



AECOM
1360 Peachtree St.
Suite 500
Atlanta, GA 30309

Phone 404.965.9600
Fax 404.965.9605

8819

RECEIVED

AUG 03 2012

SITE ASSESSMENT,
REMEDICATION &
REVITALIZATION

Ms. Addie Walker
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

August 2, 2012

Subject: Off-Site Plan 2012
Auriga, Spartanburg Facility (fka INVISTA)
Site # 00225
AECOM Project No. 60242428

RECEIVED

AUG 03 2012

SITE ASSESSMENT,
REMEDICATION &
REVITALIZATION

Dear Ms. Walker,

This letter presents an update on the activities associated with groundwater located off site near the Auriga facility in Spartanburg, SC. A preliminary investigation was completed in late 2011 and the results of that work were submitted to DHEC in January of this year. A meeting was held at DHEC's office in February to discuss future plans, including off-site activities. The plan presented in this report is consistent with the activities discussed during that meeting.

The 2011 investigation established that the chloroform plume extends into the off-site property. The extent of identified concentrations as presented in the January 2012 report is shown in Figure 1. Data collected in 2011 is presented in Table 1. Figure 1 presents the data from samples collected at refusal, which has been interpreted as approximately the top of rock. The data for shallower samples is also included in Table 1. The more shallow data were lower in concentration and covers less area.

The highest concentration observed was 2.14 milligrams per liter (mg/L). Concentrations were found to decline in both east and west directions, as well as downgradient from the location with the highest concentration. The detections are an order of magnitude lower than historically observed on-site concentrations which have been successfully remediated to below the MCL (<.080 mg/l) and in many cases below the detection limits (<0.005 mg/L). We plan to implement the same plan for the off-site area as for the on-site area.

Celanese has been involved in conversations to obtain full access to the property in order to complete the work that is needed. The negotiations have recently concluded and Celanese expects to have full access to the site in the fourth quarter of 2012. With your approval we will establish a date for mobilization and completion of the work described below.

As discussed in our February 2012 meeting, the first step is to define the extent of the plume. The direct push technology (DPT) investigation previously completed has provided a clear indication of the center of the remaining plume, as well as limits of the plume to the east and downgradient. But Celanese and DHEC agree that the data have also identified locations requiring improved definition. These areas include defining a limit of the plume to the Maximum Concentration Limit (MCL) (0.080

mg/L for total trihalomethanes) to the west and directly downgradient of the highest concentrations. In addition, the extent of the plume should be better defined in gaps along the east boundary and the downgradient edge. Two bedrock wells were also proposed during the February 2012 meeting. The purpose of these wells is to provide data on the far side of the downgradient creek.

In order to complete this plan nine DPT and two bedrock well locations are proposed for this phase of work. The proposed locations are presented on Figure 2.

The proposed DPT locations are distributed to fill potential gaps in the following areas:

- along the western portion of the property
- the central area downgradient of the highest detection
- the eastern edge of the plume and
- downgradient before the creek.

As discussed in the February meeting, the two proposed bedrock wells will be placed in the right-of-way along Bruckner Road on the far side of the creek.

A review of access for these locations will be needed to confirm utility clearance and approvals for well installation. We will communicate changes to well locations caused by utility conflicts. Thus, the locations are approximate and will be revised as required. The final locations will be surveyed and reported.

Each DPT location will be completed to refusal depth. A groundwater sample will be collected at first water and at refusal depth for all locations. As with previous events, if the DPT refusal is encountered within ten feet of first water, that sample will be considered to be at refusal depth and no second sample will be collected at that location.

Based on the existing data, we anticipate that these DPTs will provide complete delineation of the plume to the east and downgradient. The data indicate that concentrations decline rapidly with distance. The locations placed to the west may demonstrate that the plume does not extend beyond the property line. However, if needed access to the next property will be arranged and further investigation will be planned as an additional phase of the investigation.

The bedrock wells will be installed as determined by the on-site geologist. The wells will be completed in a water producing zone in a target range of 20 to 50 feet below the top of rock. The wells will be completed and developed and then groundwater samples will be collected.

The groundwater samples from all locations will be analyzed for volatile organics, 1,4-dioxane, and natural attenuation parameters (DO, ORP, pH, iron, sulfate/sulfide, nitrate/nitrite, and alkalinity).

In addition surface water samples will be collected along the creek. The surface water samples will be analyzed for volatile organics and 1,4-dioxane.

Once the initial data are available from the new locations, a revised assessment of current conditions will be prepared and an updated remediation plan will be proposed in the same report. The screening data gathered from the DPT locations will be used to approximate the boundaries requiring further remediation in both saprolite and bedrock. The remediation plan will consist of additional injection in the areas identified. Injection may be proposed using either permanent injection wells or direct push wells, or a combination, depending on results.

A similar investigation has recently been approved for remaining areas of chloroform plume on the on-site property. This on-site investigation includes additional sampling at a few locations and also includes microcosm analysis to better define the distribution and mechanisms involved in the historic successful treatment. This understanding will improve the next phase of remediation planning. Planning of remedial activities for the off-site areas will also include the understanding provided by these findings.

After injection is completed, permanent monitoring wells will be planned and installed. New wells will include both saprolite and bedrock locations, and are anticipated to mostly include adjacent well pairs with one well in each zone. These wells will be placed with the intent of establishing clean boundaries and demonstrating treatment inside those boundaries. The planned permanent locations will be submitted to DHEC for approval prior to installation.

The new monitoring wells will be added to both the June Annual sampling plan and the December DMT area sampling plan. Groundwater monitoring will continue twice per year in this area. In addition to the planned injection, additional injection events may be planned in the future if it is determined that rebound occurs or gaps in the treatment are observed.

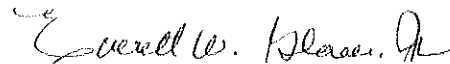
As described above, we anticipate having full access to start work during the fourth quarter of this year. With your approval we will schedule a drilling contract to mobilize in November. We plan to complete all DPT and bedrock wells during a single mobilization. A report of the results including recommendations for additional permanent wells and remediation will be submitted approximately ten weeks after all validated data from the investigation has been received.

Please contact me if you need any additional information.

Sincerely,



Bryon Dahlgren
Project Manager



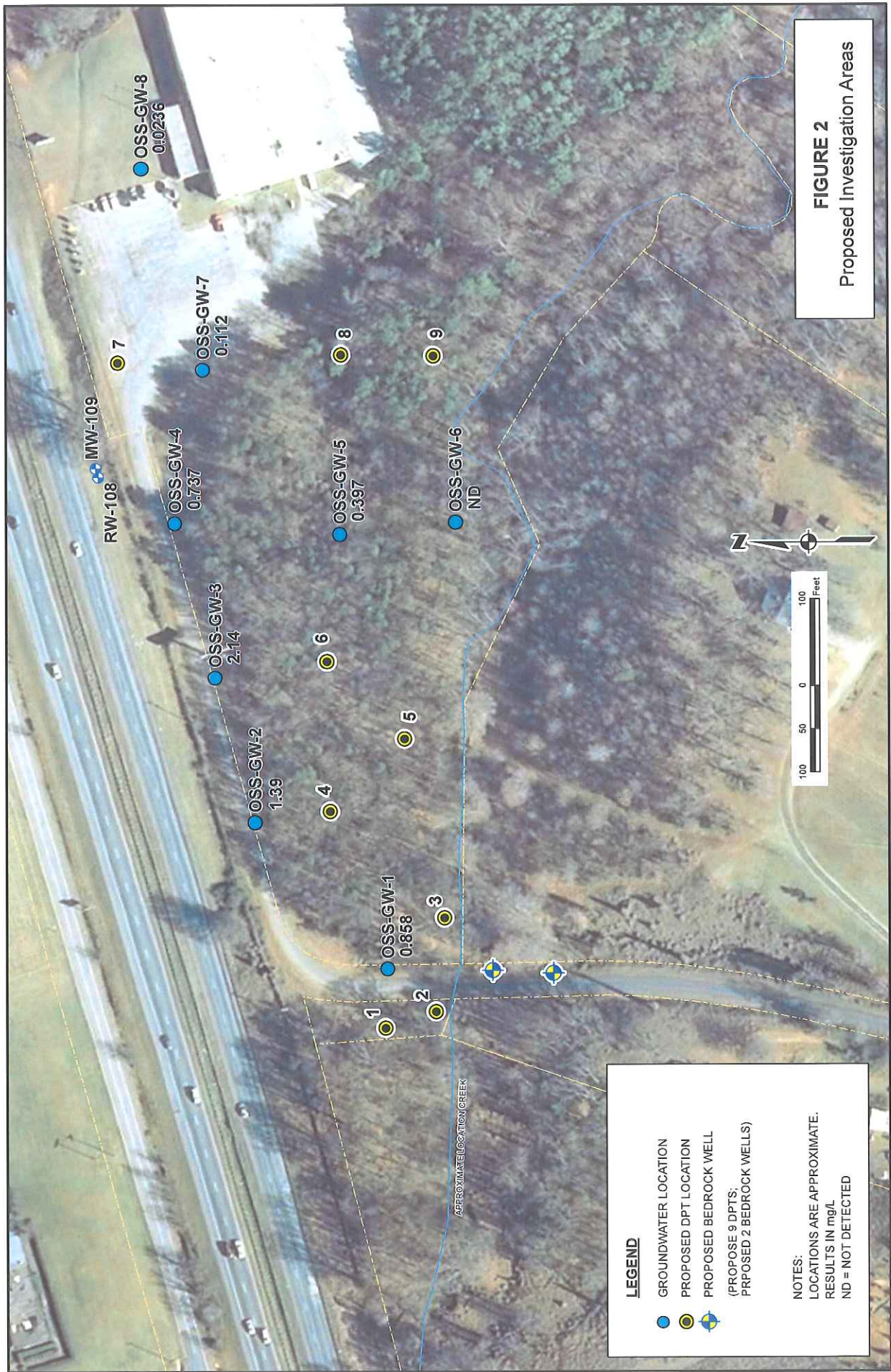
Everett W. Glover, Jr., PE
Senior Program Manager



FIGURE 1
October 2011 Results

LEGEND
 ● GROUNDWATER LOCATION

NOTES:
 LOCATIONS ARE APPROXIMATE.
 RESULTS IN mg/L
 ND = NOT DETECTED





Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

August 21, 2012

Mr. Steve Simpson
Celanese Corporation
1085 Lakeside Road
Salisbury, NC 28147

Re: Invista/Kosa (Hoechst Celanese Textile) Site ID#00225
Off-Site Plan dated August 2, 2012
Spartanburg County


Dear Mr. Simpson,

The Department has reviewed and approved the referenced temporary and permanent monitoring well installation request submitted by Bryon Dahlgren of AECOM. Attached is your copy of the monitoring well installation approval for the installation of up to 9 temporary wells and two permanent bedrock wells. The original has been sent to Mr. Dahlgren. The analytical results from the new groundwater wells should be submitted to my attention within thirty days (30) of receipt from the laboratory or on or before December 15, 2012. Please note the following:

- Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).

Please contact me with any questions or comments at (803)896-4077.

Sincerely,


Addie Walker, Hydrologist
Contamination Mitigation Section
Division of Site Assessment, Remediation and Reclamation
Bureau of Land and Waste Management

cc: Cindy Carter, Region 2 EQC – Spartanburg via email
Bryon Dahlgren, AECOM 1360 Peachtree Street, Suite 500, Atlanta, GA
30309
File #400225



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

Monitoring Well Installation Approval

Approval is hereby granted to: AECOM
(on behalf of): CNA Holdings
Facility: Auriga/Kosa/Hoechst Celanese Site
Site Identification: #00225
County: Spartanburg

This approval is for the installation of nine (9) temporary wells and two permanent bedrock wells. These wells are to be installed per the correspondence dated August 2, 2012. The wells are to be installed following all of the applicable requirements of R.61-71.

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. 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
3. 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.
4. All temporary monitoring wells shall be abandoned within 10 days of borehole completion using appropriate methods as required by R.61-71.H.4.c.
5. If any of the information provided to the Department changes, the **Addie Walker (803) 896-4077** shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance: August 21, 2012

Approval #: 8819

Addie Walker, Hydrologist
Contamination Mitigation Section
Division of Site Assessment, Remediation and Reclamation
Bureau of Land and Waste Management