ug/L	ND	50.0	01/05/15 14:45	
Toluene	ug/L	ND	5.0	01/05/15 14:45	
Xylene (Total)	ug/L	ND	10.0	01/05/15 14:45	
1,2-Dichloroethane-d4 (S)	%	99	70-130	01/05/15 14:45	
4-Bromofluorobenzene (S)	%	100	70-130	01/05/15 14:45	
Toluene-d8 (S)	%	101	70-130	01/05/15 14:45	

LABORATORY CONTROL SAMPLE: 1363340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	46.9	94	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	950	95	70-130	
Benzene	ug/L	50	55.1	110	70-130	
Diisopropyl ether	ug/L	50	50.4	101	70-130	
Ethanol	ug/L	2000	2820	141	70-130	L3
Ethyl-tert-butyl ether	ug/L	100	110	110	70-130	
Ethylbenzene	ug/L	50	51.4	103	70-130	
Methyl-tert-butyl ether	ug/L	50	48.2	96	70-130	
Naphthalene	ug/L	50	54.7	109	70-130	
tert-Amyl Alcohol	ug/L	1000	1120	112	70-130	
tert-Amylmethyl ether	ug/L	100	104	104	70-130	
tert-Butyl Alcohol	ug/L	500	559	112	70-130	
tert-Butyl Formate	ug/L	400	467	117	70-130	
Toluene	ug/L	50	52.4	105	70-130	
Xylene (Total)	ug/L	150	152	102	70-130	
1,2-Dichloroethane-d4 (S)	%			90	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			101	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

MATRIX SPIKE SAMPLE: 1363341

Parameter	Units	92231489005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	13.0	65	70-130	M0
3,3-Dimethyl-1-Butanol	ug/L	ND	400	320	80	70-130	
Benzene	ug/L	ND	20	17.8	89	70-130	
Diisopropyl ether	ug/L	ND	20	12.3	61	70-130	M0
Ethanol	ug/L	ND	800	721	90	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	26.3	65	70-130	M0
Ethylbenzene	ug/L	ND	20	23.0	115	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	11.9	55	70-130	M0
Naphthalene	ug/L	ND	20	21.8	109	70-130	
tert-Amyl Alcohol	ug/L	ND	400	259	65	70-130	M0
tert-Amylmethyl ether	ug/L	ND	40	28.5	71	70-130	
tert-Butyl Alcohol	ug/L	ND	200	178	89	70-130	
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	P5
Toluene	ug/L	ND	20	16.7	83	70-130	
1,2-Dichloroethane-d4 (S)	%				92	70-130	
4-Bromofluorobenzene (S)	%				92	70-130	
Toluene-d8 (S)	%				89	70-130	

SAMPLE DUPLICATE: 1363342

Parameter	Units	92231489006 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	91	91	1		
4-Bromofluorobenzene (S)	%	101	99	2		
Toluene-d8 (S)	%	94	94	0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

QC Batch: OEXT/31998
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 92231138001, 92231138002

METHOD BLANK: 1360963 Matrix: Water
Associated Lab Samples: 92231138001, 92231138002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	12/30/14 17:29	
1-Chloro-2-bromopropane (S)	%	96	60-140	12/30/14 17:29	

LABORATORY CONTROL SAMPLE & LCSD: 1360964 1360965

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.29	0.30	0.31	106	108	60-140	1	20	
1-Chloro-2-bromopropane (S)	%				99	96	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1360966 1360967

Parameter	Units	92231138001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.28	.28	0.29	0.29	102	102	60-140	0	20	
1-Chloro-2-bromopropane (S)	%						95	95	60-140			

SAMPLE DUPLICATE: 1360968

Parameter	Units	92231138002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	95	95	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EF&C3 14-211651
Pace Project No.: 92231138

QC Batch: OEXT/31999 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 92231138003, 92231138004, 92231138005, 92231138006, 92231138007, 92231138008, 92231138009, 92231138010, 92231138011, 92231138012, 92231138013, 92231138014, 92231138015, 92231138016, 92231138018, 92231138019

METHOD BLANK: 1360969 Matrix: Water
Associated Lab Samples: 92231138003, 92231138004, 92231138005, 92231138006, 92231138007, 92231138008, 92231138009, 92231138010, 92231138011, 92231138012, 92231138013, 92231138014, 92231138015, 92231138016, 92231138018, 92231138019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.021	12/30/14 22:25	
1-Chloro-2-bromopropane (S)	%	93	60-140	12/30/14 22:25	

LABORATORY CONTROL SAMPLE & LCSD: 1360970 1360971

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.28	0.30	0.29	104	100	60-140	1	20	
1-Chloro-2-bromopropane (S)	%				95	95	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1360972 1360973

Parameter	Units	92231138008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.28	.28	0.28	0.29	100	102	60-140	2	20	
1-Chloro-2-bromopropane (S)	%						93	95	60-140			

SAMPLE DUPLICATE: 1360974

Parameter	Units	92231138009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	77	76	2		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: EF&C3 14-211651
Pace Project No.: 92231138

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

C8	Result may be biased high due to carryover from previously analyzed sample.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P5	The EPA or method required sample preservation degrades this compound, therefore acceptable recoveries may not be achieved in sample matrix spikes.

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EF&C3 14-211651
Pace Project No.: 92231138

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92231138001	12175-MW15	EPA 8011	OEXT/31998	EPA 8011	GCSV/19949
92231138002	12175-MW16	EPA 8011	OEXT/31998	EPA 8011	GCSV/19949
92231138003	12175-MW7	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138004	12175-MW8	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138005	12175-MW9	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138006	12175-MW10	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138007	12175-MW22	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138008	12175-MW23	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138009	12175-MW11	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138010	12175-FB1	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138011	12175-MW26	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138012	12175-MW12	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138013	12175-MW3	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138014	12175-MW6	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138015	12175-FB2	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138016	12175-RW1	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138018	DUP1	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138019	DUP2	EPA 8011	OEXT/31999	EPA 8011	GCSV/19950
92231138001	12175-MW15	EPA 8260	MSV/29893		
92231138002	12175-MW16	EPA 8260	MSV/29893		
92231138003	12175-MW7	EPA 8260	MSV/29893		
92231138004	12175-MW8	EPA 8260	MSV/29893		
92231138005	12175-MW9	EPA 8260	MSV/29893		
92231138006	12175-MW10	EPA 8260	MSV/29893		
92231138007	12175-MW22	EPA 8260	MSV/29906		
92231138008	12175-MW23	EPA 8260	MSV/29893		
92231138009	12175-MW11	EPA 8260	MSV/29893		
92231138010	12175-FB1	EPA 8260	MSV/29893		
92231138011	12175-MW26	EPA 8260	MSV/29893		
92231138012	12175-MW12	EPA 8260	MSV/29906		
92231138013	12175-MW3	EPA 8260	MSV/29893		
92231138014	12175-MW6	EPA 8260	MSV/29893		
92231138015	12175-FB2	EPA 8260	MSV/29893		
92231138016	12175-RW1	EPA 8260	MSV/29893		
92231138017	TRIP BLANK	EPA 8260	MSV/29894		
92231138018	DUP1	EPA 8260	MSV/29894		
92231138019	DUP2	EPA 8260	MSV/29894		

Pace Analytical	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: September 22, 2014 Page 1 of 2
	Document Number: **F-CHR-CS-003-rev.15**	Issuing Authority: Pace Huntersville Quality Office

Client Name: ECS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other_____

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1401 Type of Ice: Wet Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor T1401 No Correction

Corrected Cooler Temp.: 3.1 °C Biological Tissue is Frozen: Yes No N/A

Date and Initials of person examining contents: AP 12-29-14

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☐N/A	11.
Sample Labels match COC:	☐Yes ☑No ☐N/A	12. extra samples: DUP 1 - 12-23-14 - No time DUP 2 - 12-23-14 - No time
-Includes date/time/ID/Analysis Matrix:_____		
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):_____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Nellie France Date/Time: 12-31-14

Comments/ Resolution: do need Dup 1 and Dup 2 analyzed

SCURF Review: AMB Date: 12-29-14

SRF Review: AMB Date: 12-31-14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Place label here

WO#: 92231138

92231138

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

1883427

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: ECS	Report To: Randy Hutchins	Attention: Accounting
Address: 13504 South Point Blvd Charlotte, NC 28273	Copy To:	Company Name: ECS
Email To: Rhutchins@ecslonsult.com	Purchase Order No.: 14-211651	Address: On File
Phone: 704-583-2711 Fax:	Project Name: EF+C 3	Pace Quote Reference:
Requested Due Date/TAT: Standard	Project Number: 14-211651	Pace Project Manager: Nicole Benjamin
		Pace Profile #: 2011-21

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: SC

Section D
Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	8260 BTEXMN	1,2DCA	8 Oxygenates	8011 EDB	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92231138
1	12175-MW15	WT	G			12/22/14	1225		6				X						X	X	X	X		001
2	12175-MW16						1207																	002
3	12175-MW7						1250																	003
4	12175-MW8						1330																	004
5	12175-MW9						1415																	005
6	12175-MW10						1452																	006
7	12175-MW22						1535																	007
8	12175-MW23						1614																	008
9	12175-MW11						1710																	009
10	12175-FB1						1655																	010
11	12175-MW26					12/23/14	820																	011
12	12175-MW12						830																	012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Please report J-Values.	A. Williamson/ECS	12/23/14	1700	ECS Office	12/23/14	1700				
	[signature] 12/29/14			[signature] Pace	12/29/14	1010				
	[signature] Pace	12/29/14	1255	Alex Pay / Pace	12-29-14	1255	3.1	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Williamson

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 12/23/14

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

1883424

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: ECS	Report To: Randy Hutchins	Attention: Accounting
Address: 13504 South Point Blvd Charlotte, NC 28273	Copy To:	Company Name: ECS
Email To: RHutchins@ecsconsult.com	Purchase Order No.: 14-211651	Address: On File.
Phone: 704-583-2711 Fax:	Project Name: EF&C 3	Pace Quote Reference:
Requested Due Date/TAT: Standard	Project Number: 14-211651	Pace Project Manager: Nicole Benjamin
		Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☒ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: SC

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information — SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	8260 BTEX MN	1,2-DCA	Oxygenates	1,2-DCA-tw	8011 EDB	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 92231138
1	12175-MW3	WT	G			12/23/14	906		6				X						X	X	X	X	X		013
2	12175-MW6	"	"			"	955		"				"						"	"	"	"	"		014
3	12175-FB2	"	"			"	945		"				"						"	"	"	"	"		015
4	12175-RW1	"	"			"	1224		1				"						"	"	"	"	"		016
5	Trip Blank	1	1			1	—		2				1						1	1	1	1	1		017
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Please report 5 values.	A. Williamson / ECS	12/23/14	1700	ECS Office	12/23/14	1700	
RW1 will be very hot.	[signature] pce	12.23.14		[signature] pce	12/23/14	1610	
	[signature] pce	12/29/14	1255	Fed Ex Ground	12.29.14	1255	N/A Y N

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Aaron Williamson

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 12/23/14

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

APPENDIX B
QUALITY ASSURANCE AND QUALITY CONTROL EVALUATION
LABORATORY ACCURACY - PACE ANALYTICAL SERVICES

Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
12175-FB1	12/22/2014	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-FB2	12/23/2014	1.7 J	2.1 J	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	84.7 J	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
TRIP BLANK	12/23/2014	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	N/A	<5.0	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
TRIP BLANK	12/23/2014	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	N/A	<5.0	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100

Detections reported in 12175-FB2 were flagged in the laboratory report with qualifier indicating results may be biased due to carryover from previously analyzed sample.

A duplicate sample was collected during the sampling event. Below is a comparison of the laboratory analytical results from the duplicate sample.

Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
12175-MW12	12/23/2014	**44.7**	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	**1,120**	<10.0	75.6 J	<50.0	<5.0	<200	<10.0	<100
Dup1	12/23/2014	**48.0**	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	**973**	<10.0	80.4 J	<50.0	<5.0	<200	<10.0	<100
Relative Percent Difference		**7.12%**	--	--	--	--	--	--	--	**14.05%**	--	**6.15%**	--	--	--	--	--
													Average Relative Percent Difference				**9.11%**

Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
12175-MW6	12/23/14	**2,350**	183	483	263	**459**	**26.6**	<0.019	<25.0	**13,600**	<50.0	1,050	<250	<25.0	<1,000	<50.0	<500
Dup2	12/23/2014	**2,370**	137	484	201	**351**	24.2	<0.020	<10.0	**12,100**	19.7 J	1,080	<100	<10.0	<400	<20.0	<200
Relative Percent Difference		**0.85%**	**28.75%**	**0.21%**	**26.72%**	**26.67%**	**9.45%**	--	--	**11.67%**	--	**2.82%**	--	--	--	--	--
													Average Relative Percent Difference				**13.39%**

Results in micrograms per liter ug/L
FB = field blank

APPENDIX G

Disposal Manifest

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone: 803-957-9175

4. Waste Tracking Number: 34798

5. Generator's Name and Mailing Address: Edgefield Fuel & Convenience, LLC, 311 Main St, Edgefield, SC

Generator's Site Address (if different than mailing address): Edgefield Fuel & Convenience, 311 Main St., Edgefield, SC

Generator's Phone: ~~800-627-6493~~

6. Transporter 1 Company Name: ~~A&D Environmental Services (SC) LLC~~

U.S. EPA ID Number: ~~SCD987598331~~

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address: A&D Environmental Services, Inc, 2718 Uhwarrie Road, Archdale, NC 27263

U.S. EPA ID Number: NCD986232221

Facility's Phone: 336-434-7750

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Purge Water 26150010	3	DM	165	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

1538

In Case of Emergency Call: 803-957-9175 A&D (SC) Job #215905

14-211651.00

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Randy Hutchins, ECS (Agent) for Edgefield Fuel & Convenience — Signature — Month: 01 Day: 06 Year: 15

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Brian Burbridge — Signature — Month: 1 Day: 14 Year: 15

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Travis Clapp — Signature — Month: 01 Day: 27 Year: 15

DESIGNATED FACILITY TO GENERATOR

APPENDIX J

Access Agreements

APPENDIX K

Data Verification Checklist

Contractor Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	✓		
2	Is UST Owner/Operator name, address, & phone number provided?	✓		
3	Is name, address, & phone number of current property owner provided?	✓		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	✓		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?			✓
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?	✓		
7	Has the facility history been summarized?	✓		
8	Has the regional geology and hydrogeology been described?			✓
9	Are the receptor survey results provided as required?			✓
10	Has current use of the site and adjacent land been described?			✓
11	Has the site-specific geology and hydrogeology been described?			✓
12	Has the primary soil type been described?			✓
13	Have field screening results been described?			✓
14	Has a description of the soil sample collection and preservation been detailed?			✓
15	Has the field screening methodology and procedure been detailed?			✓
16	Has the monitoring well installation and development dates been provided?			✓
17	Has the method of well development been detailed?			✓
18	Has justification been provided for the locations of the monitoring wells?			✓
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	✓		
20	Has the groundwater sampling methodology been detailed?	✓		
21	Have the groundwater sampling dates and groundwater measurements been provided?	✓		
22	Has the purging methodology been detailed?	✓		
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?	✓		
24	If free-product is present, has the thickness been provided?			✓
25	Does the report include a brief discussion of the assessment done and the results?	✓		
26	Does the report include a brief discussion of the aquifer evaluation and results?			✓
27	Does the report include a brief discussion of the fate & transport models used?			✓

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			✓
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			✓
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			✓
31	Have recommendations for further action been provided and explained?	✓		
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			✓
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	✓		
34	Has the current and historical laboratory data been provided in tabular format?	✓		
35	Have the aquifer characteristics been provided and summarized on the appropriate form?			✓
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			✓
37	Has the topographic map been provided with all required elements? (Figure 1)	✓		
38	Has the site base map been provided with all required elements? (Figure 2)	✓		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)	✓		
40	Has the site potentiometric map been provided? (Figure 5)	✓		
41	Have the geologic cross-sections been provided? (Figure 6)			✓
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			✓
43	Has the site survey been provided and include all necessary elements? (Appendix A)			✓
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)	✓		
45	Is the laboratory performing the analyses properly certified?	✓		
46	Has the tax map been included with all necessary elements? (Appendix C)			✓
47	Have the soil boring/field screening logs been provided? (Appendix D)			✓
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)			✓
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			✓
50	Have the disposal manifests been provided? (Appendix G)	✓		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			✓
52	Has all fate and transport modeling been provided? (Appendix I)			✓
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			✓
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	✓		

Explanation for missing and incomplete information?

Project Verifier (signature) _____

(print name) David R. Mazorra, PE

Date 2/2/15

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

Permit
12175

January 06, 2015

Randall Hutchins
Environmental Compliance Services
13504 South Point Blvd
Charlotte, NC 28273

RE: Project: EF & C3 14-211651
Pace Project No.: 92231131

Dear Randall Hutchins:
Enclosed are the analytical results for sample(s) received by the laboratory on December 29, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Benjamin
nicole.benjamin@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: EF & C3 14-211651
Pace Project No.: 92231131

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: EF & C3 14-211651
Pace Project No.: 92231131

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92231131001	12175-MW14	Water	12/22/14 16:12	12/29/14 12:55
92231131002	12175-MW13	Water	12/22/14 16:47	12/29/14 12:55
92231131003	12175-MW20	Water	12/22/14 17:37	12/29/14 12:55
92231131004	12175-MW21	Water	12/23/14 08:29	12/29/14 12:55
92231131005	12175-MW18	Water	12/23/14 09:18	12/29/14 12:55
92231131006	12175-MW24	Water	12/23/14 10:05	12/29/14 12:55
92231131007	12175-MW17	Water	12/23/14 11:08	12/29/14 12:55
92231131008	12175-RW3	Water	12/23/14 12:17	12/29/14 12:55
92231131009	TRIP BLANK	Water	12/23/14 00:00	12/29/14 12:55

Pace Analytical Services, Inc.
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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: EF & C3 14-211651
Pace Project No.: 92231131

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92231131001	12175-MW14	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231131002	12175-MW13	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231131003	12175-MW20	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231131004	12175-MW21	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231131005	12175-MW18	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231131006	12175-MW24	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231131007	12175-MW17	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231131008	12175-RW3	EPA 8011	JMC	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92231131009	TRIP BLANK	EPA 8260	CCL	18	PASI-C

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF & C3 14-211651
Pace Project No.: 92231131

Sample: 12175-MW14 Lab ID: 92231131001 Collected: 12/22/14 16:12 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:24	12/30/14 18:28	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	97	%	60-140		1	12/30/14 12:24	12/30/14 18:28	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		12/31/14 13:25	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		12/31/14 13:25	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		12/31/14 13:25	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		12/31/14 13:25	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		12/31/14 13:25	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		12/31/14 13:25	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		12/31/14 13:25	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		12/31/14 13:25	108-20-3	
Ethanol	ND	ug/L	200	138	1		12/31/14 13:25	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		12/31/14 13:25	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		12/31/14 13:25	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		12/31/14 13:25	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		12/31/14 13:25	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		12/31/14 13:25	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		12/31/14 13:25	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		12/31/14 13:25	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		12/31/14 13:25	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		12/31/14 13:25	2037-26-5	

Sample: 12175-MW13 Lab ID: 92231131002 Collected: 12/22/14 16:47 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:24	12/30/14 18:48	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	94	%	60-140		1	12/30/14 12:24	12/30/14 18:48	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		12/31/14 13:41	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		12/31/14 13:41	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		12/31/14 13:41	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		12/31/14 13:41	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		12/31/14 13:41	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		12/31/14 13:41	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		12/31/14 13:41	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		12/31/14 13:41	108-20-3	
Ethanol	ND	ug/L	200	138	1		12/31/14 13:41	64-17-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF & C3 14-211651
Pace Project No.: 92231131

Sample: 12175-MW13 Lab ID: 92231131002 Collected: 12/22/14 16:47 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Ethylbenzene	ND	ug/L	5.0	1.6	1		12/31/14 13:41	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		12/31/14 13:41	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		12/31/14 13:41	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		12/31/14 13:41	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		12/31/14 13:41	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		12/31/14 13:41	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		12/31/14 13:41	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		12/31/14 13:41	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		12/31/14 13:41	2037-26-5	

Sample: 12175-MW20 Lab ID: 92231131003 Collected: 12/22/14 17:37 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:24	12/30/14 19:08	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	96	%	60-140		1	12/30/14 12:24	12/30/14 19:08	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		12/31/14 14:49	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		12/31/14 14:49	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		12/31/14 14:49	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		12/31/14 14:49	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		12/31/14 14:49	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		12/31/14 14:49	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		12/31/14 14:49	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		12/31/14 14:49	108-20-3	
Ethanol	ND	ug/L	200	138	1		12/31/14 14:49	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		12/31/14 14:49	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		12/31/14 14:49	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		12/31/14 14:49	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		12/31/14 14:49	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		12/31/14 14:49	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		12/31/14 14:49	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		12/31/14 14:49	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		12/31/14 14:49	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		12/31/14 14:49	2037-26-5	

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF & C3 14-211651
Pace Project No.: 92231131

Sample: 12175-MW21 Lab ID: 92231131004 Collected: 12/23/14 08:29 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:24	12/30/14 19:28	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	97	%	60-140		1	12/30/14 12:24	12/30/14 19:28	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		12/31/14 13:58	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		12/31/14 13:58	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		12/31/14 13:58	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		12/31/14 13:58	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		12/31/14 13:58	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		12/31/14 13:58	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		12/31/14 13:58	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		12/31/14 13:58	108-20-3	
Ethanol	ND	ug/L	200	138	1		12/31/14 13:58	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		12/31/14 13:58	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		12/31/14 13:58	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		12/31/14 13:58	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		12/31/14 13:58	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		12/31/14 13:58	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		12/31/14 13:58	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	70-130		1		12/31/14 13:58	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	70-130		1		12/31/14 13:58	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		12/31/14 13:58	2037-26-5	

Sample: 12175-MW18 Lab ID: 92231131005 Collected: 12/23/14 09:18 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	12/30/14 12:24	12/30/14 19:47	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	139	%	60-140		1	12/30/14 12:24	12/30/14 19:47	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**1540**	ug/L	200	154	2		12/31/14 16:12	75-85-4	
tert-Amylmethyl ether	**94.3**	ug/L	20.0	6.8	2		12/31/14 16:12	994-05-8	
Benzene	**7030**	ug/L	625	212	125		12/31/14 22:01	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	200	64.2	2		12/31/14 16:12	624-95-3	
tert-Butyl Alcohol	ND	ug/L	200	115	2		12/31/14 16:12	75-65-0	
tert-Butyl Formate	ND	ug/L	100	14.6	2		12/31/14 16:12	762-75-4	
1,2-Dichloroethane	ND	ug/L	10.0	3.6	2		12/31/14 16:12	107-06-2	
Diisopropyl ether	ND	ug/L	10.0	3.4	2		12/31/14 16:12	108-20-3	
Ethanol	ND	ug/L	400	276	2		12/31/14 16:12	64-17-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: EF & C3 14-211651
Pace Project No.: 92231131

Sample: 12175-MW18 Lab ID: 92231131005 Collected: 12/23/14 09:18 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Ethylbenzene	1430	ug/L	625	200	125		12/31/14 22:01	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	20.0	7.2	2		12/31/14 16:12	637-92-3	
Methyl-tert-butyl ether	18.7	ug/L	10.0	3.4	2		12/31/14 16:12	1634-04-4	
Naphthalene	228	ug/L	10.0	4.0	2		12/31/14 16:12	91-20-3	
Toluene	17400	ug/L	625	200	125		12/31/14 22:01	108-88-3	
Xylene (Total)	8170	ug/L	1250	338	125		12/31/14 22:01	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		2		12/31/14 16:12	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		2		12/31/14 16:12	17060-07-0	
Toluene-d8 (S)	101	%	70-130		2		12/31/14 16:12	2037-26-5	

Sample: 12175-MW24 Lab ID: 92231131006 Collected: 12/23/14 10:05 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	12/30/14 12:24	12/30/14 20:07	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	108	%	60-140		1	12/30/14 12:24	12/30/14 20:07	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	17400	ug/L	1000	768	10		12/31/14 16:28	75-85-4	
tert-Amylmethyl ether	119	ug/L	100	34.0	10		12/31/14 16:28	994-05-8	
Benzene	12100	ug/L	1250	425	250		12/31/14 22:17	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	1000	321	10		12/31/14 16:28	624-95-3	
tert-Butyl Alcohol	644J	ug/L	1000	577	10		12/31/14 16:28	75-65-0	
tert-Butyl Formate	ND	ug/L	500	73.0	10		12/31/14 16:28	762-75-4	
1,2-Dichloroethane	ND	ug/L	50.0	18.0	10		12/31/14 16:28	107-06-2	
Diisopropyl ether	ND	ug/L	50.0	17.0	10		12/31/14 16:28	108-20-3	
Ethanol	ND	ug/L	2000	1380	10		12/31/14 16:28	64-17-5	
Ethylbenzene	1780	ug/L	50.0	16.0	10		12/31/14 16:28	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	100	36.0	10		12/31/14 16:28	637-92-3	
Methyl-tert-butyl ether	75.5	ug/L	50.0	17.0	10		12/31/14 16:28	1634-04-4	
Naphthalene	469	ug/L	50.0	20.0	10		12/31/14 16:28	91-20-3	
Toluene	32800	ug/L	1250	400	250		12/31/14 22:17	108-88-3	
Xylene (Total)	21100	ug/L	2500	675	250		12/31/14 22:17	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		10		12/31/14 16:28	460-00-4	
1,2-Dichloroethane-d4 (S)	88	%	70-130		10		12/31/14 16:28	17060-07-0	
Toluene-d8 (S)	103	%	70-130		10		12/31/14 16:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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ANALYTICAL RESULTS

Project: EF & C3 14-211651
Pace Project No.: 92231131

Sample: 12175-MW17 Lab ID: 92231131007 Collected: 12/23/14 11:08 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.23**	ug/L	0.020	0.020	1	12/30/14 12:37	12/31/14 12:04	106-93-4	C2
Surrogates									
1-Chloro-2-bromopropane (S)	121	%	60-140		1	12/30/14 12:37	12/31/14 12:04	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**18000**	ug/L	12500	9600	125		12/31/14 16:45	75-85-4	
tert-Amylmethyl ether	**490J**	ug/L	1250	425	125		12/31/14 16:45	994-05-8	
Benzene	**15600**	ug/L	625	212	125		12/31/14 16:45	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	12500	4010	125		12/31/14 16:45	624-95-3	
tert-Butyl Alcohol	ND	ug/L	12500	7210	125		12/31/14 16:45	75-65-0	
tert-Butyl Formate	ND	ug/L	6250	912	125		12/31/14 16:45	762-75-4	
1,2-Dichloroethane	ND	ug/L	625	225	125		12/31/14 16:45	107-06-2	
Diisopropyl ether	ND	ug/L	625	212	125		12/31/14 16:45	108-20-3	
Ethanol	ND	ug/L	25000	17200	125		12/31/14 16:45	64-17-5	
Ethylbenzene	**3430**	ug/L	625	200	125		12/31/14 16:45	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1250	450	125		12/31/14 16:45	637-92-3	
Methyl-tert-butyl ether	**545J**	ug/L	625	212	125		12/31/14 16:45	1634-04-4	
Naphthalene	**843**	ug/L	625	250	125		12/31/14 16:45	91-20-3	
Toluene	**40400**	ug/L	1250	400	250		12/31/14 22:34	108-88-3	
Xylene (Total)	**18500**	ug/L	1250	338	125		12/31/14 16:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		125		12/31/14 16:45	460-00-4	
1,2-Dichloroethane-d4 (S)	88	%	70-130		125		12/31/14 16:45	17060-07-0	
Toluene-d8 (S)	101	%	70-130		125		12/31/14 16:45	2037-26-5	

Sample: 12175-RW3 Lab ID: 92231131008 Collected: 12/23/14 12:17 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.028**	ug/L	0.019	0.019	1	12/30/14 12:37	12/31/14 13:04	106-93-4	C2
Surrogates									
1-Chloro-2-bromopropane (S)	121	%	60-140		1	12/30/14 12:37	12/31/14 13:04	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	50000	38400	500		01/05/15 16:41	75-85-4	
tert-Amylmethyl ether	ND	ug/L	5000	1700	500		01/05/15 16:41	994-05-8	
Benzene	**13300**	ug/L	2500	850	500		01/05/15 16:41	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	50000	16000	500		01/05/15 16:41	624-95-3	
tert-Butyl Alcohol	ND	ug/L	50000	28800	500		01/05/15 16:41	75-65-0	
tert-Butyl Formate	ND	ug/L	25000	3650	500		01/05/15 16:41	762-75-4	
1,2-Dichloroethane	ND	ug/L	2500	900	500		01/05/15 16:41	107-06-2	
Diisopropyl ether	ND	ug/L	2500	850	500		01/05/15 16:41	108-20-3	
Ethanol	ND	ug/L	100000	68900	500		01/05/15 16:41	64-17-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C3 14-211651
Pace Project No.: 92231131

Sample: 12175-RW3 Lab ID: 92231131008 Collected: 12/23/14 12:17 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Ethylbenzene	3140	ug/L	2500	800	500		01/05/15 16:41	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	5000	1800	500		01/05/15 16:41	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	2500	850	500		01/05/15 16:41	1634-04-4	
Naphthalene	ND	ug/L	2500	1000	500		01/05/15 16:41	91-20-3	
Toluene	36200	ug/L	2500	800	500		01/05/15 16:41	108-88-3	
Xylene (Total)	15700	ug/L	5000	1350	500		01/05/15 16:41	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		500		01/05/15 16:41	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		500		01/05/15 16:41	17060-07-0	
Toluene-d8 (S)	101	%	70-130		500		01/05/15 16:41	2037-26-5	

Sample: TRIP BLANK Lab ID: 92231131009 Collected: 12/23/14 00:00 Received: 12/29/14 12:55 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		01/01/15 02:27	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		01/01/15 02:27	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		01/01/15 02:27	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		01/01/15 02:27	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		01/01/15 02:27	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		01/01/15 02:27	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		01/01/15 02:27	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		01/01/15 02:27	108-20-3	
Ethanol	ND	ug/L	200	138	1		01/01/15 02:27	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		01/01/15 02:27	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		01/01/15 02:27	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		01/01/15 02:27	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		01/01/15 02:27	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		01/01/15 02:27	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		01/01/15 02:27	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	112	%	70-130		1		01/01/15 02:27	460-00-4	
1,2-Dichloroethane-d4 (S)	120	%	70-130		1		01/01/15 02:27	17060-07-0	
Toluene-d8 (S)	103	%	70-130		1		01/01/15 02:27	2037-26-5	

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: EF & C3 14-211651
Pace Project No.: 92231131

QC Batch: MSV/29869 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92231131001, 92231131002, 92231131003, 92231131004, 92231131005, 92231131006, 92231131007

METHOD BLANK: 1361611 Matrix: Water
Associated Lab Samples: 92231131001, 92231131002, 92231131003, 92231131004, 92231131005, 92231131006, 92231131007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	12/31/14 06:44	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	12/31/14 06:44	
Benzene	ug/L	ND	5.0	12/31/14 06:44	
Diisopropyl ether	ug/L	ND	5.0	12/31/14 06:44	
Ethanol	ug/L	ND	200	12/31/14 06:44	
Ethyl-tert-butyl ether	ug/L	ND	10.0	12/31/14 06:44	
Ethylbenzene	ug/L	ND	5.0	12/31/14 06:44	
Methyl-tert-butyl ether	ug/L	ND	5.0	12/31/14 06:44	
Naphthalene	ug/L	ND	5.0	12/31/14 06:44	
tert-Amyl Alcohol	ug/L	ND	100	12/31/14 06:44	
tert-Amylmethyl ether	ug/L	ND	10.0	12/31/14 06:44	
tert-Butyl Alcohol	ug/L	ND	100	12/31/14 06:44	
tert-Butyl Formate	ug/L	ND	50.0	12/31/14 06:44	
Toluene	ug/L	ND	5.0	12/31/14 06:44	
Xylene (Total)	ug/L	ND	10.0	12/31/14 06:44	
1,2-Dichloroethane-d4 (S)	%	99	70-130	12/31/14 06:44	
4-Bromofluorobenzene (S)	%	102	70-130	12/31/14 06:44	
Toluene-d8 (S)	%	102	70-130	12/31/14 06:44	

LABORATORY CONTROL SAMPLE: 1361612

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	52.6	105	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	870	87	70-130	
Benzene	ug/L	50	57.8	116	70-130	
Diisopropyl ether	ug/L	50	55.6	111	70-130	
Ethanol	ug/L	2000	2290	114	70-130	
Ethyl-tert-butyl ether	ug/L	100	121	121	70-130	
Ethylbenzene	ug/L	50	50.2	100	70-130	
Methyl-tert-butyl ether	ug/L	50	52.9	106	70-130	
Naphthalene	ug/L	50	47.7	95	70-130	
tert-Amyl Alcohol	ug/L	1000	966	97	70-130	
tert-Amylmethyl ether	ug/L	100	113	113	70-130	
tert-Butyl Alcohol	ug/L	500	584	117	70-130	
tert-Butyl Formate	ug/L	400	474	119	70-130	
Toluene	ug/L	50	54.6	109	70-130	
Xylene (Total)	ug/L	150	154	103	70-130	
1,2-Dichloroethane-d4 (S)	%			89	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			102	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: EF & C3 14-211651
Pace Project No.: 92231131

MATRIX SPIKE SAMPLE: 1361613

Parameter	Units	92231131002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	21.1	105	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	350	88	70-130	
Benzene	ug/L	ND	20	24.3	122	70-130	
Diisopropyl ether	ug/L	ND	20	22.6	113	70-130	
Ethanol	ug/L	ND	800	1010	126	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	48.3	121	70-130	
Ethylbenzene	ug/L	ND	20	21.4	107	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	21.0	105	70-130	
Naphthalene	ug/L	ND	20	18.3	92	70-130	
tert-Amyl Alcohol	ug/L	ND	400	393	98	70-130	
tert-Amylmethyl ether	ug/L	ND	40	43.6	109	70-130	
tert-Butyl Alcohol	ug/L	ND	200	358	178	70-130	M0
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	P5
Toluene	ug/L	ND	20	23.2	115	70-130	
1,2-Dichloroethane-d4 (S)	%				92	70-130	
4-Bromofluorobenzene (S)	%				103	70-130	
Toluene-d8 (S)	%				100	70-130	

SAMPLE DUPLICATE: 1361614

Parameter	Units	92231131004 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	97	97	0		
4-Bromofluorobenzene (S)	%	104	106	2		
Toluene-d8 (S)	%	102	103	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: EF & C3 14-211651
Pace Project No.: 92231131

QC Batch: MSV/29893 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92231131009

METHOD BLANK: 1362561 Matrix: Water
Associated Lab Samples: 92231131009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	12/31/14 23:24	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	12/31/14 23:24	
Benzene	ug/L	ND	5.0	12/31/14 23:24	
Diisopropyl ether	ug/L	ND	5.0	12/31/14 23:24	
Ethanol	ug/L	ND	200	12/31/14 23:24	
Ethyl-tert-butyl ether	ug/L	ND	10.0	12/31/14 23:24	
Ethylbenzene	ug/L	ND	5.0	12/31/14 23:24	
Methyl-tert-butyl ether	ug/L	ND	5.0	12/31/14 23:24	
Naphthalene	ug/L	ND	5.0	12/31/14 23:24	
tert-Amyl Alcohol	ug/L	ND	100	12/31/14 23:24	
tert-Amylmethyl ether	ug/L	ND	10.0	12/31/14 23:24	
tert-Butyl Alcohol	ug/L	ND	100	12/31/14 23:24	
tert-Butyl Formate	ug/L	ND	50.0	12/31/14 23:24	
Toluene	ug/L	ND	5.0	12/31/14 23:24	
Xylene (Total)	ug/L	ND	10.0	12/31/14 23:24	
1,2-Dichloroethane-d4 (S)	%	109	70-130	12/31/14 23:24	
4-Bromofluorobenzene (S)	%	102	70-130	12/31/14 23:24	
Toluene-d8 (S)	%	105	70-130	12/31/14 23:24	

LABORATORY CONTROL SAMPLE: 1362562

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	50.5	101	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	875	88	70-130	
Benzene	ug/L	50	57.0	114	70-130	
Diisopropyl ether	ug/L	50	55.6	111	70-130	
Ethanol	ug/L	2000	2180	109	70-130	
Ethyl-tert-butyl ether	ug/L	100	120	120	70-130	
Ethylbenzene	ug/L	50	48.9	98	70-130	
Methyl-tert-butyl ether	ug/L	50	51.8	104	70-130	
Naphthalene	ug/L	50	46.1	92	70-130	
tert-Amyl Alcohol	ug/L	1000	994	99	70-130	
tert-Amylmethyl ether	ug/L	100	109	109	70-130	
tert-Butyl Alcohol	ug/L	500	587	117	70-130	
tert-Butyl Formate	ug/L	400	481	120	70-130	
Toluene	ug/L	50	55.3	111	70-130	
Xylene (Total)	ug/L	150	150	100	70-130	
1,2-Dichloroethane-d4 (S)	%			87	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			102	70-130	

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QUALITY CONTROL DATA

Project: EF & C3 14-211651
Pace Project No.: 92231131

MATRIX SPIKE SAMPLE: 1362565

Parameter	Units	92231138008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	22.3	111	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	313	78	70-130	
Benzene	ug/L	18.9	20	46.6	138	70-130	M0
Diisopropyl ether	ug/L	ND	20	24.6	122	70-130	
Ethanol	ug/L	ND	800	846	106	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	52.7	132	70-130	M0
Ethylbenzene	ug/L	ND	20	22.0	110	70-130	
Methyl-tert-butyl ether	ug/L	6.4	20	30.1	119	70-130	
Naphthalene	ug/L	ND	20	19.7	99	70-130	
tert-Amyl Alcohol	ug/L	ND	400	418	105	70-130	
tert-Amylmethyl ether	ug/L	ND	40	48.7	122	70-130	
tert-Butyl Alcohol	ug/L	ND	200	342	171	70-130	M0
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	P5
Toluene	ug/L	ND	20	26.2	131	70-130	M0
1,2-Dichloroethane-d4 (S)	%				88	70-130	
4-Bromofluorobenzene (S)	%				104	70-130	
Toluene-d8 (S)	%				101	70-130	

SAMPLE DUPLICATE: 1362566

Parameter	Units	92231138010 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	117	122	4		
4-Bromofluorobenzene (S)	%	110	110	0		
Toluene-d8 (S)	%	103	103	0		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: EF & C3 14-211651
Pace Project No.: 92231131

QC Batch: MSV/29906 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92231131008

METHOD BLANK: 1363339 Matrix: Water
Associated Lab Samples: 92231131008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	01/05/15 14:45	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	01/05/15 14:45	
Benzene	ug/L	ND	5.0	01/05/15 14:45	
Diisopropyl ether	ug/L	ND	5.0	01/05/15 14:45	
Ethanol	ug/L	ND	200	01/05/15 14:45	
Ethyl-tert-butyl ether	ug/L	ND	10.0	01/05/15 14:45	
Ethylbenzene	ug/L	ND	5.0	01/05/15 14:45	
Methyl-tert-butyl ether	ug/L	ND	5.0	01/05/15 14:45	
Naphthalene	ug/L	ND	5.0	01/05/15 14:45	
tert-Amyl Alcohol	ug/L	ND	100	01/05/15 14:45	
tert-Amylmethyl ether	ug/L	ND	10.0	01/05/15 14:45	
tert-Butyl Alcohol	ug/L	ND	100	01/05/15 14:45	
tert-Butyl Formate	ug/L	ND	50.0	01/05/15 14:45	
Toluene	ug/L	ND	5.0	01/05/15 14:45	
Xylene (Total)	ug/L	ND	10.0	01/05/15 14:45	
1,2-Dichloroethane-d4 (S)	%	99	70-130	01/05/15 14:45	
4-Bromofluorobenzene (S)	%	100	70-130	01/05/15 14:45	
Toluene-d8 (S)	%	101	70-130	01/05/15 14:45	

LABORATORY CONTROL SAMPLE: 1363340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	46.9	94	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	950	95	70-130	
Benzene	ug/L	50	55.1	110	70-130	
Diisopropyl ether	ug/L	50	50.4	101	70-130	
Ethanol	ug/L	2000	2820	141	70-130	L3
Ethyl-tert-butyl ether	ug/L	100	110	110	70-130	
Ethylbenzene	ug/L	50	51.4	103	70-130	
Methyl-tert-butyl ether	ug/L	50	48.2	96	70-130	
Naphthalene	ug/L	50	54.7	109	70-130	
tert-Amyl Alcohol	ug/L	1000	1120	112	70-130	
tert-Amylmethyl ether	ug/L	100	104	104	70-130	
tert-Butyl Alcohol	ug/L	500	559	112	70-130	
tert-Butyl Formate	ug/L	400	467	117	70-130	
Toluene	ug/L	50	52.4	105	70-130	
Xylene (Total)	ug/L	150	152	102	70-130	
1,2-Dichloroethane-d4 (S)	%			90	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			101	70-130	

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QUALITY CONTROL DATA

Project: EF & C3 14-211651
Pace Project No.: 92231131

MATRIX SPIKE SAMPLE: 1363341

Parameter	Units	92231489005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	13.0	65	70-130	M0
3,3-Dimethyl-1-Butanol	ug/L	ND	400	320	80	70-130	
Benzene	ug/L	ND	20	17.8	89	70-130	
Diisopropyl ether	ug/L	ND	20	12.3	61	70-130	M0
Ethanol	ug/L	ND	800	721	90	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	26.3	65	70-130	M0
Ethylbenzene	ug/L	ND	20	23.0	115	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	11.9	55	70-130	M0
Naphthalene	ug/L	ND	20	21.8	109	70-130	
tert-Amyl Alcohol	ug/L	ND	400	259	65	70-130	M0
tert-Amylmethyl ether	ug/L	ND	40	28.5	71	70-130	
tert-Butyl Alcohol	ug/L	ND	200	178	89	70-130	
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	P5
Toluene	ug/L	ND	20	16.7	83	70-130	
1,2-Dichloroethane-d4 (S)	%				92	70-130	
4-Bromofluorobenzene (S)	%				92	70-130	
Toluene-d8 (S)	%				89	70-130	

SAMPLE DUPLICATE: 1363342

Parameter	Units	92231489006 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	91	91	1		
4-Bromofluorobenzene (S)	%	101	99	2		
Toluene-d8 (S)	%	94	94	0		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: EF & C3 14-211651
Pace Project No.: 92231131

QC Batch: OEXT/31997 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 92231131007, 92231131008

METHOD BLANK: 1360957 Matrix: Water
Associated Lab Samples: 92231131007, 92231131008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	12/31/14 05:53	
1-Chloro-2-bromopropane (S)	%	93	60-140	12/31/14 05:53	

LABORATORY CONTROL SAMPLE & LCSD: 1360958 1360959

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.28	0.28	0.28	98	98	60-140	1	20	
1-Chloro-2-bromopropane (S)	%				91	94	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1360960 1360961

Parameter	Units	92231131007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	0.23	.28	.28	0.36	0.36	48	50	60-140	2	20	M3
1-Chloro-2-bromopropane (S)	%						126	130	60-140			

SAMPLE DUPLICATE: 1360962

Parameter	Units	92231131008 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	0.028	0.028	1	20	C2
1-Chloro-2-bromopropane (S)	%	121	116	2		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: EF & C3 14-211651
Pace Project No.: 92231131

QC Batch: OEXT/31998 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 92231131001, 92231131002, 92231131003, 92231131004, 92231131005, 92231131006

METHOD BLANK: 1360963 Matrix: Water
Associated Lab Samples: 92231131001, 92231131002, 92231131003, 92231131004, 92231131005, 92231131006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	12/30/14 17:29	
1-Chloro-2-bromopropane (S)	%	96	60-140	12/30/14 17:29	

LABORATORY CONTROL SAMPLE & LCSD: 1360964 1360965

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.29	0.30	0.31	106	108	60-140	1	20	
1-Chloro-2-bromopropane (S)	%				99	96	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1360966 1360967

Parameter	Units	92231138001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.28	.28	0.29	0.29	102	102	60-140	0	20	
1-Chloro-2-bromopropane (S)	%						95	95	60-140			

SAMPLE DUPLICATE: 1360968

Parameter	Units	92231138002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	95	95	1		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: EF & C3 14-211651
Pace Project No.: 92231131

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

C2	Relative percent difference between results from each column was greater than 40%. The lower of the two results was reported.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
P5	The EPA or method required sample preservation degrades this compound, therefore acceptable recoveries may not be achieved in sample matrix spikes.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: EF & C3 14-211651
Pace Project No.: 92231131

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92231131001	12175-MW14	EPA 8011	OEXT/31998	EPA 8011	GCSV/19949
92231131002	12175-MW13	EPA 8011	OEXT/31998	EPA 8011	GCSV/19949
92231131003	12175-MW20	EPA 8011	OEXT/31998	EPA 8011	GCSV/19949
92231131004	12175-MW21	EPA 8011	OEXT/31998	EPA 8011	GCSV/19949
92231131005	12175-MW18	EPA 8011	OEXT/31998	EPA 8011	GCSV/19949
92231131006	12175-MW24	EPA 8011	OEXT/31998	EPA 8011	GCSV/19949
92231131007	12175-MW17	EPA 8011	OEXT/31997	EPA 8011	GCSV/19948
92231131008	12175-RW3	EPA 8011	OEXT/31997	EPA 8011	GCSV/19948
92231131001	12175-MW14	EPA 8260	MSV/29869		
92231131002	12175-MW13	EPA 8260	MSV/29869		
92231131003	12175-MW20	EPA 8260	MSV/29869		
92231131004	12175-MW21	EPA 8260	MSV/29869		
92231131005	12175-MW18	EPA 8260	MSV/29869		
92231131006	12175-MW24	EPA 8260	MSV/29869		
92231131007	12175-MW17	EPA 8260	MSV/29869		
92231131008	12175-RW3	EPA 8260	MSV/29906		
92231131009	TRIP BLANK	EPA 8260	MSV/29893		

Pace Analytical	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: September 22, 2014 Page 1 of 2
	Document Number: F-CHR-CS-003-rev.15	Issuing Authority: Pace Huntersville Quality Office

Client Name: ECS

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used: IR Gun T1401 Type of Ice: Wet Blue None ☑ Samples on ice, cooling process has begun

Temp Correction Factor T1401 No Correction

Corrected Cooler Temp.: 3.4 °C Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: AP 12-29-14

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	☐Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: AMB Date: 12-29-14

SRF Review: AMB Date: 12-31-14

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO#: 92231131

92231131

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1775527

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: ECS	Report To: Randall Hutchins	Attention: Accounting
Address: 13504 S. Point Blvd Charlotte, NC	Copy To:	Company Name: ECS
Email To: rhutchins@ecsconsult.com	Purchase Order No.: 14-211451	Address: Agawam, MA
Phone: 704-583-2411 Fax:	Project Name: EF & C3	Pace Quote Reference:
Requested Due Date/TAT: 5 DAY TAT	Project Number: 14-211451	Pace Project Manager: Nicole Benjamin
		Pace Profile #: 2071-3

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: SC

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information / SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test ↓	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	12175 - MW14	WT	G				12/22	1612		6				X							001
2	12175 - MW13							1647													002
3	12175 - MW19							1737													003
4	12175 - MW21						12/23	0829													004
5	12175 - MW18							0918													005
6	12175 - MW24							1005													006
7	12175 - MW17							1108													007
8	12175 - RW3							1217													008
9	Trip Blank									2											009
10																					
11																					
12																					

Analysis Test ↓: 8260 BTEX MN 1,2 DCA Oxys 8011 EDB

92231131 Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Report J values	Brian Peay/ECS	12/23/14	1715	ECS Office	12/23	1715				
		12/24/14	1000		12/24/14	1000				
		12/24/14	1255		12/24/14	1255	3.9	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brian Peay

SIGNATURE of SAMPLER: Brian Peay

DATE Signed (MM/DD/YY): 12/23/14

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

D H E C
PROMOTE PROTECT PROSPER
Catherine E. Heigel, Director
Promoting and protecting the health of the public and the environment

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

AUG 1 1 2015

UST 344eeh DOCKETING

Re: **Site-Specific Work Plan (SSWP) Directive for Groundwater Sampling**
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175
Release Reported December 31, 2008
Monitoring Report received February 3, 2015
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) recognizes your commitment to continue work at this site using Environmental Compliance Services (ECS), Inc., as your contractor. The next appropriate scope of work at the site is a comprehensive groundwater sampling event.

The groundwater sampling event should be conducted in accordance with the most recent revision of the UST Quality Assurance Program Plan (QAPP), Environmental Compliance Services (ECS), Inc., approved Annual Contractor Quality Assurance Plan (ACQAP), and in compliance with all applicable regulations. Groundwater samples should be collected from all monitoring wells, water supply wells, or surface water locations associated with the referenced release and analyzed for BTEX + Naphth + MtBE, 1,2-DCA, 8 oxygenates, and EDB. A copy of the current revision of the Agency QAPP for the UST Management Division is available at
http://www.scdhec.gov/Environment/LW/UST/ReleaseAssessmentClean-up/QualityAssurance/.

Your contractor must complete the QAPP Contractor addendum or the Site Specific Work Plan (SSWP) if your contractor has an approved ACQAP. The QAPPA or SSWP and Cost Proposal must be submitted within 30 days from the date of this letter. The State Underground Petroleum Environmental Response Bank (SUPERB) Account allowable cost for each component is included on the Assessment Component Cost Agreement Form. **Please note that technical and financial preapproval from the Agency must be issued before work begins.**

On all correspondence concerning this site, please reference **UST Permit # 12175.** If there are any questions concerning this project, please contact me at (803) 898-0610 or email hetricml@dhec.sc.gov.

Sincerely, *Matthew Lee Hetrick*

Matthew Hetrick, Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

cc: Environmental Compliance Services, Inc., P O Box 3528, FortMill, SC 29708
Technical File

D H E C

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Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

AUG 1 2 2015

Re: **Corrective Action Options**
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit #**12175**
Release reported December 31, 2008
Monitoring Report received February 3, 2015
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division (Division) of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report submitted by Environmental Compliance Services (ECS), Inc., on your behalf. The report indicates that active corrective action is necessary at the site to mitigate petroleum impact and ensure that there is no detrimental exposure to human health or the environment.

Funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account will soon be available for active corrective action under the terms and conditions of the SUPERB Act. The selected technology must reduce the petroleum chemicals of concern (CoC) concentrations to site-specific target levels (SSTLs) determined by the Division.

The SUPERB Site Rehabilitation and Fund Access Regulations R.61-98 require the UST owner/operator to develop and implement a reasonable, cost-effective corrective action to be performed by an Agency-certified site rehabilitation contractor. As the owner/operator for the release reported on December 31, 2008, you may choose one of two options as to how to proceed with this requirement: state lead or owner/operator lead.

State Lead Option:

- If you choose the state lead option, the Division will procure a certified site rehabilitation contractor to perform corrective action on your behalf. The Agency will enter into an enforceable contract with the awarded contractor. As long as you do not interfere with or prohibit the work at your site, you will not be responsible in the event the state selected contractor does not perform appropriately or does not make satisfactory progress towards achieving the established corrective action goals. **To utilize the state lead option, please sign and return the applicable Permission and Right-of-Entry forms within 15 days of the date of this letter.**

Owner/Operator Lead Option:

- If you select the owner/operator lead option, you will be required to select a contractor to perform the corrective action. In order to assist you in determining the clean-up technology, time frame, clean-up levels, and associated costs, the Division will prepare a technical specification package and provide you copies to send to contractors of your choice. In addition, the Division will announce the request for solicitations in the South Carolina Business Opportunities, a bi-weekly state government publication, to ensure that an adequate solicitation response is obtained so that a fair and competitive price can be established. This announcement will clearly indicate that you will select the contractor to implement the corrective action.
- Compensation to the contractor will be from the SUPERB Account, but you may have the obligation to pay your selected contractor for any costs not approved by the Agency.
- The Division strongly suggests that a written contract between you and the selected contractor be developed following the completion of the solicitation process. The parties to this contract would be you and the contractor you choose; the Agency would not be a party to this contract. The Division's function would be to monitor and ensure progress of corrective action activities.
- If the contractor you select does not or cannot complete the required activities, you will be required to find another certified contractor to complete the required activities for the remainder of the existing financial approval amount. No additional funding from the SUPERB Account may be allowed. Under R.61-92, Part 280 of the Underground Storage Tank Control Regulations, you as the owner/operator are ultimately responsible to the Agency for the actions of your contractor. The Agency will pursue enforcement actions against you if the contractor you select does not make satisfactory progress towards achieving established corrective actions goals. **To utilize the owner/operator lead option, please sign and return the enclosed Active Corrective Action Options Form within 15 days of the date of this letter.**

On all correspondence or inquiries regarding this project, please reference UST Permit **#12175**. If you have any questions, please contact me at (803) 898-0610 or hetricml@dhec.sc.gov.

Sincerely,

Matthew Lee Hetrick

Matthew L. Hetrick, Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

enc: Permission/Right-of-Entry forms
Active Corrective Action Options form

cc: Environmental Compliance Services, Inc., P O Box 3528, Fort Mill, SC 29708 (w/ enc)
Technical File (w/ enc)

State Lead Option

PERMISSION FORM

UNDERGROUND STORAGE TANK AND PROPERTY OWNER

UST Permit #12175

If you are both the owner of the former or existing underground storage tanks for the release reported on December 31, 2008 and the current property owner, please complete this form.

I, _____, certify that I am the identified legal owner of the underground storage tanks for the release reported on December 31, 2008 and property located at the facility identified below or serve as the authorized representative for the owner. I grant permission to the South Carolina Department of Health and Environmental Control (Agency) to secure on my behalf contractor services to conduct assessment and corrective action activities as required, and authorize the Agency, or a contractor selected by the Agency, to enter this property at reasonable times only to accomplish these site rehabilitation tasks. The contractor(s) will be designated as my contractor for only the required site rehabilitation activities. Compensation to the contractor(s) will be from the SUPERB Account and I will have no obligation to pay the contractor(s). I understand that the Agency or its contractor will be responsible for notifying me of all activities that are necessary prior to their initiation and will promptly provide to me a copy of each environmental report. I understand that I may choose to select my own contractor at the completion of any phase of work by notifying the Division of Underground Storage Tank Management in writing.

Name of Facility Edgefield Fuel & Convenience 3 Phone # _____

Street Address of Facility 311 Main Street

Town, City, District, Suburb Edgefield

Name of nearest intersecting street, road, highway, alley _____

_____Is this facility within the city limits? (yes or no) _____

Does a public water or sewer utility service this facility? (yes or no) _____, if no, please provide the name and phone number of a person that we can contact that can assist in the location of private water and septic tank lines _____

_____, phone number _____

Is the property currently leased or rented to someone? (yes or no) _____. If yes, please provide their name _____and phone number _____

_____and let them know about the pending site rehabilitation activities. If vehicles or other mobile structures are parked over the monitoring wells, they should be moved before the Agency's contractor arrives at the site.

NAME of UST/property owner (Please Print):_____

Phone Number (home)_____(work)_____

Signature of UST/property Owner:_____

Witness:_____

Date:_____Month _____Day_____Year

Please return this form to: SCDHEC
Underground Storage Tank Management Division
2600 Bull Street
Columbia, SC 29201
Attn: Matthew L. Hetrick

State Lead Option

PERMISSION FORM

UNDERGROUND STORAGE TANK OWNER

UST Permit **#12175**

If you are the owner of the former or existing underground storage tanks for the release reported on December 31, 2008 or are designated as their authorized representative, but do not own the property, please complete this form.

I, _____ certify that I am the legal owner of the former and/or existing underground storage tank(s) located at the facility identified below and for the release reported on December 31, 2008 or serve as the authorized representative for the UST owner. I grant permission to the South Carolina Department of Health and Environmental Control (Agency) to secure on my behalf services of a contractor to conduct assessment and corrective action activities, as required. The contractor will be designated as my contractor for only the required environmental site rehabilitation activities. Compensation to the contractor will be from the SUPERB Account and I will have no obligation to pay the contractor. I understand that the Agency or its contractor will be responsible for obtaining right-of-entry from the property owner and notifying me of all activities that are necessary prior to their initiation and will promptly provide to me a copy of each environmental report. I understand that I may choose to select my own contractor at the completion of any phase of work by notifying the Division of Underground Storage Tank Management in writing.

Name of Facility Edgefield Fuel & Convenience 3 Phone # _____

Street Address of Facility 311 Main Street

Town, City, District, Suburb Edgefield

Name of nearest intersecting street, road, highway, alley _____

_____ Is this facility within the city limits? (yes or no) _____

Does a public water or sewer utility service this facility? (yes or no) _____, if no, please provide the name and phone number of a person that we can contact that can assist in the location of private water and septic tank lines _____

_____, phone number _____

NAME of UST owner (Please Print):_____

Phone Number (home)_____ (work)_____

Signature of UST Owner:_____

Witness:_____

Date:_____ Month _____ Day_____ Year

Please return this form to: SCDHEC
Underground Storage Tank Management Division
2600 Bull Street
Columbia, SC 29201
Attn: Matthew L. Hetrick

State Lead Option

RIGHT-OF-ENTRY FORM

PROPERTY OWNER

UST Permit **#12175**

If you are the Property Owner or are the authorized representative for that person, but did not own the former or existing underground storage tanks at the time the release was reported, please complete this form.

I, _____, certify that I am the legal owner of the property identified below or serve as the authorized representative for the property owner. I authorize the South Carolina Department of Health and Environmental Control (Agency), or a contractor selected by the Agency, to enter this property at reasonable times only to conduct assessment and corrective action activities, as required. The contractor will be designated as the contractor for the UST owner or operator for only the required environmental site rehabilitation activities. Compensation to the contractor will be from the SUPERB Account and I will have no obligation to pay the contractor. I understand that the Agency or its contractor will notify me of all activities that are necessary prior to their initiation and will promptly provide to me a summary of the data upon request.

Name of Facility Edgefield Fuel & Convenience 3 Phone # _____

Street Address of Facility 311 Main Street

Town, City, District, Suburb Edgefield

Name of nearest intersecting street, road, highway, alley _____

_____ Is this facility within the city limits? (yes or no) _____

Does a public water or sewer utility service this facility? (yes or no) _____, if no, please provide the name and phone number of a person that we can contact that can assist in the location of private water and septic tank lines _____

_____, phone number _____

Is the property currently leased or rented to someone? (yes or no) _____. If yes, please provide their name _____ and phone number _____ and let them know about the pending site rehabilitation activities. If vehicles or other mobile structures are parked over the monitoring wells, they should be moved before the Agency's contractor arrives at the site.

NAME of Property owner (Please Print):_____

Phone Number (home)_____ (work)_____

Current Mailing Address:_____

Signature of Property Owner:_____

Witness:_____

Date:_____ Month _____ Day_____ Year

Please return this form to: SCDHEC
Underground Storage Tank Management Division
2600 Bull Street
Columbia, SC 29201
Attn: Matthew L. Hetrick

Owner/ Operator Lead Option

ACTIVE CORRECTIVE ACTION OPTIONS FORM

UST PERMIT #12175

I, _____, certify that I am the legal owner on record for the underground storage tanks at the facility identified below for the release reported on December 31, 2008 or serve as the authorized representative for the owner. I wish to secure price quotations for corrective action activities as required by the Agency, and to select my own corrective action contractor after price quotation results are received. I understand that the Agency will also advertise for price quotations in the South Carolina Business Opportunities and provide the results to me. **I understand compensation to the contractor will be from the SUPERB Account, but I may have the obligation to pay the contractor for any costs not approved by the Agency. I understand that if the contractor I select does not or cannot complete the required activities, I will be required to find another certified contractor to complete the required activities for the remainder of the existing financial approval amount and that no additional funding from the SUPERB Account may be allowed. I also understand that the Agency will pursue enforcement actions against me if the contractor I select does not make satisfactory progress towards achieving established corrective actions goals.**

NAME of UST owner or authorized representative (Please Print):_____

Phone Number (home)_____ (work)_____

Signature of UST Owner:_____

Date:_____

Witness:_____

Date:_____

Please return this form to: SCDHEC
Underground Storage Tank Management Division
2600 Bull Street
Columbia, SC 29201
Attn: Matthew L. Hetrick

State Lead Option

PERMISSION FORM

UNDERGROUND STORAGE TANK AND PROPERTY OWNER

UST Permit #12175

If you are both the owner of the former or existing underground storage tanks for the release reported on December 31, 2008 and the current property owner, please complete this form.

I, Joel Jolly, certify that I am the identified legal owner of the underground storage tanks for the release reported on December 31, 2008 and property located at the facility identified below or serve as the authorized representative for the owner. I grant permission to the South Carolina Department of Health and Environmental Control (Agency) to secure on my behalf contractor services to conduct assessment and corrective action activities as required, and authorize the Agency, or a contractor selected by the Agency, to enter this property at reasonable times only to accomplish these site rehabilitation tasks. The contractor(s) will be designated as my contractor for only the required site rehabilitation activities. Compensation to the contractor(s) will be from the SUPERB Account and I will have no obligation to pay the contractor(s). I understand that the Agency or its contractor will be responsible for notifying me of all activities that are necessary prior to their initiation and will promptly provide to me a copy of each environmental report. I understand that I may choose to select my own contractor at the completion of any phase of work by notifying the Division of Underground Storage Tank Management in writing.

Name of Facility Edgefield Fuel & Convenience 3 Phone # 803-637-1900

Street Address of Facility 311 Main Street

Town, City, District, Suburb Edgefield

Name of nearest intersecting street, road, highway, alley Main Street

Is this facility within the city limits? (yes or no) yes

Does a public water or sewer utility service this facility? (yes or no) YES, if no, please provide the name and phone number of a person that we can contact that can assist in the location of private water and septic tank lines _____, phone number _____

Is the property currently leased or rented to someone? (yes or no) NO. If yes, please provide their name _____ and phone number _____ and let them know about the pending site rehabilitation activities. If vehicles or other mobile structures are parked over the monitoring wells, they should be moved before the Agency's contractor arrives at the site.

NAME of UST/property owner (Please Print): Joel Jolly

Phone Number (home) 8032757404 (work) 8036371900

Signature of UST/property Owner: Joel Jolly

Witness: Linda B. Whitmore

Date: 14 Month August Day Friday Year 2015

Please return this form to: SCDHEC
Underground Storage Tank Management Division
2600 Bull Street
Columbia, SC 29201
Attn: Matthew L. Hetrick

ecs WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

13504 South Point Boulevard, Unit F, Charlotte, NC 28273 tel 704.583.2711 fax 704.583.2744 www.ecsconsult.com

August 19, 2015
ECS Project #14-21165

Mr. Matthew Hetrick
Corrective Action Section
Underground Storage Tank Management Division
SCDHEC
2600 Bull Street
Columbia, South Carolina 29201

Re: Site Specific Work Plan
Edgefield Fuel and Convenience 3
311 Main Street
Edgefield, South Carolina
UST Permit #12175

Mr. Hetrick

Enclosed please find the Site Specific Work Plan requested for the referenced site, in your letter dated August 11, 2015. Should you have any questions or require additional information, please do not hesitate to call me at (704) 583-2711 or by email at nfrance@ecsconsult.com.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, INC.

Noelle A. France
Project Manager

D H E C
PROMOTE PROTECT PROSPER

Site-Specific Work Plan for Approved ACQAP
Underground Storage Tank Management Division

To: Matthew Hetrick (SCDHEC Project Manager)
From: Noelle A. France (Contractor Project Manager)
Contractor: ECS, Inc. UST Contractor Certification Number: 358

Facility Name: Edgefield Fuel and Convenience 3 UST Permit #: 12175
Facility Address: 311 Manin Street, Edgefield, South Carolina
Responsible Party: Edgefield Fuel and Convenience,LLC Phone:
RP Address: Post Office Box 388, Edgefield, South Carolina
Property Owner (if different): As above
Property Owner Address: As above
Current Use of Property: Convenience store with gasoline retail

Scope of Work (Please check all that apply)

- ☐ IGWA
- ☐ Tier I
- ☐ Tier II
- ☐ Monitoring Well Installation
- ☑ Groundwater Sampling
- ☐ Other
- ☐ GAC

Analyses (Please check all that apply)

Groundwater/Surface Water:

- ☑ BTEXNMDCA (8260B)
- ☑ Oxygenates (8260B)
- ☑ EDB (8011)
- ☐ PAH (8270D)
- ☐ Lead
- ☐ 8 RCRA Metals
- ☐ TPH
- ☐ pH
- ☐ BOD
- ☐ Nitrate
- ☐ Sulfate
- ☐ Other
- ☐ Methane
- ☐ Ethanol
- ☐ Dissolved Iron

Soil:

- ☐ BTEXNM
- ☐ Lead
- ☐ PAH
- ☐ 8 RCRA Metals
- ☐ Oil & Grease (9071)
- ☐ TPH-DRO (3550B/8015B)
- ☐ TPH-GRO (5030B/8015B)
- ☐ Grain Size
- ☐ TOC

Air:

- ☐ BTEXN

Sample Collection (Estimate the number of samples of each matrix that are expected to be collected.)

NA	Soil	NA	Water Supply Wells	NA	Air	2	Field Blank
29	Monitoring Wells	NA	Surface Water	2	Duplicate	1	Trip Blank

Field Screening Methodology

Estimate number and total completed depth for each point, and include their proposed locations on the attached map.

# of shallow points proposed: NA Estimated Footage: NA feet per point
# of deep points proposed: NA Estimated Footage: NA feet per point
Field Screening Methodology: NA

Permanent Monitoring Wells

Estimate number and total completed depth for each well, and include their proposed locations on the attached map.

# of shallow wells: NA Estimated Footage: NA feet per point
# of deep wells: NA Estimated Footage: NA feet per point
# of recovery wells: NA Estimated Footage: NA feet per point
Monitoring Well development method (consistent with SOP):
Comments, if warranted:

UST Permit #: 12175 Facility Name: Edgefield Fuel and Convenience 3

Implementation Schedule (Number of calendar days from approval)
Field Work Start-Up: 30 days Field Work Completion: 60 days
Report Submittal: 90 # of Copies Provided to Property Owners: _____

Aquifer Characterization
Pump Test: ☐ Slug Test: ☐ (Check one and provide explanation below for choice)
NA

Investigation Derived Waste Disposal
Soil: NA Tons Purge Water: _____ Gallons
Drilling Fluids: NA Gallons Free-Phase Product: NA Gallons

Additional Details For This Scope of Work
For example, list wells to be sampled, wells to be abandoned/repaired, well pads/bolts/caps to replace, details of AFVR event, etc.
ECS will gauge and sample groundwater monitoring wells 12175-MW1 through MW26, and 12175-RW1 through RW3.
The groundwater samples will be analyzed for BTEXMN, 1,2-DCA and the 8 oxygenates by EPA Method 8260.
Additionally all samples with the exception of the trip blank will be analyzed for EDB by EPA Method 8011.

Compliance With Annual Contractor Quality Assurance Plan (ACQAP)
Yes Laboratory as indicated in ACQAP? (Yes/No) If no, indicate laboratory information below.
Name of Laboratory: _____
SCDHEC Certification Number: _____
Name of Laboratory Director: _____

NA Well Driller as indicated in ACQAP? (Yes/No) If no, indicate driller information below.
Name of Well Driller: _____
SCLLR Certification Number: _____

NA Other variations from ACQAP. Please describe below.

Attachments
1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:
   - North Arrow
   - Location of property lines
   - Location of buildings
   - Previous soil sampling locations
   - Previous monitoring well locations
   - Proposed soil boring locations
   - Proposed monitoring well locations
   - Legend with facility name and address, UST permit number, and bar scale
   - Streets or highways (indicate names and numbers)
   - Location of all present and former ASTs and USTs
   - Location of all potential receptors
3. Assessment Component Cost Agreement, SCDHEC Form D-3664

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT COST AGREEMENT
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account

efield Fuel and Convenience #3

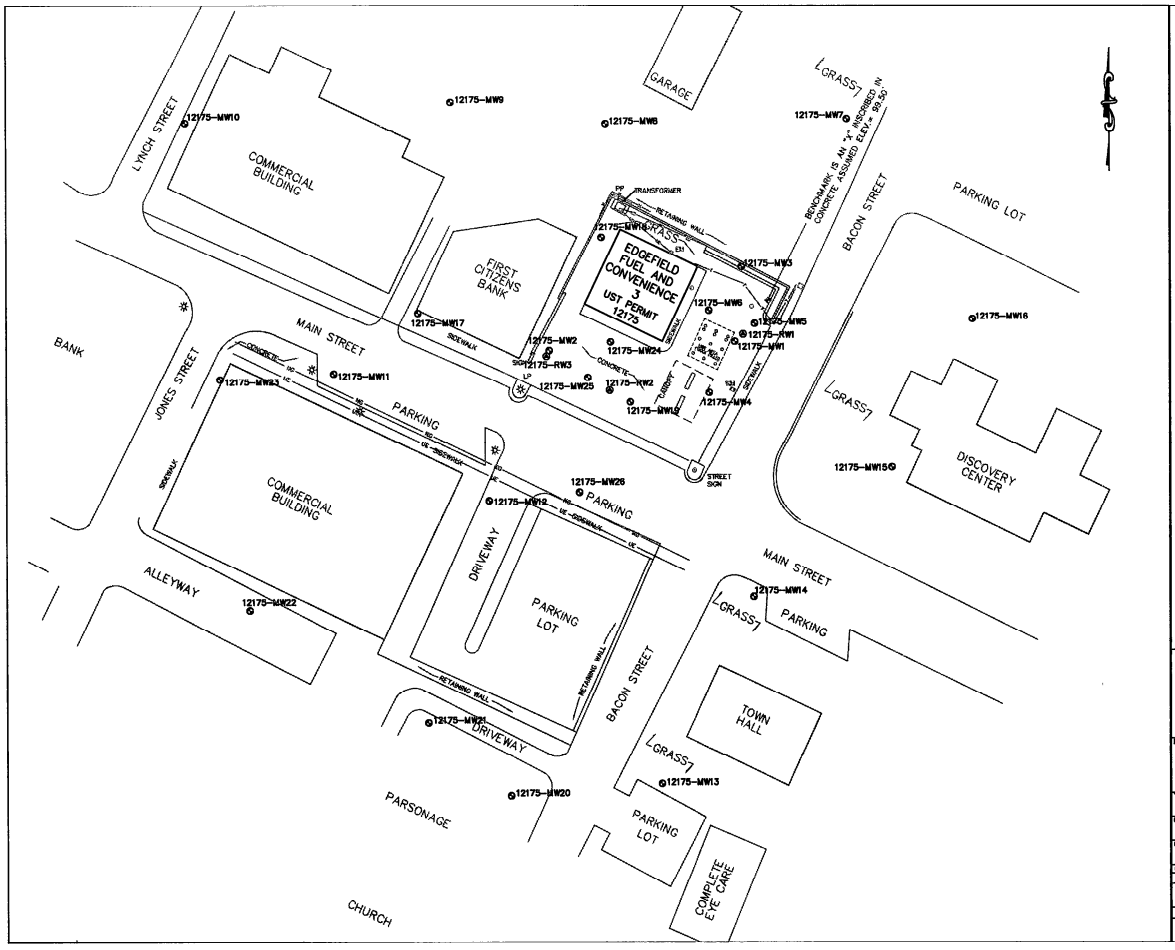
UST Permit #: 12175 **Cost Agreement #:** _____

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. **Plan Preparation**				
A1. Site-specific Work Plan	1	each	$150.00	$150.00
B1. Tax Map		each	$70.00	$0.00
C1. Tier II or Comp. Plan /QAPP Appendix B		each	$250.00	$0.00
2. A1. **Receptor Survey ***		each	$551.00	$0.00
3. **Survey (500 ft x 500 ft)**				
A1. Comprehensive Survey		each	$1,040.00	$0.00
B. Subsurface Geophysical Survey				
1B. < 10 meters below grade		each	$1,300.00	$0.00
2B. > 10 meters below grade		each	$2,310.00	$0.00
C1. Geophysical UST or Drum Survey		each	$910.00	$0.00
4. **Mob/Demob**				
A1. Equipment		each	$1,020.00	$0.00
B1. Personnel	2	each	$423.00	$846.00
C1. Adverse Terrain Vehicle		each	$500.00	$0.00
5. A1. **Soil Borings (hand auger)***		foot	$5.00	$0.00
6. **Soil Borings (requiring equipment, push technology, etc)* or Field Screening (including water ssample, soil sample, soil gas sample, etc.)***				
AA. Standard		per foot	$15.00	$0.00
C1. Fractured Rock		per foot	$20.20	$0.00
7. A1. **Soil Leachability Model**		each	$60.00	$0.00
8. **Abandonment (per foot)***				
A1. 2" diameter or less		per foot	$3.10	$0.00
B1. Greater than 2" to 6" diameter		per foot	$4.50	$0.00
C1. Dug/Bored well (up to 6 feet diameter)		per foot	$15.00	$0.00
9. **Well Installation (per foot)***				
A1. Water Table (hand augered)		per foot	$10.60	$0.00
B1. Water Table (drill rig)		per foot	$38.00	$0.00
CC. Telescoping		per foot	$50.00	$0.00
DD. Rock Drilling		per foot	$58.00	$0.00
E1. 2" Rock Coring		per foot	$30.90	$0.00
G1. Rock Multi-sampling ports/screens		per foot	$33.40	$0.00
HH. Recovery Well (4" diameter)		per foot	$45.00	$0.00
II. Pushed Pre-packed screen (1.25" dia)		per foot	$15.00	$0.00
J1. Rotosonic (2" diameter)		per foot	$44.00	$0.00
K. Re-develop Existing Well		per foot	$11.00	$0.00
10. **Groundwater Sample Collection / Gauge Depth to Water or Product ***				
A1. Groundwater Purge		per well/recept	$60.00	$0.00
B1. Air or Vapors		per recepto	$12.00	$0.00
C1. Water Supply		per well/recept	$22.00	$0.00
D1. Groundwater No Purge or Duplicate	31	er well/recept	$28.00	$868.00
E1. Gauge Well only		per well	$7.00	$0.00
F1. Sample Below Product		per well	$12.00	$0.00
G1. Passive Diffusion Bag		each	$26.00	$0.00
H1. Field Blank	2	each	$24.60	$49.20

11. Laboratory Analyses-Groundwater					
A2. BTEXNM+Oxyg's+1,2 DCA+Eth(82	34	per sample	$122.00		$4,148.00
AA1. Lead, Filtered		per sample	$13.80		$0.00
B2. Rush EPA Method 8260B (All of item A.)		per sample	$153.60		$0.00
C2. Trimethal, Butyl, and Isopropyl Benzenes		per sample	$36.40		$0.00
D1. PAH's		per sample	$60.60		$0.00
E1. Lead		per sample	$16.00		$0.00
F1. EDB by EPA 8011	32	per sample	$45.20		$1,446.40
FF1. EDB by EPA Method 8011 Rush		per sample	$68.20		$0.00
G1. 8 RCRA Metals		per sample	$63.40		$0.00
H1. TPH (9070)		per sample	$41.00		$0.00
II. pH		per sample	$5.20		$0.00
J1. BOD		per sample	$20.00		$0.00
PP. Ethanol		per sample	$14.80		$0.00
11. **Analyses-Soil**					
Q1. BTEX + Naphth.		per sample	$64.00		$0.00
R1. PAH's		per sample	$64.04		$0.00
S1. 8 RCRA Metals		per sample	$56.40		$0.00
U1. TPH-DRO (3550C/8015C)		per sample	$40.00		$0.00
V1. TPH- GRO (5030B/8015C)		per sample	$35.96		$0.00
W1. Grain size/hydrometer		per sample	$104.00		$0.00
X1. Total Organic Carbon		per sample	$30.60		$0.00
11. **Analyses-Air**					
Y1. BTEX + Naphthalene		per sample	$216.00		$0.00
11. **Analyses-Free Phase Product**					
Z1. Hydrocarbon Fuel Identification		per sample	$357.00		$0.00
12. **Aquifer Characterization**					
A1. Pumping Test*		per hour	$23.00		$0.00
B1. Slug Test*		per test	$191.00		$0.00
C1. Fractured Rock		per test	$100.00		$0.00
13. A1. **Free Product Recovery Rate Test***		each	$38.00		$0.00
14. **Fate/Transport Modeling**					
A1. Mathematical Model		each	$100.00		$0.00
B1. Computer Model		each	$100.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		each	$300.00		$0.00
B1. Tier II Risk Evaluation		each	$100.00		$0.00
16. A1. **Subsequent Survey***		each	$260.00		$0.00
17. **Disposal (gallons or tons)***					
AA. Wastewater	200	gallon	$0.56		$112.00
BB. Free Product		gallon	$0.50		$0.00
C1. Soil Treatment/Disposal		ton	$60.00		$0.00
D1. Drilling fluids		gallon	$0.42		$0.00
18. **Miscellaneous (attach receipts)**					
		each	$0.00		$0.00
		each	$0.00		$0.00
		each	$0.00		$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		standard			$0.00
21. **IGWA (Use DHEC 3666 form)**		standard			$0.00
22. **Corrective Action (Use DHEC 3667 form)**		PFP Bid			$0.00

23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A1. 8-hour Event*		each	$1,375.00		$0.00
AA. 24-hour Event*		each	$3,825.00		$0.00
A3. 48-hour Event*		each	$6,265.00		$0.00
A4. 96-hour Event*		each	$12,567.50		$0.00
C1. Off-gas Treatment 8 hour		per event	$122.50		$0.00
C2. Off-gas Treatment 24 hour		per event	$241.50		$0.00
C3. Off-gas Treatment 48 hour		per event	$327.00		$0.00
C4. Off-gas Treatment 96 hour		per event	$780.00		$0.00
D. Site Reconnaissance		each	$203.25		$0.00
E1. Additional Hook-ups		each	$25.75		$0.00
F1. Effluent Disposal		gallon	$0.44		$0.00
G. AFVR Mobilization/Demobilization		each	$391.50		$0.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A1. New GAC System Installation*		each	$1,900.00		$0.00
BB. Refurbished GAC Sys. Install*		each	$900.00		$0.00
C1. Filter replacement/removal*		each	$350.00		$0.00
DD. GAC System removal, cleaning, & refurbishment*		each	$275.00		$0.00
E1. GAC System housing*		each	$250.00		$0.00
F. In-line particulate filter		each	$150.00		$0.00
G1. Additional piping & fittings		foot	$1.50		$0.00
25. **Well Repair**					
A1. Additional Copies of the Report Delivered		each	$50.00		$0.00
B1. Repair 2x2 MW pad*		each	$50.00		$0.00
C1. Repair 4x4 MW pad*		each	$88.00		$0.00
D1. Repair well vault*		each	$118.00		$0.00
F1. Replace well cover bolts		each	$2.60		$0.00
G. Replace locking well cap & lock		each	$15.00		$0.00
H1. Replace/Repair stick-up*		each	$134.00		$0.00
I1. Convert Flush-mount to Stick-up*		each	$150.00		$0.00
J1. Convert Stick-up to Flush-mount*		each	$130.00		$0.00
K1. Replace missing/illegible well ID plate		each	$12.00		$0.00
Report Prep & Project Management	12%	percent	$7,619.60		$914.35
TOTAL					$8,533.95

*The appropriate mobilization cost can be added to complete these tasks, as necessary



Legend

- UE — Underground Electric Line
- X — Wood Fence Line
- T — Underground Telephone Line
- SS — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- Shallow (Water Table) Monitoring Well
- Recovery Well
- 12175-MW1 — Well ID

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT: **Edgefield Fuel & Convenience 3**
311 Main Street
Edgefield, South Carolina

TITLE: **Site Plan**

CLIENT: **Edgefield Fuel & Convenience, LLC**

GRAPHIC SCALE: 50 25 0 25 50

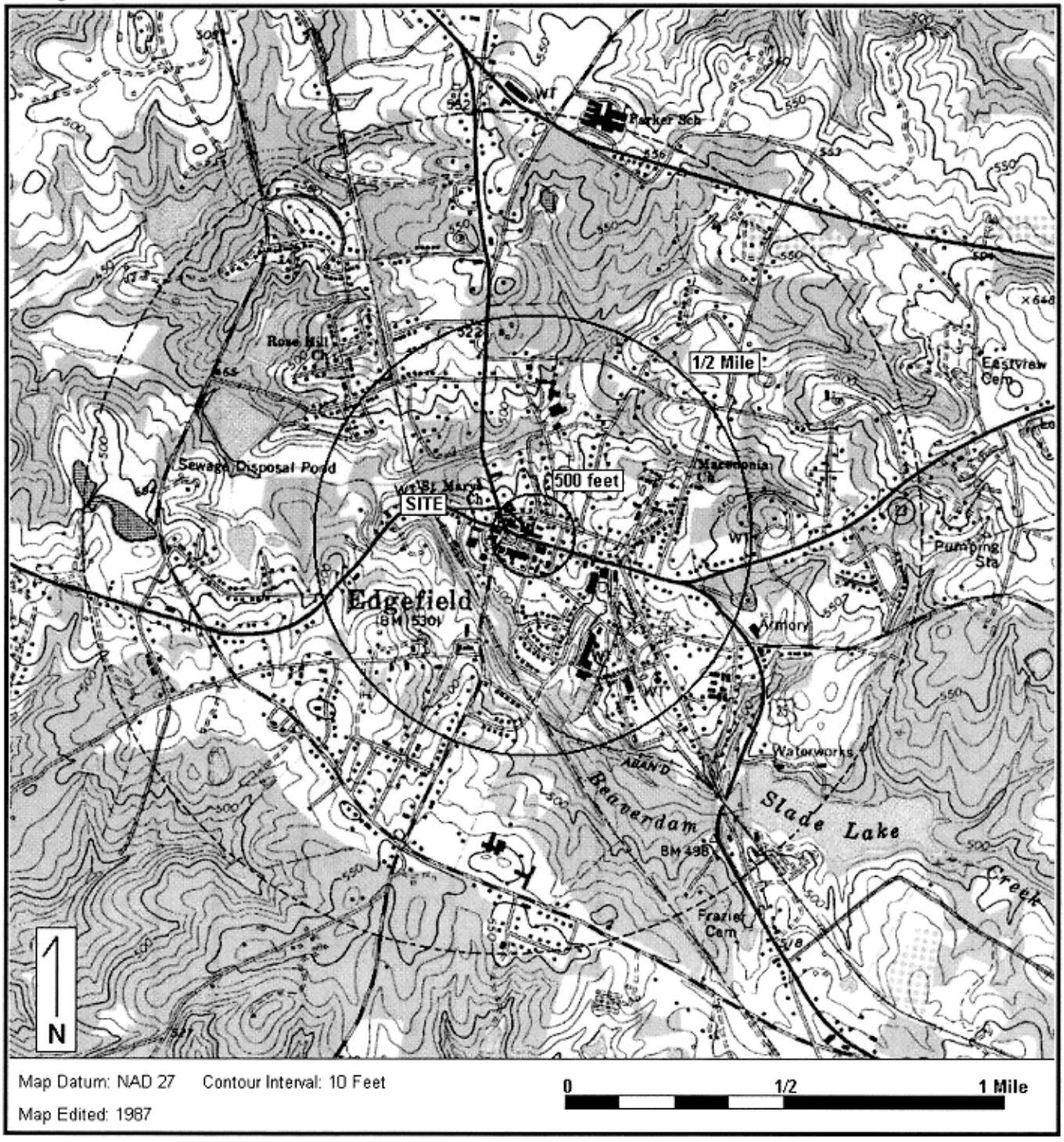
COMPUTER CADFILE 06-12-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	CK
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	6/10/13	14-211651	2

Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC

Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH

Generated By: Kevin Collins

D H E C

PROMOTE PROTECT PROSPER

Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

MR JOEL JOLLY
EDGEFIELD FUEL & CONVENIENCE, LLC
P O BOX 388
EDGEFIELD SC 29824-0388

AUG 2 8 2015

Re: **Groundwater Sampling Directive**
Edgefield Fuel & Convenience 3, 311 Main Street, Edgefield, SC
UST Permit # 12175; CA# 50755
Release reported December 31, 2008
Site Specific Work Plan received August 21, 2015
Edgefield County

Dear Mr. Jolly:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed and approved the referenced Site Specific Work Plan (SSWP) submitted on your behalf by Environmental Compliance Services, Inc. The next appropriate scope of work at the site is a comprehensive groundwater sampling event. All work should be conducted in accordance with the most recent revision of the UST Quality Assurance Program Plan (QAPP), Environmental Compliance Services, Inc.'s approved SSWP and Annual Contractor Quality Assurance Plan (ACQAP), and in compliance with all applicable regulations. A copy of the current revision of the Agency UST QAPP is available at http://www.scdhec.gov/Environment/LW/UST/ReleaseAssessmentClean-up/QualityAssurance/.

Groundwater sampling activities at the site should begin immediately upon receipt of this letter. Cost agreement # 50755 has been approved for the amount shown on the enclosed cost agreement form for sampling of all monitoring wells associated with the referenced release. Groundwater samples should be collected and analyzed for BTEX, naphthalene, MtBE, 1,2 DCA, 8 oxygenates, and EDB.

The Contractor must provide the UST Project Manager with a Project Status Report on a weekly basis via e-mail or notify the UST Project Manager via email 4 days prior to initiation of any site rehabilitation activity(ies). If there are any changes or conflicts with the date(s) of site activities, the UST Project Manager must be contacted within 24 hours of those changes.

The Monitoring Report, contractor checklist (QAPP Appendix K), and invoice are due within 60 days from the date of this letter. The report submitted at the completion of these activities should include the required information outlined in the QAPP. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Environmental Compliance Services, Inc. can submit an invoice for direct payment from the State Underground Petroleum Environmental Response Bank (SUPERB) Account for pre-approved costs. By law, the SUPERB Account cannot compensate any costs that are not pre-approved.

Please note that applicable South Carolina certification requirements regarding laboratory services and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Agency is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

Please note, if unnecessary dilutions are completed resulting in reporting limits of individual chemicals of concern (CoC) in excess of Risk-Based Screening Levels (RBSLs), the data cannot be used. In those cases, the Division may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The UST Management Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release.

The Agency grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The transport and disposal must be conducted in accordance with the QAPP. If the CoC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit # 12175. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-0610, by fax at (803) 898-0673, or by e-mail at hetricml@dhec.sc.gov.

Sincerely,

Matthew Lee Hetrick

Matthew L. Hetrick, Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement

cc: Environmental Compliance Services, Inc., P O Box 3528, Fort Mill, SC 29708 (with enc.)
Technical File (with enc.)

Approved Cost Agreement 50755

Facility: 12175 EDGEFIELD FUEL & CONVENIENCE 3

HETRICML

PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		A1	SITE SPECIFIC WORK PLAN	1.0000	150.00	150.00
04 MOB/DEMOB						
		B1	PERSONNEL	2.0000	423.00	846.00
10 SAMPLE COLLECTION						
		D1	GROUNDWATER NO PURGE/DUPLICATE	31.0000	28.00	868.00
		H1	FIELD BLANK	2.0000	24.60	49.20
11 ANALYSES	GW GROUNDWATER					
		A2	BTEXNM+OXYGS+1,2-DCA+ETH-8260B	34.0000	122.00	4,148.00
		F1	EDB BY 8011	32.0000	45.20	1,446.40
17 DISPOSAL						
		AA	WASTEWATER	50.0000	0.56	28.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PRT	REPORT PREPARATION	0.1200	7,535.60	904.27
				Total Amount		8,439.87

Document Receipt Information

☐ Hard Copy ☒ CD ☐ Email

Date Received 10-20-15

Permit Number 12175

Project Manager Matt Hetrick

Name of Contractor CCS

UST Certification Number

Docket Number 39tech

Scanned

BWS Report

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

GROUNDWATER SAMPLING REPORT
EDGEFIELD FUEL AND CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, SOUTH CAROLINA
UST PERMIT # 12175

Prepared for:
Edgefield Fuel and Convenience LLC
Post Office Box 388
Edgefield, South Carolina

ECS Project No.14-211651
October 19, 2015

Prepared by:
ECS, Inc.
13504 South Point Blvd, Unit F
Charlotte, NC 28273
tel 704.583.2711 fax 704.583.2744
www.ecsconsult.com

GROUNDWATER MONITORING REPORT

EDGEFIELD FUEL & CONVENIENCE 3
311 MAIN STREET
EDGEFIELD, EDGEFIELD COUNTY

UST PERMIT NO. 12175
ECS PROJECT NO. 14-211651

Prepared For:

Edgefield Fuel & Convenience, LLC
Post Office Box 388
Edgefield, South Carolina 29824-0388

Prepared By:

Environmental Compliance Services, Inc.
2764 Pleasant Road #11420
Fort Mill, South Carolina 29708-7299

October 19, 2015

Noelle France
Project Manager

David R. Mazorra, PE
SC Licensed Professional Engineer #31409

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
10/19/15
No. 31409
DAVID R. MAZORRA

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1.0 INTRODUCTION

This report presents the results of the groundwater sampling event conducted at the Edgefield Fuel & Convenience 3 site between September 15 and 16, 2015. The activities were conducted in accordance with the Underground Storage Tank (UST) Quality Assurance Program Plan (QAPP) Revision 2.0, and Cost Agreement Number 50755 as approved by the South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence dated August 28, 2015.

1.1 SITE INFORMATION

UST Facility Name: Edgefield Fuel & Convenience 3
UST Permit Number: 12175
Facility Address: 311 Main Street
Edgefield, South Carolina 29824
Telephone Number: (803) 637-5425

1.2 UST OWNER/OPERATOR

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 637-1900

1.3 PROPERTY OWNER INFORMATION

Name: Edgefield Fuel & Convenience, LLC
Address: P.O. Box 388
Edgefield, South Carolina 29824
Telephone Number: (803) 367-1900

1.4 DHEC CERTIFIED UST SITE REHABILITATION CONTRACTOR INFORMATION

Name: Environmental Compliance Services, Inc. (ECS)
Address: 2764 Pleasant Road #11420
Fort Mill, South Carolina 29708-7299
Telephone Number: (800) 627-0493
Certification Number: 358

1.5 CERTIFIED LABORATORY INFORMATION

Company Name: Pace Analytical Services, Inc.
Address: 9800 Kincey Avenue, Suite 100
Huntersville, North Carolina 28078
SC Certification: 99006001

1.6 SITE HISTORY

UST Permit:	12175
Site Name:	Edgefield Fuel & Convenience 3
Date Release Reported to SCDHEC:	December 31, 2008
Estimated Quantity of Product Released:	Not reported
Cause of Release:	UST system
SC RBCA Classification Code:	2BA

UST Permit 12175

UST	Size	Product	Date Installed	Currently in Use	Date Closed
1	3,000	Regular Unleaded Gasoline	10/11/1989	Yes	Not applicable
2	3,000	Regular Unleaded Gasoline	10/11/1989	Yes	Not applicable
3	3,000	Premium Unleaded Gasoline	10/11/1989	Not In Use	Not applicable

The site operates as Edgefield Fuel & Convenience 3, a retail gasoline and convenience store. The site previously operated as Amoco Food Mart 3, also a retail petroleum and convenience store. A release from the UST system at the site was reported to the SCDHEC on December 31, 2008. Three USTs (one 3,000-gallon premium unleaded gasoline UST and two 3,000-gallon regular unleaded gasoline USTs) were listed at the site and the premium unleaded gasoline UST was not in use during these activities.

1.7 REGIONAL GEOLOGY/HYDROGEOLOGY

The area is located in the Modoc shear zone of the Piedmont physiographic province. The Modoc zone is an example of a ductile fault in the Eastern Piedmont fault system (zone). The Modoc zone separates the high grade and older Savannah River terrane (Kiokee belt) from the low-grade metavolcanics and metasediments of the Carolina terrane (Slate belt) to the northwest. The Modoc shear zone was interpreted to be of late Paleozoic. Carolina Terrane consists of upper Precambrian to Cambrian greenschist facies metasedimentary and metavolcanic rocks intruded by numerous granitic and gabbroic plutons ranging in age from 265 to 650 million years. A mantle of residual soil and saprolite typically overlie the crystalline rocks of the Carolina Terrane. The thickness of the mantle has ranges from approximately six to 60 feet, although it apparently has been absent in places and thicker than 60 feet in others. The surface layers are reportedly composed chiefly of sandy clay. The clay content of most saprolites typically ranges from 10 to 25 percent, with some containing as little as three percent and others as much as 70 percent.

The mantle that covers the underlying fractured bedrock in most places provides an intergranular medium through which recharge into, and discharge of water from, the fractured rocks commonly occur. As a result, groundwater flow occurs within a composite two-media system. The top of the system is the water table surface, which is typically located within the saprolite. The fractured bedrock is expected to generally grade downward into unfractured rock below a depth of approximately 300 feet. The base of the groundwater system is therefore indistinct.

2.0 RECEPTOR SURVEY & SITE DATA

2.1 RECEPTOR SURVEY

The Edgefield Fuel & Convenience 3 site is located in a primarily business and commercial area within the town limits of Edgefield, South Carolina. The site is bordered to the north by an access road and parking lot for the west abutting Carolina First Bank. The site is bordered to the east by Bacon Street followed by the South Carolina National Heritage Corridor Discovery Center. The site is bordered to the south by Main Street (US Highway 25) followed by a parking lot for the downtown district of Edgefield. Edgefield Town Hall is located diagonally across the cross streets of Bacon Street and Main Street. A site vicinity map with topographic features is included as **Figure 1**.

Potable water to the site and surrounding properties is provided by the Edgefield County Water and Sewer Authority. The Edgefield County Water and Sewer Authority utilize potable water from portions of the Savannah River located within the Savannah-Salkehatchie Basin. One private water supply well was previously identified within a 1,000-foot radius of the site. The private water supply well is located approximately 860 feet southeast of the active site UST basin at the community college; however, this well is not in operation.

One wet weather drainage feature was previously identified approximately 1,000 feet southeast of the site. This wet weather drainage feature flows in a general east to west direction before a turn and then flows toward the southwest. The wet weather drainage feature drains into the Beaverdam Creek. The two closest surface water bodies previously identified in relation to the site were Beaverdam Creek and a tributary to Beaverdam Creek. Beaverdam Creek is located approximately 1,375 feet southwest of the site and flows in a general northwest to southeast direction. The tributary to Beaverdam Creek is located approximately 1,380 feet northwest of the site and flowed in a general northeast to southwest direction.

Underground utility conduits previously marked by area utility companies include a water meter for a municipal water line, electrical lines, and a telephone line. Additionally, a sanitary sewer cleanout for a sanitary sewer line and drop inlets for a storm drainage system are located on-site. The water meter is located on the eastern side of the property. Electrical lines are located along the eastern side of the property beneath the sidewalk and along the northern property limits of the site. A telephone line is located along the northeastern portion of the site. The sewer cleanout is located on the east side of the site building. The storm drains are located along Bacon Street next to the site property limits. A natural gas line and municipal water line are located across Main Street from the site. A Site Plan showing the utilities and the current UST system is included as **Figure 2**.

2.2 SITE GEOLOGY/HYDROGEOLOGY

The site is located approximately 525 feet above mean sea level (MSL) with an approximate total site topographic relief of three feet. The surface at the site is generally covered by asphalt, and some smaller areas of concrete and grass. The active site USTs were covered with concrete. The boring logs provide a general characterization of the geological formations encountered at the location of each monitoring well installed during assessment activities. In general, the site subsurface is characterized by asphalt and concrete ranging from 4 to 6 inches in thickness followed by fill material consisting of aggregate base course (ABC) stone and clayey to silty sand to depths of approximately 2 feet below ground surface (bgs). Native soils (residuum), below the fill material, are characterized as tan to brown to red silty sand and silty clay to depths of 6 feet bgs. Soils encountered in the boreholes 6 feet bgs are characterized as yellow to orange and tan to gray silty sand to the termination depths of the boreholes.

The percentages of sand, silt and clay in a soil sample collected from SB-2 (12175-MW1) at a depth of 20 feet during Tier I assessment activities (March 2009) were 64.1%, 24.5%, and 11.4%, respectively. The percentages of gravel, sand, and combination of silt & clay in the soil sample collected during Tier II activities (April 2010) from on-site monitoring well 12175-MW6 at a depth of 20 feet were 0.6%, 52.2%, and 47.2%, respectively. A hydrometer analysis was not performed on the soil sample collected from monitoring well 12175-MW6 to determine the percentages of silt and clay. Based on the sieve and hydrometer analyses, the site was underlain at shallow depths by clayey silty sand.

Historical depths to groundwater measured in shallow monitoring wells at the site ranged from 18.09 feet bgs (12175-MW5 in May 2010) to 25.61 feet bgs (12175-MW2 in October 2010 with 3.65 feet of free product), and averaged 22.24 feet bgs in on-site monitoring wells over time. Historical groundwater elevation data is presented in **Table 2**. Groundwater beneath the site was historically reported to flow radially from the northwest to south beneath the site.

Slug tests were previously performed on shallow monitoring wells 12175-MW2 and 12175-MW3 in March 2009 during Tier I activities and shallow monitoring wells 12175-MW6 and 12175-MW11 in May 2010 during Tier II activities. Hydraulic conductivities for these four shallow monitoring wells, calculated using the Bouwer and Rice method, ranged between 0.11 feet per day (ft/day) and 0.73 ft/day. Seepage velocities ranged between 1.66 feet per year (ft/yr) to 3.81 ft/yr.

3.0 ASSESSMENT INFORMATION

3.1 SOIL ASSESSMENT

Soil assessment was not required for the scope of work outlined in the August 28, 2015 directive.

3.2 GROUNDWATER FIELD SCREENING

Groundwater field screening was not required for the scope of work outlined in the August 28, 2015 directive.

3.3 MONITORING WELL INFORMATION

Monitoring well installation was not required for the scope of work outlined in the August 28, 2015 directive.

3.4 GROUNDWATER ASSESSMENT

3.4.1 Product/Water Level Measurements

Twenty-nine wells (12175-MW1 through 12175-MW26 and 12175-RW1 through 12175-RW3) were gauged for depths to free phase product (where present), depths to groundwater, and total well depths on September 15, 2015. Free phase product was detected in wells 12175-MW1 (thickness of 3.52 feet), 12175-MW2 (thickness of 0.83 feet), 12175-MW4 (thickness of 0.97 feet), 12175-MW5 (thickness of 0.37 feet), 12175-MW19 (thickness of 0.52 feet), 12175-MW25 (thickness of 3.97 feet), and 12175-RW2 (thickness of 3.95 feet).

On September 15, 2015, the groundwater elevations measured in the shallow monitoring wells (screened intervals between 10 and 34 feet bgs), relative to a temporary benchmark with an assumed datum of 99.50 feet, ranged from 79.08 feet (12175-MW16) to 72.67 feet (12175-MW20). Based on these data, the groundwater flow direction is to the south on the southern side of the site and to the north-northwest on the northern portion of the site.

The horizontal hydraulic gradient is estimated based on the change in hydraulic head per unit distance, calculated by using the formula $i = (h_2-h_1)/d$, referenced from the "EPA On-line Tools for Site Assessment Calculation" website. In this calculation, i is the gradient, h is the hydraulic head at the up gradient monitoring well (h_1) and down gradient monitoring well (h_2), and d is the distance between the down gradient monitoring well and the up gradient monitoring well. The horizontal hydraulic gradient is 0.00166 ft/ft between monitoring wells 12175-MW16 and 12175-MW23. The horizontal hydraulic gradient is 0.0236 ft/ft between monitoring wells 12175-MW24 and 12175-MW20.

Historical groundwater elevation data is presented in **Table 2**. A groundwater elevation map for site monitoring wells is included as **Figure 5**.

3.4.2 Water Sampling and Analyses

Twenty-two monitoring wells (12175-MW3, 123175-MW6 through 12175-MW18, 12175-MW20 through 12175-MW24, 12175-MW26, 12175-RW1, and 12175-RW3) were sampled between September 15 and 16, 2015. Groundwater samples were not collected from

monitoring wells 12175-MW1, 12175-MW2, 12175-MW4, 12175-MW5, 12175-MW19, 12175-MW25, and recovery well 12175-RW2 due to the presence of free phase product.

These 22 monitoring wells (12175-MW3, 123175-MW6 through 12175-MW18, 12175-MW20 through 12175-MW24, 12175-MW26, 12175-RW1, and 12175-RW3) were sampled using a new, disposable polyethylene bailer while wearing new, disposable nitrile gloves. The groundwater monitoring wells were not purged as they had been purged and sampled within the previous 12 months.

Groundwater samples collected were containerized in laboratory-prepared glass bottles, packed on ice, and transported to Pace Analytical Services, Inc. (Huntersville, NC), a South Carolina certified laboratory. Standard chain-of-custody procedures were maintained, as documented in **Appendix B**.

A duplicate sample identified as 12175-Duplicate-1 was collected from 12175-MW17 within 5 minutes of 12175-MW17 groundwater sample collection. A second duplicate sample, identified as 12175-Duplicate-2, was collected from 12175-MW6 within 5 minutes of 12175-MW6 groundwater sample collection. The duplicate samples were assigned unique identification names with no time listed on the chain of custody to avoid potential laboratory analytical bias. The duplicate samples were identified in the field book. Two field blanks were also collected, one each day, during water sampling activities for quality assurance and quality control. Trip blanks, one set per cooler, were included for quality assurance and quality control.

Twenty-seven water samples (22 monitoring wells, two duplicates, two field blanks, and one trip blank) were analyzed for benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX compounds), naphthalene, 1,2-dichloroethane (1,2-DCA), methyl tertiary butyl ether (MTBE), tertiary amyl alcohol (TAA), tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), tertiary butyl formate (TBF), diisopropyl ether (DIPE), ethanol, ethyl tertiary butyl ether (ETBE), and 3,3-dimethyl-1-butanol by Environmental Protection Agency (EPA) Method 8260. Twenty-six water samples (22 monitoring wells, two duplicates, and two field blanks) were analyzed for ethylene dibromide (EDB) by EPA Method 8011.

3.4.3 Groundwater Analytical Data

Analytical results were compared to the Risk-Based Screening Levels (RBSLs), as defined in Appendix B of SCDHEC, Department of Health and Environmental Control, Bureau of Land and Waste Management, Underground Storage Tank Program, May 15, 2001, *South Carolina Risk-Based Corrective Action for Petroleum Release*, and the Action Levels (ALs), as defined in SCDHEC, Department of Health and Environmental Control, Bureau of Land and Waste Management, Underground Storage Tank Program, October 22, 2008, *Certification of the Oxygenate Compounds*.

Detectable concentrations of benzene above the RBSL were reported in groundwater samples collected from wells 12175-MW6, 12175-MW11 12175-MW12, 12175-MW17, 12175-MW18, 12175-MW23, 12175-MW24, 21275-MW26, 12175-RW1, and 12175-RW3.

Detectable concentrations of toluene above the RBSL was reported in groundwater samples collected from wells 12175-MW17, 12175-MW18, 12175-MW24, 12175-RW1, and 12175-RW3.

Detectable concentrations of ethylbenzene above the RBSL was reported in groundwater samples collected from wells 12175-MW6, 12175-MW17, 12175-MW18, 12175-MW24, 12175-RW1, and 12175-RW3.

Detectable concentrations of total xylenes above the RBSL were reported in groundwater samples collected from wells 12175-MW17, 12175-MW24, 12175-RW1, and 12175-RW3.

Detectable concentrations of MTBE above the RBSL were reported in groundwater samples collected from wells 12175-MW6, 12175-MW26, and 12175-RW1.

Detectable concentrations of naphthalene above the RBSL were reported in groundwater samples collected from wells 12175-MW11, 12175-MW17, 12175-MW18, 12175-MW24, 12175-MW26, 12175-RW1, and 21275-RW3.

Detectable concentrations of EDB above the RBSL were reported in groundwater samples collected from wells 12175-MW17, 12175-MW18, and 12175-RW1.

A detectable concentration of 1,2-DCA above the RBSL was reported in the groundwater sample collected from well 12175-MW26.

Detectable concentrations of TAA above the AL were reported in groundwater samples collected from wells 12175-MW6, 12175-MW12, 12175-MW17, 12175-MW18, 12175-MW24, 12175-MW26, 12175-RW1, and 12175-RW3.

A detectable concentration of TAME above the AL was reported in the groundwater sample collected from on-site monitoring well 12175-RW1.

A detectable concentration of TBA above the AL was reported in the groundwater sample collected from on-site monitoring well 12175-MW6.

Chemicals of Concern were not detected in the field blanks or trip blanks from the September 2015 groundwater sampling event.

Historical groundwater analytical data are presented in **Table 3**. A groundwater quality map based on the September 2015 data is included as **Figure 4**. Groundwater Sampling Field Data Sheets have been included in **Appendix B**. The laboratory report for groundwater samples collected during this assessment is included in **Appendix B**. A quality assurance and quality control evaluation is also included in **Appendix B**.

3.4.4 Aquifer Characterization

Aquifer characteristics determinations were not required for the scope of work outlined in the August 28, 2015 directive.

3.5 INVESTIGATIVE DERIVED WASTE

Investigative derived waste (IDW) was not generated during these activities.

4.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

4.1 SUMMARY

- A groundwater sampling event was completed between September 15 and 16, 2015 for site monitoring wells (12175-MW1 through 12175-MW26 and 12175-RW1 through 12175-RW3).
- Free phase product was measured in monitoring wells 12175-MW1, 12175-MW2, 12175-MW4, 12175-MW5, 12175-MW19, 12175-MW25, and recovery well 12175-RW2 during the September 15, 2015 gauging event.
- Based on the laboratory analytical results from the September 2015 groundwater sampling event, the distribution of dissolved-phase petroleum compounds in groundwater at concentrations above RBSLs/ALs was limited to 12175-MW6, 12175-MW11, 12175-MW12, 12175-MW17, 12175-MW18, 12175-MW23, 12175-MW24, 12175-MW26, 12175-RW1, and 12175-RW3.

4.2 CONCLUSIONS

- Based on the September 15, 2015 gauging event, the groundwater flow direction is to the south on the southern side of the site and to the north-northwest on the northern portion of the site.
- Free phase product continues to be detected at the site in wells located at and to the west of the UST system.
- The vertical extent of dissolved phase petroleum in the groundwater has not been defined.

4.3 RECOMMENDATIONS

- ECS recommends installing a shallow groundwater monitoring well southwest of 12175-MW23.
- ECS recommends the installation of a telescoping monitoring wells in the vicinity of 12175-MW6, 12175-MW18, 12175-MW17, 12175-MW24, and south of 12175-MW26 for the purpose of completing the vertical delineation of dissolved phase petroleum compounds in groundwater.
- ECS recommends two back-to-back 96-hour aggressive fluid vapor recovery (AFVR) events. One of the AFVR events should be conducted with connections to wells 12175-MW1, 12175-MW4, 12175-MW5, and 12175-RW1. The other AFVR event should be conducted with connections to wells 12175-MW2, 12175-MW19, 12175-MW25, 12175-RW2, and 12175-RW3.
- Additional monitoring wells appear appropriate to delineate the dissolved phase plume above RBSL/ALs in groundwater.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of Edgefield Fuel & Convenience, LLC for specific application to the referenced site in Edgefield County, South Carolina. The assessment was conducted based on the scope of work and level of effort desired by the SCDHEC and with resources adequate only for that scope of work. Our findings have been developed in accordance with generally accepted standards of geology and hydrogeology practices in the State of South Carolina, available information, and our professional judgment. No other warranty is expressed or implied.

The data that are presented in this report are indicative of conditions that existed at the precise locations sampled and at the time the samples were collected. Additionally, the data obtained from samples would be interpreted as being meaningful with respect to parameters indicated in the laboratory report. No additional information can logically be inferred from these data.

Certain data contained in this report were not obtained under the supervision of ECS. Although the accuracy of these data cannot be verified, for the purposes of this report, ECS assumes that they are correct.

5.1 DATA VERIFICATION

The Project Verifier/Quality Assurance Manager has reviewed this report and provided any additional comments if applicable in **Appendix K**.

TABLES

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)	Measured Well Depth (ft)
12175-MW1	35	20-35	98.51	12/17/04	22.13	23.68	1.55	75.99	NM
				05/10/10	17.83	21.00	3.17	79.89	NM
				10/20/10	19.38	25.07	5.69	77.71	NM
				09/12/11	20.59	26.35	5.76	76.48	NM
				08/16/13	19.33	22.72	3.39	78.33	NM
				01/09/14	19.37	22.77	3.40	78.29	NM
				01/23/15	18.70	20.10	1.40	79.46	33.30
				09/15/15	19.15	22.67	3.52	78.48	NM
12175-MW2	34	19-34	100.42	12/17/04	---	24.55	---	75.87	34.05
				05/10/10	20.27	22.73	2.46	79.54	33.98
				10/20/10	21.96	25.61	3.65	77.55	NM
				09/12/11	23.01	27.06	4.05	76.40	NM
				08/16/13	22.35	22.67	0.32	77.99	NM
				01/09/14	22.08	22.91	0.83	78.13	NM
				01/23/15	21.10	21.90	0.80	79.12	34.00
				09/15/15	21.80	22.63	0.83	78.41	NM
12175-MW3	34	19-34	100.44	12/17/04	---	24.38	---	76.06	34.00
				05/10/10	---	20.54	---	79.90	33.91
				10/20/10	---	22.71	---	77.73	33.90
				09/12/11	---	23.90	---	76.54	33.89
				08/16/13	---	22.32	---	78.12	---
				01/09/14	---	22.11	---	78.33	---
				12/22/14	---	21.90	---	78.54	33.90
				09/15/15	---	21.77	---	78.67	33.90
12175-MW4	29	19-29	98.61	05/10/10	---	18.92	---	79.69	28.91
				10/20/10	---	21.04	---	77.57	28.95
				09/12/11	---	22.22	---	76.39	28.96
				08/16/13	20.49	21.49	1.00	77.87	---
				01/09/14	20.27	21.15	0.88	78.12	---
				01/23/15	19.30	19.85	0.55	79.17	29.00
				09/15/15	19.93	20.90	0.97	78.44	NM
12175-MW5	29	19-29	98.05	05/10/10	---	18.09	---	79.96	29.04
				10/20/10	20.22	20.57	0.35	77.74	NM
				09/12/11	20.66	24.05	3.39	76.54	NM
				08/16/13	19.39	21.83	2.44	78.05	NM
				01/09/14	19.24	20.96	1.72	78.38	NM
				01/23/15	18.55	18.90	0.35	79.41	29.00
				09/15/15	19.35	19.72	0.37	78.61	NM
12175-MW6	29	19-29	99.82	05/10/10	---	19.94	---	79.88	28.99
				10/20/10	---	22.09	---	77.73	29.02
				09/12/11	---	23.27	---	76.55	28.99
				08/16/13	---	21.75	---	78.07	---
				01/09/14	---	21.51	---	78.31	---
				12/22/14	---	21.24	---	78.58	29.01
				09/15/15	---	21.12	---	78.70	28.99

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EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)	Measured Well Depth (ft)
12175-MW7	20	10-20	93.32	05/10/10	---	13.51	---	79.81	20.33
				10/20/10	---	15.91	---	77.41	20.25
				09/12/11	---	17.00	---	76.32	20.36
				08/16/13	---	15.18	---	78.14	---
				01/09/14	---	14.95	---	78.37	---
				12/22/14	---	15.10	---	78.22	20.40
				09/15/15	---	15.03	---	78.29	20.40
12175-MW8	27	17-27	100.59	05/10/10	---	21.61	---	78.98	26.85
				10/20/10	---	23.83	---	76.76	26.89
				09/12/11	---	24.89	---	75.70	26.89
				08/16/13	---	22.87	---	77.72	---
				01/09/14	---	22.73	---	77.86	---
				12/22/14	---	23.07	---	77.52	26.90
				09/15/15	---	23.01	---	77.58	26.90
12175-MW9	27	17-27	97.55	05/10/10	---	18.81	---	78.74	27.03
				10/20/10	---	21.12	---	76.43	27.07
				09/12/11	---	22.16	---	75.39	26.93
				08/16/13	---	20.03	---	77.52	---
				01/09/14	---	19.75	---	77.80	---
				12/22/14	---	20.30	---	77.25	26.89
				09/15/15	---	20.36	---	77.19	26.89
12175-MW10	30	20-30	101.31	05/10/10	---	22.88	---	78.43	30.31
				10/20/10	---	24.90	---	76.41	30.40
				09/12/11	---	25.87	---	75.44	30.39
				08/16/13	---	23.86	---	77.45	---
				01/09/14	---	23.74	---	77.57	---
				12/22/14	---	24.10	---	77.21	30.30
				09/15/15	---	23.89	---	77.42	30.30
12175-MW11	31	21-31	101.65	05/10/10	---	22.16	---	79.49	31.04
				10/20/10	---	24.10	---	77.55	31.07
				09/12/11	---	25.25	---	76.40	30.91
				08/16/13	---	23.69	---	77.96	---
				01/09/14	---	23.61	---	78.04	---
				12/22/14	---	23.41	---	78.24	30.85
				09/15/15	---	23.09	---	78.56	30.85
12175-MW12	30	20-30	100.55	05/10/10	---	21.78	---	78.77	30.15
				10/20/10	---	23.75	---	76.80	30.10
				09/12/11	---	25.00	---	75.55	30.04
				08/16/13	---	23.35	---	77.20	---
				01/09/14	---	23.24	---	77.31	---
				12/22/14	---	22.98	---	77.57	30.05
				09/15/15	---	22.70	---	77.85	30.05
12175-MW13	25	15-25	93.20	05/10/10	---	17.82	---	75.38	25.20
				10/20/10	---	20.26	---	72.94	25.24
				09/12/11	---	21.60	---	71.60	25.24
				08/16/13	---	19.20	---	74.00	---
				01/09/14	---	18.87	---	74.33	---
				12/22/14	---	19.44	---	73.76	25.25
				09/15/15	---	18.86	---	74.34	25.25

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Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)	Measured Well Depth (ft)
12175-MW14	30	20-30	100.05	05/10/10	---	22.47	---	77.58	29.54
				10/20/10	---	24.77	---	75.28	29.59
				09/12/11	---	25.97	---	74.08	29.57
				08/16/13	---	24.06	---	75.99	---
				01/09/14	---	23.70	---	76.35	---
				12/22/14	---	23.90	---	76.15	29.60
				09/15/15	---	23.40	---	76.65	29.60
12175-MW15	27	17-27	98.47	05/10/10	---	18.81	---	79.66	26.93
				10/20/10	---	21.16	---	77.31	26.97
				09/12/11	---	22.10	---	76.37	26.96
				08/16/13	---	20.66	---	77.81	---
				01/09/14	---	20.24	---	78.23	---
				12/22/14	---	20.09	---	78.38	26.93
				09/15/15	---	19.70	---	78.77	26.93
12175-MW16	20	10-20	93.01	05/10/10	---	12.34	---	80.67	19.92
				10/20/10	---	14.97	---	78.04	19.89
				09/12/11	---	16.15	---	76.86	19.66
				08/16/13	---	14.68	---	78.33	---
				01/09/14	---	14.28	---	78.73	---
				12/22/14	---	13.61	---	79.40	19.25
				09/15/15	---	13.93	---	79.08	19.25
12175-MW17	28	18-28	101.09	10/20/10	---	23.52	---	77.57	28.70
				09/12/11	---	24.67	---	76.42	28.68
				08/16/13	22.62	24.66	2.04	77.96	---
				01/09/14	---	23.00	---	78.09	---
				12/22/14	---	22.82	---	78.27	28.66
				09/15/15	---	22.72	---	78.37	28.66
12175-MW18	28	18-28	101.51	10/20/10	---	24.01	---	77.50	28.66
				09/12/11	---	25.14	---	76.37	28.58
				08/16/13	---	23.45	---	78.06	---
				01/09/14	---	23.33	---	78.18	---
				12/22/14	---	23.31	---	78.20	28.60
				09/15/15	---	23.12	---	78.39	28.60
12175-MW19	28	18-28	100.01	10/20/10	22.35	23.19	0.84	77.45	NM
				09/12/11	22.57	27.18	4.61	76.29	NM
				08/16/13	20.73	23.35	2.62	78.63	NM
				01/09/14	21.58	23.25	1.67	78.01	NM
				01/23/15	20.05	20.80	0.75	79.77	28.30
				09/15/15	21.53	22.05	0.52	78.35	NM
12175-MW20	27	17-27	91.80	10/20/10	---	20.28	---	71.52	26.24
				09/12/11	---	21.66	---	70.14	26.24
				08/16/13	---	18.98	---	72.82	---
				01/09/14	---	18.42	---	73.38	---
				12/22/14	---	19.21	---	72.59	26.25
				09/15/15	---	19.13	---	72.67	26.25

TABLE 2
GROUNDWATER ELEVATION DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Well Depth (ft)	Screened Interval (ft)	Top of Casing Elevation (ft)	Date Measured	Depth to Free Phase Product (ft)	Depth to Groundwater (ft)	Free Phase Product Thickness (ft)	Groundwater Elevation (ft)	Measured Well Depth (ft)
12175-MW21	29	19-29	94.30	10/20/10	---	21.70	---	72.60	29.37
				09/12/11	---	22.94	---	71.36	29.35
				08/16/13	---	20.70	---	73.60	---
				01/09/14	---	20.33	---	73.97	---
				12/22/14	---	20.81	---	73.49	29.37
				09/15/15	---	20.58	---	73.72	29.37
12175-MW22	30	20-30	99.82	10/20/10	---	25.99	---	73.83	29.89
				09/12/11	---	26.94	---	72.88	29.89
				08/16/13	---	24.04	---	75.78	---
				01/09/14	---	23.98	---	75.84	---
				12/22/14	---	25.15	---	74.67	29.90
				09/15/15	---	24.79	---	75.03	29.90
12175-MW23	31	21-31	102.29	10/20/10	---	24.86	---	77.43	31.37
				09/12/11	---	25.99	---	76.30	31.34
				08/16/13	20.87	24.35	3.48	80.55	NM
				01/09/14	---	24.32	---	77.97	---
				12/22/14	---	24.21	---	78.08	31.35
				09/15/15	---	23.90	---	78.39	31.35
12175-MW24	30	20-30	100.23	08/16/13	---	22.07	---	78.16	---
				01/09/14	---	22.08	---	78.15	---
				12/22/14	---	21.85	---	78.38	30.15
				09/15/15	---	21.76	---	78.47	30.15
12175-MW25	30	20-30	99.95	08/16/13	21.40	23.87	2.47	77.93	NM
				01/09/14	21.22	23.75	2.53	78.10	NM
				01/23/15	19.90	21.90	2.00	79.55	30.15
				09/15/15	20.48	24.45	3.97	78.48	NM
12175-MW26	30	20-30	99.89	08/16/13	---	22.81	---	77.08	---
				01/09/14	---	22.68	---	77.21	---
				12/22/14	---	22.45	---	77.44	30.09
				09/15/15	---	22.13	---	77.76	30.09
12175-RW1	30	20-30	98.05	08/16/13	---	19.80	---	78.25	---
				08/16/13	19.64	19.67	0.03	78.40	NM
				04/03/14	18.31	18.35	0.04	79.73	NM
				12/22/14	---	19.38	---	78.67	29.18
				09/15/15	---	19.42	---	78.63	NM
12175-RW2	30	20-30	100.05	08/16/13	20.75	20.87	0.12	79.27	NM
				08/16/13	21.16	24.18	3.02	78.14	NM
				04/03/14	19.79	22.38	2.59	79.61	NM
				01/23/15	20.00	22.50	2.50	79.43	30.10
				09/15/15	20.45	24.40	3.95	78.61	NM
12175-RW3	30	20-30	100.16	08/16/13	---	22.16	---	78.00	---
				01/09/14	---	22.00	---	78.16	---
				12/22/14	---	21.78	---	78.38	30.00
				09/15/15	---	21.68	---	78.48	NM

Notes:
Elevations relative to a temporary benchmark with an assumed datum of 99.50 feet.
Groundwater elevation adjusted for the presence of free phase product with an assumed density of 0.75g/cm3, where present.
Well depths and screen lenghts based on well construction records referencing ground surface.
Measured depths to fluids reference top of casing as measuring point.

TABLE 3
GROUNDWATER ANALYTICAL DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
RBSL/Action Level		5	1,000	700	10,000	40	25	0.05	5	15	240	128	1,400	NE	150	10,000	47	NE
12175-MW1	03/04/09	FREE PHASE PRODUCT																
	05/10/10	FREE PHASE PRODUCT																
	10/20/10	FREE PHASE PRODUCT																
	09/12/11	FREE PHASE PRODUCT																
	12/22/14	FREE PHASE PRODUCT																
	09/15/15	FREE PHASE PRODUCT																
12175-MW2	03/04/09	**4,970**	**7,470**	**1,020**	4,400	**183**	**142**	**0.46**	NR	<5.0	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	FREE PHASE PRODUCT																
	10/20/10	FREE PHASE PRODUCT																
	09/12/11	FREE PHASE PRODUCT																
	12/22/14	FREE PHASE PRODUCT																
	09/15/15	FREE PHASE PRODUCT																
12175-MW3	03/04/09	**7.9**	33.9	<5.0	12.8	<5.0	<5.0	<0.019	NR	<5.0	NR	NR	NR	NR	NR	NR	NR	NR
	05/10/10	<5.0	4.5J	<5.0	5.7J	<5.0	<5.0	<0.020	<5.0	<5.0	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/21/10	**7.5**	<5.0	<5.0	4.7J	<5.0	3.6J	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**21.4**	<1	<0.5	3.5	<1	<5	<0.0189	<0.5	NR	<20	<1	2.6 I	<160	<1	<800	<1	<40
	12/23/14	**43.1**	1.7 J	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	3.1 J	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW4	05/10/10	**411**	29.8	8.3	31.9J	**256**	<5.0	<0.020	<5.0	**17.6**	**3,120**	11.8	322	<50.0	<5.0	<200	<10.0	<100
	10/21/10	**1,360**	87.5	108	121.6	**630**	15.2	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**626**	10.6	9.5	19.2	**862**	<25	<0.019	<2.5	NR	**7,600**	30	350	<800	4.4 I	<4,000	<5	<200
	12/22/14	FREE PHASE PRODUCT																
	09/15/15	FREE PHASE PRODUCT																
12175-MW5	05/10/10	**20,900**	**30,900**	**1,090**	**12,100**	**11,400**	**316**	**0.93**	<5.0	**21.7**	**25,300**	**1,620**	<100	<50.0	131	<200	**47.1**	<100
	10/20/10	FREE PHASE PRODUCT																
	09/12/11	FREE PHASE PRODUCT																
	12/22/14	FREE PHASE PRODUCT																
	09/15/15	FREE PHASE PRODUCT																
12175-MW6	05/10/10	**270**	200	20.1	213.3	**59.4**	<5.0	<0.019	<5.0	9.4	**757**	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/21/10	**1,830**	**1,140**	110	677	**186**	9.1J	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**1,500**	351	19.5	353	**155**	<50	<0.0187	<5	NR	<200	6.7 I	<200	<1,600	<10	<8,000	<10	<400
	12/23/14	**2,350**	183	483	263	**459**	**26.6**	<0.019	<25.0	NR	**13,600**	<50.0	1,050	<250	<25.0	<1,000	<50.0	<500
	09/15/15	**1890**	<100	**708**	<200	**905**	<100	<0.020	<100	NR	**28300**	<200	**2020**	<1000	<100	<4000	<200	<2000
12175-MW7	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**59.3**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0187	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW8	05/10/10	<5.0	3.7J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**57.2**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	1.9 I	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/16/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW9	05/10/10	<5.0	3.1J	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**34.4**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0185	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/16/15	<5.0	<5.0	<5.0	<10.0	<5.0	2.8 J	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	05/10/10	<5.0	1.8J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	**41.6**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

TABLE 3
GROUNDWATER ANALYTICAL DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
RBSL/Action Level		5	1,000	700	10,000	40	25	0.05	5	15	240	128	1,400	NE	150	10,000	47	NE
12175-MW10	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW11	05/10/10	**1,820**	522	33.1	522	**125**	**31.9**	**0.097**	<5.0	**40.5**	**310**	100	<100	<50.0	4.7J	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	4.4J	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**1,110**	**1,140**	155	3,610	<10	<50	<0.0191	<5	NR	<200	19.3	<200	<1,600	<10	<8,000	<10	<400
	12/22/14	**1,980**	519	62.7	2,470	**161**	**251**	<0.020	<5.0	NR	**1,340**	94.0	200	<50.0	5.9	<200	<10.0	<100
	09/15/15	**673**	637	<62.5	3620	<62.5	**260**	<0.020	<62.5	NR	<1250	<125	<1250	<625	<62.5	<2500	<125	<1250
12175-MW12	05/10/10	**75.7**	3.5J	9.4	34.0J	<5.0	12.0	<0.020	<5.0	**61.5**	157	<10.0	570	<50.0	<5.0	<200	<10.0	<100
	10/20/10	**58.0**	2.6J	8.5	19.5	<5.0	14.6	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	**53.6**	2.1	2.6	1.1 I	<1	5.9	<0.0188	<0.5	NR	**343**	<1	88.2	<160	<1	<800	<1	<40
	12/23/14	**44.7**	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	**1,120**	<10.0	75.6 J	<50.0	<5.0	<200	<10.0	<100
	09/15/15	**24.7**	<5.0	11.3	<10.0	<5.0	14.5	<0.019	<5.0	NR	**715**	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW13	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.021	<5.0	**96.0**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.019	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW14	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	7.2	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW15	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**128**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW16	05/10/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.019	<5.0	**146**	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	10/20/10	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<0.020	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW17	10/21/10	**15,900**	**31,400**	**2,820**	**12,970**	**564**	**623**	**0.69**	<5.0	NR	**13,600**	**533J**	<100	<50.0	24.5	<200	8.5J	<100
	09/12/11	**9,220**	**19,500**	**1,530**	7,480	<100	**272 I**	**0.13**	<50	NR	**9,580**	**260**	<2,000	<16,000	<100	<80,000	<100	<4,000
	12/23/14	**15,600**	**40,400**	**3,430**	**18,500**	**545 J**	**843**	**0.23**	<625	NR	**18,000**	**490 J**	<12,500	<6,250	<625	<25,000	<1,250	<12,500
	09/16/15	**15000**	**33000**	**2820**	**17000**	<1000	**1880**	**0.70**	<1000	NR	**15700 J**	<2000	<20000	<10000	<1000	<40000	<2000	<20000
12175-MW18	10/21/10	**26.8**	101	9.3	42.7	2.8J	3.1J	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/23/14	**7,030**	**17,400**	**1,430**	8,170	18.7	**228**	<0.019	<10.0	NR	**1,540**	94.3	<200	<100	<10.0	<400	<20.0	<200
	09/16/15	**3350**	**9620**	**898**	6070	<25.0	**208**	**0.056**	<25.0	NR	**740**	31.8 J	<500	<250	<25.0	<1000	<50.0	<500
12175-MW19	10/20/10	**FREE PHASE PRODUCT**																
	09/12/11	**FREE PHASE PRODUCT**																
	12/22/14	**FREE PHASE PRODUCT**																
	09/15/15	**FREE PHASE PRODUCT**																
12175-MW20	10/21/10	**5.6**	7.0	1.1J	9.1J	9.5	2.9J	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	0.17 I	<0.5	<2	5	<5	<0.0188	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100

TABLE 3
GROUNDWATER ANALYTICAL DATA
EDGEFIELD FUEL & CONVIENENCE 3

Well ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	Total Lead (µg/L)	TAA (µg/L)	TAME (µg/L)	TBA (µg/L)	TBF (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	ETBE (µg/L)	3,3-Dimethyl-1-butanol (µg/L)
RBSL/Action Level		5	1,000	700	10,000	40	25	0.05	5	15	240	128	1,400	NE	150	10,000	47	NE
12175-MW21	10/21/10	2.5J	10.5	1.8J	8.2J	<5.0	5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0188	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/23/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	3.2 J	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW22	10/21/10	<5.0	4.5J	<5.0	<15.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	<1	<0.5	<2	<1	<5	<0.0191	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	<5.0	<5.0	<5.0	<10.0	<5.0	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW23	10/21/10	<5.0	4.5J	<5.0	<15.0	3.8J	<5.0	<0.020	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/12/11	<0.5	<1	<0.5	<2	0.66 I	<5	<0.0189	<0.5	NR	<20	<1	<20	<160	<1	<800	<1	<40
	12/22/14	**18.9**	<5.0	<5.0	<10.0	6.4	<5.0	<0.019	<5.0	NR	<100	<10.0	<100	<50.0	<5.0	<200	<10.0	<100
	09/15/15	**18.7**	<5.0	<5.0	<10.0	10.1	3.6 J	<0.020	<5.0	NR	<100	3.5 J	<100	<50.0	<5.0	<200	<10.0	<100
12175-MW24	12/23/14	**12,100**	**32,800**	**1,780**	**21,100**	**75.5**	**469**	<0.020	<50.0	NR	**17,400**	119	644 J	<500	<50.0	<2,000	<100	<1,000
	09/16/15	**4720**	**17000**	**2600**	**14600**	<625	**1320**	<0.020	<625	NR	**15600**	<1250	<12500	<6250	<625	<25000	<1250	<12500
12175-MW25	12/22/14	**FREE PHASE PRODUCT**																
	09/15/15	**FREE PHASE PRODUCT**																
12175-MW26	12/22/14	**967**	41.8	<25.0	<50.0	**84.6**	**25.6**	<0.019	**13.9 J**	NR	**1,310**	44.7 J	306 J	<250	16.0 J	<1,000	<50.0	161 J
	09/15/15	**563**	<25.0	<25.0	<50.0	**54.4**	**47.5**	<0.020	**12.1 J**	NR	**1200**	27.4 J	<500	<250	18.6 J	<1000	<50.0	<500
12175-RW1	12/23/14	**27,900**	**44,800**	**2,900**	**17,000**	**4,540**	**525**	**1.2**	<100	NR	**18,100**	**2,010**	**1,550 J**	<1,000	145	<4,000	<200	<2,000
	09/16/15	**26800**	**51700**	**3630**	**21600**	**2330**	**3120**	**0.39**	<2000	NR	**41800**	**1570 J**	<40000	<20000	<2000	<80000	<4000	<40000
12175-RW2	12/22/14	**FREE PHASE PRODUCT**																
	09/15/15	**FREE PHASE PRODUCT**																
12175-RW3	12/23/14	**13,300**	**36,200**	**3,140**	**15,700**	<2,500	<2,500	0.028	<2,500	NR	<50,000	<5,000	<50,000	<25,000	<2,500	<100,000	<5,000	<50,000
	09/16/15	**8210**	**29800**	**2410**	**16000**	<125	**705**	<0.019	<125	NR	**19600**	<250	<2500	<1250	<125	<5000	<250	<2500

Notes:
Analyses for BTEX constituents, MTBE, naphthalene, 1,2-DCA, and oxygenates by EPA Method 8260; analyses for EDB by EPA Method 8011; analyses for total lead by EPA Method 6010
Risk-Based Screening Level (RBSL) as defined in Appendix B of SCDHEC, Department of Health and Environmental Control, Bureau of Land and Waste Management, Underground Storage Tank Program, May 15, 2001, South Carolina Risk-Based Corrective Action for Petroleum Releases
Action Level (AL) as defined in SCDHEC, Department of Health and Environmental Control, Bureau of Land and Waste Management, Underground Storage Tank Program, October 22, 2008, Certification of the Oxygenate Compounds
Concentrations in bold face type exceeded the RBSL / Action Level
< = less than the reporting limit specified in the laboratory report
NR = analysis not requested
NS = not sampled
J value = an estimated value between the laboratory reporting limit and the method detection limit
I value = an estimated value between the laboratory method detection limit and the laboratory practical quantitation limit
NE = not established

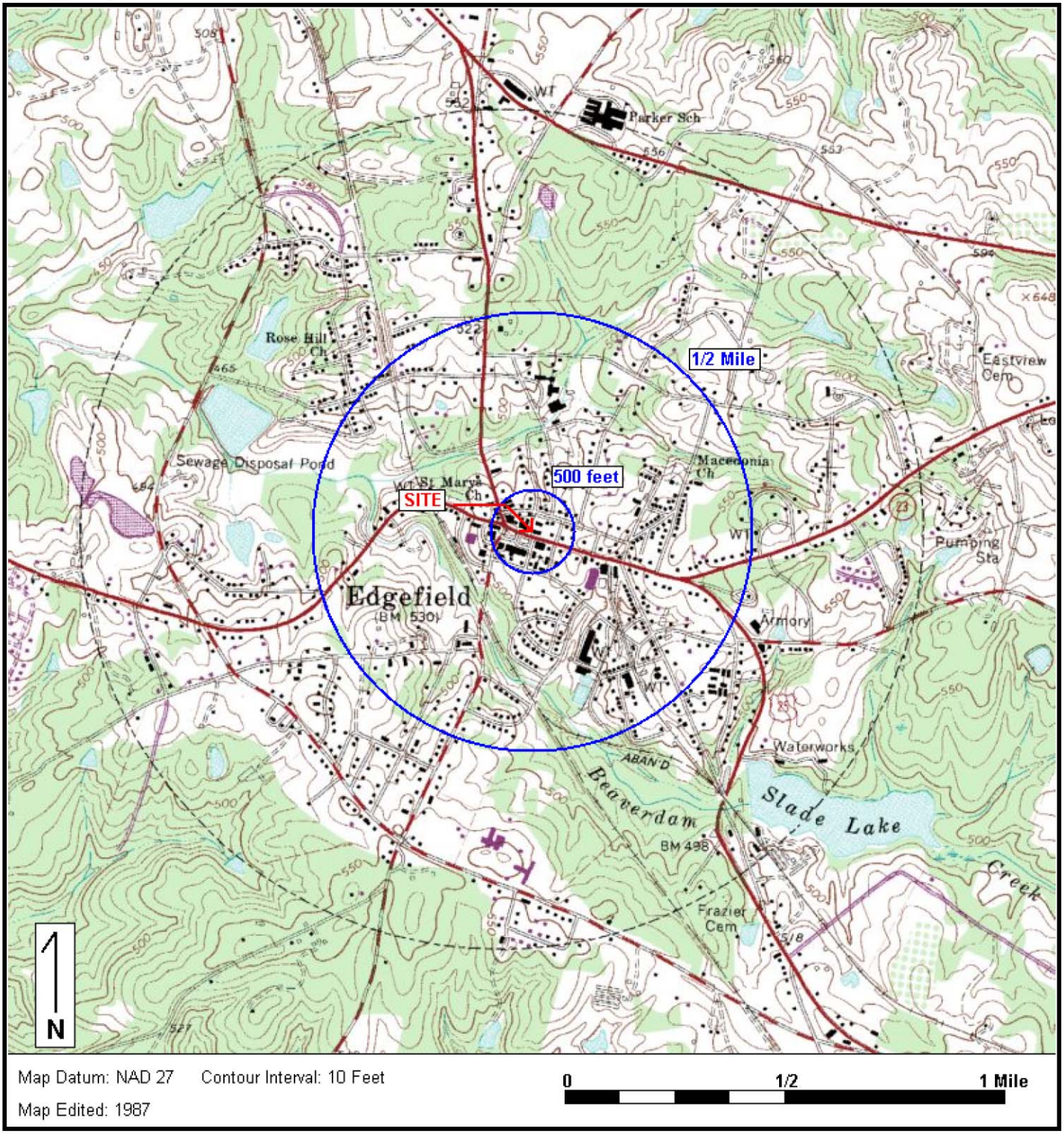
EDB = 1,2-Dibromoethane
TBF = *tert* -Butyl Formate
TAA = *tert* -Amyl Alcohol
1,2-DCA = 1,2-Dichloroethane
TBA = *tert* -Butyl Alcohol
MTBE = Methyl-*tert* -butyl ether
TAME = *tert* -Amyl methyl ether
DIPE = Diisopropyl ether
ETBE = Ethyl-*tert* -butyl ether

FIGURES

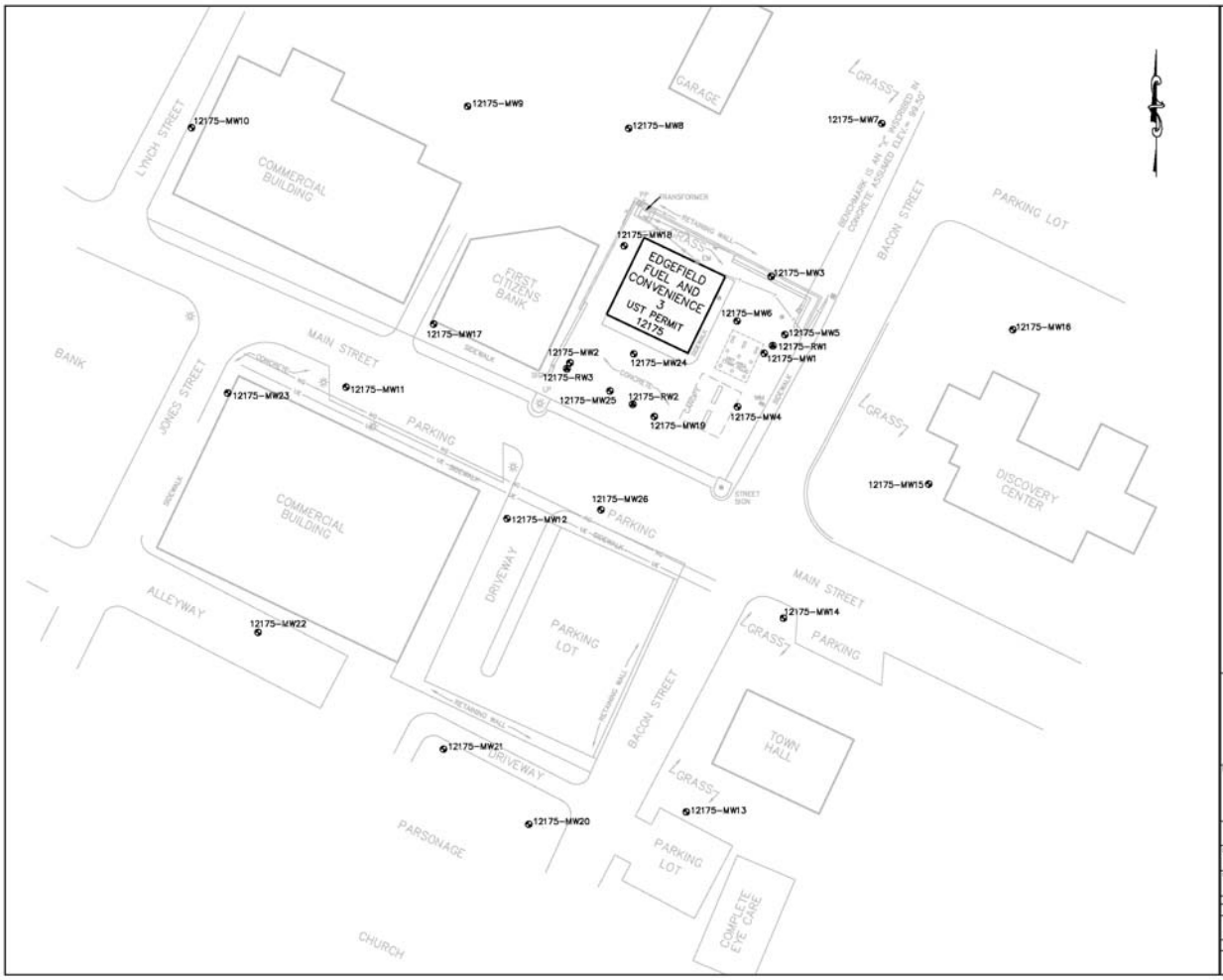
Environmental Compliance Services, Inc.
13504 South Point Boulevard
Charlotte, NC 28273
Phone 704.583.2711
www.ecsconsult.com

Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, SC 29824

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Edgefield, SC
Lat/Lon: 33° 47' 22" NORTH, 81° 55' 43" WEST - UTM Coordinates: 17 414033 EAST / 3739192 NORTH
Generated By: Kevin Collins



Legend

- Underground Electric Line
- Wood Fence Line
- Underground Telephone Line
- Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- Light Pole
- Light Pole
- Shallow (Water Table) Monitoring Well
- Recovery Well
- 12175-MW1 Well ID

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

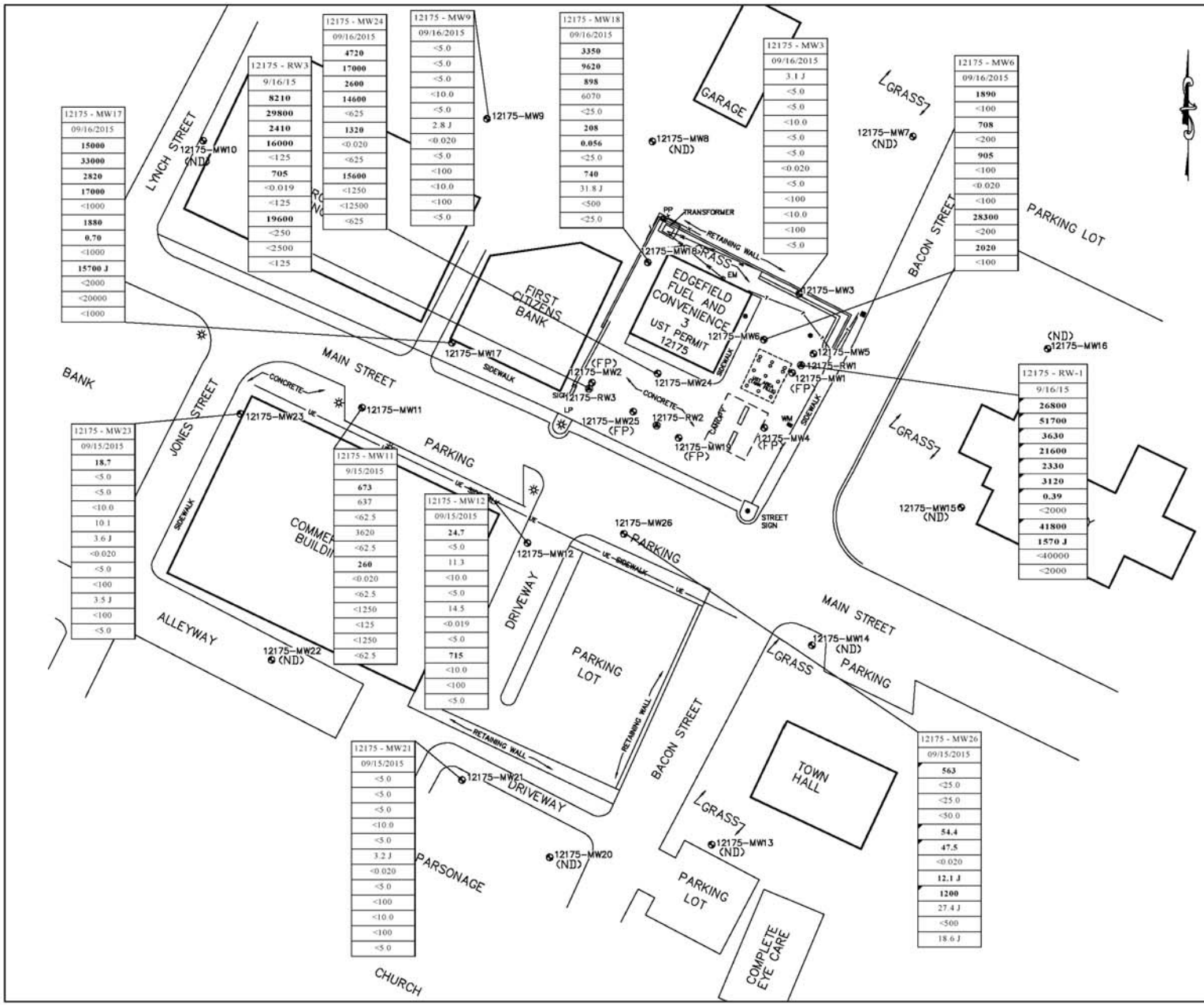
TITLE:
Site Plan

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE 06-25-13.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RH	KDP	AW	CK
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	6/10/13	14-211631	2



Legend

- UE — Underground Electric Line
- X — Wood Fence Line
- T — Underground Telephone Line
- 12175-MW1 — Shallow (Water Table) Monitoring Well
- 12175-RW1 — Recovery Well

Sample ID	
Date	
Benzene	5
Toluene	1000
Ethylbenzene	700
Xylene (Total)	10000
Methyl-tert-butyl ether	40
Naphthalene	25
1,2-Dibromoethane (EDB)	0.05
1,2-Dichloroethane	5
tert-Amyl Alcohol	240
tert-Amylmethyl ether	128
tert-Butyl Alcohol	1400
Diisopropyl ether	150

General Notes:

All locations, dimensions, and property lines depicted o this plan are approximate. This plan should not be use for construction or land conveyance purposes.

All concentrations are measured in micrograms per liter (ug/L)

Above concentrations represent May 2001 Risk-Based Screening Levels and August 2008 Action Levels. Concentrations in **bold** face type exceeded the RBSL/AL.

FP - Free Phase Product Present
<1.0 - Less than the reporting limit specified in the laboratory report.

J - Estimated value between the method detection limit and th reporting limit.

ND - Chemicals of concern not detected.

Groundwater Samples were collected 9/15/15 & 9/16/15.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

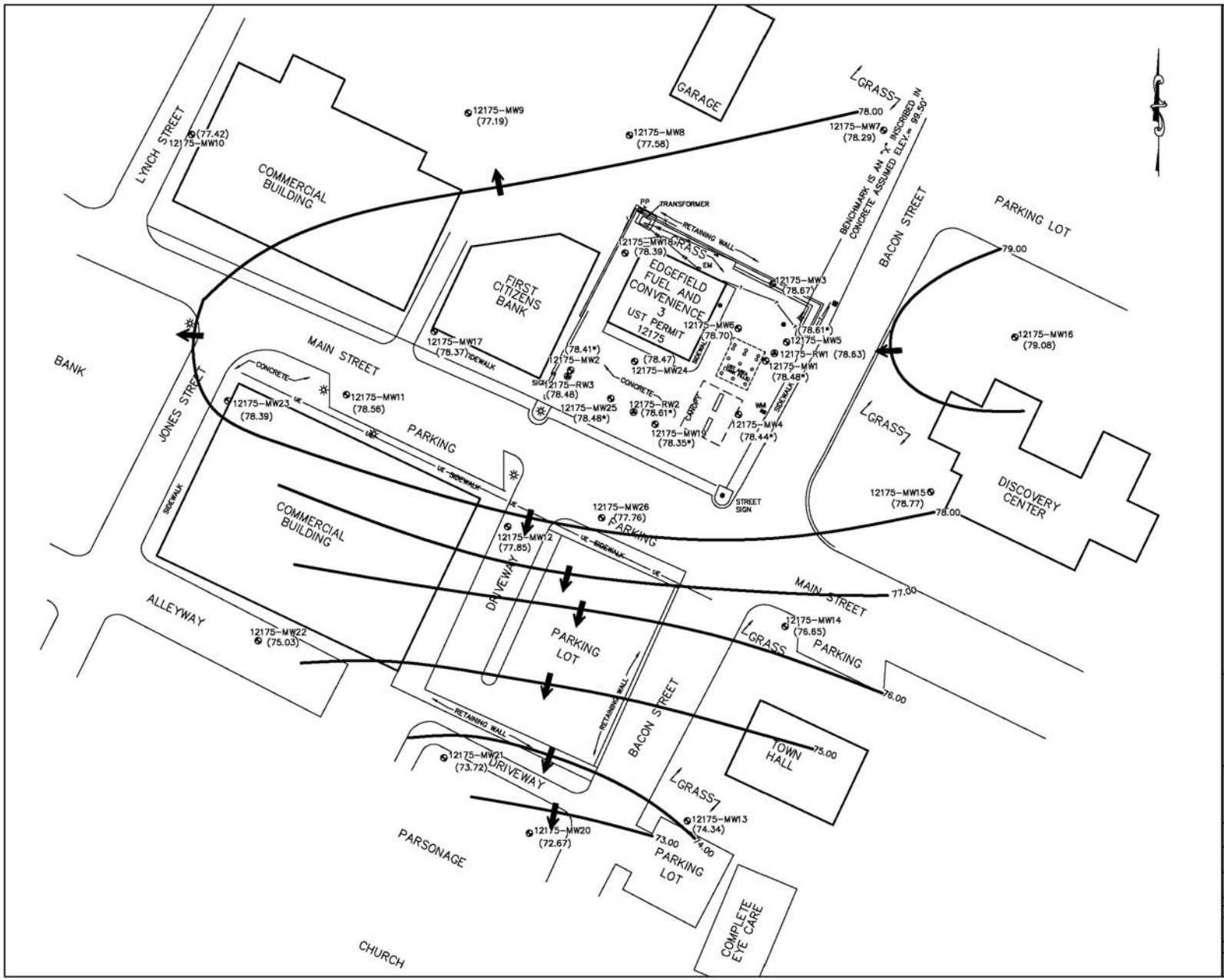
TITLE:
Groundwater Quality Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE: 211651.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KD	KD	NF	NF
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	9/30/15	14-211651	4



Legend

- UE — Underground Electric Line
- X — Wood Fence Line
- T — Underground Telephone Line
- MH — Sanitary Sewer Clean Out
- Grate Top Drop Inlet
- PP — Light Pole
- LP — Light Pole
- 12175-MW1 — Shallow (Water Table) Monitoring Well
- 12175-RW1 — Recovery Well
- (78.48) — Groundwater Elevation (ft)
- 79.00 — Water Table Contour (Dashed where inferred)
- Flow Direction Indicator

General Notes:

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Groundwater elevations are relative to a temporary benchmark with an assumed datum of 99.50 feet.

Groundwater elevations are based on measurements made on September 15, 2015.

Water table contours, and flow directions assume homogeneous, isotropic aquifer conditions, and horizonta flow.

Fluctuations in the level of the water table may occure du to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

*Groundwater elevation corrected using estimated densit of 0.75g/cm³ for free phase product, measured on September 15, 2015.

ecs
WHERE BUSINESS AND THE ENVIRONMENT CONVERGE
13504 SOUTH POINT BLVD, UNIT F
CHARLOTTE, NORTH CAROLINA 28273
TEL. (704)583-2711 FAX (704)583-2744

PROJECT:
Edgefield Fuel & Convenience 3
311 Main Street
Edgefield, South Carolina

TITLE:
Groundwater Elevation Map

CLIENT:
Edgefield Fuel & Convenience, LLC

GRAPHIC SCALE: 50 25 0 25 50

COMPUTER CADFILE: 211651.dwg

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
KD	KD	NF	NF
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1"=50'	9/30/15	14-211651	5

APPENDIX B

Sampling Logs, Laboratory Reports, COC Forms, QA/QC Evaluation

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 80's

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No 3.8)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.56)		DO 8.52 mg/L: Y or N (No 9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (Yes 0.0)			

Well Information

Well ID: 12175-MW1	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20 to 35	Total Well Depth (TWD) (ft.): 22.67
Depth to Free Product (DFP) (ft.): 19.15		Depth to Groundwater (DGW) (ft.): na	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									
Time (military)									
PH (s.u.)									
Specific Conductivity (µS/cm)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/L)									

Sampling Data

Sampled By:	Sampling Time:	Duplicate: Y or N	If yes, Duplicate Time:

Notes: Well not sampled due to presence of free product (FP)

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 80's

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No 3.8)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.56)		DO 8.52 mg/L: Y or N (No 9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (Yes 0.0)			

Well Information

Well ID: 12175-MW2	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 19.05 to 34.05	Total Well Depth (TWD) (ft.): 22.63
Depth to Free Product (DFP) (ft.): 21.80		Depth to Groundwater (DGW) (ft.): na	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									
Time (military)									
PH (s.u.)									
Specific Conductivity (µS/cm)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/L)									

Sampling Data

Sampled By:	Sampling Time:	Duplicate: Y or N	If yes, Duplicate Time:

Notes: Well not sampled due to presence of free product (FP)

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: 12175-MW3	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 19.00 to 34.00	Total Well Depth (TWD) (ft.): 33.90
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 21.77	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1130
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.336
Water Temperature (°C)									23.23
Turbidity (NTU)									9.7
Dissolved Oxygen (mg/L)									0

Sampling Data

Sampled By: P Pike	Sampling Time: 1130	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No pH readings due to water quality meter problems. No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 80's

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No 3.8)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.56)		DO 8.52 mg/L: Y or N (No 9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (Yes 0.0)			

Well Information

Well ID: 12175-MW5	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 19.04 to 29.04	Total Well Depth (TWD) (ft.): 19.72
Depth to Free Product (DFP) (ft.): 19.35		Depth to Groundwater (DGW) (ft.): na	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									
Time (military)									
PH (s.u.)									
Specific Conductivity (µS/cm)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/L)									

Sampling Data

Sampled By:	Sampling Time:	Duplicate: Y or N	If yes, Duplicate Time:

Notes: Well not sampled due to presence of free product (FP)

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: 12175- MW6	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 18.99 to 28.99	Total Well Depth (TWD) (ft.): 28.99
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 21.12	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1100
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.518
Water Temperature (°C)									22.37
Turbidity (NTU)									105
Dissolved Oxygen (mg/L)									7.1

Sampling Data

Sampled By: P Pike	Sampling Time: 1100	Duplicate: Y or N (Yes)	If yes, Duplicate Time: 1100

Notes: No pH readings due to water quality meter problems. No purge required. 12175-Dup 2 collected at 1100.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: 12175-MW7	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 18.99 to 28.99	Total Well Depth (TWD) (ft.): 20.40
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 15.03	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									900
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.093
Water Temperature (°C)									21.24
Turbidity (NTU)									58.3
Dissolved Oxygen (mg/L)									4.78

Sampling Data

Sampled By: P Pike	Sampling Time: 0900	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No pH readings due to water quality meter problems. No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: 12175- MW8	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 17 to 27	Total Well Depth (TWD) (ft.): 26.90
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 23.01	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									915
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.36
Water Temperature (°C)									21.06
Turbidity (NTU)									58.2
Dissolved Oxygen (mg/L)									2.93

Sampling Data

Sampled By: P Pike	Sampling Time: 1100	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No pH readings due to water quality meter problems. No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: 12175-MW9	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 17.00 to 27.00	Total Well Depth (TWD) (ft.): 26.89
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 20.36	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									830
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.167
Water Temperature (°C)									18.91
Turbidity (NTU)									12.7
Dissolved Oxygen (mg/L)									2.94

Sampling Data

Sampled By: P Pike	Sampling Time: 830	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No pH readings due to water quality meter problems. No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW10	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20 to 30	Total Well Depth (TWD) (ft.): 30.30
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 23.68	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1745
PH (s.u.)									6.23
Specific Conductivity (µS/cm)									0.135
Water Temperature (°C)									22.4
Turbidity (NTU)									116
Dissolved Oxygen (mg/L)									2.01

Sampling Data

Sampled By: P Pike	Sampling Time: 1745	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW11	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 21 to 31	Total Well Depth (TWD) (ft.): 30.85
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 23.09	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1635
PH (s.u.)									6.16
Specific Conductivity (µS/cm)									0.769
Water Temperature (°C)									22.93
Turbidity (NTU)									0
Dissolved Oxygen (mg/L)									1.13

Sampling Data

Sampled By: P Pike	Sampling Time: 1635	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW12	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20 to 30	Total Well Depth (TWD) (ft.): 30.05
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 22.70	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1720
PH (s.u.)									6.34
Specific Conductivity (µS/cm)									0.466
Water Temperature (°C)									24.1
Turbidity (NTU)									0.9
Dissolved Oxygen (mg/L)									0.026

Sampling Data

Sampled By: P Pike	Sampling Time: 1720	Duplicate: Y or N	If yes, Duplicate Time:
Notes: No purge required.			
		Signature:	

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW13	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 15 to 25	Total Well Depth (TWD) (ft.): 25.25
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 18.86	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1455
PH (s.u.)									5.45
Specific Conductivity (µS/cm)									0.171
Water Temperature (°C)									22.88
Turbidity (NTU)									1.9
Dissolved Oxygen (mg/L)									2.61

Sampling Data

Sampled By: P Pike	Sampling Time: 1455	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW14	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20 to 30	Total Well Depth (TWD) (ft.): 29.60
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 23.40	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1440
PH (s.u.)									6.17
Specific Conductivity (µS/cm)									0.249
Water Temperature (°C)									22.58
Turbidity (NTU)									2.9
Dissolved Oxygen (mg/L)									2.71

Sampling Data

Sampled By: P Pike	Sampling Time: 1440	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW15	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 17 to 27	Total Well Depth (TWD) (ft.): 26.93
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 19.70	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1425
PH (s.u.)									6.7
Specific Conductivity (µS/cm)									1.07
Water Temperature (°C)									22.06
Turbidity (NTU)									14.8
Dissolved Oxygen (mg/L)									3.46

Sampling Data

Sampled By: P Pike	Sampling Time: 1425	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW16	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 10 to 20	Total Well Depth (TWD) (ft.): 19.25
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 13.93	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1410
PH (s.u.)									5.87
Specific Conductivity (µS/cm)									0.395
Water Temperature (°C)									22.93
Turbidity (NTU)									112
Dissolved Oxygen (mg/L)									5.59

Sampling Data

Sampled By: P Pike	Sampling Time: 1410	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: MW17	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 18 to 28	Total Well Depth (TWD) (ft.): 28.66
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 22.72	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									940
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.178
Water Temperature (°C)									21.13
Turbidity (NTU)									19.6
Dissolved Oxygen (mg/L)									0.7

Sampling Data

Sampled By: P Pike	Sampling Time: 940	Duplicate: Y or N (Yes)	If yes, Duplicate Time: 940

Notes: No pH readings due to water quality meter problems. No purge required. 12175-Dup1 taken at 0940

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: MW17	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 18.70 to 28.70	Total Well Depth (TWD) (ft.): 28.66
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 22.72	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									940
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.178
Water Temperature (°C)									21.13
Turbidity (NTU)									19.6
Dissolved Oxygen (mg/L)									0.7

Sampling Data

Sampled By: P Pike	Sampling Time: 940	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No pH readings due to water quality meter problems. No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 80's

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No 3.8)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.56)		DO 8.52 mg/L: Y or N (No 9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (Yes 0.0)			

Well Information

Well ID: 12175-MW19	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 18 to 28	Total Well Depth (TWD) (ft.): 22.05
Depth to Free Product (DFP) (ft.): 21.53		Depth to Groundwater (DGW) (ft.): na	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									
Time (military)									
PH (s.u.)									
Specific Conductivity (µS/cm)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/L)									

Sampling Data

Sampled By:	Sampling Time:	Duplicate: Y or N	If yes, Duplicate Time:

Notes: Well not sampled due to presence of free product (FP)

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW20	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 17 to 27	Total Well Depth (TWD) (ft.): 26.25
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 19.13	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1535
PH (s.u.)									5.19
Specific Conductivity (µS/cm)									0.253
Water Temperature (°C)									21.54
Turbidity (NTU)									26.2
Dissolved Oxygen (mg/L)									0.69

Sampling Data

Sampled By: P Pike	Sampling Time: 1535	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW21	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 19 to 29	Total Well Depth (TWD) (ft.): 29.37
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 20.58	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1520
PH (s.u.)									5.45
Specific Conductivity (µS/cm)									0.205
Water Temperature (°C)									22.16
Turbidity (NTU)									5.6
Dissolved Oxygen (mg/L)									1.01

Sampling Data

Sampled By: P Pike	Sampling Time: 1520	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW22	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20 to 30	Total Well Depth (TWD) (ft.): 29.90
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 24.79	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1620
PH (s.u.)									6.42
Specific Conductivity (µS/cm)									0.204
Water Temperature (°C)									22.47
Turbidity (NTU)									1.5
Dissolved Oxygen (mg/L)									4.97

Sampling Data

Sampled By: P Pike	Sampling Time: 1620	Duplicate: Y or N	If yes, Duplicate Time:
Notes: No purge required.			
		Signature:	

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW23	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 21 to 31	Total Well Depth (TWD) (ft.): 31.35
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 23.90	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1600
PH (s.u.)									5.65
Specific Conductivity (µS/cm)									0.442
Water Temperature (°C)									22.83
Turbidity (NTU)									0
Dissolved Oxygen (mg/L)									1.23

Sampling Data

Sampled By: P Pike	Sampling Time: 1600	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: MW24	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20.00 to 30.00	Total Well Depth (TWD) (ft.): 30.15
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 21.76	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1025
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.328
Water Temperature (°C)									21.73
Turbidity (NTU)									0
Dissolved Oxygen (mg/L)									0.6

Sampling Data

Sampled By: P Pike	Sampling Time: 1025	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No pH readings due to water quality meter problems. No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 80's

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No 3.8)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.56)		DO 8.52 mg/L: Y or N (No 9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (Yes 0.0)			

Well Information

Well ID: 12175-MW25	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20 to 30	Total Well Depth (TWD) (ft.): 24.45
Depth to Free Product (DFP) (ft.): 20.48		Depth to Groundwater (DGW) (ft.): na	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									
Time (military)									
PH (s.u.)									
Specific Conductivity (µS/cm)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/L)									

Sampling Data

Sampled By:	Sampling Time:	Duplicate: Y or N	If yes, Duplicate Time:

Notes: Well not sampled due to presence of free product (FP)

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (3.80)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (4.56)		DO 8.52 mg/L: Y or N (9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (0.0)			

Well Information

Well ID: 12175-MW26	Well Diameter (inches): 2	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20 to 30	Total Well Depth (TWD) (ft.): 30.09
Depth to Free Product (DFP) (ft.): NP		Depth to Groundwater (DGW) (ft.): 22.13	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1655
PH (s.u.)									6.39
Specific Conductivity (µS/cm)									0.95
Water Temperature (°C)									24.25
Turbidity (NTU)									0
Dissolved Oxygen (mg/L)									0.07

Sampling Data

Sampled By: P Pike	Sampling Time: 1655	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: RW1	Well Diameter (inches): 4	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
__MW ___IW _x_RW ___Other ___Private WSW ___Public WSW	Screened Interval (ft.): 20.00 to 30.00	Total Well Depth (TWD) (ft.): 30.00	
Depth to Free Product (DFP) (ft.): NP	Depth to Groundwater (DGW) (ft.): 19.42	Free Product Thickness (ft.): na	
Length of water column (LWC = TWD – DGW) (ft.):	1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):	

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1045
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.21
Water Temperature (°C)									22.02
Turbidity (NTU)									0
Dissolved Oxygen (mg/L)									0

Sampling Data

Sampled By: P Pike	Sampling Time: 1045	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No pH readings due to water quality meter problems. No purge required.

Signature:

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/15/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 80's

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No 3.8)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.56)		DO 8.52 mg/L: Y or N (No 9.59)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (Yes 0.0)			

Well Information

Well ID: 12175-RW2	Well Diameter (inches): 4	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
_x_MW ___IW ___RW ___Other ___Private WSW ___Public WSW		Screened Interval (ft.): 20 to 30	Total Well Depth (TWD) (ft.): 24.40
Depth to Free Product (DFP) (ft.): 20.45		Depth to Groundwater (DGW) (ft.): na	Free Product Thickness (ft.): na
Length of water column (LWC = TWD – DGW) (ft.):		1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									
Time (military)									
PH (s.u.)									
Specific Conductivity (µS/cm)									
Water Temperature (°C)									
Turbidity (NTU)									
Dissolved Oxygen (mg/L)									

Sampling Data

Sampled By:	Sampling Time:	Duplicate: Y or N	If yes, Duplicate Time:
Notes: Well not sampled due to presence of free product (FP)			
		Signature:	

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Sampling

Site Information

Date: 9/16/2015	Site ID #: 12175	Site Name: Edgefield Fuel and Convenience 3	Field Personnel: Phil Pike
County: Edgefield	Project Manager: Noelle France	General Weather Conditions: Sunny	Ambient Air Temp (°F): 85

Quality Assurance

Meter Name:	Serial #:	Calibration:			
Horiba U-22 (pH)	YTA6RG5E	pH 4.0: Y or N (No)	at 28 °C		
Horiba U-22 (Specific Conductivity, Dissolved Oxygen)	YTA6RG5E	Specific Conductivity 4.49 mS/cm: Y or N (No 4.59)		DO 8.52 mg/L: Y or N (No 9.37)	
Horiba U-22 (Turbidity)	YTA6RG5E	0.0 NTU: Y or N (No 0.1)			

Well Information

Well ID: RW3	Well Diameter (inches): 4	Conversion Factor (C): 1" well = 0.047, 2" well = 0.163, 4" well = 0.652	Method of Purging/Sample Collection: __x_Bailer ____Pump
__MW ___IW _x_RW ___Other ___Private WSW ___Public WSW	Screened Interval (ft.): 20.00 to 30.00	Total Well Depth (TWD) (ft.): 30.00	
Depth to Free Product (DFP) (ft.): NP	Depth to Groundwater (DGW) (ft.): 21.68	Free Product Thickness (ft.): na	
Length of water column (LWC = TWD – DGW) (ft.):	1 casing volume (CV = LWC x C) (gals.):	3 casing volumes (3 x CV) (gals.):	

Purging Data

	Initial	1st Vol.	2nd Vol.	2½ Vol.	3rd Vol.	3½ Vol.	4th Vol.	5th Vol.	Sampling
Volume Purged (gallons)									na
Time (military)									1010
PH (s.u.)									no reading
Specific Conductivity (µS/cm)									0.125
Water Temperature (°C)									21.4
Turbidity (NTU)									0
Dissolved Oxygen (mg/L)									6.72

Sampling Data

Sampled By: P Pike	Sampling Time: 1010	Duplicate: Y or N	If yes, Duplicate Time:

Notes: No pH readings due to water quality meter problems. No purge required.

Signature:

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

September 24, 2015

Noelle France
Environmental Compliance Services
13504 South Point Blvd.
Unit F
Charlotte, NC 28273

RE: Project: EF & C #3
Pace Project No.: 92268046

Dear Noelle France:
Enclosed are the analytical results for sample(s) received by the laboratory on September 16, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Taylor Ezell
taylor.ezell@pacelabs.com
Project Manager

Enclosures

cc: Aaron Williamson, Environmental Compliance Services

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: EF & C #3
Pace Project No.: 92268046

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE SUMMARY

Project: EF & C #3
Pace Project No.: 92268046

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92268046001	12175 - MW16	Water	09/15/15 14:10	09/16/15 17:00
92268046002	12175 - MW15	Water	09/15/15 14:25	09/16/15 17:00
92268046003	12175 - MW14	Water	09/15/15 14:40	09/16/15 17:00
92268046004	12175 - MW13	Water	09/15/15 14:55	09/16/15 17:00
92268046005	12175 - MW21	Water	09/15/15 15:20	09/16/15 17:00
92268046006	12175 - MW20	Water	09/15/15 15:35	09/16/15 17:00
92268046007	12175 - MW23	Water	09/15/15 16:00	09/16/15 17:00
92268046008	12175 - MW22	Water	09/15/15 16:20	09/16/15 17:00
92268046009	12175 - MW11	Water	09/15/15 16:35	09/16/15 17:00
92268046010	12175 - MW26	Water	09/15/15 16:58	09/16/15 17:00
92268046011	12175 - MW12	Water	09/15/15 17:20	09/16/15 17:00
92268046012	12175 - FB1	Water	09/15/15 17:30	09/16/15 17:00
92268046013	12175 - MW10	Water	09/15/15 17:45	09/16/15 17:00
92268046014	12175 - MW9	Water	09/16/15 08:30	09/16/15 17:00
92268046015	12175 - MW7	Water	09/16/15 09:00	09/16/15 17:00
92268046016	12175 - MW8	Water	09/16/15 09:18	09/16/15 17:00
92268046017	12175 - MW17	Water	09/16/15 09:40	09/16/15 17:00
92268046018	12175 - MW18	Water	09/16/15 09:55	09/16/15 17:00
92268046019	12175 - RW3	Water	09/16/15 10:10	09/16/15 17:00
92268046020	12175 - MW24	Water	09/16/15 10:25	09/16/15 17:00
92268046021	12175 - RW-1	Water	09/16/15 10:45	09/16/15 17:00
92268046022	12175 - MW6	Water	09/16/15 11:00	09/16/15 17:00
92268046023	12175 - FB1	Water	09/16/15 11:15	09/16/15 17:00
92268046024	12175 - MW3	Water	09/16/15 11:30	09/16/15 17:00
92268046025	12175 - Duplicate - 1	Water	09/16/15 00:00	09/16/15 17:00
92268046026	12175 - Duplicate - 2	Water	09/16/15 00:00	09/16/15 17:00
92268046027	Trip Blank	Water	09/16/15 00:00	09/16/15 17:00

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: EF & C #3
Pace Project No.: 92268046

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92268046001	12175 - MW16	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046002	12175 - MW15	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046003	12175 - MW14	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046004	12175 - MW13	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046005	12175 - MW21	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046006	12175 - MW20	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046007	12175 - MW23	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046008	12175 - MW22	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046009	12175 - MW11	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046010	12175 - MW26	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046011	12175 - MW12	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046012	12175 - FB1	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046013	12175 - MW10	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046014	12175 - MW9	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046015	12175 - MW7	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046016	12175 - MW8	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046017	12175 - MW17	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046018	12175 - MW18	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046019	12175 - RW3	EPA 8011	HSK	2	PASI-C

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: EF & C #3
Pace Project No.: 92268046

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8260	CCL	18	PASI-C
92268046020	**12175 - MW24**	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046021	**12175 - RW-1**	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046022	**12175 - MW6**	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046023	**12175 - FB1**	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046024	**12175 - MW3**	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046025	**12175 - Duplicate - 1**	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046026	**12175 - Duplicate - 2**	EPA 8011	HSK	2	PASI-C
		EPA 8260	CCL	18	PASI-C
92268046027	**Trip Blank**	EPA 8260	CCL	18	PASI-C

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW16 **Lab ID: 92268046001** Collected: 09/15/15 14:10 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:45	09/22/15 14:28	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	101	%	60-140		1	09/22/15 08:45	09/22/15 14:28	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 02:04	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 02:04	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 02:04	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 02:04	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 02:04	75-65-0	M1
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 02:04	762-75-4	P5
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 02:04	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 02:04	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 02:04	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 02:04	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 02:04	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 02:04	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/19/15 02:04	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 02:04	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 02:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-130		1		09/19/15 02:04	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	70-130		1		09/19/15 02:04	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		09/19/15 02:04	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW15 **Lab ID: 92268046002** Collected: 09/15/15 14:25 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:45	09/22/15 14:47	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	82	%	60-140		1	09/22/15 08:45	09/22/15 14:47	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 02:21	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 02:21	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 02:21	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 02:21	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 02:21	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 02:21	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 02:21	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 02:21	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 02:21	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 02:21	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 02:21	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 02:21	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/19/15 02:21	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 02:21	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 02:21	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-130		1		09/19/15 02:21	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		09/19/15 02:21	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		09/19/15 02:21	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW14 **Lab ID: 92268046003** Collected: 09/15/15 14:40 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:45	09/22/15 15:06	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	100	%	60-140		1	09/22/15 08:45	09/22/15 15:06	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 02:55	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 02:55	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 02:55	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 02:55	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 02:55	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 02:55	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 02:55	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 02:55	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 02:55	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 02:55	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 02:55	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 02:55	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/19/15 02:55	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 02:55	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 02:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	111	%	70-130		1		09/19/15 02:55	460-00-4	
1,2-Dichloroethane-d4 (S)	118	%	70-130		1		09/19/15 02:55	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		09/19/15 02:55	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW13 **Lab ID: 92268046004** Collected: 09/15/15 14:55 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	09/22/15 08:45	09/22/15 15:25	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	102	%	60-140		1	09/22/15 08:45	09/22/15 15:25	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 03:12	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 03:12	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 03:12	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 03:12	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 03:12	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 03:12	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 03:12	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 03:12	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 03:12	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 03:12	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 03:12	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 03:12	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/19/15 03:12	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 03:12	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 03:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-130		1		09/19/15 03:12	460-00-4	
1,2-Dichloroethane-d4 (S)	117	%	70-130		1		09/19/15 03:12	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		09/19/15 03:12	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW21 **Lab ID: 92268046005** Collected: 09/15/15 15:20 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:45	09/22/15 15:45	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	80	%	60-140		1	09/22/15 08:45	09/22/15 15:45	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 16:58	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 16:58	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 16:58	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 16:58	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 16:58	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 16:58	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 16:58	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 16:58	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 16:58	64-17-5	L3
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 16:58	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 16:58	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 16:58	1634-04-4	
Naphthalene	**3.2J**	ug/L	5.0	2.0	1		09/19/15 16:58	91-20-3	L1
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 16:58	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 16:58	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		09/19/15 16:58	460-00-4	
1,2-Dichloroethane-d4 (S)	108	%	70-130		1		09/19/15 16:58	17060-07-0	
Toluene-d8 (S)	104	%	70-130		1		09/19/15 16:58	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW20 **Lab ID: 92268046006** Collected: 09/15/15 15:35 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:46	09/22/15 16:04	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	108	%	60-140		1	09/22/15 08:46	09/22/15 16:04	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 01:30	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 01:30	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 01:30	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 01:30	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 01:30	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 01:30	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 01:30	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 01:30	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 01:30	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 01:30	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 01:30	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 01:30	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/19/15 01:30	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 01:30	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 01:30	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-130		1		09/19/15 01:30	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	70-130		1		09/19/15 01:30	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		09/19/15 01:30	2037-26-5	

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW23 **Lab ID: 92268046007** Collected: 09/15/15 16:00 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:46	09/22/15 16:23	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	104	%	60-140		1	09/22/15 08:46	09/22/15 16:23	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 01:47	75-85-4	
tert-Amylmethyl ether	**3.5J**	ug/L	10.0	3.4	1		09/19/15 01:47	994-05-8	
Benzene	**18.7**	ug/L	5.0	1.7	1		09/19/15 01:47	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 01:47	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 01:47	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 01:47	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 01:47	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 01:47	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 01:47	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 01:47	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 01:47	637-92-3	
Methyl-tert-butyl ether	**10.1**	ug/L	5.0	1.7	1		09/19/15 01:47	1634-04-4	
Naphthalene	**3.6J**	ug/L	5.0	2.0	1		09/19/15 01:47	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 01:47	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 01:47	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	110	%	70-130		1		09/19/15 01:47	460-00-4	
1,2-Dichloroethane-d4 (S)	111	%	70-130		1		09/19/15 01:47	17060-07-0	
Toluene-d8 (S)	104	%	70-130		1		09/19/15 01:47	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW22 **Lab ID: 92268046008** Collected: 09/15/15 16:20 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:46	09/22/15 16:43	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	91	%	60-140		1	09/22/15 08:46	09/22/15 16:43	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 13:48	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 13:48	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 13:48	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 13:48	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 13:48	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 13:48	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 13:48	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 13:48	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 13:48	64-17-5	L3
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 13:48	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 13:48	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 13:48	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/19/15 13:48	91-20-3	L3
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 13:48	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 13:48	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	112	%	70-130		1		09/19/15 13:48	460-00-4	
1,2-Dichloroethane-d4 (S)	125	%	70-130		1		09/19/15 13:48	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		09/19/15 13:48	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW11 **Lab ID: 92268046009** Collected: 09/15/15 16:35 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:46	09/22/15 17:02	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	77	%	60-140		1	09/22/15 08:46	09/22/15 17:02	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	1250	960	12.5		09/21/15 17:03	75-85-4	
tert-Amylmethyl ether	ND	ug/L	125	42.5	12.5		09/21/15 17:03	994-05-8	
Benzene	**673**	ug/L	62.5	21.2	12.5		09/21/15 17:03	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	1250	401	12.5		09/21/15 17:03	624-95-3	
tert-Butyl Alcohol	ND	ug/L	1250	721	12.5		09/21/15 17:03	75-65-0	
tert-Butyl Formate	ND	ug/L	625	91.2	12.5		09/21/15 17:03	762-75-4	
1,2-Dichloroethane	ND	ug/L	62.5	22.5	12.5		09/21/15 17:03	107-06-2	
Diisopropyl ether	ND	ug/L	62.5	21.2	12.5		09/21/15 17:03	108-20-3	
Ethanol	ND	ug/L	2500	1720	12.5		09/21/15 17:03	64-17-5	
Ethylbenzene	ND	ug/L	62.5	20.0	12.5		09/21/15 17:03	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	125	45.0	12.5		09/21/15 17:03	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	62.5	21.2	12.5		09/21/15 17:03	1634-04-4	
Naphthalene	**260**	ug/L	62.5	25.0	12.5		09/21/15 17:03	91-20-3	
Toluene	**637**	ug/L	62.5	20.0	12.5		09/21/15 17:03	108-88-3	
Xylene (Total)	**3620**	ug/L	125	33.8	12.5		09/21/15 17:03	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	114	%	70-130		12.5		09/21/15 17:03	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		12.5		09/21/15 17:03	17060-07-0	
Toluene-d8 (S)	103	%	70-130		12.5		09/21/15 17:03	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW26 **Lab ID: 92268046010** Collected: 09/15/15 16:58 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:46	09/22/15 17:21	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	93	%	60-140		1	09/22/15 08:46	09/22/15 17:21	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**1200**	ug/L	500	384	5		09/21/15 17:21	75-85-4	
tert-Amylmethyl ether	**27.4J**	ug/L	50.0	17.0	5		09/21/15 17:21	994-05-8	
Benzene	**563**	ug/L	25.0	8.5	5		09/21/15 17:21	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	500	160	5		09/21/15 17:21	624-95-3	
tert-Butyl Alcohol	ND	ug/L	500	288	5		09/21/15 17:21	75-65-0	
tert-Butyl Formate	ND	ug/L	250	36.5	5		09/21/15 17:21	762-75-4	
1,2-Dichloroethane	**12.1J**	ug/L	25.0	9.0	5		09/21/15 17:21	107-06-2	
Diisopropyl ether	**18.6J**	ug/L	25.0	8.5	5		09/21/15 17:21	108-20-3	
Ethanol	ND	ug/L	1000	689	5		09/21/15 17:21	64-17-5	
Ethylbenzene	ND	ug/L	25.0	8.0	5		09/21/15 17:21	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	50.0	18.0	5		09/21/15 17:21	637-92-3	
Methyl-tert-butyl ether	**54.4**	ug/L	25.0	8.5	5		09/21/15 17:21	1634-04-4	
Naphthalene	**47.5**	ug/L	25.0	10.0	5		09/21/15 17:21	91-20-3	
Toluene	ND	ug/L	25.0	8.0	5		09/21/15 17:21	108-88-3	
Xylene (Total)	ND	ug/L	50.0	13.5	5		09/21/15 17:21	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	104	%	70-130		5		09/21/15 17:21	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		5		09/21/15 17:21	17060-07-0	
Toluene-d8 (S)	103	%	70-130		5		09/21/15 17:21	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW12 **Lab ID: 92268046011** Collected: 09/15/15 17:20 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	09/22/15 08:46	09/22/15 17:41	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	87	%	60-140		1	09/22/15 08:46	09/22/15 17:41	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**715**	ug/L	100	76.8	1		09/21/15 19:03	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/21/15 19:03	994-05-8	
Benzene	**24.7**	ug/L	5.0	1.7	1		09/21/15 19:03	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/21/15 19:03	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/21/15 19:03	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/21/15 19:03	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/21/15 19:03	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/21/15 19:03	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/21/15 19:03	64-17-5	
Ethylbenzene	**11.3**	ug/L	5.0	1.6	1		09/21/15 19:03	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/21/15 19:03	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/21/15 19:03	1634-04-4	
Naphthalene	**14.5**	ug/L	5.0	2.0	1		09/21/15 19:03	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/21/15 19:03	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/21/15 19:03	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		09/21/15 19:03	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		09/21/15 19:03	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		09/21/15 19:03	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - FB1 **Lab ID: 92268046012** Collected: 09/15/15 17:30 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:46	09/22/15 18:00	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	77	%	60-140		1	09/22/15 08:46	09/22/15 18:00	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/22/15 01:02	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/22/15 01:02	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/22/15 01:02	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/22/15 01:02	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/22/15 01:02	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/22/15 01:02	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/22/15 01:02	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/22/15 01:02	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/22/15 01:02	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/22/15 01:02	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/22/15 01:02	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/22/15 01:02	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/22/15 01:02	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/22/15 01:02	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/22/15 01:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-130		1		09/22/15 01:02	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		09/22/15 01:02	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		09/22/15 01:02	2037-26-5	

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW10 **Lab ID: 92268046013** Collected: 09/15/15 17:45 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:50	09/22/15 19:36	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	98	%	60-140		1	09/22/15 08:50	09/22/15 19:36	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/21/15 19:54	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/21/15 19:54	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/21/15 19:54	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/21/15 19:54	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/21/15 19:54	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/21/15 19:54	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/21/15 19:54	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/21/15 19:54	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/21/15 19:54	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/21/15 19:54	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/21/15 19:54	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/21/15 19:54	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/21/15 19:54	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/21/15 19:54	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/21/15 19:54	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	107	%	70-130		1		09/21/15 19:54	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	70-130		1		09/21/15 19:54	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		09/21/15 19:54	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW9 **Lab ID: 92268046014** Collected: 09/16/15 08:30 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:50	09/22/15 19:55	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	134	%	60-140		1	09/22/15 08:50	09/22/15 19:55	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 14:40	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 14:40	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 14:40	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 14:40	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 14:40	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 14:40	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 14:40	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 14:40	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 14:40	64-17-5	L3
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 14:40	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 14:40	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 14:40	1634-04-4	
Naphthalene	**2.8J**	ug/L	5.0	2.0	1		09/19/15 14:40	91-20-3	L1
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 14:40	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 14:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-130		1		09/19/15 14:40	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	70-130		1		09/19/15 14:40	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		09/19/15 14:40	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW7 **Lab ID: 92268046015** Collected: 09/16/15 09:00 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:51	09/22/15 20:14	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	93	%	60-140		1	09/22/15 08:51	09/22/15 20:14	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 17:15	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 17:15	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 17:15	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 17:15	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 17:15	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 17:15	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 17:15	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 17:15	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 17:15	64-17-5	L3
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 17:15	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 17:15	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 17:15	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/19/15 17:15	91-20-3	L3
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 17:15	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 17:15	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-130		1		09/19/15 17:15	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	70-130		1		09/19/15 17:15	17060-07-0	
Toluene-d8 (S)	72	%	70-130		1		09/19/15 17:15	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW8 **Lab ID: 92268046016** Collected: 09/16/15 09:18 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:51	09/22/15 20:33	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	94	%	60-140		1	09/22/15 08:51	09/22/15 20:33	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/19/15 17:32	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/19/15 17:32	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/19/15 17:32	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/19/15 17:32	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/19/15 17:32	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/19/15 17:32	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/19/15 17:32	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/19/15 17:32	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/19/15 17:32	64-17-5	L3
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/19/15 17:32	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/19/15 17:32	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/19/15 17:32	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/19/15 17:32	91-20-3	L3
Toluene	ND	ug/L	5.0	1.6	1		09/19/15 17:32	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/19/15 17:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-130		1		09/19/15 17:32	460-00-4	
1,2-Dichloroethane-d4 (S)	115	%	70-130		1		09/19/15 17:32	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		09/19/15 17:32	2037-26-5	

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW17 **Lab ID: 92268046017** Collected: 09/16/15 09:40 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.70**	ug/L	0.021	0.021	1	09/22/15 08:51	09/22/15 20:52	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	64	%	60-140		1	09/22/15 08:51	09/22/15 20:52	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**15700J**	ug/L	20000	15400	200		09/21/15 17:38	75-85-4	
tert-Amylmethyl ether	ND	ug/L	2000	680	200		09/21/15 17:38	994-05-8	
Benzene	**15000**	ug/L	1000	340	200		09/21/15 17:38	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	20000	6420	200		09/21/15 17:38	624-95-3	
tert-Butyl Alcohol	ND	ug/L	20000	11500	200		09/21/15 17:38	75-65-0	
tert-Butyl Formate	ND	ug/L	10000	1460	200		09/21/15 17:38	762-75-4	
1,2-Dichloroethane	ND	ug/L	1000	360	200		09/21/15 17:38	107-06-2	
Diisopropyl ether	ND	ug/L	1000	340	200		09/21/15 17:38	108-20-3	
Ethanol	ND	ug/L	40000	27600	200		09/21/15 17:38	64-17-5	
Ethylbenzene	**2820**	ug/L	1000	320	200		09/21/15 17:38	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	2000	720	200		09/21/15 17:38	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1000	340	200		09/21/15 17:38	1634-04-4	
Naphthalene	**1880**	ug/L	1000	400	200		09/21/15 17:38	91-20-3	
Toluene	**33000**	ug/L	1000	320	200		09/21/15 17:38	108-88-3	
Xylene (Total)	**17000**	ug/L	2000	540	200		09/21/15 17:38	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	107	%	70-130		200		09/21/15 17:38	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		200		09/21/15 17:38	17060-07-0	
Toluene-d8 (S)	100	%	70-130		200		09/21/15 17:38	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW18 **Lab ID: 92268046018** Collected: 09/16/15 09:55 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.056**	ug/L	0.020	0.020	1	09/22/15 08:51	09/22/15 21:11	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	80	%	60-140		1	09/22/15 08:51	09/22/15 21:11	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**740**	ug/L	500	384	5		09/19/15 16:23	75-85-4	
tert-Amylmethyl ether	**31.8J**	ug/L	50.0	17.0	5		09/19/15 16:23	994-05-8	
Benzene	**3350**	ug/L	500	170	100		09/21/15 20:12	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	500	160	5		09/19/15 16:23	624-95-3	
tert-Butyl Alcohol	ND	ug/L	500	288	5		09/19/15 16:23	75-65-0	
tert-Butyl Formate	ND	ug/L	250	36.5	5		09/19/15 16:23	762-75-4	
1,2-Dichloroethane	ND	ug/L	25.0	9.0	5		09/19/15 16:23	107-06-2	
Diisopropyl ether	ND	ug/L	25.0	8.5	5		09/19/15 16:23	108-20-3	
Ethanol	ND	ug/L	1000	689	5		09/19/15 16:23	64-17-5	L3
Ethylbenzene	**898**	ug/L	25.0	8.0	5		09/19/15 16:23	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	50.0	18.0	5		09/19/15 16:23	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	25.0	8.5	5		09/19/15 16:23	1634-04-4	
Naphthalene	**208**	ug/L	25.0	10.0	5		09/19/15 16:23	91-20-3	L1
Toluene	**9620**	ug/L	500	160	100		09/21/15 20:12	108-88-3	
Xylene (Total)	**6070**	ug/L	1000	270	100		09/21/15 20:12	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		5		09/19/15 16:23	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		5		09/19/15 16:23	17060-07-0	
Toluene-d8 (S)	100	%	70-130		5		09/19/15 16:23	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - RW3 **Lab ID: 92268046019** Collected: 09/16/15 10:10 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	09/22/15 08:51	09/22/15 21:30	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	112	%	60-140		1	09/22/15 08:51	09/22/15 21:30	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**19600**	ug/L	2500	1920	25		09/19/15 16:40	75-85-4	
tert-Amylmethyl ether	ND	ug/L	250	85.0	25		09/19/15 16:40	994-05-8	
Benzene	**8210**	ug/L	1250	425	250		09/21/15 20:29	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	2500	802	25		09/19/15 16:40	624-95-3	
tert-Butyl Alcohol	ND	ug/L	2500	1440	25		09/19/15 16:40	75-65-0	
tert-Butyl Formate	ND	ug/L	1250	182	25		09/19/15 16:40	762-75-4	
1,2-Dichloroethane	ND	ug/L	125	45.0	25		09/19/15 16:40	107-06-2	
Diisopropyl ether	ND	ug/L	125	42.5	25		09/19/15 16:40	108-20-3	
Ethanol	ND	ug/L	5000	3440	25		09/19/15 16:40	64-17-5	L3
Ethylbenzene	**2410**	ug/L	125	40.0	25		09/19/15 16:40	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	250	90.0	25		09/19/15 16:40	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	125	42.5	25		09/19/15 16:40	1634-04-4	
Naphthalene	**705**	ug/L	125	50.0	25		09/19/15 16:40	91-20-3	L1
Toluene	**29800**	ug/L	1250	400	250		09/21/15 20:29	108-88-3	
Xylene (Total)	**16000**	ug/L	2500	675	250		09/21/15 20:29	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		25		09/19/15 16:40	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		25		09/19/15 16:40	17060-07-0	
Toluene-d8 (S)	100	%	70-130		25		09/19/15 16:40	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW24 **Lab ID: 92268046020** Collected: 09/16/15 10:25 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:51	09/22/15 21:49	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	103	%	60-140		1	09/22/15 08:51	09/22/15 21:49	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**15600**	ug/L	12500	9600	125		09/22/15 03:54	75-85-4	
tert-Amylmethyl ether	ND	ug/L	1250	425	125		09/22/15 03:54	994-05-8	
Benzene	**4720**	ug/L	625	212	125		09/22/15 03:54	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	12500	4010	125		09/22/15 03:54	624-95-3	
tert-Butyl Alcohol	ND	ug/L	12500	7210	125		09/22/15 03:54	75-65-0	
tert-Butyl Formate	ND	ug/L	6250	912	125		09/22/15 03:54	762-75-4	
1,2-Dichloroethane	ND	ug/L	625	225	125		09/22/15 03:54	107-06-2	
Diisopropyl ether	ND	ug/L	625	212	125		09/22/15 03:54	108-20-3	
Ethanol	ND	ug/L	25000	17200	125		09/22/15 03:54	64-17-5	
Ethylbenzene	**2600**	ug/L	625	200	125		09/22/15 03:54	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1250	450	125		09/22/15 03:54	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	625	212	125		09/22/15 03:54	1634-04-4	
Naphthalene	**1320**	ug/L	625	250	125		09/22/15 03:54	91-20-3	
Toluene	**17000**	ug/L	625	200	125		09/22/15 03:54	108-88-3	
Xylene (Total)	**14600**	ug/L	1250	338	125		09/22/15 03:54	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		125		09/22/15 03:54	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		125		09/22/15 03:54	17060-07-0	
Toluene-d8 (S)	105	%	70-130		125		09/22/15 03:54	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - RW-1 **Lab ID: 92268046021** Collected: 09/16/15 10:45 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.39**	ug/L	0.020	0.020	1	09/22/15 08:51	09/22/15 22:09	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	114	%	60-140		1	09/22/15 08:51	09/22/15 22:09	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**41800**	ug/L	40000	30700	400		09/22/15 04:11	75-85-4	
tert-Amylmethyl ether	**1570J**	ug/L	4000	1360	400		09/22/15 04:11	994-05-8	
Benzene	**26800**	ug/L	2000	680	400		09/22/15 04:11	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	40000	12800	400		09/22/15 04:11	624-95-3	
tert-Butyl Alcohol	ND	ug/L	40000	23100	400		09/22/15 04:11	75-65-0	
tert-Butyl Formate	ND	ug/L	20000	2920	400		09/22/15 04:11	762-75-4	
1,2-Dichloroethane	ND	ug/L	2000	720	400		09/22/15 04:11	107-06-2	
Diisopropyl ether	ND	ug/L	2000	680	400		09/22/15 04:11	108-20-3	
Ethanol	ND	ug/L	80000	55100	400		09/22/15 04:11	64-17-5	
Ethylbenzene	**3630**	ug/L	2000	640	400		09/22/15 04:11	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	4000	1440	400		09/22/15 04:11	637-92-3	
Methyl-tert-butyl ether	**2330**	ug/L	2000	680	400		09/22/15 04:11	1634-04-4	
Naphthalene	**3120**	ug/L	2000	800	400		09/22/15 04:11	91-20-3	
Toluene	**51700**	ug/L	2000	640	400		09/22/15 04:11	108-88-3	
Xylene (Total)	**21600**	ug/L	4000	1080	400		09/22/15 04:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	107	%	70-130		400		09/22/15 04:11	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		400		09/22/15 04:11	17060-07-0	
Toluene-d8 (S)	102	%	70-130		400		09/22/15 04:11	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW6 **Lab ID: 92268046022** Collected: 09/16/15 11:00 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:51	09/22/15 22:28	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	82	%	60-140		1	09/22/15 08:51	09/22/15 22:28	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**28300**	ug/L	2000	1540	20		09/22/15 04:28	75-85-4	
tert-Amylmethyl ether	ND	ug/L	200	68.0	20		09/22/15 04:28	994-05-8	
Benzene	**1890**	ug/L	100	34.0	20		09/22/15 04:28	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	2000	642	20		09/22/15 04:28	624-95-3	
tert-Butyl Alcohol	**2020**	ug/L	2000	1150	20		09/22/15 04:28	75-65-0	
tert-Butyl Formate	ND	ug/L	1000	146	20		09/22/15 04:28	762-75-4	
1,2-Dichloroethane	ND	ug/L	100	36.0	20		09/22/15 04:28	107-06-2	
Diisopropyl ether	ND	ug/L	100	34.0	20		09/22/15 04:28	108-20-3	
Ethanol	ND	ug/L	4000	2760	20		09/22/15 04:28	64-17-5	
Ethylbenzene	**708**	ug/L	100	32.0	20		09/22/15 04:28	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	200	72.0	20		09/22/15 04:28	637-92-3	
Methyl-tert-butyl ether	**905**	ug/L	100	34.0	20		09/22/15 04:28	1634-04-4	
Naphthalene	ND	ug/L	100	40.0	20		09/22/15 04:28	91-20-3	
Toluene	ND	ug/L	100	32.0	20		09/22/15 04:28	108-88-3	
Xylene (Total)	ND	ug/L	200	54.0	20		09/22/15 04:28	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		20		09/22/15 04:28	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		20		09/22/15 04:28	17060-07-0	
Toluene-d8 (S)	103	%	70-130		20		09/22/15 04:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - FB1 **Lab ID: 92268046023** Collected: 09/16/15 11:15 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	09/22/15 08:52	09/22/15 22:47	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	92	%	60-140		1	09/22/15 08:52	09/22/15 22:47	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/22/15 01:19	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/22/15 01:19	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		09/22/15 01:19	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/22/15 01:19	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/22/15 01:19	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/22/15 01:19	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/22/15 01:19	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/22/15 01:19	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/22/15 01:19	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/22/15 01:19	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/22/15 01:19	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/22/15 01:19	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/22/15 01:19	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/22/15 01:19	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/22/15 01:19	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-130		1		09/22/15 01:19	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		1		09/22/15 01:19	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		09/22/15 01:19	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - MW3 **Lab ID: 92268046024** Collected: 09/16/15 11:30 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	09/22/15 08:52	09/22/15 23:45	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	76	%	60-140		1	09/22/15 08:52	09/22/15 23:45	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		09/22/15 02:45	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		09/22/15 02:45	994-05-8	
Benzene	**3.1J**	ug/L	5.0	1.7	1		09/22/15 02:45	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		09/22/15 02:45	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		09/22/15 02:45	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		09/22/15 02:45	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		09/22/15 02:45	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		09/22/15 02:45	108-20-3	
Ethanol	ND	ug/L	200	138	1		09/22/15 02:45	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		09/22/15 02:45	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		09/22/15 02:45	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		09/22/15 02:45	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		09/22/15 02:45	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		09/22/15 02:45	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		09/22/15 02:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	108	%	70-130		1		09/22/15 02:45	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		09/22/15 02:45	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		09/22/15 02:45	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: EF & C #3
Pace Project No.: 92268046

Sample: 12175 - Duplicate - 1 **Lab ID: 92268046025** Collected: 09/16/15 00:00 Received: 09/16/15 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.48**	ug/L	0.020	0.020	1	09/22/15 08:52	09/23/15 00:23	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	115	%	60-140		1	09/22/15 08:52	09/23/15 00:23	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**19300J**	ug/L	20000	15400	200		09/22/15 04:45	75-85-4	
tert-Amylmethyl ether	ND	ug/L	2000	680	200		09/22/15 04:45	994-05-8	
Benzene	**15900**	ug/L	1000	340	200		09/22/15 04:45	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	20000	6420	200		09/22/15 04:45	624-95-3	
tert-Butyl Alcohol	ND	ug/L	20000	11500	200		09/22/15 04:45	75-65-0	
tert-Butyl Formate	ND	ug/L	10000	1460	200		09/22/15 04:45	762-75-4	
1,2-Dichloroethane	ND	ug/L	1000	360	200		09/22/15 04:45	107-06-2	
Diisopropyl ether	ND	ug/L	1000	340	200		09/22/15 04:45	108-20-3	
Ethanol	ND	ug/L	40000	27600	200		09/22/15 04:45	64-17-5	
Ethylbenzene	**2670**	ug/L	1000	320	200		09/22/15 04:45	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	2000	720	200		09/22/15 04:45	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1000	340	200		09/22/15 04:45	1634-04-4	
Naphthalene	**1790**	ug/L	1000	400	200		09/22/15 04:45	91-20-3	
Toluene	**34100**	ug/L	1000	320	200		09/22/15 04:45	108-88-3	
Xylene (Total)	**16400**	ug/L	2000	540	200		09/22/15 04:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		200		09/22/15 04:45	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		200		09/22/15 04:45	17060-07-0	
Toluene-d8 (S)	103	%	70-130		200		09/22/15 04:45	2037-26-5	

REPORT OF LABORATORY ANALYSIS