Hydrogeologic Assessment
Luck Edgefield Site
Edgefield County, South Carolina
S&ME Project No. 22350640

PREPARED FOR:

Luck Companies
Post Office Box 269682
Richmond, Virginia, 23242

PREPARED BY:

S&ME, Inc.
8646 West Market Street, Suite 105
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February 5, 2024

February 5, 2024

Luck Companies
Post Office Box 29682
Richmond, Virginia 23242

Attention: Mr. Bruce Smith
Greenfield Project Manager
brucesmith@luckcompanies.com

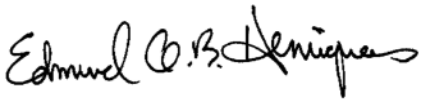
Reference: **Hydrogeologic Assessment**
Luck Edgefield Site
Edgefield County, South Carolina
S&ME Project No. 22350640

Dear Mr. Smith:

S&ME, Inc. has completed a Hydrogeologic Assessment for the referenced property (i.e., the subject property). The attached report presents the findings of the Hydrogeologic Assessment, which was performed in general accordance with S&ME Proposal No. 22350640, dated November 21, 2022.

S&ME appreciates the opportunity to provide this Hydrogeologic Assessment for this project. Please contact us at your convenience if there are questions regarding the information contained in this report.

Sincerely,



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cc: South Carolina Department of Health and Environmental Control
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1.0 INTRODUCTION

S&ME, Inc. (S&ME) conducted a Hydrogeologic Assessment of the subject property located north of Woodlawn Road in Edgefield County, South Carolina. A site vicinity is shown on **Figure 1, Appendix I.** The Hydrogeologic Assessment was conducted in general accordance with S&ME, Inc. Proposal No. 22350640, dated November 21, 2022.

1.1 Purpose

S&ME understands that Luck Companies (Luck) is considering the purchase of the subject property for the purpose of developing the property as an aggregate mine. The mining operations will use dry mining techniques; therefore, the proposed mining area will be dewatered via groundwater extraction points/sumps. The purpose of the hydrogeologic assessment was to provide information on certain recognized hydrogeology features of the site and vicinity, inferred locations of on-site water bearing fractures and registered off-site water supply wells in the vicinity of the site, and to assess aquifer properties for the development of estimated probable impacts of mine dewatering activities.

1.2 Methodology

This hydrogeology assessment relied on a process that began with the development of a preliminary conceptual site model. The preliminary model was based on known or expected primary features of geology, hydrogeology, mine pit location and development, and site-specific relationships between geologic structures and groundwater flow. The preliminary conceptual site model was utilized to develop field data collection needs for this assessment. The collected data included geologic, geophysical, and hydrogeologic information. Site specific data was then collected to further characterize the hydrogeologic system and the resultant data analyzed to refine the conceptual site model.

2.0 Site Setting

The approximate 402-acre site is located north of Woodlawn Road and south of Stevens Creek in Clarks Hill, Edgefield County, South Carolina. The site is comprised of a portion of Edgefield County tax parcel number 058-00-00-039-00 owned by Wilkie Development, LLC.

The historical resources reviewed for the property by S&ME for the Phase I Environmental Site Assessment (ESA), dated January 25, 2023, indicated the property has consisted of wooded land and open/pastureland since at least 1892. Several structures were visible on aerial photography and topographic mapping from 1892-1941. A utility easement has also been present on the northern portion of the Property since at least 1955. *(source: phase I)*

The subject site is identified on the United States Geological Survey (USGS) 7.5-minute series Topographic Maps titled Martinez, Georgia Quadrangle, dated 2020, and the Colliers South Carolina Quadrangle, dated 2020. The original maps have a scale of one-inch equals 2,000 feet. A portion of the USGS Topographic Maps covering the site and vicinity is included as **Figure 2, Appendix I**. Topography on the property is undulating and slopes to multiple on-site drainage features that slope generally towards the Stevens Creek, which adjoins the property to

the north. Surface elevations on the subject site range from approximately 450 feet to 200 feet above Mean Sea Level. *(source: phase I)*

Properties surrounding the subject site consist of forestland and residential land.

2.1 Planned Quarry Operations

The planned mining operations will take place in the central portion of the subject property with the plant area south of the pit areas. Overburden storage/berms will be to the south, east, west, and north of the pit and plant area. The entrance to the mine facility will be from Woodlawn Road to the south of the site and will extend to the primary infrastructure area. S&ME understands that mining operations have not been planned for specific depths or time frames. Luck indicated a Phase 1 pit area containing approximately 50 acres and a Phase 2 with pit areas containing approximately 43 acres. The expected life of any aggregate mine operation is primarily driven by economic factors, such as demand for the product, which is difficult to predict. A mine life forecast of 75 years or less was considered foreseeable.

Please reference **Figure 3, Appendix I** regarding the planned operations.

2.2 Geology and Lineament Mapping

2.2.1 Geology

According to the Geology of the Carolinas, (Horton, Jr. J. Wright and Zulu A. Victor, University of Tennessee Press, 1991), the Property lies in the Piedmont Physiographic Province. The Piedmont is characterized by rolling relief drained by numerous creeks. Most soils in the Piedmont were formed by the weathering of the underlying rock. Parent material is felsic/mafic residuum weathered from metamorphic and igneous rocks. In the general vicinity of the subject site, the soils are gently sloping or sloping sandy loams or loamy sands with red, brown, or yellow subsoil. *(source: phase I)* **Figure 4, Appendix I** represents a portion of the Geology of South Carolina reviewed at SCDENR.Maps.arcgis.com. According to this map, the subject site and vicinity are located within the Savannah Terrane (sr) and are likely underlain by migmatic gneiss and schist consisting of biotite-amphibole paragneiss, sillimanite schist and quartzite.

A review of core drilling data recorded by Subhorizon Geologic Resources (C-1, C-2) indicated that the site is underlain by bedrock primarily described as granitic gneiss and biotite granitic gneiss, with pegmatite, quartzite, unakite and schist lenses.

Based on the core drilling data, the thickness of the soil/saprolite overburden ranged from a depth of 19 feet to 33 feet below grade (BG). The apparent soil saprolite overburden thickness observed during installation of monitoring wells associated with pump testing ranged from approximately 50 feet BG to 71 feet BG.

2.2.2 Lineament Study

Fractures are often the primary sources of permeability in crystalline bedrock aquifers. When these features cannot be observed directly, they can often be inferred by examining topographic maps, aerial and satellite images. As an ancillary tool for predicting the location of possible geologic structures in the study area, a lineament (or facture trace) study was prepared. The lineament study entailed a qualitative and subjective visual analysis of the

topographic map features in the study area and surrounding vicinity, searching of apparent linear features (i.e., lineaments) embedded in the map data. For example, straight stream segments or draws arranged in somewhat parallel patterns or aligned at roughly 90-degree angles to main streams may indicate that the drainage features would be controlled by high-angle fractures. Other non-man-made linear features may also provide indications of the structural fabric and compositional variations in the underlying bedrock.

As depicted in **Figure 5, Appendix I**, the recognized lineaments are generally oriented north 0 to north 15 degrees east, and north 65 to north 80 degrees east. The lineaments identified may be indicative of geologic structures or zones of contrasting strength due to differences in the composition of adjoining rock types. Lineaments and lineament intersections can represent targets for water well drilling, and/or identify areas warranting further examination during hydrogeologic studies. Considering the map scale used for this lineament study, fractures inferred by this method may or may not directly underlie the lines shown. Because a lineament study is a qualitative analysis, the actual presence and dip of features cannot be determined without additional investigations.

2.3 Hydrogeology

The hydrogeology of the Piedmont is typically characterized by surficial soils underlain by a weathered rock zone referred to as saprolite, which can range from a few feet to tens of feet thick. The saprolite transitions into bedrock with increased depth. In places, the lowermost portion of saprolite transition zone, just above bedrock, can be more permeable. Groundwater within the Piedmont generally moves from topographically high areas (recharge zones) to topographically low areas within and along stream valleys (discharge areas). Stevens Creek, and its unnamed tributaries that bisect portions of the site, are the expected discharge zones for the shallow saprolite aquifer beneath the site.

The conceptual site model presented below provides further discussion of local hydrogeology.

2.4 Conceptual Site Model

The generally accepted model for the Piedmont aquifers is a two layered system, built on the premise of an unconsolidated layer of soil and saprolite containing an unconfined aquifer that has a relatively high storage capacity supplying water to an underlying variably fractured crystalline bedrock aquifer that has low overall porosity and storage (Heath 1989). The low overall porosity and storage are due to the dense, somewhat impermeable bedrock that yields water primarily from secondary porosity and permeability provided by fractures, faults, joints, and foliations. The saprolite aquifer and bedrock fractures zone are common targets for residential, industrial and irrigation water wells. It is important to emphasize that crystalline bedrock aquifers are irregular and heterogeneous in distribution, often highly localized, and exhibit discontinuous water bearing zones.

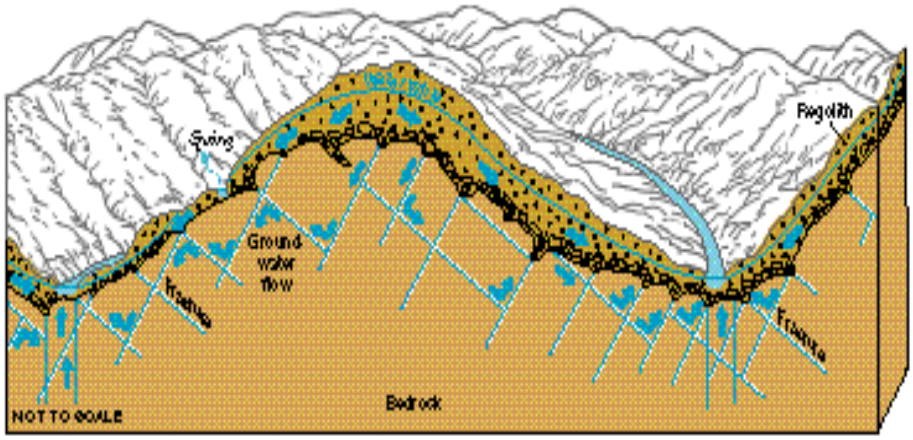
Although far more complex, the local aquifer system can be conceptually simplified and viewed as a two-layered system consisting of a shallow, unconsolidated, unconfined, porous regolith aquifer that can supply water to surface water features and to the second layer, the underlying fractured bedrock aquifer as depicted in Figure 2-1.

Aquifer recharge in the Piedmont region is provided by precipitation which occurs in the form of rainfall and snow melt. Depending on factors such as ground saturation, ground cover and slope, a portion of the precipitation forms runoff. This runoff flows to areas of lower elevation where some runoff water infiltrates into the

unconsolidated material (i.e., soil), and some of the water flows into local surface waters. The precipitation that does not form runoff infiltrates through the unsaturated zone where it can merge with underlying aquifers.

Most of the recharge in this region takes place in inter-stream areas. In general, recharge from precipitation enters the aquifer system through the saprolite zone. It is believed that much of the recharge water moves laterally through the saprolite zone and discharges to nearby streams. Under some conditions shallow groundwater can discharge at the ground surface down slope as seeps or permanent springs above these surface water bodies. Some of these seeps may occur on a seasonal basis or as short-term temporal responses to precipitation. This unconfined saprolite aquifer is generally expected to function as a storage reservoir for the underlying fractured bedrock aquifer.

Figure 2-1 Simplified Illustration of Groundwater Movement



Heath 1980

Some of the water moves vertically downward through the saprolite until it reaches bedrock where it enters fractures in the crystalline rock. Groundwater within the consolidated fractured bedrock aquifer flows in accordance with hydraulic (i.e., pressure) gradients in the fracture network. Because of this, the groundwater does not necessarily flow in the direction of topographic gradients. Based on the site geology and Very Low Frequency (VLF) imaged fractures, flow likely occurs along rock fabric and fracture zones. Significant fracture zones have the potential to substantially influence groundwater flow and velocities.

Published geologic data, lineament study findings, site geologic data, and the VLF survey findings were reviewed for the selection of test well and observation well locations.

3.0 Water Well Inventory

3.1 Freedom of Information Request

On February 20, 2023, and on July 13, 2023, S&ME requested to review available environmental regulatory files pertaining to water supply wells located in Edgefield County and in McCormick County, respectively, from the South Carolina Department of Health and Environmental Control (SCDHEC) through its Freedom of Information (FOI) office. The Freedom of Information Request Forms or correspondence are included in **Appendix II**. On

March 8, 2023, S&ME received two spreadsheets (FOI Response_871992 (Edgefield).xlsx and FOI Response_871992 (Legacy – Edgefield.xlsx) containing information regarding registered water supply wells in Edgefield County, South Carolina. On July 20, 2023, S&ME received two spreadsheets (McCormick 1.xlsx and McCormick 2.xlsx) containing information regarding registered water supply wells in McCormick County, South Carolina.

In an electronic mail message from the SCDHEC Bureau of Water Private Well Program to S&ME during 2021, we understand that the older of the two database files (WellTrak Query Spartanburg.xlsx) contains wells supposedly installed from 1985 to 2006. SCDHEC did not start permitting wells until 2000. Because of this, older non-permitted wells installed between 1985 and 1999 were given a log number only. Wells noted in the old database that were installed from 2000 to 2006 were permitted and given both a log number and a permit number.

The newer database (General Query) has been in use since 2006. When data was being migrated from the old database to the new, the wells with permit numbers (those installed from 2000 to 2006) were included in this new database. This makes for some duplication in the database of wells permitted between 2000 to 2006. From past experience, we understand that wells included in the database are only the wells that were reported and should not be considered a complete inventory of all wells in Edgefield County or McCormick County.

Due to the volume of information provided by SCDHEC via S&ME's FOI request, the data was not included in this report but can be submitted electronically upon request by S&ME.

A review of database information showed that there are no wells present in the database that are located within a 0.5-mile radius of the proposed mine pit site (**Figure 6, Appendix I**).

3.2 Site Reconnaissance

During a site reconnaissance performed on August 3-4, 2023, by Cody McMechen of S&ME, indications of municipal water lines were not observed on the roads located within a one-mile radius of the proposed mine site.

S&ME observations indicated the presence of three residential properties located within a 0.5- mile radius of the proposed mine site, which may contain water wells as depicted on **Figure 6, Appendix I**. From the public right-of-way, S&ME did not observe any apparent water well structures.

3.3 Potential Water Well Observations

S&ME reviewed parcels located with a 0.5-mile radius of the proposed mine pits on the Edgefield GIS site. As summarized on **Figure 6, Appendix I**, three parcels with the potential to contain water supply wells not included in the database queries, but observed during the well reconnaissance, were identified. This finding was consistent with site reconnaissance observations of three residential properties within a 0.5-mile radius.

3.4 Data Summary

The findings of our water well survey, including the parcels with water supply wells located within a 1-mile radius of the proposed mine pits, are summarized on **Figure 6, Appendix I**. Based on the methods employed and discussed above, three suspect water supply wells were identified within 0.5-mile radius of the edge of the proposed mine pits.

4.0 Field Methods

4.1 Geophysical Survey

The conceptual site model assumed that bedrock fractures would provide primary control over groundwater movement in the bedrock aquifer. Characterization of fractured bedrock aquifers can be aided by the utilization of certain non-invasive geophysical survey tools. For this project, a VLF survey was employed for imaging steeply dipping fractures in the immediate vicinity of the proposed mine site.

S&ME subcontracted THG Geophysics for the collection of VLF profile data across select portions of the proposed mine pit. The VLF survey utilizes very low frequency military radio signals to measure electrical properties of near surface soil and shallow bedrock. Electrically conductive features include fault zones and fractures, which tend to be more conductive than the surrounding bedrock. VLF is used to collect conductivity data, which is analyzed for contrasting electrical conductivities among underlying geologic units. The results of the analysis allow identification of more conductive zones (e.g., suspect fracture zones) in the underlying bedrock. The data is collected by walking a series of lines (e.g., profiles) with a backpack VLF receiver and stopping to collect data at points roughly every 10 meters along each line. The location of each data point along the profile is determined and recorded using a non-survey grade GPS. The VLF method is sensitive to cultural interference from items such as pipelines, utilities, fences, and other conductive objects. If observed, cultural features were noted at the time of data collection.

From January 6, 2023, through January 9, 2023, THG Geophysics collected data along eight VLF profiles and four 2-D electrical resistivity (EI) profiles covering approximately 27,650 feet. The profile locations and orientations were selected based on regional and local geologic information, as well as inferences made from the lineament study.

Following field data collection, the VLF data was post-processed. **Appendix III** contains the THG Geophysics report which includes figures illustrating the VLF profiles and the points along each profile where fractures were imaged. The post-processed VLF data was presented in both plan and cross-sectional view to illustrate the interpreted dip of the imaged fractures. The VLF data was examined and utilized to make interpretations of the subsurface fracture patterns within the study area. The green lines depicted in the THG report illustrate the interpreted location and orientation of the imaged fractures, with arrows depicting the dip of these features. Although the lines shown are straight and continuous, actual fracture patterns are not always linear and/or as laterally continuous as shown.

4.2 Well Installations

Site-specific field data was collected to verify the conceptual site model or provide data to refine the model. Well drilling locations were selected based on the VLF geophysical survey findings, with goals of installing wells that intersect dominant fractures and developing an observation well network to be used during pump tests for monitoring aquifer responses and estimating aquifer parameters. In selecting drilling locations, consideration was given to anticipated placement of mine infrastructure.

The well network installed provided for one primary pumping well and four observation wells. Well drilling targeted installation of a pumping well in a primary fracture zone and installation of secondary wells (observation wells) intersecting the same apparent fracture zone, but at some distance from the pumping well. An observation

well was installed to examine the influences of pumping in the aquifer system away from the fracture zone intersected by the pumping well. Given the orientation and dip of the fractures as imaged, this arrangement allowed for the possibility of a single fracture to be intersected by other wells located along a line perpendicular to the trace of the fracture. This approach would provide an opportunity to measure hydraulic conductivity along the same fracture and test the conceptual site model.

S&ME obtained a well installation permit (Permit) from the SCDHEC Mining and Reclamation Program for site identification SARRMW-00015, dated June 16, 2023. The permit is included in **Appendix IV**.

Wendell J. Lee Well Services, a South Carolina licensed well driller, installed five 6-inch diameter groundwater monitoring wells, with depths ranging from 400 feet to 402 feet below ground surface. The wells are identified as B-03, MW-01, MW-02, MW-03 and MW-04. Each well was installed using 6.25-inch diameter air hammer drilling tooling. Depth to bedrock varied from 50 feet below ground surface at well MW-04 to 71 feet below ground surface at well MW-01. Based on the drill cuttings, bedrock encountered consisted primarily of gneiss. Well locations are depicted in **Figure 7; Appendix I**. **Table 4-1** summarizes the dominant water bearing fracture zones recognized during drilling of monitoring wells.

Table 4-1 Dominant Fracture Zones Encountered

Well ID	Depth to Dominant Water Bearing Fractures or Fracture Zones (feet below grade)	Driller Estimate of Well Yield At Time of Drilling (GPM)
B-03	75, 97,115	0.5
MW-01	80	<0.5
MW-02	68, 84, 135	2.5
MW-03	72, 80, 100	<0.25
MW-04	70, 110, 135	6

GPM = gallons per minute

Each bedrock well was constructed using a 6-inch diameter PVC surface casing that extended from less than three feet above grade to the top of bedrock. An inner well casing was not installed into bedrock; the borehole was left open in each well. Each well was secured with a lockable cover.

S&ME documented the installation and development of the groundwater extraction wells, prepared a geologist's log for each well, and developed a well schematic for each well installed. These logs are included in **Appendix IV.** A Water Well Record (SCDHEC Form 1903) was also completed and submitted to the SCDHEC within 30 days of completion of each well. These well records are included in **Appendix IV.**

4.3 Aquifer Pump Testing

Aquifer pump testing was performed using the following configurations.

- Well MW-04: Well MW-04 was the pumping well, whereas wells B-03, MW-01, MW-02, and MW-03 functioned as observation wells. Testing included a variable rate (step) test and a constant rate test.

Details regarding each test are summarized in the following sections.

4.3.1 Variable Rate Test – Well MW-04

On September 6, 2023, to determine the target flow rate for the constant rate aquifer pumping test, S&ME conducted a variable flow rate pump test (step test) on the pumping well (MW-04). A submersible electric pump was installed on a 1-inch diameter galvanized pipe and positioned at a depth of approximately 370 feet BG. A flow control device was installed on the discharge line to adjust and control flow rates. A digital flow meter capable of providing instantaneous flow rate data and flow totalizer data was installed to document flow rates and the total volume of water pumped. After the pump and discharge were configured, S&ME installed a Level Troll 700® pressure transducer/datalogger into the pumping well to collect height of water column data during the step test, from which drawdown levels were calculated.

The pump test began with an initial flow rate of 3 gallons per minute (gpm), which was maintained using the flow control valves, for approximately 10 minutes until the flow meter clogged and required cleaning. The test was restarted and operated with an initial flow rate of 3 gpm for approximately three hours, during which the change in drawdown in the pumping well was showing signs of becoming asymptotic. The pumping rate was increased to 5 gpm and maintained at this rate for approximately 6 hours, during which the change in drawdown in the pumping well was showing signs of becoming asymptotic. The pumping rate was increased to 7 gpm. Following the pumping rate increase to 7 gpm the change in drawdown was not showing signs of becoming asymptotic, for this reason, the pump rate was decreased to 4 gpm after approximately 2 hours.

During this time, and throughout the test, sediment was clogging the flow meters requiring the manifold to be flushed by opening the flow controller to allow several gallons of water to unclog the blockage at a higher pumping rate. At one point during the test the flow was redirected through a sampling port and the digital flow meter was removed from the manifold to limit the number of flushes to dislodge sediment.

The drawdown data collected and recorded by the transducers was analyzed following the test. Based on an analysis of the flow rate employed and drawdown data obtained, a target flow rate of 4 gpm was selected for the constant rate pumping test. A chart depicting the pressure transducer data collected at pumping well MW-04 during the step test is included in **Appendix V**.

4.3.2 Constant Rate Pumping Test – Well MW-04

Immediately following the variable rate test and without ceasing of pumping, a constant rate pumping test was performed using well MW-04 as the pumping well and wells B-03, MW-01, MW-02, and MW-03 as observation wells. This test was configured and conducted in an equivalent manner to the step test, though the pumping rate would be constant at 4 gpm. The same submersible electric pump previously installed at a depth of approximately 370 feet BG was used for the constant rate pump test. The flow control device and electronic flow meter utilized during the step test was employed during the constant rate test. **Figure 7, Appendix I** depicts the well locations.

Date3/24/2020

Photographer: Gary Simcox

Location	Typical Pump Test Setup
Remarks	Flow Control Device, Flow Meter, and Discharge Line

Prior to starting the pump test, S&ME installed Level Troll 700® pressure transducers in the pumping well (MW-04) and in four observation wells. These transducers were set to record height of water column data during the pump test, from which drawdown levels were calculated. In addition to transducer data, manual water level readings were collected from each of the observation wells during the test. **Table 4-2** provides a summary of the transducer types, locations deployed, and logging intervals utilized.

Table 4-2 Transducers, Device Type, and Logging Intervals

Well ID	Device Type	Logging Interval (minutes)
MW-04 (Pumping Well)	LevelTROLL 700®	30 second
MW-01, MW-02, MW-03, and B-03 (Observation Wells)	LevelTROLL 700®	5 minutes

Maximum drawdown observed in each of the wells is summarized in **Table 4-3** below:

Table 4-3 Summary of Maximum Drawdown

Well ID	Maximum Drawdown During Pump Test (feet)
MW-04 (Pumping Well)	288.4
B-03 (Observation Well)	23.5
MW-01 (Observation Well)	0
MW-02 (Observation Well)	94.5
MW-03 (Observation Well)	19.8

Following the decrease to 4 gpm the change in drawdown went through a period of recharge for approximately 6.5 hours then a period of drawdown for approximately 6.5 hours showing no signs of becoming asymptotic, for this reason, the pump rate was decreased to 2 gpm. After approximately 11 hours the pumping rate was increased to 3 gpm.

The pumping phase for the combined variable rate test and the constant rate test was run for approximately 48 hours, with pumping terminated at 9:30 AM on September 8, 2023. The pump rate was held between 2 and 4 gpm, with a total of 9,427 gallons pumped from the well during the test.

After the pumping phase of the test was completed and the pump was deactivated, the transducers in each of the wells continued to record data during the aquifer recovery phase, to monitor post-pumping water levels responses at the pumping and observation wells. On September 12, 2023, around 12:00 PM, the transducer logging was terminated, and the transducers were removed from the wells. Rainfall events occurred during the pumping phase of the test, but not during the recovery phase. Charts depicting pump test drawdown data collected are included in **Appendix V.** Drawdown data obtained for each of the five wells utilized for the constant rate pump test were subsequently analyzed as part of the groundwater modeling task.

5.0 Pump Test Analysis, Groundwater Modeling, and Reporting

The analysis of pumping tests and development of projections for the dewatering operations were performed utilizing groundwater flow simulation models. Groundwater simulations were performed using MODFLOW-2000 or MODFLOW-2005 through the graphical user interface Groundwater Vistas, version 7.22. Groundwater Vistas is a reliable and commonly used graphical user interface for MODFLOW and the MODFLOW family of groundwater modeling codes. It aids in the construction of model input files and is particularly helpful for data organization for three-dimensional models with multiple hydrogeologic zones. It also facilitates model calibration and the rapid visualization of simulation results.

In preparation for development of a regional model for the simulation of site and regional effects of the proposed mine dewatering, a model was constructed with calibration to the site-specific aquifer pumping test data. A discretized model was used to evaluate site-specific variables pertaining to fracture zones and pit configurations. Fracture orientations at the site defined by the VLF Geophysical survey identified one distinct trend, generally northeast to southwest. The pumping test calibration model simulated the primary fractures as part of an equivalent porous media (EPM) domain limited to the area of the VLF profiles and pumping test well locations. The purpose of the pumping test calibration model was to derive input parameters for the regional model simulations.

Following pump test calibration, the EPM model was expanded for the purpose of simulating specific phases of the proposed mining operations, over time. The regional model applied aquifer parameters derived from the pumping test to a larger, more regional domain that included residential wells in the vicinity of the planned mining area.

5.1 Model Construction

Figure 8, Appendix I is a map of the model domain and grid, placed on a site map. The model is rotated so that the x-direction is generally parallel to the east-northeast—west-southwest trending primary fractures. The model is rotated 12 degrees west of north (clockwise) to better align model rows with fracture traces. The model covers 38,000 feet in the x-direction and 34,000 feet in the y-direction. The model has 50-foot by 50-foot cells in the refined area around the mine property, gradually increasing to and 500-foot by 500-foot cells in the peripheral area of the grid.

The model is 640 feet thick, separated into five layers. The top of Layer 1 represents the ground surface at an elevation of 400 feet. It generally represents partially weathered rock. The static water table is set in the middle of Layer 1, 40 feet below the ground surface. Layer 2 is 80 feet thick and contains the upper part of fractured bedrock. Layer 3 is 100 feet thick and contains the lower part of bedrock fractured similar to bedrock in Layer 2. The bottom of the Phase 1 pit lies approximately 10 feet above the bottom of Layer 3, which lies 260 feet below ground surface. Layer 4 is 200 feet thick and contains bedrock with fewer fractures than the shallower bedrock, reflecting boring log data. The bottom of the Phase 2 Pits, consisting of a deeper Phase I Pit and both Phase 2 Pit areas, is approximately 10 feet above the bottom of Layer 4, which lies 460 feet below ground surface. Layer 5 is 180 feet thick and also consists of bedrock with low fracture density, just as Layer 4. The top of Layer 5 is 10 feet below the bottom of the Phase 2 Pits, and the bottom of Layer 5 is the base of the model, 640 feet below ground surface.

5.2 Aquifer Storage Properties

The pumping test calibration yields specific storage (*Ss*) of approximately 5 x 10^{-6} per foot, varying spatially within a narrow range. Specific yield, *Sy*, ranged from 0.10 to 1 x 10^{-3} based on pumping test interpretations. The low value of *Sy* reflects fractures intersecting the water table. After a long period of dewatering at the site drawdown is not very sensitive to *Sy*.

5.3 Hydraulic Conductivity Zones

The EPM model has a consistent set of directional hydraulic conductivity values representing vertical and horizontal anisotropy introduced by the regional fracture trends. The horizontal hydraulic conductivity in the *x*-direction, K_x, reflects flow in the direction of the primary fracture trend. The horizontal hydraulic conductivity in the *y*-direction, K_y, reflects flow in the direction of the primary porosity and minor fractures within the crystalline rock. The vertical hydraulic conductivity, K_z, reflects the aggregate effect of flow along the steeply dipping fractures and through intervening matrix rock. The three hydraulic conductivity values representing the three principal directions of the EPM model are as follows for the five model layers.

1. Layers 1, 2, and 3: $K_x = K_z = 0.03$ foot per day, $K_y = 0.0175$ foot per day
2. Layers 4 and 5: $K_x = K_y = K_z = 0.01$ foot per day

Lower hydraulic conductivity and less anisotropy in the deeper layers reflects the general observation that fracture size decreases the fracture spacing increases with depth at the site.

River and stream conductance (*Ksb*) is 1 foot per day for the Savannah River and Stevens Creek, and 0.1 foot per day for smaller regional creeks and onsite creeks. Lower small creek conductance assumes silty bottom sediments. Savannah River and Stevens Creek width is 500 feet, small creek and stream widths are 10 feet regionally and 5 feet onsite. Although the Savannah River is wider than 500 feet, its conductivity is sufficiently high that additional width in the model is unnecessary.

5.4 Boundary Conditions

The model applied constant head boundaries (CHB) along the edges of the model and a no flow boundary at the base of the model. These boundaries are critical to model calibration.

Figure 9, Appendix I shows the network of creeks and streams that are represented as river boundary (RIV) cells in the model grid, which are affected by a product of conductance, thickness, and width. Grid resolution is sufficient for distant effects. The impact of creeks and streams in the model is controlled by the conductance term of the creek, not cell width. The flow between a stream and an aquifer in contact with the stream is proportional to the head difference between the stream and the aquifer.

5.5 Model Calibration

Chart 1, Appendix VI shows plots of observed and modeled drawdown over time for all five test wells (B-03, MW-01, MW-02, MW-03 and the pumping well MW-04) during both the step test with recovery and the constant rate pumping test and recovery period. Achieving close match with the orthogonally positioned observation wells, along with the pumping well MW-04 is particularly important for the EPM model. Improvement of the calibration would entail localized hydraulic conductivity zonation which would not affect the regional EPM hydraulic conductivity and therefore additional calibration refinement would not be productive.

5.6 Mine Pit Dewatering and Drawdown

Chart 2, Appendix VI shows a graph of water levels in the mine pit as a function of time. The dashed black line represents depth to water measured from the ground surface for the Phase 1 pit, which is in the middle of the pit area and is flanked on either side by two Phase 2 pit areas: Phase 2 West and Phase 2 east. Together, the Phase 1 pit and the two Phases 2 pits cover the complete footprint of the mine. The bottom elevation of the Phase 1 pit is first reached after 20 years (dashed black line), and the pit continues to expand at the same bottom elevation for another 20 years. The blue line and gray line represent water levels in the Phase 2 East and Phase 2 West pits, respectively. Varying rates of water level decline in the Phase 2 East and West pits during the first 40 years of mine operation reflect progressive cutting back of mine wall lifts and travel ways. In the second 40-year period of mine operation the mine continues to deepen until depth to water reaches 450 feet at the bottom of the mine.

The blue line depicted on the graph in **Chart 3, Appendix II** measures the total dewatering rate of the mining operation, in gpm, as the mine expands and deepens with time. The dewatering rate increases with time as the mine becomes bigger, and the rate of change of the dewatering rate is variable during the first 40 years of mine operation as the lifts and travel ways are progressively cut back at varying rates to accommodate the geometry of the mine. After 40 years, as the mine becomes deeper, the dewatering rate increases more slowly as the mine cuts into less fractured rock. S&ME understands that model predicted dewatering rates are reasonable for mines in similar geologic terrain.

Figure 10, Appendix I shows drawdown contours for the limit of mining at the base of the Phase 1 pit, achieved after 20 years of mining. Drawdown is predicted to exceed 200 feet within the pit area. The drawdown cone is nearly circular and steep around the edges of the mine. The area where drawdown is predicted to exceed 20 feet outside the mine property is confined to a small area extending approximately 200 feet east of the eastern property line.

Figure 11, Appendix I shows drawdown contours for the limit of mining at the base of the middle pit, achieved after 40 years of mining. Drawdown exceeding 200 feet is confined within the mine pit area. The drawdown cone after 40 years of mining is elongated in the east-west direction and extends further toward the property boundary than after 20 years, and in some areas beyond it. The area where drawdown is predicted to exceed 20 feet extends up to 700 feet east of the mine pit, and up to 300 feet west of the mine pit. The predicted, approximate extent of

the 10 feet drawdown line extends to one of the three residences to the south of the mine property, across Woodlawn Road. It is noted that normal seasonal fluctuations in the groundwater table typically range from 5 to 10 feet.

Figure I2, Appendix I shows drawdown contours when the mine reaches its maximum depth of approximately 450 feet below original ground surface, after 80 years. Compared to the 40-year drawdown cone, the drawdown cone after 80 years of mining is more elongated and extends beyond the property boundary to the east, south, and west. The maximum extent of the areas where 20 feet of drawdown is predicted include 2,000 feet or less east of the property boundary, 1,400 feet or less west of the property boundary, and 1,200 feet or less south of the property line. Stevens Creek causes the drawdown cone to be steeper north of the mine pit than in other directions. Consequently, the maximum extent of the area where drawdown is predicted to exceed 20 feet extends approximately 400 feet north of the property boundary along Stevens Creek.

6.0 Significant Assumptions

- The assessment assumes that the proposed mine pit and operations would be configured as provided by Luck and outlined in this report.
- Aquifer parameters estimated with pump test, are generally representative of the area to be influenced by dewatering of the mine pit during active operations.

7.0 Limitations and Exceptions of Assessment

- S&ME used generally accepted industry practices to characterize site conditions. The assessment is based on data available at the time of the assessment. The estimates and opinions contained herein may need to be revised if significant additional information becomes available. Nevertheless, the opinions are well-founded and consistent with observed conditions at the site.
- Information obtained regarding off-site water supply wells was limited to that provided by the South Carolina Department of Health & Environmental Control, and interpretations made by S&ME using field observations and aerial photographic imagery.
- Subsurface data is always limited in its spatial coverage and subsurface hydraulic testing produces only approximate results.
- The techniques used in preparing the modeling evaluation were based upon generally accepted industry standards, the current understanding of site conditions, and literature values for some model parameters. Furthermore, numerical models are simplified approximations of a complex subsurface. Estimates and projections about groundwater and subsurface behavior have inherent and unavoidable uncertainties. This is particularly true for potential local-scale variations in bedrock depth, fracture distribution and subsurface permeability. By using good industry standards, generally accepted methods and best practices, we believe this assessment provides useful and reasonable guidance concerning expected site behavior. Model simulation data outputs should be viewed as predictions. Contour lines shown depicting future groundwater drawdowns scenarios should be viewed as reasonably anticipated conditions, not actual. Results for actual mine operations may be different from model simulated results.
- This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions of a type or at a specific location not evaluated.

- This evaluation was prepared by S&ME specifically for use by the Client and SCDHEC. Use of or reliance upon this information by any other party without express written permission granted by S&ME and the Client is not authorized and is completely at the user's risk.

8.0 CONCLUSIONS

S&ME has completed a hydrogeologic assessment at the approximate 402-acre site located in Edgefield County, South Carolina. The purpose of the assessment requested by Luck was to provide information regarding off-site water well use within a 0.5-mile radius of the limits of the proposed aggregate quarry pits, and to characterize site hydrogeologic conditions for the development of a groundwater model, to be utilized to predict impacts due to mine dewatering.

The water well survey performed identified three suspected water supply wells within a 0.5-mile radius of the edge of the proposed mine pits. Each of the three wells are associated with residential homes located south of the mine property, south of Woodlawn Road.

The assessment performed relied on a process that began with the development of a preliminary site conceptual model. The preliminary model was based on known or expected main features of geology, hydrogeology, mine pit location and development, and site-specific relationships between geologic structures and groundwater flow. The preliminary site conceptual model was utilized to develop field data collection needs for this assessment. Site specific data was collected to further characterize the hydrogeologic system and refine the site conceptual model. A standard computer aided three-dimensional mathematical model was then employed to provide predictive simulations of effects of future mine dewatering scenarios. The model used conservative assumptions about aquifer properties and is consistent with standard best practice in numerical finite-difference modeling of flow in porous and fractured media.

The proposed aggregate mining operations will use dry mining techniques; therefore, the proposed mining area will be dewatered via groundwater extraction points/sumps. S&ME understands that future mine operations will likely include reintroducing a portion of the groundwater extracted by dewatering into on-site or nearby stream segments, to lessen anticipated stream flow impacts.

S&ME modeled future mine pit development to the limits of mining relying upon basic outlines for a mine composed of a Phase 1 and Phase 2. The Phase 1 pit was modeled to reach its bottom elevation of 260 feet below ground surface after 20 years. The Phase 1 and Phase 2 pits were modeled to reach a combined bottom elevation of 460 feet below ground surface after 80 years.

The model predicted a limited drawdown cone slightly elongated in the east – west orientation. The model predicted extents of 20 feet of drawdown were greatest to the east, extending less than 2,000 feet beyond the mine property after 80 years and reaching the maximum mine depth. The model predicted extents of 20 feet of drawdown were limited to an area up to 700 feet east of the eastern property line and an area 300 feet west of the western property line, after 40 years. The areas east and west of the proposed mine property boundaries consist of undeveloped woodlands. The potential aquifer drawdown north of the mine property is limited due to the presence of Stevens Creek.

The area within approximately 0.5 miles of the proposed mine consists of undeveloped woodlands with only three homes visible from recent aerial photographs. The water well survey performed indicated three residences with

known or suspected water supply wells within a 0.5-mile radius of the edge of the proposed mine pits. The model predicted drawdown in the vicinity of these residences is on the order of 10 feet after 40 years of mine operation. The model predicted drawdown in the vicinity of these residences is on the order of 20 to 60 feet after 80 years of mine operation. Depending upon the total depth of these wells and the degree fracturing and orientation of fractures these well encountered, aquifer drawdown due to mine dewatering operations may or may not adversely affect use of these water wells.

In the Piedmont region of South Carolina, normal seasonal fluctuations in the water table aquifer can be on the order of 5 – 10 feet. Natural fluctuations in the water table influence all water wells. Therefore, predicted mine dewatering related drawdown of a similar order of magnitude may be relatively insignificant.

SCDHEC individual mine operating permits contain many Terms and Conditions, which typically include a requirement to report to SCDHEC and respond to a complaint concerning adverse impacts to neighboring wells. Should it be determined that mine dewatering activities at the mine are affecting a drinking water well or water supply well, the operator would be responsible for repairing, deepening, or re-drilling such wells, or providing a permanent water supply. Individual mine operating permit also often require monitoring of groundwater levels at points around the perimeter of the site, throughout the life of the mine. Monitoring actual drawdown conditions observed during the life of the mine provides SCDHEC and the mine operator with an early warning system that would allow for time to evaluate and respond to drawdown conditions that hold a potential for producing adverse impacts to off-site wells.

9.0 REFERENCES

Preliminary Digital Geologic Map of the Appalachian Piedmont and Blue Ridge, South Carolina Segment, U.S. Geological Survey Open-File Report 01-298

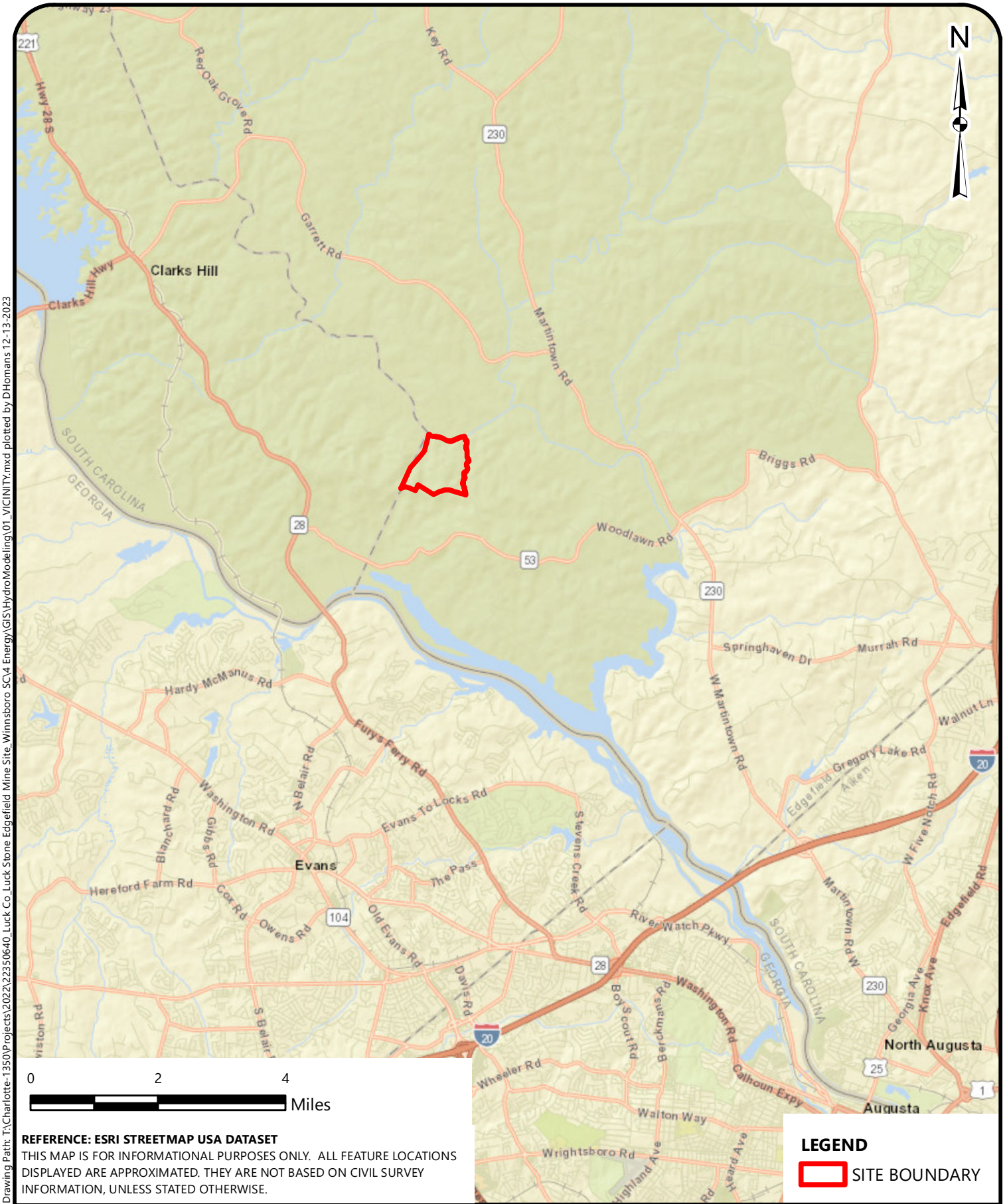
Geology of the Carolinas (1991), Horton, Jr. J. Wright, and Zulu A. Victor, University of Tennessee Press

Heath, R.C. (1989), Ground Water in the Piedmont: Proceedings of a conference on ground water in the Piedmont of the eastern United States: Clemson University, October 16-18, 1989: Clemson, South Carolina.

Heath, R.C. (1990), Basic Elements of Ground-Water Hydrology with Reference to Conditions in North Carolina: USGS Water-Resources Investigations Open File Report 80-44, page 86.

Appendices

Appendix I – Figures



0 2 4 Miles

REFERENCE: ESRI STREETMAP USA DATASET

THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

LEGEND

SITE BOUNDARY

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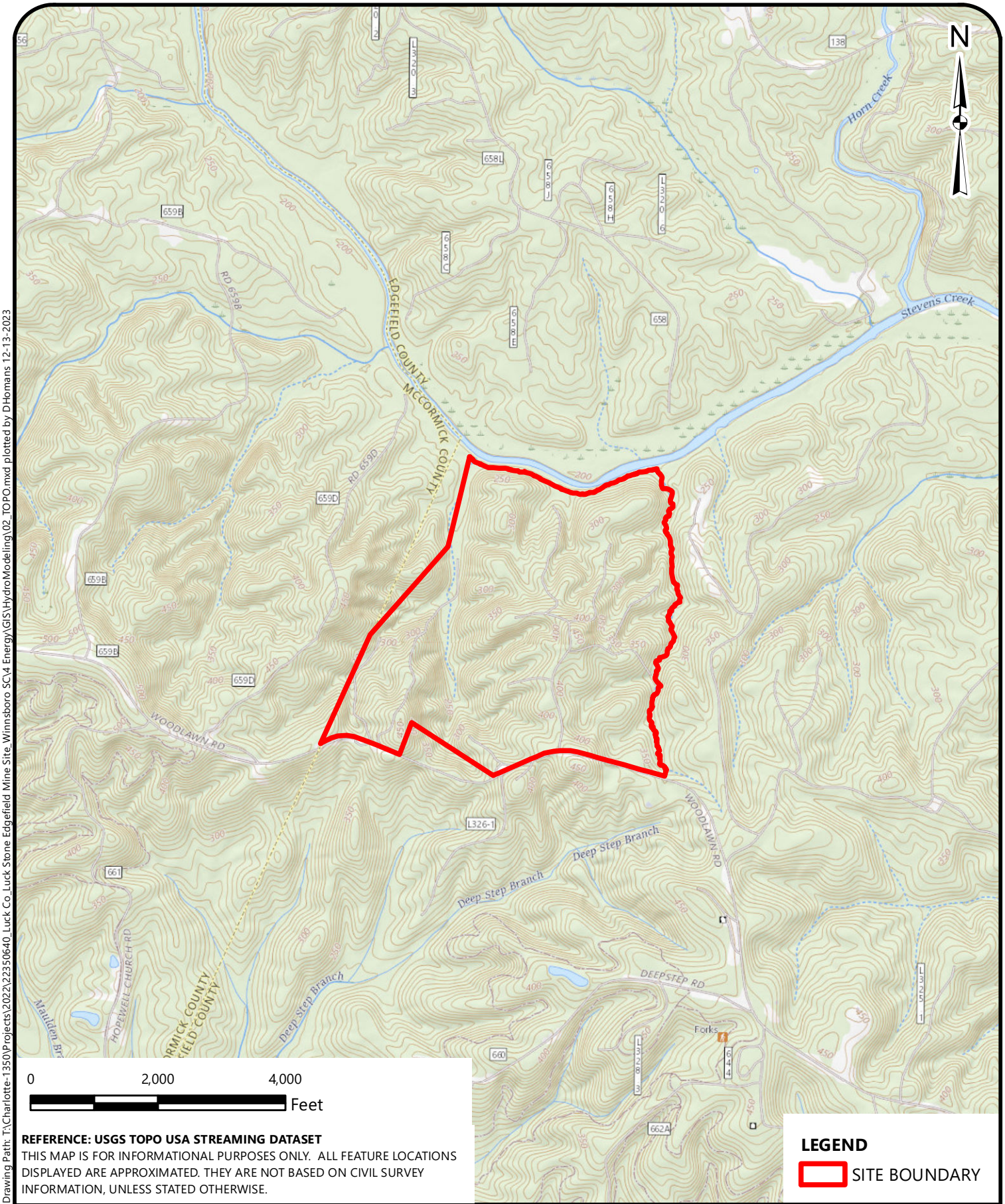
VICINITY MAP

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE:	1 " = 2.0 miles
DATE:	12-13-23
PROJECT NUMBER	22350640
FIGURE NO.	1



REFERENCE: USGS TOPO USA STREAMING DATASET

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LEGEND

SITE BOUNDARY

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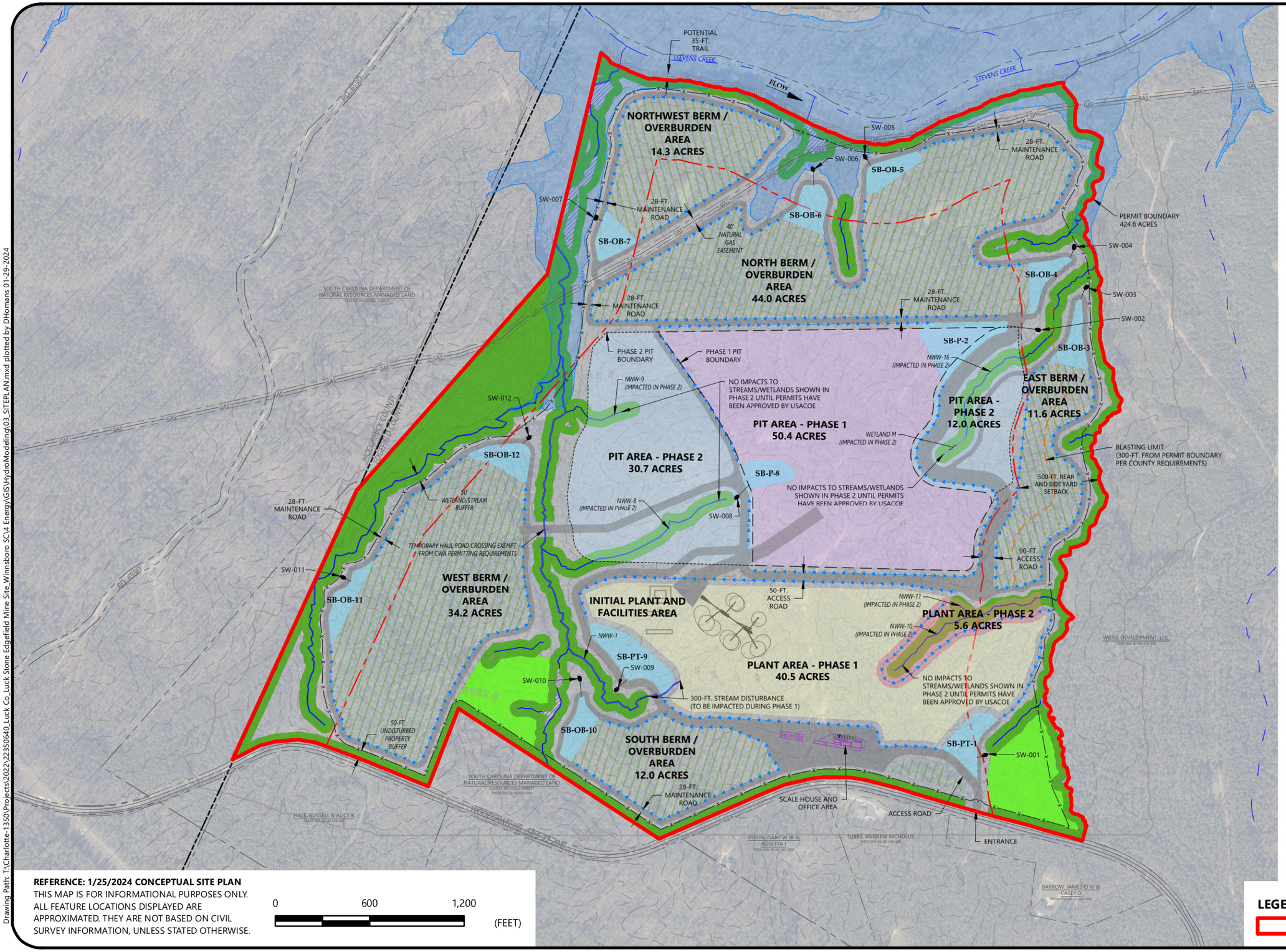
USGS TOPOGRAPHIC MAP

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE:	1 " = 2,000 '
DATE:	12-13-23
PROJECT NUMBER	22350640
FIGURE NO.	2



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REFERENCE: 1/25/2024 CONCEPTUAL SITE PLAN
THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

0 600 1,200 (FEET)

LEGEND
SITE BOUNDARY

CONCEPTUAL SITE PLAN

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE: 1 " = 600 '
DATE: 1-29-24
PROJECT NUMBER 22350640
FIGURE NO. 3

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REFERENCE: USGS STATE GEOLOGIC MAP COMPILATION (SGMC) GEODATABASE
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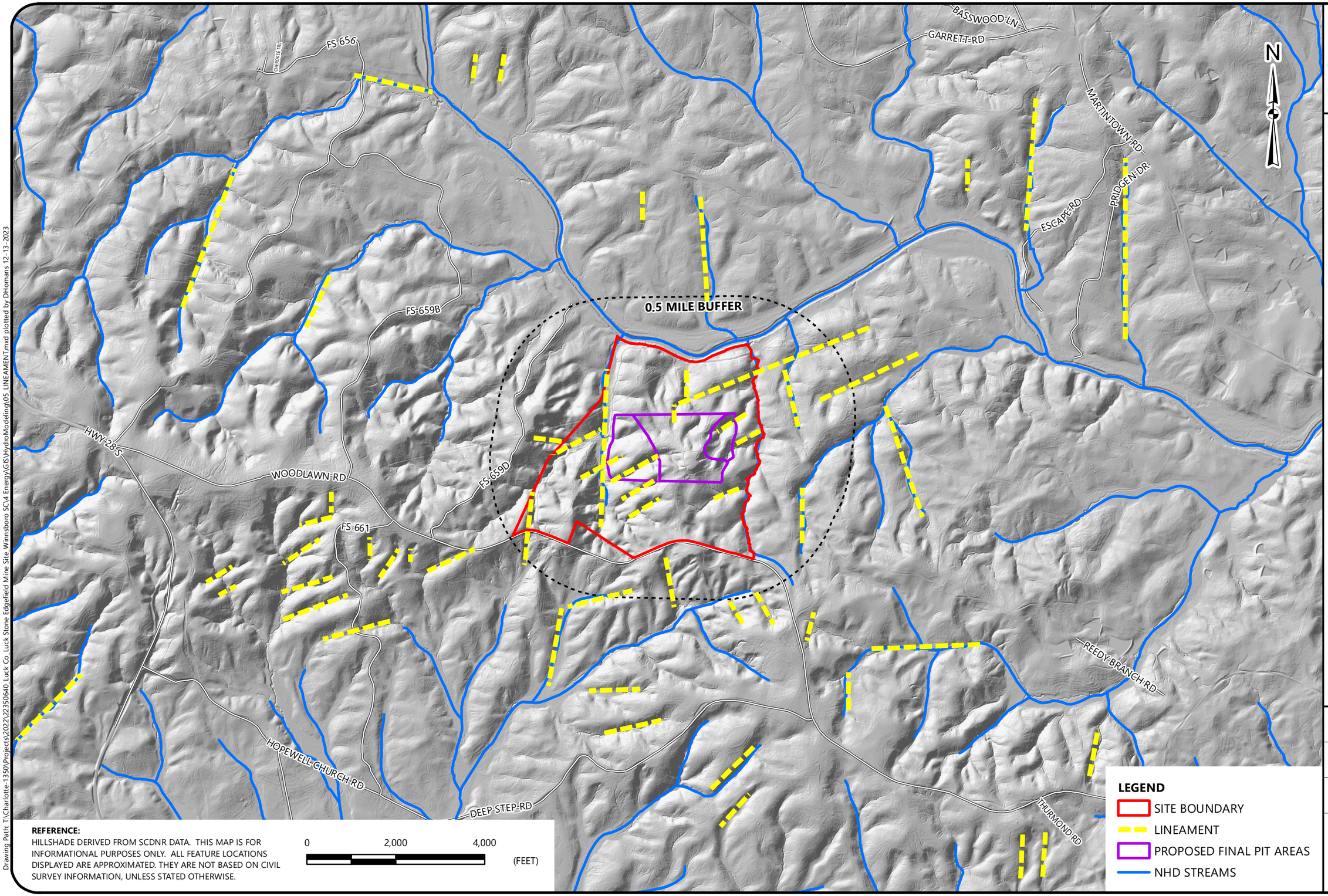
GEOLOGY MAP

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE: 1 " = 5,000 '
DATE: 12-13-23
PROJECT NUMBER 22350640

FIGURE NO. 4



LINEAMENT STUDY MAP

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE:
1 " = 2,000 '

DATE:
12-13-23

PROJECT NUMBER
22350640

FIGURE NO.
5

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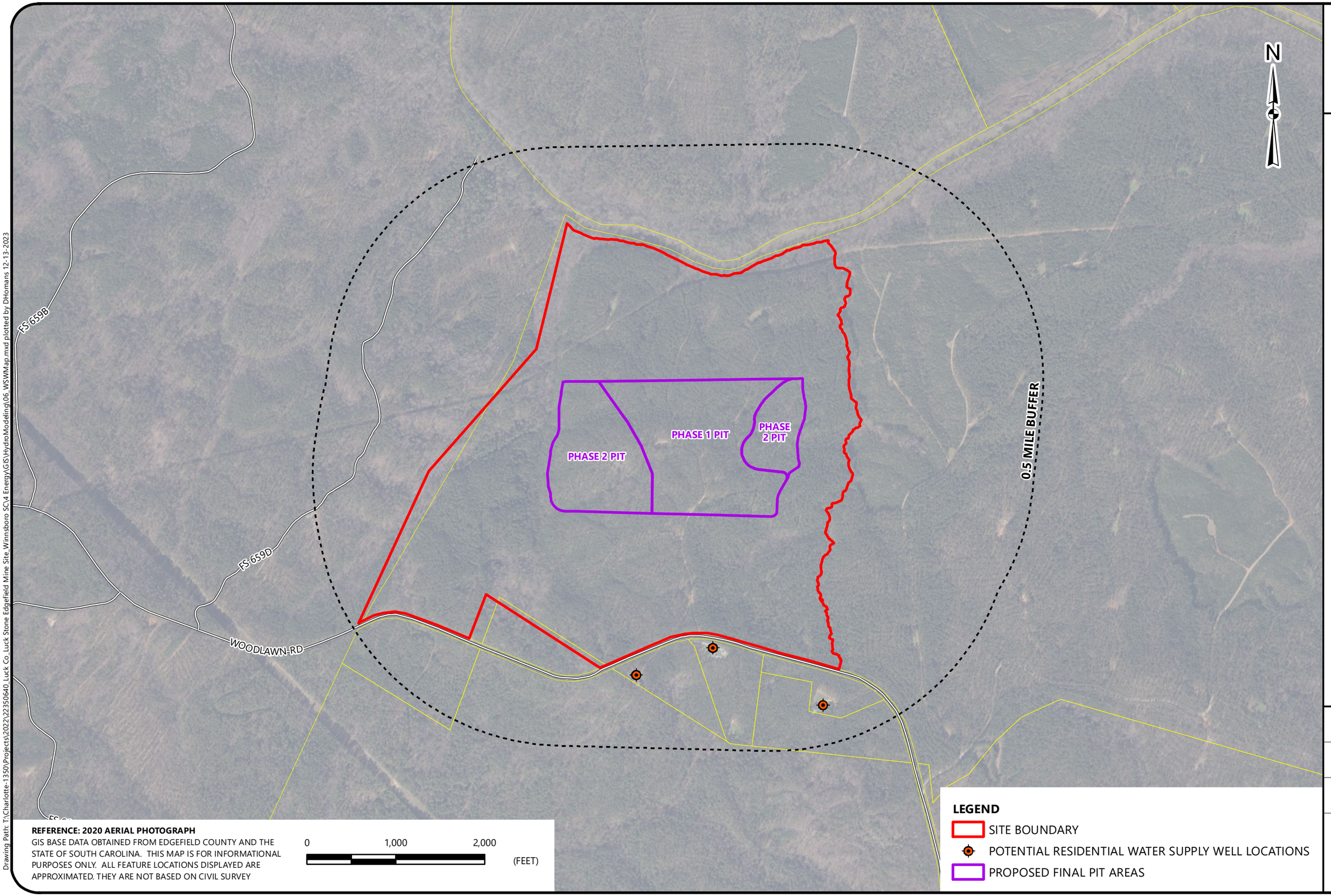

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GIS BASE DATA OBTAINED FROM EDGEFIELD COUNTY AND THE STATE OF SOUTH CAROLINA. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY

0 1,000 2,000 (FEET)

LEGEND
- SITE BOUNDARY
- POTENTIAL RESIDENTIAL WATER SUPPLY WELL LOCATIONS
- PROPOSED FINAL PIT AREAS

WATER SUPPLY WELL MAP

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE: 1 " = 1,000 '
DATE: 12-13-23
PROJECT NUMBER: 22350640
FIGURE NO.: 6

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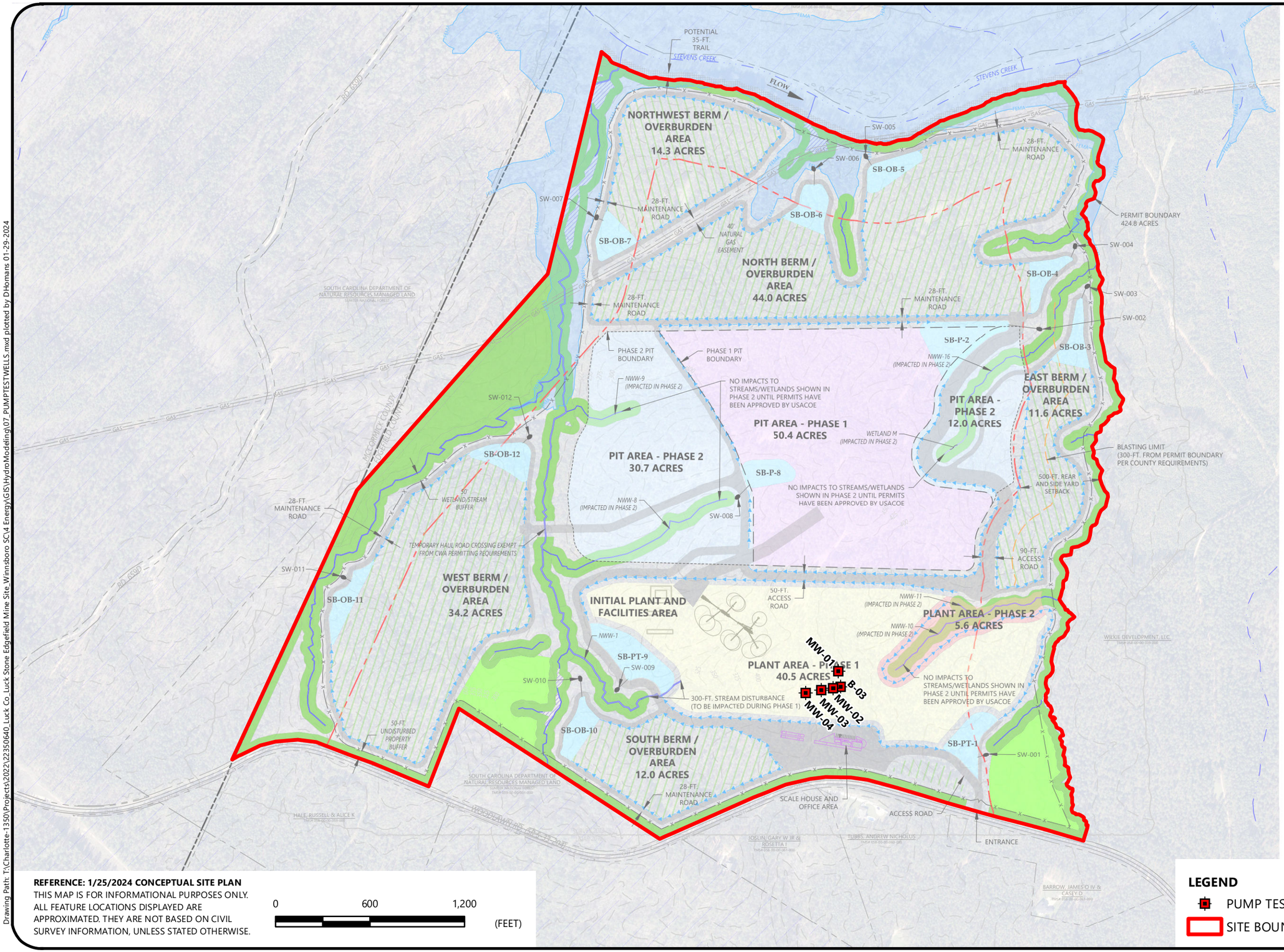

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LEGEND
- PUMP TEST WELL LOCATION
- SITE BOUNDARY

PUMP TEST WELL LOCATIONS

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE: 1 " = 600 '
DATE: 1-29-24
PROJECT NUMBER 22350640
FIGURE NO. 7

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MODEL DOMAIN BOUNDARY AND GRID

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

N

SCALE:
1 " = 4,000 '

DATE:
12-26-23

PROJECT NUMBER
22350640

FIGURE NO.
8

LEGEND

- SITE BOUNDARY
- MODEL DOMAIN BOUNDARY
- MODEL GRID LINES

REFERENCE: DRAWDOWN MODEL INFORMATION PROVIDED BY LOZONSKY&ASSOCIATES. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

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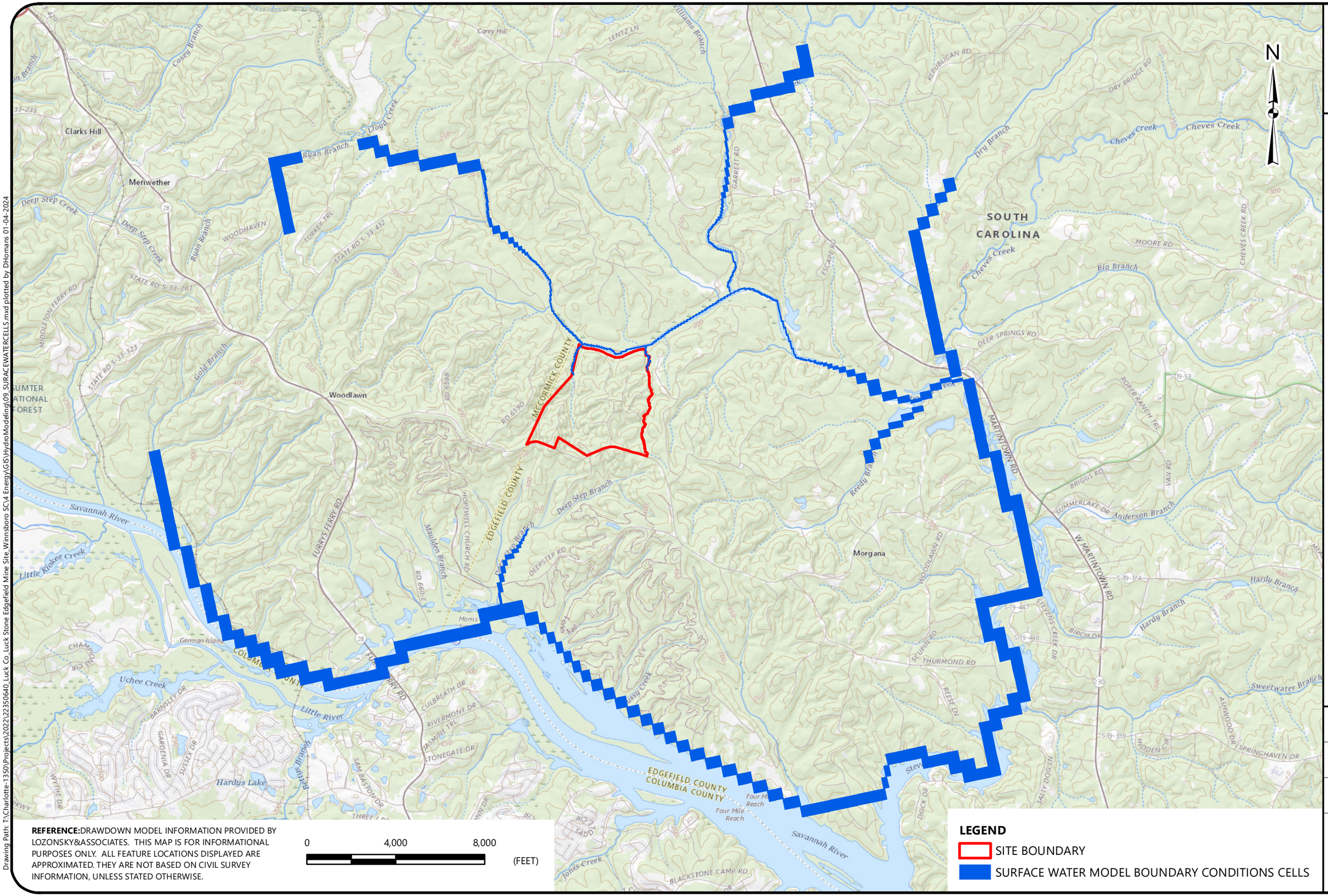

SURFACE WATER MODEL BONDARY AREAS

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE:
1 " = 4,000 '

DATE:
1-4-24

PROJECT NUMBER
22350640

FIGURE NO.
9

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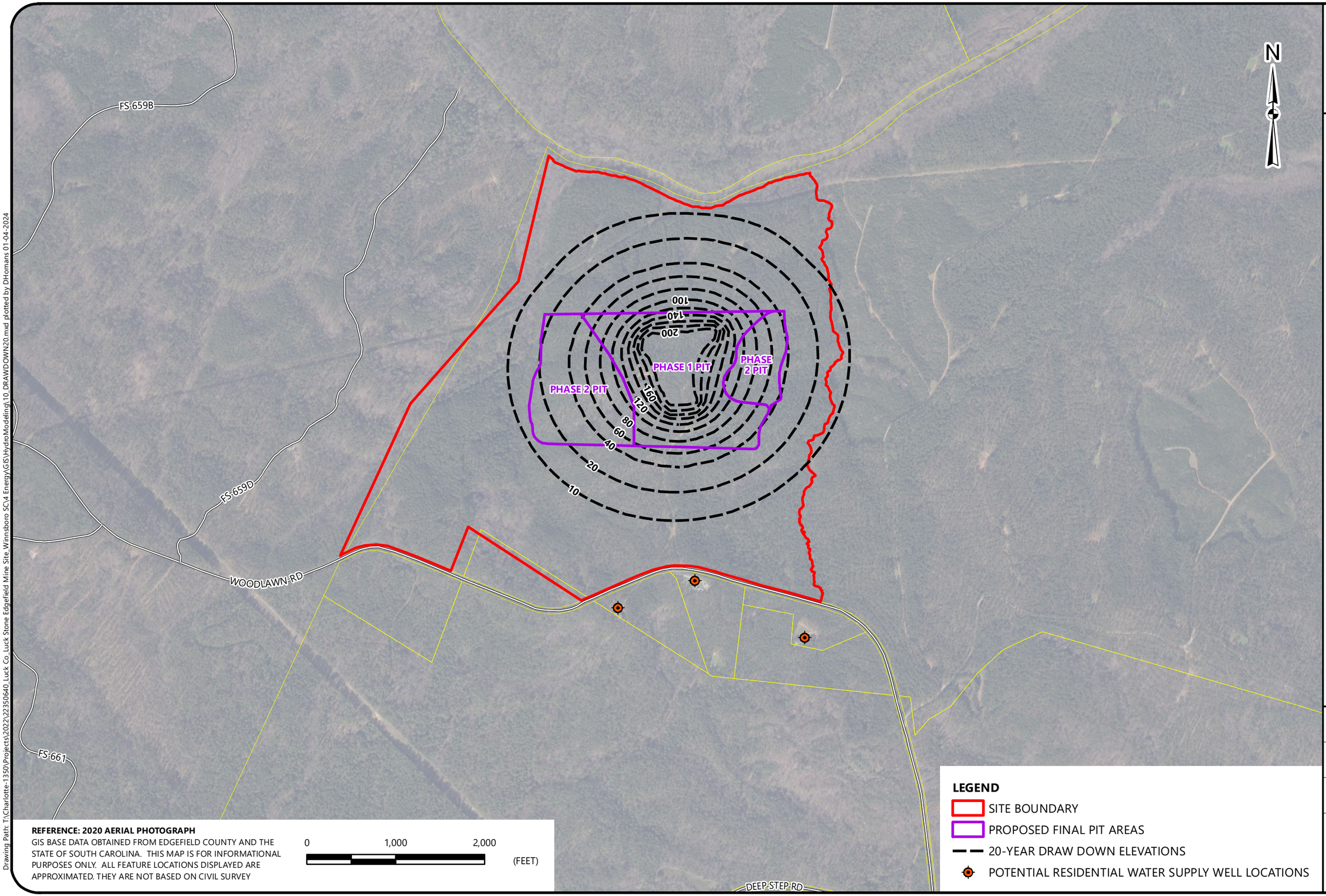

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DRAWDOWN CONTOURS AFTER 20 YEARS

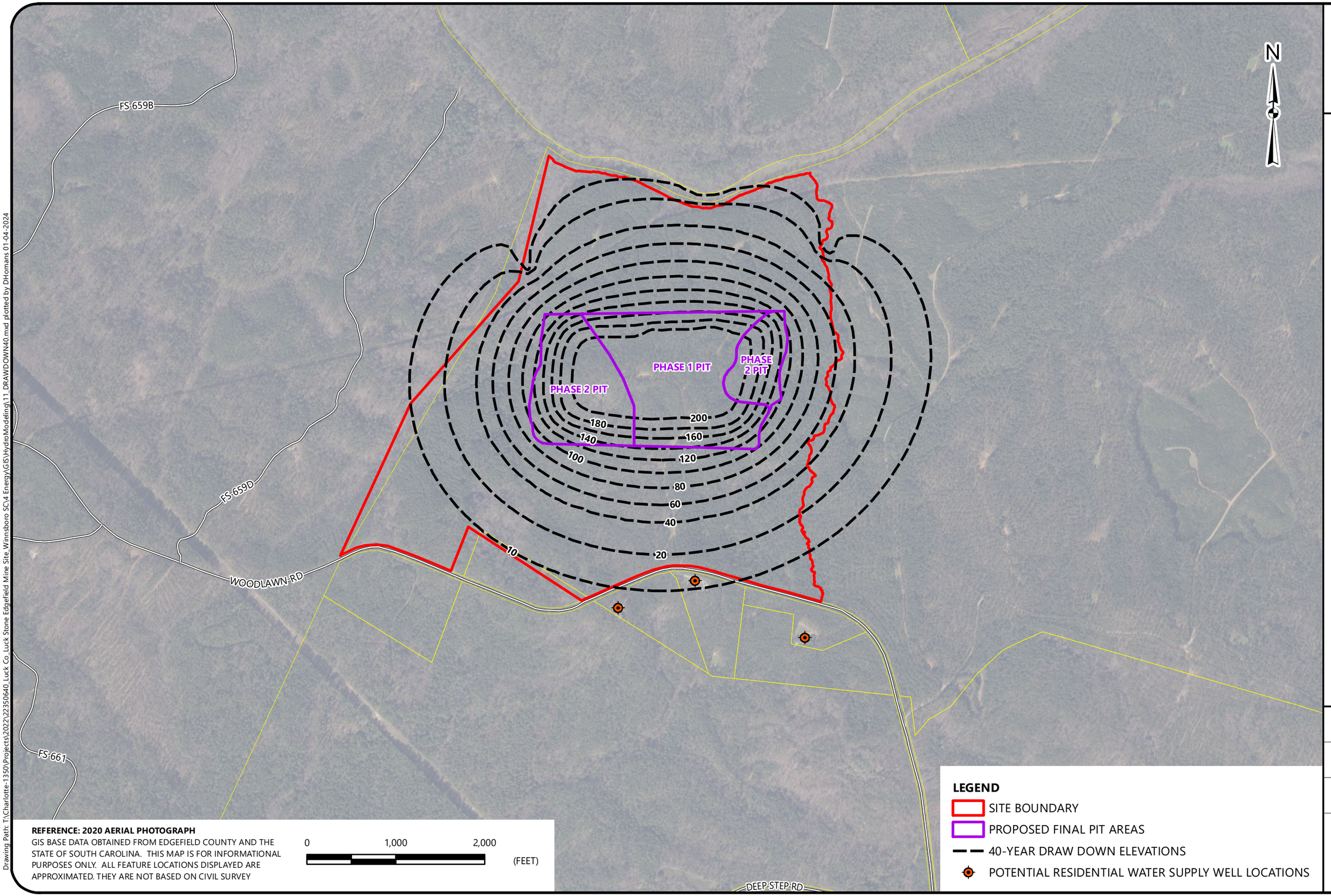
LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE:
1 " = 1,000 '

DATE:
1-4-24

PROJECT NUMBER
22350640

FIGURE NO.
10



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REFERENCE: 2020 AERIAL PHOTOGRAPH

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0 1,000 2,000 (FEET)

LEGEND

- SITE BOUNDARY
- PROPOSED FINAL PIT AREAS
- 40-YEAR DRAW DOWN ELEVATIONS
- POTENTIAL RESIDENTIAL WATER SUPPLY WELL LOCATIONS

DRAWDOWN CONTOURS AFTER 40 YEARS

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE: 1 " = 1,000 '

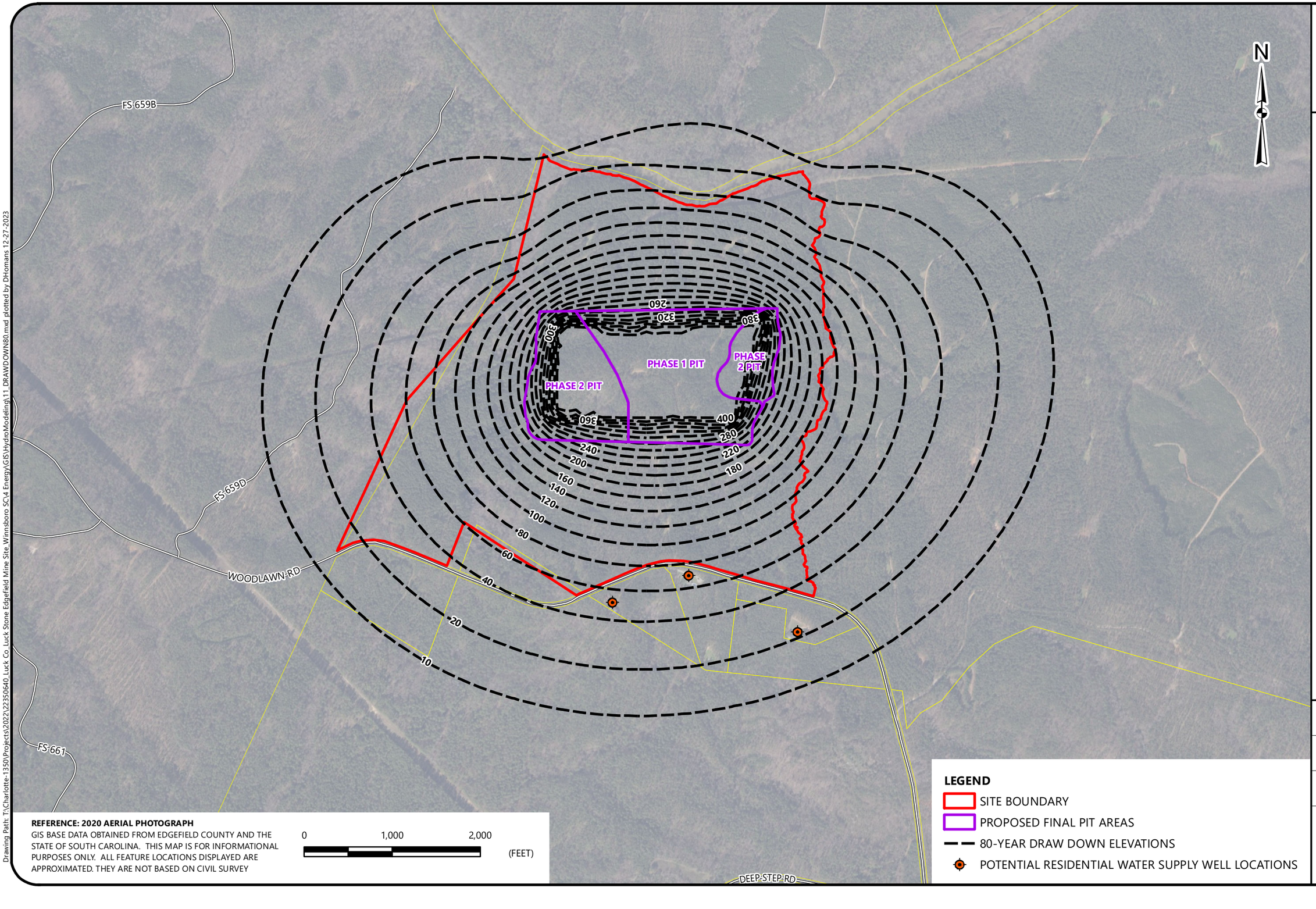
DATE: 1-4-24

PROJECT NUMBER 22350640

FIGURE NO. **11**

DRAWDOWN CONTOURS AFTER 80 YEARS

LUCK EDGEFIELD SITE
EDGEFIELD COUNTY, SOUTH CAROLINA



LEGEND

- SITE BOUNDARY
- PROPOSED FINAL PIT AREAS
- 80-YEAR DRAW DOWN ELEVATIONS
- POTENTIAL RESIDENTIAL WATER SUPPLY WELL LOCATIONS

REFERENCE: 2020 AERIAL PHOTOGRAPH
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0 1,000 2,000 (FEET)

SCALE: 1 " = 1,000 '

DATE: 12-27-23

PROJECT NUMBER 22350640

FIGURE NO. **12**

Drawing Path: T:\Charlotte-1350\Projects\2022\22350640_Luck Co_Luck Stone Edgefield Mine Site_Winnsboro SC\4 Energy\GIS\HydroModeling\11_DRAWDOWN80.mxd plotted by DHomans 12-27-2023

Appendix II – Receptor Survey

Lyndal Butler

From: Information, Freedom <foi@dhec.sc.gov>
Sent: Monday, February 13, 2023 9:46 AM
To: Lyndal Butler
Subject: Re: Freedom of Information form

Good morning,

I hope you are well! We have received your request through our FOI email, and it has been assigned FOI request number **871992**. It is currently pending assignment to a coordinator for further processing.

Due to our office receiving an increase number of requests, we are asking for future submissions, please submit your request once through our online portal or directly to our FOI Office email. Please see the link below:

https://scdhec.gov/about-dhec/freedom-information-act-requests

Kindest Regards,

Freedom of Information
S.C. Dept. of Health & Environmental Control
Office: (803)898-3882
Connect: www.scdhec.gov Facebook Twitter

From: Lyndal Butler <LButler@smeinc.com>
Sent: Friday, February 10, 2023 12:18 PM
To: Information, Freedom <foi@dhec.sc.gov>
Subject: RE: Freedom of Information form

Thank you for your great help this morning. I understand that Request #871174 is being researched at this time. On our second request, please see the completed and attached Request Form for Edgefield County. Please reply if the form is incomplete or if additional information is needed to submit the request. Thank you, Lyndal

Lyndal Butler
Environmental Scientist

Lyndal Butler

From: DHECFOI@sc.lmhostediq.com
Sent: Wednesday, July 19, 2023 9:22 AM
To: Lyndal Butler
Subject: Responding to your message

Re: Freedom of Information Request #876999
Microsoft Excel database reports for water wells in McCormick County, South Carolina

Dear Allan:

Your request for the above referenced information has been received by the Freedom of Information Center. The Freedom of Information staff are currently researching and compiling this information. You will be notified by our office when the research process is complete. DHEC will make the requested information available for review and copying to the extent it is not protected from disclosure pursuant to section 30-4-30 of the Freedom of Information Act.

If we are unable to locate files on a facility, based on the information submitted, you will be notified by mail.

Further inquiries regarding your request should include your above mentioned Freedom of Information Request Number. We can be reached at (803) 898 - 3882.

Sincerely,

Kristen Keller
Freedom of Information Office

Appendix III – Geophysical Survey Report

GEOPHYSICAL INVESTIGATION

Luck Stone Corporation
Proposed Edgefield Site
Edgefield, South Carolina

Prepared for:
S&ME, Inc.
8646 W. Market Street, Suite 105
Greensboro, NC 27409

January 20, 2023
Revised January 24, 2023

Prepared by:

THG Geophysics, Ltd.
4280 Old William Penn Highway
Murrysville, Pennsylvania 15668
724-325-3996
www.thggeophysics.com
THG Project No. 459-11217

TABLE OF CONTENTS

FIGURES

1.0 INTRODUCTION

1.1 BACKGROUND

The project site, located in Edgefield, South Carolina is undergoing preparations for development of a proposed rock quarry (**Figure 1**). As part of the site geotechnical investigation, S&ME, Inc. contracted with THG Geophysics, Ltd. to perform a series of geophysical surveys to investigate the subsurface of the site. The objective of this investigation was to image the subsurface of the site for potential bedrock fractures.

1.2 WORK SCOPE

THG collected eight (8) very low frequency (VLF) electromagnetic survey profiles and four (4) 2-D electrical resistivity (EI) profiles at the site (**Figure 2**). VLF was chosen as the best method to image the site based on its exceptional ability to locate bedrock fractures and its efficient data collection and high resolution. EI was chosen to supplement the characterization of fractures in the shallow subsurface. Geophysical data were collected January 6-9, 2023.

2.0 GEOPHYSICAL INVESTIGATION

2.1 ELECTRICAL IMAGING THEORY

2.1.1 Introduction

Electrical resistance is based upon Ohm's Law:

$$R = \frac{V}{I} \quad [ohms]$$

Where, resistance, **R**, is equal to the ratio of potential, **V** (volts) to current flow, **I** (amperes).

Resistivity is the measure of the resistance along a linear distance of a material with a known cross-sectional area. Consequently, resistivity is measured in Ohm-meters. This report presents the geophysical results as geo-electrical profiles of modeled resistance plotted as 2-dimensional profiles of distance and depth, in units of feet.

Electrical currents propagate as a function of three material properties (1) ohmic conductivity, (2) electrolytic conductivity, and (3) dielectric conductivity. Ohmic conductivity is a property exhibited by metals. Electrolytic conductivity is a function of the concentration of total dissolved solids and chlorides in the groundwater that exists in the pore spaces of a material. Dielectric conductivity is a function of the permittivity of the matrix of the material. Therefore, the matrix of most soil and bedrock is highly resistive. Of these three properties, electrolytic conductivity is the dominant material characteristic that influences the apparent resistivity values collected by this method. In general, resistivity values decrease in water-bearing rocks and soil with increasing:

a. Fractional volume of the rock occupied by groundwater;
b. Total dissolved solid and chloride content of the groundwater;
c. Permeability of the pore spaces; and,
d. Temperature.

Materials with minimal primary pore space (i.e., limestone, dolomite) or those which lack groundwater in the pore spaces will exhibit high resistivity values (Mooney, 1980). Highly porous, moist, or saturated soil will exhibit very low resistivity values.

In homogeneous ground, the apparent resistivity is the true ground resistivity; however, in heterogeneous ground, the apparent resistivity represents a weighted average of all formations through which the current passes. Many electrode placements (arrays) have been proposed (for examples see Reynolds, 1997); however, the Schlumberger array has proven to be an effective configuration for imaging bedrock. The following Schlumberger array was used in the collection of data:

$$R_i = \frac{\pi a^2}{b}\left[1 - \frac{b^2}{4a^2}\right]R; a = 5b$$

Where, R_i, resistivity, is related to the number of poles, ***n***, the separation distance between the current source and current sink ***b***, and the pole spacing, **a**.

2.1.2 Methods

The resistivity survey was performed using the ARES II multi-electrode cable system (GF Instruments, s.r.o., Brno, Czech Republic). The survey was conducted using stainless steel electrodes and passive multi-electrode cables with switch boxes. The locations of all 1seven EI profiles were recorded in the field using a Trimble Geo-7XH global positioning system (GPS).

2.1.3 PROCESSING

A forward modeling subroutine was used to calculate the apparent resistivity values using the EarthImager2D program (AGI, 2002). This program is based on the smoothness-constrained least-squares method (deGroot-Hedlin and Constable, 1990; Loke and Barker, 1996). The smoothness-constrained least-squares method is based upon the following equation:

$$J^T g = (J^T J + \mu F)d$$

Where, **F** is a function of the horizontal and vertical flatness filter, **J** is the matrix of partial derivatives, **μ** is the damping factor, **d** is the model perturbation vector, and **g** is the discrepancy vector.

The EarthImager2D program divides the subsurface 2-D space into a number of rectangular blocks. Resistivities of each block are then calculated to produce an apparent resistivity pseudo section. The pseudo section is compared to the actual measurements for consistency. A measure of the difference is given by the root-mean-squared (rms) error.

2.2 Very Low Frequency Electromagnetics

The VLF method can be used to find steeply dipping structures that differ from their surroundings with regard to electrical conductivity. VLF transmitters send out low frequency military radio signals (15-30 kHz). When the low frequency field emitted by one of the transmitters strikes an anomaly, secondary currents are created that can be read and recorded by the WADI VLF instrument. The VLF transmitter located in Cutler, Maine, was used for this survey and maintained acceptable average signal strength of 20.

When a field emitted by a transmitter strikes a body having low electrical resistance, secondary circuits are created in the body. Fraser filtering, a numeric algorithm is performed on the real part of the VLF data to enhance the anomaly indication. Fraser filtering is based upon the work of Karous and Hjelt (1983):

$$F_o = - 0.102\ H_{-3} + 0.059\ H_{-2} - 0.561\ H_{-1} + H_0 + 0.561\ H_1 - 0.059\ H_2 + 0.102\ H_3$$

Where; F_0 is the filtered result and H-3 to H3 are the original VLF data.

Eight VLF profiles were collected using an ABEM WADI VLF meter **(Figure 2).** Data were processed using Ramag VLF modeling software and locational data was collected using a Trimble GEO-7XH GPS.

2.3 QUALITY ASSURANCE AND CONTROL

The interpretation of geophysical data is not an exact science since responses to induced disturbance are affected by many phenomena including buried metals, operator error, precipitation, and net changes in ground saturation conditions. Some sources of spurious data can be overcome through a QA/QC program and use of multiple geophysical methods. The quality control program employed with this study included frequent checks of the equipment and daily calibrations. The QA/QC program indicates that all geophysical equipment functioned as designed during the survey.

3.0 GEOLOGY

The site is regionally located in the Western Piedmont region of South Carolina. The bedrock, known as the Savannah River terrain, is characterized as a suite of metamorphic tectonites consisting mainly of migmatitic gneiss and schist and metasedimentary rocks. The most common rock types include biotite-amphibole paragneiss, sillimanite schist, and quartzite (SCDNR, 2023).

4.0 GEOPHYSICAL ANALYSES

4.1 INTRODUCTION

Eight (8) VLF profiles were collected across the site in an orthogonal orientation (south-north and west-east). In order to efficiently survey the entire approximately 385-acre site, parallel VLF profiles were spaced approximately 600-1,000 feet from one another **(Figure 2).** The VLF profiles imaged to a depth of 300 feet below grade; however, this does not take into account topography.

VLF Profiles 1-4 were acquired in approximately south to north orientation and Profiles 5-8 were acquired in an approximately west to east orientation (**Figure 2**). All profiles were collected using a 32-foot (10-meter) station separation.

In addition to fractures, anomalies can be generated by cultural sources. For example, power lines, subsurface utilities and metal fencing can also cause very strong anomalies. One subsurface pipeline was identified running approximately west-east along the northern portion of the site; however, all VLF profiles were terminated before crossing the pipeline. The VLF data quality is very good.

Electrical imaging data were collected at four (4) locations across the site. Profiles were positioned and oriented to image strong VLF fractures. Each profile was collected using a 3-meter (9.84 feet) electrode spacing in various cable configurations (**Figure 3**). The resulting 2-D profiles were able to image to depths of 60 feet below grade; however, strong elevation variations across the site limited the penetration depth of some EI profiles. Additionally, dense vegetation and steep terrain limited the viable locations for EI testing **(Figure 2).**

Generally, individual geologic units have a common apparent resistivity value. Low apparent resistivity values are typically associated with soils, saturated materials, and highly weathered bedrock; whereas, high apparent resistivity values are associated with rock (also increasing with rock competence). Clay materials can exhibit a range of apparent resistivity from 1-20 Ohm-m, sand can exhibit a range from 20-200 Ohm-m, and metamorphic units can exhibit a range from 10-5,000 Ohm-m.

4.2 DISCUSSION

Numerous fractures are interpreted to exist within the site footprint (**Figure 2**). The site is characterized by having a regional north-south fracture located to the west of the property. The VLF data indicate that a series of southwest-northeast fractures are interpreted to cross the entire site.

Locally a graben fracture system was located along VLF Profile 2. These features are generally excellent for groundwater production; however, proposed boring B-4 is listed as 4th in potential for groundwater production as the first three (3) proposed boring locations are supported with EI profiles (**Figures 2 and 3**). Proposed boring B-3 is interpreted to intercept a vertical fracture.

Fractures were positioned on the map based on where they would theoretically intercept the ground surface. All interpreted fractures are located within the proposed pit and/or plant areas

of the proposed quarry. Most of the interpreted fractures extend across the entire site (**Figures 2 and 3**).

Apparent resistivity values at the project site range from approximately 10 to 100 Ohm-m; consistent with the geology of the site. Ground conditions were variable from location to location; ranging from metamorphic rock such as gneiss to sandy, silty and clayey soils. EI profiles were positioned to image deeper portions of strong VLF anomalies, consistent with depths likely reached during anticipated geotechnical drilling. The locations of interpreted fractures from EI profiles correlate well with the locations and interpreted dip of VLF-interpreted fractures (**Figures 2 and 3**).

Based on the results of this geophysical investigation, eight (8) proposed well locations have been identified. Three (3) proposed locations were chosen based on the EI fractures and the strongest VLF anomalies (Locations B-1, B-2, and B-3; **Figure 2**). Additionally, five (5) additional well locations, based solely on the VLF profiles, were identified (B-4, B-5, B-6, B-7, and B-8; **Figure 2**).

5.0 CONCLUSION

Two geophysical (VLF and EI) methods were used to identify subsurface fractures at the Edgefield, South Carolina site. The interpreted fractures at the Edgefield site trend southwest to northeast (**Figure 2**). Fracture dips were interpreted in both directions perpendicular, respectively, to the trend of a fracture.

Eight (8) proposed drilling locations were identified across the site; three (3) are supported by EI and VLF interpretations while five (5) additional locations are supported by VLF profile interpretation. Considering VLF anomaly strength and locations of EI anomalies, proposed drilling locations were limited to the pit and plant area.

Geophysical investigations are a non-invasive method of interpreting physical properties of the shallow earth using electrical, electromagnetic, or mechanical energy. This document contains geophysical interpretations of responses to induced or real-world phenomena. As such, the measured phenomenon may be impacted by variables not readily identified in the field that can result in a false-positive and/or false-negative interpretation. THG makes no representations or warranties as to the accuracy of the interpretations.

6.0 REFERENCES

AGI (2002). EarthImager Program. American Geosciences Inc., Austin Texas.

deGroot-Hedlin, C. and Constable, S. (1990), Occam's inversion to generate smooth, two-dimensional models from magnetotelluric data. Geophysics, V. 55, 1613-1624.

Karous and Hjelt (1983). Linear filtering of VLF dip-angle measurements: Geophysical Prospecting, v. 31, p. 782-794.

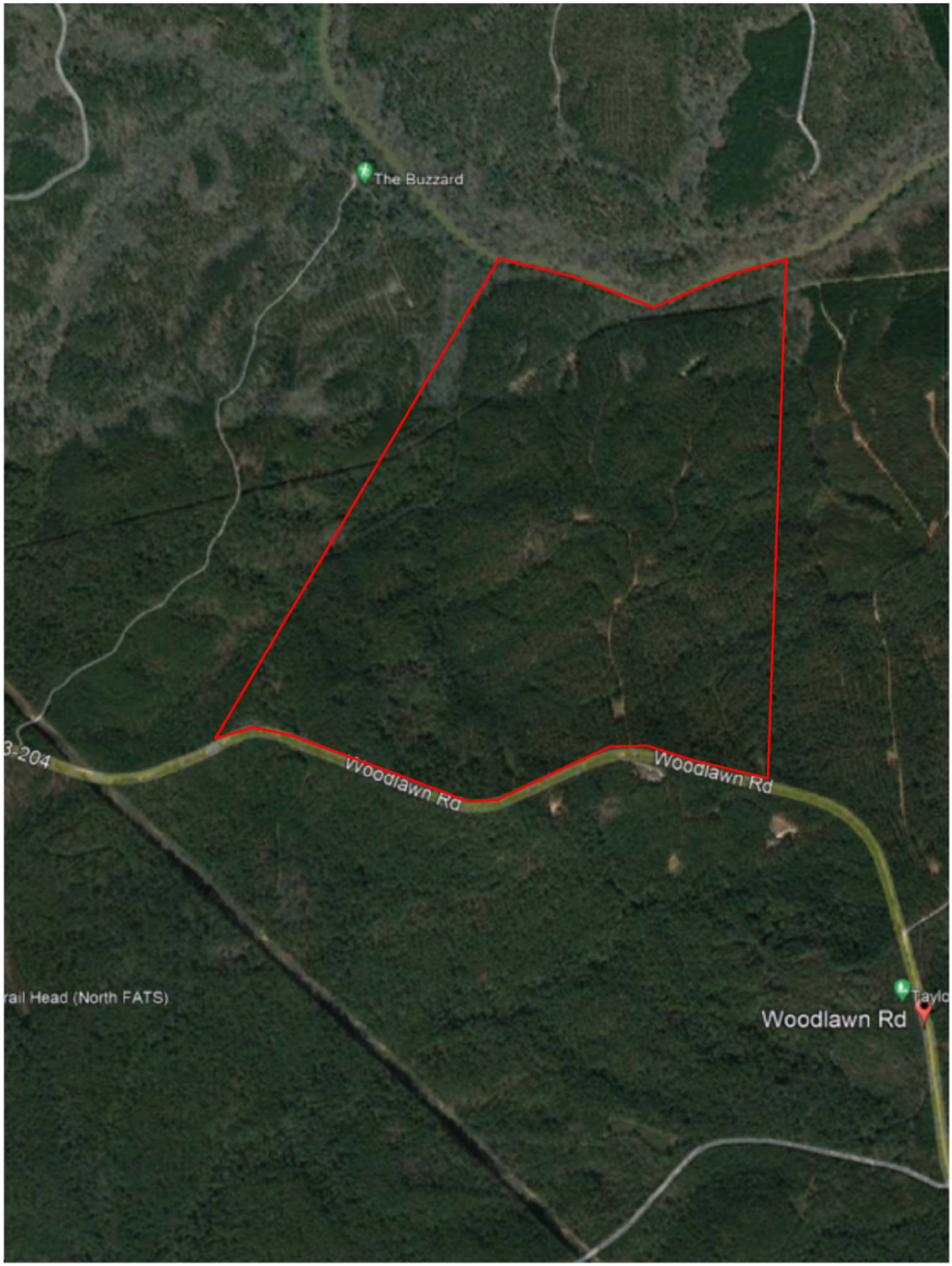
Loke, M. N., and Barker, R. D. (1996). Rapid least-squares inversion of apparent resistivity pseudosection by quasi-Newton method. Geophysical Prospecting, V. 44, 131-152.

Mooney, H. M. (1980). Handbook of Engineering Geophysics: Volume 2: Electrical Resistivity, Bison Instruments, Inc.

Reynolds, J. M. (1997). An Introduction to Applied and Environmental Geophysics. New York, NY, Wiley.

SCDNR(2019). Geology of South Carolina Online Map. South Carolina Department of Natural resources Survey. https://scdnr.maps.arcgis.com/apps/Viewer/index.html?appid=735411a2f5714f28a424422296f77bb1

Geophysical investigations are a non-invasive method of interpreting physical properties of the shallow earth using electrical, electromagnetic, or mechanical energy. This document contains geophysical interpretations of responses to induced or real-world phenomena. As such, the measured phenomenon may be impacted by variables not readily identified in the field that can result in a false-positive and/or false negative interpretations. THG makes no representations or warranties as to the accuracy of the interpretations.



Legend

Survey Area

HGEOPHYSICS
4210 Old William Penn Hwy
Murrysville, Pennsylvania 15668
(724) 325-3936 Fax: (724) 733-7301
www.hggeophysics.com

DRN	DJH	1/25/2023
DES	DJH	1/21/2023
CHK	PJH	1/25/2023
REV		
PROJ. MGR.	MLT	1/21/2023

SCALE: Not to Scale

SOURCE: Google Earth, 2022

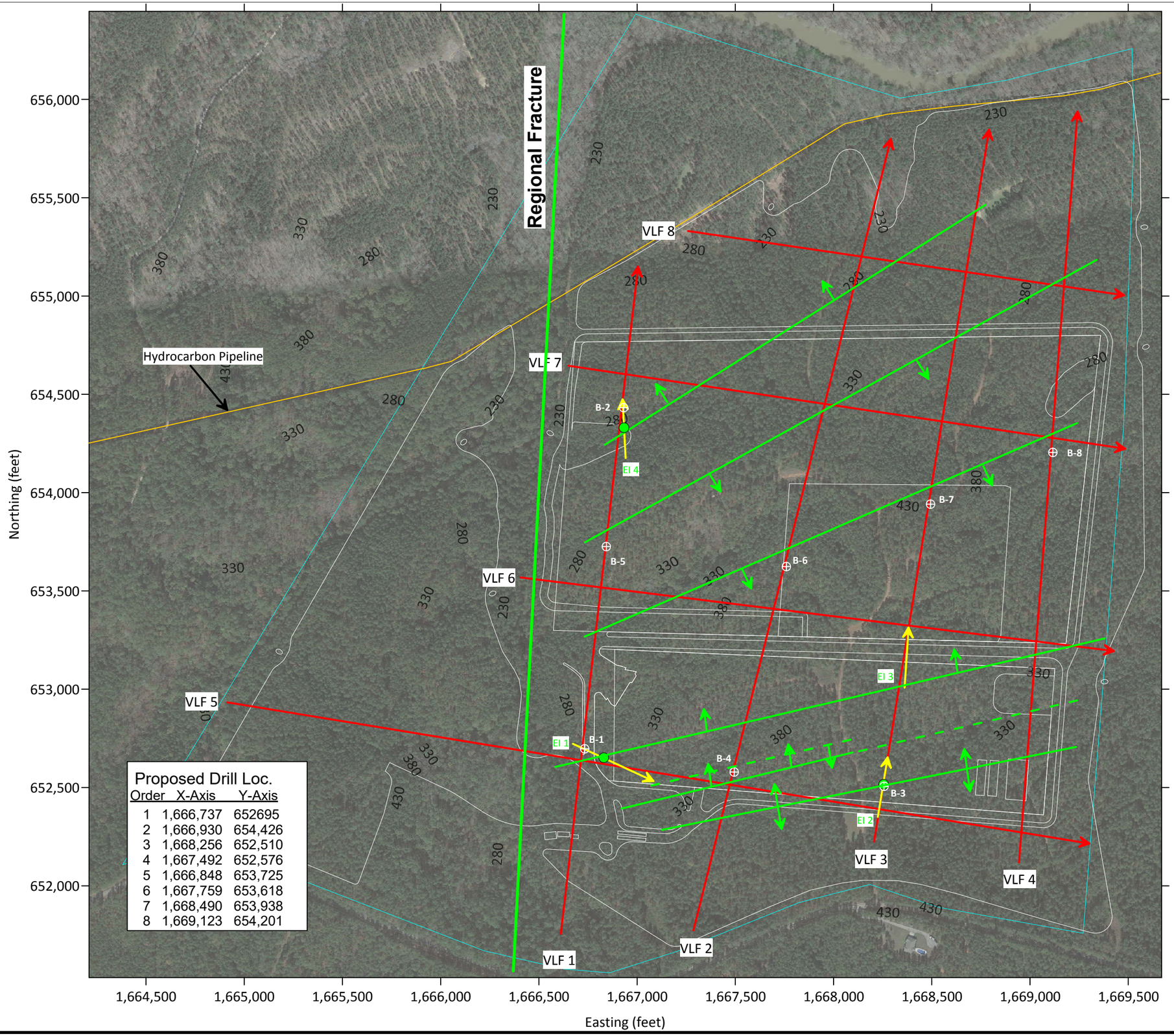
PREPARED FOR:

PROJECT:
Geophysical Survey
Proposed Luck Stone Quarry
Edgefield, South Carolina

DRAWING NO:
Figure 1
Site Location Map

PROJECT NO.
459-11217

SHEET TITLE:
DWG11217F1



Legend

- VLF Profile (arrow indicates direction)
- EI Profile (arrow indicates direction)
- Interpreted Fracture - EI Profile
- Interpreted Fracture and Dip Direction
- Interpolated Fracture Orientation
- Project Limits
- Proposed Boring Location (B-1)

True North Approximate

0 ft 500 ft 1000 ft 1500 ft

1 inch = 500 feet

Notes

Geophysical survey was conducted January 6-9, 2023 using an ABEM Wadi VLF meter and a GF Instruments ARES II electrical resistivity meter.

Real-time positioning of data using fully integrated Trimble Geo-7X global positioning system set to NAD 1983 US State Plane (South Carolina) coordinate system in US Survey feet.

Locations and depths are approximate.

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DES	MLT	1/20/23
CHK	PJH	1/20/23
REV		
PROJ. MGR.	MLT	1/20/23

SCALE: 1 in = 500 ft

SOURCE: Google Earth, 2023

PROJECT:
Geophysical Investigation
Luck Stone - Edgefield Site
Edgefield, South Carolina

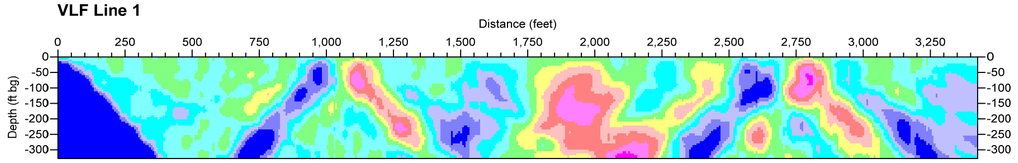
DRAWING NO.:
Figure 2
Geophyisical Survey Map

PREPARED FOR: LUCK STONE

PROJECT NO.: 459-11217

SHEET TITLE: DWG11217F2

VLF Line 1



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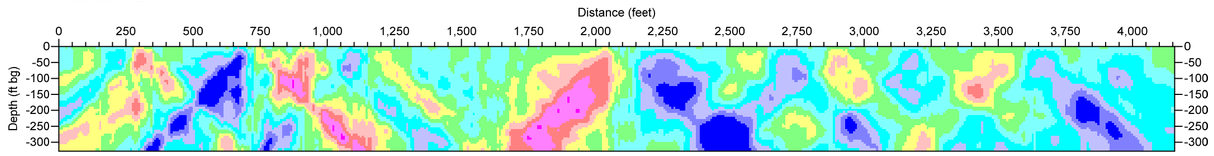
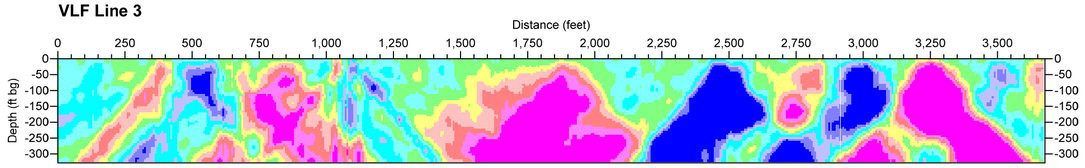
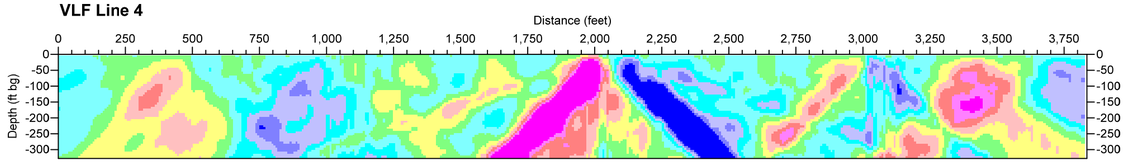


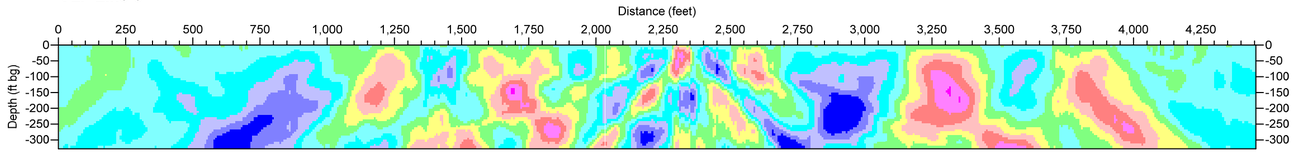
VLF Line 3



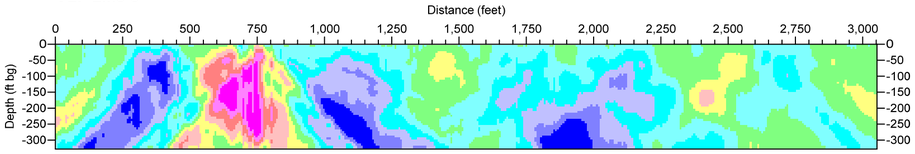
VLF Line 4



VLF Line 5



VLF Line 6



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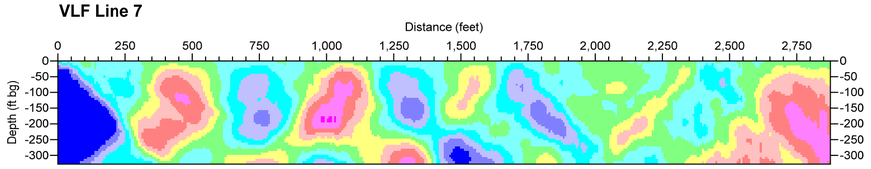
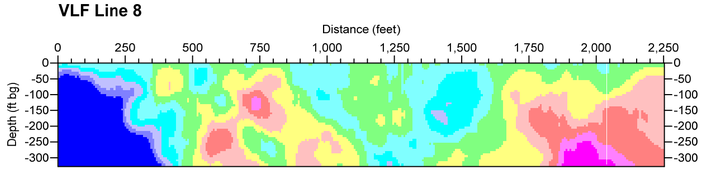
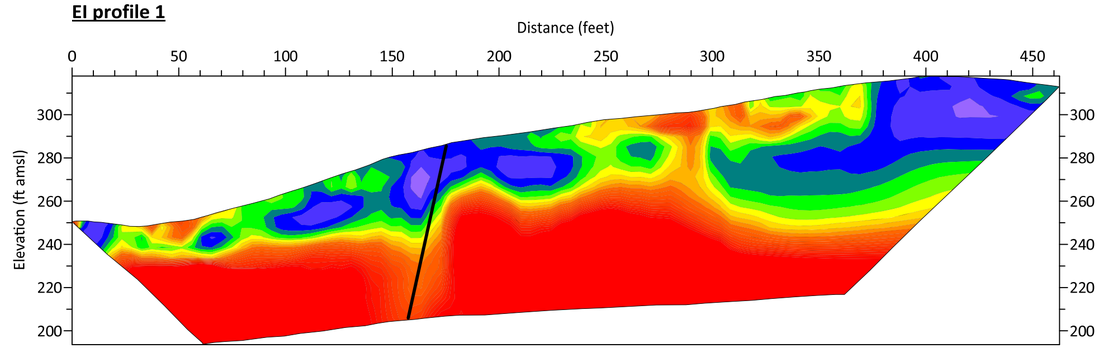


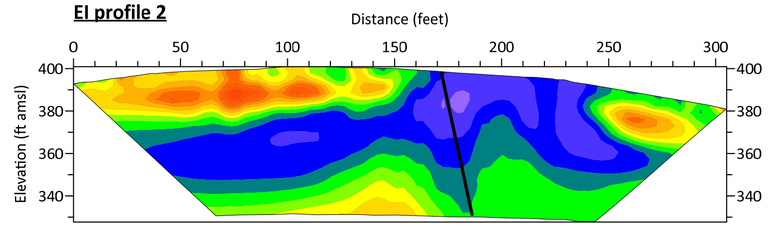
VLF Line 8



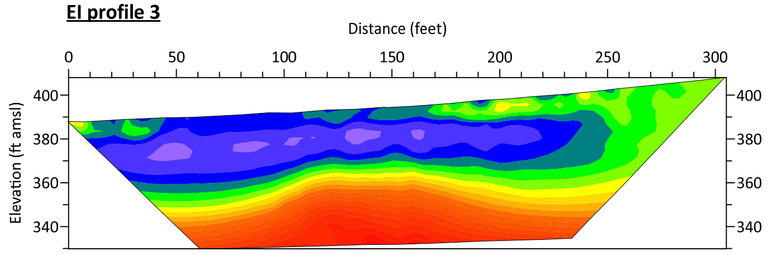
EI profile 1



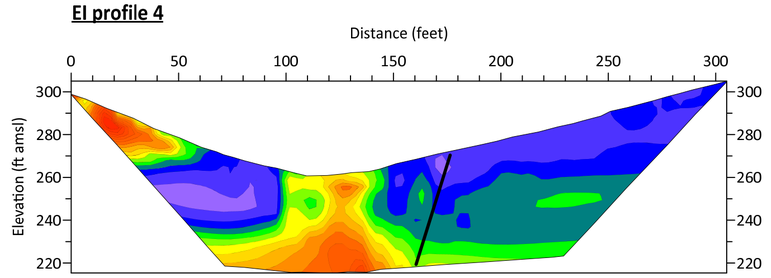
EI profile 2



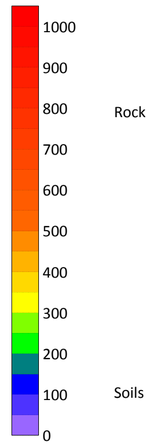
EI profile 3



EI profile 4



Apparent Resistivity (mS/m)



Legend

Interpreted Fracture

Notes

Geophysical survey was conducted January 6-9, 2023 using an ABEM Wadi VLF meter and a GF Instruments ARES II electrical resistivity meter.

Real-time positioning of data using fully integrated Trimble Geo-7X global positioning system set to NAD 1983 US State Plane (South Carolina) coordinate system in US Survey feet.

Locations and depths are approximate.

VLF Profile Scale:
- horizontal: 1 inch = 400 feet
- vertical: 1 inch = 328 feet

EI Profile Scale: 1 inch = 50 feet

THG GEOPHYSICS
4280 Old William Penn Hwy
Murrysville, Pennsylvania 15668
(724) 325-3996 Fax: (724) 733-7901
www.thggeophysics.com

DRN	MLT	1/20/23
DES	MLT	1/20/23
CHK	PJH	1/20/23
REV		
PROJ. MGR.	MLT	1/20/23

SCALE: 1 in = 500 ft

SOURCE: Google Earth, 2023

PREPARED FOR: LUCK STONE

PROJECT:
Geophysical Investigation
Luck Stone - Edgefield Site
Edgefield, South Carolina

DRAWING NO.:
Figure 3
VLF Data - Electrical Imaging Data

PROJECT NO.: 459-11217

SHEET TITLE: DWG11217F3

Appendix IV – Well Permit, Boring Logs and Well Records

June 16, 2023

Jason Wilkie
Wilkie Development LLC
PO Box 1350
Lexington, SC 29071

Re: Monitoring Well Approval Request received May 30, 2023
Woodlawn Rd
Edgefield County Site ID: SARRMW-00015

Dear Jason Wilkie:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced monitoring well approval request submitted May 30, 2023. The original monitoring well approval has been sent to Edmund Henriques of S&ME and a copy is enclosed for your records. Initial water level measurements from the wells should be submitted to my attention on or before August 30, 2023. 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).

- If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Robert Cole, Manager
Federal and State Site Assessment Section
Division of Site Assessment Remediation & Revitalization (SARR)
Bureau of Land & Waste Management

enc: Monitor well approval
cc: SCDHEC EA Midlands - Aiken

Monitoring Well Approval

Approval is hereby granted to:	Edmund Q.B. Henriques
On behalf of:	S&ME
Facility:	Woodlawn Rd
Site Identification:	SARRMW-00015
County:	Edgefield

This approval is for the installation of 5 piezometer(s). The wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated May 30, 2023. 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 the Department has approved another schedule. 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 5 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, Karen Morrison (803-898-0792, morrisks@dhec.sc.gov) 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: June 16, 2023 **Approval #: SARRMW-00015**

Robert Cole, Manager
Federal and State Site Assessment Section
Division of Site Assessment Remediation & Revitalization (SARR)
Bureau of Land & Waste Management

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: B-03 *Sheet 1 of 5*
DATE: 08/01/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 450.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
0					SANDY SILT (ML), red, medium grained, trace clays			0
8.0								-8
		Residuum			SILT (ML), orange red, dry, micaceous, trace clays			
15.0								-15
					SANDY SILT (ML), tan, medium grained, dry, micaceous			
28.0								-28
					PWR very weathered, quartz, biotite, plagioclase, muscovite, felsic			
42.0								-42
					PWR hornblende, biotite, quartz, mafic			
51.0								-51
					PWR slightly weathered, biotite, hornblende, quartz, plagioclase, intermediate			
63.0								-63
		Rock			GNEISS, quartz, hornblende, biotite, plagioclase, orthoclase, mafic - intermediate, Rock			
					Fracture: <1 GPM			
					Fracture: ~1 GPM			
100								-100

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: B-03 *Sheet 2 of 5*
DATE: 08/01/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 450.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
105					GNEISS, quartz, hornblende, biotite, plagioclase, orthoclase, mafic - intermediate, Rock			-105
110								-110
115					*Fracture: <1 GPM*			-115
120								-120
125								-125
130								-130
135								-135
140								-140
145								-145
150		Rock						-150
155								-155
160								-160
165								-165
170								-170
175	175.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic, Rock			-175
180								-180
185								-185
190	190.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic - intermediate, Rock			-190
195								-195
200								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: B-03 *Sheet 3 of 5*
DATE: 08/01/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 450.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
205					GNEISS, hornblende, biotite, plagioclase, quartz, mafic - intermediate, Rock			-205
210	210.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic, Rock			-210
215								-215
220								-220
225								-225
230								-230
235	235.0	Rock			GNEISS, hornblende, plagioclase, quartz, biotite, intermediate, Rock			-235
240								-240
245								-245
250								-250
255								-255
260								-260
265	265.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic, Rock			-265
270								-270
275								-275
280								-280
285								-285
290	290.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic - intermediate, Rock			-290
295								-295
300								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: B-03 *Sheet 4 of 5*
DATE: 08/01/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 450.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
305					GNEISS, hornblende, biotite, plagioclase, quartz, mafic - intermediate, Rock			-305
310	310.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic - intermediate, Rock			-310
315								-315
320								-320
325								-325
330								-330
335	335.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic, Rock			-335
340								-340
345								-345
350		Rock						-350
355								-355
360								-360
365								-365
370								-370
375	375.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic - intermediate, Rock			-375
380								-380
385	385.0				GNEISS, hornblende, biotite, plagioclase, quartz, mafic, Rock			-385
390								-390
395	395.0				GNEISS, quartz, plagioclase, hornblende, biotite, felsic - intermediate, Rock			-395
400								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: B-03 *Sheet 5 of 5*
DATE: 08/01/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 450.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
405	405.0	Rock			GNEISS, quartz, plagioclase, hornblende, biotite, felsic - intermediate, Rock			-405
410					GNEISS, hornblende, biotite, quartz, plagioclase, mafic, Rock			-410
415								-415
420								-420
425								-425
430								-430
435	435.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic - intermediate, Rock			-435
440								-440
445								-445
450	450.0				Bore Hole terminated at 450.0 feet			-450
455								-455
460								-460
465								-465
470								-470
475								-475
480								-480
485								-485
490								-490
495								-495
500								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-01 *Sheet 1 of 5*
DATE: 08/02/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
0					SANDY SILT (ML), red, medium grained, dry, trace clays			0
8.0					SANDY SILT (ML), orange tan, medium grained, dry			-5
15.0		Residuum			SILTY SAND (SM), tan, medium grained, dry			-15
20.0					POORLY GRADED SAND (SP), brown tan, coarse grained, dry, trace silts			-20
30.0					POORLY GRADED SAND (SP), brown, fine grained, dry, trace silts			-30
40.0					PWR tan orange, coarse grained, dry, trace silt			-40
71.0		Rock			GNEISS, quartz, plagioclase, biotite, hornblende, felsic - intermediate, slightly weathered, Rock *Fracture: <0.5 GPM*			-70
85.0					GNEISS, biotite, hornblende, quartz, plagioclase, mafic - intermediate, Rock			-85
100								-95

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-01 *Sheet 2 of 5*

DATE:	08/02/2023	**ELEVATION:**	**NOTES:** Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:		**DATUM:** NAVD88	
OPERATOR:	Wendell Lee Drilling Service	**DEPTH:** 400.0 ft	
HAMMER TYPE:		**CLOSURE:**	
DRILLING METHOD:		**LOGGED BY:** Cody McMechen	**LATITUDE:** **LONGITUDE:**
SAMPLING METHOD:		**PROJECT COORDINATE SYSTEM -** NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
105					GNEISS, biotite, hornblende, quartz, plagioclase, mafic - intermediate, Rock			-105
110								-110
115	115.0				GNEISS, biotite, hornblende, quartz, plagioclase, intermediate, Rock			-115
120								-120
125								-125
130								-130
135	135.0				GNEISS, plagioclase, quartz, biotite, hornblende, felsic - intermediate, Rock			-135
140								-140
145	145.0	Rock			GNEISS, biotite, quartz, hornblende, plagioclase, mafic - intermediate, Rock			-145
150								-150
155								-155
160								-160
165	165.0				GNEISS, biotite, quartz, hornblende, plagioclase, intermediate, Rock			-165
170								-170
175	175.0				GNEISS, biotite, quartz, hornblende, plagioclase, mafic - intermediate, Rock			-175
180								-180
185								-185
190								-190
195								-195
200								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-01 *Sheet 3 of 5*
DATE: 08/02/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
205					GNEISS, biotite, quartz, hornblende, plagioclase, mafic - intermediate, Rock			-205
210								-210
215								-215
220								-220
225								-225
230								-230
235	235.0	Rock			GNEISS, biotite, quartz, hornblende, plagioclase, intermediate, Rock			-235
240								-240
245								-245
250								-250
255	255.0				GNEISS, biotite, quartz, hornblende, plagioclase, mafic - intermediate, Rock			-255
260								-260
265								-265
270								-270
275								-275
280								-280
285								-285
290								-290
295								-295
300								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-01 *Sheet 4 of 5*
DATE: 08/02/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
305					GNEISS, biotite, quartz, hornblende, plagioclase, mafic - intermediate, Rock			-305
310								-310
315								-315
320								-320
325								-325
330								-330
335	335.0	Rock			GNEISS, biotite, quartz, hornblende, plagioclase, intermediate, Rock			-335
340								-340
345								-345
350								-350
355								-355
360								-360
365								-365
370								-370
375								-375
380								-380
385								-385
390	390.0				GNEISS, biotite, quartz, hornblende, plagioclase, mafic, Rock			-390
395								-395
400	400.0							

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-01 *Sheet 5 of 5*
DATE: 08/02/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
405					Bore Hole terminated at 400.0 feet			-405
410								-410
415								-415
420								-420
425								-425
430								-430
435								-435
440								-440
445								-445
450								-450
455								-455
460								-460
465								-465
470								-470
475								-475
480								-480
485								-485
490								-490
495								-495
500								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-02 *Sheet 1 of 5*
DATE: 08/02/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 402.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
0					SANDY SILT (ML), red, medium grained, dry, trace clays			0
7.0					SANDY SILT (ML), orange, medium grained, dry, trace clays			-5
15.0		Residuum			SANDY SILT (ML), orange tan, fine grained, dry			-15
25.0					SANDY SILT (ML), tan brown, medium grained, dry, micaceous			-25
35.0					PWR SILTY SAND (SM), brown, coarse grained, dry, micaceous, very weathered			-35
45.0					PWR biotite, quartz, plagioclase, hornblende, mafic			-45
53.0		Rock			GNEISS, quartz, plagioclase, biotite, hornblende, felsic - intermediate, slightly weathered			-53
					Fracture: ~1 GPM			-70
85.0					*Fracture: ~1 GPM*			-85
					GNEISS, quartz, plagioclase, hornblende, biotite, intermediate, mafic			-90
100								-95

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-02 *Sheet 2 of 5*
DATE: 08/02/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 402.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
105	105.0	Rock			GNEISS, quartz, plagioclase, hornblende, biotite, intermediate, mafic			-105
					GNEISS, quartz, plagioclase, hornblende, biotite, intermediate			
110								-110
115								-115
120								-120
125								-125
130								-130
135	135.0							-135
	138.0				GNEISS, quartz, plagioclase, hornblende, biotite, oxidation observed, intermediate			
140					***Fracture: ~2.5 GPM***			-140
145					GNEISS, quartz, plagioclase, hornblende, biotite, intermediate			-145
150	150.0							-150
					GNEISS, quartz, plagioclase, hornblende, biotite, felsic - intermediate			
155	155.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic			-155
160								-160
165	165.0				GNEISS, quartz, plagioclase, orthoclase, hornblende, biotite, felsic - intermediate			-165
170								-170
175	175.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic - intermediate			-175
180								-180
185								-185
190								-190
195								-195
200								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-02 *Sheet 3 of 5*
DATE: 08/02/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 402.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
205					GNEISS, hornblende, biotite, quartz, plagioclase, mafic - intermediate			-205
210								-210
215	215.0				GNEISS, hornblende, biotite, quartz, plagioclase, intermediate			-215
220								-220
225								-225
230								-230
235	235.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic			-235
240								-240
245								-245
250		Rock						-250
255								-255
260								-260
265								-265
270	270.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic - intermediate			-270
275								-275
280								-280
285								-285
290								-290
295								-295
300								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-02 *Sheet 4 of 5*
DATE: 08/02/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 402.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
305					GNEISS, hornblende, biotite, quartz, plagioclase, mafic - intermediate			-305
310	310.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic			-310
315								-315
320								-320
325								-325
330								-330
335	335.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic - intermediate			-335
340								-340
345								-345
350	350.0	Rock			GNEISS, hornblende, biotite, quartz, plagioclase, mafic			-350
355								-355
360								-360
365								-365
370								-370
375								-375
380								-380
385								-385
390	390.0				GNEISS, quartz, plagioclase, hornblende, biotite, felsic - intermediate			-390
395								-395
400								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-02 *Sheet 5 of 5*

DATE:	08/02/2023	**ELEVATION:**	**NOTES:** Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:		**DATUM:** NAVD88	
OPERATOR:	Wendell Lee Drilling Service	**DEPTH:** 402.0 ft	
HAMMER TYPE:		**CLOSURE:**	
DRILLING METHOD:		**LOGGED BY:** Cody McMechen	**LATITUDE:** **LONGITUDE:**
SAMPLING METHOD:		**PROJECT COORDINATE SYSTEM -** NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
402.0		Rock			GNEISS, quartz, plagioclase, hornblende, biotite, felsic - intermediate Bore Hole terminated at 402.0 feet			

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-03 *Sheet 1 of 5*
DATE: 08/03/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
0					SANDY SILT (ML), red, medium grained, dry, trace clays			0
8.0					SANDY SILT (ML), tan brown, medium grained			-8
17.0		Residuum			POORLY GRADED SAND (SP), tan brown, fine grained, trace silt			-17
40.0					PWR tan orange brown, coarse grained, very weathered, felsic			-40
50.0					PWR black gray brown, fine grained, very weathered, mafic			-50
68.0					GNEISS, quartz, plagioclase, biotite, hornblende, mafic - intermediate, slightly weathered *Fracture: <0.1 GPM*			-68
75.0		Rock			GNEISS, quartz, plagioclase, biotite, hornblende, intermediate *Fracture: <0.1 GPM*			-75
90.0					GNEISS, hornblende, biotite, quartz, plagioclase, mafic			-90
100								-100

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-03 *Sheet 2 of 5*
DATE: 08/03/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
105					GNEISS, hornblende, biotite, quartz, plagioclase, mafic ***Fracture: <0.25 GPM***			-105
110								-110
115								-115
120								-120
125	125.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic - intermediate			-125
130								-130
135	135.0				GNEISS, hornblende, biotite, quartz, plagioclase, mafic - intermediate			-135
140								-140
145								-145
150		Rock						-150
155								-155
160								-160
165								-165
170								-170
175								-175
180								-180
185								-185
190								-190
195	195.0				GNEISS, quartz, plagioclase, biotite, hornblende, intermediate			-195
200								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-03 *Sheet 3 of 5*
DATE: 08/03/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
205					GNEISS, quartz, plagioclase, biotite, hornblende, intermediate			-205
210								-210
215								-215
220								-220
225								-225
230								-230
235								-235
240								-240
245								-245
250		Rock						-250
255	255.0				GNEISS, quartz, plagioclase, biotite, hornblende, felsic - intermediate			-255
260								-260
265								-265
270	270.0				GNEISS, quartz, plagioclase, biotite, hornblende, intermediate			-270
275	275.0				GNEISS, quartz, plagioclase, biotite, hornblende, felsic - intermediate			-275
280	280.0				GNEISS, quartz, plagioclase, biotite, hornblende, intermediate, Rock			-280
285								-285
290								-290
295								-295
300								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-03 *Sheet 4 of 5*
DATE: 08/03/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
305					GNEISS, quartz, plagioclase, biotite, hornblende, intermediate, Rock			-305
310								-310
315								-315
320								-320
325								-325
330								-330
335	335.0				GNEISS, quartz, plagioclase, biotite, hornblende, mafic - intermediate, Rock			-335
340								-340
345								-345
350		Rock						-350
355								-355
360								-360
365								-365
370								-370
375								-375
380								-380
385								-385
390								-390
395								-395
400	400.0							

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-03 *Sheet 5 of 5*
DATE: 08/03/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
405					Bore Hole terminated at 400.0 feet			-405
410								-410
415								-415
420								-420
425								-425
430								-430
435								-435
440								-440
445								-445
450								-450
455								-455
460								-460
465								-465
470								-470
475								-475
480								-480
485								-485
490								-490
495								-495
500								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-04 *Sheet 1 of 5*

DATE:	08/04/2023	**ELEVATION:**	
EQUIPMENT:		**DATUM:** NAVD88	
OPERATOR:	Wendell Lee Drilling Service	**DEPTH:** 400.0 ft	
HAMMER TYPE:		**CLOSURE:**	
DRILLING METHOD:		**LOGGED BY:** Cody McMechen	
SAMPLING METHOD:		**PROJECT COORDINATE SYSTEM -** NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

NOTES: Characterization based on air hammer cuttings.
Estimated yields in gallons per minute (gpm) are cumulative.
Casing: 6-5/8 inch diameter stainless steel.

LATITUDE: **LONGITUDE:**

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
0					SANDY SILT (ML), red, dry, trace clay			0
10.0					SANDY SILT (ML), orange red, dry			-10
18.0		Residuum			SILTY SAND (SM), brown tan orange, medium grained, dry			-20
38.0					PWR SILTY SAND (SM), tan brown, coarse grained, dry, very weathered			-40
48.0								-45
50.0					PWR SILTY SAND (SM), tan brown, coarse grained, dry			-50
					GNEISS, plagioclase, quartz, biotite, hornblende, intermediate, Rock			-55
65.0		Rock			GNEISS, plagioclase, quartz, biotite, hornblende, intermediate, Rock *Fracture: <1 GPM*			-65
95.0					GNEISS, plagioclase, quartz, biotite, hornblende, oxidation observed, felsic - intermediate, Rock			-95
100								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-04 *Sheet 2 of 5*
DATE: 08/04/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
105					GNEISS, plagioclase, quartz, biotite, hornblende, oxidation observed, felsic - intermediate, Rock			-105
110					*Fracture: <1 GPM*			-110
115	115.0				GNEISS, plagioclase, quartz, biotite, hornblende, intermediate, Rock			-115
120								-120
125								-125
130								-130
135					***Fracture: ~ 6 GPM***			-135
140								-140
145								-145
150		Rock						-150
155	155.0				GNEISS, plagioclase, quartz, biotite, hornblende, mafic - intermediate, Rock			-155
160								-160
165								-165
170								-170
175								-175
180								-180
185	185.0				GNEISS, plagioclase, quartz, biotite, hornblende, intermediate, Rock			-185
190								-190
195	195.0				GNEISS, plagioclase, quartz, biotite, hornblende, felsic - intermediate, Rock			-195
200								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-04 *Sheet 3 of 5*

DATE:	08/04/2023	**ELEVATION:**	**NOTES:** Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:		**DATUM:** NAVD88	
OPERATOR:	Wendell Lee Drilling Service	**DEPTH:** 400.0 ft	
HAMMER TYPE:		**CLOSURE:**	
DRILLING METHOD:		**LOGGED BY:** Cody McMechen	**LATITUDE:** **LONGITUDE:**
SAMPLING METHOD:		**PROJECT COORDINATE SYSTEM -** NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
205	205.0	Rock			GNEISS, plagioclase, quartz, biotite, hornblende, felsic - intermediate, Rock			-205
210					GNEISS, plagioclase, quartz, biotite, hornblende, mafic - intermediate, Rock			-210
215								-215
220								-220
225								-225
230								-230
235								-235
240								-240
245								-245
250								-250
255								-255
260								-260
265	265.0				GNEISS, plagioclase, quartz, biotite, hornblende, mafic - intermediate, Rock			-265
270								-270
275								-275
280	279.0				GNEISS, plagioclase, quartz, biotite, hornblende, intermediate, Rock			-280
285								-285
290	290.0				GNEISS, plagioclase, quartz, biotite, hornblende, felsic - intermediate, Rock			-290
295								-295
300								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-04 *Sheet 4 of 5*
DATE: 08/04/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
305					GNEISS, plagioclase, quartz, biotite, hornblende, felsic - intermediate, Rock			-305
310	310.0							-310
					GNEISS, plagioclase, quartz, biotite, hornblende, intermediate, Rock			
315								-315
320								-320
325								-325
330	330.0							-330
					GNEISS, plagioclase, quartz, biotite, hornblende, mafic - intermediate, Rock			
335								-335
340								-340
345								-345
350	350.0	Rock						-350
					GNEISS, plagioclase, quartz, biotite, hornblende, intermediate, Rock			
355								-355
360								-360
365								-365
370								-370
375								-375
380								-380
385								-385
390	390.0							-390
					GNEISS, plagioclase, quartz, biotite, hornblende, felsic - intermediate, Rock			
395								-395
400	400.0							

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

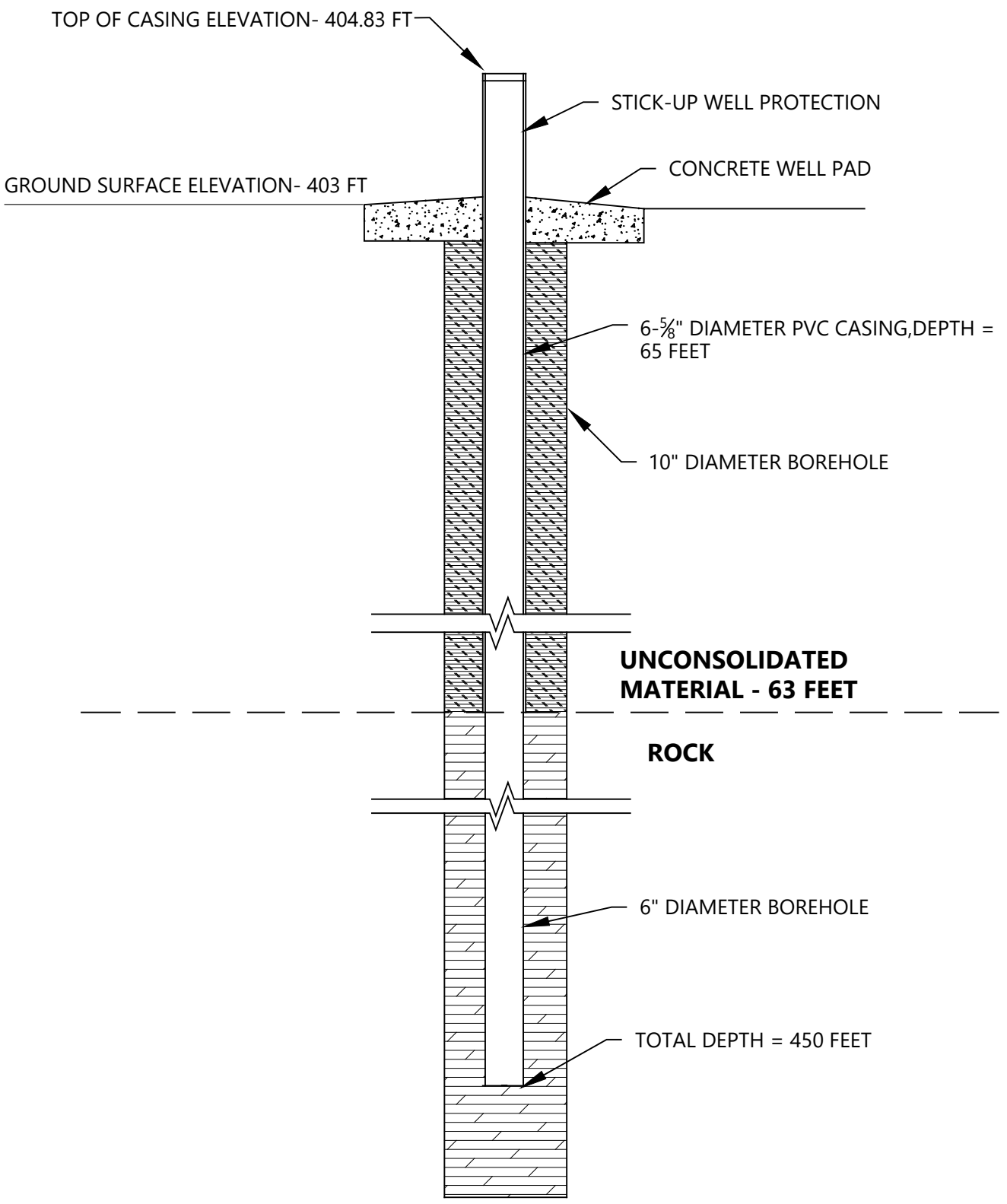
GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

PROJECT:	Luck Edgefield Site Edgefield, South Carolina S&ME Project No. 22350640	BORING LOG: MW-04 *Sheet 5 of 5*
DATE: 08/04/2023	ELEVATION:	NOTES: Characterization based on air hammer cuttings. Estimated yields in gallons per minute (gpm) are cumulative. Casing: 6-5/8 inch diameter stainless steel.
EQUIPMENT:	DATUM: NAVD88	
OPERATOR: Wendell Lee Drilling Service	DEPTH: 400.0 ft	
HAMMER TYPE:	CLOSURE:	
DRILLING METHOD:	LOGGED BY: Cody McMechen	LATITUDE: LONGITUDE:
SAMPLING METHOD:	PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane South Carolina FIPS 3900 Feet	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	Well Details	ELEVATION
405					Bore Hole terminated at 400.0 feet			-405
410								-410
415								-415
420								-420
425								-425
430								-430
435								-435
440								-440
445								-445
450								-450
455								-455
460								-460
465								-465
470								-470
475								-475
480								-480
485								-485
490								-490
495								-495
500								

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	▽			
END OF DRILLING	▼			
AFTER DRILLING	▼			
AFTER DRILLING	▼			

GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)



B-03 BEDROCK WELL SCHEMATIC

LUCK EDGEFIELD SITE
EDGEFIELD, SOUTH CAROLINA

SCALE:	FIGURE NO.
NTS	
DATE:	
SEPT. 2023	
PROJECT NUMBER	
22350640	

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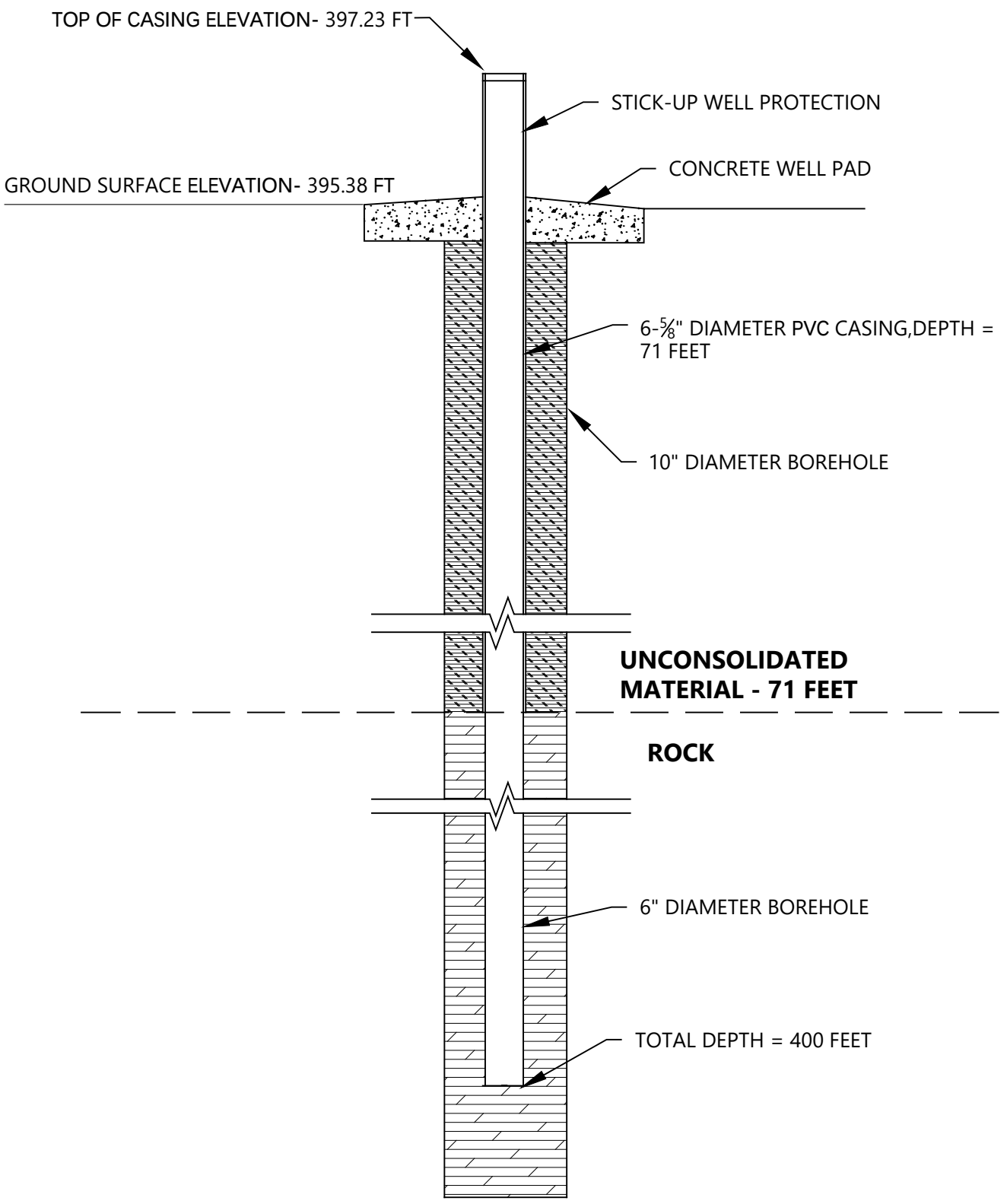

MW-01 BEDROCK WELL SCHEMATIC

LUCK EDGEFIELD SITE
EDGEFIELD, SOUTH CAROLINA

SCALE:	FIGURE NO.
NTS	
DATE:	
SEPT. 2023	
PROJECT NUMBER	
22350640	

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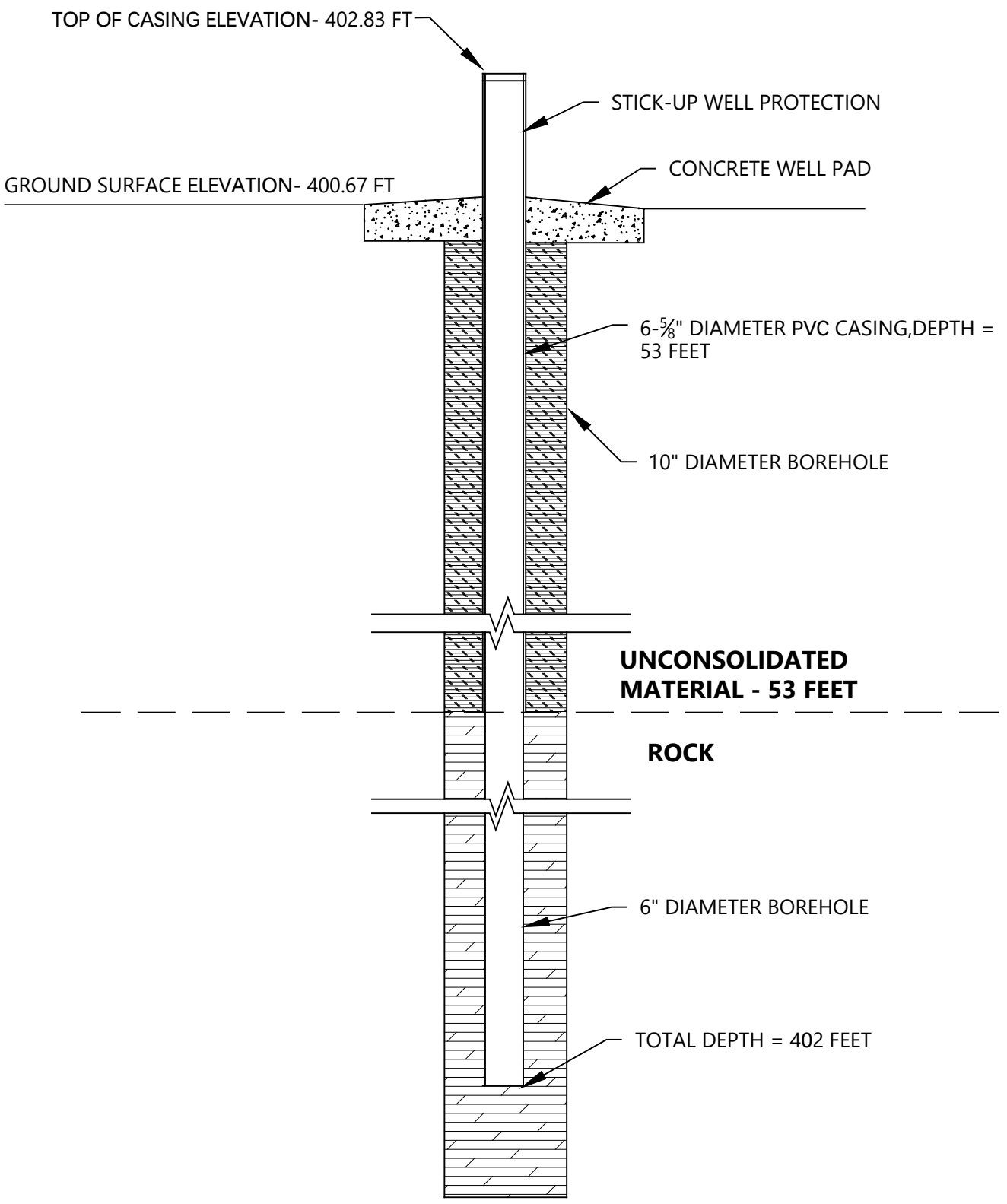

MW 02 BEDROCK WELL SCHEMATIC

LUCK EDGEFIELD SITE
EDGEFIELD, SOUTH CAROLINA

SCALE:	FIGURE NO.
NTS	
DATE:	
SEPT. 2023	
PROJECT NUMBER	
22350640	

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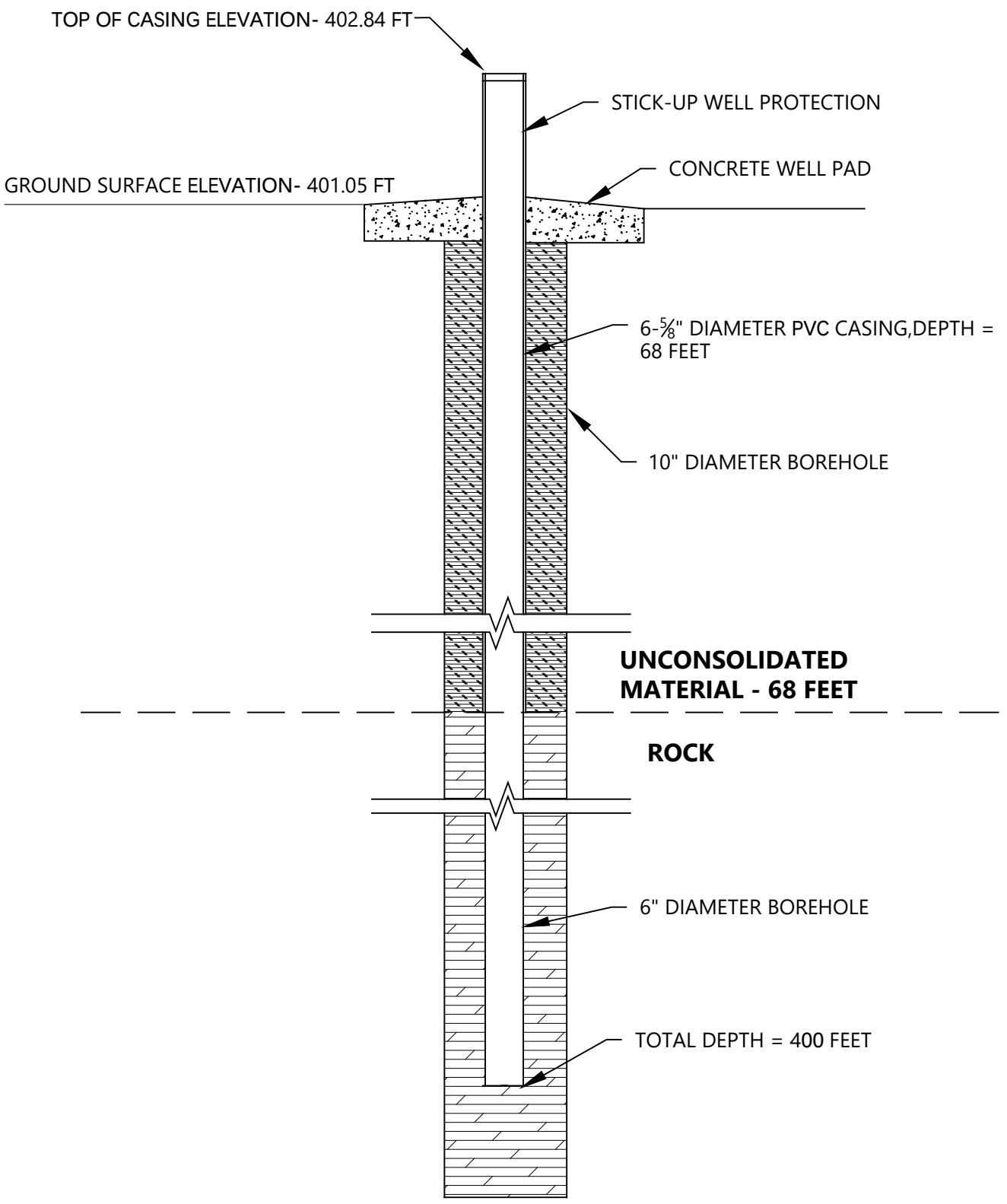

MW 03 BEDROCK WELL SCHEMATIC

LUCK EDGEFIELD SITE
EDGEFIELD, SOUTH CAROLINA

SCALE:	FIGURE NO.
NTS	
DATE:	
SEPT. 2023	
PROJECT NUMBER	
22350640	

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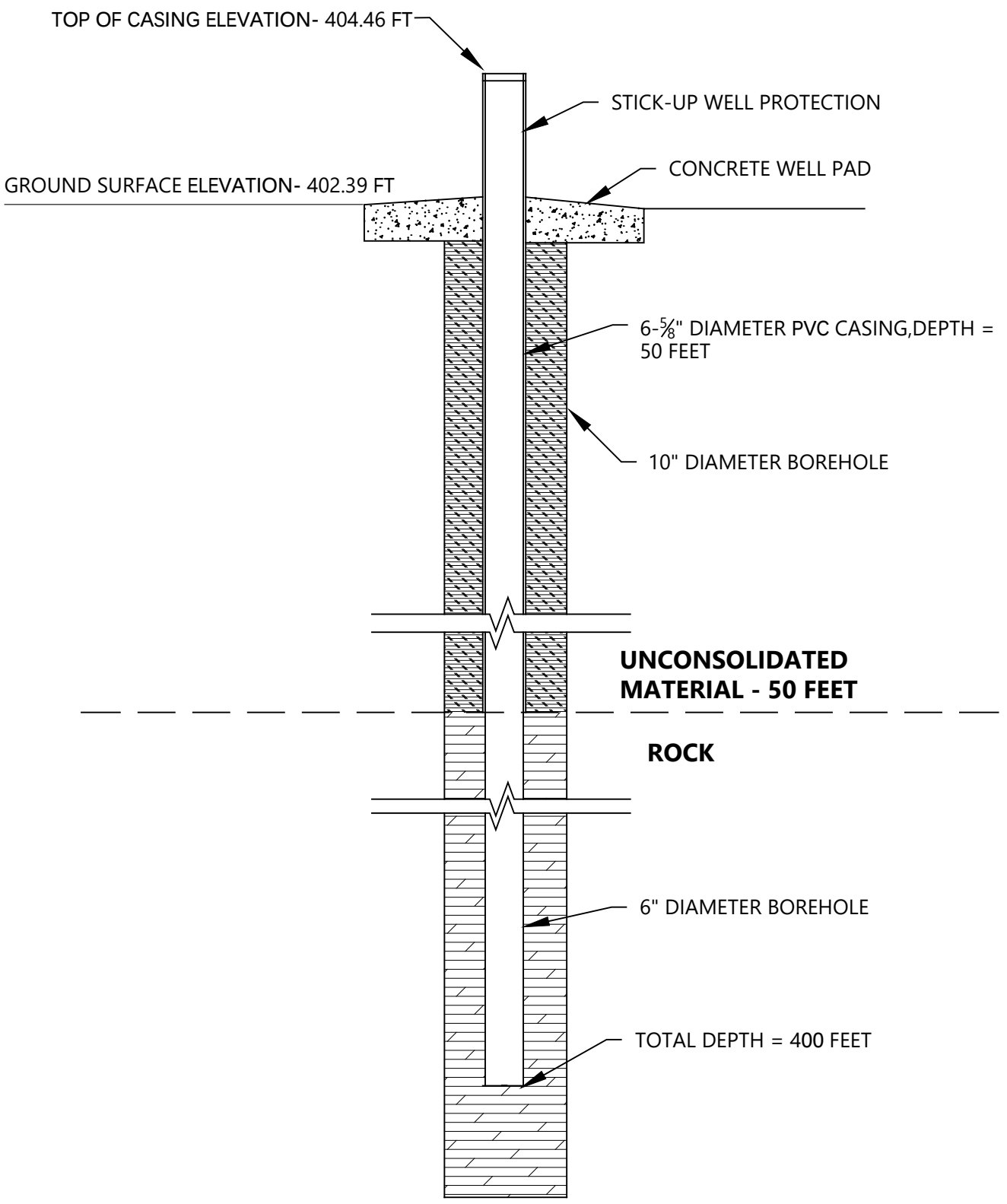

MW 04 BEDROCK WELL SCHEMATIC

LUCK EDGEFIELD SITE
EDGEFIELD, SOUTH CAROLINA

SCALE:	FIGURE NO.
NTS	
DATE:	
SEPT. 2023	
PROJECT NUMBER	
22350640	

T:\Charlotte-1350\Projects\2022\22350640_Luck Co_Luck Stone Edgefield Mine Site_Winnsboro SC\4 Energy\Project Docs\Reports\Hydrogeologic Assessment\Field Notes

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

Note: *Personal information provided on this document is subject to public scrutiny or release.*

1. WELL OWNER INFORMATION:
Name: S&ME INC. (last) (first)
Address: 8646 WEST MARKET STREET, SUITE 105
City: GREENSBORO State: NC Zip: 27409
Telephone: Work: Home: 3362887180

2. LOCATION OF WELL: **COUNTY:** EDGEFIELD
Name: LUCK STONE
Street Address: WOODLAWN ROAD
City: CLARKS HILL, SC Zip: 29821
Latitude: 33.621559 Longitude: -82.090062

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

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
OVERBURDEN	65	65
*GRANITE ROCK	385	450
*1 GPM AT 75 FEET		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
SITE ID: SARRMW-0015

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

7. PERMIT NUMBER: WELL ID: B-03

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

9. WELL DEPTH (completed) 450 ft. Date Started: 8-1-2023 Date Completed: 8-1-2023

10. CASING: ☐ Threaded ☐ Welded
Diam.: 6.125
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6 1/8 in. to 65 ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface 1.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 20 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: *** ft. *** direction
Type UNKNOWN
Well Disinfected ☑ Yes ☐ No Type: HTH Amount: 20 OZ.

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: GRANT FLOYD **CERT. NO.:** 2198
Address: (Print) Level: A B C D (circle one)
P.O. BOX 205 ROEBUCK, SC 29376
Telephone No.: 864-576-6655 Fax No.:

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: 8-8-2023
Well Driller

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

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

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

Note: *Personal information provided on this document is subject to public scrutiny or release.*

1. WELL OWNER INFORMATION:
Name: S&ME INC. (last) (first)
Address: 8646 WEST MARKET STREET, SUITE 105
City: GREENSBORO State: NC Zip: 27409
Telephone: Work: Home: 3362887180

2. LOCATION OF WELL: **COUNTY:** EDGEFIELD
Name: LUCK STONE
Street Address: WOODLAWN ROAD
City: CLARKS HILL, SC Zip: 29821
Latitude: 33.621559 Longitude: -82.090062

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

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
OVERBURDEN	72	72
*GRANITE ROCK	328	400
*1/2 GPM AT 85 FEET		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
SITE ID: SARRMW-0015

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

7. PERMIT NUMBER: WELL ID: MW-01

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

9. WELL DEPTH (completed) 400 ft. Date Started: 8-3-2023 Date Completed: 8-3-2023

10. CASING: ☐ Threaded ☐ Welded
Diam.: 6.125
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6 1/8 in. to 54 ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface 1.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 20 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: *** ft. *** direction
Type UNKNOWN
Well Disinfected ☑ Yes ☐ No Type: HTH Amount: 20 OZ.

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: GRANT FLOYD **CERT. NO.:** 2198
Address: (Print) Level: A B C D (circle one)
P.O. BOX 205 ROEBUCK, SC 29376
Telephone No.: 864-576-6655 Fax No.:

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: 8-8-2023
Well Driller

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

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

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

Note: *Personal information provided on this document is subject to public scrutiny or release.*

1. WELL OWNER INFORMATION:
Name: S&ME INC. (last) (first)
Address: 8646 WEST MARKET STREET, SUITE 105
City: GREENSBORO State: NC Zip: 27409
Telephone: Work: Home: 3362887180

2. LOCATION OF WELL: **COUNTY:** EDGEFIELD
Name: LUCK STONE
Street Address: WOODLAWN ROAD
City: CLARKS HILL, SC Zip: 29821
Latitude: 33.621559 Longitude: -82.090062

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

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
OVERBURDEN	54	54
*GRANITE ROCK	346	400
*1 1/2 GPM AT 85 FEET		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
SITE ID: SARRMW-0015

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

7. PERMIT NUMBER: WELL ID: MW-02

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

9. WELL DEPTH (completed) Date Started: 8-3-2023
400 ft. Date Completed: 8-3-2023

10. CASING: ☐ Threaded ☐ Welded
Diam.: 6.125
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6 1/8 in. to 54 ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface 1.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 20 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: *** ft. *** direction
Type UNKNOWN
Well Disinfected ☑ Yes ☐ No Type: HTH Amount: 20 OZ.

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: GRANT FLOYD **CERT. NO.:** 2198
Address: (Print) Level: A B C D (circle one)
P.O. BOX 205 ROEBUCK, SC 29376
Telephone No.: 864-576-6655 Fax No.:

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: 8-8-2023
Well Driller

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

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

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

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1. WELL OWNER INFORMATION:
Name: S&ME INC. (last) (first)
Address: 8646 WEST MARKET STREET, SUITE 105
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Telephone: Work: Home: 3362887180

2. LOCATION OF WELL: **COUNTY:** EDGEFIELD
Name: LUCK STONE
Street Address: WOODLAWN ROAD
City: CLARKS HILL, SC Zip: 29821
Latitude: 33.621559 Longitude: -82.090062

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

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
OVERBURDEN	72	72
*GRANITE ROCK	328	400
*1/4 GPM AT 80 FEET		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
SITE ID: SARRMW-0015

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

7. PERMIT NUMBER: WELL ID: MW-03

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

9. WELL DEPTH (completed) 400 ft. Date Started: 8-3-2023 Date Completed: 8-3-2023

10. CASING: ☐ Threaded ☐ Welded
Diam.: 6.125
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6 1/8 in. to 54 ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface 1.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 20 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: *** ft. *** direction
Type UNKNOWN
Well Disinfected ☑ Yes ☐ No Type: HTH Amount: 20 OZ.

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: GRANT FLOYD **CERT. NO.:** 2198
Address: (Print) Level: A B C D (circle one)
P.O. BOX 205 ROEBUCK, SC 29376
Telephone No.: 864-576-6655 Fax No.:

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: 8-8-2023
Well Driller

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

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

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

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Telephone: Work: Home: 3362887180

2. LOCATION OF WELL: **COUNTY:** EDGEFIELD
Name: LUCK STONE
Street Address: WOODLAWN ROAD
City: CLARKS HILL, SC Zip: 29821
Latitude: 33.621559 Longitude: -82.090062

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

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

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
OVERBURDEN	51	51
*GRANITE ROCK	349	400
*6 GPM AT 135 FEET		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
SITE ID: SARRMW-0015

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

7. PERMIT NUMBER: WELL ID: MW-04

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

9. WELL DEPTH (completed) Date Started: 8-3-2023
400 ft. Date Completed: 8-3-2023

10. CASING: ☐ Threaded ☐ Welded
Diam.: 6.125
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
6 1/8 in. to 54 ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface 1.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: _____ Diam.: _____
Slot/Gauge: _____ Length: _____
Set Between: _____ ft. and _____ ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL _____ 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0 ft. to 20 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: *** ft. *** direction
Type UNKNOWN
Well Disinfected ☑ Yes ☐ No Type: HTH Amount: 20 OZ.

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: GRANT FLOYD **CERT. NO.:** 2198
Address: (Print) Level: A B C D (circle one)
P.O. BOX 205 ROEBUCK, SC 29376
Telephone No.: 864-576-6655 Fax No.:

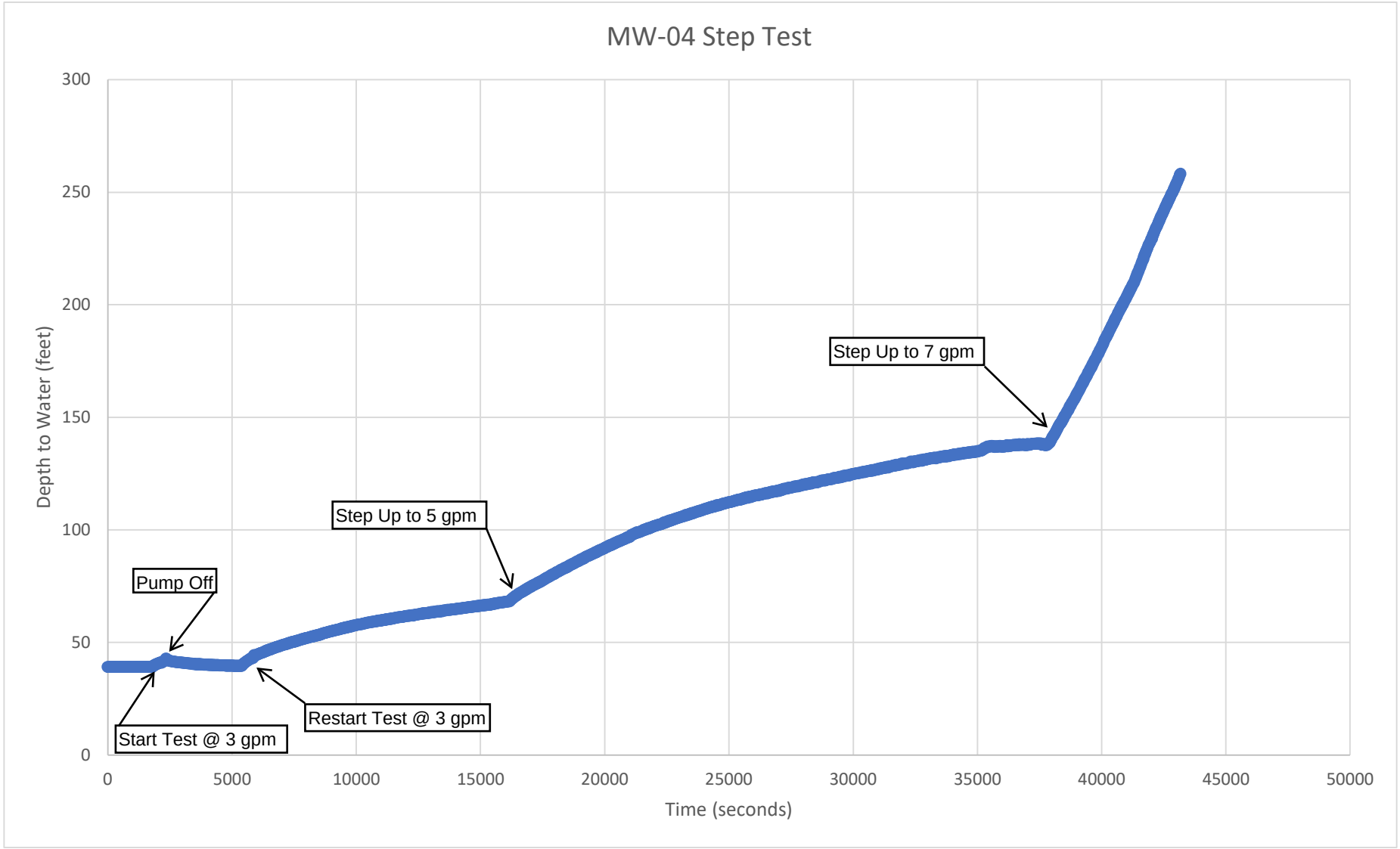
20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

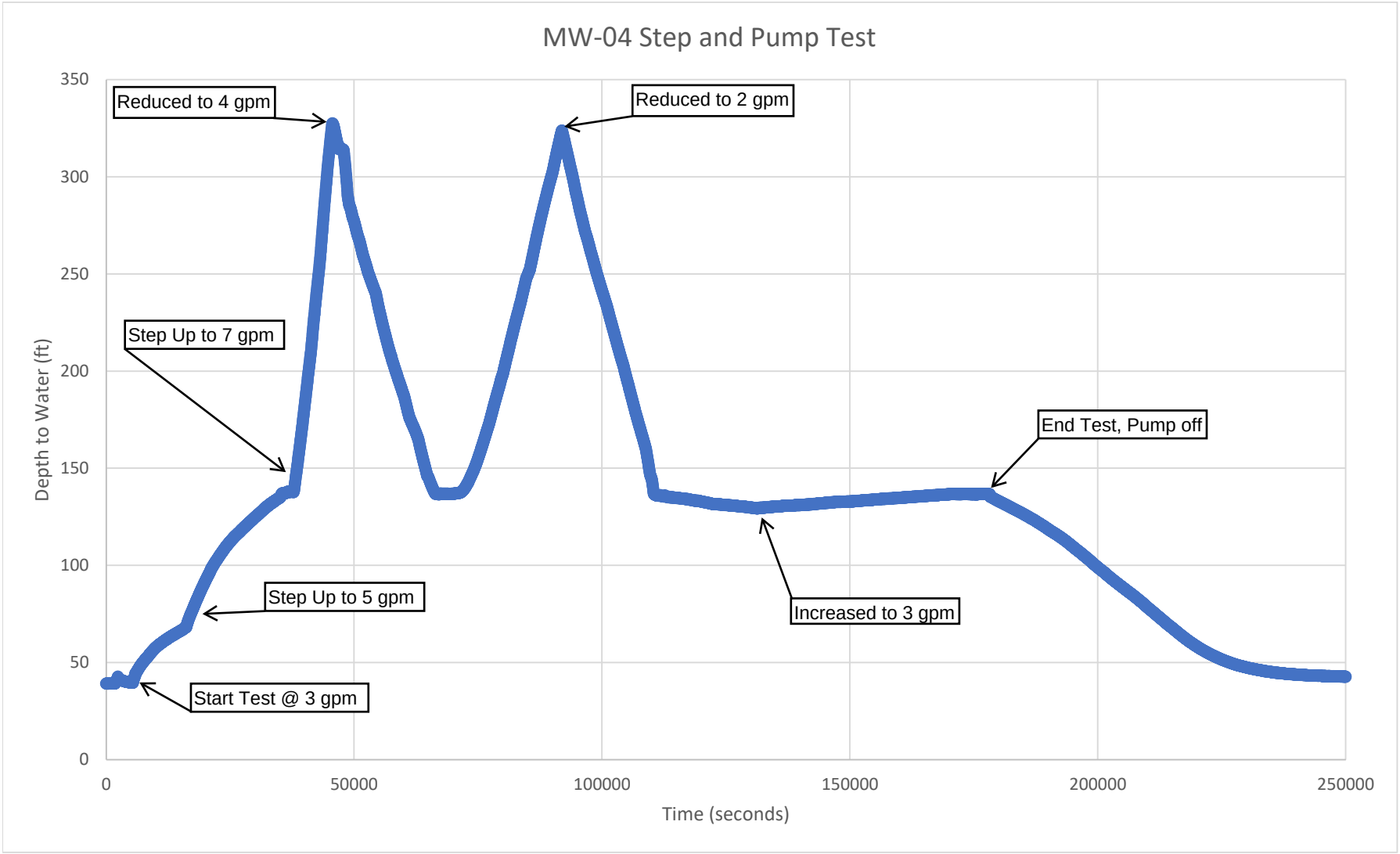
Signed: _____ Date: 8-8-2023
Well Driller

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

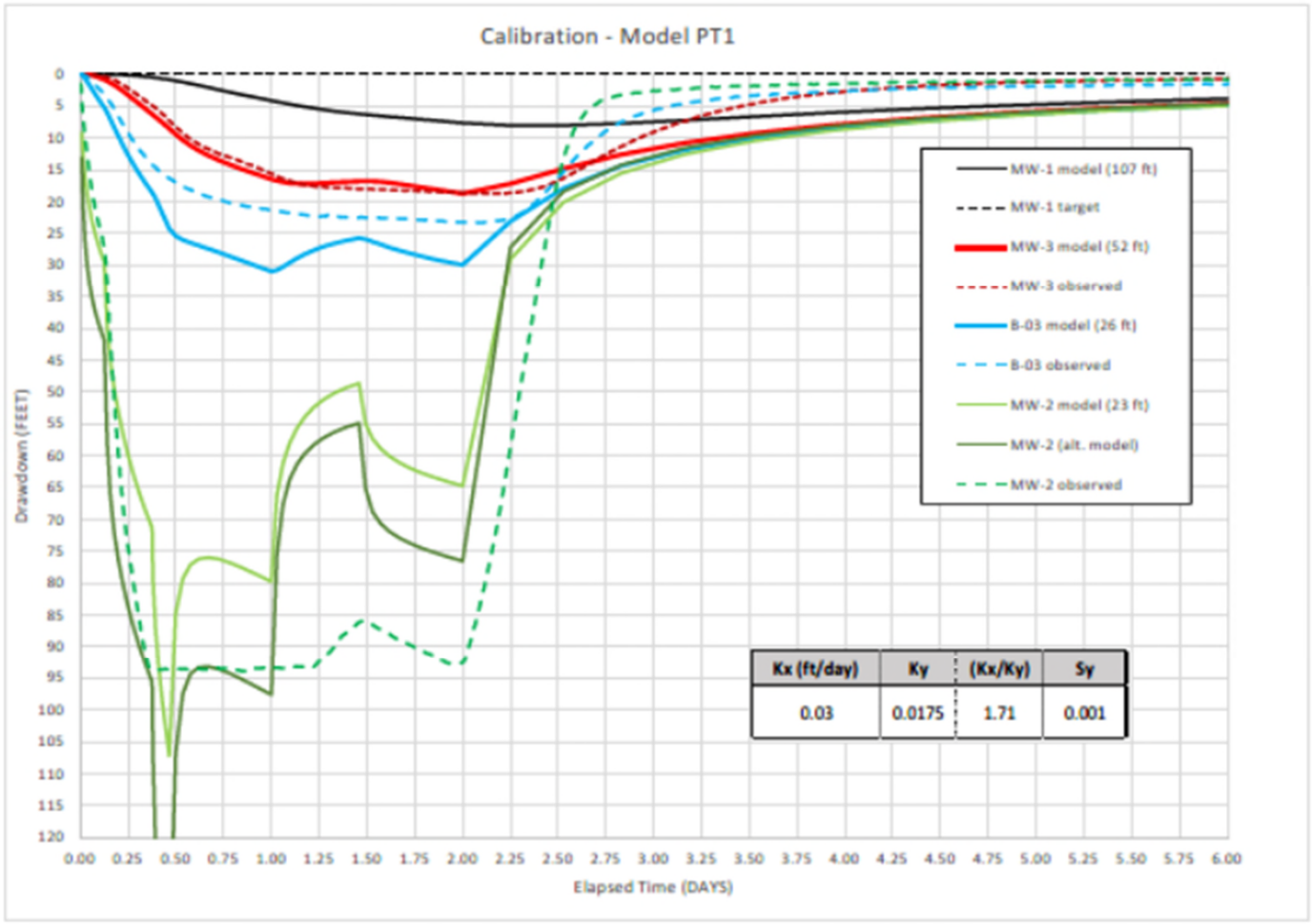
COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

Appendix V – Pump Test Charts

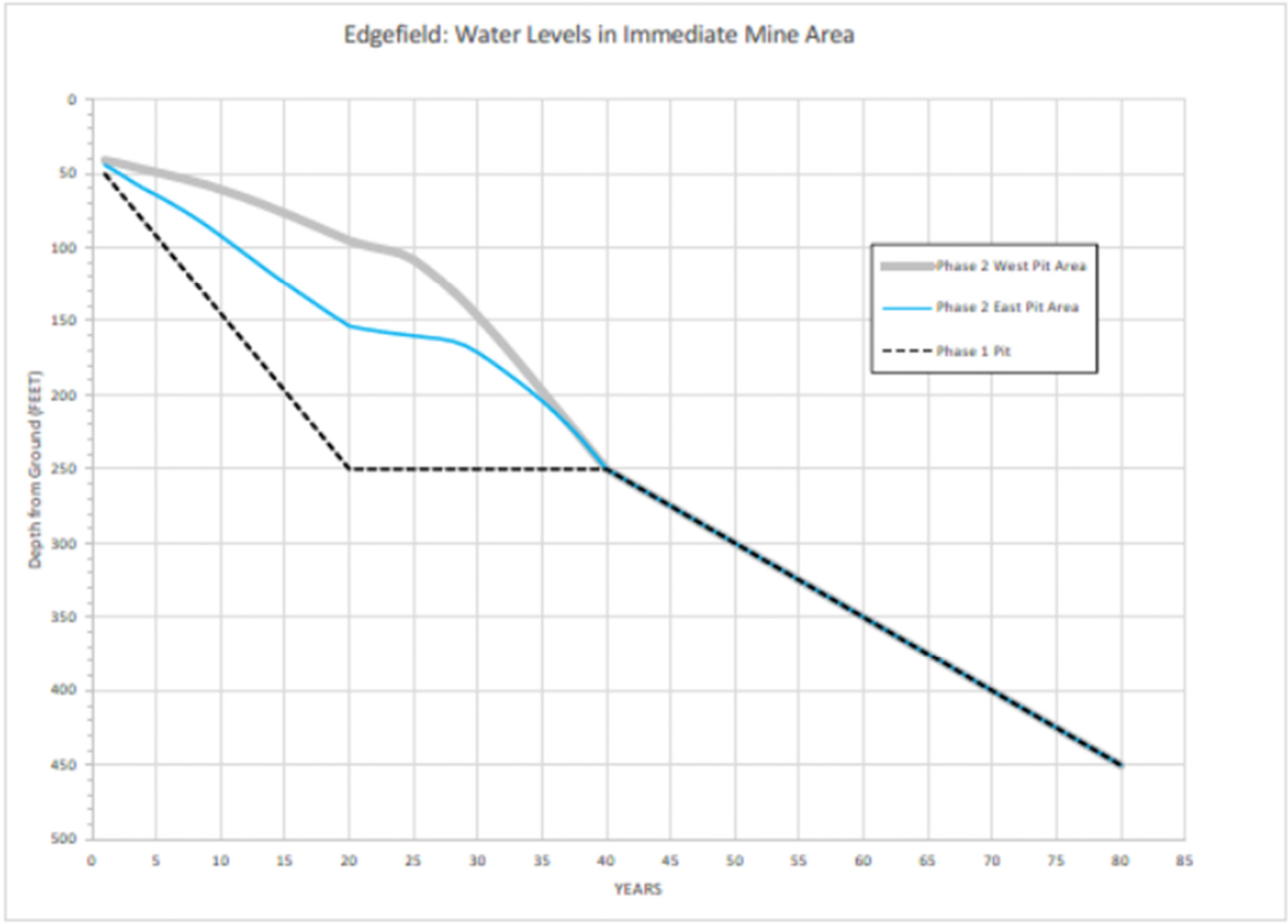

MW-04 Step Test
Depth to Water (feet)
300
250
200
150
100
50
0
0
5000
10000
15000
20000
25000
30000
35000
40000
45000
50000
Time (seconds)
Step Up to 7 gpm
Step Up to 5 gpm
Pump Off
Restart Test @ 3 gpm
Start Test @ 3 gpm


MW-04 Step and Pump Test
Depth to Water (ft)
Time (seconds)
0
50
100
150
200
250
300
350
0
50000
100000
150000
200000
250000
Reduced to 4 gpm
Reduced to 2 gpm
Step Up to 7 gpm
End Test, Pump off
Step Up to 5 gpm
Increased to 3 gpm
Start Test @ 3 gpm

Appendix VI – Modeling Charts



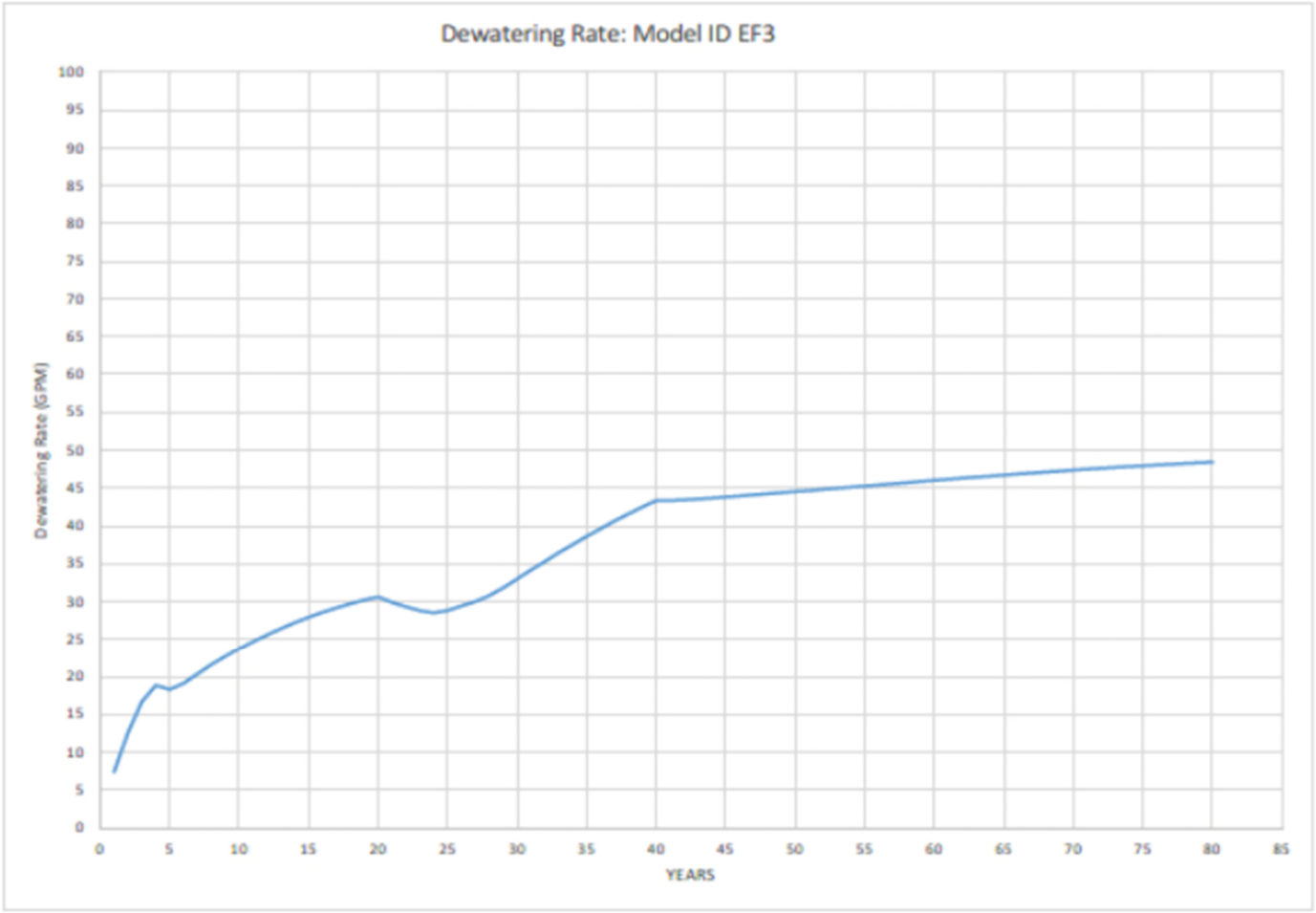
	Calibration Plots	SCALE: NOT TO SCALE DATE: 1/4/2024 PROJECT NUMBER 22350640	FIGURE NO. **VI-1**
	Luck Edgefield Site Woodlawn Road EDGEFIELD COUNTY, SOUTH CAROLINA		



Predicted Water Levels In Immediate Mine Area Over Time

Luck Edgefield Site
Woodlawn Road
EDGEFIELD COUNTY, SOUTH CAROLINA

SCALE:	FIGURE NO.
NOT TO SCALE	VI-2
DATE:	
10/18/2023	
PROJECT NUMBER	
22610504	



	Predicted Mine Dewatering Rates	SCALE: NOT TO SCALE	FIGURE NO. VI-3
	Luck Edgefield Site Woodlawn Road EDGEFIELD COUNTY, SOUTH CAROLINA	DATE: 10/18/2023 PROJECT NUMBER 22610504	