GEI Consultants

Consulting
Engineers and
Scientists

Environmental Management Plan

K-Line Stream Crossing

Quantum Loophole, Frederick Maryland

Submitted to:
Quantum Maryland, LLC
500 E. 4th Street, Suite 333
Austin, Texas 78701

Submitted by:
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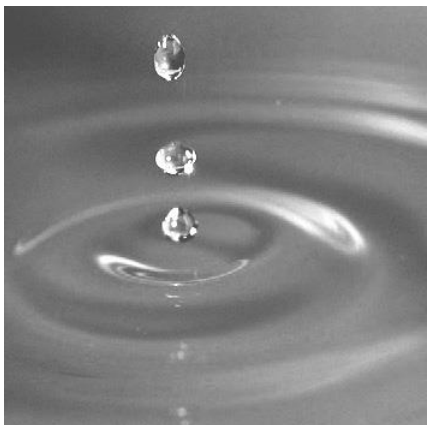

William Silverstein, P.E.
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Transmittal

Quantum Maryland, LLC
500 E. 4th Street, Suite 333
Austin, Texas 78701

Attn: Mr. AD Robison

Re: Environmental Management Plan
Pump Station Manhole 3
Quantum Maryland, Inc.
Frederick County, Maryland

Dear Mr. Robison,

GEI Consultants, Inc. (GEI) has prepared this Environmental Management Plan (EMP) for utility construction work related to the K-Line Sewer Stream Crossing at the former Eastalco property in Frederick Maryland.

This EMP relates to disturbance of soil and groundwater within the limits of the area of the Environmental Covenant (EC) during the K-Line Stream Crossing (portions within the EC) which consists of the installation of a sewer line from MH-3 to MH-400R (inside the EC) and from there to MH-401R (outside the EC). The sewer (part of the site's "K-Line" sewer line) will be installed using microtunneling from MH-3 west to MH-400R and separately from MH-401R east to MH-400R. The remainder of the work for the MH-401R excavation, and access and staging areas takes place outside of the EC and is not the subject of this EMP.

This EMP has been prepared to address potential environmental impacts in the K-Line Stream Crossing area within the EC. Environmental media samples (soil and groundwater collected within the utility corridor in the vicinity of the MH-400R and MH-401R) have not identified environmental impacts of concern other than total chromium in soil. However, as the work area is partially within the EC, this document outlines the controls put in place to assure protection of human health for workers and future visitors in this area.

We appreciate the continued opportunity to be of assistance on this project. Should you have any questions regarding this information, or should you require additional information, please contact the GEI office in Washington, D.C. at (202) 828-9510.

cc: Ms. Anuradha Mohanty / MDE Land and Materials Administration
Ms. Barbara Brown / MDE LMA
Ms. Kate Ansalvish / MDE Water and Science Administration

1. Introduction

1.1 Overview and Purpose

At the request of Quantum Maryland, LLC (QL), GEI Consultants, Inc. (GEI) has prepared this Environmental Management Plan (EMP) for the construction of specific listed elements of the K-Line Sewer Stream Crossing which will convey wastewater from west to east to the 1 million gallon per day (MGD) pump station as part of the redevelopment of the Former Alcoa Eastalco Works. The overall Quantum property ("overall property" or "the Site") comprises over 2,200 acres. The central portion of the overall property formerly contained the Eastalco Aluminum Works. The remaining portions of the overall property were primarily used for agricultural purposes. Future development of the overall property will include the construction of multiple data center buildings and associated infrastructure. The overall property is being developed in separate areas, and for the sake of expediency, multiple EMPs will be produced to cover individual work areas or construction elements.

The work elements covered by this EMP include construction and installation of a sewer line and stream crossing along the proposed K-Line west of the sewer pump station, specifically by microtunneling between proposed sewer manhole MH-401R via MH-400R to MH-3. These construction elements consist of:

- a microtunnel launch pit (with support of excavation [SOE] comprising a secant pile wall) at MH-401R (west of the EC and floodway and therefore not covered by this EMP);
- a microtunnel receiving pit with secant wall SOE at MH-400R (within the EC and EMP boundary);
- a temporary access road to MH-400R;
- a microtunnel installed from the MH-401R SOE east to MH-400R; and
- a microtunnel from MH-3 west to MH-400R.

MH-401R is just outside the EC and outside the floodway and is not part of this EMP; however, both microtunneling segments between manholes are within the EC.

In 2021, the QL team requested that the Maryland Department of the Environment (MDE) Land and Materials Administration (LMA) participate in the review of the environmental conditions on the overall property and the proposed remedies. An expedited Inculpable Person (IP) was requested and was received by Quantum Maryland, LLC on June 22, 2021. On behalf of Quantum Maryland, LLC Geo Technology Associates, Inc. (GTA), the

environmental consultant for QL at the time, submitted an application to the MDE Voluntary Cleanup Program (VCP) for the overall property on September 28, 2021. On May 4, 2022, GTA withdrew the overall property from the VCP and remedial oversight was engaged with the MDE Controlled Hazardous Substances (CHS) Enforcement Division. On September 26, 2023 Quantum Maryland further removed areas outside the EC from CHS oversight. However, construction activities within the EC continue to remain subject to CHS oversight and require preparation and approval of an EMP.

As part of the ongoing CHS oversight agreement between the project team and MDE, this EMP was prepared to establish proposed management of soils and groundwater encountered during the planned installation of the K-Line Sewer Crossing construction elements. The proposed activities include:

- Grading within the EMP boundary to create a level construction pad around MH-400R and access road from MH-400R to MH-401R;
- Installation of support of excavation (SOE) structures (secant pile wall) for MH-400R;
- Use of the MH-401R excavation (outside the EC and EMP) as a microtunneling launch pit for the MH-400R to MH-401R sewer line; and the use of the MH-3 excavation (constructed under a separate EMP) to microtunnel from MH-3 to MH-400R
- Soil screening and management/stockpiling during excavation and microtunneling (If any waste material is encountered during construction, it must be reported to LRP. Additional segregation and management of waste will be done with LRP approval);
- Off-Site disposal or on-site discharge of containerized water from dewatering operations;
- Temporary stockpiling of stripped topsoil and soil excavated from MH-400R for re-use at the original location;
- Removal, containerization and testing of seepage water in the excavation or from microtunneling;
- Disposal of excess soil or soil re-use (if supported by the data collected and specifically authorized by MDE after review of data)
- Import of quarry fill following notification to and prior approval from LRP; and
- Use of appropriate health and safety measures during construction.

Once the EMP is approved, these remedial measures will be performed as part of the ongoing CHS oversight.

2. BACKGROUND

2.1 K-Line Stream Crossing Site Description

The K-Line Stream Crossing is part of the overall site utilities being installed to serve the overall QL property ("overall property" or "the Site") that comprises over 2,200 acres and is located southeast of Ballenger Creek Pike, north and south of Manor Woods Road, west of New Design Road, northwest of Mountville Road, and north of Adamstown Road. The Site is being developed as a data center community, and near-term construction consists generally of construction of roads and utilities including water, sewer (including a 1 MGD sewer pump station) and cooling water.

Figure 1 shows the approximate boundary of the overall property, the proposed Limit of Disturbance (LOD) for the K-Line Stream Crossing, and the relative location of the LOD associated with construction of the pump station to which the K-Line will convey wastewater. **Figure 2** shows an expanded view of the K-Line Stream Crossing EMP boundary in relation to the adjacent Pump Station MH-3 EMP boundary to the east and the construction access and staging areas outside the EC (and outside the floodway) to the west.

This EMP describes the work elements required for the construction of the K-Line sewer line from MH-3 to MH-401R. **Figure 2** shows the LOD associated with the construction and the boundary of the area covered by this EMP. This EMP applies only to specific identified work elements consisting of the installation of a secant wall around MH-400R, and installation of a sewer line from MH-3 to MH-400R and from MH-401R to MH-400R both via microtunneling. MH-400R and the two microtunnels are located within the EC near the southern boundary of the EC. **Figure 2** shows the proposed LOD for reference along with EMP boundary in orange. The SOE construction and excavation for MH-401R and the access road and staging areas to the north- and south-west are outside the EC and not part of this EMP. However management of CHS-regulated materials such as water and soil removed from within the EC and stored in this staging area (in order to be outside the floodplain) remains regulated under this EMP.

The subsurface construction activities under this EMP (outlined in **Section 1.1**) will be within the proposed LOD shown on **Figure 2**. After stripping and stockpiling topsoil for reuse and local regrading of a work platform around MH-400R, stone fill will be imported within the EC and EMP boundary to create a level platform and access road. This will involve temporary import of approximately 1290 cubic yards of clean quarry stone placed on a geotextile (831 cubic yards for the level platform, and 460 cubic yards for the access road). A copy of the Clean Stone Certificate provided by Vulcan Materials to Clark subcontractor Metro Materials for pump station work is provided in **Appendix F**. After the microtunneling

is complete, this temporary clean fill will be removed and used in backfilling of the MH-400R and MH-401R SOE, if possible. Details of all soil movements are provided within this EMP.

As described in **Section 2.3.2**, engineering changes related to implementation of microtunneling for the stream crossing (and other design changes associated with the overall K-Line and West Water Loop route) will require completion of re-design and resubmittal to Frederick County for approval. Because the EMP area is in the floodplain, a modification of the JPA Permit is also being submitted to MDE Wetlands and Waterways associated with the same revised LOD. These agencies are aware of the CHS regulation of this activity subject to this EMP and their approvals are anticipated to reference this EMP. Construction of work elements associated with this EMP and with the adjacent MH-401R outside the present LOD shown on **Figure 2** cannot proceed until those approvals and 20-CP construction stormwater permits are obtained.

Due to space and floodplain constraints within the EMP boundary, the staging area northwest of MH-401R (outside the EC and the EMP, and outside the flood plain) will be used to manage soil and water generated during construction activities covered by this EMP, as well as that generated outside the EC. Soil stockpiles and frac tanks for water will be segregated as containing material from "inside the EC" and "outside the EC". The stored water and soil generated from inside the EC remains subject to regulation under this EMP. These soil piles will be labeled (as to contents) and surrounded with silt fence. **Figure 2** shows the proposed location of frac tanks and stockpiles.

This EMP proposes testing of containerized water generated within the EC prior to on-site discharge or off-Site disposal at appropriate facility. Soil including stripped topsoil and soil excavated from the MH-400R SOE can be returned to its original location without testing or can be proposed for re-use elsewhere if supported by sample data collected and specifically authorized by MDE after review of data.

MH-401R, the staging area to the northwest, and the access road to the southwest are located outside the EC and outside the floodplain and are not the subject of this EMP. They will be constructed using similar means; but soil and water generated during construction of and working within the MH-401R secant wall will not be managed under CHS oversight.

During construction, the EMP boundary will be staked/flagged in the field with temporary/construction fence to ensure that workers/equipment performing the K-Line Stream Crossing work are aware of where the EMP must be followed (and where the EC is entered at the same location). The EMP boundary will be marked on both sides of the access road between MH-400R and MH-401R.

2.2 Environmental Site History

The central portion of the overall property was historically developed as an aluminum smelting plant (Alcoa Eastalco Works) that was in operation from 1969 through 2005. The plant was demolished between 2011 and 2016. Since 2005, the plant area has undergone extensive environmental evaluation and is currently subject to an Environmental Covenant (EC) and MDE-approved Site Management Plan (SMP). The former plant area is subject to the EC due to environmental impacts associated with the historic use of the Site. The EC places restrictions on land and groundwater use within a portion of the Site and requires current and future property owners to follow an MDE-approved SMP. The EC boundary includes both the former plant area and a smaller Soil Management Area (SMA), which includes two closed, permitted industrial landfills, former waste disposal sites (WDS), and other areas containing constituents of potential concern (COPCs). The boundaries of the EC and SMP are depicted on **Figure 1**.

Historic plant operations resulted in impacts to groundwater, surface water, surface soils, and subsurface soils in the former plant area (now included within the SMA). COPCs in the SMA primarily include fluoride in groundwater, cyanide in surface water, and metals, polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) in soils**.**

The work area covered by this EMP is well outside the SMA and thus does not include any construction activities within the SMA. However, MH-400R and the access from MH-401R are located within the EC.

The K-Line Stream Crossing is also proximal to groundwater monitoring wells within the EC with detected exceedance of the fluoride groundwater standard and historic detection of VOCs (see Section 3.2.3).

The land use restrictions and maintenance requirements outlined below are still applicable during construction.

Land use is limited to restricted commercial (Tier 2B) and restricted industrial (Tier 3B) land uses.

- Groundwater use is prohibited.
- A Health and Safety Plan (HASP) must be prepared in accordance with the SMP and maintained on-site during site work.
- A HASP must also address areas where groundwater is proposed to be encountered.
- Water encountered in/removed from excavations within the EC must be containerized and tested before disposal.

With regard to water management, page 3 of the EC states:

> "**Excavation Encountering Groundwater**: When conducting any excavation activities on the Property extending to the ground water table, the Property Owner shall implement the requirements of a site-specific health and safety plan in accordance with the Site Management Plan to ensure that worker protection measures are met. The encountered ground water shall be containerized during all dewatering activities at the property and shall be analyzed before disposal. The analytical results shall be the basis for appropriate disposition of the ground water in accordance with applicable local, State and federal laws and regulations."

In addition to the requirements of the EC, work conducted within the scope of this EMP (and all construction within the EC) is subject to CHS oversight and as such, requires approval of the MDE CHS case manager.

2.3 Future Land Use

As part of the overall site redevelopment, the K-Line Stream Crossing consists of the installation of a secant pile wall for MH-400R (inside the EC) and MH-401R (outside the EC), and a sewer line (part of the site's K-Line) from MH-3 to MH-401R. Temporary access roads and staging areas will be constructed to support this installation. The part of this work subject to this EMP consists of the construction of the MH-400R SOE and excavation, a temporary access road between MH-400R and MH-401R, and microtunneling from the MH-401R SOE to MH-400R, and from MH-3 to MH-400R.

2.3.1 Construction of K-Line Stream Crossing

The K-Line Stream Crossing consists of a portion of the site's proposed "K-Line" sewer line, and is located on the southern portion of the overall site near the southwestern terminus of future Happy Landing Road. The plan includes construction of temporary access roads and a staging area, secant wall installations at MH-401R and MH-400R microtunnel launch and receiving pits, and a sewer line from MH-401R via MH-400R to MH-3.

Preliminary design is included in **Appendix D.** Additional detail regarding the sewer line preliminary design is provided below and in **Appendix D1**. Additional detail regarding the preliminary SOE design for construction of microtunnel pits at MH-400R and MH-401R is provided in **Appendix D2**.

The construction of an access road between MH-400R and MH-401R, the SOE at MH-400R and the microtunneling installation of the sewer between MH-401R and MH-3 are located within the EC. MH-401R and its construction elements (the installation of the SOE

structures) are located outside the EC. The only MH-401R work elements covered by this EMP include the use of the MH-401R excavation as a launch pit for microtunneling to MH-400R (the microtunnel itself is within the EC). The access road between MH-401R and MH-400R, and the microtunneling are also within the floodplain and subject to permits described in the next section.

In order to construct the MH-400 SOE system, the contractor needs a level work platform at elevation 298.0 which is the top elevation of the secant wall per the preliminary design described in the next paragraph. This level work platform will extend to the dimensions of the EMP boundary (50 feet around the MH-400R SOE). After stripping and saving topsoil (top 6 inches comprising 277 cy), this requires a cut (soil excavation) on the west portion (approximately 300 cubic yards) and fill – an equal amount, using the same cut soil - on the east portion. **Figure 5** shows the existing grade of the area including some spot elevations. The maximum cut depth is approximately 2 feet on the northwest corner (from elevation 298.5 to elevation 296.5) and 1.5 feet at the southwest corner (from elevation 298 to elevation 296.5). The maximum fill is approximately 2 feet along the eastern side (from approximate elevation 294.5 to elevation 296.5). The temporary import of approximately 831 cubic yards of clean quarry stone placed on a geotextile will be added (in an approximately 18-inch layer to bring the elevation to 298) to create the stable working platform. Additionally, for the construction of the temporary access road from MH-400R to MH-401R, the top 6 inches of topsoil (approximately 230 cy) will be stripped and stockpiled for later restoration. Then 6-12 inches of clean quarry stone (approximately 460 cy) from the same source will be imported and placed on a geotextile. A copy of the Clean Stone Certificate provided by Vulcan Materials to Clark subcontractor Metro Materials for pump station work is provided in **Appendix F**. After the secant wall and microtunneling are complete, this temporary clean fill will be removed and used in backfilling of the MH-400R SOE. A revision of the K-Line Stream Crossing LOD to include the EMP boundary will be submitted to Frederick County SCD for approval. Because the EMP area is in the floodplain, a modification of the JPA Permit will also be submitted to MDE Wetlands and Waterways associated with the same revised LOD. These agencies are aware of the CHS regulation of this activity subject to this EMP and their approvals are anticipated to reference this EMP. Work associated with this EMP (and manhole MH-401R outside the EC and EMP) shown on **Figure 2** cannot proceed until those approvals and the associated 20-CP construction stormwater permits are obtained.

The SOE structure at MH-400R extends to an excavation depth of approximately 20 feet in order to allow two feet beneath the preliminary pipe invert per the preliminary Rodgers Consulting *Plan and Profile Exhibit, Sewer at Stream Crossing* provided in **Appendix C**. Depth to water and depth to bedrock are to be determined through the microtunnel stream crossing geotechnical investigation presently underway (proposed boring GEI-7 is located at the proposed MH-400R location). Rock blasting is not proposed at this location. The SOE

preliminary design (by GEI Consultants, Inc. for Clark Foundations Group LLC, January 29, 2024) is provided as **Appendix D2** of this EMP.

Secant pile walls consisting of overlapping drilled shafts will be installed from the ground surface down to an elevation that will be determined based on the required embedment for the SOE final design. Per Sheet 3 of the preliminary SOE design, the bottom of excavation for the MH-400R SOE is elevation 278.6 (approximately 20 feet below working platform grade). Steel piles in alternating grout holes will extend to elevation a minimum 8 feet into rock (subject to other final design criteria). The secant wall grout holes will extend deeper than the piles, also subject to final design.

These walls provide a low-permeability cutoff for the groundwater that would flow horizontally towards the excavation. However, due to the potential for high groundwater flows through karst rock formations below the secant piles, QL is also proposing to construct a grout plug at the bottom of the excavation. This grout plug will be constructed with low-mobility grout pumped into a grid of grout holes to cover the footprint of the construction shafts. If needed (based on observed seepage rate after excavation of soil and rock within the secant wall), the SOE design includes a contingent concrete base over the grout plug.

Drilled soil and rock cuttings from the secant pile drilling and any groundwater displaced during grouting will be stored within the proposed K-Line Stream Crossing LOD in the same manner as excavated soil and containerized groundwater as described in **Sections 5.3 and 5.5.**

After completion of the secant wall, the contents will be excavated. As described in **Section 5.3**, approximately 344 cy of soil and rock will be generated from the MH-400R SOE and stockpiled in the location shown on **Figure 2**.

Once the MH-400R SOE and the MH-401R SOE are both constructed, microtunneling for sewer line installation will commence from MH-401R to MH-400R (west to east), as well as microtunneling from MH-3 to MH-400R (east to west). The microtunnel boring machines (MTBM) are lowered into the "launch pits" (which will be MH-401R and MH-3) to begin tunneling through rock to the common receiving pit (MH-400R). Microtunneling typically proceeds approximately 6 feet per day, or approximately 80 days for this project (based on both sections proceeding concurrently).

Dewatering of the MH-401R, and MH-3 SOEs will continue over this duration. Dewatering at MH-401R is outside the EC and not included in this EMP. Procedures for management of seepage water at MH-3 are included in the MH-3 EMP; however the duration that the MH-3 SOE will remain open is extended as a result of the tunneling from MH-3 to MH-400R.

Dewatering at MH-400R will be shorter in duration than the launch pits as MH-400R only needs to be dewatered as tunneling approaches MH-3 through the end of the sewer line and manhole construction.

The MTBM has connections for water supply (initially charged with potable water) and slurry return. The fluid is not a drilling mud, rather water conveying rock chips directly from the MTBM to an aboveground separator, where water is returned to the MTBM and rock cuttings are removed for management along with excavated rock and soil. Any significant karst voids along the microtunnel path will be grouted then drilled through in order to limit groundwater management by the tunneling water circulation system.

Once tunneling is complete, the 18-inch sewer line is installed/pushed through from one end and grouted in place.

The sewer line will be connected to MH-400R and the SOE then backfilled with imported stone or soil originally excavated from the MH-400R SOE (subject to MDE approval per **Sections 5.3 and 5.4**). Soil reused from the MH-400R excavation will not require testing for reuse in the original location.

The seepage analysis in **Appendix G2** estimates the groundwater seepage rate for the microtunneling activities would be 2,100 gallons per day (gpd) for MH-401R (which is outside the EC) and the microtunneling between MH-401R and MH-300, plus an additional 2,250 gpd for the additional time the MH-3 SOE remains open beyond the time already accounted for in the pump Station/MH-3 seepage analysis in the MH-3 EMP. Note that at the time these calculations were performed, it was assumed that the excavation at MH-400R would be smaller and shorter duration than the present preliminary design, and the seepage rates will be recalculated at the completion of final design. Also, the calculations supporting the Water Appropriation Permit application (By design, two frac tanks (nominally 40,000 gallons capacity) is equal to approximately 18 days capacity, which will allow for receipt of lab data for disposal/discharge determination. At a minimum it gives adequate time to rent a third or fourth tank if needed.

2.3.2 Plans and Permits

Several permits have been submitted to various issuing authorities for aspects of the work subject to this EMP. As a result of design changes to eliminate utility line trenching across Tuscarora Creek (replaced by sewer line microtunneling), most of the existing plan approvals and/or permits are being revised and resubmitted. The following section describes existing approvals and those which must e obtained or revised.

Frederick County, Maryland
The existing Frederick County approved design for the K Sewer line (prior to a change to microtunneling) is part of the following plan set:

Combined Stormwater Management Development and Improvement Plan - Water, Potable Cooling Water and Sewer - West Loop to Quantum Place South (approved by Frederick County 6/18/2023, Contract No. 603D-SW), including SWM Concept Plans Section 1 & Part of Sections 2 & 3 (PW266568) Approved 11/30/2021 and Section 2 (PW273817) Approved 11/29/2022.

This existing plan set includes water, potable cooling water, and sewer most of the distance from MH-3 to future Lot 101, with water and potable cooling water continuing up to Quantum Place South. Design work is underway to make several changes to this plan set including:

- Change in the K-Line sewer route to head west from MH-3 to MH-400R to MH-401R before turning north;
- Change in the K-Line stream crossing (the subject of this EMP) from open trench to microtunnel;
- Adjusting the K-line (and water lines) route near lot 401 to stay outside the EC and floodplain; and
- Eliminate the northern K-Line sewer crossing back across to the 100 lots and Quantum Place South (water lines would still cross at that location.

In addition, these work elements will be divided into more than one Frederick County contract.

While the referenced plan set has been shared with MDE, it does not presently represent the scope of the work to be performed under this EMP (with a change in route and change to microtunneling) and is not included in **Appendix C** of this EMP. Rather, **Appendix C** includes the preliminary Rodgers Consulting *Plan and Profile Exhibit, Sewer at Stream Crossing,* which serves as the preliminary basis for development of the redesign and re-permitting of the segment of K-Line sewer subject to this EMP. The Rodgers revised plan set for this work scope was submitted to Frederick County on 2/1/2024 and will be provided to MDE when available. The K-Line Stream Crossing LOD shown on **Figure 1** through **Figure 4** is also preliminary based on in-progress design and has not yet been approved by any regulatory agency.

MDE WSA- Construction Stormwater

QL and its prime contractor STO have each submitted an NOI (notice of intent) for coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (Maryland General Permit No. 20-CP) based on the approved construction plans referenced above. These NOIs are currently pending at MDE awaiting issuance of an associated EMP as portions of the overall design are within the EC. New or revised 20-CP

NOIs will be resubmitted to align with the scope of new design drawing packages/County contracts after completion of design and approval by Frederick County. The existing permit reference numbers are as follows:

Site Name	**20-CP NOI Reference**	**Status**	**Applicant**
Quantum West Loop	MDRCK07BQ	Resubmitted September 2023, pending EMP issuance, to be revised upon Frederick County approval of revised designs	Quantum Maryland, LLC
Quantum West Loop	MDRCK07BE	Resubmitted September 2023, pending EMP issuance, to be revised upon Frederick County approval of revised designs	STO

MDE WSA- Water Appropriation

An application for Water Appropriation and Water Use for construction dewatering for the Pump Station was originally submitted on October 17, 2023. The application was revised December 27, 2023 to include construction dewatering for all presently planned/permitted utility construction elements based on best available estimates (application Appendix F includes the water appropriation estimate for the microtunnel stream crossing subject to this EMP). State Water Appropriation and Use Permit No. FR2023G001(01) was issued December 29, 2023.

MDE WSA – Wetlands and Waterways

No impacts to wetlands are authorized at this time.

Floodplain Permanent and temporary impacts to the 100-year Floodplain have been authorized by 20226097/ 22-NT-3124, and 202260706/ 22-NT-3094 respectively. Three modifications of this approval are/have been necessary to conduct the work under this EMP or related to this K-Line stream crossing as follows:

- In order to authorize geotechnical borings along this stream crossing (as well as other proposed utility stream crossings on Site), Waterways Permit 22-NT-3124/202260907 was modified effective January 5, 2004 to conduct geotechnical investigation in compliance with the associated Geotechnical Management Plan.

- In order to modify the limit of disturbance under the site Waterways permit (22-NT-3124/202260907) to match the extent of the Pump Station MH-3 EMP area, Rodgers submitted on 12/18/2023 the "Quantum Frederick Pump Station Modification

Package Joint Federal/State Application Permit Modification Package for the Alteration of any Floodplain, Waterway, Tidal or Non-Tidal Wetland in Maryland." The permit modification was issued effective 1/12/2024 and received 1/16/2024 and was attached to the Pump Station MH-3 EMP progress report No. 3. Based on that approval, QL applied for SCD approval of the revised LOD on 1/17/2024. SCD approval was received 1/30/2024. QL then submitted to Frederick County for approval of the redline plan revision and received final approval 2/1/2024.

An additional modification of Waterways Permit 22-NT-3124/202260907 will be submitted to reflect the proposed limit of disturbance and temporary fill placement associated with the specific activities subject to this EMP including construction of the MH-400R SOE and the portion of the access road within the floodplain. As shown on **Figure 2**, the western limit of the floodplain and the western boundary of the EC are essentially co-located east of the MH-401R SOE, so the same portions of the work which are inside the EC are subject to Waterways permitting.

3. Recent Site Activities

3.1 Impacted Media Evaluations

In September and August 2022 GTA performed a Phase II ESA to provide project-specific data along utility and roadway alignments in order to determine the proper management of material that will be excavated during roadway installation and utility installation/abandonment. The Phase II ESA was also prepared in consideration of a Work Plan that was submitted to the MDE LMA for review and approval. The sampling locations and sampling parameters were determined on September 1, 2022. The Work Plan was approved with some alterations and additional sampling parameters on September 28, 2022. Soil samples were collected from 86 soil borings that were situated at approximate 300-foot intervals along the Site's roadway or utility alignments or within the Site's proposed sediment traps, sewage pumping station, and electrical sub-station. The approximate sample locations are depicted on **Figure 3**.

This section describes the Phase II ESA in general, followed by specific Phase II samples in the vicinity of the K-Line sewer work subject to this EMP. **Section 3.3** further describes COPCs in soil and groundwater in the area subject to this EMP. **Section 3.3.1** describes the results of Phase II soil samples which are located closest to the area subject to this EMP Sample SA-7C is close to the MH-400R location within the EC. Sample SA-7D is the next closest EC sample location. Outside the EC, sample SA-7B is near MH-401R, and samples SA-7A and SA-7E are within the proposed LOD. The analytes that were requested for analysis for samples at these locations were either not detected above the laboratory reporting limits or the applicable comparison values. Please refer to the *Phase II Environmental Site Assessment, Initial Infrastructure Phase* (GTA, October 11, 2022) and *Phase II ESA Initial Infrastructure Phase Addendum* (GTA, November 2, 2022) for specific details regarding the Phase II ESA. Figure 4, Figure 8, and Table 2 of the Phase II ESA are reproduced in **Appendix A** of this EMP. Samples SA-7A through SA-7E are presented on page 19 of 25 of Table 2.

3.2 Contaminants of Potential Concern

3.2.1 Soil

No work related to the K-Line Stream Crossing from MH-3 to MH-401R will be conducted within the SMA.

PAHs, PCBs, and arsenic are conservatively identified as COPCs in soil within EC areas, outside of the SMA; however, these COPCs were not detected above laboratory reporting

limits and/or respective NRCS values outside the SMA as part of GTA's 2022 Phase II ESA – Initial Infrastructure Phase. See **Appendix A** for Phase II ESA – Initial Infrastructure Phase data tables.

As shown on **Figure 3**, the Phase II boring locations closest to the work elements subject to this EMP include:

- Sample SA-7C is close to the MH-400R location within the EC.
- Sample SA-7D is the next closest EC sample location (outside the immediate area of work).
- Outside the EC, sample SA-7B is near MH-401R, and samples SA-7A and SA-7E are to the south and north within the proposed LOD.

At location SA7-C (at the approximate location of MH-400R, inside the EC) - samples were collected at 0-1 feet bgs (grab) and at 1-5 feet bgs (composite).

- Arsenic results were 4.3 and 2.8 mg/kg, respectively. These are below the Risk-based calculated value from the MDE NRCS.
- Total Chromium was detected at 24 mg/kg in the shallow sample and 31 mg/kg in the deep sample. The deep sample result was above the 30 mg/kg level for Anticipated Typical Concentrations for soils in Eastern Maryland. This sample (and others referenced in this section) were not speciated for hexavalent chromium. However, as described in the Phase II Addendum, 7 samples with total chromium over 30 mg/kg from across the site were analyzed for hexavalent chromium and (per the Phase II Addendum) "Hexavalent chromium was not detected above the laboratory's reporting limits in the submitted samples. As such, it appears that the chromium detection was associated with the more benign trivalent chromium." The non-residential trivalent chromium standard is 150,000 mg/kg.

At location SA7-D (within the EC outside the immediate area of work) – a grab sample was collected from 0-1 feet bgs and a composite sample was collected from 1-5 feet bgs.

- Arsenic results were 2.8 and 3.9 mg/kg, respectively. Both are below the Risk-based calculated value from the MDE NRCS.
- Total Chromium was detected at 26 mg/kg in the shallow sample and 51 mg/kg in the deep sample. The deep sample result was above the 30 mg/kg level for Anticipated Typical Concentrations for soils in Eastern Maryland.

At location SA7-B (just west of MH-401R outside the EC) – a grab sample was collected from 0-1 feet bgs and a composite sample was collected from 1-5 feet bgs.

- Arsenic results were 8.9 and 7.6 mg/kg, respectively. Both are below the Risk-based calculated value from the MDE NRCS.

- Total Chromium was detected in both samples above the 30 mg/kg level for Anticipated Typical Concentrations for soils in Eastern Maryland. The two reported detections of total chromium were 45 mg/kg (0-1 feet) and 32 mg/kg (1-5 feet).

At locations SA7-A (outside the EC within the LOD to the south) and SA-7E (outside the EC within the LOD to the north) – samples were again collected from 0-1 feet (grab) and 1-5 feet (composite).

- Arsenic results ranged between 2.9 and 7.2 mg/kg. All arsenic results are below the Risk-based calculated value from the MDE NRCS of 26.8 mg/kg.

- Total Chromium was detected in three of the four samples above the 30 mg/kg level for Anticipated Typical Concentrations for soils in Eastern Maryland. The reported detections of total chromium were 44 mg/kg (0-1 feet) and 34 mg/kg (1-5 feet) at SA7-A and 32 mg/kg (0-1 feet) and 27 mg/kg (1-5 feet) at SA7-E.

Detections of beryllium, copper, lead, nickel, and zinc were reported at all soil sample locations described above, which were all below their associated MDE NRCS values. Mercury was also detected (well below the associated MDE NRCS value) in sample SA7-A(0-1) and SA7-A(1-5) only. Values were 0.15 and 0.21 mg/kg, respectively.

3.2.2 Surface Water

No work activities for the K-Line microtunnel (and associated manhole/SOE) construction will encounter surface water bodies within the area of work. The purpose of the microtunneling is to install the K-Line beneath Tuscarora Creek and the associated floodplain while avoiding impacts to or contact with Tuscarora Creek.

Prior evaluations, as summarized in the Environmental Background Summary of the SMP, indicated low-level detections of cyanide that slightly exceeded MDE's criteria for ambient surface waters of 0.0052 mg/L, set forth by an Administrative Consent Order between Eastalco Aluminum Company and the MDE. The USEPA maximum contaminant level (MCL) for cyanide is 0.2 mg/L and detections of cyanide in surface water at the site are orders of magnitude below that level. GTA's 2022 Phase II ESA – Initial Infrastructure Phase included surface water sampling in locations where utilities are proposed to cross surface waters and in the former rainwater pond 102 (now DA-11). Collected surface water samples did not identify cyanide concentrations above the USEPA MCL both within and outside of the SMA. See **Appendix A** for Phase II ESA – Initial Infrastructure Phase data tables. According to the SMP, "exposure by on-site workers and off-site receptors to surface water does not require mitigation." Conservatively, cyanide is considered a COPC in surface water at stream crossings.

None of the proposed construction work covered by this EMP is proposed to discharge water directly into surface water; any approved discharge of containerized and tested water will be in an upland area within the proposed LOD away from surface water bodies.

3.2.3 Groundwater

Prior evaluations, as summarized in the Environmental Background Summary of the SMP, indicated that fluoride exceeded the USEPA MCL on portions of the Site, primarily within the SMA and EC.

Groundwater data in the vicinity of the K-Line Sewer construction subject to this EMP is available from several sources including the Phase II ESA (GTA 2022), current and historic sample results from the North and South Landfill monitoring programs (Tetra Tech 1988, 2005, 2022, 2023), a water sample from the partial pump station excavation (GTA 2022), and a water sample from water in the partially constructed 1B sewer line infiltrating from a pipe joint near MH-4.

GTA's 2022 *Phase II ESA – Initial Infrastructure Phase* included groundwater sampling for fluoride at sample locations SA6-A (the pump station location outside the eastern EC boundary – sample number GTA-GW-1) and SA7-H (outside the western EC boundary – sample number GTA-GW-2), both in utility corridors where groundwater is expected to be encountered. As shown on Table 4 of the Phase II report, both samples had non-detect fluoride results.

The nearest groundwater monitoring wells in the Site groundwater/surface water monitoring network are MW-52, MW-60, MW-72 and MW-73 (two overburden monitoring wells and two bedrock monitoring wells). These four wells are located inside the EC near Tuscarora Creek west of the pump station MH-3 SOE location and east of the proposed MH-400R SOE. (see Figure 4). All four wells are west of the main branch of Tuscarora Creek, with MW-52 and MW-60 east of the western tributary.

In 2023, bedrock well MW-60 was sampled semi-annually and had two fluoride detections of 2.6 mg/L, which are below the fluoride MCL of 4 mg/L. In 2023, MW-52 (overburden), MW-72 (overburden) and MW-73 (bedrock) were each sampled semi-annually and all results were above the fluoride MCL of 4 mg/L. The fluoride detections in 2023 from MW-52, MW-72 and MW-73 ranged from 4.5 to 5.8 mg/L.

The landfill monitoring network is no longer sampled for VOCs. The most recent data for VOCs and other compounds was November 2005. Results from that event are as follows:

Historic Groundwater Results

COC	units	MW-52 11/15/2005	MW-60 11/15/2005	MW-72 11/15/2005	MW-73 11/15/2005
Free Cyanide	ug/L	2	3.7	7.1	5.8
1, 1-Dichloroethene (DCE)	ug/L	ND (<1)	ND (<1)	ND (<1)	ND (<1)
Cis-1, 2-Dichloroethene	ug/L	ND (<1)	ND (<1)	ND (<1)	ND (<1)
Tetrachloroethene (PCE)	ug/L	4.9	4.2	5	6.1
Trichloroethene (TCE)	ug/L	0.5	ND (<1)	ND (<1)	ND (<1)
Vinyl chloride	ug/L	ND (<1)	ND (<1)	ND (<1)	ND (<1)
Total Fluoride	mg/L	7.19	5.3	7.45	8.02

As shown on **Figure 4**, former (abandoned) overburden monitoring wells MW-58 and MW-61 were previously located west of Tuscarora Creek, just outside the EC close to MH-401R. These wells were last sampled in 2005 and then abandoned in 2017 because groundwater concentrations for the parameters listed above were routinely non-detect or below standards.

Appendix B provides the analytical data for the most-recent sample collected from groundwater seepage into the pump station excavation (EMP-GW1), collected May 23, 2023 from the excavation pit. This sample contained fluoride at a concentration below the reporting limit (0.25 mg/L) for the laboratory sample. Samples GW-2 and GW-3 on the same laboratory report relate to basins DA-2 and DA-11 which are not located near the area subject to this EMP.

Fluoride is considered a COPC in groundwater in the Site, in both overburden and deep groundwater, based on the consistent occurrence above MCL in sentry wells MW-52, MW-72 & MW-73 (and sometimes but not recently MW-60) near the EC boundary in close proximity to the K-Line Stream Crossing.

3.3 Exposure Pathway Evaluation

Based on the Phase II ESA performed on the initial infrastructure phase of construction and the existing SMP, potential environmental exposure risks to future occupants and construction workers may exist at the Site. However, with institutional controls in the recorded EC itself serving as deed notice and prohibiting use of groundwater, there is not a complete exposure pathway after construction activities for the K-Line Stream Crossing within the EC.

Specific to this EMP and the K-Line Stream Crossing, potential soil exposure is described in **Section 3.4.1** and exposure to groundwater is described in **Section 3.4.2**.

During implementation of the work under this EMP there will be an environmental professional familiar with the authorized scope of work on-site during working hours. Typically, there are two - an employee of GEI Consultants, Inc. under contract to STO and

an employee of Tetra Tech under contract directly to QL (see **Section 5.0**). In addition, the EMP will be distributed to and signed by representatives of QL, STO, Clark, and the GEI and Tetra Tech representatives (see **Section 7.2**)

The identified exposure pathways, potentially exposed populations, and COPCs are summarized in the table below.

Table 1: Potential Exposure Pathways

Media	Potential Exposed Population	Exposure Pathway	COPCs
Soil (SMA, Explicitly) EC Soils are assumed to have the potential to provide the same pathways	Adult On-Site Construction Worker Child Visitor Youth Visitor Adult Visitor Adult On-Site Worker	Dermal Exposure Incidental Ingestion Inhalation of Volatiles and Fugitive Dust	PAHs (benzo(a)anthrancene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthrancene, and indeno(1,2,3-c,d)pyrene), PCBs (Aroclor 1016, Aroclor 1242, and Aroclor 1248), and Arsenic
Groundwater	Adult On-Site Construction Worker	Dermal Exposure Incidental Ingestion	Fluoride
Surface Water	Adult On-Site Construction Worker	Dermal Exposure Incidental Ingestion	Cyanide

3.3.1 Direct Contact to Soil Contamination

There is a potential for site construction workers to come into contact with the COPCs during drilling of secant piles, excavation of soil and rock and management of soil stockpiles including loading for disposal. Some of the site soil COPCs listed above (such as PCBs) are related to specific areas of the site and within the SMA and not likely to be contacted in the K-Line Stream Crossing area. Soil COPCs were not detected above standards in the Phase II soil samples in the vicinity of the K-Line Stream Crossing area (**Section 3.2.1**). However, for planning and safety purposes, the listed site soil COPCs are addressed in the HASP.

This contact will be limited by implementing a site-specific HASP.

3.3.2 Exposure to Groundwater Contamination

Groundwater has generally been identified at elevations at the site ranging from 5 to 25 feet below ground surface (bgs), with some apparent perched water conditions present on portions of the Site. In the vicinity of MH-3 (and as confirmed through geotechnical drilling related to the Pump Station and MH-3), groundwater is generally 6 to 9 feet below ground surface. Ground surface elevation at MH-400R is similar to MH-3 and the ongoing stream

crossing microtunnel geotechnical investigation will provide additional data with respect to depth to groundwater and depth to rock at MH-400R and along the microtunnel route. Groundwater at the site is not currently used for any purpose, and the EC prevents its use within the area encumbered by the EC. The groundwater at the Site will be prohibited from being used for any purpose via restrictions recorded in the property deeds for areas within the EC and SMA.

There is a potential for site construction workers to come into contact with groundwater from within the area encumbered by the EC during the excavation at MH-400R and continuing dewatering at MH-3 and MH-400R during microtunneling operations. This contact will be limited by implementing the secant pile SOE (which will significantly limit the overall volume of water to be encountered/managed), as well as water management actions including containerizing the groundwater for testing and proper disposal or discharge (subject to MDE approval).

A groundwater seepage analysis was conducted in conjunction with the K-Line Stream Crossing (**Appendix D1**). The analysis considered the following construction elements: the MH-401R SOE, MH-400R excavation, sewer line microtunneling activity and the future proposed water line installation (not part of this EMP). The seepage study estimated about 2,100 gallons per day (gpd) of water would be generated by the microtunneling at the MH-401R launch shaft. Seepage at the excavation at MH-400 was estimated at 75 gpd; however as stated earlier in this report, the preliminary design has changed to include construction of a microtunnel receiving pit at MH-400R, which will increase the water generated at that location, likely to a value similar to but less than MH-401R (the MH-400R SOE is smaller than the MH-401R SOE).

The site-specific HASP will address worker contact with the groundwater.

3.3.3 Inhalation of Fugitive Dust

During construction activities, it is possible for soil impacted by COPCs to become airborne. There is a potential for site construction workers to breathe this fugitive dust. The inhalation of fugitive dust will be limited by implementing the site-specific HASP and construction practices that prevent dust generation (e.g., implementation of dust control methodologies), as well as air monitoring for dust concentrations to assure no hazardous exposure can occur for workers. Details of this monitoring is provided in **Section 5.2.1**.

The proposed remedy for inhalation of fugitive dust is protective of human health as exposure to contamination above regulatory limits will be prevented.

4. Cleanup Criteria

The cleanup criteria for the Site are summarized in the table below. The cleanup criteria for the Site soil COPCs generally reflect the MDE NRCS values, which are the generic risk-based guidance values in MDE's Cleanup Standards for Soil and Groundwater; October 2018; Interim Final Guidance (Update No. 3). MDE cleanup standards are derived from USEPA Region III Reginal Screening Levels (RSLs), which assume a 1E-6 cancer risk; generally speaking, MDE modifies these values to reflect a 1E-5 cancer risk in the NRCS values. The cleanup criteria for fluoride and cyanide are derived from the USEPA National Primary Drinking Water Regulations (NPWDR); May 2009.

Table 2: Cleanup Criteria

Media	COPC	Cleanup Criteria	Basis
Soil	Benzo(a)anthracene	21 mg/kg	NRCS
	Benzo(a)pyrene	2.1 mg/kg	NRCS
	Benzo(b)fluoranthene	21 mg/kg	NRCS
	Benzo(k)fluoranthene	210 mg/kg	NRCS
	Dibenz(a,h)anthrancene	2.1 mg/kg	NRCS
	Ideno(1,2,3-c,d)pyrene	21 mg/kg	NRCS
	Aroclor 1016	5.1 mg/kg	NRCS
	Aroclor 1242	0.95 mg/kg	NRCS
	Aroclor 1248	0.95 mg/kg	NRCS
	Arsenic	26.8 mg/kg	RCV
Groundwater	Fluoride	4.0 mg/L	NPWDR
Surface Water	Cyanide	0.2 mg/L	NPWDR

Note: Arsenic is proposed to be compared to the MDE risk-based comparison value (RCV) of 26.8 mg/kg for commercial properties.

If other COPCs are identified, the cleanup criteria will be re-evaluated. Generally, the cleanup criteria that will be applied to any additional COPCs will be the published MDE NRCS values, or site-specific values calculated using the appropriate frequency exposure parameters, as the need arises.

5. Remedies and Institutional Controls

This EMP presents proposed actions to protect against exposure to potentially contaminated soil and groundwater in conjunction with construction and improvement on the Site. Potentially complete exposure pathways have been identified between contaminated soil and groundwater and construction worker and future on-site worker and visitor populations at the Site. These potential exposure pathways will be eliminated through implementation of a site-specific HASP by Clark Construction (Clark) and any subcontractors working for Clark, construction observation for health and safety measures, proper management of impacted materials encountered during construction activities, and engineering and land use controls (deed restrictions on use of groundwater in the EC).

During implementation of the work under this EMP there will be an environmental professional familiar with the authorized scope of work on-site during working hours. Typically, there are two - an employee of GEI Consultants, Inc. under contract to STO and an employee of Tetra Tech under contract directly to QL. These inspectors are responsible to be familiar with approved environmental plans and scopes of work (including this EMP) and have the authority to stop work if necessary or otherwise direct concerns to appropriate client or contractor personnel.

The environmental professionals are notified by the contractor each morning (via Smartsheets) of the activities for the next day, including specific information as to whether work is in the EC, whether any movement of soil or water is planned (including location/estimated quantity) etc. Both environmental professionals separately review the submittal to verify compliance with plans, add conditions if needed, and prepare for the next day. These sheets are retained. Armed with that advance information, specific elements which will be observed and documented by the environmental professionals or delegates include:

- Daily beginning of each work element (to verify equipment/work areas), including site prep, first secant drilling, first excavation inside secant wall;
- Start and completion daily of any water movement (log source, destination, label the tank, and once moved the amount);
- Start, periodically during work and at completion of any soil movement daily for work area prep, secant drilling, excavation, backfill (log source, destination, and quantity). If an import, document quarry fill cert or reference to MDE approval;
- As needed to verify continued EMP compliance and document daily water/soil/fill volumes for items which continue more than one day; and

- All environmental samples collected (water sampled for disposal or discharge, soil sampled for disposal or reuse.

5.1 Site Security

The SMA portions of the Site are currently secured with fencing to prevent trespassing during non-working hours. The work areas associated with the K-Line Stream Crossing are not located within the SMA.

5.2 Health and Safety Measures

A site-specific HASP has been produced by Clark Construction (Clark) and is included in **Appendix E**. The primary action taken to mitigate potential exposures to construction workers will be the avoidance of direct contact with potentially impacted soil and groundwater, and the appropriate use of personal protective equipment (PPE) during construction activities. Any subcontractors working for Clark will also produce a HASP that provides the administrative and engineering controls and PPE that will be used to ensure workers are protected.

HASPs will be provided by the contractors covering the work of that company's workers involved in construction activities potentially encountering impacted media, for their information. The contractors should independently assess the available information and implement appropriate measures to protect the health and safety of their employees and subcontractors. Information and recommendations contained in Clark's HASP should not in any way be construed as relieving its subcontractors of their responsibilities for site health and safety.

5.2.1 Dust Control

The potential for worker exposure to site contaminants is primarily via direct contact, ingestion, or inhalation of nuisance dust. The primary action taken to mitigate potential exposures to construction workers will be the avoidance of direct contact with potentially impacted soil and the appropriate use of standard construction site personal protective equipment (work gloves, safety glasses, etc.) during construction activities.

Using the maximum detected on-site concentrations of COPCs in soil, the OSHA Permissible Exposure Limits (PELs) for the individual COPCs could only be exceeded if the nuisance dust PEL is exceeded by several to many orders of magnitude. Therefore, airborne dust will be used as a real-time surrogate to prevent potential exposure to contaminant; with nuisance dust controlled to below the worker protection limits, construction workers are protected from COPCs.

Accordingly, the nuisance dust PEL of 15 mg/m^3 can be used as a conservative guideline for air monitoring. The nuisance dust concentration of 15 mg/m^3 can be visually identified without active dust monitoring equipment. If airborne dust is visually observed during activities involving known or potentially contaminated soils, dust suppression measures (e.g., wetting, misting, etc.) will be implemented. If such efforts do not effectively suppress visible dust, then dust monitoring will be initiated to ensure nuisance dust does not exceed the OSHA PEL of 15 mg/m^3. The nuisance dust PEL of 15 mg/m^3 will be used as a stop work action level, and earthwork will cease until dust is no longer visible and dust concentrations are below the 15 mg/m^3 stop work action level.

Visual indications of dust will be observed and recorded, and dust suppression activities will be implemented during earth moving activities at the Site.

A water truck is routinely present on-site during construction activities and available for use. Hydroseed equipment can also be used to spray water as a backup or where more appropriate to reach a particular area. Potable water is used for dust control.

5.2.2 Volatile Organic Vapors

No environmental sampling data or observations have indicated any petroleum or other potentially hazardous volatile organic compounds are present outside of the EC area. If any additional organic odors are detected in borings or excavations during the work, QL will stop work and will direct an investigation of the presumed impacts. This EMP will be amended to describe the risks present and protections to enact if this situation occurs.

5.3 Construction-Related Soil Management

The current scope of work represents an interim use of the property. Soils excavated from within the EMP area is subject to the requirements laid out in the recorded EC and MDE-approved SMP.

For the K-Line Stream Crossing construction elements, soil generated from microtunneling and MH-400R SOE construction and excavation will be stockpiled and labeled as to the source/contents (such as “MH-400R/EC soil”). Due to floodplain constraints within the LOD, these EC soils will be stockpiled outside the EC and floodplain (and therefore outside the EC) in the staging area northwest of MH-401R (**Figure 2**). These will be segregated with silt fencing from stockpiles generated from the MH-401R excavations which are outside the EC, and are not part of this EMP. **Figure 2** shows stockpiles containing materials originating in the EC and subject to CHS oversight in orange boxes and non-EC materials to be generated from the MH-401R SOE in blue boxes. The CHS-regulated materials include

- Approximately 500 CY of topsoil stripped from the MH-400R work area and the access road from MH-401R to MH-400R. This material will be reused to restore the same source location and therefore does not require sampling and testing.

- Approximately 344 CY of soil and/or rock from excavation of the MH-400R SOE and drilling of the secant piles. If structurally suitable, this material may be used as backfill of MH-400R without sampling and testing. Otherwise the materials will be tested for Site COCs for evaluation of disposal or reuse.

- Approximately 300 CY of rock cuttings from the microtunneling from MH-401R to MH-400R. This material will be physically removed from the ground via the microtunnel operation at MH-401R (outside the EC) but the tunnel itself is almost entirely within the EC. This material will be tested for Site COCs for evaluation of disposal or reuse.

To the extent practicable, soils excavated from the MH-400R excavation will be used as backfill. However, due to the volume of soil displaced by the manhole, pipe and select backfill (clean stone) or removal of geotechnically unsuitable materials (organic topsoil, rock) excess material will be sampled to determine disposal requirements.

Soil sampling will at a minimum meet the requirements of the selected disposal facility. If observed soil quality (lack of visible contamination/waste/debris) and/or disposal sample results suggest the material may be considered for reuse, QL may elect to sample the material in accordance with the MDE Fill Material and Soil Management in Maryland fact sheet and related regulation (including one 10-point composite per 2,000 tons of material). If sampled soils meet criteria for Category 1 – Residential Unrestricted Use Soil and Fill Material or Category 2 – Non-Residential Restricted Use Soil and Fill Material, QL may request authorization for use of the material in a manner specified in the request.

If field observations, field screening, unusual odors, odd coloration, or other factors indicate environmental impacts in significant quantities, the suspect impacted soils will be segregated from non-impacted soils so that additional characterization can be performed. This soil will be placed on and covered with plastic sheeting. Soil samples will be collected from the suspect impacted materials to evaluate whether it should be classified as regulated and requiring off-site disposal.

Impacted soils/waste (as determined by sampling results) may be disposed at an appropriate disposal facility. The potential disposal facilities will be contacted to establish the necessary sampling and analysis requirements. The likely facilities for disposal of soil include:

Soil Safe, Inc. (Soil Safe)	or	Clean Earth Inc. (Clean Earth)
16001 Mattawoman Drive		1469 Oak Ridge Place
Brandywine, Maryland 20613-3027		Hagerstown, Maryland 21740
(301) 782-3036		(215) 734-1400

The MH-401R SOE is outside the EC. Soils generated from the MH-401R excavation will be stockpiled separately and are not subject to this EMP.

After completion of the MH-400R and MH-401R SOE construction, microtunneling will be conducted through rock from the MH-401R SOE to the MH-400 SOE and separately from the pre-existing MH-3 SOE to the MH-400R SOE.

Almost the entire length of this tunnel (from one SOE to the other) is within the EC. Therefore, tunneling spoils are "EC soil" and will be managed accordingly. The estimated 300 CY generated from the western portion was described among the materials listed above and shown on Figure 2. An estimated 340 CY of rock cuttings from the eastern portion of the tunnel between MH-3 and MH-400R will be generated (removed from the ground) at MH-3 and will be stockpiled east of the Pump Station along adjacent to the other CHS-regulated material excavated from MH-3 under the Pump Station/MH-3 EMP. These materials will be tested and the results shared with MDE prior to a decision on final disposition or reuse.

5.4 Clean Fill Materials

Materials such as open-graded aggregate to be used for the MH-400R work platform and access road within the EMP boundary will be documented to be clean, either through submittal to MDE and prior approval of a certification from the supplier (for quarry stone) or by testing and approval by MDE prior to use. A copy of the Clean Stone Certificate provided by Vulcan Materials to Clark subcontractor Metro Materials for pump station work is provided in **Appendix F**.

5.5 Groundwater Management

A groundwater use restriction is recorded in the property deeds by way of the existing EC. As such, the use of public utilities is planned. Groundwater will be encountered during MH-400R SOE installation and excavation, as well as microtunneling activities. Groundwater is anticipated to be encountered at a depth of 6 to 9 feet below grade at the MH-3 location (with a similar ground surface elevation to MH-400R), and updated information regarding the MH-400R area will be determined through the ongoing geotechnical boring program.

The use of alternate means of construction including the secant pile SOE structures and grouted base plug will significantly limit the amount of seepage into the structures during excavation and construction within the SOEs (microtunneling and MH-400R construction/pipe connections).

Appendix D1 includes a memorandum presenting the K-Line Stream Crossing Seepage Analysis with SOE Design elements. This memo describes the SOE design elements to be used for the MH-401R SOE (outside the EC and not part of this EMP), MH-400R excavation, microtunneling for sewer installation, and the future water lines installation (not part of this EMP).

The seepage study estimated about 2,100 gallons per day (gpd) of water would be generated by the microtunneling at the MH-401R launch shaft. Seepage at the excavation at MH-400 was estimated at 75 gpd; however as stated earlier in this report, the preliminary design has changed to include construction of a microtunnel receiving pit at MH-400R, which will increase the water generated at that location, likely to a value similar to but less than MH-401R (the MH-400R SOE is smaller than the MH-401R SOE).

Construction is estimated to take approximately 80 to 100 days including up to 80 days of dewatering at the MH-401R SOE (outside the EC). The duration of dewatering at the MH-400R SOE may be shorter as complete dewatering at MH-400R is not necessary when tunneling starts at the other ends.

With regard to water management, page 3 of the EC states:

> "Excavation Encountering Groundwater: When conducting any excavation activities on the Property extending to the ground water table, the Property Owner shall implement the requirements of a site-specific health and safety plan in accordance with the Site Management Plan to ensure that worker protection measures are met. The encountered ground water shall be containerized during all dewatering activities at the property and shall be analyzed before disposal. The analytical results shall be the basis for appropriate disposition of the ground water in accordance with applicable local, State and federal laws and regulations."

This EC requirement is applicable to any water evacuated from secant pile boreholes at MH-400R as well as seepage water removed from the completed MH-400R SOE and microtunneling return water/slurry removed at MH-401R and at MH-3. Since this area of work is located in or removes material from the EC and site construction workers may come in contact with groundwater during the work, contractors are required to assure appropriate health and safety precautions presented in the contractors' HASPs are followed.

Water generated from seepage in the MH-401R SOE that is not attributed to microtunneling operations is not covered under this EMP, as it is outside the EC.

The water extracted during MH-400R SOE installation and excavation, and microtunneling between MH-401R and MH-3 will be containerized and tested for COPCs to assure proper handling and disposal. Water will be pumped through a hose to two portable frac tanks located outside the floodplain (and therefore also outside the EC) as shown on Figure 2.

When the first tank is between 20% and 100% full, the water will be sampled for fluoride plus any additional requirements of the potential disposal facility.

When results are received from the laboratory, they will be provided to the disposal facility (if slated for disposal) for waste acceptance approval and will be sent to MDE for information. If fluoride (the most likely site-related COC) meets MDE standards, QL may elect to analyze for additional site COCs. Where water data is suitable for on-site discharge (meeting MDE surface water discharge criteria), MDE will be notified prior to discharge in a controlled manner in an upland area away from surface waterways within the proposed LOD shown on **Figure 2**.

Groundwater will also be encountered in construction of the MH-401R SOE. Since this water is outside the limits of the EC, this water will be managed as per the SWPPP, which requires containerization and testing prior to controlled site discharge in an upland area within the LOD, away from surface waterways.

Due to the sequence of construction, water will be managed at the Pump Station/MH-2 (including sampling for off-site disposal) and then at MH-3 under the associated EMP prior to generating groundwater under the scope of this EMP. Although those locations are across Tuscarora Creek, the MH-3 results in particular will inform planning for implementation of the K-Line work.

Because the microtunneling from MH-3 to MH-401R passes between the monitoring wells described earlier in this report, that section of microtunnel has the potential to have higher fluoride concentrations than the water on either side.

All tanks will be labelled as to their contents. Any tank containing any EC water will be so labelled.

As noted above, the calculated groundwater seepage rates at MH-3 SOE, MH-400R SOE, and MH-401R SOE (outside the EC) are on the order of 2,000 gallons per day. By design, two frac tanks (nominally 40,000 gallons capacity) is equal to at least 18 days capacity, which should allow for receipt of lab data for disposal or discharge. At a minimum it gives adequate time to rent a third or fourth tank if needed. In the case that seepage rate is significantly higher than expected (the calculated number already includes a factor of safety), the design includes a contingency to pour a concrete base or implement additional grouting. Work could stop and the water level would not rise above natural groundwater elevation so there is no possibility of a surface discharge or need for emergency pumping.

Containerized water will be disposed at an appropriate disposal facility or discharged on-site as determined by sampling results. The potential disposal facilities will be contacted to establish the necessary sampling and analysis requirements. Water recently collected from manhole MH-4 (groundwater seepage into a partially constructed sewer line generally near

MH-3) was tested and shipped to Valicor Environmental Services under contract to Capitol Environmental Services, Inc. Some water from Pump Station construction (outside the EC) has been shipped to VLS Recovery Services, Baltimore MD. It is anticipated that any water not approved for on-site discharge will go to the same facilities if acceptable based on sample results:

Valicor Environmental Services
17551 Power House Road
Williamsport, MD 21795
(410) 463-7662

Capitol Environmental Services, Inc.
PO Box 37143
Baltimore, MD 21297-3143
Attn: Ben Sisti
(732) 672-9476

VLS Recovery Services
3300 Childs St, Baltimore, MD 21226
(833) 342-5372

5.6 Capping

No activities for work covered by this EMP will be conducted within the SMA. Therefore, no capping activities are required for this work at this time.

5.7 Land Use Controls

Land use controls currently exist in the form of an EC that includes the area adjacent to MH-3 as well as the majority of the K-Line Stream Crossing (except for the MH-401R SOE)~~, and~~ e Closure documentation issued by the MDE LMA for the successful completion of EMP activities will also list land use controls. The existing land use controls for the area within the EC include but are not limited to the soil excavation controls and restrictions, as well as restrictions on the use of groundwater beneath the property. These land use controls are recorded in the local land records.

6. Contingencies

If site conditions observed during construction and/or remediation differ substantially from those described herein, modifications to this EMP may be necessary. Such differing conditions may warrant an adjustment of sampling procedures, analytical methods, remedial activities, etc. and such modifications will be addressed in an addendum or revision to this EMP. MDE will be notified of any newly discovered contamination, proposed changes to this EMP, or citations from other regulatory agencies.

Specifically, if newly discovered contamination is identified during site development, the following contingency measures will be taken:

- Notify MDE within 24 hours (verbally and written/email);
- Postpone implementation of the EMP;
- Evaluate new site conditions identified; and
- Amend EMP to address new site conditions identified.

Any amendments to the EMP must be approved by MDE prior to implementation

Notified departments will include:

MDE Land Restoration Program
Land and Materials Administration
1800 Washington Boulevard
Baltimore, Maryland 21230
(410) 537-3466
Attention: Anuradha Mohanty

In addition to the above, if there is evidence of an oil discharge at the Site in violations of applicable regulations, it must be reported within two hours as specified in COMAR 26.10.08.01, to the OCP (410-537-3442) or, if after normal business hours, to the 24-hour Spill Reporting Hotline (1-866-633-4646). The MDE will be verbally notified within 48 hours (72 hours in writing /email) of changes (planned or emergency) to the EMP implementation schedule, previously undiscovered contamination, and citations from regulatory entities related to health and safety practices. Notifications shall be made to the MDE project manager at 410-537-3466.

Any violations of State or Local permit requirements during implementation of the EMP in the EMP area must be reported to the CHS project manager by email within 24 hours of receipt of the violation notification.

7. ADMINISTRATIVE

7.1 Schedule

The preliminary schedule to implement the EMP is presented below. Note that this preliminary schedule is subject to change based on unforeseen conditions that are beyond the development team's control. Deviations from this proposed schedule will be communicated to MDE.

Table 3: Estimated Construction Schedule Relevant to EMP

Milestone	Estimated Schedule
EMP Review/Approval	1-29-2024 to 3-11-2024
Submission of Weekly EMP Progress Reports	Weekly following initiation of work (due Tuesday of the following week))
MH-401R and MH-400 Secant Wall Installation (MH-401R is not part of the EMP, but critical to the project)	March to May 2024
Microtunneling/Sewer Installation Activities	May to August 2024
EMP Completion Report Submittal	September 2024
MDE review completed	October 2024

The MDE project manager will be notified in writing within five calendar days prior to the beginning of EMP implementation activities. Schedule updates will be provided when needed, during preparation of the progress reports discussed in **Section 7.2**.

If site conditions or other factors lead to a change in the scope of work or procedures MDE will be notified and an EMP modification will be provided to MDE for review and approval prior to implementation.

7.2 Documentation

After approval of the EMP and prior to the start of work under this EMP, QL and all site contractors working under this EMP (including the on-site environmental professionals) will review the EMP and sign the certification on the following page stating that they have received and read the EMP. All contractor certifications are to be submitted to the CHS project manager prior to EMP implementation.

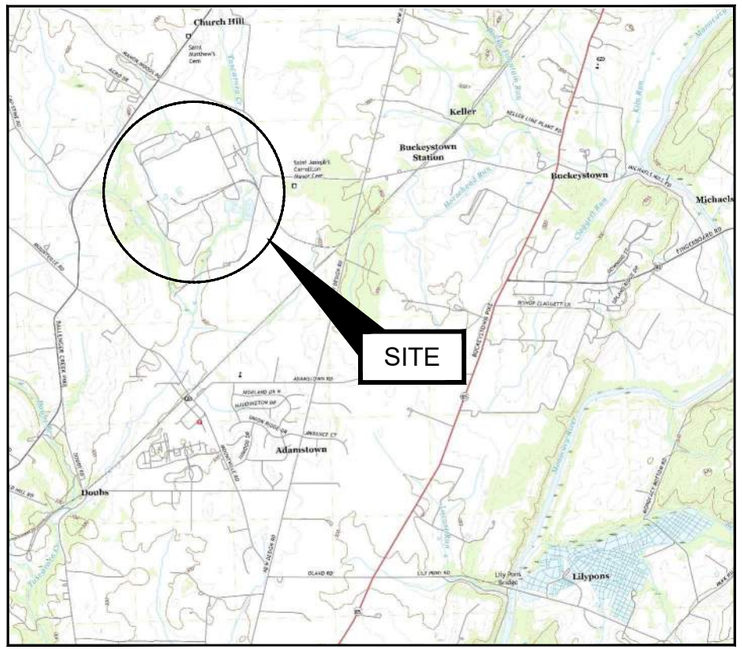
During implementation of this EMP, QL will prepare weekly progress reports summarizing the remedial activities occurring during that week and volume of groundwater collected and disposed of off-Site. These weekly progress reports will be submitted to the Client and to MDE by Tuesday of the following week, to demonstrate implementation of this EMP. At the conclusion of EMP implementation, QL will prepare an EMP Completion Report.

K-Line Stream Crossing EMP Certification

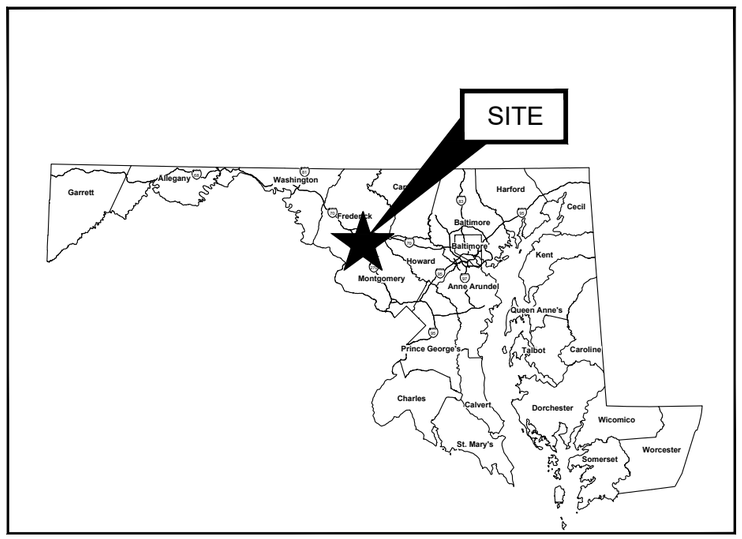
By signing below, I certify that I have read and understand the terms and conditions of the EMP for the above designated project and agree to follow the practices described in the EMP.

Name	Company	Signature

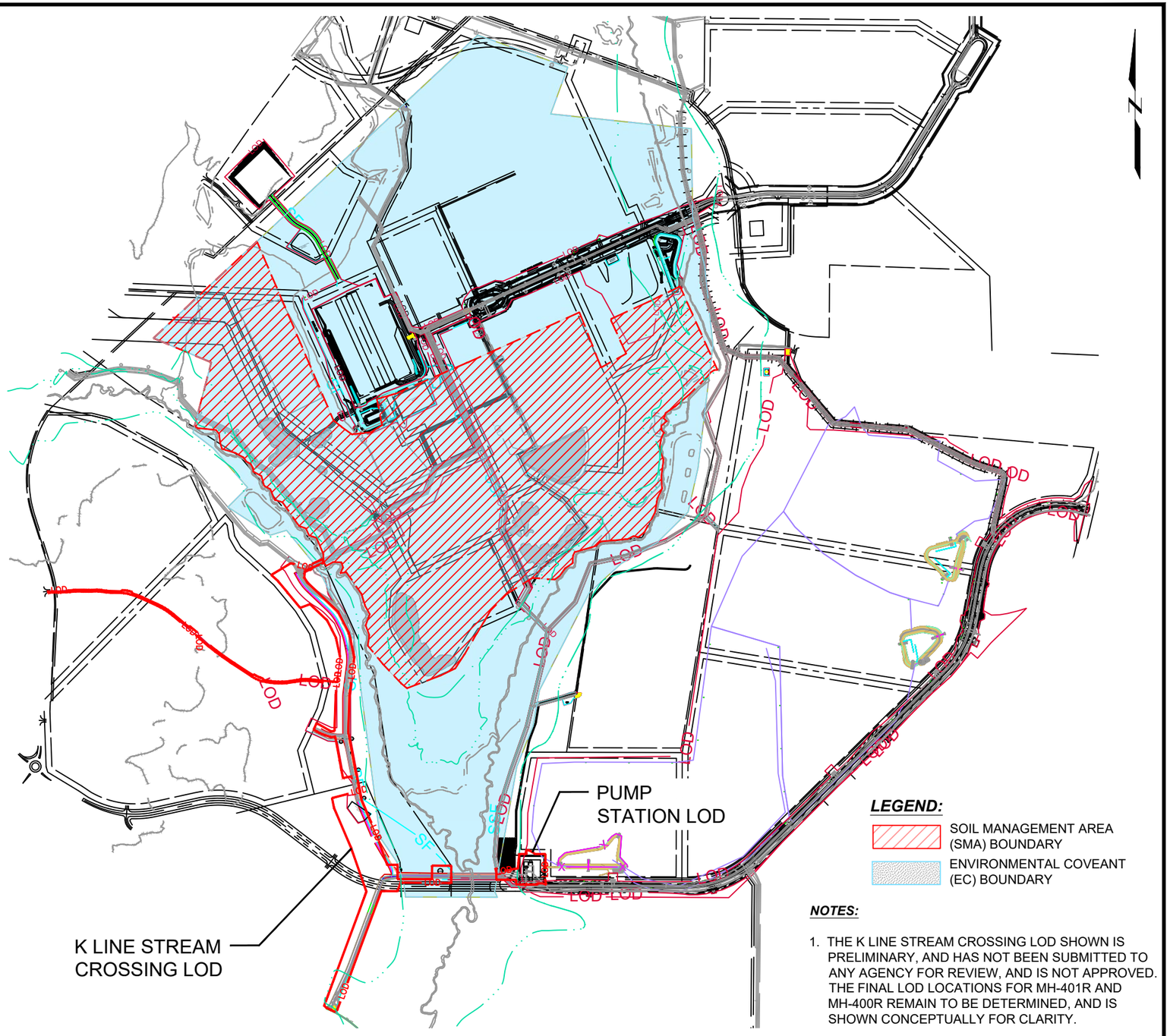
Figures



SOURCE:
MAP TAKEN FROM USGS.GOV.



STATE or COUNTY MAP
(NOT TO SCALE)



LEGEND:

- SOIL MANAGEMENT AREA (SMA) BOUNDARY
- ENVIRONMENTAL COVEANT (EC) BOUNDARY

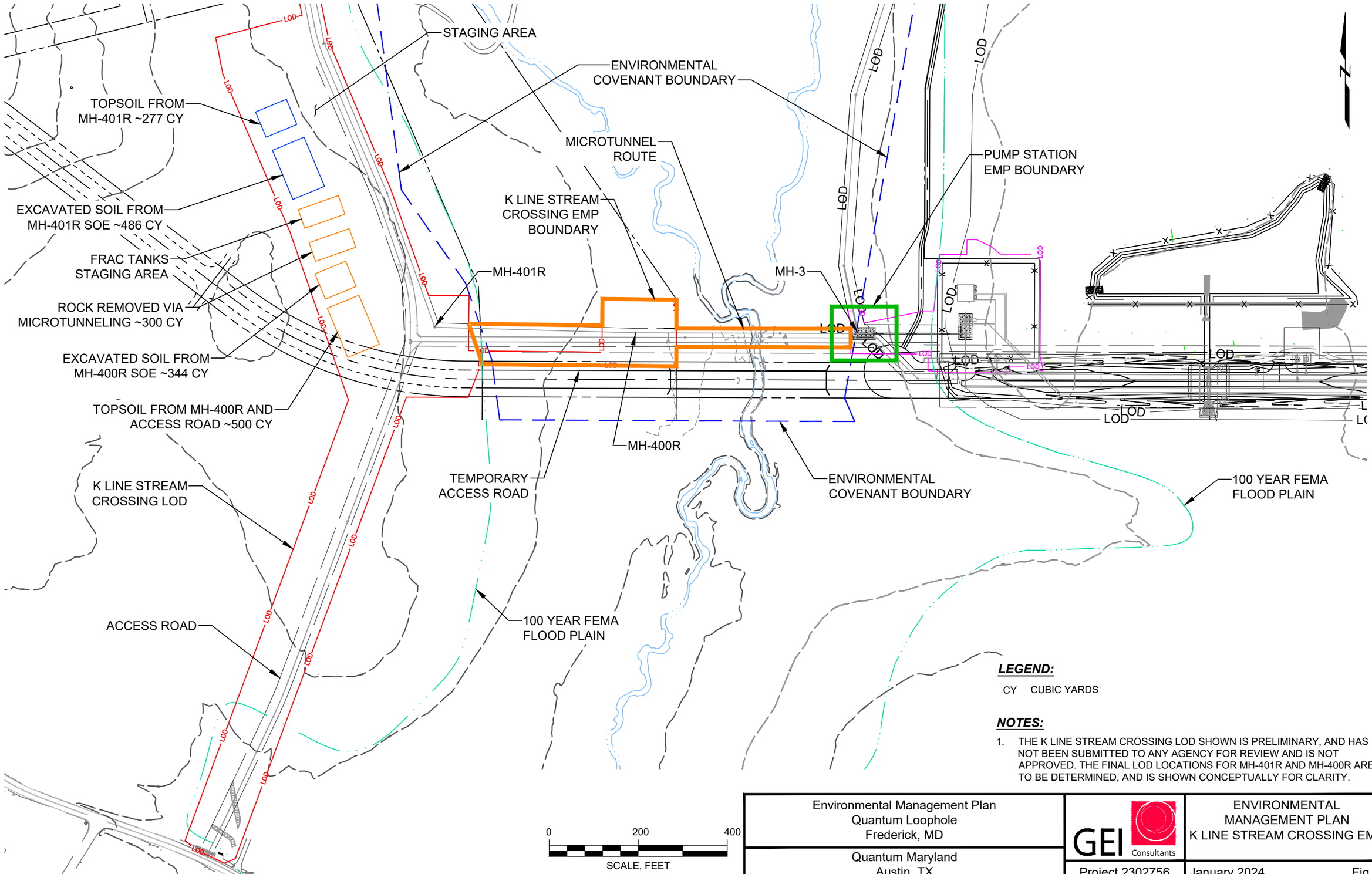
NOTES:

1. THE K LINE STREAM CROSSING LOD SHOWN IS PRELIMINARY, AND HAS NOT BEEN SUBMITTED TO ANY AGENCY FOR REVIEW, AND IS NOT APPROVED. THE FINAL LOD LOCATIONS FOR MH-401R AND MH-400R REMAIN TO BE DETERMINED, AND IS SHOWN CONCEPTUALLY FOR CLARITY.

0 1000 2000
SCALE, FEET

Environmental Management Plan Quantum Loophole Frederick, MD	GEI Consultants	ENVIRONMENTAL MANAGEMENT PLAN K LINE STREAM CROSSING
Quantum Maryland Austin, TX	Project 2302756	January 2024 Fig. 1

HERIOT, PAULA B:\Working\STRUCTURE TONE\2302756 STO Mission Critical - Frederick\00_CAD\Figures\Environmental Management Plans - EMP\EMP-1A_K Line Stream Crossing\Fig 1_EMP-K Line Stream Crossing.dwg - 1/31/2024



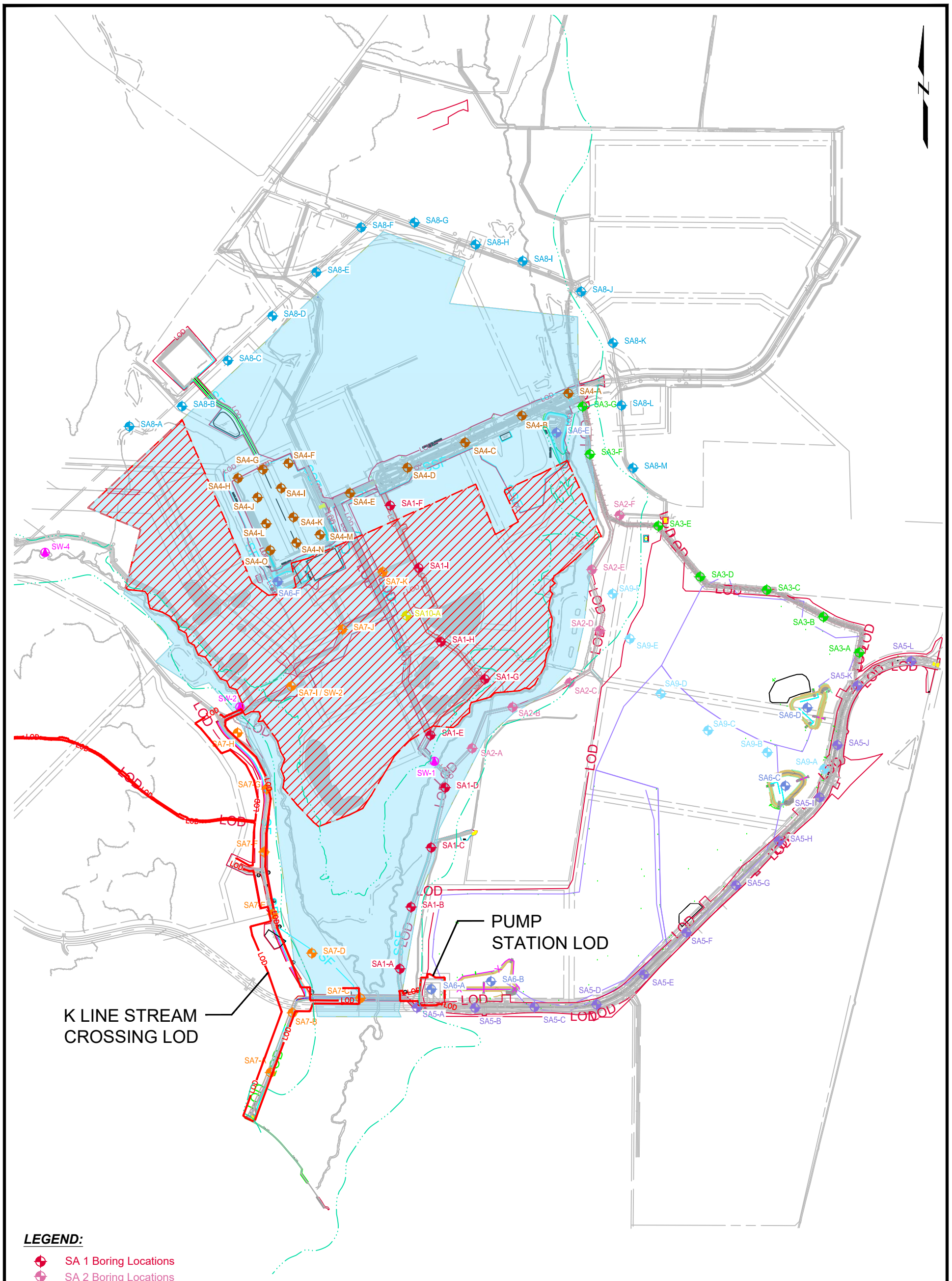
LEGEND:

CY CUBIC YARDS

NOTES:

1. THE K LINE STREAM CROSSING LOD SHOWN IS PRELIMINARY, AND HAS NOT BEEN SUBMITTED TO ANY AGENCY FOR REVIEW AND IS NOT APPROVED. THE FINAL LOD LOCATIONS FOR MH-401R AND MH-400R ARE TO BE DETERMINED, AND IS SHOWN CONCEPTUALLY FOR CLARITY.

Environmental Management Plan Quantum Loophole Frederick, MD	GEI Consultants	ENVIRONMENTAL MANAGEMENT PLAN K LINE STREAM CROSSING EMP
Quantum Maryland Austin, TX	Project 2302756	January 2024 Fig. 2



LEGEND:

- SA 1 Boring Locations
- SA 2 Boring Locations
- SA 3 Boring Locations
- SA 4 Boring Locations
- SA 5 Boring Locations
- SA 6 Boring Locations
- SA 7 Boring Locations
- SA 8 Boring Locations
- SA 10 Boring Locations

NOTES:

1. THE K LINE STREAM CROSSING LOD SHOWN IS PRELIMINARY, AND HAS NOT BEEN SUBMITTED TO ANY AGENCY FOR REVIEW, AND IS NOT APPROVED. THE FINAL LOD LOCATIONS FOR MH-401R AND MH-400R REMAIN TO BE DETERMINED, AND IS SHOWN CONCEPTUALLY FOR CLARITY.

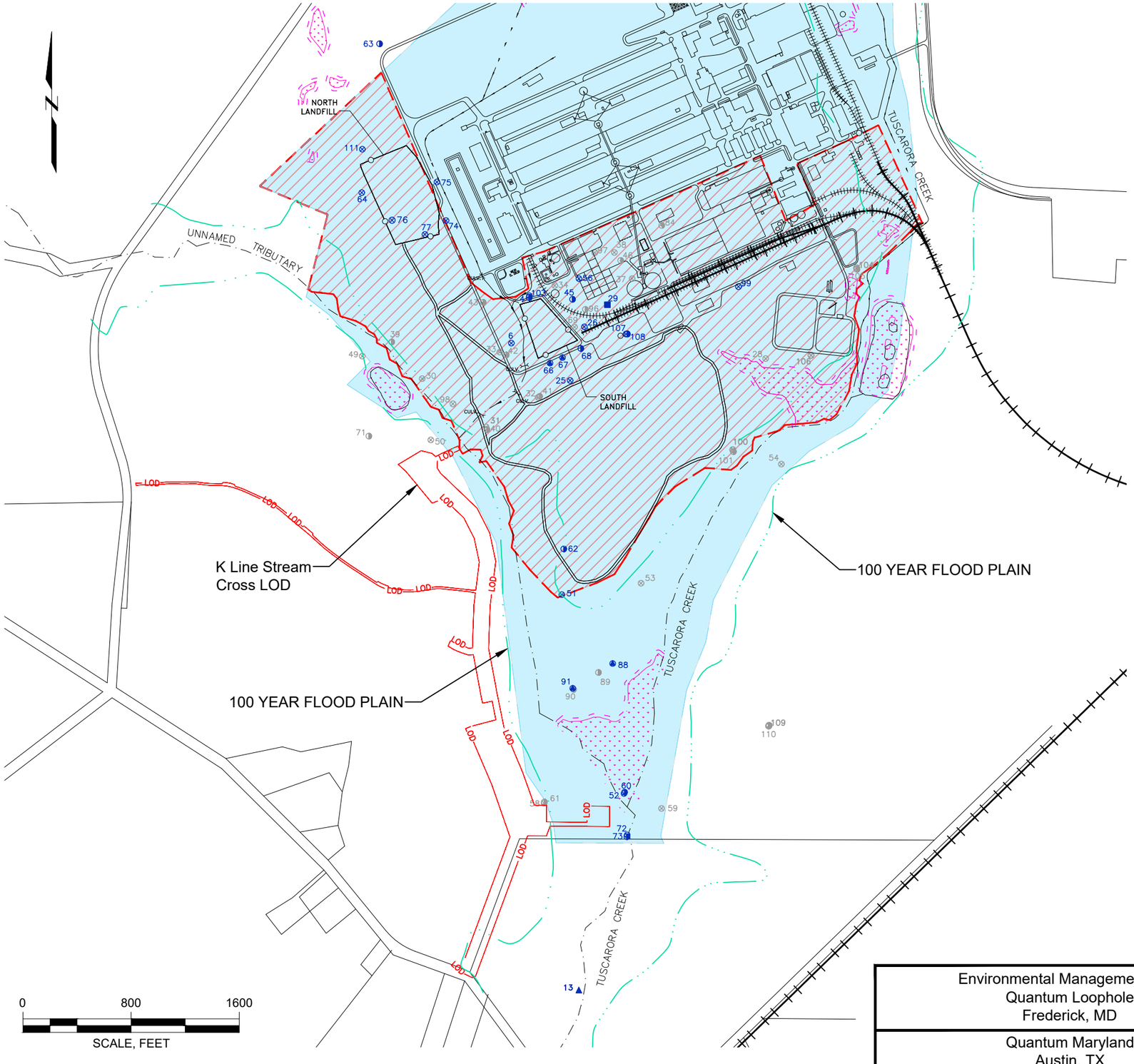
SOURCE:

1. BORING LOCATION PLAN BASED ON 2022 PHASE II DRAWING PROVIDED BY GEO-TECHNOLOGY ASSOCIATES, INC., DATED OCTOBER 2022.

0 900 1800

SCALE, FEET

Environmental Management Plan Quantum Loophole Frederick, MD		GEI Consultants	BASE MAP FROM GTA PHASE II REPORT (FIGURE 8)
Quantum Maryland Austin, TX		Project 2302756	January 2024 Fig. 3



LEGEND:

- ABANDONED OVERBURDEN MONITORING WELL
- ABANDONED OVERBURDEN / BEDROCK MONITORING WELL
- ABANDONED BEDROCK MONITORING WELL
- OVERBURDEN MONITORING WELL LOCATION (MAINTAINED FOR MONITORING)
- OVERBURDEN / BEDROCK MONITORING WELL LOCATION (MAINTAINED FOR MONITORING)
- BEDROCK MONITORING WELL (MAINTAINED FOR MONITORING)
- OFF-PROPERTY / BEDROCK MONITORING WELL LOCATION (NOT OWNED BY QL)
- RECOVERY WELL
- PROPERTY LINE
- STREAM COURSE
- SOIL MANAGEMENT AREA (SMA) BOUNDARY
- ENVIRONMENTAL COVEANT (EC) BOUNDARY
- WETLAND
- WETLAND BUFFER

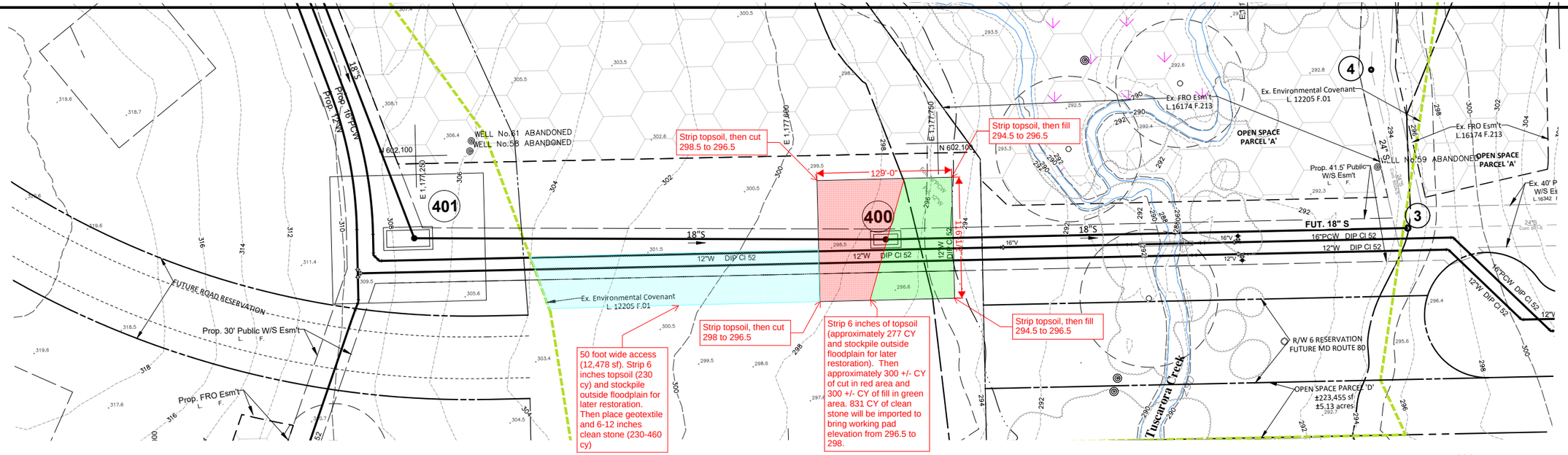
NOTES:

1. THE SITE FEATURES ARE BASED ON PRE-DEMOLITION/CURTAILMENT PLANT CONDITIONS.
2. MONITORING WELL STATUS BASED ON THE 2018 TETRA TECH WELL ABANDONMENT REPORT AND THE 2023 CLOSED NORTH INDUSTRIAL LANDFILL SEMIANNUAL WATER QUALITY REPORT.
3. THE K LINE STREAM CROSSING LOD SHOWN IS PRELIMINARY, AND HAS NOT BEEN SUBMITTED TO ANY AGENCY FOR REVIEW AND IS NOT APPROVED. THE FINAL LOD LOCATIONS FOR MH-401R AND MH-400R ARE TO BE DETERMINED, AND IS SHOWN CONCEPTUALLY FOR CLARITY.

SOURCE:

BASE MAP TAKEN FROM THE DRAWING, FIGURE 1 PLANNED MONITORING WELL ABANDONMENT LOCATIONS, PROVIDED BY TETRA TECH, DATED AUGUST 2017.

Environmental Management Plan Quantum Loophole Frederick, MD	GEI Consultants	MONITORING WELL LOCATIONS
Quantum Maryland Austin, TX	Project 2302756	January 2024 Fig. 4



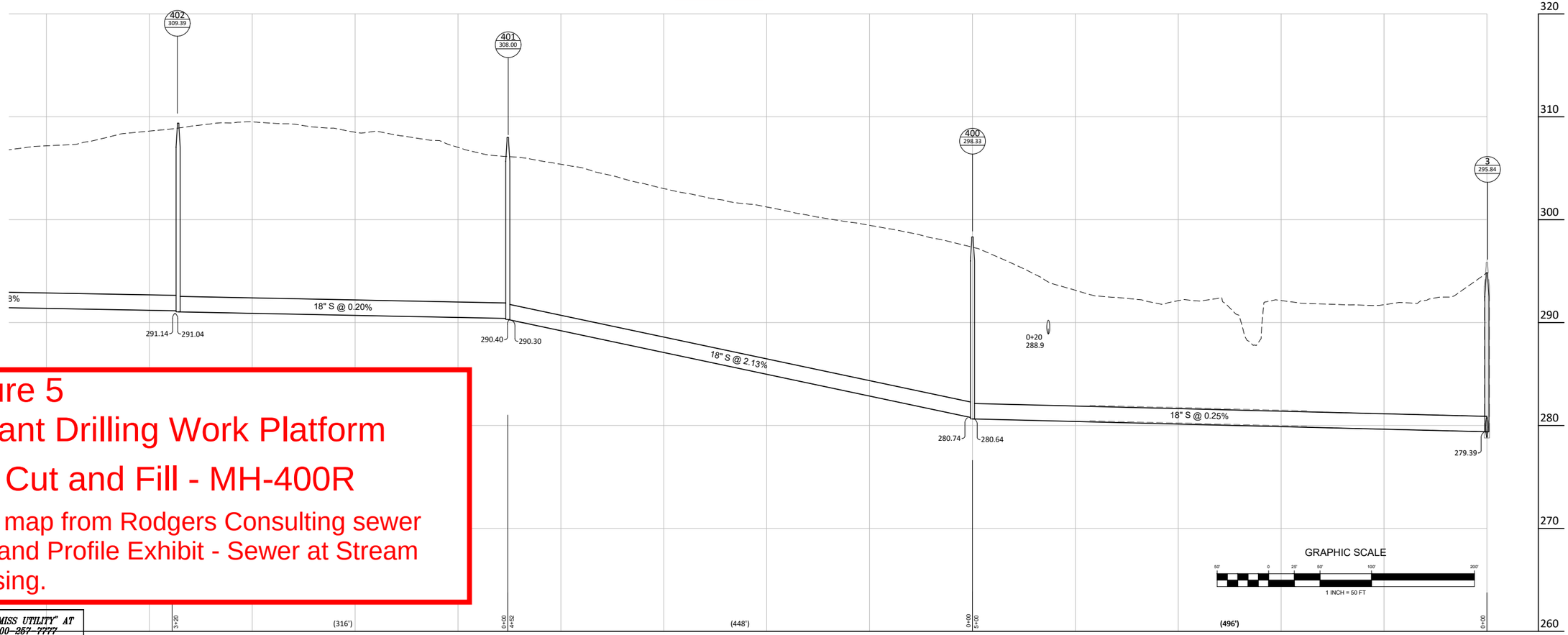


Figure 5
Secant Drilling Work Platform
Soil Cut and Fill - MH-400R

Base map from Rodgers Consulting sewer Plan and Profile Exhibit - Sewer at Stream Crossing.

CALL "MISS UTILITY" AT 1-800-257-7777 72 Hours Before Start Of Construction

REVISION	DATE	REVISION	DATE

	BY	DATE
BASE DATA	CADD	
DESIGNED		
DRAWN		
REVIEWED		

RELEASE FOR _____ BY DATE

DEVELOPER/ OWNER:
QUANTUM MARYLAND, LLC
500 E 4TH STREET SUITE 333
AUSTIN, TX 78701
PHONE: 530-417-7496
CONTACT: AD ROBISON

Plan & Profile Exhibit
Sewer at Stream Crossing

RODGERS CONSULTING
19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
Ph: 301.948.4700 Fx: 301.948.6256 www.rodgers.com

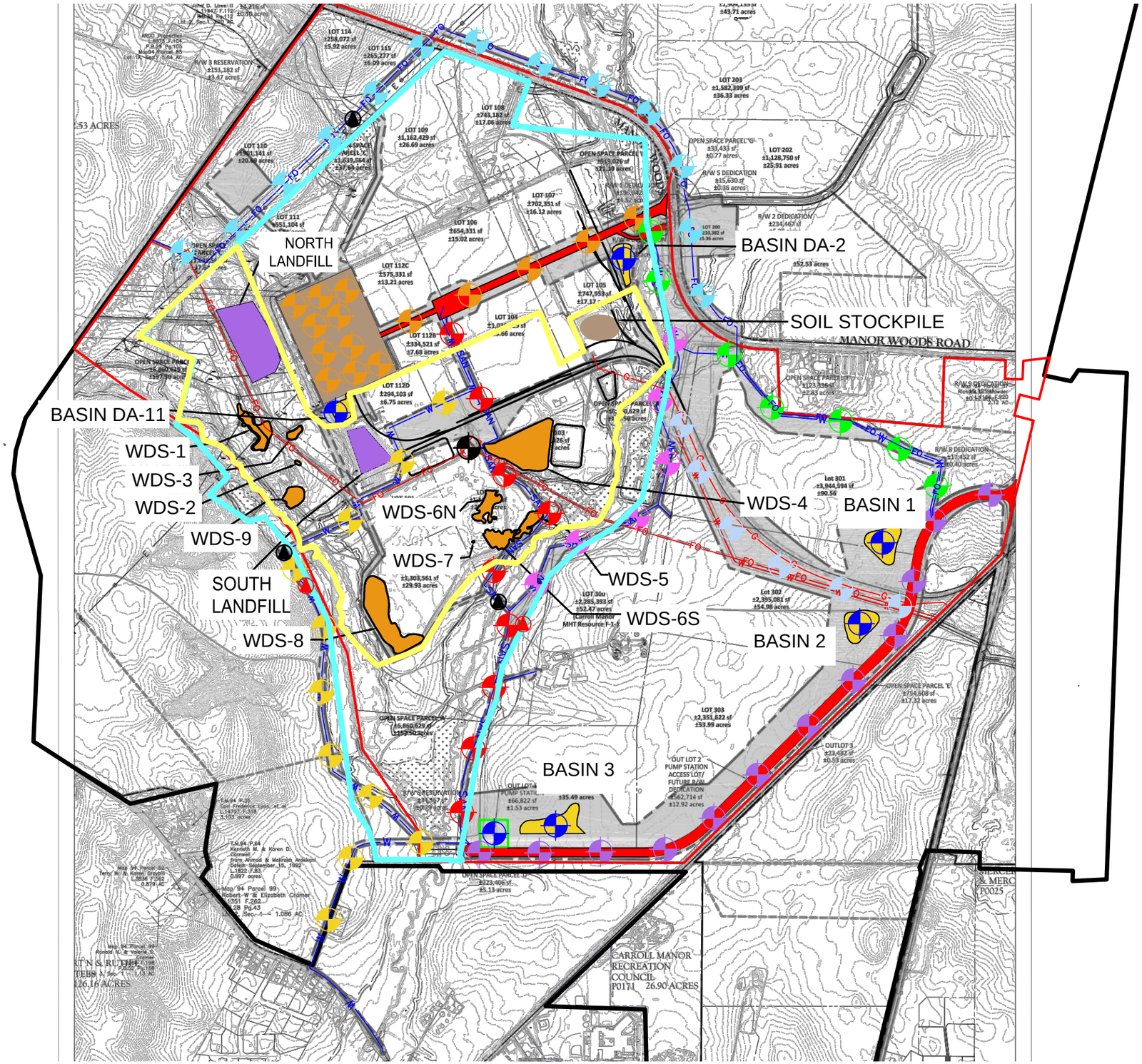
12"Water & 16" Potable Cooling Water
Mountville Road to Happy Landing Road
QUANTUM FREDERICK
LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE: 1"=50'
JOB No. 1339A2
January, 2023
INDEX No.
SHEET No. OF 11

Appendix A

Phase II Environmental Site Assessment – Initial Infrastructure Phase

Figures 4 and 8 and Table 2



Legend

- SA 1 Boring Locations
- SA 2 Boring Locations
- SA 3 Boring Locations
- SA 4 Boring Locations
- SA 5 Boring Locations
- SA 6 Boring Locations
- SA 7 Boring Locations
- SA 8 Boring Locations
- SA 9 Boring Locations
- SA 10 Boring Locations
- Surface Water Locations
- Groundwater Locations

- Site Boundary
- SMP Boundary
- UEC Boundary
- Utilities to be installed permantly
- Utilities to be abandoned in place or removed
- Roadways
- Substation Pad
- Limit of Disturbance
- Landfills
- Waste Disposal Sites
- Basins
- W — Water lines
- SAN — Sanitary Lines
- G — Gas Lines
- FO — Dry Utlities

Notes

Base image obtained from "Quantum Frederick - Initial Infrastructure Grading Limits of Disturbance", drawn by Rodgers Consulting on 08-01-2022

0 400 800

Approximate Scale
1 inch = 800 feet

NORTH

GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
14280 PARK CENTER DRIVE, SUITE A
LAUREL, MARYLAND 20707
(410) 792-9446 OR (301) 470-4470
www.gtaeng.com

FORMER ALCOA EASTALCO WORKS PROPERTY
INITIAL INFRASTRUCTURE PHASE
FREDERICK COUNTY, MARYLAND

PROPOSED SAMPLING AREAS

PROJECT: 201536	DATE: AUGUST 2022	SCALE: 1" = 800'
DRAWN BY: NMT	REVIEW BY: PHH	FIGURE: 4

SA8-F SA8-G SA8-H SA8-I SA8-J SA8-E SA8-D SA8-K SA8-C SA8-B SA8-A SA8-L SA8-M

SA4-A SA4-B SA4-C SA4-D SA4-E SA6-E SA3-G SA3-F

See Inset 1

See Inset 2

SA1-F SA1-I SA1-H SA1-G SA1-E SA1-D SA1-C SA1-B SA1-A

SA2-F SA2-E SA2-D SA2-C SA2-B SA2-A

SA3-E SA3-D SA3-C SA3-B SA3-A

SA4-F SA4-G SA4-I SA4-H SA4-J SA4-K SA4-L SA4-N SA4-M SA4-O

SA5-L SA5-K SA5-J SA5-I SA5-H SA5-G SA5-F SA5-E SA5-C SA5-D SA5-A SA5-B

SA6-F SA6-D SA6-C SA6-A SA6-B

SA7-K SA7-J SA7-I SA7-H SA7-G SA7-F SA7-E SA7-D SA7-C SA7-B SA7-A

SA9-F SA9-E SA9-D SA9-C SA9-B SA9-A

SA10-A

SW-4 SW-2 SW-1

GTA-DA11-E GTA-DA11-W

Inset 1

0 75 150

Approximate Scale
1 inch = 150 feet

NORTH

Inset 2

0 25 50

Approximate Scale
1 inch = 50 feet

NORTH

Legend

- SA 1 Boring Locations
- SA 2 Boring Locations
- SA 3 Boring Locations
- SA 4 Boring Locations
- SA 5 Boring Locations
- SA 6 Boring Locations
- SA 7 Boring Locations
- SA 8 Boring Locations
- SA 9 Boring Locations
- SA 10 Boring Locations
- Surface Water Locations
- Groundwater Locations

Notes:

1. Base map obtained from MD iMap (2020 Western Shore Collection).
2. Sample locations were field located using a Trimble Geo 7x global positioning system (GPS) unit with sub-meter capable accuracy.

0 150 300

Approximate Scale
1 inch = 300 feet

NORTH

GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
14280 PARK CENTER DRIVE, SUITE A
LAUREL, MARYLAND 20707
(410) 792-9446 OR (301) 470-4470
FAX: (410) 792-7395
www.gtaeng.com

FORMER ALCOA EASTALCO WORKS PROPERTY
INITIAL INFRASTRUCTURE PHASE
FREDERICK COUNTY, MARYLAND

BORING LOCATION PLAN

PROJECT: 3120153	DATE: October 2022	SCALE: 1" = 300'	DESIGN BY: CMM	REVIEW BY: KPP	FIGURE: 8

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA1-A	GTA-SA1-A	GTA-SA1-B	GTA-SA1-B
Sample Interval			0-1	1-6.5	0-1	1-5.5
Sample Type			Grab	Composite	Grab	Composite
Sampling Date			9/12/2022	9/12/2022	9/12/2022	9/12/2022
Polycyclic Aromatic Hydrocarbons (PAHs)						
2-Methylnaphthalene	300	--	<0.0097	<0.011	<0.010	<0.011
Acenaphthene	4,500	--	<0.0097	<0.011	<0.010	<0.011
Acenaphthylene	NE	--	<0.0097	<0.011	<0.010	<0.011
Anthracene	23,000	--	<0.0097	<0.011	<0.010	<0.011
Benzo(a)anthracene	21	--	<0.0097	<0.011	<0.010	<0.011
Benzo(a)pyrene	2	--	<0.0097	<0.011	<0.010	<0.011
Benzo(b)fluoranthene	21	--	<0.0097	<0.011	<0.010	<0.011
Benzo(g,h,i)perylene	NE	--	<0.0097	<0.011	<0.010	<0.011
Benzo(k)fluoranthene	210	--	<0.0097	<0.011	<0.010	<0.011
Chrysene	2,100	--	<0.0097	<0.011	<0.010	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.0097	<0.011	<0.010	<0.011
Fluoranthene	3,000	--	<0.0097	<0.011	<0.010	<0.011
Fluorene	3,000	--	<0.0097	<0.011	<0.010	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.0097	<0.011	<0.010	<0.011
Naphthalene	17	--	<0.0097	<0.011	<0.010	<0.011
Phenanthrene	2,300	--	<0.0097	<0.011	<0.010	<0.011
Pyrene	2,300	--	<0.0097	<0.011	<0.010	<0.011
Priority Pollutant (PP) Metals						
Antimony	47	6.8	<2.0	<2.3	<2.3	<2.6
Arsenic	3.0/26.8*	4.9	2.7	7.5	5.4	4.0
Beryllium	230	1.6	<0.39	2.4	1.5	1.8
Cadmium	98	1.1	<0.39	<0.46	<0.47	<0.52
Chromium [3]	6.3	30	20	**44**	**36**	**45**
Copper	4,700	42	6.4	30	15	19
Lead	550	61	10	22	16	15
Mercury	4.6	0.14	<0.079	0.19	<0.094	<0.10
Nickel	2,200	22	8.1	52	25	37
Selenium	580	1.0	<0.39	<0.46	<0.47	<0.52
Silver	580	1.0	<0.39	<0.46	<0.47	<0.52
Thallium	1.2	1.5	<0.39	<0.46	<0.47	<0.52
Zinc	35,000	73	22	90	38	64
Organochlorine Pesticides						
4,4-DDD	2.5	--	<0.0047	--	<0.0049	--
4,4-DDE	9.3	--	<0.0047	--	<0.0049	--
4,4-DDT	8.5	--	<0.0047	--	<0.0049	--
Aldrin	0.18	--	<0.0047	--	<0.0049	--
Chlordane (n.o.s.)	7.7	--	<0.12	--	<0.12	--
Dieldrin	7.7	--	<0.0047	--	<0.0049	--
Endosulfan I	0.14	--	<0.0047	--	<0.0049	--
Endosulfan II	700	--	<0.0047	--	<0.0049	--
Endosulfan Sulfate	NE	--	<0.0047	--	<0.0049	--
Endrin	NE	--	<0.0047	--	<0.0049	--
Endrin Aldehyde	25	--	<0.0047	--	<0.0049	--
Endrin ketone	NE	--	<0.0047	--	<0.0049	--
Gamma-BHC (Lindane)	NE	--	<0.0047	--	<0.0049	--
Heptachlor	2.5	--	<0.0047	--	<0.0049	--
Heptachlor Epoxide	7.7	--	<0.0047	--	<0.0049	--
Methoxychlor	0.63	--	<0.0047	--	<0.0049	--
Toxaphene	0.33	--	<0.12	--	<0.12	--
alpha-BHC	410	--	<0.0047	--	<0.0049	--
beta-BHC	2.1	--	<0.0047	--	<0.0049	--
cis-Chlordane	0.36	--	<0.0047	--	<0.0049	--
delta-BHC	1.3	--	<0.0047	--	<0.0049	--
trans-Chlordane	NE	--	<0.0047	--	<0.0049	--
Chlorinated Herbicides						
2,4,5-T		--	<0.021	--	<0.023	--
2,4,5-TP (Silvex)		--	<0.021	--	<0.023	--
2,4-D		--	<0.21	--	<0.23	--
2,4-DB		--	<0.22	--	<0.24	--
Dalapon		--	<0.51	--	<0.56	--
Dicamba		--	<0.021	--	<0.023	--
Dichloroprop		--	<0.21	--	<0.23	--
Dinoseb		--	<0.11	--	<0.12	--
MCPA		--	<21	--	<23	--
MCPP		--	<21	--	<23	--
Total Petroleum Hydrocarbons (TPH)						
TPH DRO	620	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See the report text for background information, assumptions, limitations, e
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Standards for Soil and Groundwater; October 2018; Interim Final Guidanc
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA1-C	GTA-SA1-C	GTA-SA1-D	GTA-SA1-D
Sample Interval			0-1	1-7	0-1	1-7
Sample Type			Grab	Composite	Grab	Composite
Sampling Date			9/12/2022	9/12/2022	9/12/2022	9/12/2022
Polycyclic Aromatic Hydrocarbons (PAHs)						
2-Methylnaphthalene	300	--	<0.010	<0.0098	<0.010	<0.010
Acenaphthene	4,500	--	<0.010	<0.0098	<0.010	<0.010
Acenaphthylene	NE	--	<0.010	<0.0098	<0.010	<0.010
Anthracene	23,000	--	<0.010	<0.0098	<0.010	<0.010
Benzo(a)anthracene	21	--	<0.010	<0.0098	<0.010	<0.010
Benzo(a)pyrene	2	--	<0.010	<0.0098	<0.010	<0.010
Benzo(b)fluoranthene	21	--	<0.010	<0.0098	<0.010	<0.010
Benzo(g,h,i)perylene	NE	--	<0.010	<0.0098	<0.010	<0.010
Benzo(k)fluoranthene	210	--	<0.010	<0.0098	<0.010	<0.010
Chrysene	2,100	--	<0.010	<0.0098	<0.010	<0.010
Dibenz(a,h)Anthracene	2.1	--	<0.010	<0.0098	<0.010	<0.010
Fluoranthene	3,000	--	<0.010	<0.0098	<0.010	<0.010
Fluorene	3,000	--	<0.010	<0.0098	<0.010	<0.010
Indeno(1,2,3-c,d)Pyrene	21	--	<0.010	<0.0098	<0.010	<0.010
Naphthalene	17	--	<0.010	<0.0098	<0.010	<0.010
Phenanthrene	2,300	--	<0.010	<0.0098	<0.010	<0.010
Pyrene	2,300	--	<0.010	<0.0098	<0.010	<0.010
Priority Pollutant (PP) Metals						
Antimony	47	6.8	<3.1	<2.6	<2.5	<2.9
Arsenic	3.0/26.8*	4.9	4.2	2.3	5.6	12
Beryllium	230	1.6	1.7	1.4	0.87	0.97
Cadmium	98	1.1	<0.62	<0.53	<0.51	<0.57
Chromium [3]	6.3	30	**38**	**31**	**39**	**33**
Copper	4,700	42	18	13	10	17
Lead	550	61	14	13	19	25
Mercury	4.6	0.14	<0.12	<0.11	<0.10	<0.11
Nickel	2,200	22	29	19	13	25
Selenium	580	1.0	<0.62	<0.53	<0.51	<0.57
Silver	580	1.0	<0.62	<0.53	<0.51	<0.57
Thallium	1.2	1.5	<0.62	<0.53	<0.51	<0.57
Zinc	35,000	73	48	47	34	39
Organochlorine Pesticides						
4,4-DDD	2.5	--	<0.0050	--	<0.0050	--
4,4-DDE	9.3	--	<0.0050	--	<0.0050	--
4,4-DDT	8.5	--	<0.0050	--	<0.0050	--
Aldrin	0.18	--	<0.0050	--	<0.0050	--
Chlordane (n.o.s.)	7.7	--	<0.12	--	<0.13	--
Dieldrin	7.7	--	<0.0050	--	<0.0050	--
Endosulfan I	0.14	--	<0.0050	--	<0.0050	--
Endosulfan II	700	--	<0.0050	--	<0.0050	--
Endosulfan Sulfate	NE	--	<0.0050	--	<0.0050	--
Endrin	NE	--	<0.0050	--	<0.0050	--
Endrin Aldehyde	25	--	<0.0050	--	<0.0050	--
Endrin ketone	NE	--	<0.0050	--	<0.0050	--
Gamma-BHC (Lindane)	NE	--	<0.0050	--	<0.0050	--
Heptachlor	2.5	--	<0.0050	--	<0.0050	--
Heptachlor Epoxide	7.7	--	<0.0050	--	<0.0050	--
Methoxychlor	0.63	--	<0.0050	--	<0.0050	--
Toxaphene	0.33	--	<0.12	--	<0.13	--
alpha-BHC	410	--	<0.0050	--	<0.0050	--
beta-BHC	2.1	--	<0.0050	--	<0.0050	--
cis-Chlordane	0.36	--	<0.0050	--	<0.0050	--
delta-BHC	1.3	--	<0.0050	--	<0.0050	--
trans-Chlordane	NE	--	<0.0050	--	<0.0050	--
Chlorinated Herbicides						
2,4,5-T		--	<0.024	--	<0.024	--
2,4,5-TP (Silvex)		--	<0.024	--	<0.024	--
2,4-D		--	<0.23	--	<0.23	--
2,4-DB		--	<0.24	--	<0.24	--
Dalapon		--	<0.57	--	<0.56	--
Dicamba		--	<0.023	--	<0.023	--
Dichloroprop		--	<0.23	--	<0.23	--
Dinoseb		--	<0.12	--	<0.12	--
MCPA		--	<23	--	<23	--
MCPP		--	<23	--	<23	--
Total Petroleum Hydrocarbons (TPH)						
TPH DRO	620	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t±tc.
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Stane (Update No. 3)
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA1-E	GTA-SA1-E	GTA-SA1-F	GTA-SA1-F
Sample Interval			0-1	1-8	0-1	1-17
Sample Type			Grab	Composite	Grab	Composite
Sampling Date			9/15/2022	9/15/2022	9/9/2022	9/9/2022
Polycyclic Aromatic Hydrocarbons (PAHs)						
2-Methylnaphthalene	300	--	<0.011	<0.011	<0.0085	<0.0094
Acenaphthene	4,500	--	0.012	<0.011	<0.0085	<0.0094
Acenaphthylene	NE	--	<0.011	<0.011	<0.0085	<0.0094
Anthracene	23,000	--	0.015	<0.011	<0.0085	<0.0094
Benzo(a)anthracene	21	--	0.11	<0.011	<0.0085	<0.0094
Benzo(a)pyrene	2	--	0.15	<0.011	<0.0085	<0.0094
Benzo(b)fluoranthene	21	--	0.14	<0.011	<0.0085	<0.0094
Benzo(g,h,i)perylene	NE	--	0.11	<0.011	<0.0085	<0.0094
Benzo(k)fluoranthene	210	--	0.11	<0.011	<0.0085	<0.0094
Chrysene	2,100	--	0.13	<0.011	<0.0085	<0.0094
Dibenz(a,h)Anthracene	2.1	--	0.034	<0.011	<0.0085	<0.0094
Fluoranthene	3,000	--	0.16	<0.011	0.0092	<0.0094
Fluorene	3,000	--	<0.011	<0.011	<0.0085	<0.0094
Indeno(1,2,3-c,d)Pyrene	21	--	0.11	<0.011	<0.0085	<0.0094
Naphthalene	17	--	<0.011	<0.011	<0.0085	<0.0094
Phenanthrene	2,300	--	0.055	<0.011	<0.0085	<0.0094
Pyrene	2,300	--	0.16	<0.011	0.0088	<0.0094
Priority Pollutant (PP) Metals						
Antimony	47	6.8	<2.9	<2.8	<2.1	<2.2
Arsenic	3.0/26.8*	4.9	7.9	7.0	2.7	4.8
Beryllium	230	1.6	1.5	1.3	<0.42	1.3
Cadmium	98	1.1	<0.57	<0.57	<0.42	<0.43
Chromium [3]	6.3	30	26	27	14	**33**
Copper	4,700	42	25	24	6.6	18
Lead	550	61	19	14	4.9	8.5
Mercury	4.6	0.14	<0.11	<0.11	<0.085	<0.087
Nickel	2,200	22	37	37	16	38
Selenium	580	1.0	<0.57	<0.57	<0.42	<0.43
Silver	580	1.0	<0.57	<0.57	<0.42	<0.43
Thallium	1.2	1.5	<0.57	<0.57	<0.42	<0.43
Zinc	35,000	73	75	65	41	57
Organochlorine Pesticides						
4,4-DDD	2.5	--	<0.0059	--	<0.0042	--
4,4-DDE	9.3	--	<0.0059	--	<0.0042	--
4,4-DDT	8.5	--	<0.0059	--	<0.0042	--
Aldrin	0.18	--	<0.0059	--	<0.0042	--
Chlordane (n.o.s.)	7.7	--	<0.15	--	<0.10	--
Dieldrin	7.7	--	<0.0059	--	<0.0042	--
Endosulfan I	0.14	--	<0.0059	--	<0.0042	--
Endosulfan II	700	--	<0.0059	--	<0.0042	--
Endosulfan Sulfate	NE	--	<0.0059	--	<0.0042	--
Endrin	NE	--	<0.0059	--	<0.0042	--
Endrin Aldehyde	25	--	<0.0059	--	<0.0042	--
Endrin ketone	NE	--		--	<0.0042	--
Gamma-BHC (Lindane)	NE	--	<0.0059	--	<0.0042	--
Heptachlor	2.5	--	<0.0059	--	<0.0042	--
Heptachlor Epoxide	7.7	--	<0.0059	--	<0.0042	--
Methoxychlor	0.63	--		--	<0.0042	--
Toxaphene	0.33	--	<0.15	--	<0.10	--
alpha-BHC	410	--	<0.0059	--	<0.0042	--
beta-BHC	2.1	--	<0.0059	--	<0.0042	--
cis-Chlordane	0.36	--	<0.0059	--	<0.0042	--
delta-BHC	1.3	--	<0.0059	--	<0.0042	--
trans-Chlordane	NE	--	<0.0059	--	<0.0042	--
Chlorinated Herbicides						
2,4,5-T		--	<0.023	--	<0.020	--
2,4,5-TP (Silvex)		--	<0.023	--	<0.020	--
2,4-D		--	<0.23	--	<0.20	--
2,4-DB		--	<0.24	--	<0.21	--
Dalapon		--	<0.56	--	<0.49	--
Dicamba		--	<0.023	--	<0.020	--
Dichloroprop		--	<0.23	--	<0.20	--
Dinoseb		--	<0.12	--	<0.10	--
MCPA		--	<23	--	<20	--
MCPP		--	<23	--	<20	--
Total Petroleum Hydrocarbons (TPH)						
TPH DRO	620	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Stan
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA1-G	GTA-SA1-G	GTA-SA1-H	GTA-SA1-H
Sample Interval			0-1	1-19	0-1	1-19
Sample Type			Grab	Composite	Grab	Composite
Sampling Date			9/9/2022	9/9/2022	9/9/2022	9/9/2022
Polycyclic Aromatic Hydrocarbons (PAHs)						
2-Methylnaphthalene	300	--	1.0	<0.010	<0.0095	<0.011
Acenaphthene	4,500	--	2.2	<0.010	<0.0095	<0.011
Acenaphthylene	NE	--	<0.094	<0.010	<0.0095	<0.011
Anthracene	23,000	--	3.0	<0.010	<0.0095	<0.011
Benzo(a)anthracene	21	--	6.1	<0.010	0.013	<0.011
Benzo(a)pyrene	2	--	**6.0**	<0.010	0.015	<0.011
Benzo(b)fluoranthene	21	--	6.3	<0.010	0.014	<0.011
Benzo(g,h,i)perylene	NE	--	3.7	<0.010	0.011	<0.011
Benzo(k)fluoranthene	210	--	4.9	<0.010	0.012	<0.011
Chrysene	2,100	--	5.9	<0.010	0.012	<0.011
Dibenz(a,h)Anthracene	2.1	--	1.3	<0.010	<0.0095	<0.011
Fluoranthene	3,000	--	16	<0.010	0.016	<0.011
Fluorene	3,000	--	2.7	<0.010	<0.0095	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	3.7	<0.010	0.011	<0.011
Naphthalene	17	--	0.77	<0.010	<0.0095	<0.011
Phenanthrene	2,300	--	15	<0.010	<0.0095	<0.011
Pyrene	2,300	--	11	<0.010	0.016	<0.011
Priority Pollutant (PP) Metals						
Antimony	47	6.8	<2.1	<2.6	<2.5	<2.9
Arsenic	3.0/26.8*	4.9	5.4	2.9	5.6	6.6
Beryllium	230	1.6	1.2	0.93	1.7	1.5
Cadmium	98	1.1	<0.41	<0.51	<0.49	<0.58
Chromium [3]	6.3	30	**33**	**46**	**32**	16
Copper	4,700	42	20	21	20	22
Lead	550	61	12	14	12	11
Mercury	4.6	0.14	<0.083	<0.10	<0.099	<0.12
Nickel	2,200	22	37	40	40	34
Selenium	580	1.0	<0.41	<0.51	<0.49	<0.58
Silver	580	1.0	<0.41	<0.51	<0.49	<0.58
Thallium	1.2	1.5	<0.41	<0.51	<0.49	<0.58
Zinc	35,000	73	65	72	75	50
Organochlorine Pesticides						
4,4-DDD	2.5	--	<0.0044	--	<0.0044	--
4,4-DDE	9.3	--	<0.0044	--	<0.0044	--
4,4-DDT	8.5	--	<0.0044	--	<0.0044	--
Aldrin	0.18	--	<0.0044	--	<0.0044	--
Chlordane (n.o.s.)	7.7	--	<0.11	--	<0.11	--
Dieldrin	7.7	--	<0.0044	--	<0.0044	--
Endosulfan I	0.14	--	<0.0044	--	<0.0044	--
Endosulfan II	700	--	<0.0044	--	<0.0044	--
Endosulfan Sulfate	NE	--	<0.0044	--	<0.0044	--
Endrin	NE	--	<0.0044	--	<0.0044	--
Endrin Aldehyde	25	--	<0.0044	--	<0.0044	--
Endrin ketone	NE	--	<0.0044	--	<0.0044	--
Gamma-BHC (Lindane)	NE	--	<0.0044	--	<0.0044	--
Heptachlor	2.5	--	<0.0044	--	<0.0044	--
Heptachlor Epoxide	7.7	--	<0.0044	--	<0.0044	--
Methoxychlor	0.63	--	<0.0044	--	<0.0044	--
Toxaphene	0.33	--	<0.11	--	<0.11	--
alpha-BHC	410	--	<0.0044	--	<0.0044	--
beta-BHC	2.1	--	<0.0044	--	<0.0044	--
cis-Chlordane	0.36	--	<0.0044	--	<0.0044	--
delta-BHC	1.3	--	<0.0044	--	<0.0044	--
trans-Chlordane	NE	--	<0.0044	--	<0.0044	--
Chlorinated Herbicides						
2,4,5-T		--	<0.021	--	<0.022	--
2,4,5-TP (Silvex)		--	<0.021	--	<0.022	--
2,4-D		--	<0.20	--	<0.22	--
2,4-DB		--	<0.21	--	<0.23	--
Dalapon		--	<0.49	--	<0.54	--
Dicamba		--	<0.020	--	<0.022	--
Dichloroprop		--	<0.20	--	<0.22	--
Dinoseb		--	<0.10	--	<0.11	--
MCPA		--	<20	--	<22	--
MCPP		--	<20	--	<22	--
Total Petroleum Hydrocarbons (TPH)						
TPH DRO	620	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Stan
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA1-I	GTA-SA1-I	GTA-SA2-A	GTA-SA2-A	GTA-SA2-B	GTA-SA2-B	GTA-SA2-C
Sample Interval			0-1	1-12.5	0-1	1-18	0-1	1-18	0-1
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab
Sampling Date			9/9/2022	9/9/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022
Polycyclic Aromatic Hydrocarbons (PAHs)									
2-Methylnaphthalene	300	--	<0.0090	<0.044	<0.010	<0.011	<0.0099	<0.012	<0.010
Acenaphthene	4,500	--	<0.0090	<0.044	<0.010	<0.011	<0.0099	<0.012	<0.010
Acenaphthylene	NE	--	<0.0090	<0.044	<0.010	<0.011	<0.0099	<0.012	<0.010
Anthracene	23,000	--	0.013	<0.044	<0.010	<0.011	<0.0099	<0.012	<0.010
Benzo(a)anthracene	21	--	0.032	0.096	<0.010	<0.011	<0.0099	<0.012	<0.010
Benzo(a)pyrene	2	--	0.028	0.092	<0.010	<0.011	<0.0099	<0.012	<0.010
Benzo(b)fluoranthene	21	--	0.033	0.19	<0.010	<0.011	<0.0099	<0.012	<0.010
Benzo(g,h,i)perylene	NE	--	0.020	0.085	<0.010	<0.011	<0.0099	<0.012	<0.010
Benzo(k)fluoranthene	210	--	0.025	0.080	<0.010	<0.011	<0.0099	<0.012	<0.010
Chrysene	2,100	--	0.036	0.18	<0.010	<0.011	<0.0099	<0.012	<0.010
Dibenz(a,h)Anthracene	2.1	--	<0.0090	<0.044	<0.010	<0.011	<0.0099	<0.012	<0.010
Fluoranthene	3,000	--	0.075	0.081	<0.010	<0.011	<0.0099	<0.012	<0.010
Fluorene	3,000	--	<0.0090	<0.044	<0.010	<0.011	<0.0099	<0.012	<0.010
Indeno(1,2,3-c,d)Pyrene	21	--	0.019	0.074	<0.010	<0.011	<0.0099	<0.012	<0.010
Naphthalene	17	--	<0.0090	<0.044	<0.010	<0.011	<0.0099	<0.012	<0.010
Phenanthrene	2,300	--	0.070	<0.044	<0.010	<0.011	<0.0099	<0.012	<0.010
Pyrene	2,300	--	0.060	0.14	<0.010	<0.011	<0.0099	<0.012	<0.010
Priority Pollutant (PP) Metals									
Antimony	47	6.8	<2.5	<2.1	<2.6	<2.4	<2.1	<2.6	<2.4
Arsenic	3.0/26.8*	4.9	3.2	3.2	6.8	8.3	5.9	4.6	5.6
Beryllium	230	1.6	0.65	0.45	0.83	0.90	0.99	1.1	0.76
Cadmium	98	1.1	<0.51	<0.43	<0.52	<0.48	<0.42	<0.53	<0.48
Chromium [3]	6.3	30	24	18	**43**	26	**33**	16	**31**
Copper	4,700	42	13	13	19	16	17	31	17
Lead	550	61	18	27	16	22	16	11	15
Mercury	4.6	0.14	<0.10	<0.085	<0.10	<0.096	<0.084	<0.11	<0.095
Nickel	2,200	22	19	14	19	21	24	46	24
Selenium	580	1.0	<0.51	<0.43	<0.52	<0.48	<0.42	<0.53	<0.48
Silver	580	1.0	<0.51	<0.43	<0.52	<0.48	<0.42	<0.53	<0.48
Thallium	1.2	1.5	<0.51	<0.43	<0.52	<0.48	<0.42	<0.53	<0.48
Zinc	35,000	73	53	41	46	36	50	50	43
Organochlorine Pesticides									
4,4-DDD	2.5	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
4,4-DDE	9.3	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
4,4-DDT	8.5	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Aldrin	0.18	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Chlordane (n.o.s.)	7.7	--	<0.11	--	<0.12	--	<0.12	--	<0.12
Dieldrin	7.7	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Endosulfan I	0.14	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Endosulfan II	700	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Endosulfan Sulfate	NE	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Endrin	NE	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Endrin Aldehyde	25	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Endrin ketone	NE	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Gamma-BHC (Lindane)	NE	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Heptachlor	2.5	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Heptachlor Epoxide	7.7	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Methoxychlor	0.63	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Toxaphene	0.33	--	<0.11	--	<0.12	--	<0.12	--	<0.12
alpha-BHC	410	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
beta-BHC	2.1	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
cis-Chlordane	0.36	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
delta-BHC	1.3	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
trans-Chlordane	NE	--	<0.0043	--	<0.0050	--	<0.0048	--	<0.0048
Chlorinated Herbicides									
2,4,5-T		--	<0.020	--	<0.023	--	<0.022	--	<0.023
2,4,5-TP (Silvex)		--	<0.020	--	<0.023	--	<0.022	--	<0.023
2,4-D		--	<0.20	--	<0.23	--	<0.22	--	<0.23
2,4-DB		--	<0.20	--	<0.23	--	<0.22	--	<0.24
Dalapon		--	<0.48	--	<0.55	--	<0.53	--	<0.56
Dicamba		--	<0.020	--	<0.023	--	<0.022	--	<0.023
Dichloroprop		--	<0.20	--	<0.23	--	<0.22	--	<0.23
Dinoseb		--	<0.099	--	<0.12	--	<0.11	--	<0.12
MCPA		--	<19	--	<23	--	<22	--	<23
MCPP		--	<20	--	<23	--	<22	--	<23
Total Petroleum Hydrocarbons (TPH)									
TPH DRO	620	--	--	--	--	--	--	--	--

Notes:
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Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Stan
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Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA2-C	GTA-SA2-D	GTA-SA2-D	GTA-SA2-E	GTA-SA2-E
Sample Interval			1-18	0-1	1-5	0-1	1-5
Sample Type			Composite	Grab	Composite	Grab	Composite
Sampling Date			9/12/2022	9/12/2022	9/12/2022	9/9/2022	9/9/2022
Polycyclic Aromatic Hydrocarbons (PAHs)							
2-Methylnaphthalene	300	--	<0.011	<0.011	<0.010	<0.011	<0.011
Acenaphthene	4,500	--	<0.011	<0.011	<0.010	<0.011	<0.011
Acenaphthylene	NE	--	<0.011	<0.011	<0.010	<0.011	<0.011
Anthracene	23,000	--	<0.011	<0.011	<0.010	<0.011	<0.011
Benzo(a)anthracene	21	--	<0.011	0.086	<0.010	<0.011	<0.011
Benzo(a)pyrene	2	--	<0.011	0.11	<0.010	<0.011	<0.011
Benzo(b)fluoranthene	21	--	<0.011	0.096	<0.010	<0.011	<0.011
Benzo(g,h,i)perylene	NE	--	<0.011	0.077	<0.010	<0.011	<0.011
Benzo(k)fluoranthene	210	--	<0.011	0.082	<0.010	<0.011	<0.011
Chrysene	2,100	--	<0.011	0.090	<0.010	<0.011	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.011	0.021	<0.010	<0.011	<0.011
Fluoranthene	3,000	--	<0.011	0.12	<0.010	<0.011	<0.011
Fluorene	3,000	--	<0.011	<0.011	<0.010	<0.011	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.011	0.071	<0.010	<0.011	<0.011
Naphthalene	17	--	<0.011	<0.011	<0.010	<0.011	<0.011
Phenanthrene	2,300	--	<0.011	0.043	<0.010	<0.011	<0.011
Pyrene	2,300	--	<0.011	0.12	<0.010	<0.011	<0.011
Priority Pollutant (PP) Metals							
Antimony	47	6.8	<3.1	<3.1	<2.7	<2.9	<2.9
Arsenic	3.0/26.8*	4.9	2.3	8.1	8.3	7.6	9.6
Beryllium	230	1.6	<0.61	1.4	1.8	1.5	2.3
Cadmium	98	1.1	<0.61	<0.62	<0.54	<0.59	<0.58
Chromium [3]	6.3	30	6.4	**36**	**37**	29	29
Copper	4,700	42	13	17	17	21	31
Lead	550	61	7.2	19	18	19	17
Mercury	4.6	0.14	<0.12	<0.12	<0.11	<0.12	<0.12
Nickel	2,200	22	8.9	32	33	36	34
Selenium	580	1.0	<0.61	<0.62	<0.54	<0.59	<0.58
Silver	580	1.0	<0.61	<0.62	<0.54	<0.59	<0.58
Thallium	1.2	1.5	<0.61	<0.62	<0.54	<0.59	<0.58
Zinc	35,000	73	21	71	61	65	57
Organochlorine Pesticides							
4,4-DDD	2.5	--	--	<0.0053	--	<0.0053	--
4,4-DDE	9.3	--	--	<0.0053	--	<0.0053	--
4,4-DDT	8.5	--	--	<0.0053	--	<0.0053	--
Aldrin	0.18	--	--	<0.0053	--	<0.0053	--
Chlordane (n.o.s.)	7.7	--	--	<0.13	--	<0.13	--
Dieldrin	7.7	--	--	<0.0053	--	<0.0053	--
Endosulfan I	0.14	--	--	<0.0053	--	<0.0053	--
Endosulfan II	700	--	--	<0.0053	--	<0.0053	--
Endosulfan Sulfate	NE	--	--	<0.0053	--	<0.0053	--
Endrin	NE	--	--	<0.0053	--	<0.0053	--
Endrin Aldehyde	25	--	--	<0.0053	--	<0.0053	--
Endrin ketone	NE	--	--	<0.0053	--	<0.0053	--
Gamma-BHC (Lindane)	NE	--	--	<0.0053	--	<0.0053	--
Heptachlor	2.5	--	--	<0.0053	--	<0.0053	--
Heptachlor Epoxide	7.7	--	--	<0.0053	--	<0.0053	--
Methoxychlor	0.63	--	--	<0.0053	--	<0.0053	--
Toxaphene	0.33	--	--	<0.13	--	<0.13	--
alpha-BHC	410	--	--	<0.0053	--	<0.0053	--
beta-BHC	2.1	--	--	<0.0053	--	<0.0053	--
cis-Chlordane	0.36	--	--	<0.0053	--	<0.0053	--
delta-BHC	1.3	--	--	<0.0053	--	<0.0053	--
trans-Chlordane	NE	--	--	<0.0053	--	<0.0053	--
Chlorinated Herbicides							
2,4,5-T		--	--	<0.024	--	<0.025	--
2,4,5-TP (Silvex)		--	--	<0.024	--	<0.025	--
2,4-D		--	--	<0.23	--	<0.24	--
2,4-DB		--	--	<0.24	--	<0.25	--
Dalapon		--	--	<0.57	--	<0.59	--
Dicamba		--	--	<0.023	--	<0.024	--
Dichloroprop		--	--	<0.23	--	<0.24	--
Dinoseb		--	--	<0.12	--	<0.12	--
MCPA		--	--	<23	--	<24	--
MCPP		--	--	<23	--	<24	--
Total Petroleum Hydrocarbons (TPH)							
TPH DRO	620	--	--	--	--	--	--

Notes:
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Samples collected Between September 8, 2022 and September 15, 2022
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* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA2-F	GTA-SA2-F	GTA-SA3-A	GTA-SA3-A
Sample Interval			0-1	1-7	0-1	1-7
Sample Type			Grab	Composite	Grab	Composite
Sampling Date			9/9/2022	9/9/2022	9/13/2022	9/13/2022
Polycyclic Aromatic Hydrocarbons (PAHs)						
2-Methylnaphthalene	300	--	<0.0096	<0.0094	<0.011	<0.011
Acenaphthene	4,500	--	<0.0096	<0.0094	<0.011	<0.011
Acenaphthylene	NE	--	<0.0096	<0.0094	<0.011	<0.011
Anthracene	23,000	--	<0.0096	<0.0094	<0.011	<0.011
Benzo(a)anthracene	21	--	<0.0096	<0.0094	<0.011	<0.011
Benzo(a)pyrene	2	--	<0.0096	<0.0094	<0.011	<0.011
Benzo(b)fluoranthene	21	--	<0.0096	<0.0094	<0.011	<0.011
Benzo(g,h,i)perylene	NE	--	<0.0096	<0.0094	<0.011	<0.011
Benzo(k)fluoranthene	210	--	<0.0096	<0.0094	<0.011	<0.011
Chrysene	2,100	--	<0.0096	<0.0094	<0.011	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.0096	<0.0094	<0.011	<0.011
Fluoranthene	3,000	--	<0.0096	<0.0094	<0.011	<0.011
Fluorene	3,000	--	<0.0096	<0.0094	<0.011	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.0096	<0.0094	<0.011	<0.011
Naphthalene	17	--	<0.0096	<0.0094	<0.011	<0.011
Phenanthrene	2,300	--	<0.0096	<0.0094	<0.011	<0.011
Pyrene	2,300	--	<0.0096	<0.0094	<0.011	<0.011
Priority Pollutant (PP) Metals						
Antimony	47	6.8	<2.3	<2.4	<2.8	<2.7
Arsenic	3.0/26.8*	4.9	6.5	7.0	9.9	8.5
Beryllium	230	1.6	<0.47	1.1	2.2	3.7
Cadmium	98	1.1	<0.47	<0.47	<0.57	<0.54
Chromium [3]	6.3	30	**37**	**38**	**74**	**61**
Copper	4,700	42	13	21	34	33
Lead	550	61	15	12	17	14
Mercury	4.6	0.14	<0.094	<0.094	0.19	0.16
Nickel	2,200	22	17	57	56	53
Selenium	580	1.0	<0.47	<0.47	<0.57	<0.54
Silver	580	1.0	<0.47	<0.47	<0.57	<0.54
Thallium	1.2	1.5	<0.47	<0.47	<0.57	<0.54
Zinc	35,000	73	48	73	77	81
Organochlorine Pesticides						
4,4-DDD	2.5	--	<0.0045	--	<0.0051	--
4,4-DDE	9.3	--	<0.0045	--	<0.0051	--
4,4-DDT	8.5	--	<0.0045	--	<0.0051	--
Aldrin	0.18	--	<0.0045	--	<0.0051	--
Chlordane (n.o.s.)	7.7	--	<0.11	--	<0.13	--
Dieldrin	7.7	--	<0.0045	--	<0.0051	--
Endosulfan I	0.14	--	<0.0045	--	<0.0051	--
Endosulfan II	700	--	<0.0045	--	<0.0051	--
Endosulfan Sulfate	NE	--	<0.0045	--	<0.0051	--
Endrin	NE	--	<0.0045	--	<0.0051	--
Endrin Aldehyde	25	--	<0.0045	--	<0.0051	--
Endrin ketone	NE	--	<0.0045	--	<0.0051	--
Gamma-BHC (Lindane)	NE	--	<0.0045	--	<0.0051	--
Heptachlor	2.5	--	<0.0045	--	<0.0051	--
Heptachlor Epoxide	7.7	--	<0.0045	--	<0.0051	--
Methoxychlor	0.63	--	<0.0045	--	<0.0051	--
Toxaphene	0.33	--	<0.11	--	<0.13	--
alpha-BHC	410	--	<0.0045	--	<0.0051	--
beta-BHC	2.1	--	<0.0045	--	<0.0051	--
cis-Chlordane	0.36	--	<0.0045	--	<0.0051	--
delta-BHC	1.3	--	<0.0045	--	<0.0051	--
trans-Chlordane	NE	--	<0.0045	--	<0.0051	--
Chlorinated Herbicides						
2,4,5-T		--	<0.022	--	<0.024	--
2,4,5-TP (Silvex)		--	<0.022	--	<0.024	--
2,4-D		--	<0.21	--	<0.23	--
2,4-DB		--	<0.22	--	<0.24	--
Dalapon		--	<0.52	--	<0.57	--
Dicamba		--	<0.021	--	<0.023	--
Dichloroprop		--	<0.21	--	<0.23	--
Dinoseb		--	<0.11	--	<0.12	--
MCPA		--	<21	--	<23	--
MCPP		--	<21	--	<23	--
Total Petroleum Hydrocarbons (TPH)						
TPH DRO	620	--	--	--	--	--

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Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA3-B	GTA-SA3-B	GTA-SA3-C
Sample Interval			0-1	1-8	0-1
Sample Type			Grab	Composite	Grab
Sampling Date			9/13/2022	9/13/2022	9/13/2022
Polycyclic Aromatic Hydrocarbons (PAHs)					
2-Methylnaphthalene	300	--	<0.010	<0.011	<0.010
Acenaphthene	4,500	--	<0.010	<0.011	<0.010
Acenaphthylene	NE	--	<0.010	<0.011	<0.010
Anthracene	23,000	--	<0.010	<0.011	<0.010
Benzo(a)anthracene	21	--	<0.010	<0.011	<0.010
Benzo(a)pyrene	2	--	<0.010	<0.011	<0.010
Benzo(b)fluoranthene	21	--	<0.010	<0.011	<0.010
Benzo(g,h,i)perylene	NE	--	<0.010	<0.011	<0.010
Benzo(k)fluoranthene	210	--	<0.010	<0.011	<0.010
Chrysene	2,100	--	<0.010	<0.011	<0.010
Dibenz(a,h)Anthracene	2.1	--	<0.010	<0.011	<0.010
Fluoranthene	3,000	--	<0.010	<0.011	<0.010
Fluorene	3,000	--	<0.010	<0.011	<0.010
Indeno(1,2,3-c,d)Pyrene	21	--	<0.010	<0.011	<0.010
Naphthalene	17	--	<0.010	<0.011	<0.010
Phenanthrene	2,300	--	<0.010	<0.011	<0.010
Pyrene	2,300	--	<0.010	<0.011	<0.010
Priority Pollutant (PP) Metals					
Antimony	47	6.8	<2.4	<3.2	<2.2
Arsenic	3.0/26.8*	4.9	7.5	12	6.3
Beryllium	230	1.6	1.2	1.7	0.99
Cadmium	98	1.1	<0.48	<0.63	<0.44
Chromium [3]	6.3	30	**36**	**40**	31
Copper	4,700	42	24	32	18
Lead	550	61	19	18	16
Mercury	4.6	0.14	<0.097	<0.13	<0.088
Nickel	2,200	22	33	64	22
Selenium	580	1.0	<0.48	<0.63	<0.44
Silver	580	1.0	<0.48	<0.63	<0.44
Thallium	1.2	1.5	<0.48	<0.63	<0.44
Zinc	35,000	73	56	99	49
Organochlorine Pesticides					
4,4-DDD	2.5	--	<0.0048	--	<0.0048
4,4-DDE	9.3	--	<0.0048	--	<0.0048
4,4-DDT	8.5	--	<0.0048	--	<0.0048
Aldrin	0.18	--	<0.0048	--	<0.0048
Chlordane (n.o.s.)	7.7	--	<0.12	--	<0.12
Dieldrin	7.7	--	<0.0048	--	<0.0048
Endosulfan I	0.14	--	<0.0048	--	<0.0048
Endosulfan II	700	--	<0.0048	--	<0.0048
Endosulfan Sulfate	NE	--	<0.0048	--	<0.0048
Endrin	NE	--	<0.0048	--	<0.0048
Endrin Aldehyde	25	--	<0.0048	--	<0.0048
Endrin ketone	NE	--	<0.0048	--	<0.0048
Gamma-BHC (Lindane)	NE	--	<0.0048	--	<0.0048
Heptachlor	2.5	--	<0.0048	--	<0.0048
Heptachlor Epoxide	7.7	--	<0.0048	--	<0.0048
Methoxychlor	0.63	--	<0.0048	--	<0.0048
Toxaphene	0.33	--	<0.12	--	<0.12
alpha-BHC	410	--	<0.0048	--	<0.0048
beta-BHC	2.1	--	<0.0048	--	<0.0048
cis-Chlordane	0.36	--	<0.0048	--	<0.0048
delta-BHC	1.3	--	<0.0048	--	<0.0048
trans-Chlordane	NE	--	<0.0048	--	<0.0048
Chlorinated Herbicides					
2,4,5-T		--	<0.023	--	<0.024
2,4,5-TP (Silvex)		--	<0.023	--	<0.024
2,4-D		--	<0.23	--	<0.24
2,4-DB		--	<0.24	--	<0.25
Dalapon		--	<0.56	--	<0.58
Dicamba		--	<0.023	--	<0.024
Dichloroprop		--	<0.23	--	<0.24
Dinoseb		--	<0.12	--	<0.12
MCPA		--	<23	--	<24
MCPP		--	<23	--	<24
Total Petroleum Hydrocarbons (TPH)					
TPH DRO	620	--	--	--	--

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Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA3-C	GTA-SA3-D	GTA-SA3-D	GTA-SA3-E
Sample Interval			1-8	0-1	1-8	0-1
Sample Type			Composite	Grab	Composite	Grab
Sampling Date			9/13/2022	9/13/2022	9/13/2022	9/13/2022
Polycyclic Aromatic Hydrocarbons (PAHs)						
2-Methylnaphthalene	300	--	<0.011	<0.011	<0.011	<0.011
Acenaphthene	4,500	--	<0.011	<0.011	<0.011	<0.011
Acenaphthylene	NE	--	<0.011	<0.011	<0.011	<0.011
Anthracene	23,000	--	<0.011	<0.011	<0.011	<0.011
Benzo(a)anthracene	21	--	<0.011	<0.011	<0.011	<0.011
Benzo(a)pyrene	2	--	<0.011	<0.011	<0.011	<0.011
Benzo(b)fluoranthene	21	--	<0.011	<0.011	<0.011	<0.011
Benzo(g,h,i)perylene	NE	--	<0.011	<0.011	<0.011	<0.011
Benzo(k)fluoranthene	210	--	<0.011	<0.011	<0.011	<0.011
Chrysene	2,100	--	<0.011	<0.011	<0.011	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.011	<0.011	<0.011	<0.011
Fluoranthene	3,000	--	<0.011	<0.011	<0.011	<0.011
Fluorene	3,000	--	<0.011	<0.011	<0.011	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.011	<0.011	<0.011	<0.011
Naphthalene	17	--	<0.011	<0.011	<0.011	<0.011
Phenanthrene	2,300	--	<0.011	<0.011	<0.011	<0.011
Pyrene	2,300	--	<0.011	<0.011	<0.011	<0.011
Priority Pollutant (PP) Metals						
Antimony	47	6.8	<2.6	<2.7	<2.9	<2.5
Arsenic	3.0/26.8*	4.9	8.8	6.2	6.4	7.4
Beryllium	230	1.6	3.6	1.1	1.0	0.90
Cadmium	98	1.1	<0.53	<0.54	<0.59	<0.51
Chromium [3]	6.3	30	24	19	16	**36**
Copper	4,700	42	30	28	30	18
Lead	550	61	23	16	17	18
Mercury	4.6	0.14	<0.11	<0.11	<0.12	<0.10
Nickel	2,200	22	42	31	36	20
Selenium	580	1.0	<0.53	<0.54	<0.59	<0.51
Silver	580	1.0	<0.53	<0.54	<0.59	<0.51
Thallium	1.2	1.5	<0.53	<0.54	<0.59	<0.51
Zinc	35,000	73	65	59	73	47
Organochlorine Pesticides						
4,4-DDD	2.5	--	--	<0.0052	--	<0.0051
4,4-DDE	9.3	--	--	<0.0052	--	<0.0051
4,4-DDT	8.5	--	--	<0.0052	--	<0.0051
Aldrin	0.18	--	--	<0.0052	--	<0.0051
Chlordane (n.o.s.)	7.7	--	--	<0.13	--	<0.13
Dieldrin	7.7	--	--	<0.0052	--	<0.0051
Endosulfan I	0.14	--	--	<0.0052	--	<0.0051
Endosulfan II	700	--	--	<0.0052	--	<0.0051
Endosulfan Sulfate	NE	--	--	<0.0052	--	<0.0051
Endrin	NE	--	--	<0.0052	--	<0.0051
Endrin Aldehyde	25	--	--	<0.0052	--	<0.0051
Endrin ketone	NE	--	--	<0.0052	--	<0.0051
Gamma-BHC (Lindane)	NE	--	--	<0.0052	--	<0.0051
Heptachlor	2.5	--	--	<0.0052	--	<0.0051
Heptachlor Epoxide	7.7	--	--	<0.0052	--	<0.0051
Methoxychlor	0.63	--	--	<0.0052	--	<0.0051
Toxaphene	0.33	--	--	<0.13	--	<0.13
alpha-BHC	410	--	--	<0.0052	--	<0.0051
beta-BHC	2.1	--	--	<0.0052	--	<0.0051
cis-Chlordane	0.36	--	--	<0.0052	--	<0.0051
delta-BHC	1.3	--	--	<0.0052	--	<0.0051
trans-Chlordane	NE	--	--	<0.0052	--	<0.0051
Chlorinated Herbicides						
2,4,5-T		--	--	<0.026	--	<0.024
2,4,5-TP (Silvex)		--	--	<0.026	--	<0.024
2,4-D		--	--	<0.26	--	<0.23
2,4-DB		--	--	<0.26	--	<0.24
Dalapon		--	--	<0.62	--	<0.57
Dicamba		--	--	<0.026	--	<0.023
Dichloroprop		--	--	<0.26	--	<0.23
Dinoseb		--	--	<0.13	--	<0.12
MCPA		--	--	<25	--	<23
MCPP		--	--	<26	--	<23
Total Petroleum Hydrocarbons (TPH)						
TPH DRO	620	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Stan
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA3-E	GTA-SA3-F	GTA-SA3-F	GTA-SA3-G	GTA-SA3-G	GTA-SA4-A	GTA-SA4-A	GTA-SA4-B	GTA-SA4-B
Sample Interval			1-8	0-1	1-8	0-1	1-8	0-1	1-15	0-1	1-15
Sample Type			Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/13/2022	9/9/2022	9/9/2022	9/9/2022	9/9/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Acenaphthene	4,500	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Acenaphthylene	NE	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Anthracene	23,000	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Benzo(a)anthracene	21	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Benzo(a)pyrene	2	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Benzo(b)fluoranthene	21	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Benzo(g,h,i)perylene	NE	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Benzo(k)fluoranthene	210	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Chrysene	2,100	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Fluoranthene	3,000	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Fluorene	3,000	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Naphthalene	17	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Phenanthrene	2,300	--	<0.011	<0.0097	<0.010	<0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Pyrene	2,300	--	<0.011	<0.0097	<0.010	0.010	<0.012	<0.010	<0.010	<0.0097	<0.011
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<3.0	<2.5	<2.9	<3.0	<3.4	<2.7	<2.3	<2.8	<2.3
Arsenic	3.0/26.8*	4.9	7.1	6.7	5.4	6.7	9.2	5.8	7.0	7.0	8.9
Beryllium	230	1.6	3.4	0.82	0.69	0.63	1.7	1.0	0.73	0.83	1.7
Cadmium	98	1.1	<0.60	<0.49	<0.59	<0.59	<0.69	<0.53	<0.45	<0.56	<0.46
Chromium [3]	6.3	30	26	**37**	30	**47**	**32**	28	28	25	**57**
Copper	4,700	42	39	11	16	18	24	11	16	24	28
Lead	550	61	13	19	12	13	24	16	18	14	17
Mercury	4.6	0.14	<0.12	<0.098	<0.12	0.25	<0.14	<0.11	<0.090	<0.11	<0.092
Nickel	2,200	22	77	16	23	22	35	16	17	23	31
Selenium	580	1.0	<0.60	<0.49	<0.59	<0.59	<0.69	<0.53	<0.45	<0.56	<0.46
Silver	580	1.0	<0.60	<0.49	<0.59	<0.59	<0.69	<0.53	<0.45	<0.56	<0.46
Thallium	1.2	1.5	<0.60	<0.49	<0.59	<0.59	<0.69	<0.53	<0.45	<0.56	<0.46
Zinc	35,000	73	130	42	37	43	68	43	45	44	58
Organochlorine Pesticides											
4,4-DDD	2.5	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
4,4-DDE	9.3	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
4,4-DDT	8.5	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Aldrin	0.18	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Chlordane (n.o.s.)	7.7	--	--	<0.12	--	<0.12	--	<0.12	--	<0.11	--
Dieldrin	7.7	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Endosulfan I	0.14	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Endosulfan II	700	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Endosulfan Sulfate	NE	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Endrin	NE	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Endrin Aldehyde	25	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Endrin ketone	NE	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Gamma-BHC (Lindane)	NE	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Heptachlor	2.5	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Heptachlor Epoxide	7.7	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Methoxychlor	0.63	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Toxaphene	0.33	--	--	<0.12	--	<0.12	--	<0.12	--	<0.11	--
alpha-BHC	410	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
beta-BHC	2.1	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
cis-Chlordane	0.36	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
delta-BHC	1.3	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
trans-Chlordane	NE	--	--	<0.0048	--	<0.0049	--	<0.0047	--	<0.0046	--
Chlorinated Herbicides											
2,4,5-T		--	--	<0.023	--	<0.023	--	<0.022	--	<0.022	--
2,4,5-TP (Silvex)		--	--	<0.023	--	<0.023	--	<0.022	--	<0.022	--
2,4-D		--	--	<0.23	--	<0.23	--	<0.22	--	<0.22	--
2,4-DB		--	--	<0.23	--	<0.23	--	<0.22	--	<0.22	--
Dalapon		--	--	<0.55	--	<0.55	--	<0.53	--	<0.53	--
Dicamba		--	--	<0.023	--	<0.023	--	<0.022	--	<0.022	--
Dichloroprop		--	--	<0.23	--	<0.23	--	<0.22	--	<0.22	--
Dinoseb		--	--	<0.12	--	<0.11	--	<0.11	--	<0.11	--
MCPA		--	--	<23	--	<22	--	<22	--	<22	--
MCPP		--	--	<23	--	<23	--	<22	--	<22	--
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA4-C	GTA-SA4-C	GTA-SA4-D	GTA-SA4-D	GTA-SA4-E	GTA-SA4-E	GTA-SA4-F	GTA-SA4-F	GTA-SA4-G
Sample Interval			0-1	1-5.5	0-1	1-6	0-1	1-15	0-1	1-15	0-1
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab
Sampling Date			9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	<0.010	<0.0099
Acenaphthene	4,500	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	<0.010	<0.0099
Acenaphthylene	NE	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	<0.010	<0.0099
Anthracene	23,000	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.014	<0.0099
Benzo(a)anthracene	21	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.046	0.013
Benzo(a)pyrene	2	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.048	0.013
Benzo(b)fluoranthene	21	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.033	<0.0099
Benzo(g,h,i)perylene	NE	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.049	0.015
Benzo(k)fluoranthene	210	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.064	0.016
Chrysene	2,100	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.048	0.011
Dibenz(a,h)Anthracene	2.1	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.046	0.013
Fluoranthene	3,000	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.033	<0.0099
Fluorene	3,000	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	<0.010	<0.0099
Indeno(1,2,3-c,d)Pyrene	21	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.052	0.015
Naphthalene	17	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	<0.010	<0.0099
Phenanthrene	2,300	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.013	<0.0099
Pyrene	2,300	--	<0.0098	<0.012	<0.0093	<0.0099	<0.0091	<0.010	<0.50	0.039	<0.0099
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.6	<2.8	<2.4	<2.2	<1.9	<2.5	<2.3	<2.1	<2.4
Arsenic	3.0/26.8*	4.9	4.9	7.8	2.7	4.1	3.2	6.0	6.7	4.0	5.1
Beryllium	230	1.6	0.74	2.4	0.59	0.75	1.2	2.4	1.8	1.2	3.9
Cadmium	98	1.1	<0.52	<0.57	<0.48	<0.43	<0.38	<0.49	<0.46	<0.42	<0.48
Chromium [3]	6.3	30	26	30	17	23	**37**	29	27	28	30
Copper	4,700	42	21	32	8.1	13	14	25	28	9.3	12
Lead	550	61	9.7	15	8.5	10	13	16	12	8.6	9.7
Mercury	4.6	0.14	<0.10	<0.11	<0.095	<0.087	<0.077	<0.098	<0.093	<0.083	<0.096
Nickel	2,200	22	32	49	14	24	29	44	40	36	54
Selenium	580	1.0	<0.52	<0.57	<0.48	<0.43	<0.38	<0.49	<0.46	<0.42	<0.48
Silver	580	1.0	<0.52	<0.57	<0.48	<0.43	<0.38	<0.49	<0.46	<0.42	<0.48
Thallium	1.2	1.5	<0.52	<0.57	<0.48	<0.43	<0.38	<0.49	<0.46	<0.42	<0.48
Zinc	35,000	73	58	86	33	83	71	78	70	69	75
Organochlorine Pesticides											
4,4-DDD	2.5	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
4,4-DDE	9.3	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
4,4-DDT	8.5	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Aldrin	0.18	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Chlordane (n.o.s.)	7.7	--	<0.11	--	<0.11	--	<0.11	--	<0.11	--	<0.12
Dieldrin	7.7	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Endosulfan I	0.14	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Endosulfan II	700	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Endosulfan Sulfate	NE	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Endrin	NE	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Endrin Aldehyde	25	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Endrin ketone	NE	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Gamma-BHC (Lindane)	NE	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Heptachlor	2.5	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Heptachlor Epoxide	7.7	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Methoxychlor	0.63	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Toxaphene	0.33	--	<0.11	--	<0.11	--	<0.11	--	<0.11	--	<0.12
alpha-BHC	410	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
beta-BHC	2.1	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
cis-Chlordane	0.36	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
delta-BHC	1.3	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
trans-Chlordane	NE	--	<0.0045	--	<0.0045	--	<0.0042	--	<0.0046	--	<0.0046
Chlorinated Herbicides											
2,4,5-T		--	<0.022	--	<0.021	--	<0.021	--	<0.023	--	<0.023
2,4,5-TP (Silvex)		--	<0.022	--	<0.021	--	<0.021	--	<0.023	--	<0.023
2,4-D		--	<0.22	--	<0.21	--	<0.21	--	<0.23	--	<0.23
2,4-DB		--	<0.22	--	<0.21	--	<0.21	--	<0.23	--	<0.23
Dalapon		--	<0.52	--	<0.50	--	<0.50	--	<0.55	--	<0.55
Dicamba		--	<0.022	--	<0.021	--	<0.021	--	<0.023	--	<0.023
Dichloroprop		--	<0.22	--	<0.21	--	<0.21	--	<0.23	--	<0.23
Dinoseb		--	<0.11	--	<0.10	--	<0.10	--	<0.11	--	<0.11
MCPA		--	<21	--	<20	--	<21	--	<22	--	<22
MCPP		--	<22	--	<21	--	<21	--	<23	--	<23
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA4-G	GTA-SA4-H	GTA-SA4-H	GTA-SA4-I	GTA-SA4-I	GTA-SA4-J	GTA-SA4-J	GTA-SA4-K	GTA-SA4-K
Sample Interval			1-15	0-1	1-11	0-1	1-15	0-1	1-9	0-1	1-15
Sample Type			Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	<0.011
Acenaphthene	4,500	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.012
Acenaphthylene	NE	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	<0.011
Anthracene	23,000	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.023
Benzo(a)anthracene	21	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.024
Benzo(a)pyrene	2	--	<0.011	<0.010	<0.011	<0.0087	<0.011	0.010	<0.011	<0.0087	0.018
Benzo(b)fluoranthene	21	--	<0.011	<0.010	<0.011	<0.0087	<0.011	0.0093	<0.011	<0.0087	0.015
Benzo(g,h,i)perylene	NE	--	<0.011	<0.010	<0.011	<0.0087	<0.011	0.014	<0.011	<0.0087	<0.011
Benzo(k)fluoranthene	210	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.017
Chrysene	2,100	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.022
Dibenz(a,h)Anthracene	2.1	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	<0.011
Fluoranthene	3,000	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.069
Fluorene	3,000	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.019
Indeno(1,2,3-c,d)Pyrene	21	--	<0.011	<0.010	<0.011	<0.0087	<0.011	0.011	<0.011	<0.0087	<0.011
Naphthalene	17	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	<0.011
Phenanthrene	2,300	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.085
Pyrene	2,300	--	<0.011	<0.010	<0.011	<0.0087	<0.011	<0.0093	<0.011	<0.0087	0.053
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.3	<2.9	<3.2	<2.1	<2.9	<2.5	<3.0	<2.1	<3.3
Arsenic	3.0/26.8*	4.9	4.7	6.4	3.3	2.7	9.4	3.1	4.7	2.6	15
Beryllium	230	1.6	1.6	2.5	0.74	0.55	2.1	0.63	2.0	0.56	4.1
Cadmium	98	1.1	<0.46	<0.58	<0.63	<0.41	<0.59	<0.51	<0.59	<0.43	<0.66
Chromium [3]	6.3	30	**38**	**46**	30	21	27	18	**37**	13	**36**
Copper	4,700	42	19	15	7.6	9.3	27	9.1	12	5.9	19
Lead	550	61	7.4	12	10	5.9	13	9.4	9.5	4.0	15
Mercury	4.6	0.14	<0.093	<0.12	<0.13	<0.083	<0.12	<0.10	<0.12	<0.085	<0.13
Nickel	2,200	22	53	54	40	19	75	17	40	12	89
Selenium	580	1.0	<0.46	<0.58	<0.63	<0.41	<0.59	<0.51	<0.59	<0.43	<0.66
Silver	580	1.0	<0.46	<0.58	<0.63	<0.41	<0.59	<0.51	<0.59	<0.43	<0.66
Thallium	1.2	1.5	<0.46	<0.58	<0.63	<0.41	<0.59	<0.51	<0.59	<0.43	<0.66
Zinc	35,000	73	85	100	67	35	120	54	70	24	170
Organochlorine Pesticides											
4,4-DDD	2.5	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
4,4-DDE	9.3	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
4,4-DDT	8.5	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Aldrin	0.18	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Chlordane (n.o.s.)	7.7	--	--	<0.12	--	<0.10	--	<0.11	--	<0.11	--
Dieldrin	7.7	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Endosulfan I	0.14	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Endosulfan II	700	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Endosulfan Sulfate	NE	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Endrin	NE	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Endrin Aldehyde	25	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Endrin ketone	NE	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Gamma-BHC (Lindane)	NE	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Heptachlor	2.5	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Heptachlor Epoxide	7.7	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Methoxychlor	0.63	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Toxaphene	0.33	--	--	<0.12	--	<0.10	--	<0.11	--	<0.11	--
alpha-BHC	410	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
beta-BHC	2.1	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
cis-Chlordane	0.36	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
delta-BHC	1.3	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
trans-Chlordane	NE	--	--	<0.0049	--	<0.0041	--	<0.0046	--	<0.0042	--
Chlorinated Herbicides											
2,4,5-T		--	--	<0.023	--	<0.020	--	<0.022	--	<0.020	--
2,4,5-TP (Silvex)		--	--	<0.023	--	<0.020	--	<0.022	--	<0.020	--
2,4-D		--	--	<0.23	--	<0.20	--	<0.21	--	<0.20	--
2,4-DB		--	--	<0.23	--	<0.20	--	<0.22	--	<0.21	--
Dalapon		--	--	<0.55	--	<0.47	--	<0.52	--	<0.49	--
Dicamba		--	--	<0.023	--	<0.020	--	<0.021	--	<0.020	--
Dichloroprop		--	--	<0.23	--	<0.20	--	<0.21	--	<0.20	--
Dinoseb		--	--	<0.12	--	<0.099	--	<0.11	--	<0.10	--
MCPA		--	--	<23	--	<19	--	<21	--	<20	--
MCPP		--	--	<23	--	<20	--	<21	--	<20	--
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
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Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
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Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA4-L	GTA-SA4-L	GTA-SA4-M
Sample Interval			0-1	1-15	0-1
Sample Type			Grab	Composite	Grab
Sampling Date			9/8/2022	9/8/2022	9/8/2022
Polycyclic Aromatic Hydrocarbons (PAHs)					
2-Methylnaphthalene	300	--	<0.0100	<0.011	<0.0094
Acenaphthene	4,500	--	<0.0100	<0.011	<0.0094
Acenaphthylene	NE	--	<0.0100	<0.011	<0.0094
Anthracene	23,000	--	<0.0100	<0.011	<0.0094
Benzo(a)anthracene	21	--	<0.0100	<0.011	<0.0094
Benzo(a)pyrene	2	--	<0.0100	<0.011	<0.0094
Benzo(b)fluoranthene	21	--	<0.0100	<0.011	<0.0094
Benzo(g,h,i)perylene	NE	--	<0.0100	<0.011	<0.0094
Benzo(k)fluoranthene	210	--	<0.0100	<0.011	<0.0094
Chrysene	2,100	--	<0.0100	<0.011	<0.0094
Dibenz(a,h)Anthracene	2.1	--	<0.0100	<0.011	<0.0094
Fluoranthene	3,000	--	<0.0100	<0.011	<0.0094
Fluorene	3,000	--	<0.0100	<0.011	<0.0094
Indeno(1,2,3-c,d)Pyrene	21	--	<0.0100	<0.011	<0.0094
Naphthalene	17	--	<0.0100	<0.011	<0.0094
Phenanthrene	2,300	--	<0.0100	<0.011	<0.0094
Pyrene	2,300	--	<0.0100	<0.011	<0.0094
Priority Pollutant (PP) Metals					
Antimony	47	6.8	<2.9	<2.4	<2.5
Arsenic	3.0/26.8*	4.9	6.6	3.0	1.8
Beryllium	230	1.6	1.1	1.5	<0.49
Cadmium	98	1.1	<0.57	<0.48	<0.49
Chromium [3]	6.3	30	**33**	21	8.5
Copper	4,700	42	18	14	6.2
Lead	550	61	17	8.5	3.9
Mercury	4.6	0.14	<0.11	<0.096	<0.099
Nickel	2,200	22	23	54	8.3
Selenium	580	1.0	<0.57	<0.48	<0.49
Silver	580	1.0	<0.57	<0.48	<0.49
Thallium	1.2	1.5	<0.57	<0.48	<0.49
Zinc	35,000	73	54	74	85
Organochlorine Pesticides					
4,4-DDD	2.5	--	<0.0046	--	<0.0044
4,4-DDE	9.3	--	<0.0046	--	<0.0044
4,4-DDT	8.5	--	<0.0046	--	<0.0044
Aldrin	0.18	--	<0.0046	--	<0.0044
Chlordane (n.o.s.)	7.7	--	<0.11	--	<0.11
Dieldrin	7.7	--	<0.0046	--	<0.0044
Endosulfan I	0.14	--	<0.0046	--	<0.0044
Endosulfan II	700	--	<0.0046	--	<0.0044
Endosulfan Sulfate	NE	--	<0.0046	--	<0.0044
Endrin	NE	--	<0.0046	--	<0.0044
Endrin Aldehyde	25	--	<0.0046	--	<0.0044
Endrin ketone	NE	--	<0.0046	--	<0.0044
Gamma-BHC (Lindane)	NE	--	<0.0046	--	<0.0044
Heptachlor	2.5	--	<0.0046	--	<0.0044
Heptachlor Epoxide	7.7	--	<0.0046	--	<0.0044
Methoxychlor	0.63	--	<0.0046	--	<0.0044
Toxaphene	0.33	--	<0.11	--	<0.11
alpha-BHC	410	--	<0.0046	--	<0.0044
beta-BHC	2.1	--	<0.0046	--	<0.0044
cis-Chlordane	0.36	--	<0.0046	--	<0.0044
delta-BHC	1.3	--	<0.0046	--	<0.0044
trans-Chlordane	NE	--	<0.0046	--	<0.0044
Chlorinated Herbicides					
2,4,5-T		--	<0.022	--	<0.022
2,4,5-TP (Silvex)		--	<0.022	--	<0.022
2,4-D		--	<0.21	--	<0.22
2,4-DB		--	<0.22	--	<0.22
Dalapon		--	<0.52	--	<0.53
Dicamba		--	<0.021	--	<0.022
Dichloroprop		--	<0.21	--	<0.22
Dinoseb		--	<0.11	--	<0.11
MCPA		--	<21	--	<22
MCPP		--	<21	--	<22
Total Petroleum Hydrocarbons (TPH)					
TPH DRO	620	--	--	--	--

Notes:
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Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Stan
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Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA4-M	GTA-SA4-N	GTA-SA4-N	GTA-SA4-O	GTA-SA4-O	GTA-SA5-A	GTA-SA5-A
Sample Interval			1-15	0-1	1-15	0-1	1-15	0-1	1-7.5
Sample Type			Composite	Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/8/2022	9/12/2022	9/12/2022
Polycyclic Aromatic Hydrocarbons (PAHs)									
2-Methylnaphthalene	300	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Acenaphthene	4,500	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Acenaphthylene	NE	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Anthracene	23,000	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Benzo(a)anthracene	21	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Benzo(a)pyrene	2	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Benzo(b)fluoranthene	21	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Benzo(g,h,i)perylene	NE	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Benzo(k)fluoranthene	210	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Chrysene	2,100	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Fluoranthene	3,000	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Fluorene	3,000	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Naphthalene	17	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Phenanthrene	2,300	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Pyrene	2,300	--	<0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.011
Priority Pollutant (PP) Metals									
Antimony	47	6.8	<2.9	<2.7	<2.3	<3.0	<2.5	<2.3	<2.5
Arsenic	3.0/26.8*	4.9	4.8	3.6	8.0	6.4	5.5	5.2	6.2
Beryllium	230	1.6	1.9	1.6	4.0	0.94	1.9	1.0	0.90
Cadmium	98	1.1	<0.58	<0.54	<0.47	<0.61	<0.51	<0.45	<0.50
Chromium [3]	6.3	30	21	25	22	**33**	30	28	30
Copper	4,700	42	13	64	25	28	26	18	15
Lead	550	61	13	12	7.9	18	12	14	15
Mercury	4.6	0.14	<0.12	<0.11	<0.093	0.21	<0.10	<0.090	<0.10
Nickel	2,200	22	52	40	73	31	57	28	36
Selenium	580	1.0	<0.58	<0.54	<0.47	<0.61	<0.51	<0.45	<0.50
Silver	580	1.0	<0.58	<0.54	<0.47	<0.61	<0.51	<0.45	<0.50
Thallium	1.2	1.5	<0.58	<0.54	<0.47	<0.61	<0.51	<0.45	<0.50
Zinc	35,000	73	110	69	120	53	110	60	52
Organochlorine Pesticides									
4,4-DDD	2.5	--	--	<0.0050	--	<0.0048	--	<0.0049	--
4,4-DDE	9.3	--	--	<0.0050	--	<0.0048	--	<0.0049	--
4,4-DDT	8.5	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Aldrin	0.18	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Chlordane (n.o.s.)	7.7	--	--	<0.12	--	<0.12	--	<0.12	--
Dieldrin	7.7	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Endosulfan I	0.14	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Endosulfan II	700	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Endosulfan Sulfate	NE	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Endrin	NE	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Endrin Aldehyde	25	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Endrin ketone	NE	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Gamma-BHC (Lindane)	NE	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Heptachlor	2.5	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Heptachlor Epoxide	7.7	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Methoxychlor	0.63	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Toxaphene	0.33	--	--	<0.12	--	<0.12	--	<0.12	--
alpha-BHC	410	--	--	<0.0050	--	<0.0048	--	<0.0049	--
beta-BHC	2.1	--	--	<0.0050	--	<0.0048	--	<0.0049	--
cis-Chlordane	0.36	--	--	<0.0050	--	<0.0048	--	<0.0049	--
delta-BHC	1.3	--	--	<0.0050	--	<0.0048	--	<0.0049	--
trans-Chlordane	NE	--	--	<0.0050	--	<0.0048	--	<0.0049	--
Chlorinated Herbicides									
2,4,5-T		--	--	<0.022	--	<0.025	--	<0.023	--
2,4,5-TP (Silvex)		--	--	<0.022	--	<0.025	--	<0.023	--
2,4-D		--	--	<0.22	--	<0.24	--	<0.23	--
2,4-DB		--	--	<0.23	--	<0.25	--	<0.23	--
Dalapon		--	--	<0.54	--	<0.59	--	<0.55	--
Dicamba		--	--	<0.022	--	<0.024	--	<0.023	--
Dichloroprop		--	--	<0.22	--	<0.24	--	<0.23	--
Dinoseb		--	--	<0.11	--	<0.12	--	<0.12	--
MCPA		--	--	<22	--	<24	--	<23	--
MCPP		--	--	<22	--	<24	--	<23	--
Total Petroleum Hydrocarbons (TPH)									
TPH DRO	620	--	--	--	--	--	--	<12	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Stan
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA5-B	GTA-SA5-B	GTA-SA5-C	GTA-SA5-C	GTA-SA5-D	GTA-SA5-D	GTA-SA5-E	GTA-SA5-E	GTA-SA5-F
Sample Interval			0-1	1-10.5	0-1	1-11.5	0-1	1-14.25	0-1	1-8	0-1
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab
Sampling Date			9/12/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Acenaphthene	4,500	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Acenaphthylene	NE	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Anthracene	23,000	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Benzo(a)anthracene	21	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Benzo(a)pyrene	2	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Benzo(b)fluoranthene	21	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Benzo(g,h,i)perylene	NE	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Benzo(k)fluoranthene	210	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Chrysene	2,100	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Fluoranthene	3,000	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Fluorene	3,000	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Naphthalene	17	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Phenanthrene	2,300	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Pyrene	2,300	--	<0.010	<0.012	<0.011	<0.012	<0.0097	<0.011	<0.011	<0.011	<0.011
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.5	<3.1	<2.2	<2.5	<2.1	<2.7	<3.0	<2.5	<2.4
Arsenic	3.0/26.8*	4.9	6.7	5.5	8.6	13	5.3	8.7	8.7	7.3	8.0
Beryllium	230	1.6	1.1	1.9	1.4	2.6	1.2	1.5	1.5	1.9	3.2
Cadmium	98	1.1	<0.49	<0.62	<0.44	<0.50	<0.43	<0.53	<0.60	<0.49	<0.48
Chromium [3]	6.3	30	**37**	**43**	**41**	**36**	**44**	**52**	**44**	**58**	**58**
Copper	4,700	42	16	19	26	32	9.7	26	30	27	30
Lead	550	61	20	12	13	18	20	12	16	12	14
Mercury	4.6	0.14	<0.099	<0.12	0.089	0.15	<0.086	<0.11	<0.12	<0.099	0.17
Nickel	2,200	22	18	40	32	57	20	51	36	64	46
Selenium	580	1.0	<0.49	<0.62	<0.44	<0.50	<0.43	<0.53	<0.60	<0.49	<0.48
Silver	580	1.0	<0.49	<0.62	<0.44	<0.50	<0.43	<0.53	<0.60	<0.49	<0.48
Thallium	1.2	1.5	<0.49	<0.62	<0.44	<0.50	<0.43	<0.53	<0.60	<0.49	<0.48
Zinc	35,000	73	46	79	59	72	48	89	61	94	71
Organochlorine Pesticides											
4,4-DDD	2.5	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
4,4-DDE	9.3	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
4,4-DDT	8.5	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Aldrin	0.18	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Chlordane (n.o.s.)	7.7	--	<0.12	--	<0.13	--	<0.12	--	<0.13	--	<0.13
Dieldrin	7.7	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Endosulfan I	0.14	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Endosulfan II	700	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Endosulfan Sulfate	NE	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Endrin	NE	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Endrin Aldehyde	25	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Endrin ketone	NE	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Gamma-BHC (Lindane)	NE	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Heptachlor	2.5	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Heptachlor Epoxide	7.7	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Methoxychlor	0.63	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Toxaphene	0.33	--	<0.12	--	<0.13	--	<0.12	--	<0.13	--	<0.13
alpha-BHC	410	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
beta-BHC	2.1	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
cis-Chlordane	0.36	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
delta-BHC	1.3	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
trans-Chlordane	NE	--	<0.0049	--	<0.0051	--	<0.0047	--	<0.0053	--	<0.0050
Chlorinated Herbicides											
2,4,5-T		--	<0.023	--	<0.024	--	<0.023	--	<0.026	--	<0.024
2,4,5-TP (Silvex)		--	<0.023	--	<0.024	--	<0.023	--	<0.026	--	<0.024
2,4-D		--	<0.23	--	<0.24	--	<0.22	--	<0.25	--	<0.24
2,4-DB		--	<0.23	--	<0.25	--	<0.23	--	<0.26	--	<0.24
Dalapon		--	<0.56	--	<0.59	--	<0.54	--	<0.61	--	<0.58
Dicamba		--	<0.023	--	<0.024	--	<0.022	--	<0.025	--	<0.024
Dichloroprop		--	<0.23	--	<0.24	--	<0.22	--	<0.25	--	<0.24
Dinoseb		--	<0.12	--	<0.12	--	<0.11	--	<0.13	--	<0.12
MCPA		--	<23	--	<24	--	<22	--	<25	--	<24
MCPP		--	<23	--	<24	--	<22	--	<25	--	<24
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	<12	--	<13	--	<12	--	<13	--	<13

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA5-F	GTA-SA5-G	GTA-SA5-G	GTA-SA5-H	GTA-SA5-H	GTA-SA5-I	GTA-SA5-I	GTA-SA5-J	GTA-SA5-J
Sample Interval			1-9.8	0-1	1-9	0-1	1-15	0-1	1-13	0-1	1-8.5
Sample Type			Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/12/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Acenaphthene	4,500	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Acenaphthylene	NE	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Anthracene	23,000	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Benzo(a)anthracene	21	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Benzo(a)pyrene	2	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Benzo(b)fluoranthene	21	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Benzo(g,h,i)perylene	NE	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Benzo(k)fluoranthene	210	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Chrysene	2,100	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Fluoranthene	3,000	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Fluorene	3,000	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Naphthalene	17	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Phenanthrene	2,300	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Pyrene	2,300	--	<0.011	<0.0090	<0.011	<0.010	<0.010	<0.011	<0.011	<0.0099	<0.011
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.6	<2.7	<2.4	<2.1	<3.0	<3.0	<2.4	<2.0	<2.4
Arsenic	3.0/26.8*	4.9	14	12	13	8.3	10	8.8	8.4	3.9	7.7
Beryllium	230	1.6	5.3	6.8	5.0	1.9	3.7	2.0	2.7	1.3	2.2
Cadmium	98	1.1	<0.53	<0.54	<0.49	<0.43	<0.60	<0.60	<0.48	<0.40	<0.49
Chromium [3]	6.3	30	29	**43**	**63**	**38**	**42**	**45**	**64**	24	**56**
Copper	4,700	42	29	22	29	25	29	29	27	12	21
Lead	550	61	15	15	16	15	12	13	12	16	10
Mercury	4.6	0.14	<0.11	<0.11	<0.098	0.12	<0.12	0.14	<0.095	<0.080	<0.098
Nickel	2,200	22	53	45	53	33	51	38	55	18	49
Selenium	580	1.0	<0.53	<0.54	<0.49	<0.43	<0.60	<0.60	<0.48	<0.40	<0.49
Silver	580	1.0	<0.53	<0.54	<0.49	<0.43	<0.60	<0.60	<0.48	<0.40	<0.49
Thallium	1.2	1.5	<0.53	<0.54	<0.49	<0.43	<0.60	<0.60	<0.48	<0.40	<0.49
Zinc	35,000	73	68	53	77	53	73	58	76	49	72
Organochlorine Pesticides											
4,4-DDD	2.5	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
4,4-DDE	9.3	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
4,4-DDT	8.5	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Aldrin	0.18	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Chlordane (n.o.s.)	7.7	--	--	<0.11	--	<0.13	--	<0.12	--	<0.12	--
Dieldrin	7.7	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Endosulfan I	0.14	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Endosulfan II	700	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Endosulfan Sulfate	NE	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Endrin	NE	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Endrin Aldehyde	25	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Endrin ketone	NE	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Gamma-BHC (Lindane)	NE	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Heptachlor	2.5	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Heptachlor Epoxide	7.7	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Methoxychlor	0.63	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Toxaphene	0.33	--	--	<0.11	--	<0.13	--	<0.12	--	<0.12	--
alpha-BHC	410	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
beta-BHC	2.1	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
cis-Chlordane	0.36	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
delta-BHC	1.3	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
trans-Chlordane	NE	--	--	<0.0043	--	<0.0050	--	<0.0050	--	<0.0047	--
Chlorinated Herbicides											
2,4,5-T		--	--	<0.020	--	<0.023	--	<0.024	--	<0.024	--
2,4,5-TP (Silvex)		--	--	<0.020	--	<0.023	--	<0.024	--	<0.024	--
2,4-D		--	--	<0.20	--	<0.23	--	<0.24	--	<0.24	--
2,4-DB		--	--	<0.20	--	<0.24	--	<0.25	--	<0.24	--
Dalapon		--	--	<0.47	--	<0.56	--	<0.59	--	<0.57	--
Dicamba		--	--	<0.020	--	<0.023	--	<0.024	--	<0.024	--
Dichloroprop		--	--	<0.20	--	<0.23	--	<0.24	--	<0.24	--
Dinoseb		--	--	<0.099	--	<0.12	--	<0.12	--	<0.12	--
MCPA		--	--	<19	--	<23	--	<24	--	<23	--
MCPP		--	--	<20	--	<23	--	<24	--	<24	--
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	<11	--	<13	--	<13	--	<12	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA5-K	GTA-SA5-K	GTA-SA5-L	GTA-SA5-L	GTA-SA6-A	GTA-SA6-A	GTA-SA6-B	GTA-SA6-B	GTA-SA6-C
Sample Interval			0-1	1-5.5	0-1	1-9	0-1	1-20	0-1	1-15	0-1
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab
Sampling Date			9/13/2022	9/13/2022	9/15/2022	9/15/2022	9/12/2022	9/12/2022	9/12/2022	9/12/2022	9/13/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.010	<0.0098	<0.012	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Acenaphthene	4,500	--	<0.010	<0.0098	<0.012	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Acenaphthylene	NE	--	<0.010	<0.0098	<0.012	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Anthracene	23,000	--	<0.010	<0.0098	<0.012	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Benzo(a)anthracene	21	--	<0.010	<0.0098	0.024	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Benzo(a)pyrene	2	--	<0.010	<0.0098	0.030	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Benzo(b)fluoranthene	21	--	<0.010	<0.0098	0.024	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Benzo(g,h,i)perylene	NE	--	<0.010	<0.0098	0.022	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Benzo(k)fluoranthene	210	--	<0.010	<0.0098	0.023	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Chrysene	2,100	--	<0.010	<0.0098	0.025	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Dibenz(a,h)Anthracene	2.1	--	<0.010	<0.0098	<0.012	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Fluoranthene	3,000	--	<0.010	<0.0098	0.031	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Fluorene	3,000	--	<0.010	<0.0098	<0.012	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Indeno(1,2,3-c,d)Pyrene	21	--	<0.010	<0.0098	0.021	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Naphthalene	17	--	<0.010	<0.0098	<0.012	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Phenanthrene	2,300	--	<0.010	<0.0098	0.012	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Pyrene	2,300	--	<0.010	<0.0098	0.031	<0.010	<0.011	<0.012	<0.010	<0.012	<0.010
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.9	<2.5	<3.4	<2.4	<2.3	<3.1	<2.4	<2.6	<2.8
Arsenic	3.0/26.8*	4.9	7.3	8.5	6.4	4.2	6.7	7.7	8.2	7.5	9.3
Beryllium	230	1.6	2.6	3.8	1.6	0.66	1.2	2.0	1.2	2.2	2.5
Cadmium	98	1.1	<0.58	<0.51	<0.68	<0.48	<0.46	<0.63	<0.48	<0.53	<0.57
Chromium [3]	6.3	30	**48**	**47**	21	20	28	12	**38**	29	**52**
Copper	4,700	42	27	28	12	16	26	32	22	24	24
Lead	550	61	17	13	23	12	17	21	15	12	18
Mercury	4.6	0.14	0.14	<0.10	<0.14	<0.097	<0.092	<0.13	<0.097	<0.11	<0.11
Nickel	2,200	22	46	56	35	19	32	38	38	47	42
Selenium	580	1.0	<0.58	<0.51	<0.68	<0.48	<0.46	<0.63	0.59	<0.53	<0.57
Silver	580	1.0	<0.58	<0.51	<0.68	<0.48	<0.46	<0.63	<0.48	<0.53	<0.57
Thallium	1.2	1.5	<0.58	<0.51	<0.68	<0.48	<0.46	<0.63	<0.48	<0.53	<0.57
Zinc	35,000	73	89	71	84	37	54	71	66	62	69
Organochlorine Pesticides											
4,4-DDD	2.5	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
4,4-DDE	9.3	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
4,4-DDT	8.5	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Aldrin	0.18	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Chlordane (n.o.s.)	7.7	--	<0.12	--	<0.15	--	<0.13	--	<0.13	--	<0.12
Dieldrin	7.7	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Endosulfan I	0.14	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Endosulfan II	700	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Endosulfan Sulfate	NE	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Endrin	NE	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Endrin Aldehyde	25	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Endrin ketone	NE	--	<0.0047	--		--	<0.0052	--	<0.0052	--	<0.0048
Gamma-BHC (Lindane)	NE	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Heptachlor	2.5	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Heptachlor Epoxide	7.7	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Methoxychlor	0.63	--	<0.0047	--		--	<0.0052	--	<0.0052	--	<0.0048
Toxaphene	0.33	--	<0.12	--	<0.15	--	<0.13	--	<0.13	--	<0.12
alpha-BHC	410	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
beta-BHC	2.1	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
cis-Chlordane	0.36	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
delta-BHC	1.3	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
trans-Chlordane	NE	--	<0.0047	--	<0.0059	--	<0.0052	--	<0.0052	--	<0.0048
Chlorinated Herbicides											
2,4,5-T		--	<0.023	--	<0.027	--	<0.024	--	<0.023	--	<0.024
2,4,5-TP (Silvex)		--	<0.023	--	<0.027	--	<0.024	--	<0.023	--	<0.024
2,4-D		--	<0.23	--	<0.27	--	<0.23	--	<0.23	--	<0.24
2,4-DB		--	<0.23	--	<0.27	--	<0.24	--	<0.23	--	<0.24
Dalapon		--	<0.55	--	<0.64	--	<0.57	--	<0.55	--	<0.57
Dicamba		--	<0.023	--	<0.027	--	<0.023	--	<0.023	--	<0.024
Dichloroprop		--	<0.23	--	<0.27	--	<0.23	--	<0.23	--	<0.24
Dinoseb		--	<0.12	--	<0.13	--	<0.12	--	<0.11	--	<0.12
MCPA		--	<23	--	<26	--	<23	--	<22	--	<23
MCPP		--	<23	--	<27	--	<23	--	<23	--	<24
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	<12	--	<14	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA6-C	GTA-SA6-D	GTA-SA6-D	GTA-SA6-E	GTA-SA6-E	GTA-SA6-F	GTA-SA6-F	GTA-SA7-A	GTA-SA7-A
Sample Interval			1-8.5	0-1	1-8.8'	0-1	1-15	0-1	1-15	0-1	1-5
Sample Type			Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/13/2022	9/13/2022	9/13/2022	9/8/2022	9/8/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.011	<0.010	<0.011	<0.086	<0.010	<0.010	<0.011	<0.010	<0.010
Acenaphthene	4,500	--	<0.011	<0.010	<0.011	<0.086	<0.010	<0.010	<0.011	<0.010	<0.010
Acenaphthylene	NE	--	<0.011	<0.010	<0.011	<0.086	<0.010	<0.010	<0.011	<0.010	<0.010
Anthracene	23,000	--	<0.011	<0.010	<0.011	<0.086	<0.010	<0.010	<0.011	<0.010	<0.010
Benzo(a)anthracene	21	--	<0.011	<0.010	<0.011	0.11	<0.010	<0.010	<0.011	<0.010	<0.010
Benzo(a)pyrene	2	--	0.011	<0.010	<0.011	0.14	<0.010	<0.010	<0.011	<0.010	<0.010
Benzo(b)fluoranthene	21	--	<0.011	<0.010	<0.011	0.12	<0.010	<0.010	<0.011	<0.010	<0.010
Benzo(g,h,i)perylene	NE	--	<0.011	<0.010	<0.011	0.10	<0.010	<0.010	<0.011	<0.010	<0.010
Benzo(k)fluoranthene	210	--	<0.011	<0.010	<0.011	0.10	<0.010	<0.010	<0.011	<0.010	<0.010
Chrysene	2,100	--	<0.011	<0.010	<0.011	0.11	<0.010	<0.010	<0.011	<0.010	<0.010
Dibenz(a,h)Anthracene	2.1	--	<0.011	<0.010	<0.011	<0.086	<0.010	<0.010	<0.011	<0.010	<0.010
Fluoranthene	3,000	--	<0.011	<0.010	<0.011	0.14	<0.010	<0.010	<0.011	<0.010	<0.010
Fluorene	3,000	--	<0.011	<0.010	<0.011	<0.086	<0.010	<0.010	<0.011	<0.010	<0.010
Indeno(1,2,3-c,d)Pyrene	21	--	<0.011	<0.010	<0.011	0.097	<0.010	<0.010	<0.011	<0.010	<0.010
Naphthalene	17	--	<0.011	<0.010	<0.011	<0.086	<0.010	<0.010	<0.011	<0.010	<0.010
Phenanthrene	2,300	--	<0.011	<0.010	<0.011	<0.086	<0.010	<0.010	<0.011	<0.010	<0.010
Pyrene	2,300	--	0.011	<0.010	<0.011	0.14	<0.010	<0.010	<0.011	<0.010	<0.010
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.6	<2.3	<3.3	<2.1	<2.6	<1.9	<2.9	<2.0	<2.9
Arsenic	3.0/26.8*	4.9	10	7.2	16	4.1	9.3	10	7.0	5.7	7.2
Beryllium	230	1.6	2.9	1.2	1.4	0.76	<0.52	1.1	2.0	0.84	1.1
Cadmium	98	1.1	<0.53	<0.46	<0.65	<0.42	<0.52	<0.39	<0.58	<0.41	<0.58
Chromium [3]	6.3	30	**53**	**38**	**120**	27	**41**	**35**	26	**44**	**34**
Copper	4,700	42	26	21	23	15	29	40	14	20	85
Lead	550	61	20	15	34	20	17	28	9.5	18	24
Mercury	4.6	0.14	<0.11	<0.092	<0.13	<0.085	<0.10	0.19	<0.12	0.21	0.15
Nickel	2,200	22	43	28	37	19	27	44	58	25	34
Selenium	580	1.0	<0.53	<0.46	<0.65	<0.42	<0.52	0.53	<0.58	0.61	<0.58
Silver	580	1.0	<0.53	<0.46	<0.65	<0.42	<0.52	<0.39	<0.58	<0.41	<0.58
Thallium	1.2	1.5	<0.53	<0.46	<0.65	<0.42	<0.52	0.44	<0.58	<0.41	<0.58
Zinc	35,000	73	67	58	49	63	60	60	90	40	50
Organochlorine Pesticides											
4,4-DDD	2.5	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
4,4-DDE	9.3	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
4,4-DDT	8.5	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Aldrin	0.18	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Chlordane (n.o.s.)	7.7	--	--	<0.12	--	<0.53	--	<0.12	--	<0.13	--
Dieldrin	7.7	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Endosulfan I	0.14	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Endosulfan II	700	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Endosulfan Sulfate	NE	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Endrin	NE	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Endrin Aldehyde	25	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Endrin ketone	NE	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Gamma-BHC (Lindane)	NE	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Heptachlor	2.5	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Heptachlor Epoxide	7.7	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Methoxychlor	0.63	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Toxaphene	0.33	--	--	<0.12	--	<0.53	--	<0.12	--	<0.13	--
alpha-BHC	410	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
beta-BHC	2.1	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
cis-Chlordane	0.36	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
delta-BHC	1.3	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
trans-Chlordane	NE	--	--	<0.0049	--	<0.021	--	<0.0049	--	<0.0051	--
Chlorinated Herbicides											
2,4,5-T		--	--	<0.024	--	<0.019	--	<0.023	--	<0.023	--
2,4,5-TP (Silvex)		--	--	<0.024	--	<0.019	--	<0.023	--	<0.023	--
2,4-D		--	--	<0.24	--	<0.19	--	<0.23	--	<0.22	--
2,4-DB		--	--	<0.24	--	<0.19	--	<0.23	--	<0.23	--
Dalapon		--	--	<0.57	--	<0.46	--	<0.55	--	<0.54	--
Dicamba		--	--	<0.024	--	<0.019	--	<0.023	--	<0.022	--
Dichloroprop		--	--	<0.24	--	<0.19	--	<0.23	--	<0.22	--
Dinoseb		--	--	<0.12	--	<0.095	--	<0.12	--	<0.11	--
MCPA		--	--	<23	--	<19	--	<23	--	<22	--
MCPP		--	--	<24	--	<19	--	<23	--	<22	--
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Table 2
Soil Analysis Summary

Sample Identification	MDE NRCS	ATC Central	GTA-SA7-B	GTA-SA7-B	GTA-SA7-C	GTA-SA7-C	GTA-SA7-D	GTA-SA7-D	GTA-SA7-E	GTA-SA7-E	GTA-SA7-F
Sample Interval			0-1	1-5	0-1	1-5	0-1	1-5	0-1	1-5	0-1
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab
Sampling Date			9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Acenaphthene	4,500	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Acenaphthylene	NE	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Anthracene	23,000	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Benzo(a)anthracene	21	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Benzo(a)pyrene	2	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Benzo(b)fluoranthene	21	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	0.0095	<0.0098	<0.010
Benzo(g,h,i)perylene	NE	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Benzo(k)fluoranthene	210	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Chrysene	2,100	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Dibenz(a,h)Anthracene	2.1	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Fluoranthene	3,000	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Fluorene	3,000	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Indeno(1,2,3-c,d)Pyrene	21	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Naphthalene	17	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Phenanthrene	2,300	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	<0.0095	<0.0098	<0.010
Pyrene	2,300	--	<0.0098	<0.011	<0.010	<0.0094	<0.011	<0.011	0.0095	<0.0098	<0.010
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.8	<2.5	<2.4	<2.5	<2.5	<2.9	<2.6	<2.3	<2.7
Arsenic	3.0/26.8*	4.9	8.9	7.6	4.3	2.8	3.9	6.7	3.8	2.9	4.8
Beryllium	230	1.6	0.63	1.1	1.3	0.92	1.6	1.7	1.2	1.3	0.97
Cadmium	98	1.1	<0.56	<0.51	<0.48	<0.49	<0.50	<0.58	<0.52	<0.47	<0.54
Chromium [3]	6.3	30	**45**	**32**	24	**31**	26	**51**	**32**	27	**46**
Copper	4,700	42	29	57	12	9.3	14	21	9.9	7.4	22
Lead	550	61	24	18	17	13	21	19	16	11	21
Mercury	4.6	0.14	<0.11	<0.10	<0.096	<0.098	<0.10	<0.12	<0.10	<0.093	<0.11
Nickel	2,200	22	28	32	17	16	20	54	22	18	36
Selenium	580	1.0	0.56	<0.51	<0.48	<0.49	<0.50	<0.58	<0.52	<0.47	<0.54
Silver	580	1.0	<0.56	<0.51	<0.48	<0.49	<0.50	<0.58	<0.52	<0.47	<0.54
Thallium	1.2	1.5	<0.56	<0.51	<0.48	<0.49	<0.50	<0.58	<0.52	<0.47	<0.54
Zinc	35,000	73	51	52	44	47	65	92	55	43	77
Organochlorine Pesticides											
4,4-DDD	2.5	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
4,4-DDE	9.3	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
4,4-DDT	8.5	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Aldrin	0.18	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Chlordane (n.o.s.)	7.7	--	<0.12	--	<0.13	--	<0.13	--	<0.11	--	<0.13
Dieldrin	7.7	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Endosulfan I	0.14	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Endosulfan II	700	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Endosulfan Sulfate	NE	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Endrin	NE	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Endrin Aldehyde	25	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Endrin ketone	NE	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Gamma-BHC (Lindane)	NE	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Heptachlor	2.5	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Heptachlor Epoxide	7.7	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Methoxychlor	0.63	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Toxaphene	0.33	--	<0.12	--	<0.13	--	<0.13	--	<0.11	--	<0.13
alpha-BHC	410	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
beta-BHC	2.1	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
cis-Chlordane	0.36	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
delta-BHC	1.3	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
trans-Chlordane	NE	--	<0.0048	--	<0.0051	--	<0.0054	--	<0.0045	--	<0.0051
Chlorinated Herbicides											
2,4,5-T		--	<0.023	--	<0.022	--	<0.025	--	<0.023	--	<0.024
2,4,5-TP (Silvex)		--	<0.023	--	<0.022	--	<0.025	--	<0.023	--	<0.024
2,4-D		--	<0.22	--	<0.22	--	<0.25	--	<0.23	--	<0.24
2,4-DB		--	<0.23	--	<0.22	--	<0.25	--	<0.23	--	<0.25
Dalapon		--	<0.54	--	<0.53	--	<0.60	--	<0.55	--	<0.58
Dicamba		--	<0.022	--	<0.022	--	<0.025	--	<0.023	--	<0.024
Dichloroprop		--	<0.22	--	<0.22	--	<0.25	--	<0.23	--	<0.24
Dinoseb		--	<0.11	--	<0.11	--	<0.12	--	<0.11	--	<0.12
MCPA		--	<22	--	<22	--	<24	--	<22	--	<24
MCPP		--	<22	--	<22	--	<25	--	<23	--	<24
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA7-F	GTA-SA7-G	GTA-SA7-G	GTA-SA7-H	GTA-SA7-H	GTA-SA7-I	GTA-SA7-I	GTA-SA7-J	GTA-SA7-J
Sample Interval			1-5	0-1	1-5	0-1	1-5	0-1	1-5	0-1	1-5
Sample Type			Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/9/2022	9/9/2022	9/9/2022	9/9/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.0094	<0.010	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Acenaphthene	4,500	--	<0.0094	<0.010	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Acenaphthylene	NE	--	<0.0094	<0.010	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Anthracene	23,000	--	<0.0094	<0.010	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Benzo(a)anthracene	21	--	<0.0094	0.029	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Benzo(a)pyrene	2	--	<0.0094	0.036	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Benzo(b)fluoranthene	21	--	<0.0094	0.034	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Benzo(g,h,i)perylene	NE	--	<0.0094	0.030	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Benzo(k)fluoranthene	210	--	<0.0094	0.029	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Chrysene	2,100	--	<0.0094	0.032	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.0094	<0.010	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Fluoranthene	3,000	--	<0.0094	0.038	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Fluorene	3,000	--	<0.0094	<0.010	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.0094	0.028	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Naphthalene	17	--	<0.0094	<0.010	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Phenanthrene	2,300	--	<0.0094	0.012	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Pyrene	2,300	--	<0.0094	0.040	<0.0095	<0.0097	<0.0098	<0.0098	<0.0096	<0.010	<0.011
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.3	<2.3	<2.4	<2.4	<2.2	<2.3	<2.2	<2.2	<3.1
Arsenic	3.0/26.8*	4.9	3.2	3.5	3.2	4.5	5.9	5.4	4.4	5.5	5.1
Beryllium	230	1.6	0.92	1.1	1.0	1.8	1.9	1.5	1.6	1.4	0.99
Cadmium	98	1.1	<0.45	<0.46	<0.48	<0.47	<0.44	<0.47	<0.44	<0.44	<0.62
Chromium [3]	6.3	30	29	**35**	**44**	**56**	**55**	22	28	21	17
Copper	4,700	42	12	11	8.7	18	24	27	22	31	27
Lead	550	61	15	16	13	22	24	11	11	7.9	8.3
Mercury	4.6	0.14	<0.091	<0.091	<0.096	<0.094	<0.087	<0.093	<0.089	<0.087	<0.12
Nickel	2,200	22	21	31	28	52	46	32	34	30	25
Selenium	580	1.0	<0.45	<0.46	<0.48	<0.47	<0.44	<0.47	<0.44	<0.44	<0.62
Silver	580	1.0	<0.45	<0.46	<0.48	<0.47	<0.44	<0.47	<0.44	<0.44	<0.62
Thallium	1.2	1.5	<0.45	<0.46	<0.48	<0.47	<0.44	<0.47	<0.44	<0.44	<0.62
Zinc	35,000	73	44	75	61	120	110	58	62	42	34
Organochlorine Pesticides											
4,4-DDD	2.5	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
4,4-DDE	9.3	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
4,4-DDT	8.5	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Aldrin	0.18	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Chlordane (n.o.s.)	7.7	--	--	<0.13	--	<0.12	--	<0.12	--	<0.13	--
Dieldrin	7.7	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Endosulfan I	0.14	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Endosulfan II	700	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Endosulfan Sulfate	NE	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Endrin	NE	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Endrin Aldehyde	25	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Endrin ketone	NE	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Gamma-BHC (Lindane)	NE	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Heptachlor	2.5	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Heptachlor Epoxide	7.7	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Methoxychlor	0.63	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Toxaphene	0.33	--	--	<0.13	--	<0.12	--	<0.12	--	<0.13	--
alpha-BHC	410	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
beta-BHC	2.1	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
cis-Chlordane	0.36	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
delta-BHC	1.3	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
trans-Chlordane	NE	--	--	<0.0051	--	<0.0047	--	<0.0047	--	<0.0051	--
Chlorinated Herbicides											
2,4,5-T		--	--	<0.023	--	<0.021	--	<0.022	--	<0.023	--
2,4,5-TP (Silvex)		--	--	<0.023	--	<0.021	--	<0.022	--	<0.023	--
2,4-D		--	--	<0.23	--	<0.21	--	<0.22	--	<0.23	--
2,4-DB		--	--	<0.23	--	<0.21	--	<0.22	--	<0.23	--
Dalapon		--	--	<0.55	--	<0.51	--	<0.53	--	<0.55	--
Dicamba		--	--	<0.023	--	<0.021	--	<0.022	--	<0.023	--
Dichloroprop		--	--	<0.23	--	<0.21	--	<0.22	--	<0.23	--
Dinoseb		--	--	<0.12	--	<0.11	--	<0.11	--	<0.12	--
MCPA		--	--	<23	--	<21	--	<22	--	<23	--
MCPP		--	--	<23	--	<21	--	<22	--	<23	--
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA7-K	GTA-SA7-K	GTA-SA8-A	GTA-SA8-A	GTA-SA8-B	GTA-SA8-B	GTA-SA8-C	GTA-SA8-C	GTA-SA8-D
Sample Interval			0-1	1-11	0-1	1-4	0-1	1-4	0-1	1-4	0-1
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab
Sampling Date			9/9/2022	9/9/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.0091	<0.011	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Acenaphthene	4,500	--	<0.0091	<0.011	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Acenaphthylene	NE	--	<0.0091	<0.011	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Anthracene	23,000	--	<0.0091	0.036	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Benzo(a)anthracene	21	--	0.050	0.030	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Benzo(a)pyrene	2	--	0.043	0.022	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Benzo(b)fluoranthene	21	--	0.11	0.018	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Benzo(g,h,i)perylene	NE	--	0.049	0.014	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Benzo(k)fluoranthene	210	--	0.055	0.021	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Chrysene	2,100	--	0.085	0.028	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Dibenz(a,h)Anthracene	2.1	--	0.012	<0.011	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Fluoranthene	3,000	--	0.048	0.079	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Fluorene	3,000	--	<0.0091	0.020	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Indeno(1,2,3-c,d)Pyrene	21	--	0.039	0.014	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Naphthalene	17	--	<0.0091	<0.011	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Phenanthrene	2,300	--	0.015	0.10	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Pyrene	2,300	--	0.048	0.063	<0.0099	<0.0095	<0.0097	<0.0093	<0.0097	<0.0094	<0.0097
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.5	<2.3	<2.4	<2.8	<2.4	<2.1	<2.2	<2.2	<2.8
Arsenic	3.0/26.8*	4.9	4.3	11	3.4	4.3	2.9	2.9	4.5	4.1	4.3
Beryllium	230	1.6	1.0	2.5	1.1	1.00	1.3	1.5	1.9	1.5	1.8
Cadmium	98	1.1	<0.50	<0.46	<0.49	<0.56	<0.49	<0.42	<0.44	<0.44	<0.56
Chromium [3]	6.3	30	21	**31**	**37**	30	**61**	**79**	**50**	**52**	**43**
Copper	4,700	42	13	25	8.4	8.2	16	19	13	20	14
Lead	550	61	20	22	16	13	14	23	22	20	20
Mercury	4.6	0.14	<0.10	<0.093	<0.097	<0.11	<0.097	<0.084	<0.088	<0.089	<0.11
Nickel	2,200	22	21	44	26	17	47	59	41	42	36
Selenium	580	1.0	<0.50	<0.46	<0.49	<0.56	<0.49	<0.42			
Silver	580	1.0	<0.50	<0.46	<0.49	<0.56	<0.49	<0.42	<0.44	<0.44	<0.56
Thallium	1.2	1.5	<0.50	<0.46	<0.49	<0.56	<0.49	<0.42	<0.44	<0.44	<0.56
Zinc	35,000	73	71	70	70	52	96	130	100	92	94
Organochlorine Pesticides											
4,4-DDD	2.5	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
4,4-DDE	9.3	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
4,4-DDT	8.5	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Aldrin	0.18	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Chlordane (n.o.s.)	7.7	--	<0.53	--	<0.12	--	<0.11	--	<0.11	--	<0.11
Dieldrin	7.7	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Endosulfan I	0.14	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Endosulfan II	700	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Endosulfan Sulfate	NE	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Endrin	NE	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Endrin Aldehyde	25	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Endrin ketone	NE	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Gamma-BHC (Lindane)	NE	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Heptachlor	2.5	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Heptachlor Epoxide	7.7	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Methoxychlor	0.63	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Toxaphene	0.33	--	<0.53	--	<0.12	--	<0.11	--	<0.11	--	<0.11
alpha-BHC	410	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
beta-BHC	2.1	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
cis-Chlordane	0.36	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
delta-BHC	1.3	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
trans-Chlordane	NE	--	<0.021	--	<0.0047	--	<0.0045	--	<0.0045	--	<0.0046
Chlorinated Herbicides											
2,4,5-T		--	<0.021	--	<0.022	--	<0.021	--	<0.023	--	<0.023
2,4,5-TP (Silvex)		--	<0.021	--	<0.022	--	<0.021	--	<0.023	--	<0.023
2,4-D		--	<0.21	--	<0.22	--	<0.21	--	<0.22	--	<0.23
2,4-DB		--	<0.21	--	<0.22	--	<0.22	--	<0.23	--	<0.23
Dalapon		--	<0.51	--	<0.52	--	<0.51	--	<0.54	--	<0.55
Dicamba		--	<0.021	--	<0.022	--	<0.021	--	<0.022	--	<0.023
Dichloroprop		--	<0.21	--	<0.22	--	<0.21	--	<0.22	--	<0.23
Dinoseb		--	<0.11	--	<0.11	--	<0.11	--	<0.11	--	<0.12
MCPA		--	<21	--	<21	--	<21	--	<22	--	<23
MCPP		--	<21	--	<22	--	<21	--	<22	--	<23
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA8-D	GTA-SA8-E	GTA-SA8-E	GTA-SA8-F	GTA-SA8-F	GTA-SA8-G	GTA-SA8-G	GTA-SA8-H	GTA-SA8-H
Sample Interval			1-4	0-1	1-4	0-1	1-4	0-1	1-4	0-1	1-4
Sample Type			Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022	9/13/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Acenaphthene	4,500	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Acenaphthylene	NE	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Anthracene	23,000	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Benzo(a)anthracene	21	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Benzo(a)pyrene	2	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Benzo(b)fluoranthene	21	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Benzo(g,h,i)perylene	NE	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Benzo(k)fluoranthene	210	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Chrysene	2,100	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Dibenz(a,h)Anthracene	2.1	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Fluoranthene	3,000	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Fluorene	3,000	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Indeno(1,2,3-c,d)Pyrene	21	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Naphthalene	17	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Phenanthrene	2,300	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Pyrene	2,300	--	<0.0099	<0.010	<0.010	<0.0097	<0.0097	<0.0099	<0.010	<0.0099	<0.010
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.4	<2.3	<2.6	<2.2	<2.3	<2.1	<2.4	<2.4	<2.1
Arsenic	3.0/26.8*	4.9	3.9	6.3	4.9	6.4	5.0	7.8	7.0	6.8	6.1
Beryllium	230	1.6	1.6	1.8	2.2	1.4	1.9	1.4	2.4	1.4	1.0
Cadmium	98	1.1	<0.48	<0.47	<0.53	<0.44	<0.46	<0.42	<0.49	<0.47	<0.42
Chromium [3]	6.3	30	**44**	27	**41**	**46**	**61**	**49**	**35**	**55**	**43**
Copper	4,700	42	15	11	27	18	27	23	31	19	17
Lead	550	61	20	15	19	26	23	25	13	18	15
Mercury	4.6	0.14	<0.096	<0.094	<0.11	<0.088	<0.091	<0.085	<0.098	<0.094	<0.085
Nickel	2,200	22	37	26	72	35	52	36	40	26	23
Selenium	580	1.0				<0.44	<0.46	0.49	<0.49	0.60	<0.42
Silver	580	1.0	<0.48	<0.47	<0.53	<0.44	<0.46	<0.42	<0.49	<0.47	<0.42
Thallium	1.2	1.5	<0.48	<0.47	<0.53	<0.44	<0.46	<0.42	<0.49	<0.47	<0.42
Zinc	35,000	73	91	69	130	87	100	83	82	64	66
Organochlorine Pesticides											
4,4-DDD	2.5	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
4,4-DDE	9.3	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
4,4-DDT	8.5	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Aldrin	0.18	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Chlordane (n.o.s.)	7.7	--	--	<0.12	--	<0.11	--	<0.11	--	<0.12	--
Dieldrin	7.7	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Endosulfan I	0.14	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Endosulfan II	700	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Endosulfan Sulfate	NE	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Endrin	NE	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Endrin Aldehyde	25	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Endrin ketone	NE	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Gamma-BHC (Lindane)	NE	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Heptachlor	2.5	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Heptachlor Epoxide	7.7	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Methoxychlor	0.63	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Toxaphene	0.33	--	--	<0.12	--	<0.11	--	<0.11	--	<0.12	--
alpha-BHC	410	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
beta-BHC	2.1	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
cis-Chlordane	0.36	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
delta-BHC	1.3	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
trans-Chlordane	NE	--	--	<0.0049	--	<0.0045	--	<0.0045	--	<0.0047	--
Chlorinated Herbicides											
2,4,5-T		--	--	<0.025	--	<0.022	--	<0.023	--	<0.022	--
2,4,5-TP (Silvex)		--	--	<0.025	--	<0.022	--	<0.023	--	<0.022	--
2,4-D		--	--	<0.25	--	<0.22	--	<0.23	--	<0.22	--
2,4-DB		--	--	<0.26	--	<0.22	--	<0.23	--	<0.23	--
Dalapon		--	--	<0.61	--	<0.53	--	<0.55	--	<0.54	--
Dicamba		--	--	<0.025	--	<0.022	--	<0.023	--	<0.022	--
Dichloroprop		--	--	<0.25	--	<0.22	--	<0.23	--	<0.22	--
Dinoseb		--	--	<0.13	--	<0.11	--	<0.11	--	<0.11	--
MCPA		--	--	<25	--	<21	--	<22	--	<22	--
MCPP		--	--	<25	--	<22	--	<23	--	<22	--
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA8-I	GTA-SA8-I	GTA-SA8-J	GTA-SA8-J	GTA-SA8-K	GTA-SA8-K	GTA-SA8-L	GTA-SA8-L	GTA-SA8-M
Sample Interval			0-1	1-4	0-1	1-4	0-1	1-4	0-1	1-4	0-1
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab
Sampling Date			9/9/2022	9/9/2022	9/9/2022	9/9/2022	9/9/2022	9/9/2022	9/9/2022	9/9/2022	9/9/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Acenaphthene	4,500	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Acenaphthylene	NE	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Anthracene	23,000	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Benzo(a)anthracene	21	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Benzo(a)pyrene	2	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Benzo(b)fluoranthene	21	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Benzo(g,h,i)perylene	NE	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Benzo(k)fluoranthene	210	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Chrysene	2,100	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Dibenz(a,h)Anthracene	2.1	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Fluoranthene	3,000	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Fluorene	3,000	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Indeno(1,2,3-c,d)Pyrene	21	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Naphthalene	17	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Phenanthrene	2,300	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Pyrene	2,300	--	<0.0099	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0098	<0.010	<0.0098
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.2	<2.4	<2.7	<3.1	<2.8	<2.8	<2.3	<3.1	<2.9
Arsenic	3.0/26.8*	4.9	2.4	6.7	7.2	3.1	9.9	14	4.5	6.9	8.7
Beryllium	230	1.6	1.1	1.6	1.3	1.1	1.4	1.7	0.65	0.75	0.93
Cadmium	98	1.1	<0.43	<0.48	<0.54	<0.63	<0.55	<0.55	<0.46	<0.63	<0.58
Chromium [3]	6.3	30	**33**	**47**	**46**	**40**	**48**	**50**	29	**43**	**44**
Copper	4,700	42	9.5	26	21	15	22	23	8.6	18	19
Lead	550	61	11	16	15	13	17	16	13	14	22
Mercury	4.6	0.14	<0.086	<0.097	<0.11	<0.13	<0.11	<0.11	<0.092	<0.13	<0.12
Nickel	2,200	22	19	52	29	27	29	35	13	24	22
Selenium	580	1.0	<0.43	<0.48	<0.54	<0.63	<0.55	<0.55	0.48	<0.63	<0.58
Silver	580	1.0	<0.43	<0.48	<0.54	<0.63	<0.55	<0.55	<0.46	<0.63	<0.58
Thallium	1.2	1.5	<0.43	<0.48	<0.54	<0.63	<0.55	<0.55	<0.46	<0.63	<0.58
Zinc	35,000	73	50	76	68	55	86	83	29	39	56
Organochlorine Pesticides											
4,4-DDD	2.5	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
4,4-DDE	9.3	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
4,4-DDT	8.5	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Aldrin	0.18	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Chlordane (n.o.s.)	7.7	--	<0.12	--	<0.12	--	<0.12	--	<0.12	--	<0.12
Dieldrin	7.7	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Endosulfan I	0.14	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Endosulfan II	700	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Endosulfan Sulfate	NE	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Endrin	NE	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Endrin Aldehyde	25	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Endrin ketone	NE	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Gamma-BHC (Lindane)	NE	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Heptachlor	2.5	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Heptachlor Epoxide	7.7	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Methoxychlor	0.63	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Toxaphene	0.33	--	<0.12	--	<0.12	--	<0.12	--	<0.12	--	<0.12
alpha-BHC	410	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
beta-BHC	2.1	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
cis-Chlordane	0.36	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
delta-BHC	1.3	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
trans-Chlordane	NE	--	<0.0046	--	<0.0048	--	<0.0047	--	<0.0047	--	<0.0046
Chlorinated Herbicides											
2,4,5-T		--	<0.023	--	<0.022	--	<0.025	--	<0.023	--	<0.022
2,4,5-TP (Silvex)		--	<0.023	--	<0.022	--	<0.025	--	<0.023	--	<0.022
2,4-D		--	<0.23	--	<0.22	--	<0.24	--	<0.23	--	<0.21
2,4-DB		--	<0.23	--	<0.22	--	<0.25	--	<0.23	--	<0.22
Dalapon		--	<0.56	--	<0.53	--	<0.59	--	<0.55	--	<0.52
Dicamba		--	<0.023	--	<0.022	--	<0.024	--	<0.023	--	<0.021
Dichloroprop		--	<0.23	--	<0.22	--	<0.24	--	<0.23	--	<0.21
Dinoseb		--	<0.12	--	<0.11	--	<0.12	--	<0.11	--	<0.11
MCPA		--	<23	--	<22	--	<24	--	<22	--	<21
MCPP		--	<23	--	<22	--	<24	--	<23	--	<21
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA8-M	GTA-SA9-A	GTA-SA9-A	GTA-SA9-B	GTA-SA9-B	GTA-SA9-C	GTA-SA9-C	GTA-SA9-D	GTA-SA9-D
Sample Interval			1-4	0-1	1-5	0-1	1-5	0-1	1-5	0-1	1-5
Sample Type			Composite	Grab	Composite	Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/9/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/14/2022
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	300	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Acenaphthene	4,500	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Acenaphthylene	NE	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Anthracene	23,000	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Benzo(a)anthracene	21	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Benzo(a)pyrene	2	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Benzo(b)fluoranthene	21	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Benzo(g,h,i)perylene	NE	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Benzo(k)fluoranthene	210	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Chrysene	2,100	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Fluoranthene	3,000	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Fluorene	3,000	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Naphthalene	17	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Phenanthrene	2,300	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Pyrene	2,300	--	<0.011	<0.0099	<0.0099	<0.0100	<0.0099	<0.010	<0.010	<0.011	<0.011
Priority Pollutant (PP) Metals											
Antimony	47	6.8	<2.8	<2.5	<2.6	<2.0	<2.4	<2.4	<2.6	<2.9	<2.7
Arsenic	3.0/26.8*	4.9	7.4	8.1	9.6	6.9	6.8	5.7	7.0	6.8	5.3
Beryllium	230	1.6	0.82	1.4	1.9	0.95	1.0	1.3	1.5	1.9	2.8
Cadmium	98	1.1	<0.55	<0.49	<0.51	<0.41	<0.48	<0.49	<0.52	<0.58	<0.54
Chromium [3]	6.3	30	**33**	**33**	**50**	**54**	**41**	**34**	**36**	**35**	**37**
Copper	4,700	42	23	15	22	14	20	14	19	32	31
Lead	550	61	13	22	17	17	13	17	13	15	12
Mercury	4.6	0.14	0.14	<0.099	<0.10	<0.082	<0.096	<0.097	<0.10	<0.12	<0.11
Nickel	2,200	22	28	24	30	19	28	24	27	40	49
Selenium	580	1.0	<0.55	<0.49	<0.51	<0.41	<0.48	<0.49	<0.52	<0.58	<0.54
Silver	580	1.0	<0.55	<0.49	<0.51	<0.41	<0.48	<0.49	<0.52	<0.58	<0.54
Thallium	1.2	1.5	<0.55	<0.49	<0.51	<0.41	<0.48	<0.49	<0.52	<0.58	<0.54
Zinc	35,000	73	48	59	60	43	53	52	48	71	75
Organochlorine Pesticides											
4,4-DDD	2.5	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
4,4-DDE	9.3	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
4,4-DDT	8.5	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Aldrin	0.18	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Chlordane (n.o.s.)	7.7	--	--	<0.12	--	<0.11	--	<0.13	--	<0.13	--
Dieldrin	7.7	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Endosulfan I	0.14	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Endosulfan II	700	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Endosulfan Sulfate	NE	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Endrin	NE	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Endrin Aldehyde	25	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Endrin ketone	NE	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Gamma-BHC (Lindane)	NE	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Heptachlor	2.5	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Heptachlor Epoxide	7.7	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Methoxychlor	0.63	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Toxaphene	0.33	--	--	<0.12	--	<0.11	--	<0.13	--	<0.13	--
alpha-BHC	410	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
beta-BHC	2.1	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
cis-Chlordane	0.36	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
delta-BHC	1.3	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
trans-Chlordane	NE	--	--	<0.0047	--	<0.0046	--	<0.0051	--	<0.0053	--
Chlorinated Herbicides											
2,4,5-T		--	--	<0.022	--	<0.023	--	<0.023	--	<0.024	--
2,4,5-TP (Silvex)		--	--	<0.022	--	<0.023	--	<0.023	--	<0.024	--
2,4-D		--	--	<0.22	--	<0.23	--	<0.23	--	<0.24	--
2,4-DB		--	--	<0.23	--	<0.23	--	<0.23	--	<0.24	--
Dalapon		--	--	<0.53	--	<0.55	--	<0.55	--	<0.57	--
Dicamba		--	--	<0.022	--	<0.023	--	<0.023	--	<0.024	--
Dichloroprop		--	--	<0.22	--	<0.23	--	<0.23	--	<0.24	--
Dinoseb		--	--	<0.11	--	<0.11	--	<0.11	--	<0.12	--
MCPA		--	--	<22	--	<22	--	<22	--	<23	--
MCPP		--	--	<22	--	<23	--	<23	--	<24	--
Total Petroleum Hydrocarbons (TPH)											
TPH DRO	620	--	--	--	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Star
ATC = Anticipated Typical Concentration for soils in Eastern Maryland
Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Sample Identification	MDE NRCS	ATC Central	GTA-SA9-E	GTA-SA9-E	GTA-SA9-F	GTA-SA9-F	GTA-SA10	GTA-SA10
Sample Interval			0-1	1-5	0-1	1-5	0-1	1-10
Sample Type			Grab	Composite	Grab	Composite	Grab	Composite
Sampling Date			9/14/2022	9/14/2022	9/14/2022	9/14/2022	9/9/2022	9/9/2022
Polycyclic Aromatic Hydrocarbons (PAHs)								
2-Methylnaphthalene	300	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Acenaphthene	4,500	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Acenaphthylene	NE	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Anthracene	23,000	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Benzo(a)anthracene	21	--	0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Benzo(a)pyrene	2	--	0.012	<0.0098	<0.010	<0.010	<0.0098	<0.011
Benzo(b)fluoranthene	21	--	0.011	<0.0098	<0.010	<0.010	<0.0098	<0.011
Benzo(g,h,i)perylene	NE	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Benzo(k)fluoranthene	210	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Chrysene	2,100	--	0.011	<0.0098	<0.010	<0.010	<0.0098	<0.011
Dibenz(a,h)Anthracene	2.1	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Fluoranthene	3,000	--	0.013	<0.0098	<0.010	<0.010	<0.0098	<0.011
Fluorene	3,000	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Indeno(1,2,3-c,d)Pyrene	21	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Naphthalene	17	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Phenanthrene	2,300	--	<0.010	<0.0098	<0.010	<0.010	<0.0098	<0.011
Pyrene	2,300	--	0.013	<0.0098	<0.010	<0.010	<0.0098	<0.011
Priority Pollutant (PP) Metals								
Antimony	47	6.8	<2.9	<2.8	<2.0	<2.7	<2.6	<2.8
Arsenic	3.0/26.8*	4.9	5.2	6.3	5.6	4.3	6.2	5.4
Beryllium	230	1.6	1.0	1.8	1.2	1.4	1.1	2.3
Cadmium	98	1.1	<0.58	<0.55	<0.41	<0.53	<0.52	<0.56
Chromium [3]	6.3	30	22	7.8	23	20	**34**	17
Copper	4,700	42	21	24	23	22	13	20
Lead	550	61	16	19	15	12	17	14
Mercury	4.6	0.14	<0.12	<0.11	<0.081	<0.11	<0.10	<0.11
Nickel	2,200	22	26	39	27	28	23	30
Selenium	580	1.0	<0.58	<0.55	<0.41	<0.53	0.53	<0.56
Silver	580	1.0	<0.58	<0.55	<0.41	<0.53	<0.52	<0.56
Thallium	1.2	1.5	<0.58	<0.55	<0.41	<0.53	<0.52	<0.56
Zinc	35,000	73	45	95	43	41	49	54
Organochlorine Pesticides								
4,4-DDD	2.5	--	<0.0047	--	<0.0049	--	<0.0047	--
4,4-DDE	9.3	--	<0.0047	--	<0.0049	--	<0.0047	--
4,4-DDT	8.5	--	<0.0047	--	<0.0049	--	<0.0047	--
Aldrin	0.18	--	<0.0047	--	<0.0049	--	<0.0047	--
Chlordane (n.o.s.)	7.7	--	<0.12	--	<0.12	--	<0.12	--
Dieldrin	7.7	--	<0.0047	--	<0.0049	--	<0.0047	--
Endosulfan I	0.14	--	<0.0047	--	<0.0049	--	<0.0047	--
Endosulfan II	700	--	<0.0047	--	<0.0049	--	<0.0047	--
Endosulfan Sulfate	NE	--	<0.0047	--	<0.0049	--	<0.0047	--
Endrin	NE	--	<0.0047	--	<0.0049	--	<0.0047	--
Endrin Aldehyde	25	--	<0.0047	--	<0.0049	--	<0.0047	--
Endrin ketone	NE	--	<0.0047	--	<0.0049	--	<0.0047	--
Gamma-BHC (Lindane)	NE	--	<0.0047	--	<0.0049	--	<0.0047	--
Heptachlor	2.5	--	<0.0047	--	<0.0049	--	<0.0047	--
Heptachlor Epoxide	7.7	--	<0.0047	--	<0.0049	--	<0.0047	--
Methoxychlor	0.63	--	<0.0047	--	<0.0049	--	<0.0047	--
Toxaphene	0.33	--	<0.12	--	<0.12	--	<0.12	--
alpha-BHC	410	--	<0.0047	--	<0.0049	--	<0.0047	--
beta-BHC	2.1	--	<0.0047	--	<0.0049	--	<0.0047	--
cis-Chlordane	0.36	--	<0.0047	--	<0.0049	--	<0.0047	--
delta-BHC	1.3	--	<0.0047	--	<0.0049	--	<0.0047	--
trans-Chlordane	NE	--	<0.0047	--	<0.0049	--	<0.0047	--
Chlorinated Herbicides								
2,4,5-T		--	<0.024	--	<0.023	--	<0.022	--
2,4,5-TP (Silvex)		--	<0.024	--	<0.023	--	<0.022	--
2,4-D		--	<0.23	--	<0.22	--	<0.22	--
2,4-DB		--	<0.24	--	<0.23	--	<0.23	--
Dalapon		--	<0.56	--	<0.54	--	<0.53	--
Dicamba		--	<0.023	--	<0.022	--	<0.022	--
Dichloroprop		--	<0.23	--	<0.22	--	<0.22	--
Dinoseb		--	<0.12	--	<0.11	--	<0.11	--
MCPA		--	<23	--	<22	--	<22	--
MCPP		--	<23	--	<22	--	<22	--
Total Petroleum Hydrocarbons (TPH)								
TPH DRO	620	--	--	--	--	--	--	--

Notes:
This table is only to be used in conjunction with the report for which it was prepared. See t
Samples collected Between September 8, 2022 and September 15, 2022
Results in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm)
NRCS = MDE Non Residential Cleanup Standards for soil as presented in MDE's Cleanup Stan
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Shaded and bold values represent exceedance of MDE RCS
NA = Not applicable
NE = MDE standard not established
* = Risk-based calculated value
The comparison value for mercury is referenced as the elemental mercury RCS/NRCS.

Appendix B

Analytical Data for Groundwater

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23052316

May 23, 2023

Kevin Plocek
GTA - Baltimore
1414 Key Highway, Ste. 201P
Baltimore, MD 21230

Reference: PSS Project No: **23052316**
Project Name: 31222314
Project Location: Frederick, MD
Project ID.: 31222314

Dear Kevin Plocek:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **23052316**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on June 27, 2023, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Cathy Thompson
QA Officer

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Explanation of Qualifiers

Project Name: 31222314
PSS Project No.: 23052316

Project ID: 31222314

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/23/2023 at 02:20 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
23052316-001	EMP-GW1	GROUND WATER	05/23/23 00:00
23052316-002	EMP-GW2	GROUND WATER	05/23/23 00:00
23052316-003	EMP-GW3	GROUND WATER	05/23/23 00:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific. instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23052316

Sample ID: EMP-GW1 **Date/Time Sampled: 05/23/2023 00:00** **PSS Sample ID: 23052316-001**
Matrix: GROUND WATER **Date/Time Received: 05/23/2023 14:20**

Inorganic Anions: Fluoride — Analytical Method: EPA 300.0 — Preparation Method: E300.0P

Qualifier(s): See Sample Receipt section on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Fluoride	**0.14**	mg/L	0.25	J	1	0.04	05/23/23	05/23/23 14:41	1053

Sample ID: EMP-GW2 **Date/Time Sampled: 05/23/2023 00:00** **PSS Sample ID: 23052316-002**
Matrix: GROUND WATER **Date/Time Received: 05/23/2023 14:20**

Inorganic Anions: Fluoride — Analytical Method: EPA 300.0 — Preparation Method: E300.0P

Qualifier(s): See Sample Receipt section on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Fluoride	**5.6**	mg/L	0.25		1	0.04	05/23/23	05/23/23 15:04	1053

Sample ID: EMP-GW3 **Date/Time Sampled: 05/23/2023 00:00** **PSS Sample ID: 23052316-003**
Matrix: GROUND WATER **Date/Time Received: 05/23/2023 14:20**

Inorganic Anions: Fluoride — Analytical Method: EPA 300.0 — Preparation Method: E300.0P

Qualifier(s): See Sample Receipt section on Case Narrative.

	Result	Units	RL	Flag	Dil	MDL	Prepared	Analyzed	Analyst
Fluoride	**0.36**	mg/L	0.25		1	0.04	05/23/23	05/23/23 15:27	1053

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800-932-9047
www.phaseonline.com

Project Name: 31222314

PSS Project No.: 23052316

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

No sampling time recorded on COC or container labels.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

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Lab Chronology

Project Name: 31222314
PSS Project No.: 23052316

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 300.0	EMP-GW1	Initial	23052316-001	W	95542	203706	05/23/2023 14:32	05/23/2023 14:41
	EMP-GW2	Initial	23052316-002	W	95542	203706	05/23/2023 14:32	05/23/2023 15:04
	EMP-GW3	Initial	23052316-003	W	95542	203706	05/23/2023 14:32	05/23/2023 15:27
	95542-1-BKS	BKS	95542-1-BKS	W	95542	203706	05/23/2023 10:24	05/23/2023 12:00
	95542-1-BLK	BLK	95542-1-BLK	W	95542	203706	05/23/2023 10:24	05/23/2023 11:37
	20230522-104 S	MS	23052218-002 S	W	95542	203706	05/23/2023 10:59	05/23/2023 13:09
	20230522-104 SD	MSD	23052218-002 S	W	95542	203706	05/23/2023 10:59	05/23/2023 13:32

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QC Summary

Project Name 31222314
PSS Project No.: 23052316

Analytical Method: EPA 300.0

Prep Method: E300.0P
Seq Number: 203706
Matrix: Water
Date Prep: 05/23/23
MB Sample Id: 95542-1-BLK
LCS Sample Id: 95542-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Fluoride	<0.04000	2.500	2.466	99	90-110	mg/L	

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

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QC Summary

Project Name 31222314
PSS Project No.: 23052316

Analytical Method: EPA 300.0
Seq Number: 203706 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 05/23/23 10:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.508	100	90-110	mg/L	

Analytical Method: EPA 300.0
Seq Number: 203706 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 05/23/23 13:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.557	102	90-110	mg/L	

Analytical Method: EPA 300.0
Seq Number: 203706 Matrix: Water
CCV Sample Id: CCV-03 Analyzed Date: 05/23/23 15:50

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.530	101	90-110	mg/L	

Analytical Method: EPA 300.0
Seq Number: 203318 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/08/23 16:22

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Fluoride	2.500	2.491	100	90-110	mg/L	

X = Recovery outside of QC Criteria

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CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: GTA | OFFICE LOCATION: BALTIMORE | PSS Work Order #: 23052316 | PAGE 1 OF 1

BILL TO (if different): | PHONE #: 443 286 5506

CONTACT: KEVIN FLOCEK | EMAIL: kflocek@gtaeng.com

PROJECT NAME: 31222314 | PROJECT #: 31222314

SITE LOCATION: FREDERICK, MD | P.O. #: 31222314

SAMPLER(S): KF | DW CERT #:

Matrix Codes: **SW**=Surface Water **DW**=Drinking Water **GW**=Ground Water **WW**=Waste Water **O**=Oil **S**=Soil **SOL**=Solid **A**=Air **WI**=Wipe

② ③

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes / Analysis/ Method Required: FLORIDE
1	EMP-GW1	5/23/23		GW	1	G	/
2	EMP-GW2	↓		↓	1	G	/
3	EMP-GW3	↓		↓	1	G	/

Preservative Codes: 1 - HCL; 2 - H_2SO_4; 3 - HNO_3; 4 - NaOH; 5 - E624KIT; 6 - ICE; 7 - Sodium Thiosulfate; 8 - Ascorbic Acid; 9 - TerraCore Kit

⑤

Relinquished By: (1)	Date	Time	Received By:
KEVIN FLOCEK	5/23/23	2:20 PM	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

④

Requested TAT (One TAT per COC)
☐ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☒ Emergency ☐ Other

STATE RESULTS REPORTED TO:
☐ MD ☐ DE ☐ PA ☐ VA ☐ WV
☐ OTHER

COMPLIANCE?
☐ DW ☐ WW

EDD FORMAT TYPE

Special Instructions:

Ice Present: ABS

Custody Seal: ABS

Coolers: 0 Temp: 22.9-24.3°C

Shipping Carrier: Client

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

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Sample Receipt Checklist

Project Name: 31222314
PSS Project No.: 23052316

Client Name GTA - Baltimore
Disposal Date 06/27/2023

Received By Tyler Enwright
Date Received 05/23/2023 02:20:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Tyler Enwright

Shipping Container(s)
No. of Coolers 0

		Ice	Absent
Custody Seal(s) Intact?	N/A	Temp (deg C)	24.3
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Kevin Plocek
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	3
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	3

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

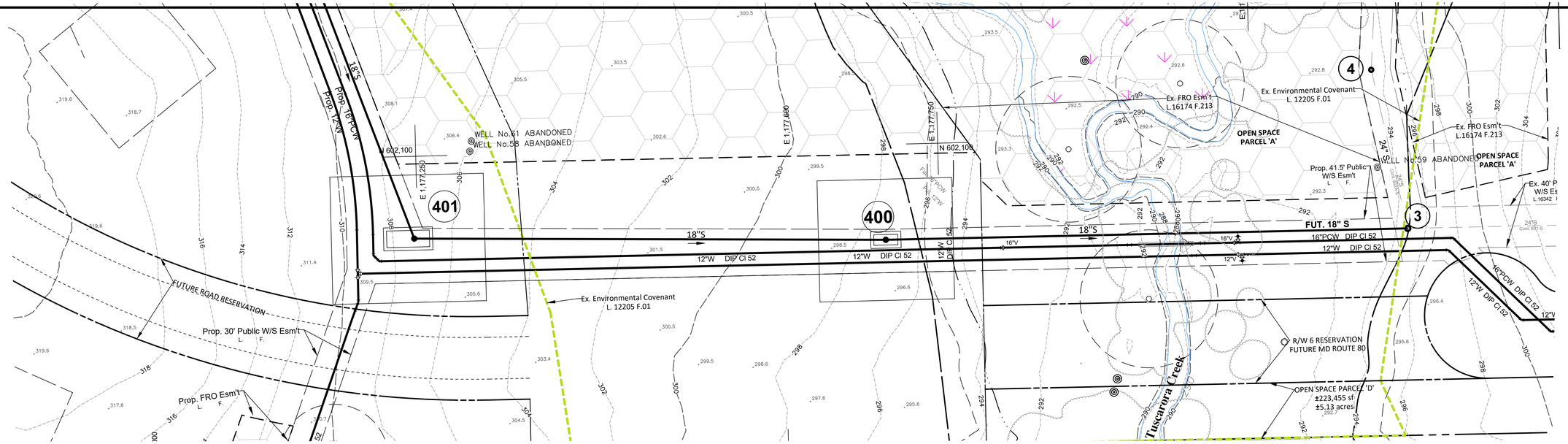
No sampling time recorded on COC or container labels.

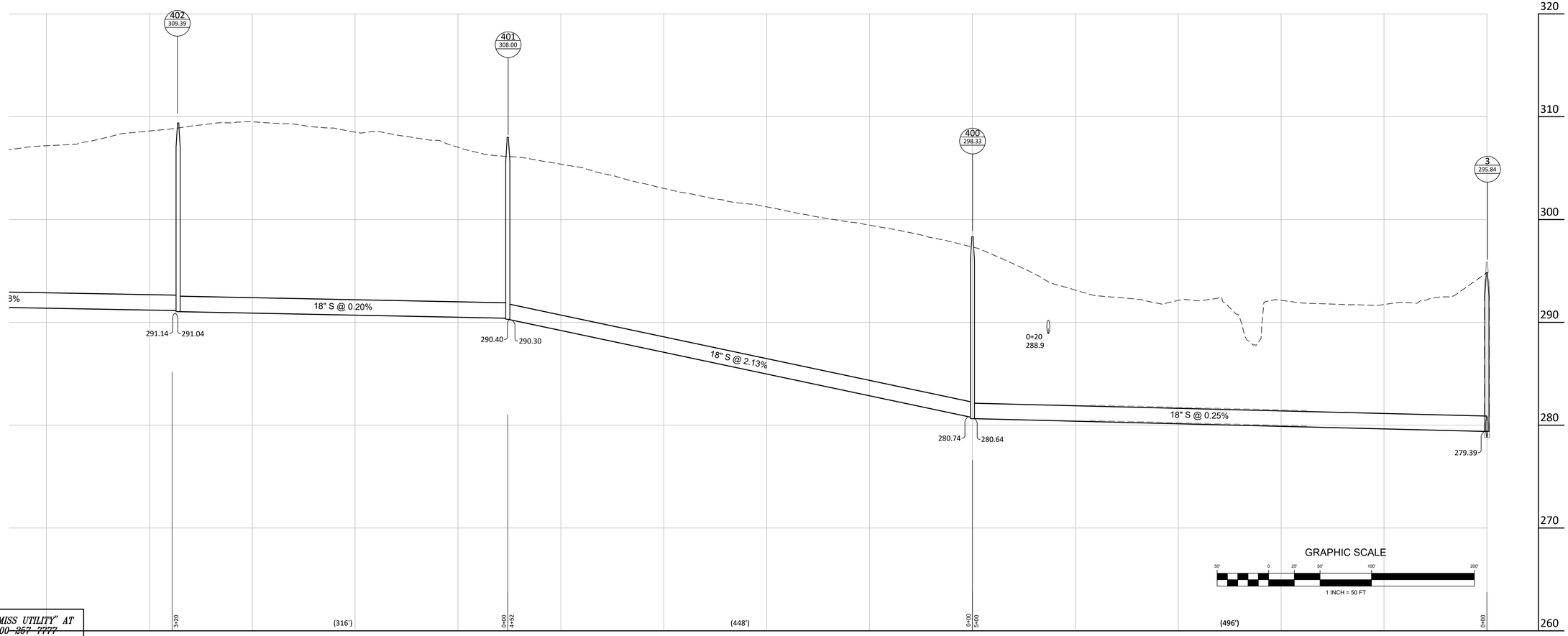
Samples Inspected/Checklist Completed By: Tyler Enwright — Date: 05/23/2023

PM Review and Approval: Lynn Jackson — Date: 05/23/2023

Appendix C

Rodgers Consulting *Plan and Profile Exhibit, Sewer at Stream Crossing*





GRAPHIC SCALE

50' 0 25' 50' 100' 200'

1 INCH = 50 FT

CALL "MISS UTILITY" AT 1-800-257-7777
72 Hours Before Start Of Construction

REVISION	DATE	REVISION	DATE

	BY	DATE
BASE DATA	CADD	
DESIGNED		
DRAWN		
REVIEWED		

RELEASE FOR ☐

BY DATE

DEVELOPER/ OWNER:
QUANTUM MARYLAND, LLC
500 E 4TH STREET SUITE 333
AUSTIN, TX 78701
PHONE: 530-417-7496
CONTACT: AD ROBISON

Plan & Profile Exhibit
Sewer at Stream Crossing

RODGERS CONSULTING
19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
Ph: 301.948.4700 Fx: 301.948.6256 www.rodgers.com

12"Water & 16" Potable Cooling Water
Mountville Road to Happy Landing Road

QUANTUM FREDERICK

LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE:	1"=50'
JOB No.	1339A2
	January, 2023
INDEX No.	
SHEET No.	OF 11

Appendix D

K-Line Stream Crossing Seepage Analysis and SOE Design

D1 - Seepage Analysis Memo

D2 - SOE Preliminary Design

Appendix D

Appendix D1 - Seepage Analysis Memo

Memo

To: Peter McCabe (STO Mission Critical)

From: Christophe Locussol, P.E. (GEI)

c: Giovanni Bonita, Ph.D., P.E.; Albin Rosado, EIT (GEI)

Date: December 19, 2023

Re: Dewatering Assessment – Mountville Road SOE
Quantum Maryland, LLC
Frederick, MD

This memorandum describes the design approach used to estimate the volume of groundwater and associated drawdown related with the extraction of water within the proposed trenchless installation methods for the sewer and water lines along the proposed K-Line at the stream crossing along Mountville Road. The 18-inch diameter sewer line will be installed using microtunneling between MH-401 and MH-3. The 16-inch diameter potable cooling water (PCW) line and 12-inch diameter water line, located south of and parallel to the sewer line will be installed using horizontal direction drilling (HDD). The analyses consider the engineering control measures developed for the project that limit groundwater pumping and discharge in these areas for both proposed installation methods.

Our design was based on the subsurface information provided in the Geo-Technology Associates, Inc. (GTA) geotechnical reports titled *Report of Geotechnical Exploration – Quantum Frederick Property Proposed Sewer Outfall A* dated August 29, 2022 and *Report of Geotechnical Exploration – Former Alcoa Eastalco Works Property* dated January 5, 2021. Additionally, boring log GEI-1 advanced by Tetra Tech was also considered in our design.

Existing Conditions

The proposed development is located within the larger Quantum Maryland, LLC property consisting of approximately 2,200 acres. The existing MH-3 is located approximately 2,500 feet north of the intersection of Mountville Road and Adamstown Road. The site was previously agricultural farmland prior to start of grading operations. Construction around the proposed temporary 1 million gallon per day (MGD) pump station was halted by regulatory agencies due to permitting issues relating to dewatering after grading operations started.

Subsurface Conditions

Subsurface conditions throughout the site were developed from the soil borings advanced for the project and presented in the GTA geotechnical reports. Two geotechnical borings were advanced at the existing MH-3 location over several mobilizations, and one geotechnical boring was advanced west of the proposed MH-401 location. Several air track probes within the footprint of MH-3 and adjacent to MH-3 were also advanced into the bedrock to identify cavities in the rock. The top of rock elevation varies significantly across the site and GEI will be performing additional subsurface investigation along the K-Line to gather more subsurface data and better understand the conditions.

The following provides a brief summary of the typical subsurface stratigraphy at the site:

Stratum 1 – Residual Soils (El. +309 feet to El. +286 feet):

The residual layer generally consists of moderate to high-plasticity cohesive soils classified as lean clay (CL), and elastic silt (ML). SPT N-values in this layer ranged from weight of hammer (WOH) to 11 blows per foot (bpf). Soft layers were encountered at depth near the transition between residual soils and weathered rock.

Based on the borings, the bottom of the residual soils varies significantly in the vicinity of the proposed MH-401 and the MH-3 locations. The boring advanced west of the MH-401 footprint has bottom of residual soils at El. +296 feet. The borings advanced within the MH-3 footprint have bottom of residual soils at El. + 293.3 feet and El. +285.5 feet for borings GEI-01 and SWR-01, respectively.

Stratum 2 – Highly Weathered Rock (El. +286 feet to El. +283 feet):

The Residual Soils are underlain by a thin layer of highly weathered rock, defined as Stratum 1 soils with SPT N-values between 51 bpf and 50 blows for 1 inch of split spoon penetration. The thickness of the weathered rock layer varies significantly in the vicinity of the proposed MH-401 and MH-3 locations. Borings within the MH-3 footprint encountered 0.2 feet and 3 feet of highly weathered rock at borings GEI-01 and SWR-01, respectively. The boring within the MH-403R footprint did not encounter weathered rock.

Stratum 3 – Top of Rock (El. +296 feet to El. +286 feet):

The Highly Weathered Rock, where present is underlain by the Cambrian-age Frederick Formation, which consists of thin-bedded, laminated limestone. This formation is particularly susceptible to developing karst features. Top of rock is defined as auger refusal. Rock Quality Designation for the rock ranged between 0% and 81%, with the top 15 feet of rock showing RQD values typically below 50%.

Air track probes were also advanced within the MH-3 footprint and did not encounter cavities within the rock.

Groundwater was encountered within the Residual Soils layer at elevations ranging between El. + 293.5 feet and El. + 291 feet at the MH-3 location. Groundwater was not encountered in the boring advanced in the vicinity of MH-401, but for analysis purposes, was established at El. +295 feet, consistent with the top of rock.

Relevant boring logs and subsurface data are included as Attachment 1 for reference.

Proposed Construction

The proposed construction consists of a new manhole (MH-401), approximately 878 lineal feet of 18-inch diameter sewer pipe between MH-401 and the existing MH-3, and the installation of a 12-inch potable water line and a 16-inch diameter potable cooling water line along the same alignment. The temporary support of excavation (SOE) around MH-3 was designed under a separate contract, and the seepage analysis for the MH-3 SOE was provided in a separate memorandum dated October 13, 2023.

A watertight SOE system in conjunction with a low-mobility grouting (LMG) program is proposed at MH-401 to minimize the amount of groundwater that will be extracted during construction. The watertight SOE system will consist of a secant pile wall system as the perimeter excavation support system around MH-401. The purpose of the secant pile wall is to provide a lateral cutoff to water flow into the excavation. The secant pile wall consists of a continuous wall of overlapping concrete circular shafts. Steel W section members are placed in alternating shafts to provide structural lateral support during the excavation. Excerpt drawings from the SOE package have been included as Attachment 2 for illustration.

The secant pile wall system around MH-401 will serve as the launch shaft for microtunneling activities and will extend to El. +279 feet. The secant pile wall system around MH-3 will serve as the retrieval shaft.

A LMG program will be performed within the rock along the alignment of the SOE systems and within the proposed excavations to fill cavities and soil seams and restrict water flow into the excavation. The intent of the LMG program is to restrict the amount of groundwater from entering the excavation and aid in the installation of the SOE systems. Additional grouting based on field conditions and grout takes might be required.

The microtunneling will extend from MH-3 to MH-401 in a continuous run. MH-400, which is located approximately 500 feet west of MH-3, will be bypassed during the tunneling activities but will be constructed afterwards using a 'doghouse' method in an open excavation supported by trench boxes. Given that the excavation will extend into rock, a LMG program is recommended to restrict groundwater inflow. The LMG program will consist of a 4-foot thick grout plug below the excavation subgrade and grouting along the perimeter within the weathered rock and limestone.

The two water lines are both currently designed as ductile iron pipes. The 16-inch water line is currently placed at a 10-foot horizontal offset and has a deeper invert elevation than the 12-inch water line. GEI proposed HDD as an alternative construction method where the two water lines intersect the existing Tuscaroa Creek to minimize disturbance. The length of the HDD-installed water lines is approximately 925 feet and would consist of HDPE pipe.

A mechanical coupler will be required to connect the two dissimilar pipe materials. These connections will be achieved in a temporary excavation approximately 8.75 feet in depth near MH-3. The analysis assumes that the excavation will have an approximate footprint at subgrade of 20 feet by 8 feet near the MH-3 location to perform the connections for both water lines. The excavation will be either sloped or supported by trench boxes. Given the excavation near MH-3 will extend into the rock, a LMG program to restrict groundwater intrusion into the excavation was considered in the analysis. The LMG program will consist of a 4-foot thick grout plug below the excavation subgrade and grouting along the perimeter of the excavation within the weathered rock and limestone.

The excavation near MH-401 will extend approximately 7 feet in depth but will be above the assumed groundwater. A seepage analysis was therefore not performed at this location.

Analysis Approach

Two numerical models (one for the SOE around MH-401 and one for the HDD excavation adjacent to MH-3) were prepared using the geometry of the proposed excavations, groundwater elevations and stratigraphy discussed above to estimate the flow that will enter the excavations. The computer program, SEEP/W, developed by Geoslope International, a Bentley company, was used to perform the analysis. SEEP/W is a finite element software product for modelling two-dimensional groundwater flow in porous media.

SEEP/W uses permeability properties of the subsurface layers to estimate the flow rate of the groundwater through these layers. As mentioned previously in the subsurface conditions section, three different soil layers were modeled in SEEP/W based on the available boring logs.

The permeability value for Stratum 1 (Residual Soils) layer was estimated using laboratory data in the publication "Hydrogeology of the Carbonate Rocks, Frederick and Hagerstown Valleys, Maryland" by LJ Nutter for the Maryland Geological Survey (Nutter 1973). Hydraulic conductivity tests were performed on residual soil samples from the Eastalco Plant, approximately 1 mile north of the proposed construction site. The hydraulic conductivity test results are within the range of typical permeability values of silty soils presented in NAVFAC DM 7.1 (2022 Manual). The maximum

hydraulic conductivity test value was conservatively used in the analysis. The permeability values of the Stratum 2 (Weathered Rock) and Stratum 3 (Rock) layers were estimated using hydraulic conductivity values of well graded gravel (GW) and limestone, respectively presented in NAVFAC DM 7.1.

The LMG program requires that the treated areas achieve a permeability of 10^{-6} cm/sec ($3.28x10^{-8}$ ft/sec) or less. This permeability value was used in the seepage analysis for the LMG zone.

The permeability of the concrete associated with the secant pile wall is traditionally very low. But the general nature of the construction process results in the formation of concrete cold joints between adjacent piles. The permeability of the secant pile walls used in the analysis took into consideration these joints by assuming higher than normal flows through water-producing hairline cracks. The permeability of the secant pile walls also considered the permeability of the soil layer behind the cold joints.

The NAVFAC DM 7 manual indicates that the ratio of vertical to horizontal permeability (K_y/K_x) can be on the order of 0.1 for stratified soil deposits.

Table 1 summarizes the permeability properties of the various elements used in the SEEP/W analyses.

Table 1. Permeability Properties in SEEP/W Analysis

Layer	Name	Saturated Horiz. Permeability, K_x (ft/sec)
1	Fine Grained Residual Soils	$3.13x10^{-7}$
2	Weathered Rock	$3.28x10^{-3}$
3	Limestone	$4.92x10^{-4}$
4	Secant Piles – Residual Soils	$1.11x10^{-10}$
5	Secant Piles – Weathered Rock	$1.09x10^{-6}$
6	Secant Piles - Limestone	$1.64x10^{-7}$
7	LMG Treated Areas	$3.28x10^{-8}$

The microtunnel analysis was set up as a two-dimensional SEEP/W model section view, modeling the SOE excavation at the launch pit around MH-401. At the MH-401 excavation, the top of the model was set at a grade elevation of El. +318 feet and a subgrade at El. +278 feet. A constant water head of +291.25 feet was set as the boundary condition to the East of the launch pit. A constant water head of +296.0 feet was set as the boundary condition to the West of the launch pit. A no flow boundary condition was set along the bottom of the limestone layer in the SEEP/W model.

The excavation for MH-400 was modeled as a two-dimensional SEEP/W model section view modeling the temporary excavation. The top of the model was set at a grade elevation of El. +310 feet with a subgrade elevation at El. +277 feet.

The HDD analysis was set up as a two-dimensional SEEP/W model section view modeling the eastern HDD trench adjacent to MH-3. The top of the model was set at a grade elevation of El. +297 feet. The same constant water head and no flow boundary conditions used in the microtunnel analysis were applied in the HDD analysis.

In the SEEP/W model, zero pressure nodes along the width of the excavation were used to model drainage trenches and sump pits. The nodes were placed at relatively equal horizontal distances and were set to target stabilized groundwater depths of two to three feet below the excavation subgrade. The flow rate was then plotted for each of the nodes to estimate the anticipated flow into the excavations.

Grouting along the alignment of the microtunnel is anticipated as part of the LMG program to fill up soil cavities. Note that although the microtunneling process will be designed as a self-contained sealed system, some minor leakage into the excavation may occur through entry portal during the microtunneling process. Given the sealed nature of the construction method, the LMG pre-treatment, and the limited construction duration of the microtunneling process, the amount of seepage from this construction activity is considered negligible. Regardless, the total volume of water estimated was increased by 10% to account for potential inflow of water through the microtunnel seals during the microtunneling process.

The results of the SEEP/W analyses for the three different analyses (launch shaft, open excavation, and HDD) are included as Attachment 3. The results of the HDD analysis indicate about 0.5 gallons per day per foot of wall (gpd/ft) will leak into the eastern excavation. The western HDD excavation is above groundwater. The results of the microtunnel analysis indicate that about 17.7 gpd/ft will leak into the excavation at the launch shaft at MH-401. The open excavation at MH-400 analysis indicates about 1.9 gpd/ft will leak into the excavation. The flow rates from the analyses were then multiplied by the total perimeter lengths of the respective excavations to estimate the total flow into the SOE systems. The total flow in the HDD excavation, microtunnel analysis and open excavation analysis were 28 gpd, 2,100 gpd and 75 gpd, respectively. The SEEP/W model shows a maximum decrease in the water table of 0.2 feet outside of the excavations, which is considered negligible. Figures within Attachment 4 show the extent of the groundwater drawdown beyond the limits of the SOE systems.

Closing

The estimated equilibrated maximum total flow of groundwater into the MH-401, eastern HDD excavation and MH-400 excavation related to the Mountville Road stream crossing is expected to be 2,205 gpd averaged over the period of time that the excavation remains open. When accounting for the estimated equilibrated maximum total flow of groundwater into the MH-3 excavation, the total flow increases to 4,455 gpd averaged over the period of time that the excavation remains open. Although considerations were made in the analysis to account for potential construction contingencies, the actual flow will be dependent on the implementation of the LMG program and the secant pile installation. Additional grouting identified either during the LMG program or during excavation may be required, and a robust special inspection program is necessary to ensure that the construction meets the design intent.

Attachments:
Attachment 1 – Subsurface Information
Attachment 2 – Secant Pile Wall and LMG Grouting General Design
Attachment 3 – Calculation Package –Seepage Analysis
Attachment 4 – Groundwater Drawdown Figures

[arr:chl:gab]
B:\Working\STRUCTURE TONE\2302756 STO Mission Critical - Frederick\11_Seepage Analysis\Mountville Road\Quantum Loop Mville Rd Seepage Analysis Memo.docx

Attachment 1 – Subsurface Information

Table No. 1
Subsurface Exploration Summary - SPT Borings
Quantum Frederick - Sewer Outfall A
GTA Project No. 201536

Exploration ID No.	Manhole ID	Approximate Existing Ground Surface Elevation[1] (El.)	Approximate Proposed Invert Elevation[2] (El.)	Approximate Cut/Fill (-/+) Required (ft.)	Exploration Depth (ft.)	Approximate Termination Elevation (El.)	Approximate Topsoil Thickness (in.)	Approximate Depth to Highly Weathered Rock[3]		Approximate Depth of Excavatable Rock		Approximate Depth to Auger Refusal		Groundwater Observations						Approximate Cave-in Depth Observation		Depth of Invert Below Unexcavatable Rock (ft.)
														Encountered During Drilling		Completion of Drilling		One to Several Days After Drilling				
								Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.	
SWR-1	MH3	295.1	278.8	-16	12.5	283	7	9.5	286	9.5	286	12.5	283	8.5	287	Dry	<283	3.9	291	Pipe	---	7
~~SWR-2~~	~~MH4~~	~~293.5~~	~~279.6~~	~~-14~~	~~7.5~~	~~286~~	~~8~~	~~3~~	~~291~~	~~4~~	~~290~~	~~7.5~~	~~286~~	~~Dry~~	~~<286~~	~~Dry~~	~~<289~~	~~Dry~~	~~<290~~	~~3.9~~	~~290~~	~~10~~
SWR-3	MH5	296.0	281.7	-14	10	286	4	6	290	7	289	10	286	Dry	<286	Dry	<292	Dry	<292	3.9	292	7
SWR-4	MH6	297.7	283.7	-14	10.5	287	3	6	292	6	292	10.5	287	2.5	295	2.5	295	5.6	292	Pipe	---	8
SWR-5	MH7	297.7	285.8	-12	10	288	5	7	291	9	289	10	288	8.5	289	3.7	294	2.1	296	6.1	292	3
SWR-6	MH8	299.0	286.8	-12	10	289	6	6	293	7	292	10	289	2.5	297	2.5	297	3.8	295	5.2	294	5
SWR-7	MH175	314	302.2	-12	20	294	8	12	302	12	302	NE	---	13.5	301	Dry	<297	Dry	<301	13.4	301	0
SWR-8	MH9	303.1	288.8	-14	10	293	3	7	296	7	296	10	293	Dry	<293	Dry	<293	Dry	<293	Pipe	---	7
SWR-9	MH11	303.8	295.7	-8	12.5	291	5	12.5	291	12.5	291	12.5	291	8.5	295	Dry	<300	6.1	298	3.4	300	-4
SWR-10	MH12	306.2	296.7	-10	10	296	4	7	299	7	299	10	296	Dry	<296	Dry	<303	Dry	<302	3.7	303	3
SWR-11	MH13	310.7	297.6	-13	15	296	4	12	299	12	299	15	296	8.5	302	12.5	298	12.2	299	12.6	298	1
SWR-12	MH14	311.4	298.7	-13	16.5	295	3	12	299	12	299	16.5	295	8.5	303	11.5	300	10.1	301	Pipe	---	1
SWR-13	MH15	312.9	299.8	-13	20	293	6	12	301	12	301	NE	---	2.5	310	Dry	<309	Dry	<309	3.9	309	1
SWR-14	MH85	319	305.9	-13	20	299	7	17	302	17	302	NE	---	2.5	317	4.1	315	Dry	<314	5.1	314	-4
SWR-15	MH16	313.0	300.9	-12	10.5	303	4	2	311	2	311	10.5	303	Dry	<303	Dry	<303	Dry	<303	Pipe	---	10
SWR-16	MH17	312.0	301.3	-11	20	292	6	NE	---	NE	---	NE	---	13.5	299	11.1	301	7.1	305	13.3	299	N/A
SWR-17	MH18	314.2	302.4	-12	10	304	4	1	313	6	308	10	304	Dry	<304	Dry	<312	Dry	<314	1.8	312	6
SWR-18	MH19	318.0	303.5	-15	20	298	6	12	306	17	301	NE	---	Dry	<298	Dry	<298	Dry	<298	Pipe	---	-3
SWR-19	MH20	316.1	303.8	-12	20	296	3	12	304	12	304	NE	---	8.5	308	Dry	<312	Dry	<315	1.6	315	0
SWR-20	MH21	316.4	304.3	-12	16	300	4	9	307	9	307	16	300	8.5	308	8.6	308	6.5	310	7.6	309	3
SWR-21	MH22	321.0	305.0	-16	21.5	300	5	17	304	17	304	21.5	300	13.5	308	13.5	308	11.6	309	Pipe	---	-1
SWR-22	MH23	321.0	306.0	-15	20	301	3	14.5	307	14.5	307	NE	---	13.5	308	7.7	313	7.3	314	8.8	312	1
SWR-23	MH24	323.7	306.7	-17	22.5	301	7	17	307	17	307	22.5	301	13.5	310	Dry	<322	Dry	<319	1.7	322	0
SWR-24	MH25	325	307.7	-17	25	300	6	22	303	22	303	NE	---	18.5	307	Dry	<320	Dry	<322	3.0	322	-5
SWR-25	MH26	324	308.2	-16	25	299	6	17	307	17	307	NE	---	13.5	311	12.5	312	8.7	315	Pipe	---	-1

Notes:

NE = Not Encountered N/A = Not Applicable

[1] The existing ground surface elevations for the majority of the borings were provided by Rodgers Consulting, via an instrumented survey. The locations of Borings SWR-7, SWR-14, SWR-24, and SWR-25 were not included in this survey, and these locations were staked by GTA using a hand-held GPS unit. The existing ground surface elevations at these boring locations were estimated based on the topographic *Sewer Outfall* plans, dated March 2022, prepared by Rodgers.

[2] The proposed invert elevations were obtained from the profiles on the above-referenced plans.

[3] Highly weathered rock was first encountered in Boring SWR-17 at a depth of approximately 1 foot, which was inferred to be a boulder. Highly weathered rock was encountered again at a depth of approximately 4 feet.

LOG OF BORING NO. SWR-1

PROJECT: **Quantum Frederick - Sewer Outfall**
PROJECT NO.: **201536**
PROJECT LOCATION: **Frederick County, Maryland**

WATER LEVEL (ft):	Dry	3.9	
DATE:	06/28/22	06/29/22	
CAVED (ft):	Pipe	Pipe	

DATE STARTED: **06/28/22**
DATE COMPLETED: **06/28/22**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **M. Lyons**
DRILLING METHOD: **3.25" HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **8.5**
GROUND SURFACE ELEVATION: **295**
DATUM: **Topo**
EQUIPMENT: **Diedrich D-50**
LOGGED BY: **XAH**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	14	3-3-3	6	295.0	0	CL		Brown, moist, medium stiff, Sandy Lean CLAY.	Topsoil: 7 in.
S-2	2.5	12	1-4-4	8					Same, Light Brown, stiff, with Sand	
S-3	5.0	6	4-6-4	10		5			Same, stiff, with Rock Fragments (Quartz)	
S-4	8.5	2	5-6-50/3"	50/3"	285.5	10			Light Brown, wet, very dense, Highly Weathered ROCK.	
S-5	12.5	0	50/0"	50/0"	282.5	15			Auger refusal encountered at 12.5 feet. Boring offset 10 feet north of staked location. Auger refusal encountered in offset boring at 12.0 feet.	
						20				
						25				
						30				

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

LOG OF BORING NO. SWR-1

BORING NUMBER GEI-1

TETRA TECH
Tetra Tech
One Oxford Valley, Suite 200A
Langhorne, PA 19047

CLIENT Clark Water
PROJECT NAME Quantum Loophole - Proposed Sewer Line
PROJECT NUMBER 112C10263
PROJECT LOCATION 5601 Manor Woods Road, Frederick, MD 21703
DATE STARTED 11/8/23 **COMPLETED** 11/9/23
GROUND ELEVATION 296 ft NAVD88 **HOLE SIZE** 3.25
CONTRACTOR/ OPERATOR Free State Drilling/ R. Stidham
LAT **LONG**
METHOD, RIG & HAMMER Hollow Stem Auger, CME 55, Automatic 80%
GWL AT TIME OF DRILLING ---
LOGGED BY Z. Hill **CHECKED BY** M. Ahmed
GWL AT END OF DRILLING 2.50 ft / Elev 293.50 ft
NOTES PID 0 ppm throughout.
GWL AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	SPT N VALUE / PL MC LL / FINES CONTENT (%)	REMARKS AND OTHER TESTS
0		Fill- Poorly Graded Sand With Silty Clay And Gravel (sp-sc), loose to very dense, angular, brown to gray, dry to moist.	SS 1	33	5-4-3-4 (7)			
			SS 2	63	4-50/2"			
		Weathered Rock- Limestone, gray.	SS 3	100	50/2"			Top of rock at 2.9 ft
5		LIMESTONE, light gray, freshly weathered to slightly weathered, fine grained, medium hard, indistinct to thin bedding, flat to moderate dip, random fractures, close to medium spacing, shallow to steep dip, open joints.	RC 1	100 (79)				Water return from 2.9 feet to 3.9 feet. No water return for rest of boring at 3.9 ft
			RC 2	92 (67)				Vertical fracture at 7.5 ft Vertical calcite seam from 7.9 feet to 8.9 feet
10			RC 3	92 (50)				45° calcite seam from 9.9 feet to 10.4 feet 60° fracture, calcite seam from 10.7 feet to 11.2 feet Broken, weathered at joints, jammed core barrel from 11.2 feet to 11.7 feet
		LIMESTONE, light gray to gray, freshly weathered to slightly weathered, fine grained, medium hard, laminated to thin bedding, moderate to steep dip, bedding joints, close to medium spacing, moderate to steep dip, open joints.	RC 4	100 (0)				
15			RC 5	100 (22)				
			RC 6	100 (0)				Broken, jammed core barrel from 15.8 feet to 16.8 feet
20								Broken, vertical fracture from 18.7 feet to 19.0 feet Vertical fracture from 19.5 feet to 19.8 feet
			RC 7	100 (77)				Calcite seam from 20.9 feet to 21.1 feet
25								Calcite seam at 23.9 ft

(Continued Next Page)

TETRA TECH
Tetra Tech
One Oxford Valley, Suite 200A
Langhorne, PA 19047

BORING NUMBER GEI-1

CLIENT Clark Water **PROJECT NAME** Quantum Loophole - Proposed Sewer Line

PROJECT NUMBER 112C10263 **PROJECT LOCATION** 5601 Manor Woods Road, Frederick, MD 21703

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80	REMARKS AND OTHER TESTS
25		LIMESTONE, light gray to gray, freshly weathered to slightly weathered, fine grained, medium hard, laminated to thin bedding, moderate to steep dip, bedding joints, close to medium spacing, moderate to steep dip, open joints. *(continued)*	RC 8	100 (72)				
30			RC 9	98 (72)				

Bottom of borehole at 34.9 feet.

Table No. 2
Subsurface Exploration Summary - Air Track Probes
Quantum Sewer Outfall A
GTA Project No. 201536

Air Track Probe ID	Location	Approximate Depth to Sewer Invert (ft.)	Probe Depth (ft.)	Estimated Soil Depth[1] (ft.)	Estimated Rock Depth[1] (ft.)	Remarks[1]
AT-A1	MH3	16	21	0-11	11-21	
AT-A2	MH3 0+52	15	20	0-9.5	9.5-20	
AT-A3	MH3 1+04	14	19	0-4.5	4.5-19	
AT-A4	MH4	14	19	0-3.5	3.5-19	
AT-A5	MH4 0+55	14	19	0-3	3-19	
AT-A6	MH4 1+10	15	20	0-6	6-20	Soil seam 9-9.5 ft.
AT-A7	MH4 1+65	15	20	0-7.5	7.5-20	
AT-A8	MH4 2+20	16	21	0-5	5-21	
AT-A9	MH4 2+75	16	21	0-7	7-21	
AT-A10	MH4 3+30	15	20	0-5	5-20	
AT-A11	MH5	14	19	0-7, 15-19	7-15	
AT-A12	MH5 0+49	15	20	0-9	9-20	
AT-A13	MH5 0+98	15	20	0-6	6-20	
AT-A14	MH5 1+47	15	20	0-20	NE	
AT-A15	MH5 1+96	16	21	0-7	7-21	
AT-A16	MH5 2+45	16	21	0-7	7-21	
AT-A17	MH5 2+94	16	21	0-6	6-21	
AT-A18	MH5 3+43	15	20	0-5	5-20	
AT-A19	MH6	14	19	0-4.5	4.5-19	
AT-A20	MH6 0+50	14	19	0-4.5	4.5-19	
AT-A21	MH6 1+00	13	18	0-5	5-18	
AT-A22	MH6 1+50	13	18	0-5	5-18	
AT-A23	MH6 2+00	13	18	0-6	6-18	
AT-A24	MH6 2+50	13	18	0-6	6-18	
AT-A25	MH6 3+00	13	18	0-7	7-18	
AT-A26	MH6 3+50	13	18	0-8	8-18	
AT-A27	MH7	12	17	0-8	8-17	
AT-A28	MH7 0+46	11	16	0-9	9-16	
AT-A29	MH7 0+91	12	17	0-7	7-17	Broke through rock at 17 ft.
AT-A30	MH7 1+37	12	17	0-7	7-17	
AT-A31	MH8	12	17	0-11.5	11.5-17	
AT-A32	MH8 0+49 (MH175)	6	11	0-8	8-11	
AT-A33	MH8 0+98 (MH175)	6	11	0-6	6-11	
AT-A34	MH8 1+47 (MH175)	6	11	0-8.5	8.5-11	
AT-A35	MH8 1+96 (MH175)	7	12	0-9	9-12	
AT-A36	MH8 2+45 (MH175)	7	12	0-12	NE	
AT-A37	MH8 2+94 (MH175)	7	12	0-12	NE	
AT-A38	MH8 3+43 (MH175)	9	14	0-14	NE	Rock at 14 ft.
AT-A39	MH8 0+48 (MH9)	13	18	0-13	13-18	
AT-A40	MH8 0+96 (MH9)	13	18	0-9	9-18	Soil seam 13-14.
AT-A41	MH8 1+43 (MH9)	14	19	0-19	NE	Boulder 5-8 ft.
AT-A42	MH8 1+91 (MH9)	14	19	0-8	8-19	Sporadic rock 8-19 ft.
AT-A43	MH8 2+39 (MH9)	14	19	0-6	6-19	
AT-A44	MH8 2+87 (MH9)	15	20	0-6	6-20	
AT-A45	MH8 3+34 (MH9)	15	20	0-6.5	6.5-20	
AT-A46	MH9	14	19	0-6.5	6.5-19	
AT-A47	MH9 0+49	14	19	0-6.5	6.5-19	
AT-A48	MH9 0+98	13	18	0-6	6-18	
AT-A49	MH9 1+47	12	17	0-6	6-17	
AT-A50	MH9 1+96	11	16	0-5	5-16	
AT-A51	MH9 2+45	10	15	0-15	NE	
AT-A52	MH10	10	15	0-6.5	6.5-15	
AT-A53	MH10 0+50	9	14	0-12	12-14	
AT-A54	MH10 0+99	9	14	0-7	7-14	

Table No. 1
Subsurface Exploration Summary
Former Alcoa Eastalco Works Property
GTA Project No. 201536

Exploration ID No.	Inferred Geologic Formation[1]	Approximate Existing Ground Surface Elevation[2] (El.)	Boring Depth (ft.)	Approximate Termination Elevation (El.)	Approximate Topsoil Thickness (in.)	Raveling Soil Observations				Approximate Depth to Highly Weathered Rock[3]		Approximate Depth to Auger Refusal[4]		Approximate Cave-in Depth Observation		Groundwater Observations					
																Encountered During Drilling		Completion of Drilling		One to Six Days After Drilling[5]	
						Top (ft.)	Bottom (ft.)	Top El.	Bottom El.	Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.	Depth (ft.)	El.
GTA-1	Poolesville Member	375	6.0	369	6	NE	NE	---	---	4	371	6	369	3.5	372	Dry	<369	Dry	<372	Dry	<372
GTA-2	Poolesville Member	386	23.6	362	6	NE	NE	---	---	4	382	13.6	372	11.9	374	Dry	<362	Dry	<374	Dry	<374
GTA-4	Poolesville Member	386	6.5	380	10	NE	NE	---	---	4	382	6.5	380	2.5	384	Dry	<380	Dry	<383	Dry	<384
GTA-7	Poolesville Member	355	30	325	10	NE	NE	---	---	NE	---	NE	---	17.0	338	Dry	<325	Dry	<336	Dry	<338
GTA-17	Poolesville Member	387	11.5	376	10	NE	NE	---	---	NE	---	11.5	376	8.0	379	Dry	<376	Dry	<379	Dry	<379
GTA-3	Rocky Springs Station Member (Qt)	318	32.0	286	6	12	22	306	296	NE	---	22	296	16.5	302	Dry	<286	Dry	<299	Dry	<302
GTA-5	Rocky Springs Station Member	338	13.5	325	10	NE	NE	---	---	NE	---	13.5	325	7.0	331	8.5	330	Dry	<331	Dry	<331
GTA-6	Rocky Springs Station Member	343	30	313	10	NE	NE	---	---	NE	---	NE	---	18.5	325	Dry	<313	Dry	<321	Dry	<325
GTA-13	Rocky Springs Station Member (Qr)	334	13.5	321	10	NE	NE	---	---	NE	---	13.5	321	9.0	325	Dry	<321	Dry	<325	Dry	<325
GTA-14	Rocky Springs Station Member	335	20.5	315	10	NE	NE	---	---	NE	---	20.5	315	Pipe	---	10	325	14.0	321	14.5	321
GTA-15	Rocky Springs Station Member	328	66.5	262	6	12	47	316	281	49	279	51.5	277	12.5	316	14	314	10.0	318	9.0	319
GTA-16	Rocky Springs Station Member	356	22.0	334	10	17	20	339	336	20.5	336	22.0	334	18.0	338	18.5	338	Dry	<338	Dry	<338
GTA-18	Rocky Springs Station Member	330	14.0	316	10	NE	NE	---	---	3.5	327	4	326	3.5	327	Dry	<316	Dry	<327	Dry	<327
GTA-19	Rocky Springs Station Member	330	31.5	299	8	22	27	308	303	17	313	31.5	299	Pipe	---	18.5	312	20.0	310	18.4	312
GTA-20	Rocky Springs Station Member	326	17.5	309	6	NE	NE	---	---	NE	---	7.5	319	6.5	320	Dry	<309	Dry	<310	Dry	<320
GTA-22	Rocky Springs Station Member	328	28.8	299	10	22	27.5	306	301	27.5	301	28.8	299	Pipe	---	23.5	305	24.0	304	25.5	303
GTA-23	Rocky Springs Station Member (Qt)	330	30	300	3	NE	NE	---	---	NE	---	NE	---	10.0	320	18.5	312	26.5	304	N/A	---
GTA-24	Rocky Springs Station Member	320	30	290	2	NE	NE	---	---	NE	---	NE	---	1.5	319	23.5	297	Dry	<320	N/A	---
GTA-25	Rocky Springs Station Member	311	15.0	296	6	7	14.5	304	297	14	297	15.0	296	6.0	305	13.5	298	Dry	<305	Dry	<305
GTA-26	Rocky Springs Station Member	331	17.0	314	8	NE	NE	---	---	NE	---	17.0	314	14.6	316	Dry	<314	Dry	<316	Dry	<316
GTA-28	Rocky Springs Station Member	328	18.0	310	8	NE	NE	---	---	NE	---	18.0	310	15.2	313	Dry	<310	Dry	<312	14.5	314
GTA-29	Rocky Springs Station Member (Qr)	311	23.0	288	10	12	17	299	294	NE	---	23.0	288	13.5	298	18	293	10.5	301	11.8	299
GTA-30	Rocky Springs Station Member	310	17.0	293	6	12	17	298	293	NE	---	17.0	293	15.0	295	Dry	<293	Dry	<295	13.8	296
GTA-8	Adamstown Member	306	10.0	296	10	NE	NE	---	---	NE	---	10.0	296	6.5	300	Dry	<296	Dry	<300	Dry	<300
GTA-9	Adamstown Member	293	7.0	286	10	NE	NE	---	---	NE	---	7.0	286	4.5	289	Dry	<286	Dry	<289	Dry	<289
GTA-10	Adamstown Member	298	14.7	283	10	NE	NE	---	---	12	286	14.7	283	11.0	287	14	284	Dry	<287	10.0	288
GTA-11	Adamstown Member	329	28.6	300	10	NE	NE	---	---	17	312	28.6	300	18.0	311	Dry	<300	Dry	<309	Dry	<311
GTA-12	Adamstown Member	332	8.0	324	12	NE	NE	---	---	NE	---	8.0	324	6.0	326	Dry	<324	Dry	<326	Dry	<326
GTA-21	Adamstown Member (Qr)	333	41.4	292	10	NE	NE	---	---	NE	---	17.0	316	13.6	319	Dry	<292	Dry	<319	Dry	<319
GTA-27	Adamstown Member	299	22.0	277	10	NE	NE	---	---	4	295	12.0	287	9.2	290	Dry	<277	Dry	<288	Dry	<290
GTA-31	Adamstown Member (Qr)	313	19.0	294	8	NE	NE	---	---	3.5	310	4.0	309	3.5	310	Dry	<294	Dry	<310	Dry	<310
GTA-32	Adamstown Member	308	11.5	297	7	NE	NE	---	---	NE	---	11.5	297	Pipe	---	Dry	<297	Dry	<297	Dry	<297
GTA-33	Adamstown Member	322	22.0	300	8	7	17	315	305	NE	---	22.0	300	12.2	310	Dry	<300	Dry	<307	Dry	<310

Notes:

= Rock core performed upon encountering auger refusal

NE = Not Encountered

The approximate cave-in depth observations are the shallowest cave-in depths observed within each boring.

< (El.) = Groundwater was not observed and is therefore anticipated to be at or below the specified cave-in depth for the borings, or the exploration depth for the borings with temporary pipes.

Pipe = Temporary 3/4 inch PVC pipe installed to facilitate groundwater readings. Cave-in depth/elevation could not be measured.

[1] (Qr) indicates the boring is mapped within the Weathering Residuum and (Qt) indicates the boring is mapped within the Terrace Deposits; however, the specified geologic member is mapped below the thin surficial layers.

[2] The existing ground surface elevations were estimated using GIS topography obtained from the Frederick County online database and should be considered approximate.

[3] Highly weathered rock was first encountered in Boring GTA-19 at a depth of approximately 17 feet, under which a cavity of soft material was encountered. Highly weathered rock was encountered again at a depth of approximately 27.5 feet. Relatively unweathered rock was encountered in Boring GTA-21 at a depth of approximately 17 feet, under which a cavity of soft material was encountered. Highly weathered rock was encountered again at a depth of approximately 41.4 feet.

[4] Auger refusal was encountered in Boring GTA-21 at a depth of approximately 17 feet. A 5-foot rock core was performed from 17 to 22 feet, under which a cavity of soft material was encountered. Highly weathered rock was encountered again at a depth of approximately 41.4 feet.

[5] Borings GTA-23 and GTA-24 were backfilled upon completion, due to their location within the environmentally impacted Soil Management Area. Subsequent groundwater/cave-in depth measurements could not be performed.

LOG OF BORING NO. GTA-3

PROJECT: **Former Alcoa Eastalco Works Property**
PROJECT NO.: **201536**
PROJECT LOCATION: **Frederick County, Maryland**

WATER LEVEL (ft): Dry | Dry |
DATE: 12/02/2020 | 12/03/2020 |
CAVED (ft): 19.2 | 16.5 |

DATE STARTED: **12/02/2020**
DATE COMPLETED: **12/02/2020**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **B. Dipasquale**
DRILLING METHOD: **3.25" HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **318**
DATUM: **Topo**
EQUIPMENT: **Diedrich D-50**
LOGGED BY: **CDN**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
					318.0	0				
S-1	0.0	11	2-2-3	5			CL		Reddish Brown, moist, medium stiff, Lean CLAY with Sand.	Topsoil: 6 in. Qu = 2.75 tsf
S-2	2.5	12	3-4-7	11					Same, stiff, trace Sand	Qu = 3.25 tsf
S-3	5.0	15	4-5-5	10		6				Qu = 2.25
					311.0		ML		Brown, moist, soft, Sandy SILT.	
S-4	8.5	16	1-2-2	4						
						12				
S-5	13.5	15	1-1-1	2					Same, with Sand	
					301.0		CL		Reddish Brown to Brown, moist, very soft, Sandy Lean CLAY.	
S-6	18.5	10	WOH/18"	WOH/ 18		18				
					296.0		ROCK		Auger refusal encountered at 22.0 feet.	"Qu" indicates the unconfined compressive strength, given in tons per square foot (tsf), as measured using a pocket penetrometer.
R-1	22.0	18	RQD=81%		294.5		ROCK		Hard, slightly weathered, moderately fractured, gray with white, LIMESTONE (Recovery = 100%).	
R-2	23.5	35	RQD=6%			24			Hard, moderately weathered, highly fractured, dark gray with white, LIMESTONE (Recovery = 58%).	
					289.5		ROCK		Hard, moderately weathered, highly fractured, dark gray with white, LIMESTONE (Recovery = 88%).	
R-3	28.5	37	RQD=32%			30				
					286.0				Boring terminated at 32 feet.	
						36				

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

LOG OF BORING NO. GTA-3

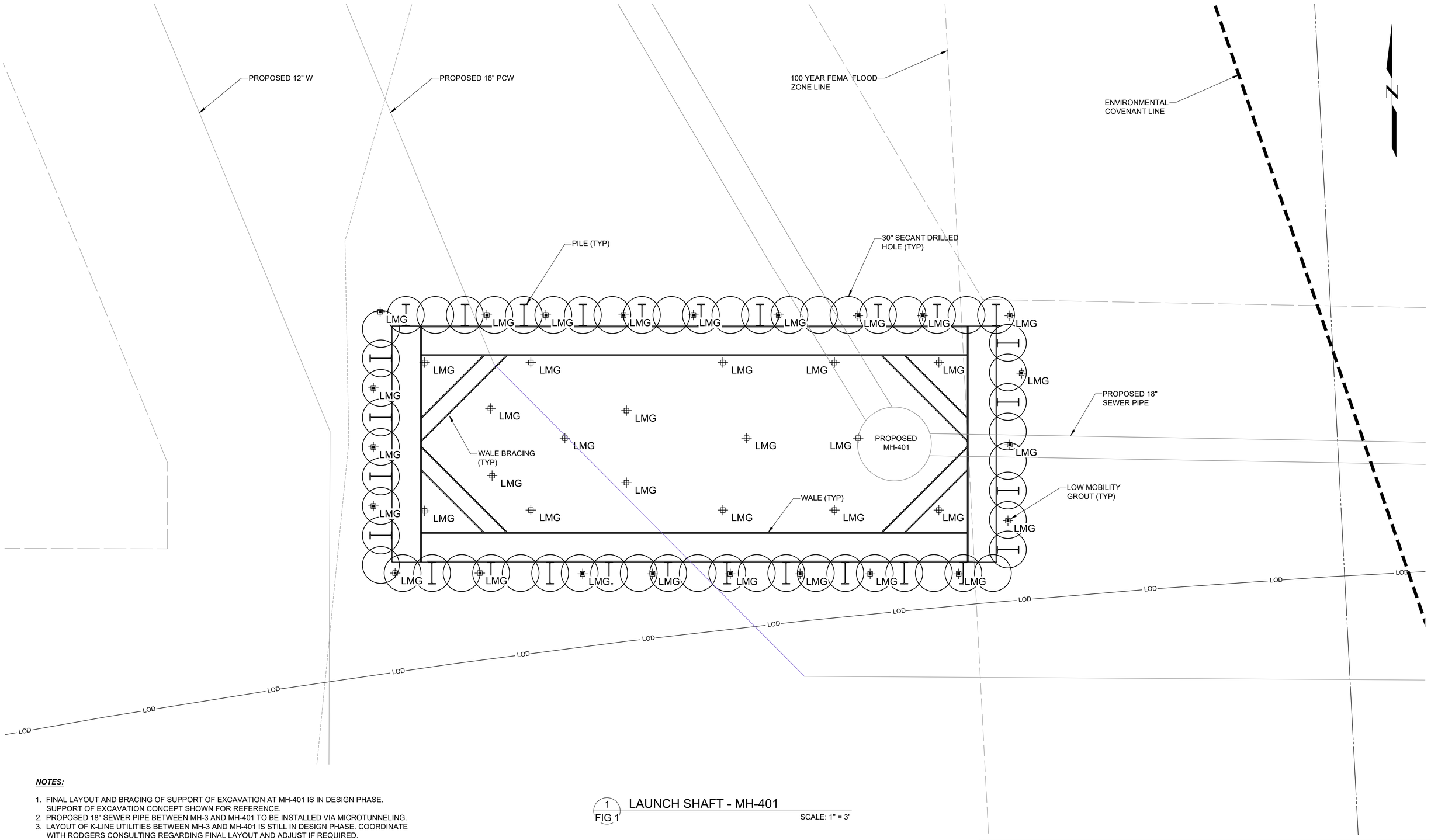
LOG OF BORING NO. GTA-3

PROJECT: **Former Alcoa Eastalco Works Property**
PROJECT NO.: **201536**
PROJECT LOCATION: **Frederick County, Maryland**

WATER LEVEL (ft):	Dry	Dry	
DATE:	12/02/2020	12/03/2020	
CAVED (ft):	19.2	16.5	

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
						42			Rock Coring Times Depth (ft.) | Time (min:sec) 22.0 - 23.0 | 2:05 23.0 - 24.0 | 1:35 24.0 - 25.0 | 1:80 25.0 - 26.0 | 3:35 26.0 - 27.0 | 2:17 27.0 - 28.0 | 1:20 28.0 - 29.0 | 2:30 29.0 - 30.0 | 3:40 30.0 - 31.0 | 4:35 31.0 - 32.0 | 3:05	
						48				
						54				
						60				
						66				
						72				
						78				

Attachment 2 - Secant Pile Wall and LMG Grouting General Design



NOTES:

1. FINAL LAYOUT AND BRACING OF SUPPORT OF EXCAVATION AT MH-401 IS IN DESIGN PHASE. SUPPORT OF EXCAVATION CONCEPT SHOWN FOR REFERENCE.
2. PROPOSED 18" SEWER PIPE BETWEEN MH-3 AND MH-401 TO BE INSTALLED VIA MICROTUNNELING.
3. LAYOUT OF K-LINE UTILITIES BETWEEN MH-3 AND MH-401 IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.

1
FIG 1 LAUNCH SHAFT - MH-401

SCALE: 1" = 3'

Mountville Road - K Line Trenchless Design Quantum Loop Frederick, MD	GEI Consultants	MOUNTVILLE ROAD LAUNCH SHAFT AT MH-401
STRUCTURE TONE	Project 2302756	DECEMBER 2023 Fig. 1

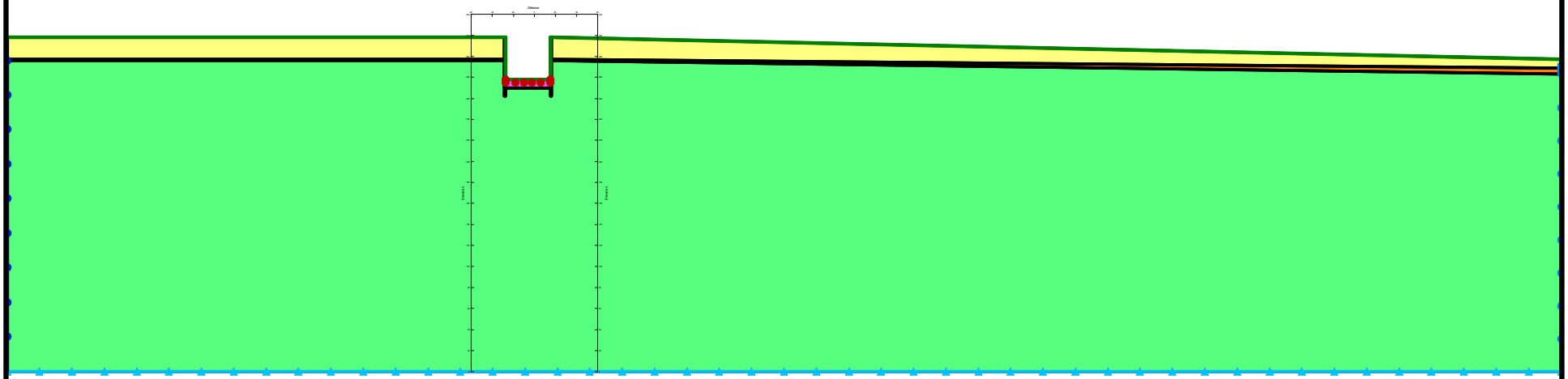
Attachment 3 – Calculation Package – Seepage Analysis

GEI Consultants

MH-401 Excavation

Color	Name	Hydraulic Material Model	Sat Kx (ft/sec)	Ky'/Kx' Ratio
	Limestone	Saturated Only	0.000492	0.1
	LMG Treated Area	Saturated Only	3.28e-08	0.1
	Residual Soils	Saturated Only	3.13e-07	0.1
	Secant Piles-LS	Saturated Only	1.64e-07	0.1
	Secant Piles-RS	Saturated Only	1.11e-10	0.1
	Secant Piles-WR	Saturated Only	1.09e-06	0.1
	Weathered Rock	Saturated Only	0.00328	0.1

Color	Name	Category	Kind	Parameters
	East Water Boundary	Hydraulic	Water Total Head	291.25 ft
	No Flow	Hydraulic	Water Rate	0 ft³/sec
	West Water Boundary	Hydraulic	Water Total Head	296 ft
	Zero Pressure	Hydraulic	Water Pressure Head	0 ft



Mountville Road Crossing Seepage Analysis
Quantum Maryland, LLC
Frederick, MD

STO Mission Critical
New York, NY

GEI Consultants

Project #2302756

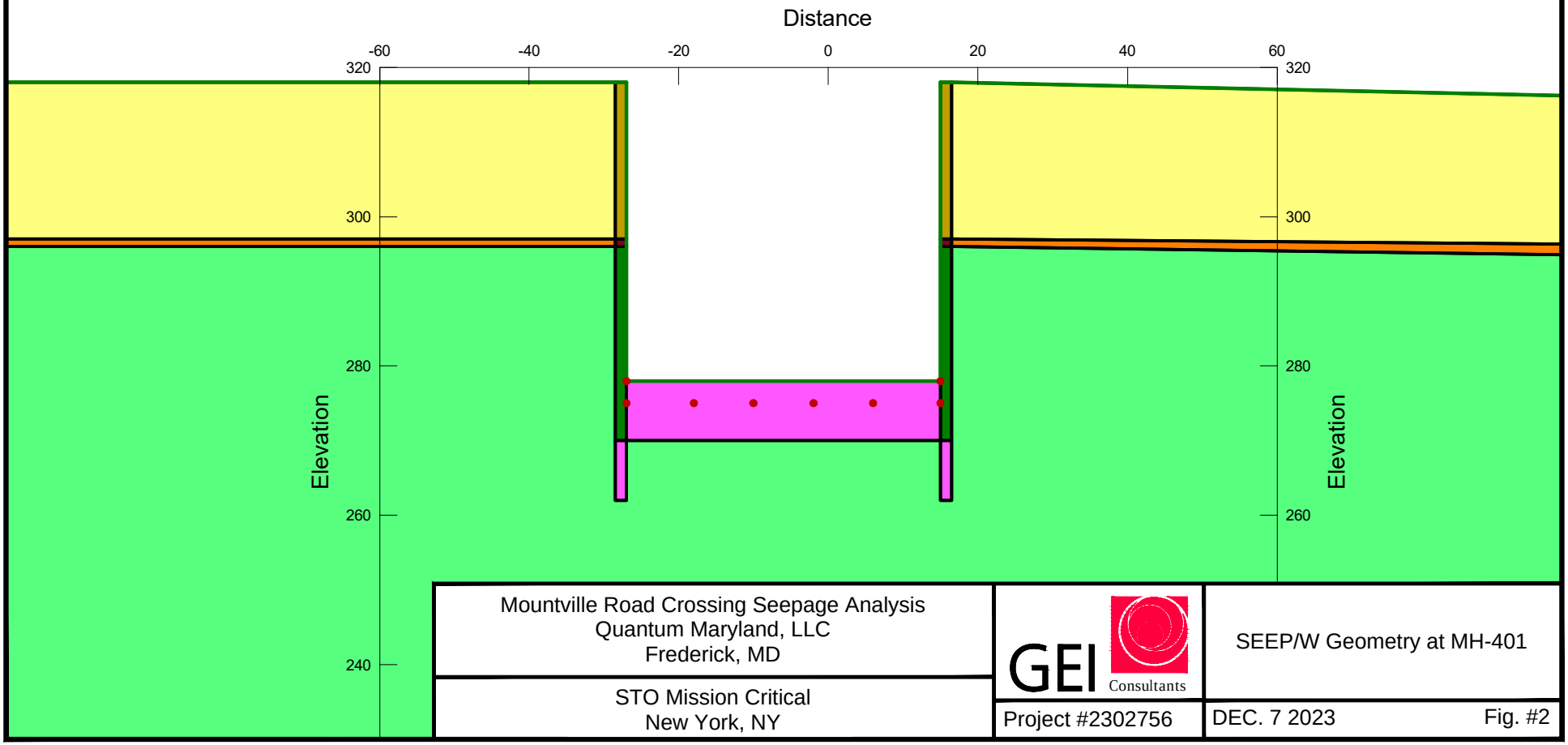
Full Extent of SEEP/W Model

DEC. 7 2023

Fig. #1

Color	Name	Hydraulic Material Model	Sat Kx (ft/sec)	Ky'/Kx' Ratio
	Limestone	Saturated Only	0.000492	0.1
	LMG Treated Area	Saturated Only	3.28e-08	0.1
	Residual Soils	Saturated Only	3.13e-07	0.1
	Secant Piles-LS	Saturated Only	1.64e-07	0.1
	Secant Piles-RS	Saturated Only	1.11e-10	0.1
	Secant Piles-WR	Saturated Only	1.09e-06	0.1
	Weathered Rock	Saturated Only	0.00328	0.1

Color	Name	Category	Kind	Parameters
	East Water Boundary	Hydraulic	Water Total Head	291.25 ft
	No Flow	Hydraulic	Water Rate	0 ft³/sec
	West Water Boundary	Hydraulic	Water Total Head	296 ft
	Zero Pressure	Hydraulic	Water Pressure Head	0 ft



Mountville Road Crossing Seepage Analysis
Quantum Maryland, LLC
Frederick, MD

STO Mission Critical
New York, NY

GEI Consultants

SEEP/W Geometry at MH-401

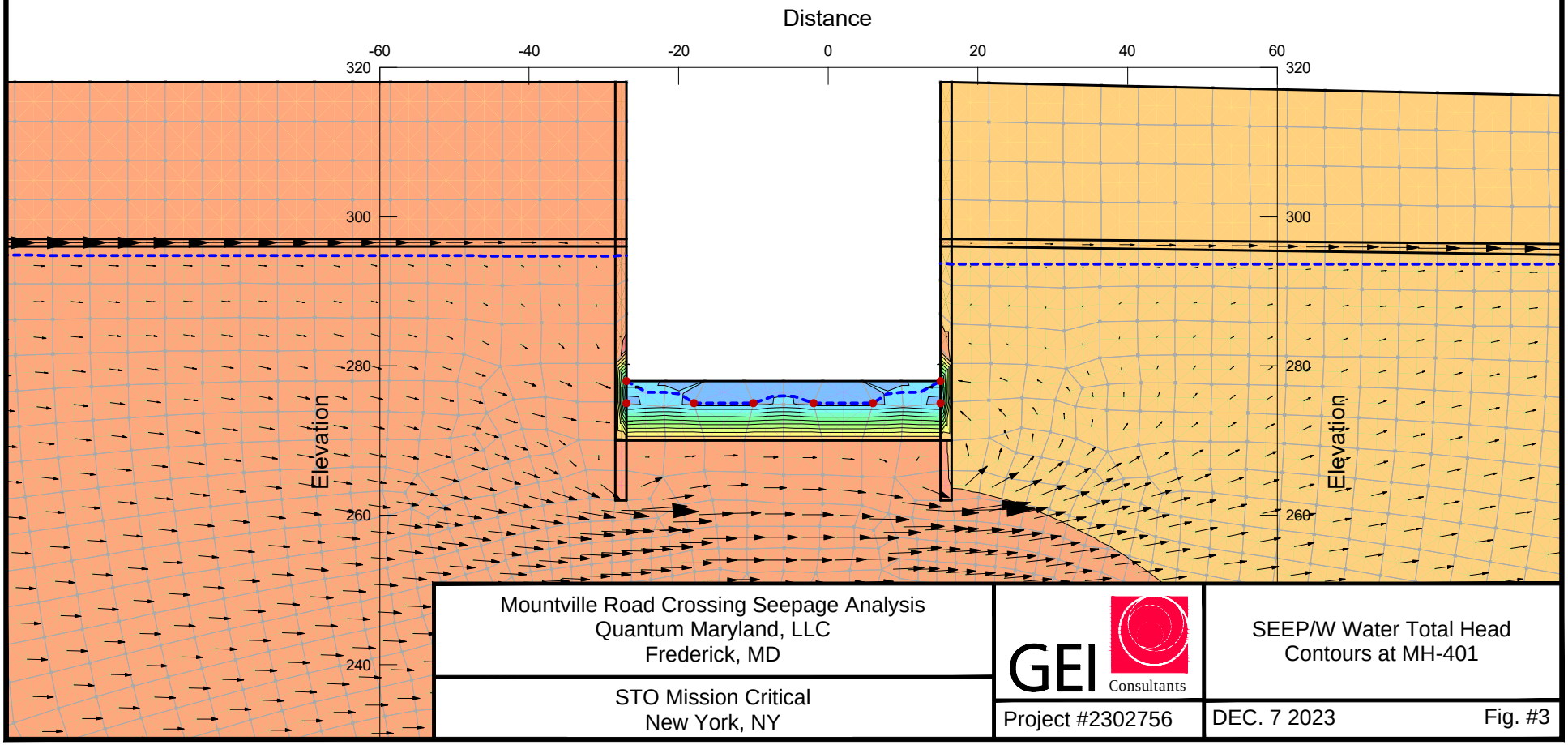
Project #2302756

DEC. 7 2023

Fig. #2

Color	Name	Hydraulic Material Model	Sat Kx (ft/sec)	Ky'/Kx' Ratio
	Limestone	Saturated Only	0.000492	0.1
	LMG Treated Area	Saturated Only	3.28e-08	0.1
	Residual Soils	Saturated Only	3.13e-07	0.1
	Secant Piles-LS	Saturated Only	1.64e-07	0.1
	Secant Piles-RS	Saturated Only	1.11e-10	0.1
	Secant Piles-WR	Saturated Only	1.09e-06	0.1
	Weathered Rock	Saturated Only	0.00328	0.1

Color	Name	Category	Kind	Parameters
	East Water Boundary	Hydraulic	Water Total Head	291.25 ft
	No Flow	Hydraulic	Water Rate	0 ft³/sec
	West Water Boundary	Hydraulic	Water Total Head	296 ft
	Zero Pressure	Hydraulic	Water Pressure Head	0 ft



Mountville Road Crossing Seepage Analysis
Quantum Maryland, LLC
Frederick, MD

STO Mission Critical
New York, NY

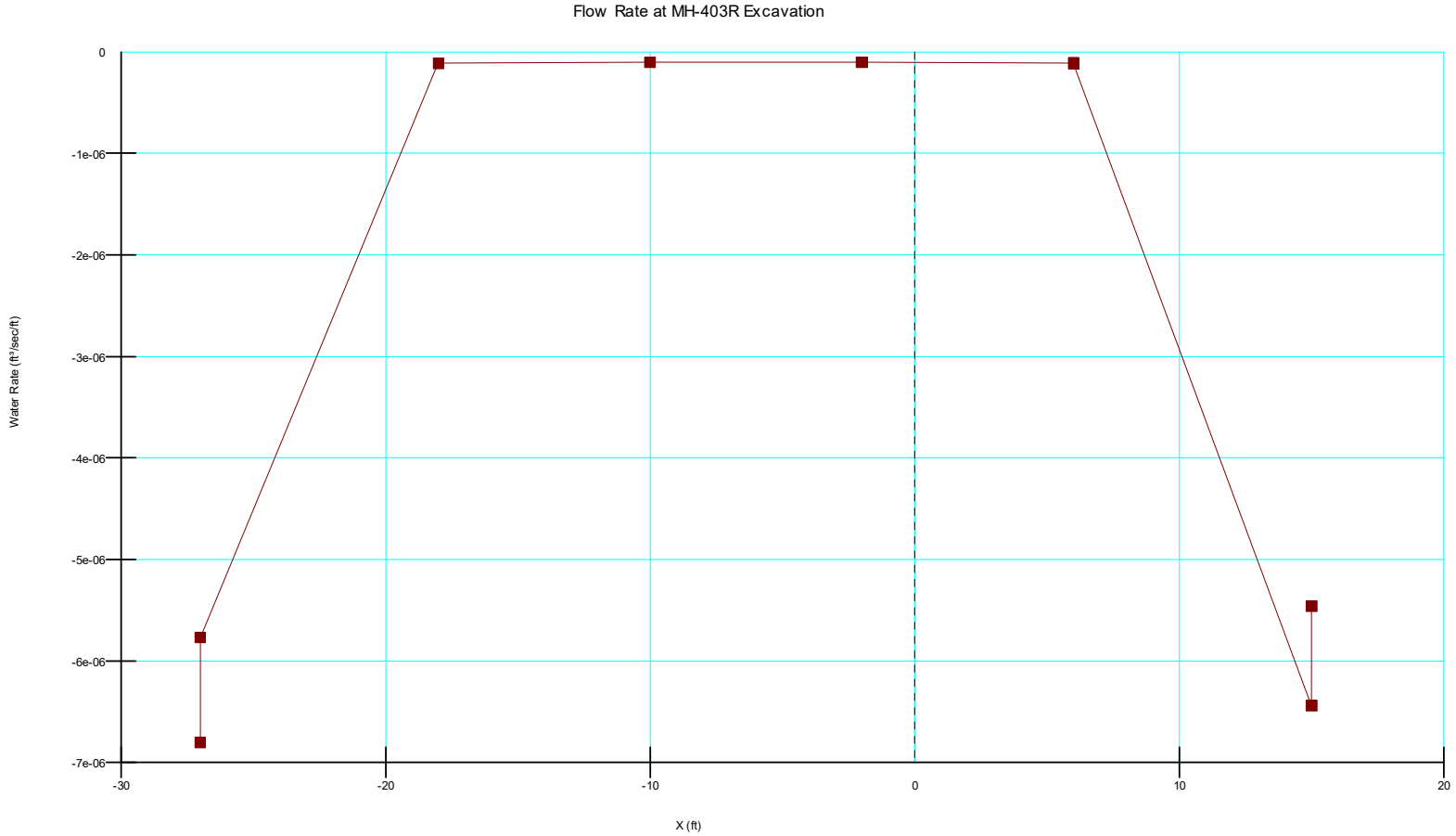
GEI Consultants

SEEP/W Water Total Head Contours at MH-401

Project #2302756

DEC. 7 2023

Fig. #3



Mountville Road Crossing Seepage Analysis Quantum Maryland, LLC Frederick, MD	GEI Consultants	Flow Rates at MH-401
STO Mission Critical New York, NY	Project #2302756	DEC. 7 2023 Fig. #4

Table 1: Water Flow Rate Results at MH-401 from SEEP/W Model

X (ft)	Water Rate (ft^3/sec/ft)	Perimeter Length (ft)	Flow Rate (gpd)	Flow Rate Sum (gpd)
-27	6.80E-06	118	518.9	1899.1
-27	5.77E-06	118	440.0	
-18	1.12E-07	118	8.5	
-10	1.02E-07	118	7.8	
-2	1.02E-07	118	7.8	
6	1.12E-07	118	8.5	
15	6.44E-06	118	491.3	
15	5.46E-06	118	416.3	

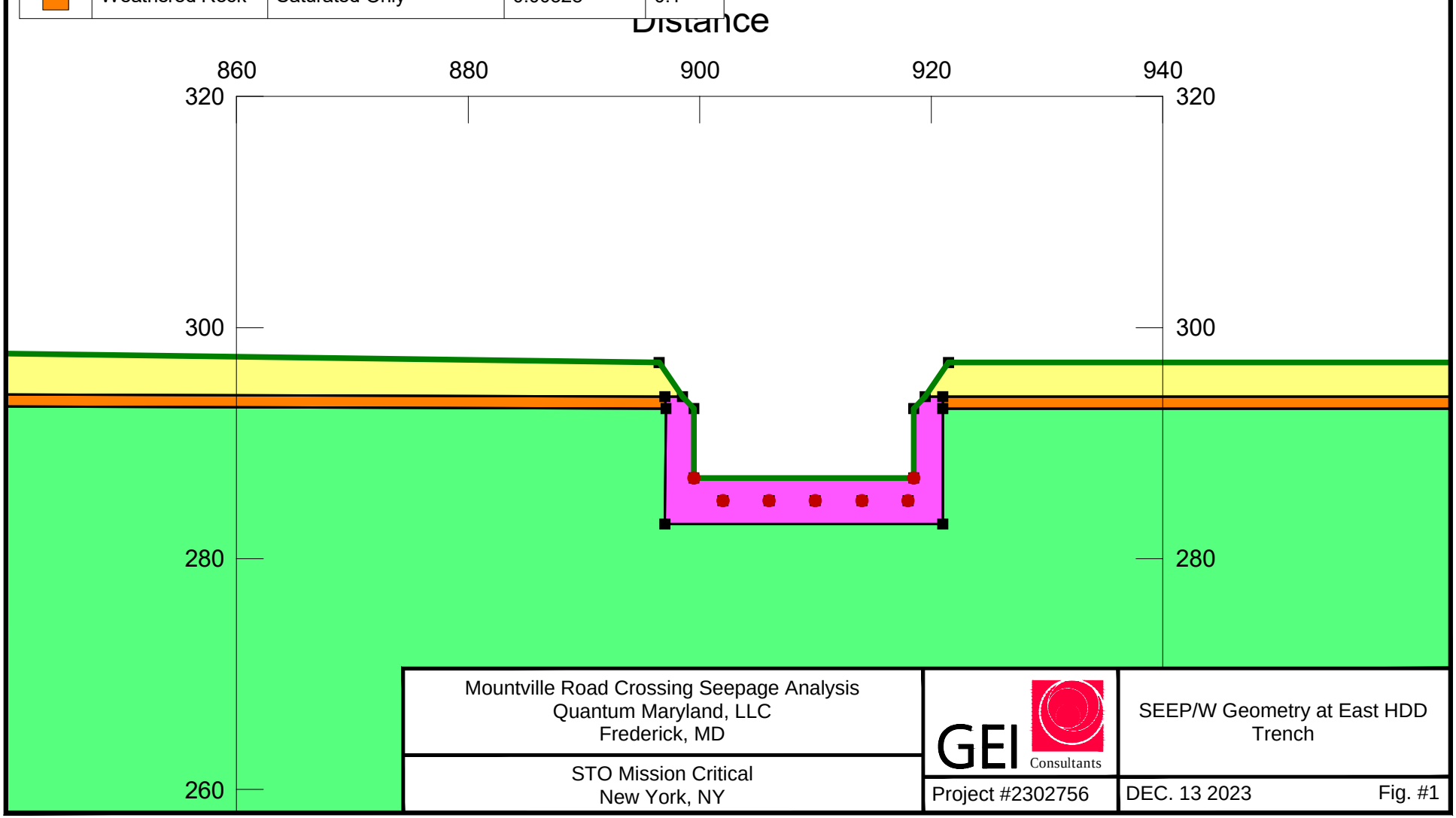
Mountville Road Crossing Seepage Analysis Quantum Maryland, LLC Frederick, MD	GEI Consultants	Flow Rate Results at MH-401	
STO Mission Critical New York, NY	Project #2302756	DEC. 7 2023	Fig. #5

GEI Consultants

Eastern HDD Excavation

Color	Name	Hydraulic Material Model	Sat Kx (ft/sec)	Ky'/Kx' Ratio
	Limestone	Saturated Only	0.000492	0.1
	LMG Treated Area	Saturated Only	3.28e-08	0.1
	Residual Soils	Saturated Only	3.13e-07	0.1
	Weathered Rock	Saturated Only	0.00328	0.1

Color	Name	Category	Kind	Parameters
	East Water Boundary	Hydraulic	Water Total Head	291.25 ft
	No Flow	Hydraulic	Water Rate	0 ft³/sec
	West Water Boundary	Hydraulic	Water Total Head	296 ft
	Zero Pressure	Hydraulic	Water Pressure Head	0 ft



Mountville Road Crossing Seepage Analysis
Quantum Maryland, LLC
Frederick, MD

STO Mission Critical
New York, NY

GEI Consultants

SEEP/W Geometry at East HDD Trench

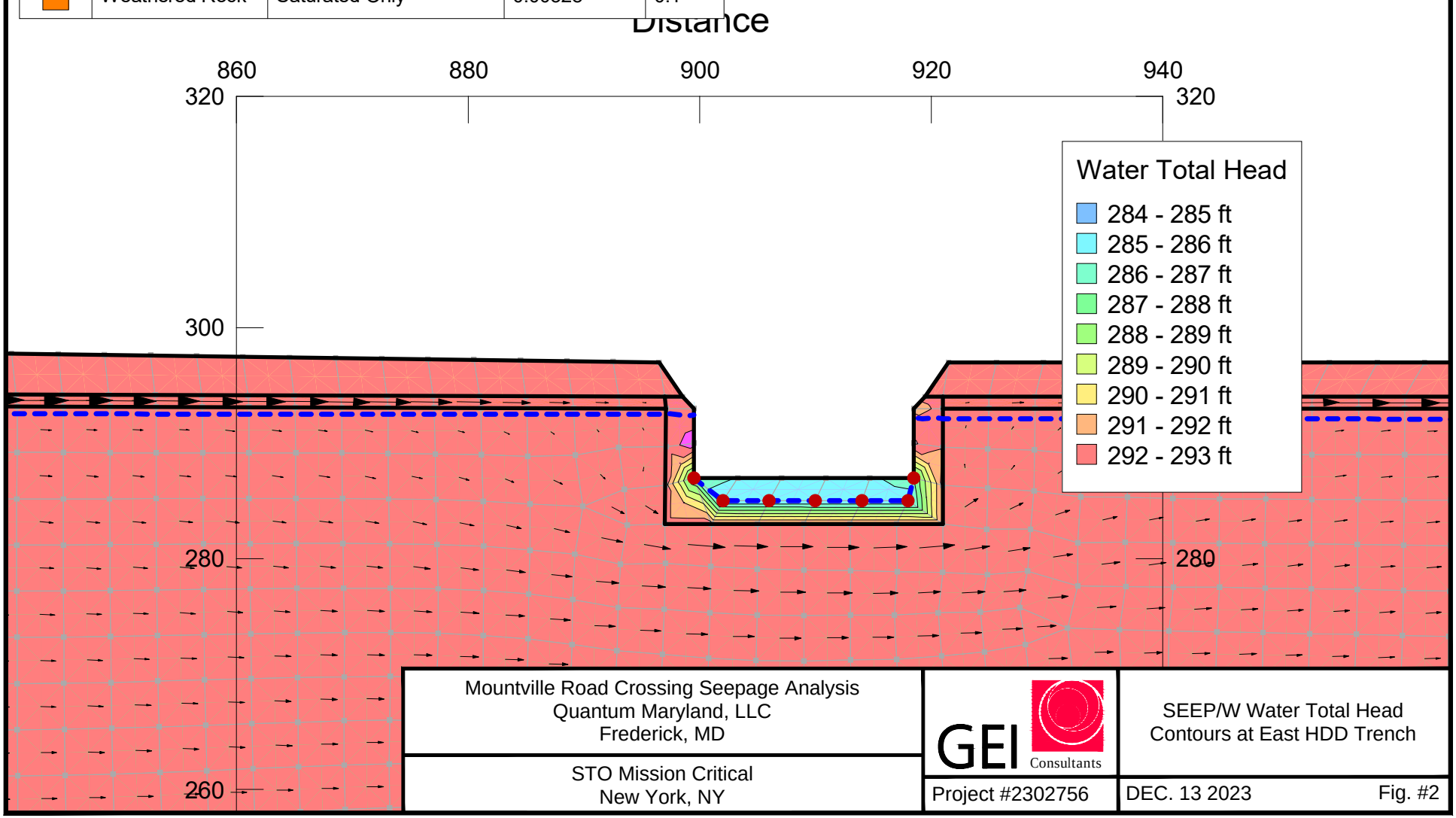
Project #2302756

DEC. 13 2023

Fig. #1

Color	Name	Hydraulic Material Model	Sat Kx (ft/sec)	Ky'/Kx' Ratio
	Limestone	Saturated Only	0.000492	0.1
	LMG Treated Area	Saturated Only	3.28e-08	0.1
	Residual Soils	Saturated Only	3.13e-07	0.1
	Weathered Rock	Saturated Only	0.00328	0.1

Color	Name	Category	Kind	Parameters
	East Water Boundary	Hydraulic	Water Total Head	291.25 ft
	No Flow	Hydraulic	Water Rate	0 ft³/sec
	West Water Boundary	Hydraulic	Water Total Head	296 ft
	Zero Pressure	Hydraulic	Water Pressure Head	0 ft



Mountville Road Crossing Seepage Analysis
Quantum Maryland, LLC
Frederick, MD

STO Mission Critical
New York, NY

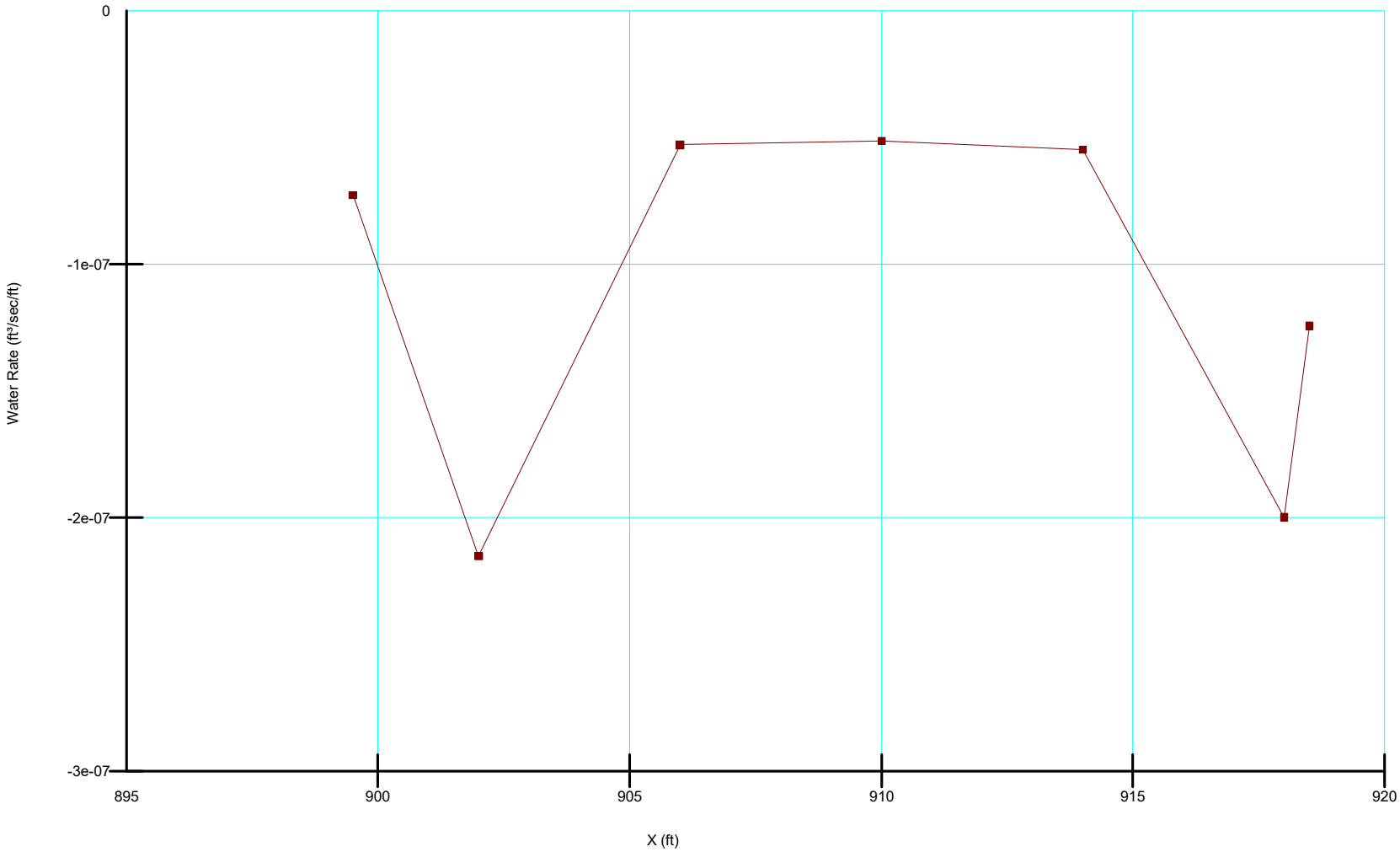
GEI Consultants

Project #2302756

SEEP/W Water Total Head
Contours at East HDD Trench

DEC. 13 2023 Fig. #2

Flow Rate at HDD East Pit - Adjacent to MH-3



Mountville Road Crossing Seepage Analysis Quantum Maryland, LLC Frederick, MD	GEI Consultants	Flow Rates at East HDD Trench
STO Mission Critical New York, NY	Project #2302756	DEC. 13 2023 Fig. #3

Table 1: Water Flow Rate Results at HDD East Pit from SEEP/W Model

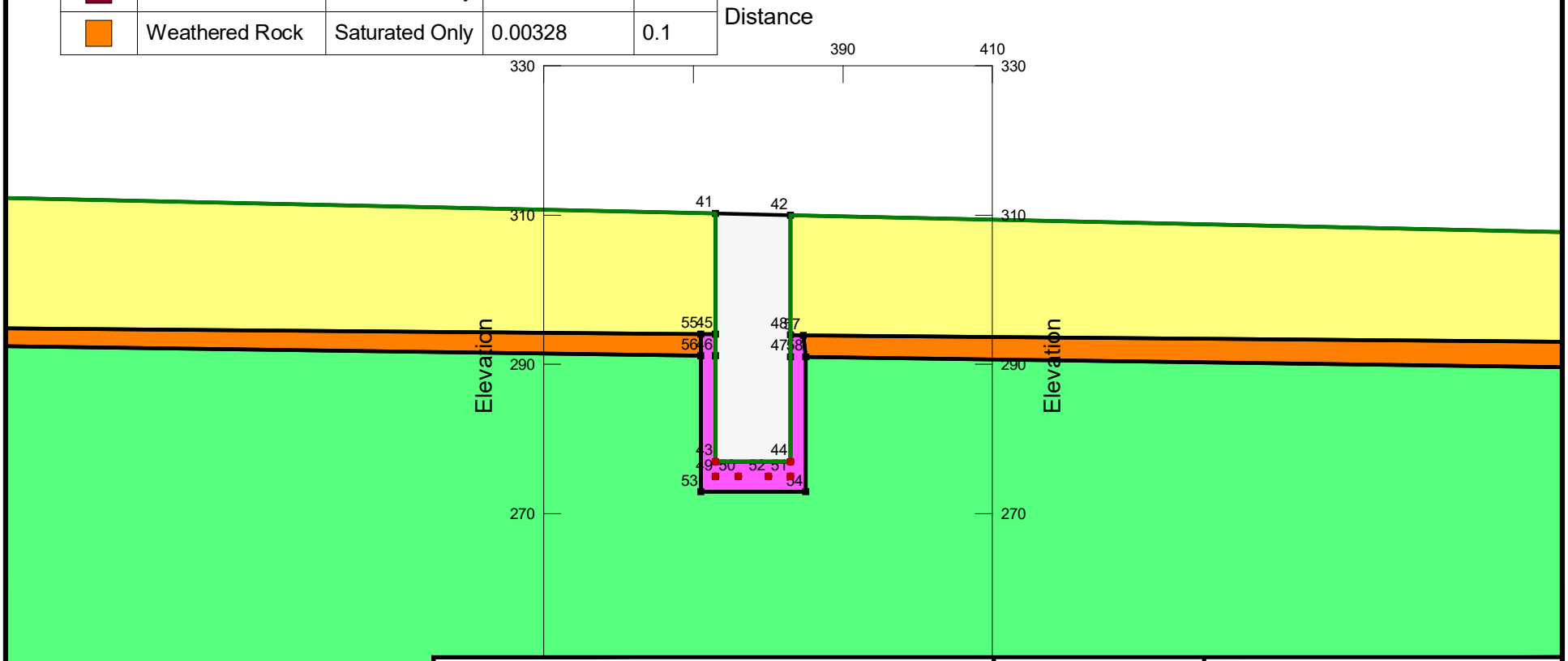
X (ft)	Water Rate (ft^3/sec/ft)	Perimeter Length (ft)	Flow Rate (gpd)	Flow Rate Sum (gpd)
900	7.28E-08	56	2.6	27.9
902	2.15E-07	56	7.8	
906	5.30E-08	56	1.9	
910	5.14E-08	56	1.9	
914	5.49E-08	56	2.0	
918	2.00E-07	56	7.2	
919	1.24E-07	56	4.5	

Mountville Road Crossing Seepage Analysis Quantum Maryland, LLC Frederick, MD	GEI Consultants	Flow Rate Results at East HDD Trench
STO Mission Critical New York, NY	Project #2302756	DEC. 13 2023 Fig. #4

MH-400 Open Excavation

Color	Name	Hydraulic Material Model	Sat Kx (ft/sec)	Ky'/Kx' Ratio
	Limestone	Saturated Only	0.000492	0.1
	LMG Treated Area	Saturated Only	3.28e-08	0.1
	Residual Soils	Saturated Only	3.13e-07	0.1
	Secant Piles-LS	Saturated Only	1.64e-07	0.1
	Secant Piles-RS	Saturated Only	1.11e-10	0.1
	Secant Piles-WR	Saturated Only	1.09e-06	0.1
	Weathered Rock	Saturated Only	0.00328	0.1

Color	Name	Category	Kind	Parameters
	East Water Boundary	Hydraulic	Water Total Head	291.25 ft
	No Flow	Hydraulic	Water Rate	0 ft³/sec
	West Water Boundary	Hydraulic	Water Total Head	296 ft
	Zero Pressure	Hydraulic	Water Pressure Head	0 ft



Mountville Road Crossing Seepage Analysis
Quantum Maryland, LLC
Frederick, MD

STO Mission Critical
New York, NY

GEI Consultants

SEEP/W Geometry at MH-400

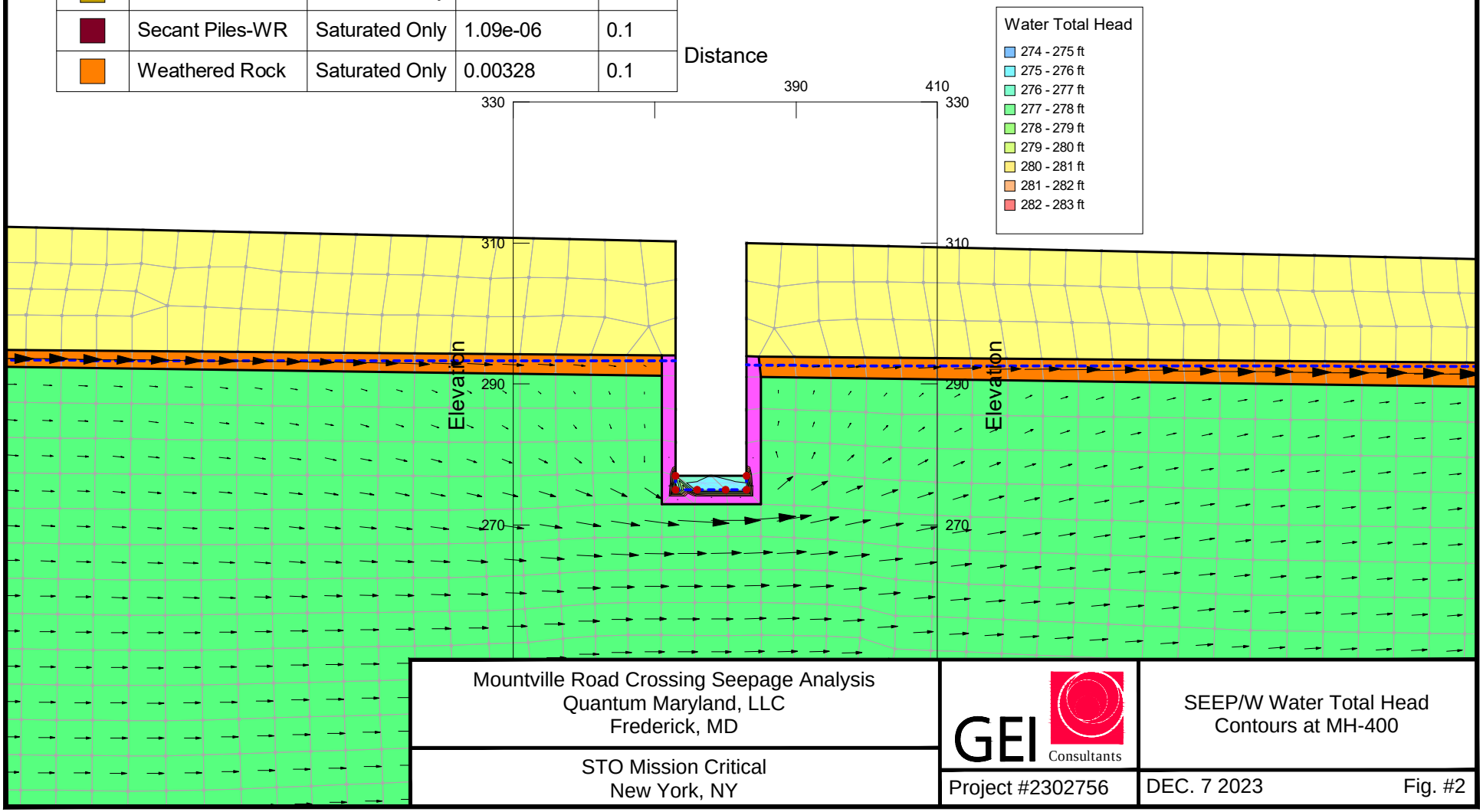
Project #2302756

DEC. 7 2023

Fig. #1

Color	Name	Hydraulic Material Model	Sat Kx (ft/sec)	Ky'/Kx' Ratio
	Limestone	Saturated Only	0.000492	0.1
	LMG Treated Area	Saturated Only	3.28e-08	0.1
	Residual Soils	Saturated Only	3.13e-07	0.1
	Secant Piles-LS	Saturated Only	1.64e-07	0.1
	Secant Piles-RS	Saturated Only	1.11e-10	0.1
	Secant Piles-WR	Saturated Only	1.09e-06	0.1
	Weathered Rock	Saturated Only	0.00328	0.1

Color	Name	Category	Kind	Parameters
	East Water Boundary	Hydraulic	Water Total Head	291.25 ft
	No Flow	Hydraulic	Water Rate	0 ft³/sec
	West Water Boundary	Hydraulic	Water Total Head	296 ft
	Zero Pressure	Hydraulic	Water Pressure Head	0 ft



Mountville Road Crossing Seepage Analysis
Quantum Maryland, LLC
Frederick, MD

STO Mission Critical
New York, NY

GEI Consultants

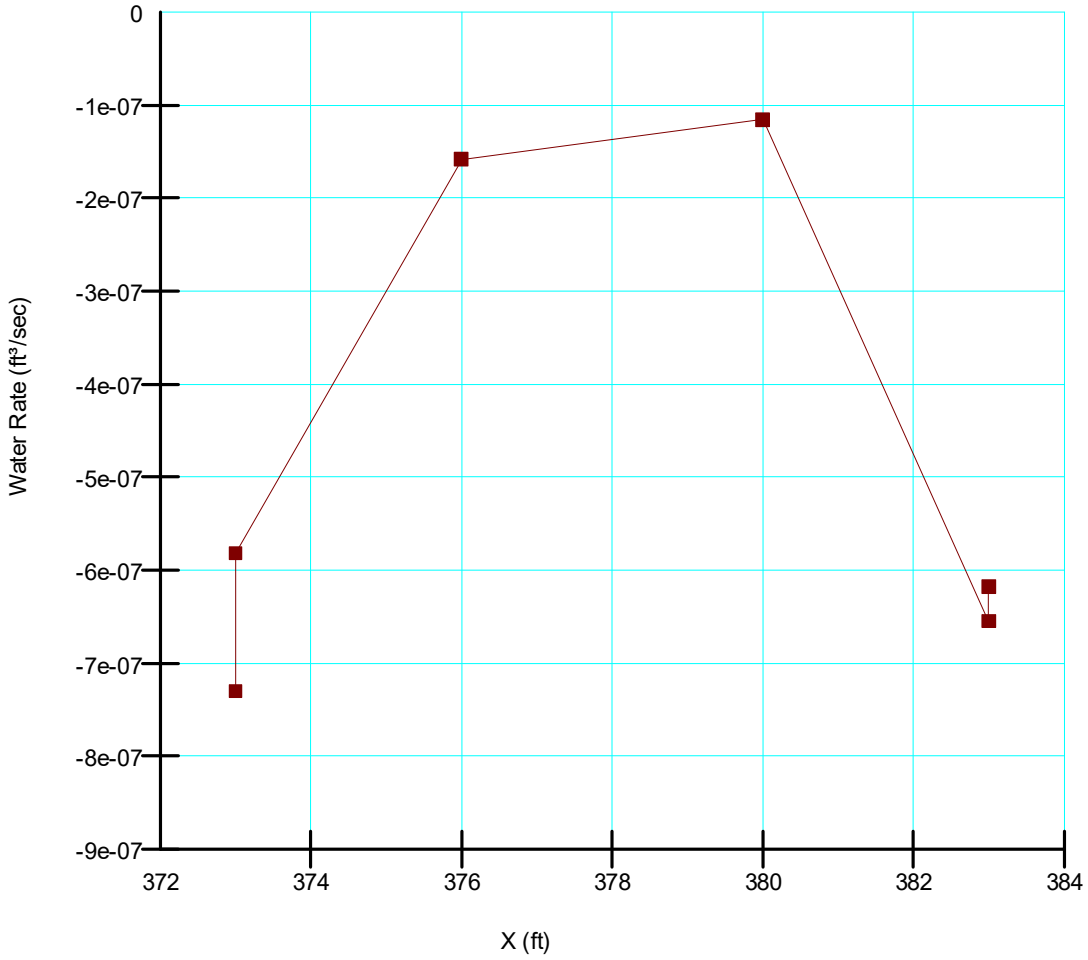
SEEP/W Water Total Head
Contours at MH-400

Project #2302756

DEC. 7 2023

Fig. #2

Flow Rate at MH-400 Excavation



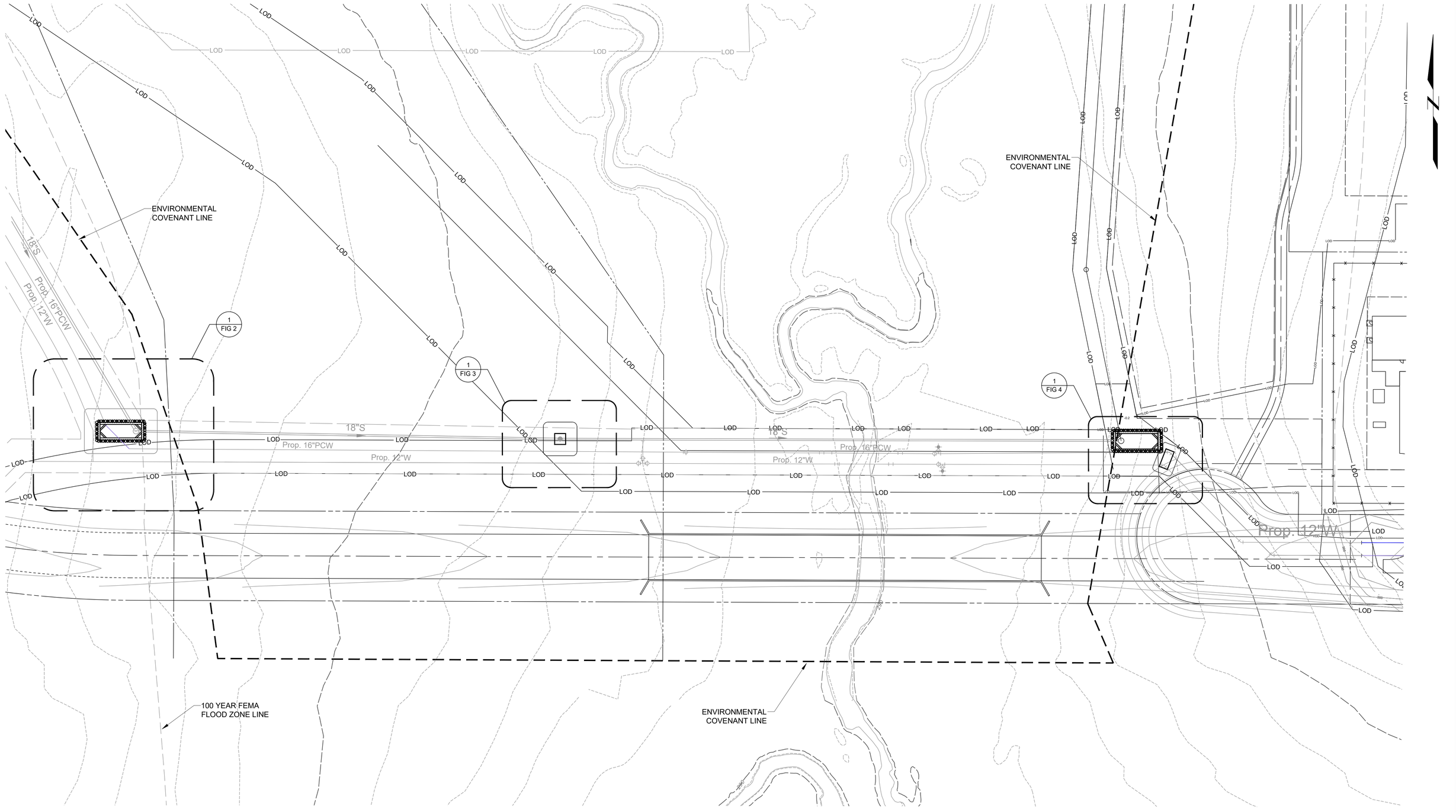
Mountville Road Crossing Seepage Analysis Quantum Maryland, LLC Frederick, MD		GEI Consultants	Flow Rates at MH-400
STO Mission Critical New York, NY		Project #2302756	DEC. 7 2023 Fig. #3

Table 1: Water Flow Rate Results at MH-400 from SEEP/W Model

X (ft)	Water Rate (ft^3/sec)	**Perimeter Length (ft)**	**Flow Rate (gpd)**	**Flow Rate Sum (gpd)**
373	7.30E-07	40	18.9	73.9
373	5.82E-07	40	15.0	
376	1.58E-07	40	4.1	
380	1.16E-07	40	3.0	
383	6.55E-07	40	16.9	
383	6.18E-07	40	16.0	

Mountville Road Crossing Seepage Analysis Quantum Maryland, LLC Frederick, MD	GEI Consultants	Flow Rate Results at MH-400
STO Mission Critical New York, NY	Project #2302756	DEC. 7 2023 Fig. #4

Attachment 4 – Groundwater Drawdown Figures



OVERALL EXCAVATION PLAN - K LINE AT MH-400, MH-401, AND NEAR MH-3

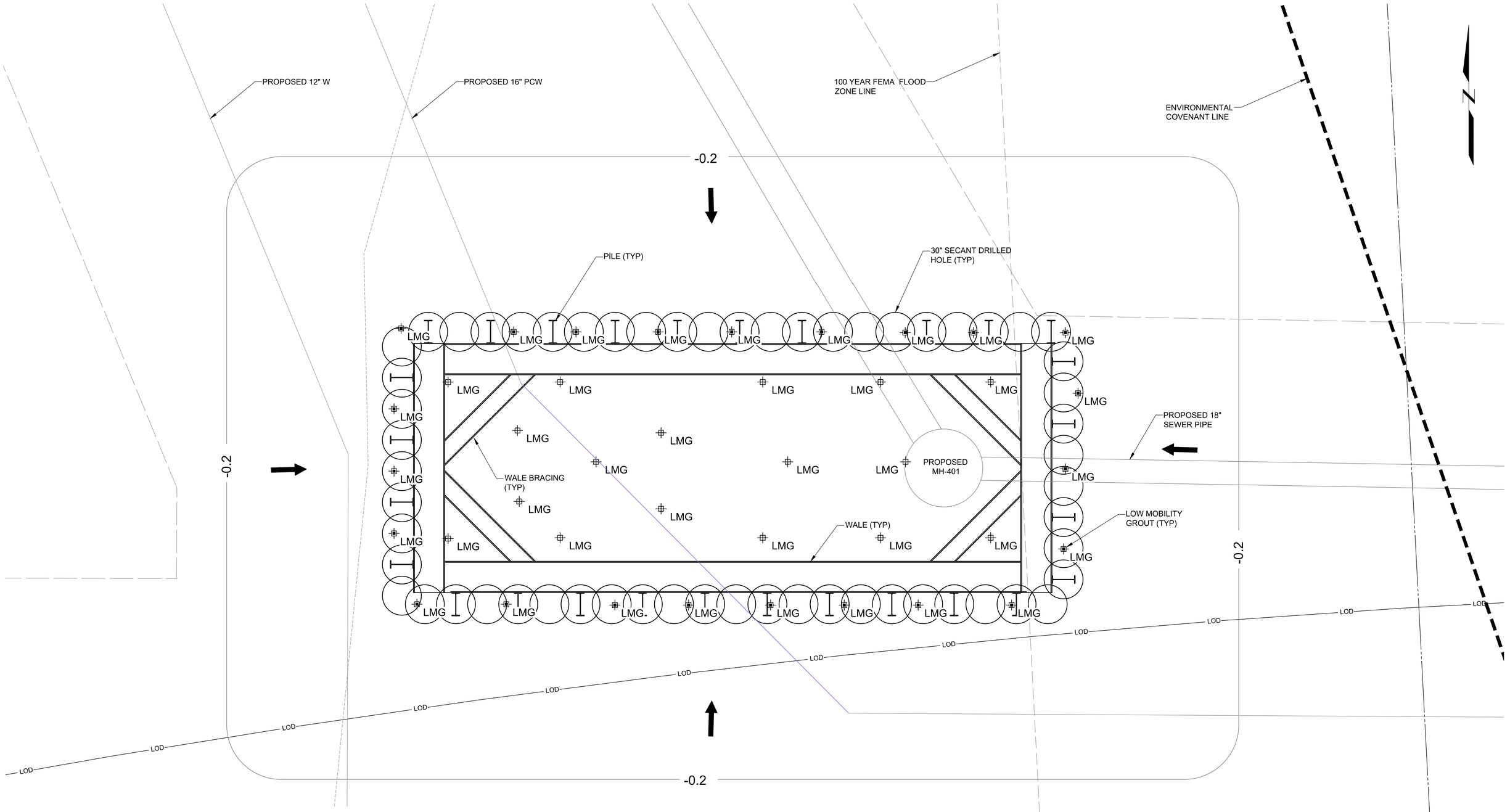
SCALE: 1" = 20'

NOTES:

1. FINAL LAYOUT AND BRACING OF SUPPORT OF EXCAVATION AT MH-401 IS IN DESIGN PHASE. SUPPORT OF EXCAVATION CONCEPT SHOWN FOR REFERENCE.
2. PROPOSED 18" SEWER PIPE BETWEEN MH-3 AND MH-401 TO BE INSTALLED VIA MICROTUNNELING.
3. LAYOUT OF K-LINE UTILITIES BETWEEN MH-3 AND MH-401 IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.

0 40 80
SCALE, FEET

Mountville Road - K Line Trenchless Design Quantum Loop Frederick, MD	GEI Consultants	MOUNTVILLE ROAD OVERALL SITE PLAN AT MH-401 AND MH-3 GROUNDWATER DRAWDOWN
STRUCTURE TONE	Project 2302756	DECEMBER 2023 Fig. 1



NOTES:

1. FINAL LAYOUT AND BRACING OF SUPPORT OF EXCAVATION AT MH-401 IS IN DESIGN PHASE. SUPPORT OF EXCAVATION CONCEPT SHOWN FOR REFERENCE.
2. PROPOSED 18" SEWER PIPE BETWEEN MH-3 AND MH-401 TO BE INSTALLED VIA MICROTUNNELING.
3. LAYOUT OF K-LINE UTILITIES BETWEEN MH-3 AND MH-401 IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.

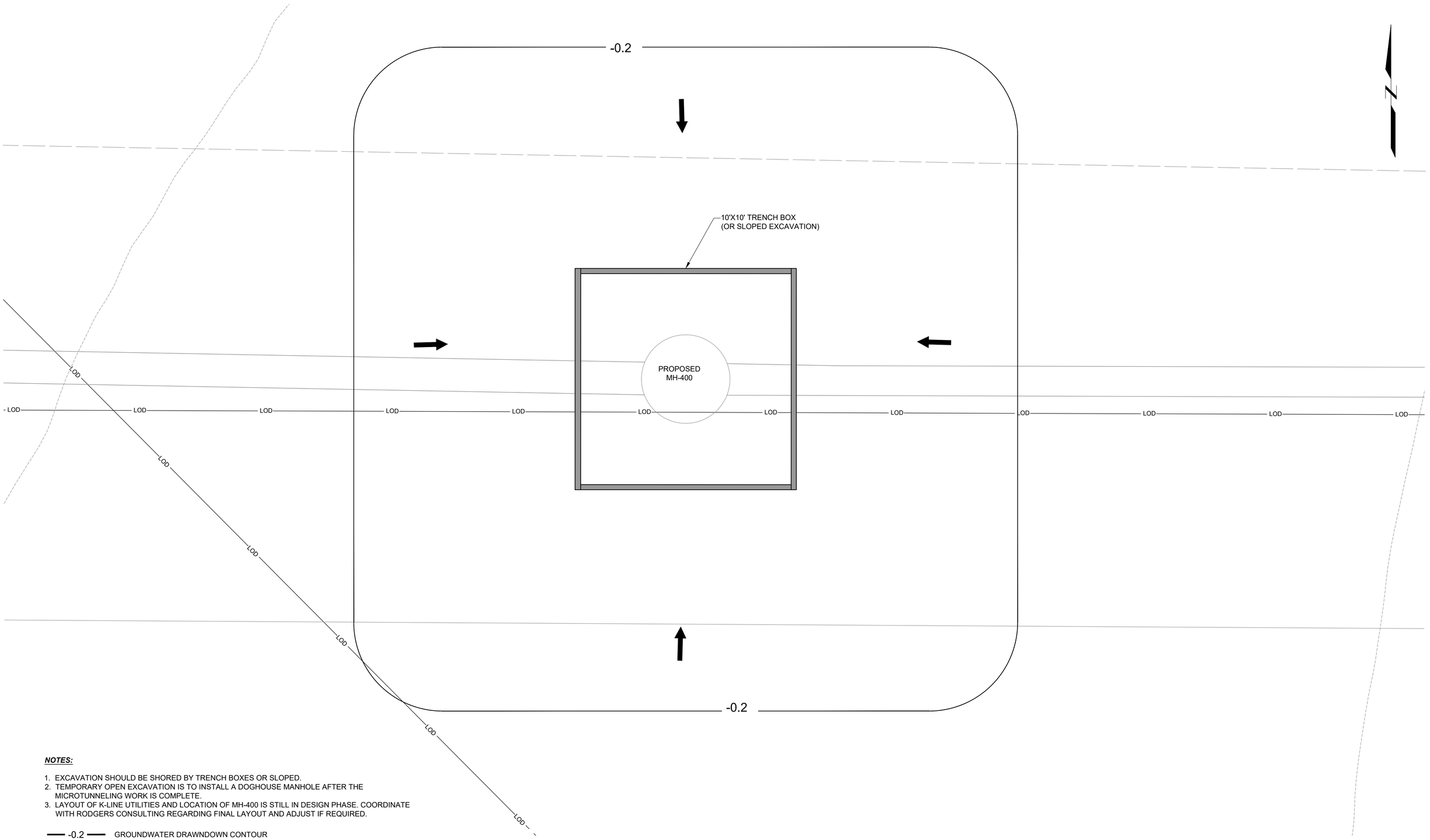
— -0.2 — GROUNDWATER DRAWNDOWN CONTOUR

➡ GROUNDWATER FLOW DIRECTION

1 / FIG 1 LAUNCH SHAFT - MH-401

SCALE: 1" = 3'

Mountville Road - K Line Trenchless Design Quantum Loop Frederick, MD	GEI Consultants	MOUNTVILLE ROAD LAUNCH SHAFT AT MH-401 GROUNDWATER DRAWDOWN
STRUCTURE TONE	Project 2302756	DECEMBER 2023 Fig. 2



NOTES:

1. EXCAVATION SHOULD BE SHORED BY TRENCH BOXES OR SLOPED.
2. TEMPORARY OPEN EXCAVATION IS TO INSTALL A DOGHOUSE MANHOLE AFTER THE MICROTUNNELING WORK IS COMPLETE.
3. LAYOUT OF K-LINE UTILITIES AND LOCATION OF MH-400 IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.

—— -0.2 —— GROUNDWATER DRAWNDOWN CONTOUR

➡ GROUNDWATER FLOW DIRECTION

1
FIG 3 EXCAVATION AT MH-400

SCALE: 1" = 2'

Mountville Road - K Line Trenchless Design Quantum Loop Frederick, MD	GEI Consultants	MOUNTVILLE ROAD EXCAVATION AT MH-400 GROUNDWATER DRAWDOWN
STRUCTURE TONE	Project 2302756	DECEMBER 2023 Fig. 3

EXISTING SEWER MH-3

ENVIRONMENTAL
COVENANT LINE

PROPOSED 12" W

8'X17' TRENCH BOX
(OR SLOPED EXCAVATION)

PROPOSED 16" PCW

-0.2

LOD

N

NOTES:

1 EXCAVATION SHOULD BE SHORED BY TRENCH BOXES OR SLOPED.
2. TEMPORARY HDD EXCAVATIONS ARE TO CONNECT DUCTILE IRON PIPE TO HDD PIPE MATERIAL.
3. LAYOUT OF K-LINE UTILITIES IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.

-0.2 GROUNDWATER DRAWNDOWN CONTOUR

GROUNDWATER FLOW DIRECTION

1
FIG 4

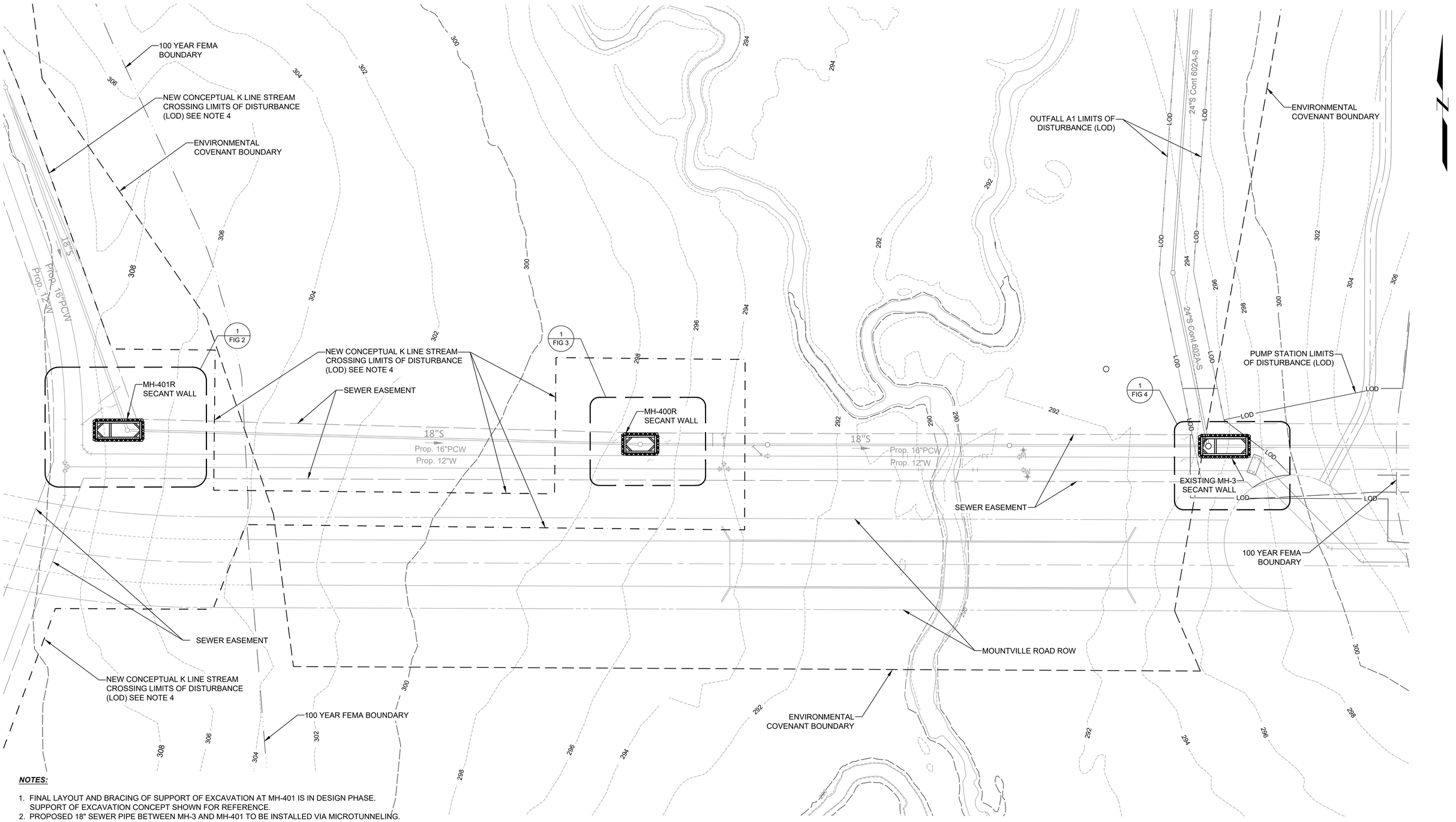
HDD EXCAVATION NEAR MH-3

SCALE: 1" = 3'

Mountville Road - K Line Trenchless Design Quantum Loop Frederick, MD	GEI Consultants	MOUNTVILLE ROAD HDD EXCAVATION NEAR MH-3 GROUNDWATER DRAWDOWN
STRUCTURE TONE	Project 2302756	DECEMBER 2023 Fig.4

Appendix D

Appendix D2 - SOE Preliminary Design



NOTES:

1. FINAL LAYOUT AND BRACING OF SUPPORT OF EXCAVATION AT MH-401 IS IN DESIGN PHASE. SUPPORT OF EXCAVATION CONCEPT SHOWN FOR REFERENCE.
2. PROPOSED 18" SEWER PIPE BETWEEN MH-3 AND MH-401 TO BE INSTALLED VIA MICROTUNNELING.
3. LAYOUT OF K-LINE UTILITIES BETWEEN MH-3 AND MH-401 IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.
3. THE K LINE STREAM CROSSING LOD SHOWN IS PRELIMINARY, AND HAS NOT BEEN SUBMITTED TO ANY AGENCY FOR REVIEW AND IS NOT APPROVED. THE FINAL LOD LOCATIONS FOR MH-401R AND MH-400R ARE TO BE DETERMINED, AND IS SHOWN CONCEPTUALLY FOR CLARITY.

LEGEND:

NEW CONCEPTUAL K LINE STREAM CROSSING LIMITS OF DISTURBANCE (LOD)

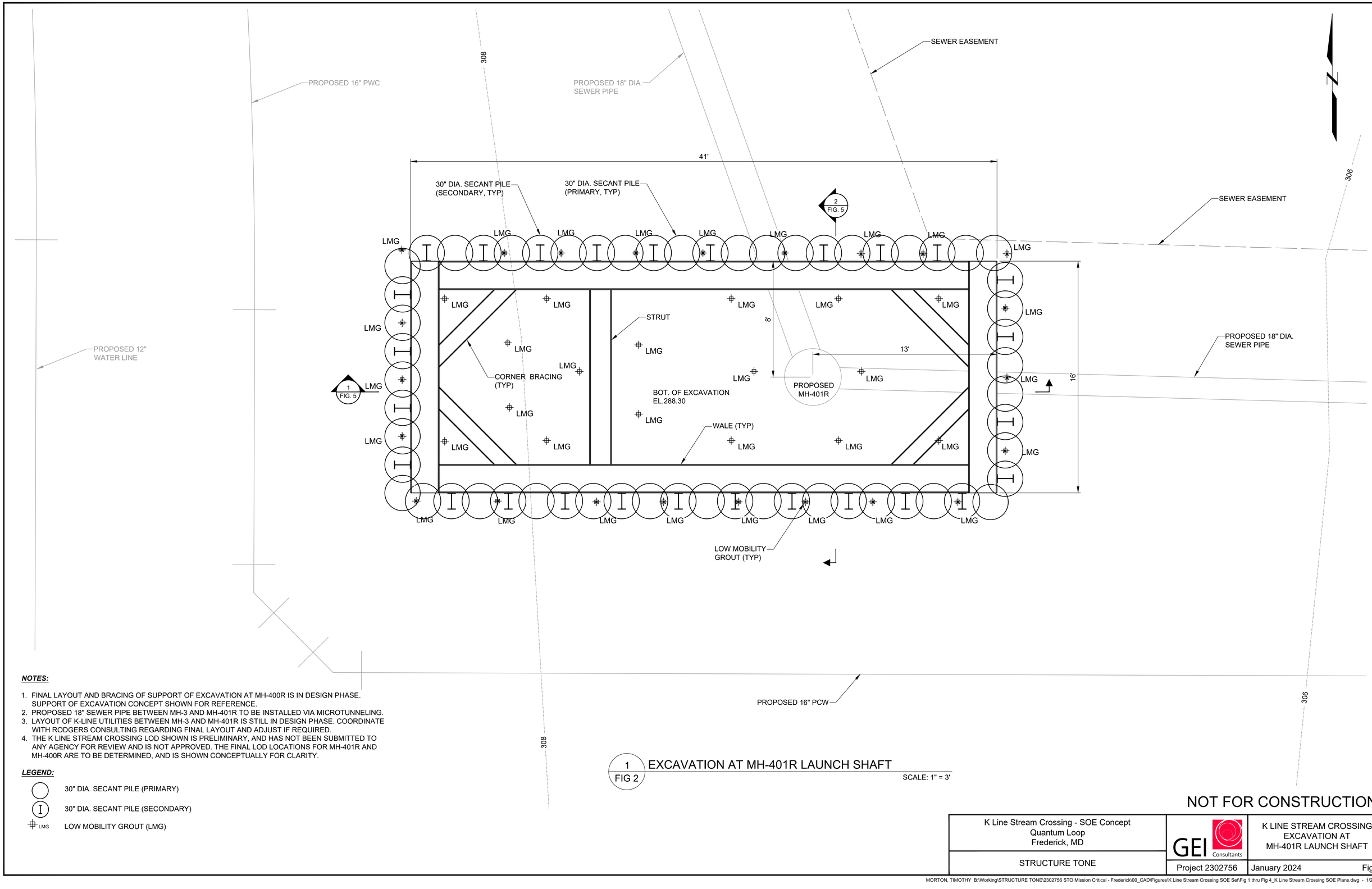
OVERALL SOE SITE PLAN - K LINE STREAM CROSSING, MH-401R, MH-400R, AND MH-3

SCALE: 1" = 40

0 40 80
SCALE, FEET

NOT FOR CONSTRUCTION

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING OVERALL SOE SITE PLAN AT MH-401R, MH-400R, AND MH-3
STRUCTURE TONE	Project 2302756	January 2024 Fig. 1



1 FIG 2 EXCAVATION AT MH-401R LAUNCH SHAFT

SCALE: 1" = 3'

NOTES:

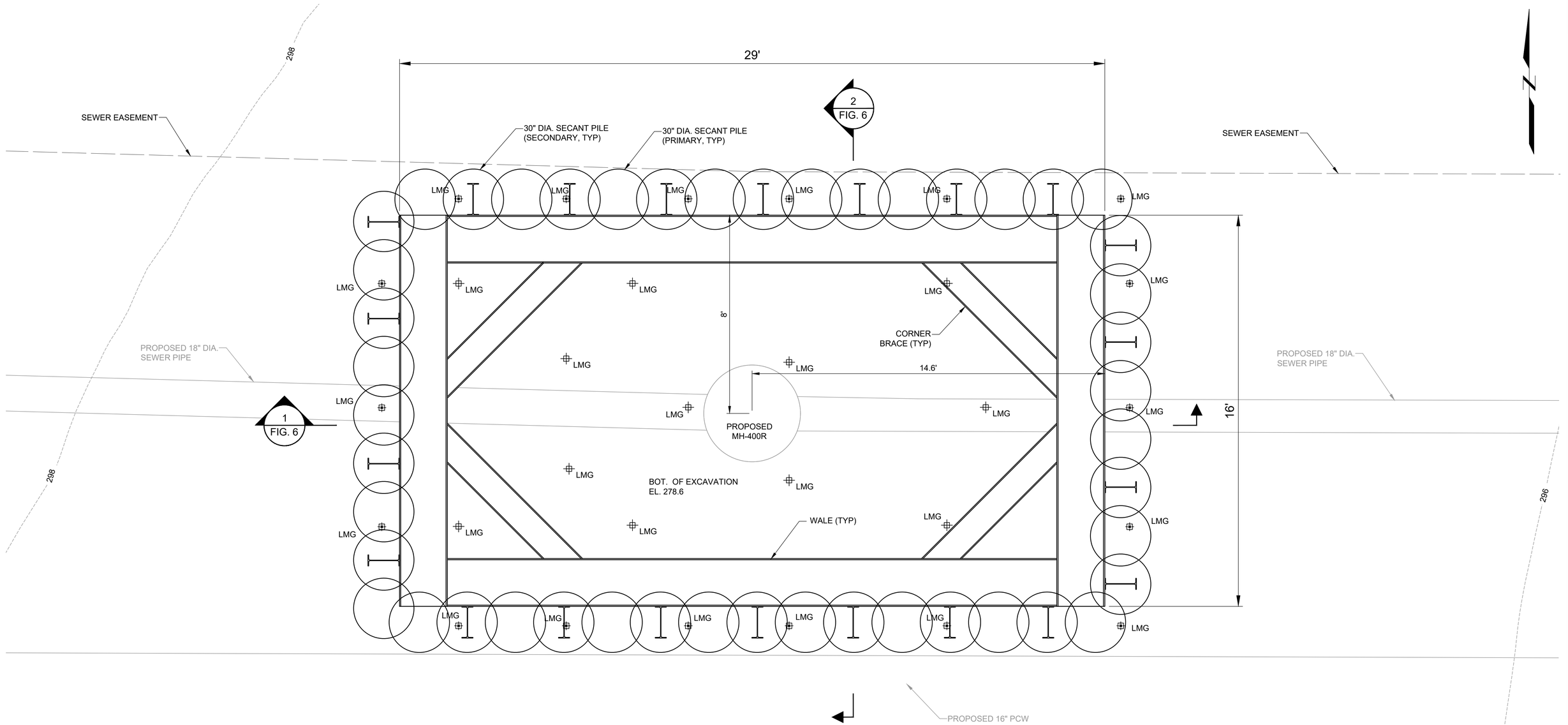
1. FINAL LAYOUT AND BRACING OF SUPPORT OF EXCAVATION AT MH-400R IS IN DESIGN PHASE. SUPPORT OF EXCAVATION CONCEPT SHOWN FOR REFERENCE.
2. PROPOSED 18" SEWER PIPE BETWEEN MH-3 AND MH-401R TO BE INSTALLED VIA MICROTUNNELING.
3. LAYOUT OF K-LINE UTILITIES BETWEEN MH-3 AND MH-401R IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.
4. THE K LINE STREAM CROSSING LOD SHOWN IS PRELIMINARY, AND HAS NOT BEEN SUBMITTED TO ANY AGENCY FOR REVIEW AND IS NOT APPROVED. THE FINAL LOD LOCATIONS FOR MH-401R AND MH-400R ARE TO BE DETERMINED, AND IS SHOWN CONCEPTUALLY FOR CLARITY.

LEGEND:

- 30" DIA. SECANT PILE (PRIMARY)
- 30" DIA. SECANT PILE (SECONDARY)
- LMG — LOW MOBILITY GROUT (LMG)

NOT FOR CONSTRUCTION

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING EXCAVATION AT MH-401R LAUNCH SHAFT
STRUCTURE TONE	Project 2302756	January 2024 Fig. 2



NOTES:

1. FINAL LAYOUT AND BRACING OF SUPPORT OF EXCAVATION AT MH-400R IS IN DESIGN PHASE. SUPPORT OF EXCAVATION CONCEPT SHOWN FOR REFERENCE.
2. PROPOSED 18" SEWER PIPE BETWEEN MH-3 AND MH-401R TO BE INSTALLED VIA MICROTUNNELING.
3. LAYOUT OF K-LINE UTILITIES BETWEEN MH-3 AND MH-401R IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.
4. THE K LINE STREAM CROSSING LOD SHOWN IS PRELIMINARY, AND HAS NOT BEEN SUBMITTED TO ANY AGENCY FOR REVIEW AND IS NOT APPROVED. THE FINAL LOD LOCATIONS FOR MH-401R AND MH-400R ARE TO BE DETERMINED, AND IS SHOWN CONCEPTUALLY FOR CLARITY.

LEGEND:

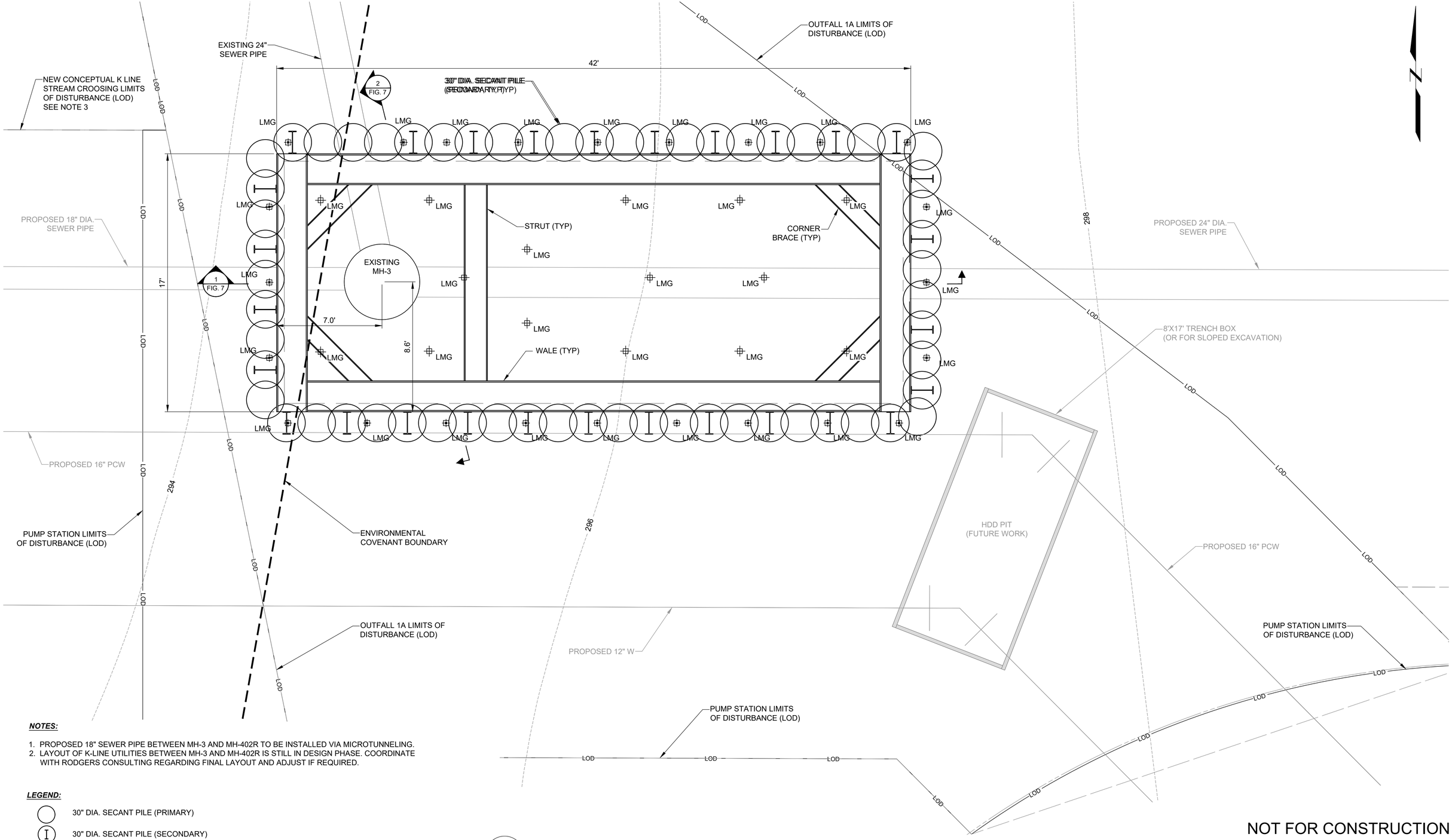
- 30" DIA. SECANT PILE (PRIMARY)
- 30" DIA. SECANT PILE (SECONDARY)
- LMG — LOW MOBILITY GROUT (LMG)

1 / FIG 3 — EXCAVATION AT MH-400R RECEIVING SHAFT

SCALE: 1" = 2'

NOT FOR CONSTRUCTION

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING EXCAVATION AT MH-400R RECEIVING SHAFT
STRUCTURE TONE	Project 2302756	January 2024 — Fig. 3



NOTES:

1. PROPOSED 18" SEWER PIPE BETWEEN MH-3 AND MH-402R TO BE INSTALLED VIA MICROTUNNELING.
2. LAYOUT OF K-LINE UTILITIES BETWEEN MH-3 AND MH-402R IS STILL IN DESIGN PHASE. COORDINATE WITH RODGERS CONSULTING REGARDING FINAL LAYOUT AND ADJUST IF REQUIRED.

LEGEND:

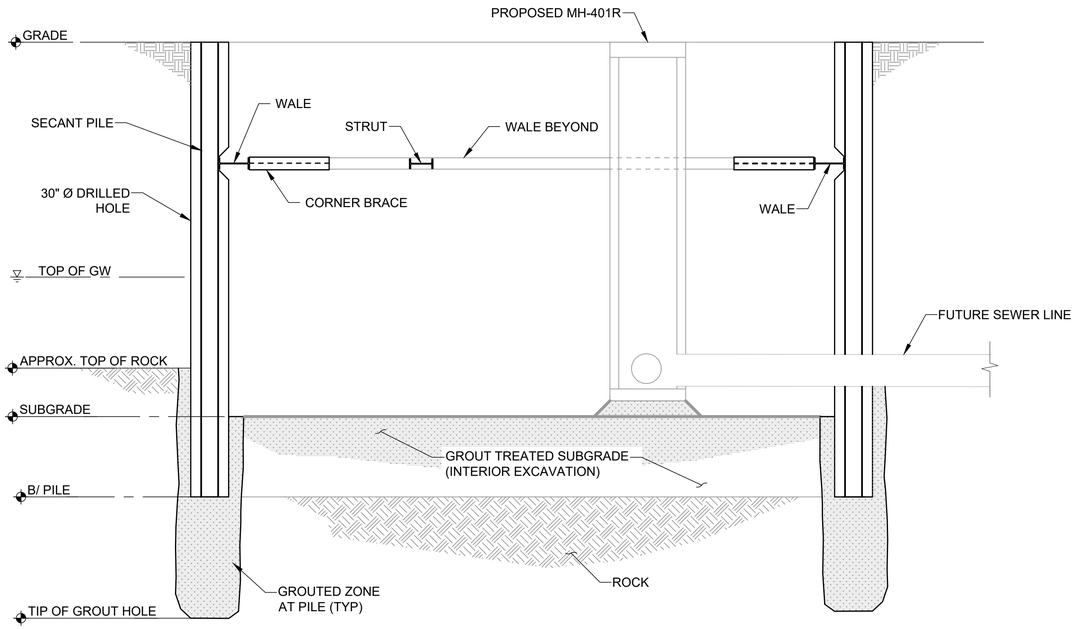
- 30" DIA. SECANT PILE (PRIMARY)
- 30" DIA. SECANT PILE (SECONDARY)
- LMG — LOW MOBILITY GROUT (LMG)

1 / FIG 4 — EXCAVATION AT MH-3 LAUNCH SHAFT AND HDD PIT

SCALE: 1" = 3'

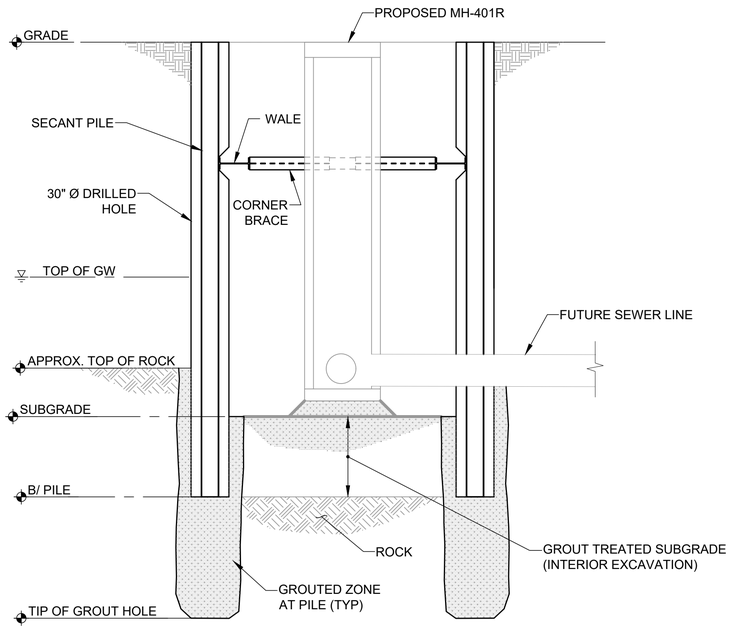
NOT FOR CONSTRUCTION

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING EXCAVATION AT MH-3 LAUNCH SHAFT AND HDD PIT
STRUCTURE TONE	Project 2302756	January 2024 — Fig. 4



1 FIG 5 SECTION - MH-401R LAUNCH SHAFT

SCALE: 1" = 5'



2 FIG 5 SECTION - MH-401R LAUNCH SHAFT

SCALE: 1" = 5'

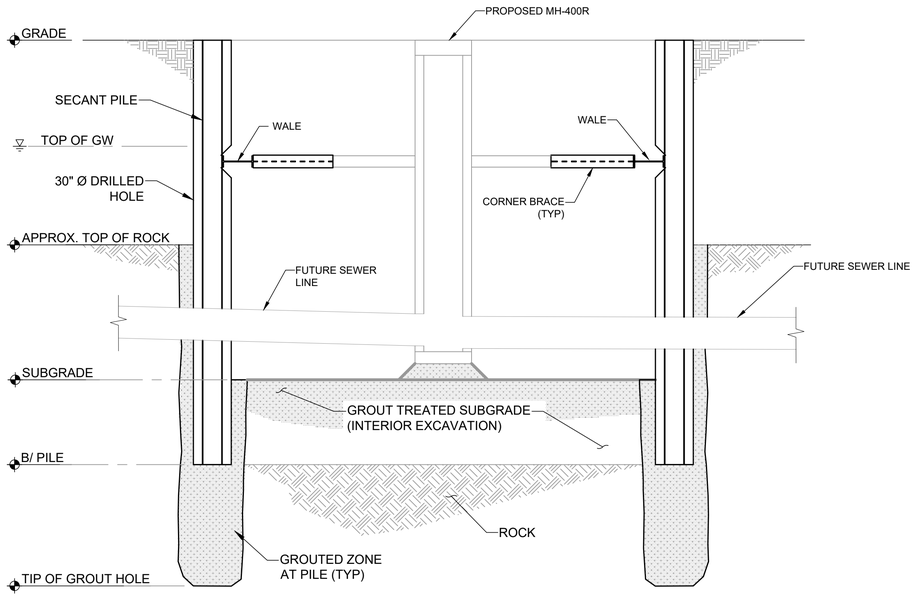
NOTES:

1. PROPOSED MAHOLE STRUCTURE IS CONCEPTUALLY SHOWN FOR CLARITY.

NOT FOR CONSTRUCTION

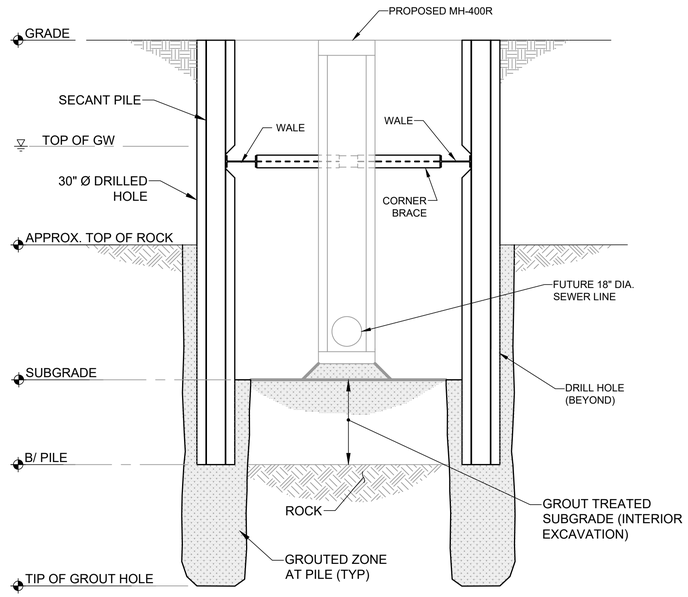
0 5 10
SCALE, FEET

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING SECTIONS MH-401R LAUNCH SHAFT
STRUCTURE TONE	Project 2302756	January 2024 Fig. 5



1 FIG 6 SECTION - MH-400R RECEIVING SHAFT

SCALE: 1" = 5'



2 FIG 6 SECTION - MH-400R RECEIVING SHAFT

SCALE: 1" = 5'

NOTES:

1. PROPOSED MAHOLE STRUCTURE IS CONCEPTUALLY SHOWN FOR CLARITY.

NOT FOR CONSTRUCTION

0 5 10

SCALE, FEET

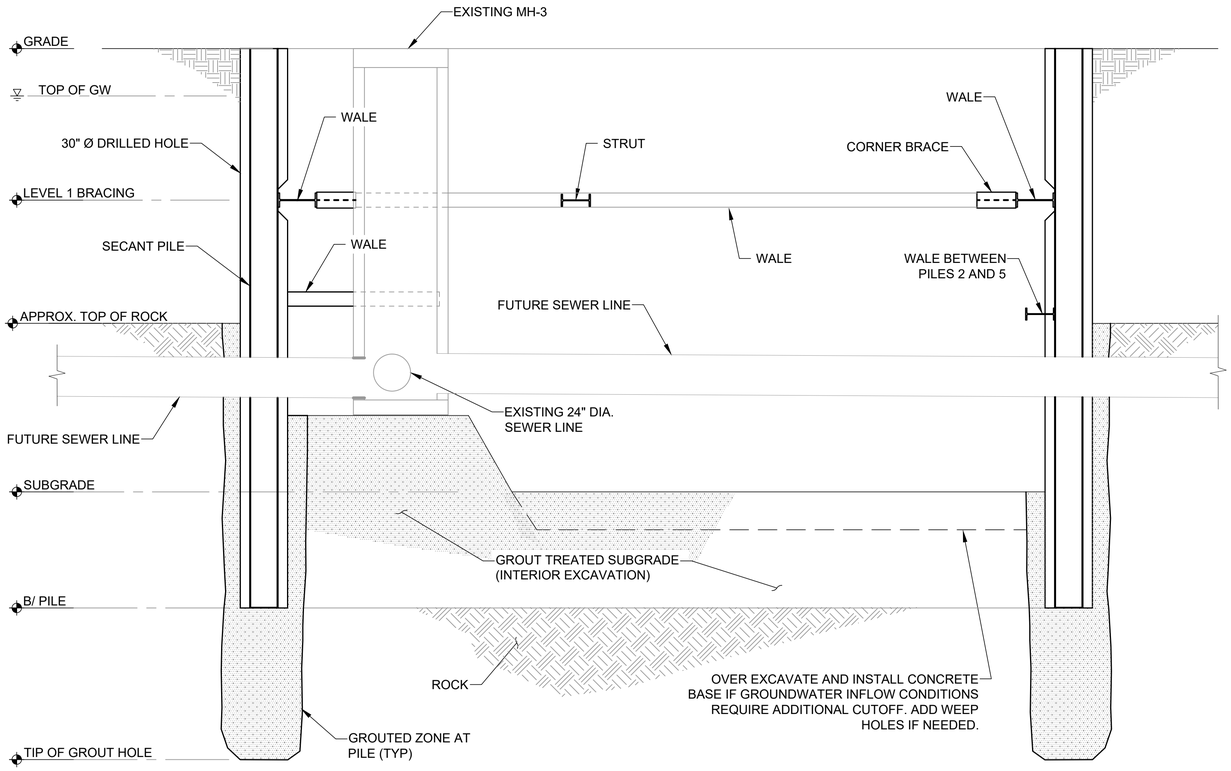
K Line Stream Crossing - SOE Concept
Quantum Loop
Frederick, MD

STRUCTURE TONE

GEI Consultants

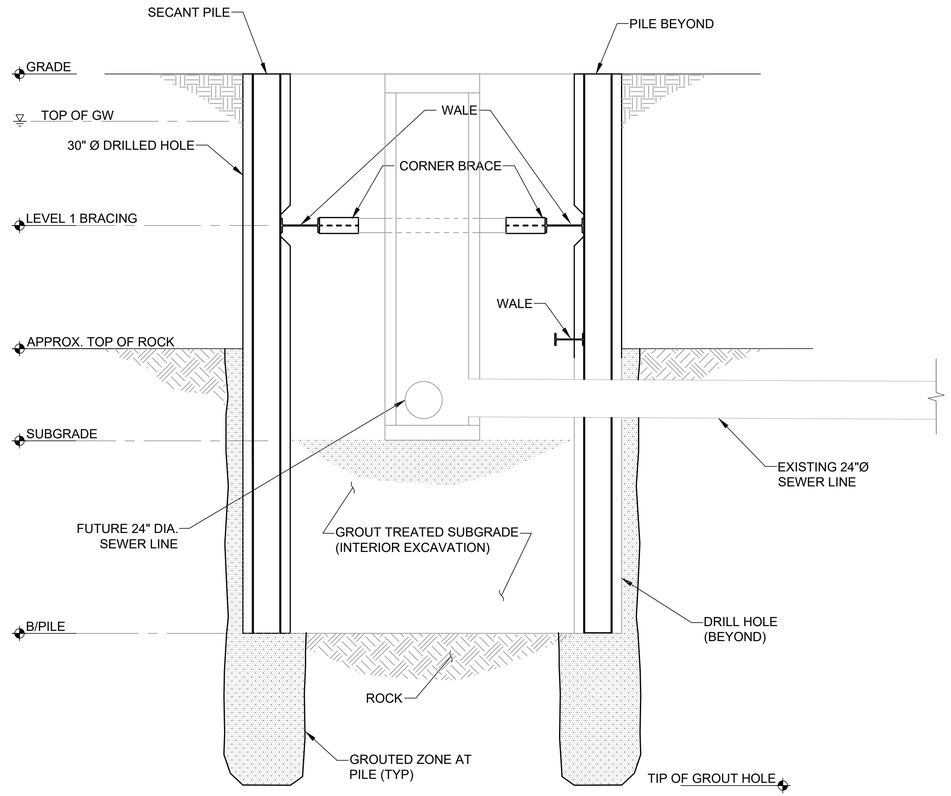
K LINE STREAM CROSSING SECTIONS
MH-400R RECEIVING SHAFT

Project 2302756 | January 2024 | Fig. 6



1 FIG 7 SECTION - MH-3 LAUNCH SHAFT

SCALE: 1" = 4'



2 FIG 7 SECTION - MH-3 LAUNCH SHAFT

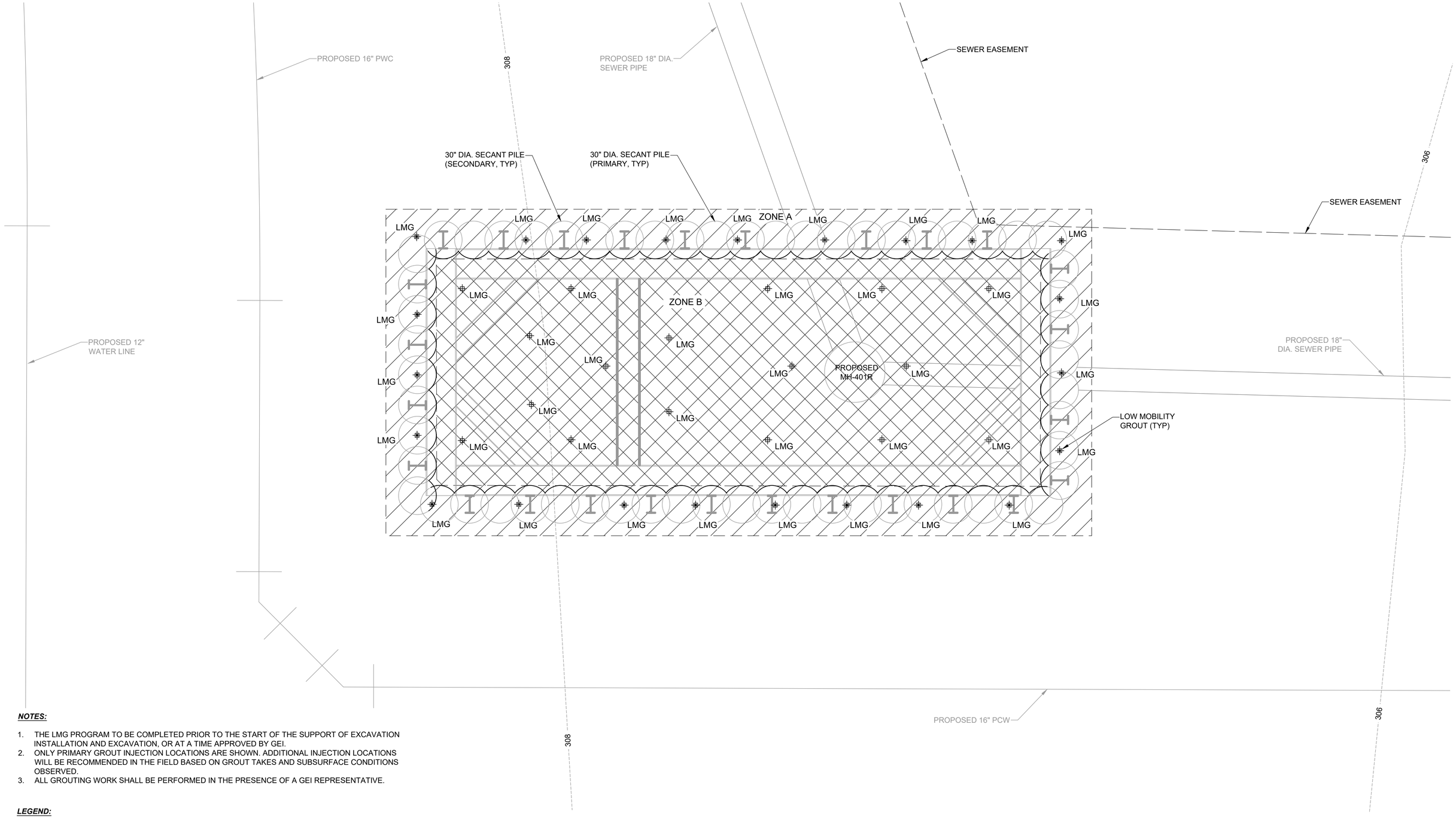
SCALE: 1" = 4'

NOT FOR CONSTRUCTION

0 4 8

SCALE, FEET

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING SECTIONS MH-3 LAUNCH SHAFT
STRUCTURE TONE	Project 2302756	January 2024 Fig. 7



NOTES:

1. THE LMG PROGRAM TO BE COMPLETED PRIOR TO THE START OF THE SUPPORT OF EXCAVATION INSTALLATION AND EXCAVATION, OR AT A TIME APPROVED BY GEI.
2. ONLY PRIMARY GROUT INJECTION LOCATIONS ARE SHOWN. ADDITIONAL INJECTION LOCATIONS WILL BE RECOMMENDED IN THE FIELD BASED ON GROUT TAKES AND SUBSURFACE CONDITIONS OBSERVED.
3. ALL GROUTING WORK SHALL BE PERFORMED IN THE PRESENCE OF A GEI REPRESENTATIVE.

LEGEND:

ZONE A

ZONE B

GH-1 PRIMARY GROUT HOLE - ZONE A

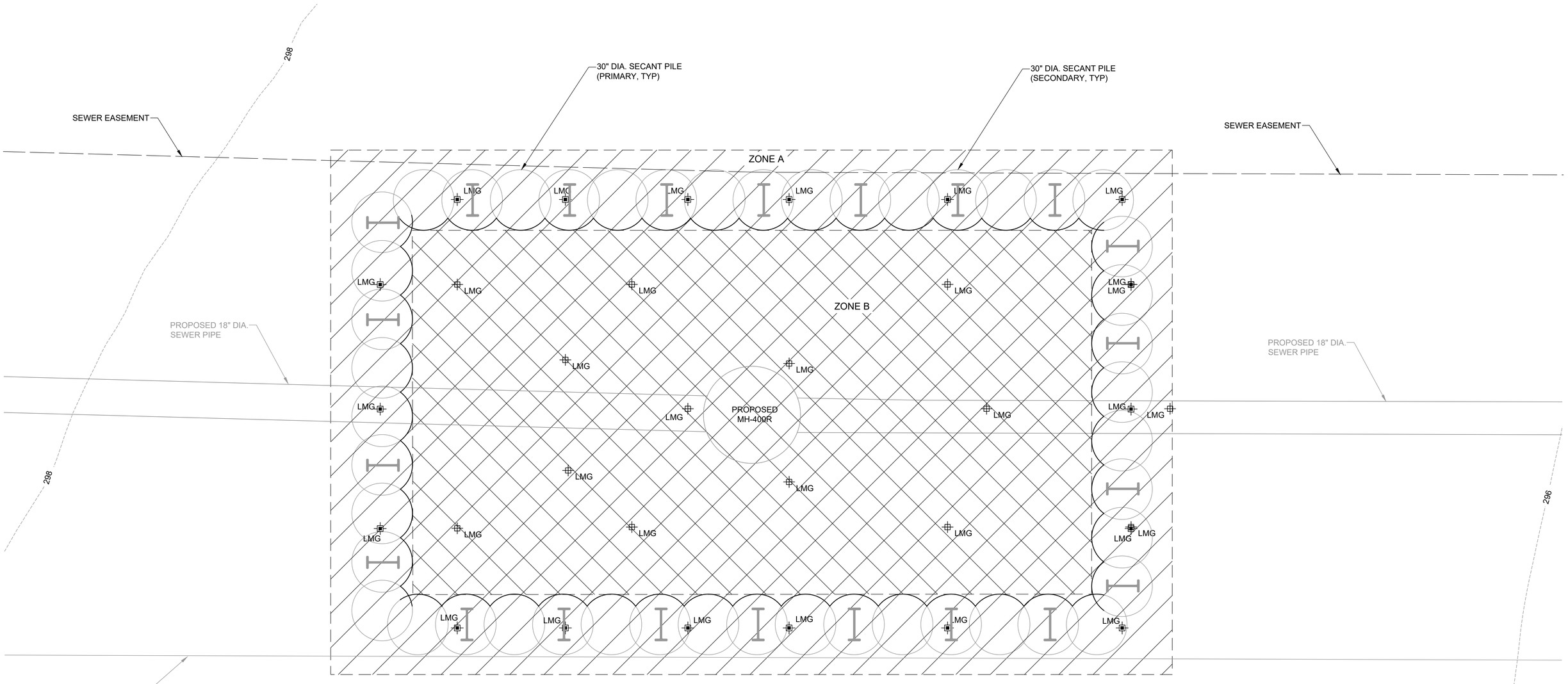
GH-1 PRIMARY GROUT HOLE - ZONE B

1 / FIG 8 GROUTING PLAN AT MH-401R LAUNCH SHAFT

SCALE: 1" = 3'

NOT FOR CONSTRUCTION

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING GROUTING PLAN AT MH-401R LAUNCH SHAFT
STRUCTURE TONE	Project 2302756	January 2024 Fig. 8



NOTES:

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2. ONLY PRIMARY GROUT INJECTION LOCATIONS ARE SHOWN. ADDITIONAL INJECTION LOCATIONS WILL BE RECOMMENDED IN THE FIELD BASED ON GROUT TAKES AND SUBSURFACE CONDITIONS OBSERVED.
3. ALL GROUTING WORK SHALL BE PERFORMED IN THE PRESENCE OF A GEI REPRESENTATIVE

LEGEND:

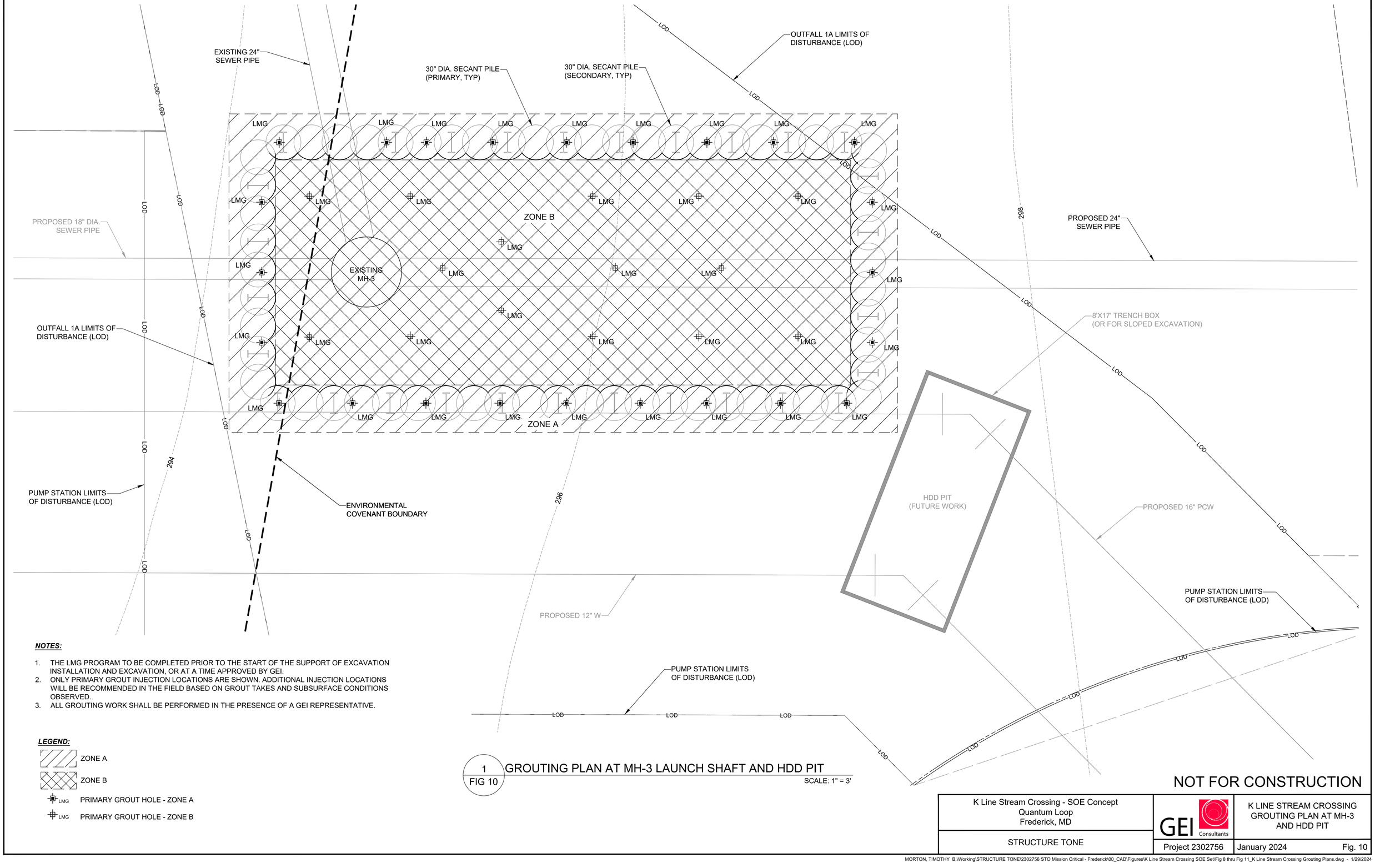
- ZONE A
- ZONE B
- GH-1 PRIMARY GROUT HOLE - ZONE A
- GH-1 PRIMARY GROUT HOLE - ZONE B

1 / FIG 9 GROUTING PLAN AT MH-400R RECEIVING SHAFT

SCALE: 1" = 2'

NOT FOR CONSTRUCTION

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING GROUTING PLAN AT MH-400R
STRUCTURE TONE	Project 2302756	January 2024 Fig. 9



NOTES:

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2. ONLY PRIMARY GROUT INJECTION LOCATIONS ARE SHOWN. ADDITIONAL INJECTION LOCATIONS WILL BE RECOMMENDED IN THE FIELD BASED ON GROUT TAKES AND SUBSURFACE CONDITIONS OBSERVED.
3. ALL GROUTING WORK SHALL BE PERFORMED IN THE PRESENCE OF A GEI REPRESENTATIVE.

LEGEND:

- ZONE A
- ZONE B
- LMG — PRIMARY GROUT HOLE - ZONE A
- LMG — PRIMARY GROUT HOLE - ZONE B

1
FIG 10

GROUTING PLAN AT MH-3 LAUNCH SHAFT AND HDD PIT

SCALE: 1" = 3'

NOT FOR CONSTRUCTION

K Line Stream Crossing - SOE Concept Quantum Loop Frederick, MD	GEI Consultants	K LINE STREAM CROSSING GROUTING PLAN AT MH-3 AND HDD PIT
STRUCTURE TONE	Project 2302756	January 2024 — Fig. 10

Appendix E

Clark Construction HASP

Accident Prevention Plan

Quantum Loophole - 1 MGD Sewage Pumping Station

Job # 22072W2

Project Description via the Project Plan:

- Clark Water will be providing a new 1 MGD Pump Station as part of the phased construction of the new Quantum Loophole Data Center Campus
- The 1 MGD Pump Station will be used to service Frederick County residents and needs from the initial expansion phase of the Quantum Loophole Data Center Campus and was designed in compliance with Frederick County standards.
- The new pump station will be composed of a new underground precast wet well, new pumps and pipeline to existing sanitary manholes and new supporting electrical infrastructure. The 1 MGD Pump Station will be configured to allow for expansion to a 5 MGD Pump Station as the campus expands.

TABLE OF CONTENTS

(1) SIGNATURE SHEET

Plan Prepared By: Lucas Porter – Safety Manager, Clark Construction Group, LLC

Corporate Approval: Brian Walker – Sr. Vice President & General Manager, Clark Construction Group, LLC

Signature_____ Date_____

Cellular: (252) 643-1000

Corporate Approval: Nathan Scalla – Project Executive, Clark Construction Group, LLC

Signature_____ Date_____

Cellular: (831) 588-5440

Corporate Approval: Dwayne Wright –Superintendent, Clark Construction Group, LLC

Signature_____ Date_____

Cellular: (240) 517-4637

Safety Approval: Marty Laskey – Division Safety Director, Clark Construction Group, LLC

Signature_____ Date_____

Cellular: (404) 638-809

(2) INTRODUCTION

The requirements specified in this Accident Prevention Plan (APP) have been established to protect the safety and health of Clark Construction Group, LLC employees and subcontractors assigned to the Quantum Loophole – 1 MGD Sewage Pumping Station Project. This plan has been written to comply with the regulations established by the Clark Construction Group, LLC Corporate Safety and Health Program and the Federal Occupational Safety and Health Administration (OSHA), Maryland OSH (MOSH), and the Structure Tone Corporate Safety, Health and Environmental Policies and Procedures Manual dated January 1st, 2022. Whenever a conflict arises between these requirements and the Accident Prevention Plan, the specification most protective of worker safety and health shall prevail (except where specifically noted as an exception). Each Clark Construction Group, LLC employee and subcontractor assigned to the project must abide by these requirements. Subcontractors, upon approval of the Clark Construction Group, LLC Site Safety and Health Officer, may use safety and health procedures that are at least as stringent as those contained in this document.

Contractor must immediately inform the Owners Representative and Clark Representatives of any inspections by MOSH, EPA, or other HSE regulatory agencies or other actions involving Contractor's work.

The information contained herein is general in nature and may not be enough to address all situations.

NOTICE

This Accident Prevention Plan (APP) has been prepared for use by employees and subcontractors performing a specific, limited scope of work. It has been prepared based on the best available information regarding the physical and chemical hazards known or suspected to be present on the projectsite.

It is not possible in advance to discover, evaluate, and protect against all possible hazards that may be encountered during the completion of this project. Adherence to the requirements of this Plan will significantly reduce, but not eliminate, the potential for occupational injury and illness at the project site. The guidelines contained in this Plan have been developed specifically for the project site and scope of work described herein and should not be used at any other site(s) without the review and approval of a qualified health and safety professional. For this Plan, "site" is defined as the area of the Quantum Loophole – 1 MGD Sewage Pumping Station Project.

Clark Construction Group LLC's Corporate Safety and Health Manual is available electronically and will be provided upon request. All references to the appendixes within this Accident Prevention Plan are part of the Clark Construction Group LLC Corporate Safety and Health Manual and can be provided electronically or printed upon request.

PURPOSE

Clark Construction is committed to providing a safe and healthful workplace for its employees. The Clark Construction Group, LLC Safety and Health Manual contains policies, procedures and programs designedto ensure the safety of our workforce, construction personnel and the general public. We consider the prevention of incidents to be an integral part of our operation, and to these ends, we have established a supplemental site-specific health and safety plan to assure the continued safety of all project employees.
This plan is designed to:

- Identify and evaluate jobsite hazards.
- Establish means and methods to prevent exposure to unsafe conditions.
- Develop a system to communicate with our employees concerning safety matters and to encourage feedback.
- Establish training and retraining programs for employees.
- Develop a recognition program that identifies individuals/subcontractors who have met criteria and goals for working safe.
- Develop an enforcement and disciplinary system to ensure that employees comply with the Site Safety and Health Plan.
- Establish a culture on the jobsite where safety is recognized as a core value by all employees.
- Develop a trusting safety relationship between us and the owner

SAFETY AND HEALTH POLICY STATEMENT

Clark Construction believes that an effective safety and health program is based on a sincere desire to eliminate personal injuries, occupational illnesses, damage to equipment and property, as well as to protect the general public.

Management and supervision are charged with the responsibility of preventing the occurrence of incidents or conditions that can lead to occupational injuries or illnesses.

The ultimate success of a safety and health program depends upon the cooperation and coordination of each individual employee and sub-contractor.

It is management's responsibility to provide effective training and education that will result in a safe place to work, and to ensure that safety and health rules and procedures are adequate and enforced.

No employee or subcontractor shall be required to work in an unsafe manner or under unsafe conditions, unless it is to correct an unsafe condition and then, only after all reasonable safety precautions have been taken to minimize the potential injury exposure.

Clark Construction recognizes that safety and health are integral and essential parts of our operations. Our policy is to accomplish work in a safe manner consistent with good work practices. Management at every level is charged with the task of translating this policy into positive actions.

Our safety and health philosophy are based on the following principles:

- Employees are an invaluable resource to the company and their safety and well-being are essential to its continued success.
- Incidents are preventable and the occurrence of an incident means that we have not effectively managed our people and resources.
- ALL EMPLOYEES play a role in their own safety and the safety of those working around them. Management will be responsive to the expressed safety concerns of employees.
  SAFETY is our core value.

ASSIGNMENT OF RESPONSIBILITIES

PROJECT SR. VICE PRESIDENT / RESPONSIBLE PERSON

Brian Walker, Sr. Vice President and General Manager of Clark Construction has been designated as the Responsible Person for the APP. It is the responsibility of the Project Sr. Vice President to ensure overall implementation of the APP. In addition, the Project team will have the responsibility for enforcement of the program at the project site.

The duties of the Responsible Person are to:

- Identify and evaluate jobsite hazards, including procedures for investigating occupational injuries and illnesses.
- Establish and/or review methods and procedures for correcting unsafe and unhealthful conditions and work practices.
- Ensure that employees receive training on general and specific safety practices for the company and on each of their job assignments.
- Ensure that there is a procedure for communicating to employees, in an understandable manner, the safety and health rules and procedures.
- Ensure compliance with safety and health work practices.
- Ensure that records on training, inspections, and corrective measures are properly maintained, as required by this APP and other OSHA required programs.
- Follow all Clark, CDC, State and Local rules/regulations pertaining to COVID-19

PROJECT MANAGER / PROJECT SUPERINTENDENT / SITE SAFETY AND HEALTH PROFESSIONAL

PROJECT MANAGER

Alexandria Hare of Clark Construction has been assigned as Project Manager. Ms. Hare is responsible for enforcement of this program at the project site, in conjunction with the Project Superintendent and SSHP. This includes:

- Assist in development of a job specific safety and health plan.
- Preplanning for safety in work activities.
- Foster a positive safety culture throughout the project.
- Inspect the project at least weekly.
- Ensure that corrective action is taken when there is an unsafe act or unsafe condition. Enforce employee and subcontractor disciplinary policies as described in the APP. Ensure subcontractor safety compliance.
- Review of safety training and orientations to ensure that the proper message is being delivered.
- Ensure that proper personal protective equipment (PPE) is available and being used as required.
- Ensure that communication from employees is being acted upon.
  Participate in investigation of all incidents.

- ☐ Follow all Clark, CDC, State and Local rules/regulations pertaining to COVID-19.
- ☐ Participate in site walks and log safety observations via safety suite

PROJECT SUPERINTENDENT

Dwayne Wright of Clark Construction has been assigned as the Project Superintendent. Mr. Wright is responsible for enforcement of this program at the project site. This includes:

- ☐ Assist in development of a job specific safety and health plan.
- ☐ Preplanning for safety in work activities.
- ☐ Foster a positive safety culture throughout the project.
- ☐ Inspect the project daily.
- ☐ Ensure that corrective action is taken when there is an unsafe act or unsafe condition.
- ☐ Enforce employee and subcontractor disciplinary policies as described in the APP.
- ☐ Ensure subcontractor safety compliance.
- ☐ Ensure that safety meetings are conducted and documented as described in this program and subcontractor "Safe Start" documents.
- ☐ Ensure that every employee goes through on-site safety orientation prior to starting work.
- ☐ Ensure that proper personal protective equipment (PPE) is available and being used as required.
- ☐ Ensure that communication from employees is being acted upon.
- ☐ Notify the owner and insurance carrier of an injury/incident which requires medical attention.
- ☐ Investigate all incidents and document findings in accordance with the APP.
- ☐ Follow all Clark, CDC, State and Local rules/regulations pertaining to COVID-19.
- ☐ Participate in site safety walks and log observations via safety suite

SITE SAFETY AND HEALTH PROFESSIONAL

Lucas Porter of Clark Construction has been assigned as the Site Safety and Health Professional (SSHP) for this project. The SSHP shall implement the operational aspects of this Plan and other applicable requirements and regulations. The SSHP shall identify and communicate existing and anticipated safety and health requirements to the Project Superintendent and Project Manager, and all subcontractor(s) through the Clark Subcontractor Safe Start meeting, and through activity/plan reviews with the project team prior to the subcontractor's start of work on the project.

The SSHP carries the authority of the Project Sr. Vice President as it relates to matters of project safety. The SSHP reports to the Project Sr. Vice President and has authority to stop work in order to prevent injury or incident.

The SSHP is responsible for the field coordination/ implementation of the APP and will consult with the Division Safety Director, Marty Laskey, on matters related to the project. Monthly exposure data including man hours worked will be completed by the SSHP and submitted to the Owner'srepresentative.

The SSHP will strictly enforce all Clark, CDC, State and Local rules/regulations pertaining to COVID-19.

PROJECT TEAM

Project Team members will be familiar with the contents of the Clark Construction Group, LLC Safety and Health Program, this Clark Construction Site Safety and Health Plan, the project work plan, and the project quality control plan, and will observe all specifications set forth within those plans, and with any further direction they may receive. No employee may, for any reason, perform an act, or create a condition that may cause harm to themselves, co-workers, or third parties.

All employees shall immediately report unsafe conditions to their immediate supervisor who will either correct the condition or request assistance from the SSHP.

All employees will participate in site safety walks and log safety observations via safety suite.

FOREMAN

Project foremen have the following responsibilities:

- Ensure compliance with the APP.
- Ensure that all employees receive the site-specific orientation prior to beginning work on site.
- Inspect work areas regularly for unsafe acts and unsafe conditions.
- Communicate safety and health matters to the crew and ensure their understanding.
- Ensure corrective action is taken when there is an unsafe act or condition observed.
- Coordinate with Superintendents and Safety Managers to ensure safety is planned into work activities.
- Ensure that their crew understands the importance of and is wearing all required personal protective equipment.
- Ensure that their crew is performing in a safe manner, in compliance with all rules and regulations.
- Ensure that the concerns of the crew are communicated to the project superintendent.
- Ensure that tools and equipment are in good condition and are being used properly and in a safe manner.
- Assist with incident investigation when needed.
- Conduct Safe Plan of Action daily in the morning before work commences.
- Authority to stop work in order to prevent injury or incident.
- Perform at least 1 toolbox talk a week with crew.
- Follow all Clark, CDC, State and Local rules/regulations pertaining to COVID-19.

EMPLOYEES

Employees have the following responsibilities:

- Arrive to work fit for duty.
- Have on proper work attire including long pants with no cuffs and shirts with sleeves that cover the shoulder, safety toed work boots, Safety Helmets, safety glasses and a minimum A3 cut resistant

glove.
- Wear personal protective equipment that is required by their job/task and applicable regulation.
- Follow safety rules required by their company and the project.
- Report all unsafe acts or conditions immediately.
- Immediately report any work-related injury, regardless of how minor.
- Authority to stop work in order to prevent injury or incident.
- Follow all Clark, CDC, State and Local rules/regulations pertaining to COVID-19.

VISITORS

- Must follow project safety requirements, Code of Safe Practices, and OSHA, MOSH, and EPA regulations
- Will not be permitted in a work area that may present a hazard to the individual.
- Will not be allowed on project site work areas without proper PPE
- Must coordinate with GC prior to coming to job site and sign in at office trailer upon arrival.
- Follow all Clark, CDC, State and Local rules/regulations pertaining to COVID-19.
- Must be escorted on Site property by a member of Clark or by an authorized subcontractor representative.

SUBCONTRACTORS AND SUPPLIERS

Prior to proceeding with any work on this project, each Subcontractor must attend a pre-mobilization Safe Start meeting held by the SSHP. This meeting will review the established Corporate Safe Start Program. Each subcontractor shall be given a copy of our Subcontractor Safe Start Manual which contains the written documentation that is required to be submitted prior to working. All documents shall be reviewed with our Subcontractor's field leadership and Safety Representative during this meeting. A copy of the Subcontractor Safe Start Manual will be distributed to each Subcontractor prior to this meeting.

Vendors and/or suppliers who will be performing work of any kind on this project will be required to submit a detailed hazard analysis prior to start of work. Each hazard analysis must be approved by the SSHP. Examples of this type of work include but are not limited to the set up and use of concrete pump trucks, deliveries of building materials that must be mechanically unloaded onsite, installation of material hoists, trash chutes and scaffold systems.

Subcontractors are responsible for notifying their vendors and suppliers of this requirement, obtaining the hazard analysis and submitting the documentation to the SSHP for approval.

Subcontractors will, at a minimum, incorporate all the principles of the Clark Construction Group, LLC, Clark Construction APP into their safety programs. Subcontractors must accept responsibility for the management and implementation of their company's Safety and Health and HAZCOM Programs for the project and will ensure that their employees, subcontractors and suppliers, regardless of tier, know, understand, properly implement and are held accountable for complete project safety and health requirements.

Additional information on the Subcontractor Safe Start Program is contained in Appendix A-14.

All Subcontractors shall provide a full-time Safety representative on jobsite when manpower exceeds 30 or more workers (including lower tier sub-contractors). Safety representative shall have no other duties other

than safety and shall have OSHA 30 and be First aid CPR trained. Safety representative shall attend all Safety meetings conducted by Clark or by its lower tier sub-contractors while they are onsite.

Any Subcontractor with less than 30 workers onsite (including lower tier subcontractors) must have a designated onsite safety representative that is at a minimum First Aid/CPR trained at all times.

All Subcontractors, lower tier sub-contractors, suppliers (when onsite), sales reps, and visitors must adhere to all Clark, CDC, State and Local rules/regulations pertaining to COVID-19.

SUBCONTRACTOR SAFETY REPERSENTIVE SHALL:

- Ensure that their employees, subcontractors and suppliers, regardless of tier, comply with their company's Safety and Health and HAZCOM Programs, the Contract Documents, OSHA/MOSH Standards, and all other federal, state and local codes, laws and regulations.
- Follow project safety requirements, Clark Construction Group, LLC Code of Safe Practices, and OSHA/MOSH regulations.
- Ensure that all work activities are planned with an emphasis on safety and health to prevent bodily injury, illness and property damage.
- Post a copy of the Medical Emergency Procedures and the Fire Emergency Procedures for the project in their change rooms, trailers and offices.
- Make provisions for immediate first aid and/or medical/hospital treatment for all work-related injuries and illnesses for their employees.
- Ensure that a Job Specific Hazard Analysis is developed and implemented for each major work operation.
- Be responsible for the Subcontractor Incident Reporting Requirements.
- Attend all Scheduled Safety Meetings.
- Arrange for weekly Toolbox Talks. A copy of the written minutes must be forwarded to the SSHP and Clark Superintendent.
- Report all safety and health related matters to the Superintendent and/or the SSHP.
- Perform daily safety inspections of work areas.
- Document all equipment inspections daily and provide copies to Clark Superintendent and or Clark Management representative.
- Ensure that Employee Information and the Training Checklist is completed and documented for new employees prior to starting work on the project.
- Authority to stop work in order to prevent injury or incident.
- Follow all Clark, CDC, State and Local rules/regulations pertaining to COVID-19
- At a minimum First Aid/CPR trained.
- Maintain up to date MSDS sheets for all materials on site.

SUBCONTRACTOR EMPLOYEES SHALL:

- Follow project safety requirements, Clark Construction Group, LLC Code of Safe Practices, and OSHA/MOSH regulations.
- Report any unsafe conditions or acts to their Supervisor.
- Perform their work using safe and healthful methods.

- ☐ Use and wear all personal protective equipment required.
- ☐ Attend weekly Toolbox Talks and sign attendance list.
- ☐ Keep all areas clean and free of debris.
- ☐ Wear seat belts when operating equipment.
- ☐ Refrain from fighting, discrimination, harassment, and or any other immoral activities.
- ☐ Notify Supervisors immediately of any incidents.
- ☐ Not to possess any drugs, alcohol or firearms of any type on Job/Plant premises or in Company vehicles.
- ☐ Authority to stop work in order to prevent injury or incident.
- ☐ Follow all Clark, CDC, State and Local rules/regulations pertaining to COVID-19.

FITNESS FOR DUTY

Clark Construction and its subcontractors will be required to implement a drug testing program that includes, at a minimum, Pre-Employment, Periodic, Post Incident, For Cause, Random and Return to Work testing. Subcontractors will be required to comply with the Clark Construction Group, LLC Fitness for Duty program while working on the Quantum Loophole – 1 MGD Sewage Pumping Station Project. See Appendix A-14 for the complete Fitness for DutyPolicy.

JOB AND ACTIVITY HAZARD ANALYSIS

Each subcontractor, regardless of tier, must submit Clark Construction a Pre-Phase Safety Plan including a Job Hazard Analysis (JHA) for each phase of work. This JHA will be reviewed by the Clark Construction Group, LLC Superintendent(s) and SSHP at the Safe Start Meeting and Initial Meetings for their feature(s) of work. All JHA/AHA will be kept on file at the project site for review.

Pre-activity walks will be conducted with applicable parties on stie at the discretion of the Owner, Engineer, and Contractor. A pre activity review will be completed before an AHA is created

Additional information on the Hazard Analysis Policy is contained in Appendix A-7.

All Phases of work will require a Job Hazard Analysis (JHA), examples are:

Site-work
Demolition
Excavations, Trenching
Concrete – Structural
HVAC
Electrical
Equipment Rigging
Working on/near existing utilities; electrical, gas, chemical, steam, pressurized lines, sanitary lines
Confined Space Entry
At a minimum (for each phase) consider all potential hazards including those below.

1. Noise
2. Dust/Fumes/Mists/Chemical Exposures
3. Traffic Control
4. Falls, Working at Heights
5. Falling Objects/Flying Objects
6. Walking Surfaces/Access/Work Platforms & Scaffolding
7. Lighting
8. Machinery/Vehicles
9. Interface with other contractors
10. Security
11. Pollution/Spills
12. Utilities Exposure Including Electrical, Water (onsite and Public)
13. Vibration/Subsidence/Ground Support/Trenching and Excavations
14. Fires, Welding, Burning Operations/Fire Prevention
15. Clothing/PPE Requirements
16. Craning/Hoisting/Rigging
17. Signage/Barricades
18. Tools-use, Inspection, Maintenance
19. Demolition Operations
20. Protection of the Public
21. Other Hazards Particular to this Project

In addition**,** Specific plans will be submitted prior to these activities.

1. Site-specific Fall Protection and Prevention
2. Formwork and Shoring Erection and Removal
3. Steel Erection
4. Roofing
5. HVAC and Plumbing
6. Tank Rehabilitation Work
7. Crane
8. Confined Space Entry

A JHA will be completed for each major task during the project. This analysis will be conducted according to the Clark Construction Group, LLC Clark Construction Procedure - Job Hazard Analysis. The purpose for this analysis is to evaluate the task, identify the sources of hazards related to the task, and assign control measures for each hazard. The completed JHA can be used to train employees and subcontractors prior to initiating the task. It should be used by the supervisor to assure that safety planning has been completed, and that all necessary safety equipment is available in advance.

An JHA will be developed by the Contractor for every operation involving a type of work presenting hazards not experienced in previous project operations or where a new work crew or subcontractor is to perform work. The analysis must identify and evaluate hazards and outline the proposed methods and techniques for the safe completion of each phase of work. At a minimum, define activity being performed, sequence of work, specific safety and health hazards anticipated, control measure (to include personal protective equipment) to eliminate

or reduce each hazard to acceptable levels, equipment to be used, inspection requirements, training requirements for all involved, and the competent person in charge of that phase ofwork.

For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall protection methods used. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include requirements for safeguarding excavations.

The JHA/AHA shall be continuously reviewed and, when appropriate, modified to address changing site conditions or operations. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls. The JHA list will be reviewed periodically and updated as necessary when procedures, scheduling, or hazards change.

The JHA/AHA shall be updated as necessary to provide an effective response to changing work conditions and activities. The on-site superintendent, SSHP and competent persons used to develop the JHA/AHAs, including updates, shall sign and date the JHAs before they are implemented.

The JHA/AHA shall be developed using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require a JHA. The JHA/AHAs will be developed by the contractor, supplier or subcontractor and provided to Clark Construction Group, LLC.

HAZARD CONTROL MEASURES

At the beginning of each work shift and as often as necessary to ensure safety, each crew foreman will conduct an area survey to identify workplace hazards and determine appropriate safety control measures. The hierarchy of control measures is as follows.

- ☐ Engineering Controls
- ☐ Work Practices Administrative Controls
- ☐ Personal Protective Equipment

EMPLOYEE TRAINING, INSTRUCTION AND INDOCTRINATION

COMMUNICATION OF SAFETY AND HEALTH MATTERS

Communication of safety and health policies and procedures begins on the employee's first day at the Employee Orientation. Each employee shall receive training from their employer on the identification of potential hazards he/she may encounter during their specific work activity, preventive measures or corrective actions and the OSHA/MOSH regulations.

Additional information on the Education and Training Policy is contained in Appendix A-12.

Daily "Safe Plan of Action" meetings are held by each crew, daily at the beginning of the work shift. A "Toolbox" Safety Meeting is held once a week attended by all of the Contractor's personnel. The Contracting

Offices will be notified in advance of these meetings and be invited to attend.

Employees shall be kept informed of updates or changes to the APP, Clark, Clark Construction and OSHA/MOSH Regulations and Policies through safety meetings, written notices, and posting of notices on the company bulletin board and shall be communicated in a manner understandable to all employees.

The SSHP will attend the Weekly Project Progress Meeting. In this forum, the SSHP will communicate concerns and issues to specific subcontractors and subcontractors in general. Subcontractors will have the opportunity to share concerns and issues regarding project safety as well.

All employees are encouraged to report hazardous conditions at the jobsite to the SSHP or Superintendent so that corrective action can be taken. Employees who report such conditions will do so without fear of reprisal.

For anonymous notification of potential safety hazards, a toll free "Safety Hotline" is available to all project personnel and jobsite subcontractors by dialing 1-888-547-3520. All notifications of potential safety hazards will be thoroughly investigated, and corrections will be made where necessary.

The SSHP shall post and maintain all required OSHA Federal and MOSH State postings, Emergency Phone Number Lists, The Emergency Action Plan, Hazard Warnings and Illness and Injury Data for employees in or on the jobsite trailer.

ORIENTATION

A representative of the Clark Project Team/SSHP shall conduct site specific orientations for all Clark Construction Group, LLC employees, subcontractor employees and visitors.

The initial site safety orientation shall be documented, and a unique hardhat sticker will be issued to each person completing the initial site-specific orientation on the Quantum Loophole – 1 MGD Sewage Pumping Station Project.

The orientation materials are shown in Appendix A-13. The orientation materials, Code of Safe Practices have been translated to Spanish and are available onsite.

Prior to beginning the orientation non-English speaking employees will be identified, a translator will be provided along with the appropriate documents to assist in the understanding of orientation material. Proper orientation documents shall be available onsite for review.

DAILY "SAFE PLAN OF ACTION" SAFETY MEETINGS

At the beginning of each shift, a qualified person shall conduct a daily Safe Plan of Action safety meeting detailing activities, specific hazards of the work to be performed and safety precautions and procedures for each task to be performed during that workday. A full understanding of the SPA must be agreed upon by all employees prior to work commencing. A copy of SPA must be submitted for documentational purposes to a representative of Clark daily.

Topics of discussion include the AHA/JHA, specific safety items relevant to the day's work activities, a

review of Safety Data Sheets (SDS) for new chemicals introduced into the work environment, new hazards that have been recognized by management or employees and a review of historical incident data or near miss information relevant to the day's activities. These meetings provide an open forum for employees to note safety conditions that need attention. The Foreman will identify non-English/non-Spanish speaking employees and provide an interpreter and translated training materials. All employees will be required to sign an attendance sheet which will be maintained in the project files.

Provide Owner's Representative copies of the meeting attendance sheet and meeting minutes.

SCHEDULED WEEKLY SAFETY MEETINGS

A "Toolbox" safety meeting shall be held weekly, attended by all contractor personnel. Topics to be covered include a review of specific health and safety regulations, new policies or procedures, any incidents or near misses that have occurred at the project, updated project incident rates, new JHA's and a forum for employee questions or comments. The SSHP or Superintendent will identify non-English/non-Spanish speaking employees and provide an interpreter and translated training materials, JHA's or Memo's. Any issues brought up during this meeting shall be documented in the meetingminutes.

Subcontractors have the option of attending the Clark Construction Group, LLC meeting or conducting their own weekly safety meeting. If a subcontractor holds their own weekly safety meeting, the Subcontractor's Superintendent is responsible for conducting the meeting and submitting the required documentation to the Clark Construction Group, LLC SSHP or onsite representative of Clark.

Provide Owner's Representative copies of the meeting attendance sheet and meeting minutes.

EMPLOYEE HEALTH AND SAFETY TRAINING

All Clark Construction Group, LLC and Subcontractor employees shall receive training and instruction by their employer in the following areas:

- ☐ Safety Data Sheets (SDS) requirements, location and availability.
- ☐ Specific instruction on each new task or phase of construction using Activity Hazard Analysis to identify hazards unique to this job environment and elimination/mitigation methods.
- ☐ Personal Protective Equipment (PPE) selection, use and maintenance requirements.
  All training will be documented and available for review.
- ☐ COVID-19 rules/regulations.

Training of employees covered by this APP shall occur:

A. When the program is first established.
B. For all new employees.
C. For all employees given a new job assignment for which training has not previously beenreceived.
D. Whenever new personnel, substances, materials, processes, procedures, or equipment areintroduced to the job site that represent a new hazard.

E. Whenever the project is made aware of a new or previously unrecognized hazard.
F. In response to a near miss or actual incident.

In accordance with this APP, the instructor will identify non-English/non-Spanish speaking employees and provide an interpreter and translated training materials.

Employers will provide additional training to supervisors to familiarize them with the safety and health hazards to which employees under their immediate direction and control may be exposed.

REQUIRED PERIODIC TRAINING

The following is a list of mandatory training applicable to this project:

A. Vehicle/Equipment/Crane Operator
B. First Aid/CPR
C. Confined Space Entry
D. Fall Protection
E. Hot Work/Fire Watch
F. Control of Hazardous Energy
G. Excavation Safety
H. Fire Extinguisher Use

CERTIFICATIONS/QUALIFICATIONS

The following lists of certifications are applicable to this project:

A. Crane Operation
B. Forklift Operator (Per Jurisdiction)
C. Rigger/Signalman
D. Traffic Flagman
E. Powder Actuated Tool Operator
F. Respiratory Medical Questionnaire/ Fit Test
G. Scissor Lift/Aerial Lift Operator
H. Confined Space Training

SAFETY AND HEALTH INSPECTIONS/CORRECTIVE ACTION PROCEDURES

The SSHP will conduct and document regular safety and health inspections. The SSHP will also conduct and document one monthly audit and submit a written report.

The safety and health inspection report shall contain the following:

- Date deficiency identified
- Description of deficiency
- Name of Company responsible for correcting deficiency
- Projected resolution date

- Date resolved

Unsafe or unhealthy work conditions or work practices will be corrected in a timely manner, as determined by the severity of the hazard. Under no circumstances will personnel be required to, or permitted to, work under conditions that pose a clear or imminent hazard.

The Project Superintendent will be responsible for problems that cannot be corrected immediately. Once corrected, the Project Superintendent will forward written documentation of the action taken to the SSHP.

When an imminent hazard exists, which cannot be immediately corrected without endangering employees and/or property, the following steps will be followed:

☐ Remove all potentially endangered employees from the area.
☐ Provide employees responsible to correct the condition with necessary safeguards.
☐ Correct the problem.
☐ Document and date the corrective action taken. The documentation is to be completed by the Project Superintendent. Documentation will be maintained at the project site and forwarded to the SSHP. Provide Owner's Representative a copy of the report before the end of the month at a minimum.

Additional inspections will be conducted:

☐ Whenever new materials, substances, processes, procedures, or equipment are introduced to the jobsite that represent a new occupational safety or health hazard.
☐ Whenever the jobsite is made aware of any new or previously unrecognized hazard.

Engineering controls are the best way to prevent or minimize unsafe or unhealthy work conditions and should be used first. If engineering controls are impractical or infeasible, adjusted work practices will be used. If engineering controls alone, or in combination with adjusted work practices cannot adequately minimize the hazard, personal protective equipment shall be used.

All operating procedures will be monitored and reviewed whenever new chemicals, equipment, or processes are introduced into the system. When changes are made, affected employees will receive additional instruction.

In the event that a subcontractor has created an unsafe condition, the following procedure will be followed.

☐ Upon identification of an unsafe condition, the Clark Construction Group, LLC Superintendent or SSHP will direct the subcontractor employees to stop work at that location immediately.
☐ The subcontractor supervisor will be called to the location to discuss the identified unsafe condition and the JHA covering that scope of work.
☐ The subcontractor will be directed to correct the unsafe condition and the timeframe in order to make the correction.
☐ The SSHP will make a determination as to subcontractor requirements for additional employee training.

The unsafe condition along with correction information and training requirements will be documented on the Clark Construction Group, LLC Inspection/Violation Report.

- ☐ Upon correction of the hazard, the Clark Construction Superintendent will inspect the area and sign off on the report.
- ☐ A jobsite stand down will be conducted by Clark Superintendent/SSHP with the subcontractor/subcontractor's management representative and employees before any work will commence.
- ☐ A copy of this report will then be given to the subcontractor and the SSHP for review and a copy will be given to the Owner's Representative.

1. First offense violations by a subcontractor are handled at a field level.
2. Second offense violations will result in a letter authored by the Clark Construction Group, LLC Project Director to the Subcontractor Corporate Office requesting an onsite safety meeting to discuss the violations and management commitment to employee safety.
3. A third offense may result in a request for the removal of a supervisor who is not enforcing safety policy, assignment of a full-time designated Safety Manager or the withholding of current and future pay requisitions pending compliance with this APP.

SAFETY AND HEALTH EXPECTATIONS, RECOGNITION PROGRAM AND COMPLIANCE

Our goal is to establish and implement a safety and health plan that will educate our employees on identifying and eliminating hazards and unsafe acts. We expect to prevent injuries, occupational illnesses and property damage by establishing safe and healthful methods on our construction sites.

SAFETY RECOGNITION PROGRAM

The Clark Construction Group, LLC mission is to build a strong safety culture through education, training, enforcement and recognition. A Safety Recognition Program will be developed providing motivation and positive reinforcement as a tool to realize increased safety performance.

EMPLOYEE COMPLIANCE AND DISCIPLINE

All employees are required to follow company safety policies and operating procedures. When required, employers will provide their employees additional training and information, or re-training to maintain their knowledge.

The disciplinary action policy is intended to encourage employee compliance with this APP. Immediate Termination: Any employee who commits a serious safety violation may be subject to immediate termination without prior notice in lieu of any prior verbal and/or written warnings.

Fall protection violations, harassment of any type, workplace violence/fighting, discrimination of any kind, possession or use of illegal drugs or alcohol use, possession of weapons, or flagrant violations or disregard for project safety rules, and unauthorized removal of LOTO devices, will result in immediate

and permanent termination, or removal from the project and all other future Clark Construction projects.

The SSHP and Superintendent will determine the best disciplinary action to be taken that best suits the circumstances. The steps to be taken at a minimum shall include the following:

- ☐ **Verbal Warning:** As the first step in correcting unacceptable behavior or minor infractions, a verbal warning and coaching will be used. This verbal warning will be documented.

- ☐ **Written Warning:** If the unacceptable performance continues, or the severity of the infraction's warrants, the next step will be a written warning. The written warning will clearly state the safety policy that was violated and steps the employee and supervisor must take to correct it.

- ☐ **Suspension/Termination:** If the unacceptable practice continues, or the severity of the infraction warrants, the employee will be given time off without pay. If suspended, an employee will be required to attend training specific to the unsafe practice or behavior that was cited.

Project workers who are terminated or removed from the project for disciplinary reasons related to violations of this safety program may not return to the project as an employee of the company they worked for at the time of termination or for any other employer. Further, they may not work on any other Clark Construction Group, LLC projects for at least 180 days. If a suspended employee wishes to return to a Clark Construction Group, LLC project they must meet with the Division Safety Director, Marty Laskey and demonstrate a significant change in attitude toward safety prior to being allowed access to Clark Construction Group, LLC projects.

Likewise, Clark Construction Managers and Supervisors may be at risk of discipline up to and including termination if they fail to diligently carry out their responsibilities as outlined in this APP and the overall Site Safety and Health Program.

Subcontractors who continually fail to comply with or to correct safety issues may have their payment withheld until compliance with safety issues and procedures is complete. Further, subcontractors may have their contracts suspended and they may be removed from work on this project if chronic failure to comply with project safety procedures continues.

INCIDENT INVESTIGATION

All work-related injuries and illnesses must be reported to the SSHP, no matter how minor, in accordance with the Clark Construction Procedure - Incident Investigation. Injuries, illness, or any other incident involving a third party, or a member of the general public must be promptly reported to the Clark SSHP and the Owner's Representative. Incident reviews shall take place after all near misses, recordable, lost times and hand injuries. Incidents involving potential exposure to hazardous materials, biological waste, and release or spills of such materials must be promptly reported to the Clark SSHP and the Owner's Representative. The Owner's Representative will be notified within four (4) hours of all incidents by the Clark Construction Superintendent/SSHP. Each Incident must be investigated as soon as possible by the immediate supervisor who has direct control over the employee or over the condition involved in the Incident. Project

Superintendent and SSHP will investigate all reported incidents and complete the Incident Investigation Report Form, as well as present the report for signature by the SSHP. Additional information on incident investigations is contained in Appendix A-5.

The Vice President, or his/her designee, will notify all public agencies requiring this information. OSHA needs to be notified of the following: any work-related fatality, hospital admittance of one or more individuals, any amputation, and loss of an eye.

Do not release information surrounding an incident to any agency. If in doubt as to who is asking, refer the inquiry to the Project Vice President.

The Incident Investigation Report Form must be completed for each injury to a Quantum Loophole – 1 MGD Sewage Pumping Station **Project** by a project employee and for all other types of incidents. All questions on the form must be clearly and completely answered.

This form must be submitted to the SSHP within twenty-four (24) hours. In addition, the incident report shall be submitted to the Owner's Representative within twenty-four hours of the incident.

Secure the incident scene until the SSHP has examined it. Do not allow any activity other than the initial rescue.

Photographs of the area are to be taken as soon after the incident as possible.

All Incident investigations should include the following information when applicable.

- ☐ Name/age/address/phone number of injured. Date and time of the incident.
- ☐ Equipment and or tools being used at the time. PPE being used/required at the time.
- ☐ Other subcontractors working in the vicinity at the time. Photographs.
- ☐ Primary cause. Secondary cause. Witness statements.
- ☐ Determine whether the employee had adequate instructions prior to starting the job.
- ☐ Name of the employee's supervisor.
- ☐ Name and telephone number of the clinic or hospital.
- ☐ Copies of AHAs, SPAs, site orientations, work plans, permits, etc.

When incidents or near misses occur that result in property damage or lost production time, these mishaps usually indicate an unsafe act, faulty procedure or hidden hazard.

The Owner's Representative shall also be notified of incidents or near misses that result in property damage or lost production time.

For any weight handling equipment incidents, a root cause incident investigation shall be completed.

Accident investigation reports for all Contractor accidents, injuries, and work-related illnesses shall be forwarded to the Owner's Representative within twenty-four hours of the occurrence. Vice President or officer of subcontractors shall attend all lost time meetings

INJURED EMPLOYEE ASSISTANCE

The Injured Employee Assistance Policy is part of the overall administration of the APP. The administration of this program includes the identification of all serious incidents, and ensures prompt medical attention and appropriate medical benefits, compensation benefits and applicable insurance coverage is provided to our injured employees.

Clark Construction is committed to providing injured employees the opportunity to return to work as soon as medically appropriate. The SSHP will meet with and be in contact with the clinic in order to communicate this policy and identify the potential for modified duty. A vital part of the recovery process is knowing that the employer will try its best to find meaningful work for their employee once they are released for work to the extent that work is reasonably available. Superintendents are expected to aggressively identify and provide modified duty assignments on their project for injured employees who have been released to work with physical limitations.

It is important to understand that returning injured employees to work under this modified duty program is in the interests of both the employee and employer.

MEDICAL SUPPORT AND FIRST AID PROCEDURES

PHYSICAL INJURY

For minor injuries, routine first aid procedures shall be applied. If required, the injured employee shall then be transported to the hospital.

For major injuries, an ambulance shall immediately be called. The emergency medical responders shall assess the nature and extent of the injury. In cases of severe injury occurring along with chemical contamination of the victim, and if injuries permit, the victim shall be decontaminated or have the contaminated garments removed prior to being transported in the ambulance, but only if these actions will not pose risk to the victim's health. Ambulance and hospital personnel shall be advised if contamination exposure is possible.

In the event of bleeding, broken bones, shock, burns, heat exhaustion, heat stroke, seizure, insect stings, etc., the trained personnel on each shift will use American Red Cross or equivalent approved measures for treatment.

CHEMICAL INJURY

- ☐ Appropriate safety gear shall be worn when treating the victim.
- ☐ The victim shall be removed to fresh air if possible.
- ☐ The victim's vital signs shall be assessed, and resuscitation shall be initiated if necessary.
- ☐ If clothing is chemically contaminated and injuries permit, clothing shall be removed, and the skin flooded with copious amounts of water.
- ☐ If the eyes are contaminated, they shall be irrigated immediately with copious amounts of water for twenty (20) minutes minimum.
- ☐ Medical attention shall be obtained immediately for any injury involving the eyes.
- ☐ Call the nearest Poison Control Center for technical advice and assistance.
- ☐ SDS sheets should be referenced to in order to treat victim properly.
- ☐ Emergency personnel should be notified of all chemicals involved if contacted.

NOTIFICATIONS

In the event of an emergency requiring notification, the Superintendent/SSHP is responsible for immediately contacting the Contracting Officer and appropriate agencies. If the Superintendent/SSHP is unavailable, the Project Manager will perform this function.

Contact will be made with local EMS/Fire Department and hospital services to discuss the project scope of work, materials identified on-site, number of employees, etc. Contact will be made with the Frederick County Police and Fire Department to give them a tour of the construction area and overview of the potential hazards. A list of phone numbers for emergency agencies and utilities will be posted near each phone in the field office to help facilitate emergency activities in the event of an incident.

The Superintendent/SSHP shall designate a rally point in case of emergency. The emergency evacuation signal for this project will be three (3) long blasts on an air horn or the crane horn, then a pause, and three more long blasts. Project radios may also be used, as well as verbal warnings, to notify project personnel of the emergency and evacuation notice.

Once an evacuation alarm has been sounded all personnel on site will proceed to the predetermined evacuation rally point. Using the daily sign-in sheet, the foremen for each trade/crew will account for the personnel under their supervision and report to the SSHP regarding the presence or absence of any of their personnel. The Superintendent/SSHP shall ensure that all personnel on site have been accounted for and provide instructions on further actions to be taken, including declaration of "all clear".

An evacuation drill will be conducted initially after work begins, and then as deemed necessary. This Emergency Action Plan will be updated as jobsite conditions warrant.

RESCUE AND EVACUATION PLAN

A Rescue and Evacuation Plan will be incorporated as part of the overall emergency action plan. The plan will incorporate the facility emergency and evacuation plan. Individual rescue and response plans will be included in other specific plans including the fall prevention/protection plan, excavation work plan, confined space entry plan, etc. The emergency action plan is contained in Appendix A-4. This plan will include a detailed discussion of the following:

- Methods of rescue
- Methods of self-rescue
- Equipment to be used
- Training requirements
- Procedures for requesting rescue
- Medical assistance
- Transportation route to the medical facility

The Rescue and Evacuation Plan will be included in the JHA for each phase of work and in the Fall Protection and Prevention Plan.

All of our subcontractors are required to have at least one (1) person who is trained and certified in First-Aid and CPR. The SSHP as well as the Project Superintendents are required to have been trained in First-Aid and CPR. At least one (1) Clark Construction trained and certified person will be on-site at all times.

TRAINING

Clark Construction office and supervisory personnel will be assigned specific duties regarding site security, media communications, assisting emergency personnel, and other duties.

Those project personnel assigned specific responsibilities regarding this emergency response policy will receive training regarding their specific responsibilities prior to the start of this project. A drill will be conducted within the first one hundred twenty (120) days from start of excavation, which will include all personnel who are assigned responsibilities. The Superintendent/SSHP will develop a specific list of responsibilities for each emergency response assignment and will distribute and review these responsibilities and discuss each participant's role in the emergency response plan in the initial Emergency Response Training meeting. This information will be contained in the project Emergency Action Plan.

EMERGENCY NUMBERS

Internal and external emergency contact numbers are identified in Table 1. The nearest emergency medical care is identified in Table 2. Emergency contact information will also be posted throughout the project including maps to clinics and hospital.

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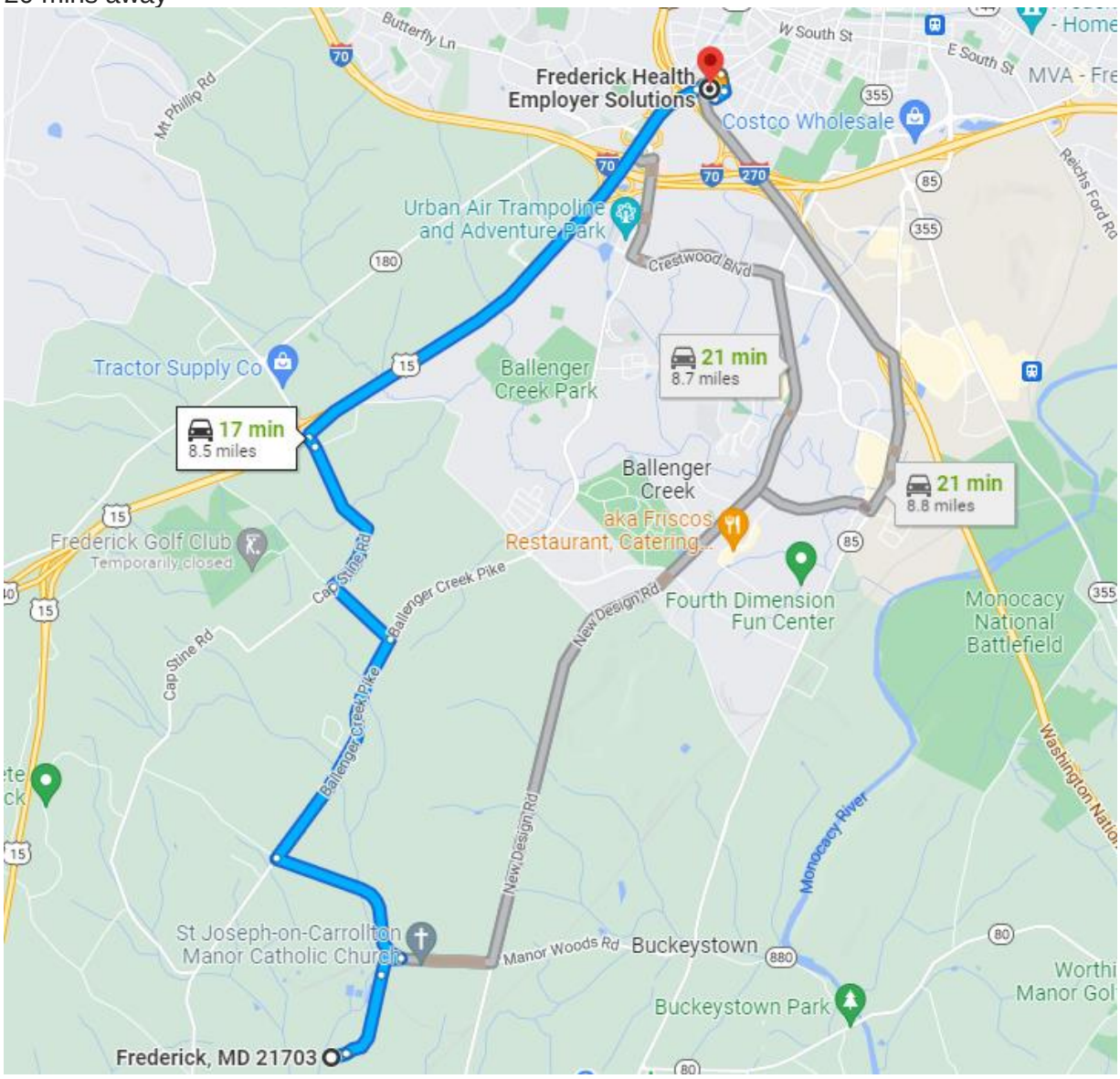
TABLE 1 - EMERGENCY CONTACTS

_ Emergency Ambulance	911
_ Fire	911
_ Poison Control Center	911 / 800-222-1222
_ Police	911
_ Spill Reporting	911
_ Safety Emergencies (after hours)	Maria Amenta: 301-272-8319
_ Burn Permits	Lucas Porter: (301) 310-3738
_ Gas Leaks	911
_ Project Superintendent	Dwayne Wright: (240) 517-4637
_ Project Manager	Alexandria Hare: (571) 458-6938
_ Project Executive	Nathan Scalla: (831) 588-5440

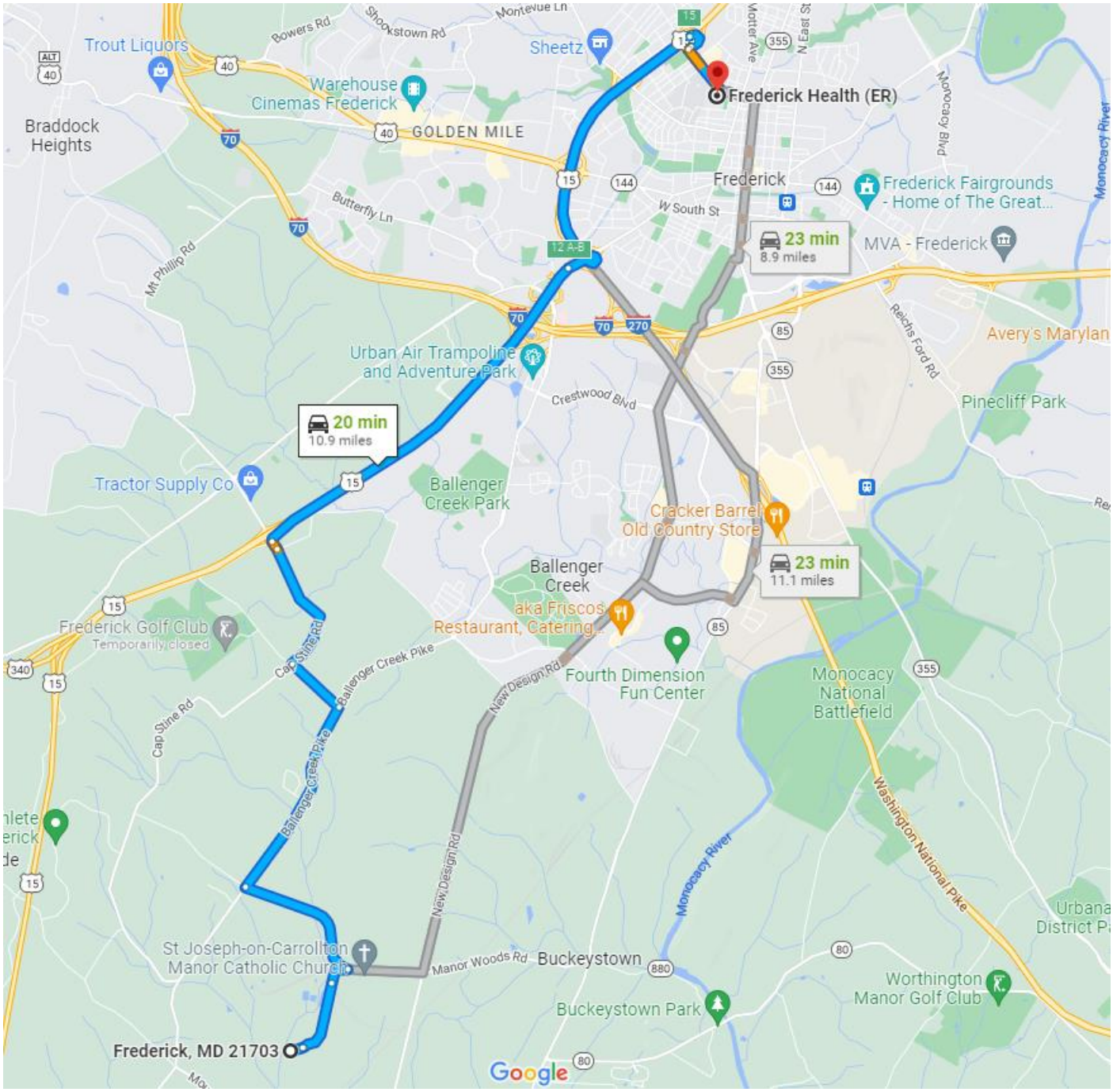
Primary Care Facility Locations

The Primary Care Facility for minor injuries will be:

Off Site Clinic:
Employer Solutions Fredrick Office
490-L Prospect Blvd Frederick, MD 21701
20 mins away



Hospital:
Frederick Health ER
Emergency Department, 400 W 7th St, Frederick, MD 21701
20 mins away.



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MANUAL LIFTING

Manual lifting is common to site work activities; and is a potential source of serious injury. The common concern about lifting is causing an injury to the back; but improper lifting techniques can also injure the neck, shoulder, knee, and hands.

Site conditions (such as poor footing, inadequate lighting, and weather) can compound the hazards associated with lifting. To minimize potential hazards from manual lifting, employees will be trained on the guidance presented below:

- Material handling equipment should always be the first choice if there is any question whether or not an employee can safely lift/move materials.
- If manual lifting will be used, prior to lifting, size up the job; look at the weight, size, shape, and condition of the object to be lifted, and decide if you can lift it unassisted.
- Obtain help if the lift will exceed your abilities or if lift weight exceeds fifty (50) lb. When lifting/carrying an object with another person, the weight should be evenly distributed, and movements coordinated.
- If you are lifting an object on your own, place your feet close to the object, get a good grip (palm of the hand is stronger than fingers, watch for sharp edges, nails, splinters), and straighten your back.
- Keeping your back as straight as comfortably possible, keep the object close to your body, and use the muscles in your legs to lift the object. Complete the lift before turning, and turn by repositioning your feet, never twist while lifting or carrying an object.
- Reverse the procedure when setting the object down, and keep your fingers clear of pinch points.
- Adverse weather condition can also be a factor in material handling such as rainy/ windy conditions, etc.
- If you do injure yourself lifting, or suspect that you may have, report the injury immediately. Do not attempt self-treatment, or ignore the problem. Report the injury to your supervisor.

HAZARD COMMUNICATION

Employees who may encounter hazardous substances used by site workers as part of construction activities will be subject to the requirements of the Clark Construction Group, LLC hazard Communication Program. All workers will be required to attend documented initial and annual refresher training on the GHS/Hazard Communication Standard.

Each hazardous material must receive approval from the Owner's Representative prior to being brought onsite. The Hazardous Material Approval Request process will take a minimum of ten (10) working days to approve.

Safety Data Sheets (SDS) will be obtained for all hazardous materials introduced for use on site. A copy of each SDS shall be available on the site. Each subcontractor will be required to supply a site-specific chemical inventory list prior to start of work. The list will be updated as necessary throughout the project. Copies of SDS will be available for review by the all employees on the project. Additional information on the hazard communication policy is contained in Appendix C-11.

SILICA EXPOSURE

Construction activities identified to have a potential to expose workers to silica dust will be conducted in accordance with OSHA standard 29CFR1926.1153 and the Clark Construction Group, LLC Procedure – Fugitive and Silica Dust Control. In addition to this procedure, the following NIOSH recommendations to reduce exposures to respirable crystalline silica in the workplace will be followed:

1. Recognize when silica dust may be generated and plan ahead to eliminate or control the dust at the source. Awareness and planning are keys to prevention of silicosis.
2. Use engineering controls and containment methods such as blast-cleaning machines and cabinets, wet drilling, or wet sawing of silica-containing materials to control the hazard and protect adjacent workers from exposure.
3. Routinely maintain dust control systems to keep them in good working condition.
4. Practice good personal hygiene to avoid unnecessary exposure to other worksite contaminants such as lead.
5. Wear disposable or washable protective clothes at the worksite.
6. Shower (if possible) and change into clean clothes before leaving the worksite to prevent contamination of cars, homes, and other work areas.
7. Conduct air monitoring to measure worker exposures and ensure that controls are providing adequate protection for workers.
8. Use adequate respiratory protection when source controls cannot keep silica exposures below the OSHA PEL.
9. Post warning signs to mark the boundaries of work areas contaminated with respirable crystalline silica.
10. Provide workers with training that includes information about health effects, work practices, and protective equipment for respirable crystalline silica.

These recommendations are discussed briefly in the following subsections.

DUST CONTROL

The key to preventing silicosis is to keep dust out of the air. Dust controls can be as simple as a water hose to wet the dust before it becomes airborne. Use the following methods to control respirable crystalline silica:

- ☐ Use the dust collection systems available for many types of dust-generating equipment. When purchasing equipment, look for dust controls.
- ☐ Use local exhaust ventilation to prevent dust from being released into the air. Always use the dust control system, and keep it well maintained.
- ☐ Do not use equipment if the dust control system is not working properly.
- ☐ During rock drilling, use water through the drill stem to reduce the amount of dust in the air, or use a drill with a dust collection system.
- ☐ Use drills that have a positive-pressure cab with air conditioning and filtered air supply to isolate the driller from the dust.
- ☐ When sawing concrete or masonry, use saws that provide water at the point of operation.
- ☐ Use good work practices to minimize exposures and to prevent nearby workers from being exposed. For example, remove dust from equipment with a water hose rather than with compressed air. Use vacuums with high-efficiency particulate air (HEPA) filters or use wet sweeping instead of dry sweeping.

☐ Use fans when possible, to keep dusty air moving away from worker/workers in work area.

PERSONAL HYGIENE

The following personal hygiene practices are essential for protecting workers from respirable crystalline silica:

☐ Do not eat, drink, or use tobacco products in dusty areas.
☐ Wash hands and face before eating, drinking, or smoking outside dusty areas.

PROTECTIVE CLOTHING

Take the following steps to assure that dusty clothes do not contaminate cars, homes, or worksites outside the dusty area:

☐ Change into disposable or washable work clothes at the worksite.
☐ Shower (if possible) and change into clean clothes before leaving the worksite.

AIR MONITORING

Air monitoring is needed to measure worker exposures to respirable crystalline silica and to select appropriate engineering controls and respiratory protection. Perform air monitoring as needed to measure the effectiveness of controls. Any new or irregular activity should be reviewed and have air monitoring conducted to determine if silica is close to or above the PEL.

Additional information on silica is contained in Appendix C-10.

NOISE

The Clark Construction Group LLC Hearing Conservation Program will be implemented when noisy conditions exist which produce noise exposures equal to or exceeding 85 dBA as an 8-hour time weighted average (TWA). Work activities and production areas will be monitored and sampled where necessary to ensure that no employee is exposed to noise level above the PEL.

Based on the hazard, employees will be given a choice of the type of PPE that can be used. Comfort and fit are important to ensure that employees will use the PPE necessary for protection.

Additional information on hearing conservation is contained in Appendix B-16.

WORK AT ELEVATED LOCATIONS

FALL PROTECTION/PREVENTION

100% fall protection is required when employees are working at (6) feet or above lower/working levels for all operations. If the fall distance is less than six (6) feet but the employee could fall into/onto dangerous equipment, or other hazards exist, fall protection must be implemented.

All employees who will utilized personal fall arrest equipment must be trained in the nature of fall hazards

associated with his or her job; calculating fall distances; proper selection, inspection, maintenance, wear and use of the equipment; proper selection and use of anchorage points; removal from service.

All fall prevention measures will be positive in nature, meaning there must be physical means to prevent an individual(s) from falling. Examples of this are guardrails and hard barricades.

Project employees shall use a complete fall arrest system when a personal fall arrest system is implemented. This includes full body harness, shock absorbing lanyard or self-retracting lanyard, anchorage devices, and an approved anchorage point.

A full body harness and lanyard are required to be used by all employees when operating any and all aerial lifts and scissor type lifts.
Double-lanyard systems will be used when necessary to ensure that 100% tie-off is maintained at all times when repositioning from one work location to another.

Positioning devices may be used but must be accompanied by a complete personal fall arrest system when an employee is working at or above 6 feet.

Body belts are not permitted on this project for any purpose.

Clark Construction believes that conventional fall protection equipment can be utilized in most cases where Leading Edge Programs have been used in the past. A Leading-Edge Program will only be approved for use under special circumstances.

A site-specific Fall Protection and Prevention Plan (FP&P) shall be developed to address specific fall protection hazards during each phase of construction. This plan will be written by a qualified person, kept onsite and revised every six (6) months to reflect any changes within the project.

Additional information on fall prevention and protection is contained in Appendix B-5.

PERSONAL PROTECTIVE EQUIPMENT

The purpose of this section is to establish guidelines for the use of Personal Protective Equipment (PPE). Although PPE can prevent an employee from injury or illness, engineering controls and work practices should always be considered first before relying on PPE. Protective equipment shall be identified, used and maintained in sanitary and reliable condition. Where employees provide their own PPE, the employer shall be responsible to assure its adequacy.

Minimum personal protective equipment requirements at the Quantum Loophole – 1 MGD Sewage Pumping Station Project include:

- ☐ ANSI approved safety toed leather work boots are required.
- ☐ Safety helmets with a fastened, integrated four-point chinstrap are required. Acceptable helmets shall meeting ANSI z89.1 Type 1 or Type II standards and EN12492 performance standards 4.2.1.2 (Front Energy absorption) 4.2.1.3 (Side Energy absorption), 4.2.1.4 (Rear Energy absorption), 4.2.3 (retention system strength), and 4.2.4 (retention system effectiveness). Subcontractor shall determine whether the hazards associated with their work

warrant having helmets with an electrical rating

- ☐ ANSI approved safety glasses with permanent side shields.
- ☐ A shirt with sleeves that cover the shoulders, and long work pants.
- ☐ Respirator (as needed for location and type of work);
- ☐ Clean-Shaven daily (is using a respirator); Hearing protection (as required)
- ☐ Appropriate task-related gloves for all activities. Minimum of at least ANSI cut resistance level 3.
- ☐ ANSI approved Class II reflective vests when working on site.
- ☐ Chaps and face shield are required when using a chainsaw
- ☐ Minimum A3 cut resistant gloves.

Based on the task being conducted, the SSHP may adjust personal protective equipment requirements. Individual PPE requirements shall be identified by the Subcontractor prior to start of work and will be outlined in the JHA consistent with the Clark Construction Group, LLC Procedure - Job Hazard Analysis. Each Subcontractor shall provide the appropriate PPE training to each of their employees, lower tier Subcontractor employees and vendors. This training shall be documented by date and individual signatures and kept onsite for review upon request. In the event that Clark Construction or the Subcontractor has reason to believe that an employee who has been trained does not have the understanding and skill required of the training, the employer shall retrain the employee. PPE is covered in safety orientation and documentation is retained by the SSHP. PPE requirements shall be enforced by the Project Director, Superintendent, SSHP, and individual Foreman.

EYE PROTECTION

As standard eye protection, ANSI approved Z87, non-prescription, standard industrial safety glasses with side shields are considered as minimum protection.

Prescription eyewear with side shields shall comply with ANSI standards. If prescription eyewear does not meet the ANSI standards, safety goggles of over-glasses shall be worn over the eyewear.

ANSI approved eye protection is required in all designated construction or facility areas, and maintenance/equipment yards.

Eye protection may be required in work atmospheres other than construction and facility areas as hazards dictate (to be determined by the SSHP).

Contact lenses are not recommended for use at the worksite due to the possibility of particles and chemicals getting behind the contact lens, the lens being broken into small particles in the eye or welding spatter fusing the lens to the eye. These can be very seriousinjuries.

CHEMICAL GOOGLES

Approved chemical mono-goggles shall be worn to ensure eye protection from the hazards associated with the handling or dispensing liquid chemicals.

FACE SHIELDS
An approved full-face shield shall be worn to provide face protection to the employee from flying particles, splashes, or mists. This includes, but is not limited to, activities such as grinding, chipping, jack hammering, and use of power saws. However, a face shield only provides protection to the face from direct impact objects, and does not provide acceptable eye protection. Eye protection must be worn in conjunction with a face shield.

BURNING GOOGLES/SHIELDS
ANSI approved burning goggles/shields with filtering lenses of number 3 or greater shall be worn to provide employee protection from optical radiation. Burning goggles/shields shall be worn whenever a torch is used for cutting or burning.

WELDING HOOD
Welding hoods with a filtered lens of number ten (10) shade or darker shall be used to provide protection from the optical radiation produced during electric arc welding. Welding hoods shall meet ANSI standards. Safety glasses must be worn in conjunction with a welding hood.

HEAD PROTECTION

Safety helmets with a fastened, integrated four-point chinstrap are required. Acceptable helmets shall meeting ANSI z89.1 Type 1 or Type II standards and EN12492 performance standards 4.2.1.2 (Front Energy absorption) 4.2.1.3 (Side Energy absorption), 4.2.1.4 (Rear Energy absorption), 4.2.3 (retention system strength), and 4.2.4 (retention system effectiveness). Subcontractor shall determine whether the hazards associated with their work warrant having helmets with an electrical rating

Metal hard hats, cowboy type, or bump caps are not considered approved head protection and shall not be used. Traditional style hardhats (lacking an integrated chinstrap) are prohibited from use on this site.

ALL employees, at all times while on the project site, shall wear approved safety helmets with their names and company name affixed to the front of the helmet.

- ☐ Safety Helmets shall conform to the approved specifications of ANSI z89.1 Type 1 or Type II standards and EN12492 performance standards 4.2.1.2, 4.2.1.3, 4.2.1.4, 4.2.3, and 4.2.4
- ☐ Clark Construction Group, LLC does not allow of the use of cowboy style hardhats. Helmets must be worn in the forward position only.
- ☐ Chin Straps must be worn on all Safety Helmets.

HEARING PROTECTION

Employees shall not be exposed to noise in excess of the Occupational Exposure Limits established by OSHA. Hearing protection shall be worn when exposures exceed 85 dba and/or working with heavy equipment. The two types of recognized hearing protection available for use in reducing noise exposure are earplugs and earmuffs.

In most instances, universal-fit earplugs are acceptable hearing protection. Cotton plugs are not acceptable and shall not be used.

When using earmuffs for hearing protection, special care shall be given to ensure that the muffs are cleaned regularly and disinfected before being issued to another employee.

HAND PROTECTION

Task-appropriate work gloves shall be worn by employees for protection against splinters, sharp edges, jagged surfaces, wire rope, glass, metal splinters, concrete burns or any other exposures that could cause injury to the hands. Minimum of ANSI cut resistance Level 3 shall be worn by all employees for general use. When using sharp cutting tools such as razor knives the protective posture must be increased according to the ANSI hand protection standard based on the tool being used.

Special purpose work gloves shall be required when employees are exposed to greater hazards. Special purpose gloves include:

- Electric "hot" gloves
- Cut resistant gloves (sharp metal, glass)
- Chemical resistant (solvents) or heat resistant gloves (welding, torch cutting)
- Standard latex/rubber gloves (grout, concrete)

FOOT PROTECTION

Work boots with leather uppers and slip resistant soles are recommended. Safety toes footwear is mandatory.

Sneakers (even if ANSI approved), sandals, tennis shoes, high heels, leather soled street or dress shoes, and thongs shall not be considered approved industrial or construction footwear.

Additional information on personal protective equipment is contained in Appendix B-16.

Metatarsals are required on boots while jackhammering for demo work operations are occurring

RESPIRATORY PROTECTION (GENERAL)

Each Subcontractor who is performing work that will require employees to use respiratory protection must submit a Respiratory Protection Program. The completed program shall meet or exceed the Clark Construction Group, LLC Procedure - Respiratory Protection. Once submitted, the plan must be approved by the SSHP prior to start of work.

Selection of respirators will be made pursuant to the Clark Construction Group, LLC respiratory Protection Program. Any variance from this program will require the approval of the Corporate Vice President of Safety, Greg Covelas. Only properly cleaned and maintained NIOSH-approved respirators shall be used on site. Air

purifying cartridges shall be replaced at the beginning of each shift or when load-up or breakthrough occurs. Where respirators are designated for protection against particulate contaminants, the employee shall be permitted to change canisters or cartridges whenever an increase in breathing resistance (load-up) is detected. Respiratory devices will be cleaned, sanitized, and inspected at the completion of each shift's activities.

No employee shall be assigned to tasks requiring the use of respirators if, based upon the most recent examination, a physician determined that the employee will be unable to function normally wearing a respirator or that the safety or health of the employee or other employees will be impaired by use of a respirator. This shall be so stated on the medical certificate.

Only employees who have had pre-issue training, qualitative fit tests, annual re-training, and fit tests thereafter shall be allowed to work in atmospheres where respirators are required. If an employee has demonstrated difficulty in breathing during the fitting test or during use, he or she shall have a supplemental physical examination to determine the cause of the difficulty.

Excessive facial hair (beards and mustaches) inhibits proper face fit and effectiveness of respirators. All personnel wearing respirators will be required to be clean-shaven prior to each day's shift.

Regular eyeglasses cannot be worn with full-face respirators because they break the face piece seal. Special purpose inserts must be used.

Additional information on respiratory protection is contained in Appendix C-19.

FIRE PREVENTION

Fire prevention measures shall be implemented in accordance with the Clark Construction Group, LLC Procedure - Fire Prevention and Protection.

The SSHP will contact local fire department officials as soon as practical after the beginning of the project to coordinate a familiarization meeting. This meeting will address access to the project, location of dry standpipes, and other related concerns.

Organic solvents and fuels with low fire hazard and toxic properties shall be used.

Users of flammable liquids shall be trained in safe practices that shall include the hazardous characteristics of the specific flammable liquids they are using. Safety Data Sheets (SDS) will assist with the specific training of the hazardous characteristics.

The "No Smoking or Open Flames" posting will be strictly enforced where flammable liquids are being transported, used, or stored. The use of flammable liquids must be constantly monitored during welding/cutting operations to ensure there are no flammable or combustible hazards in the area. Flammable liquids must be secured in an approved container overnight. **Smoking is prohibited on the project site.**

Work efforts (e.g., painting, solvent cleaning of parts, etc.) and work areas where the potential exists for vapor accumulation shall incorporate fire prevention provisions including engineering controls and/or work practices. These controls are intended to prevent the concentration of any flammable or combustible mists or vapors.

All flammable liquid containers shall be kept away from ignition sources. Even empty containers generally contain flammable vapor-air mixtures.

Flammable and combustible liquids shall be stored at least ten (10) feet away from stairways, elevators, and exits.

Flammable liquids shall be stored in facilities that have been approved by Underwriters Laboratories (UL), and/or Factory Mutual (FM), or which have been constructed to meet those requirements and have been approved for flammable liquid storage by the SSHP.

No plastic storage containers for flammable liquids.

Portable fire extinguishers shall be located within seventy-five (75) feet of travel from all locations where fuel transfer is being performed.

Fire extinguisher use training will be conducted annually.

Oil painting materials (paint, brushes, empty paint cans, etc.), and all flammable liquids shall be removed from the facility at the end of the work shift. All painting materials and flammable liquids shall be stored outside in a suitable metal locker or box and will require re-submittal with non-hazardous materials.

Accumulation of trays, papers, shavings, sawdust, boxes and other packing materials shall be removed from the facility at the close of each workday and such material disposed of in the proper containers located away from the facility.

The storage of combustible supplies shall be a safe distance from structures.

Area outside the facility undergoing work shall be cleaned of trash, paper, or other discarded combustibles at the close of each workday.

All portable electric devices (saw, sanders, compressors, extension cord, lights, etc.) shall be disconnected at the close of each workday. When possible, the main electric switch in the facility shall be deactivated.

When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE RESPONSIBLE FIRE DIVISION IMMEDIATELY.

Obtain services from a National Fire Protection Agency (NFPA) Certified Chemist for “HOT WORK” within or around flammable materials (such as fuel systems, welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, vaults, etc.) that have the potential for flammable or explosive atmospheres.

All fuel containers such as gas or diesel must be stored in appropriate fuel cabinets, not in offices or tool storage containers.

All fire extinguishers must be tagged and inspected on a monthly basis. Any extinguishers not in good

working order must be removed and replaced immediately.

Additional information on fire prevention is contained in Appendix B-6.

FIRE WATCH

A fire watch shall be maintained during and for at least sixty (60) minutes after completion of welding/cutting operations so that possible smoldering fire can be detected and extinguished. Where it is possible for hot metal/sparks to fall to lower levels, a fire watch must be assigned to each level.

Should the hot work take place in an occupied building, historical building or other area requiring special attention the fire watch shall be maintained for three (3) hours after completion of welding/cutting operations.

Firewatchers shall have fire-extinguishing equipment readily available and shall be trained in its use. They shall be familiar with facilities and procedures in the event of a fire. They shall watch for fires in all exposed areas and attempt to extinguish them only when the situation is obviously within the capacity of the equipment available.

The Fire Department shall be immediately notified of all fires.

SMALL FIRES

A small fire is defined as a fire that can be extinguished with a single 10-pound dry chemical fire extinguisher. In the event of a small fire, site personnel will take the following actions:

- ☐ Evacuate all unnecessary personnel from the area, if possible to an upwind location.
- ☐ Attempt to extinguish fire using portable fire extinguishers or by smothering with soil
- ☐ Fire Department shall be notified of all fires, even if extinguished with no damage.

LARGE FIRES

In the event of a large fire or a small fire that cannot be extinguished, the following actions will be taken:

- Evacuate all unnecessary personnel from the site, preferably to an upwind location.
- Notify the fire department and other emergency response services (police, ambulance, hospital and poison control center) as needed.

Additional information on fire watch is contained in Appendix B-6.

WELDING AND FLAME CUTTING

Employees who will perform hot work; any spark or flame producing operation or tool, shall attend the Hot Work Orientation. Records of hot work orientations will be maintained by the SSHP.

No welding or flame cutting will be done without first obtaining authorization for such activities. Authorization must be obtained from the SSHP for Quantum Loophole – 1MGD Sewage Pumping Station Project to any welding, cutting or burning activities.

Prior to performing "Hot Work" or operating other flame producing devices, a written permit shall be obtained from the SSHP. ***The permit will not be issued until all of the criteria are met.*** Any "Hot Work" to be performed as part of the project will require a Hot Work Permit. Use of the Structure Tone Hot Work Permit is required on this project site and an inspection walk will be required prior to issuance of the Hot Work Permit.

The subcontractor will supply at least one (1) twenty-pound 4A:20BC rated fire extinguisher for normal hot work.

All oxygen and acetylene tanks should be kept a minimum of 25' apart while not in use. Containers should be stored in appropriate storage cages. Fire extinguishers should be kept near storage areas within 50'.

Additional information on hot work procedures and welding/torch operations is contained in Appendix B-6.

TRANSFER AND USE OF FLAMMABLE LIQUIDS

Flammable liquids may be transferred into an approved container after the original manufacturer's container is opened.

Containers are to be kept closed except when transfers are being made.

When transferring flammable liquids between conductive containers, the containers must be effectively bonded and grounded.

A maximum of a one-day supply of flammable liquids may be kept in a work area at one time. The one-day supply is to be returned to the designated storage area at the end of each work shift.

Secondary containers of flammable and combustible liquids shall be labeled with the name and hazards of the contents in accordance with OSHA regulations.

No welding or cutting operations which may provide an open flame or hot surface will be permitted until the SSHP has been notified and a permit obtained to conduct the specific operation outlined in thepermit.

When possible, objects to be welded, cut, or heated shall be moved to a designated safe location. If this is not possible, all movable combustibles in the workspace shall be taken to a safe place.

If the object to be welded, cut or heated cannot be moved and all combustibles cannot be removed (e.g., equipment, walls, floors, etc.), positive means shall be taken to confine the heat, sparks, and slag to protect

the immovable combustibles as well as opposite sides.

No welding, cutting, or heating shall be done where the application of flammable paint, the presence of other flammable compounds, or heavy dust concentration create a possible hazard.

Wherever there are openings or cracks in the flooring that cannot be closed, precautions shall be taken so that no sparks will drop through the floor. The same precautions shall be taken in the presence of cracks or holes in walls, open doorways, and open or broken windows.

Approved fire extinguishing equipment in good working order shall be present in the immediate work area.

HAND AND PORTABLE POWER EQUIPMENT

Hand and portable power equipment will be operated in accordance with manufacturer specifications. Markings, guards, grounding devices, and other safety equipment must be fully functional.

When working from heights tools must be properly tethered.

Wrenches with cracked work jaws, screw drivers with broken points or broken handles, hammers with loose heads, dull saws, extension cords or electrical tools with broken plugs, improper or removed grounding systems, or split insulation are examples of tools in poor condition. Tools that have deteriorated to these conditions must be taken out of service.

Screwdrivers applied to objects held in the hand, knives pulled toward the body, cutting the ground pin off of electrical equipment, which eliminates the shock safeguard, are all activities that are prohibited.

Many incidents have been caused by tools falling from overhead and by knives, chisels, and other sharp tools carried in pockets or left in toolboxes with cutting edges exposed.

Powder-activated shot charges are classified as a hazardous material and must be listed on the hazardous material identification Form. Powder-activated shot charges and tools must be secured in a locked container when not in use. Never use used shot strips with misfired shots, place strips in a bucket of water and dispose of properly.

Additional information on hand tools and equipment is contained in Appendix B-17.

ELECTRICAL

Work on or near energized electrical parts is prohibited unless authorized by Clark Construction. All electrical work, installation, and wire capacities shall be in accordance with the pertinent provisions of the National Electrical Code.

It is mandatory that Ground Fault Circuit Interrupters (GFCI's) be used on all 120-V, single-phase, 15/20 amp receptacle outlets used for temporary power. Each GFCI outlet shall be marked and inspected daily before use, and monthly at a minimum. All cords will be inspected daily before use, and periodically depending on use and environment.

All switches shall be enclosed and grounded. Panel boards shall have provisions for closing and locking the main switch and fuse box compartments. All switches will be labeled to show the device or area that the switch serves.

Cables passing through work areas shall be covered or elevated to protect them from damage and to eliminate hazards to employees.

Extension cords used with portable electric tools and appliances shall be three-wire and grounded. Plugs shall conform to the type and configuration required by OSHA Construction Standards.
Suitable means shall be provided for identifying all electrical equipment and circuits, especially when two or more voltages are used on the same job. All circuits shall be marked for the voltage and the area of service they provide.

Flexible electrical cord shall be continuous length without splices. The Clark Construction Group, LLC Procedure - Portable Electrical Equipment shall be implemented.

All extension cords should follow Clarks minimum rating of a 12/3 gauge or higher.

Additional information on electrical equipment and operations is contained in Appendix B-9.

LOCK OUT/TAG OUT/BLOCK OUT (HAZARDOUS ENERGY CONTROL)

All hazardous energy control activities will be conducted in accordance with the Clark Construction Group, LLC Procedure - Lock and Tag Program.

Dwayne Wright (Clark Superintendent) will be the designated Energy Marshall for this project. Dwayne will be familiar with all "LOTO" process as part of our scope of work and will coordinate between the Owner, Structure Tone, Clark and all lower tier subcontractors.

Locks and "DANGER" tags shall be used by authorized personnel when the release of energy can cause injury to personnel, create property damage, or release a harmful substance to the environment. If locks cannot be used, an alternate method of isolating the system must be implemented. Tags will always be used.

Affected employees and contractors, if applicable, shall be notified of the placement of locks/tags prior to locking out the equipment. Only one lock per key.

Removal or cutting of locks and tags without approval is subject to immediate termination.
Additional information on LOTO is contained in Appendix B-15.

LADDERS

A "Ladders Last" approach shall be used during the pre-planning period for any scope of work. Ladders should only be used once the competent person has determined that no other method of access or egress to the work is feasibly available.

Ladders used on the project site must be used and maintained in accordance with the Clark Construction Procedure – Ladders - Use Handling and Storage and manufacturers' specifications. Ladders must have tight

joints, and securely attached hardware and fittings. Ladders in need of repair will be removed from the job site and repaired or destroyed.

All portable ladders must be clearly marked with the user's company name. Only Type 1-A or a Lean Safe ladders are allowable for use on any Clark project.

All employees who will use ladders must be trained in the nature of fall hazards associated with ladders; proper selection, inspection, maintenance, and use; removal from service.

Extension ladders must be secured to a suitable anchorage point to prevent tipping or rolling. If an employee must mount the ladder in order to secure it, a second employee must be utilized to hold the ladder until it is secured. If an employee is working above the fifth rung of an extension ladder, the ladder must either be secured in place or held by a second employee.

Employees must maintain three points of contact while ascending/descending any type of ladder. While performing work from a ladder, an employee must keep him or herself centered between the side rails of the ladder and not over reach, changing the center of balance.

Fall protection is required when an employee is working at or above 20 feet while working from a ladder.

Job-built ladders shall meet the requirements outlined in ANSI 14.4; Job-built Ladders.

Metal ladders are not permitted when working in or around electrical equipment at Quantum Loophole – 1 MGD Sewage Pumping Station Project.

Additional information on ladders is contained in Appendix B-14.

SCAFFOLD USE, ASSEMBLY, AND DISMANTLING

All employees who will erect, alter, dismantle, and use scaffolding shall be trained in the nature of fall hazards associated with scaffolds; proper selection, erection, inspection, maintenance and use (dependent on the job task); engineering requirements.

A competent person shall be identified and be present to guide and observe any erection, alteration, or dismantling of scaffolding.

All scaffold activities will be conducted in accordance with the Clark Construction Group, LLC Procedure Scaffold Use, Assembly and Dismantling. Prior to assembly activities, a competent person or erection supervisor must be identified.

Scaffold or work platform erectors shall utilize fall protection during the erection and Dismantling of scaffolding or work platforms that are more than six (6) feet in height. The specific fall protection requirements can be found in the Fall Protection and Prevention Plan and delineated in the JHA for scaffold activities.

Scaffold platforms greater than twenty (20) feet in height shall be accessed by use of a scaffold stair system.

For scaffolds less than twenty (20) feet in height, when ladders are used, an adequate gate is required.

Counter-weighted suspended scaffold systems shall not be used with any system requiring the counterweights to be suspended or hung from the scaffold system. Counterweighted systems must be placed on the ground or deck. Counterweighted scaffold systems must be approved for the intended set up and have manufacturer data sheets on available on site or have drawings stamped by a registered professional engineer and be set up accordingly.

All employees who will use suspended scaffold systems must have proper training for the type of scaffold to be used. A competent person trained in suspended scaffolds must inspect daily and be present for all suspended scaffold operations.

Additional information on scaffolds is contained in Appendix B-20.

FALLING OBJECT PROTECTION

Employees exposed to falling objects will be protected by one of the following methods:

- Toe boards, screens or guardrail systems shall be erected to prevent objects from falling from higher levels, and potential falling objects on higher levels shall be kept far enough from the edge so that they would not go over the edge if they were incidentally displaced; or
- The area(s) into which objects could fall shall be barricaded and employees shall be prohibited from entering barricaded areas; or
- A canopy structure shall be erected.
- Tethering of tools when working from heights.

EXCAVATION AND TRENCHING

All excavation and trenching activities will be conducted in accordance with the Clark Construction Group, LLC Policy – Trenching and Excavation. Prior to initiating excavation and trenching activities, a competent person must be designated. The competent person shall be present during all excavation activities.

Sloping technique will be used during initial excavation and soil removal. All slopes shall be cut back according to Type C soil condition requirements.

All spoils piles must be kept a minimum of 2’ away from edge of excavation.

Trench and shoring systems shall be identified in the JHA/AHA for each activity or phase of work. Manufacturer tabulated data and specifications or registered engineer tabulated data for all shoring or benching systems shall be readily available on-site for review.

All shoring systems to be kept a minimum of 2’ off bottom of excavation.

The means of egress must be located so as not to require workers to travel more than 25’ laterally within the trench.

Job-made sheeting and shoring systems shall have the registered professional engineer stamped specification and tabulated data.

All existing utility or other underground facilities shall be identified by a "No Dig Method" and located before excavation commences. The utility company or owner shall be contacted within customary or established response times to identify underground facilities.

Surface encumbrances (trees, boulders, and poles) that are located so as to create a hazard to employees shall be removed or supported, as necessary, to safeguard employees.

During initial excavation, truck ramps shall have built-up side berms. Additionally, if employees will use the ramps to access the work area, a segregated walkway shall be fenced off along one side of the ramp to provide safe access. High visibility fencing or rope with flagging shall be used to mark the boundaries of the walkway.

Excavation Support plans including section and plan views must be submitted to Clark Construction for approval prior to beginning excavations greater than four (4) feet in depth.

Additional information on excavation and trenching is contained in Appendix A-23.

CONFINED SPACES AND PERMIT REQUIRED SPACES

All confined space entry activities will be conducted in accordance with OSHA standard 29CFR1926.1200, and the Clark Construction Group, LLC Procedure - Confined Space Entry. Prior to initiating confined space entry activities, a competent person must be designated, and all entry team members identified; Entry Supervisor, Attendant, Entrant.

The contractor who will require employees to enter and work in a confined space must complete the Clark Confined Space Survey form and submit it to the SSHP. The SSHP will then evaluate the space and coordinate with the appropriate party (Owner, subcontractor) to determine if the space is permit required, and if declassification is possible.

Proof of training for all employees involved in confined space/permit required confined space entry must be submitted for review and approval prior to the activity taking place.

Three (3) calendar days prior to entering any space, subcontractor will submit a request for a confined space permit to the SSHP. A confined space entry plan will accompany each request (see Subcontractor Safe Start Documents). Permit required confined space entries will, at a minimum, comply with the Department of Labor 29 CFR § 1926.1200. Non-permit required confined space entries will, at a minimum, require a confined space entry plan and AHA. Rescue procedures shall be included as part of all confined space entry plans. 911 shall not be the sole means of rescue prescribed for any confined space activity.

Additional information on confined spaces is located in Appendix C-7

HEAVY AND LIGHT EQUIPMENT

Heavy and light equipment shall be operated and maintained in accordance with manufacturer specifications.

Daily inspections will be performed by a competent person prior to equipment operation.

Proof of training, qualification, and required licenses shall be submitted to the SSHP to be kept on file.

Additional information on equipment operations is contained in Appendix B-4.

USE OF CRANES/DRILL RIGS

All cranes that will be operated on site shall have a 3rd party crane check performed as required by Clark Construction Group LLC crane policy. All deficiencies noted during the 3rd party crane check must be corrected prior to the crane being operated on site.

Prior to crane operations the crane packet required by Clark Construction Group LLC Policy Section B-02 Crane Operations, shall be completed and submitted to the Clark Water SSHP for review at least one week prior to any crane arriving on site.

Additionally, all crane/drill rig activities will be conducted in accordance with the Clark Construction Group, LLC Policy B-02 Crane Operations.

All cranes/drill rigs shall be inspected prior to use. If the crane was out of service, it must receive either certification or a complete annual inspection, whichever is applicable, prior to placement in service. The crane/drill rig operator shall conduct a daily inspection prior to start of work each shift.

All cranes with telescoping booms shall be equipped with a device to indicate clearly to the operator at all times the boom extended length, or an accurate determination of the load radius to be used during the lift shall be made prior to the lift.

Tower crane pedestals shall be designed by a registered professional engineer familiar with structural engineering. Pedestals must be built according to engineered specifications and the concrete cured to a specified strength prior to beginning erection of the tower crane.

Mobile crane operators must be qualified on the specific crane (type and capacity) that they are assigned to operate through an OSHA and/or industry recognized testing and qualification procedure. The out riggers on mobile cranes shall be fully extended and deployed to lift or support load. Base plates/supports shall be level.

Each load shall be rigged or attached independently to the hook/master link. Multiple rigging of materials (Christmas-Tree Lifting) is prohibited.

All cranes must be equipped with an operational anti two block device, **except during Driving Pile operations.**

Back-up alarms shall be operational on all cranes and tested daily.

Crane operator should fill out a daily inspection form to be turned into supervisor for documentation.

At least one hand-held or crane mounted wind speed indicator shall be on site during crane operations.

Tag lines shall be used on all lifts unless their use creates an unsafe condition.

All lifts shall be made in accordance with the manufacturer's lifting recommendations.

The use of a crane to hoist employees on a personnel platform is prohibited, except when conventional means of reaching the work location presents a greater hazard or is not possible because of structural design or worksite conditions. Supervision shall make a case-by-case evaluation to determine if an alternate method can be used. A justification for the use of crane-suspended personnel platforms shall be written into the JHA.

All cranes must follow Clarks Adverse weather condition policies, such as for wind and lighting.

The following documentation/reports are to be forwarded to the Owner's Representative:

- ☐ Copy of crane assembly and inspection reports prior to the crane being used.
  Copy of annual crane inspection report.
- ☐ Copy of crane operators certifications
- ☐ Copy of riggers and signal persons certifications

Additional information on crane operations and rigging is contained in Appendix B-2.

CRITICAL LIFT PROCEDURE

When a lift will exceed 75% of the cranes lifting capacity, lifts that will require two cranes (tandem lift), lifting of personnel or any lift involving non-routine rigging or operations a Critical Lift Plan will be prepared and signed in accordance the Clark Construction Group, LLC Critical Lift Procedure.

The Critical Lift Plan (CLP) must be reviewed and signed by all persons involved in the lift, and must include the following:

- The qualifications of the Critical Lift Supervisor;
- A description of the ground conditions, outriggers, and/or other requirements to achieve a level foundation for the lift;
- A list of environmental conditions that will stop the lift; and,
- A description of the coordination communication requirements.

The CLP must be completed before every critical or tandem lift procedure is performed.

All cranes must be equipped with Load Indicating Devices, anti-two blocks, load, and boom angle moment indicators.

Additional information on critical lift procedures is located in Appendix B-2.

HAZARDOUS MATERIAL HANDLING

Hazardous material may be encountered on this project. Additionally this project may require recycling of certain materials. The Hazardous Material/Recycling Coordinator for this project will be the Project Superintendent. He will be responsible for implementing the Recycling and Hazardous Material/Waste Handling/Disposal Procedure if required at the Quantum Loophole – 1 MGD Pumping Station Project.

In the event that contaminated soils are encountered during any phase of this project, the Hazardous Waste/Recycling Coordinator will have all work stopped in the area of the contaminated soils and will notify the owner. Soils tests will then be conducted by the owner to determine the level of contamination. Determinations will be made of how to dispose of the contaminated soils based on the soils test that have been conducted.

All subcontractors who generate hazardous waste materials during the process of building this project will share costs associated with the maintenance of this program.

Additional information on hazardous materials is located in Appendix C-12.

SPILLS

If a spill of hazardous material occurs, the following actions will be taken:

- Notify the Hazardous Material Coordinator immediately.
- Notify the Owner's Representative immediately.
- Take immediate measures to control and contain the spill within site boundaries if safe to do so.
- Keep unnecessary personnel away, isolate the hazardous area and deny entry.
- Stay upwind and keep out of low-lying areas.
- Allow no flares, smoking, or flames in hazard area.
- For liquids, keep combustibles away from the spilled materials.

SMALL DRY SPILLS

Proceed only under the direction and approval of the Hazardous Material Coordinator. Shovel contaminated materials into dry containers and cover. Use care not to make material airborne. Label the containers as to contents and remove to a secure area.

SMALL LIQUID SPILLS

Proceed only under the direction of the Hazardous Material Coordinator. Absorb the liquid with sand, clean fill, or other noncombustible absorbent material. Place contaminated material in a container, cover and label it, and remove it to a secure area.

DRINKING WATER

An adequate supply of potable water shall be provided in all places of employment.

- ☐ Cool drinking water will be provided during hot weather
- ☐ Drinking water will be dispensed by means that prevent contamination between the consumer and the source.
- ☐ Cups will be provided when drinking from portable coolers/containers. Unused disposable cups shall be kept in sanitary containers and waste receptacle shall be provided for used cups at each water container
- ☐ All drinking water should be stored in a proper location away from direct sunlight and extreme hot or cold conditions.
- ☐ Containers used to distribute drinking water shall be clearly marked "DRINKING WATER" and should not be used for other purposes. Water Containers shall be cleaned each day and each time refilled. The lid shall be taped shut and marked with the days date.

Housekeeping and Sanitation

Work areas shall be cleaned regularly of trash and debris to prevent slip/trip hazards and fire dangers.

Equipment and materials shall be stored in designated areas. Trash cans shall be placed in work areas and break areas in quantity enough to contain daily build-up. Food rubbish shall be removed from work areas regularly. Access routes and stairways shall be kept free of stored materials and debris piles.

Toilet facilities shall be made available based on the personnel on site. Toilet facilities shall be cleaned at regular intervals, and more often as needed. Hand washing and sanitizing stations shall be maintained in the toilet facility areas.

Additional information on housekeeping and sanitation is contained in Appendix B-12.

MAINTENANCE OF RECORDS

The SSHP will keep records of the actions taken to implement and maintain this APP.

Records of scheduled and unscheduled periodic inspections as well as other records including methods used to identify and evaluate jobsite conditions and work practices shall also be retained.

Records relating to the APP shall include, at a minimum, person(s) conducting the inspection or evaluation; the unsafe conditions and work practices that have been identified; and actions taken to correct the identified condition or work practice.

Records and documentation of safety and health training shall include at a minimum, the name of employee and/or employee number, date of training, training topic(s), and the name of the instructor.

ENVIRONMENTAL

Per Section 4.2.2, 4.2.3 and 4.2.4 of the Standard Operating Procedures set forth by Geo-Technical Associates Inc. per the Subject Property: Former Alcoa East alco Works Property, Frederick County, Maryland:

GTA Project No. 31201536

Date: October 28, 2022

All Infrastructure activities, Mass Grading and Construction, and Ground Water Management performed by Clark Construction, LLC will take place outside the SMA and EC. Please find Appendix 1 that contains the SOPs developed by Geo – Technical and a site map overlay to show SMA, EC and specific locations of Clark Water construction activities.

HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (HAZWOPER)

In areas where hazardous soils or conditions exist Clark will follow and institute a HAZWOPER plan. Clark will coordinate with trade partners to manage controls to be put place to protect employees and other subcontractors from hazardous materials on the jobsite. These controls will be outlined in an Activity Hazard Analysis (AHA) some of these controls include the use of continuous atmospheric monitoring through the use a calibrated 4-gas monitor testing for Oxygen concentration, Carbon Monoxide, Flammable concentration, and Hydrogen Sulfide. In addition, a photoionization detector (PID) will be used. Proper PPE will be used to include Tyvek suits, nitrile or rubber gloves, safety glasses and googles, and rubber boots. Personal hygiene stations will be set up within the Clark Limits of Disturbance to include handwash stations and changing rooms.

Based on industrial hygiene monitoring no adverse conditions are present where our employees and subcontractors will need to be enrolled in a medical surveillance program. Clark will conduct routine industrial hygiene monitoring during work activities to validate that workers will not be exposed to environmental concerns.

In addition, Clark will ensure that all employees or subcontractors that have the potential to come in to contact with Hazardous Waste will be decontaminated. All decontaminated materials will be disposed in accordance with both Local and Federal requirements.

Clark will ensure all individuals that could encounter hazardous waste be trained with a minimum of 24 hours of training and 8 hours of classroom experience. Annual refresher will be conducted as needed for applicable individuals. All employees and subcontractors entering the jobsite will be briefed on specific environmental concerns and methods to protect themselves during jobsite specific orientation.
This accident prevention plan contains provisions to address additional sections of a comprehensive HAZWOPER program as outlined in 1910.120 (B) (4) (ii).

SITE CONTROL

ACCESS

Access to the project site shall be restricted to authorized personnel. All personnel shall enter and exit through the pre-planned construction project access gates and will wear a hard hat sticker that denotes the worker has completed mandatory safety orientation training.

SITE COMMUNICATION

If the size or topography of the site is such that operations will be conducted out of continuous visual contact, a buddy system, or means of immediate voice communication (two-way radio) shall be instituted.

WARNING SIGNAGE

Appropriate caution/warning/danger signs will be posted to warn of potential hazards prior to entering the work areas and throughout the site as needed. Also, notices regarding the use of personal protective equipment (hardhats, safety glasses, etc.) shall be placed at the access points to the sites. Additional notices of specific hazardous areas shall be posted where needed.

VISITORS

This project is located at a secured location. As a result, **NO VISITORS** will be granted access unless escorted by authorized personnel. All Visitors are required to receive visitor orientation and sign visitor indemnification form.

SEVERE WEATHER

In the event of severe weather, as determined by warning and/or observation of earthquake, lightning, high winds, or heavy rain, site work shall be suspended until the event has passed. If the area of the project is under a severe weather warning issued by the National Weather Service, the SSHP shall maintain continuous observation of approaching weather.

Following a severe geological event or weather episode (including, earthquake wind, brush fires, and heavy rain), site work shall not resume until the site area has been inspected and a qualified person has determined that the site is secure.

No Cranes or any other heavy equipment should operate during sever weather conditions.

Additional information on weather response actions is contained in Appendix C-20, emergency action plan.

ORIENTATION OUTLINE

1. Emergency procedures.
2. Project work rules.
3. Incident investigation.
4. First Aid/Incident reporting.
5. Fitness for duty.
6. Lost time injury management policy.
7. Fall protection policy (6 foot).
8. Discipline policy.
9. Actions to be expected for failure to comply with safety requirements.
10. Parking and site security procedures and regulations.
11. Public protection.
12. Scaffold program and standards.
13. Hazard communication.
14. Hazardous chemical inventory list.
15. All MSDS's on site and submitted before product is used.
16. Safety recognition program.
17. Ladder safety.
18. Specific licensing requirements.
19. Subcontractor's safety audits.
20. Our written safety program.
21. Contractual obligation to comply with our safety program.
22. Respiratory protection program or requirements.
23. Fire protection.
24. Confined spaces/permits.
25. Job hazard analysis.
26. Safety meetings and documentation
27. Hazard abatement.
28. Housekeeping.
29. Project specific safety plan.
30. Designated safety representative.
31. Chain of command within the company.
32. Notification of OSHA visits.
33. Personal protective equipment policy.
34. Personal protective equipment use (including demonstration as
35. necessary).
36. Owner imposed safety requirements.
37. First aid provider identification.
38. First aid kit location.
39. Footwear/clothing/jewelry/hair policy.
40. Trenches and excavations.
41. Competent person identification.
42. Barricade/barricade tape (Yellow tape is cautionary; Red tape is mandatory).

43. Lock Out/Tag Out.
44. Hot work permits.
45. Review of the Safety and Health Handbook.
46. Rigging requirements.
47. Further safety education through Clark Net.
48. Daily SPA requirements.
49. 3rd party crane inspection

CODE OF SAFE PRACTICES

- ☐ All work shall be performed in compliance with OSHA Construction Industry Standards, the Clark Construction Group, LLC safety requirements, and other applicable federal, state, and local Safety and Health laws.
- ☐ Only equipment that is in serviceable condition, properly maintained, and equipped with all necessary safety guards and operating accessories shall be used on the Project.
- ☐ Project workers shall be fit for work, and qualified to perform all assigned tasks.
- ☐ Project workers shall strictly comply with all safety regulations and directions of the Contractor and Client.
- ☐ Workers with long hair must keep their hair tucked under their hard hat.
- ☐ Adequate supplies of all necessary personal protective clothing and equipment shall be available for employees. Protective clothing and equipment shall be approved by, or comply with, the specifications of ANSI, Underwriters Laboratories, or Factory Mutual, as appropriate.
- ☐ If respiratory protection is required, only NIOSH-approved respirators shall be used. Use of respiratory protection shall comply with OSHA. Project workers who may use respiratory protection shall have been trained and medically certified for its use.
- ☐ Project workers shall have been trained as required by the Hazard Communication Standard. All hazardous material containers shall be labeled and meet labeling requirements of the OSHA standard.
- ☐ All necessary steps shall be taken to protect Project workers from exposure to materials in excess of the OSHA Permissible Exposure Limits.
- ☐ Hearing protection devices shall be provided to and used by Project workers as appropriate.
- ☐ Safety glasses with side shields, hard-hats, long pants, sleeved shirts, and work boots are mandatory.
- ☐ Eating, drinking, and use of tobacco products are permitted only in designated areas. Use or possession of alcohol, intoxicating drugs, or firearms is prohibited.
- ☐ Use of smokeless tobacco products is strictly prohibited.
- ☐ Reasonable steps shall be taken to protect third parties from injury related to the work.
- ☐ The work area shall be maintained in an orderly manner. Accumulation of trash or debris is prohibited.

Tools, equipment, and materials used during the work shall be properly stored.

☐ Flammable gases, liquids, fuels, and solvents shall be properly used and stored to prevent fires. GFCIs shall be incorporated into all temporary wiring and flexible cords.

☐ Ladders shall be used, inspected and maintained according to manufacturers' recommendations. Portable ladders constructed of metal are prohibited.

☐ Scaffolding shall be erected and dismantled only under the direction of a competent person. Each scaffold system shall be inspected by a competent person prior to start of work.

☐ No Project worker shall be required or permitted to enter any unsecured excavation greater than five (5) feet deep.

☐ No Project worker shall be permitted or required to enter any confined space, until that space has been isolated, purged, and supplied with a safe atmosphere. A safety standby and emergency rescue capability shall be maintained for entry into a permit required confined space.

☐ Necessary emergency equipment, such as first aid kits, fire extinguishers, and eyewash solution shall be available for use by Project workers.

☐ Where Project workers may be exposed to the unexpected release of hazardous energy, a lock out/tag out program shall be applied.

☐ Horseplay, practical joking, or any other actions that jeopardize safety will not be tolerated. Running is not permitted

☐ Alcoholic beverages and non-medicinal drugs are not permitted at the project site. Employees suspected of being under the influence of alcohol or drugs will be removed from the site.

☐ Transportation and disposal of any contaminated materials shall comply with all applicable local, state, federal regulations. The generator, transporter, and disposer will address these items.

☐ Contaminated materials shall be stored in tightly closed containers in well-ventilated areas. Emergency equipment shall be located in readily accessible locations.

☐ All trenching, shoring, and excavation work must comply with Clark Construction Group, LLC safety requirements.

☐ Appropriate action to provide secure footing shall be taken at all locations where personnel will be working.

☐ Whenever solvents, cleaners, or other chemical substances are used, a properly completed Safety Data

Sheet (SDS) for the chemicals shall be available at the work site.

☐ Whenever flammable or combustible solvents are used, specific procedures for the control of flammable gases and vapors may be necessary.

☐ Tests shall be made by a qualified person to ensure that concentrations of flammable vapors in the work area do not exceed 10% of the lower explosive limit.

☐ As appropriate, equipment on site shall be bonded and grounded, spark proof, and explosion resistant.

☐ An adequate supply of fire extinguishers with a minimum rating of 20 lbs. ABC shall be strategically located throughout the work area so as to limit the travel distance required by any worker to reach the extinguisher to less than 100 linear feet.

☐ Radios (except two-way radios), tape players, or other forms of entertainment devices are prohibited within the authorized construction work zone. This includes storage yards, staging areas and other construction support work zones, which may be adjacent to the construction worksite.

☐ All activities will be performed in such a manner as to minimize or prevent the disbursement or release of any contaminants.

☐ Legible and understandable precautionary labels shall be affixed prominently to containers of contaminated scrap, waste, debris, and clothing.

☐ Transportation and disposal of any contaminated materials shall comply with all applicable local, state, federal regulations. The generator, transporter, and disposer will address these items.

☐ Contaminated materials shall be stored in tightly closed containers in well-ventilated areas. Emergency equipment shall be located in readily accessible locations.

☐ All trenching, shoring, and excavation work must comply with Clark Construction Group, LLC safety requirements.

☐ Appropriate action to provide secure footing shall be taken at all locations where personnel will be working.

Appendix F

Quarry Fill Certificate for Imported Stone

Vulcan
Materials Company
MIDEAST DIVISION

Subject: Clean Stone Cert.

Purchaser: Metro Earthworks

Address: 5601 Manor Woods
Frederick, MD

Project: Quantum Loophole

This Source of Supply Certification is to certify that to the best of my knowledge the #3 aggregate supplied out of our Frederick Quarry is free of any slag/asphalt/concrete and not contaminated with any hazardous substances or petroleum products. The stone is naturally occurring virgin aggregate and has not been reprocessed or previously used. No controlled hazardous substances or oil is used in the extraction, or production.

Date: 10/13/2023

Harry Deatrick
Harry Deatrick
Technical Services
Vulcan Materials Company