SITE STABILIATION WORK PLAN
COMPLETION REPORT

Quantum Frederick (Former Alcoa Eastalco Works)
Frederick County, Maryland

September 18, 2023

Submitted to:
Maryland Department of the Environment
Land Restoration Program
1800 Washington Boulevard, Suite 625
Baltimore, Maryland 21230
Attn: Ms. Anuradha Mohanty

Prepared for:
Quantum Maryland, LLC
One South Street, Suite 2800
Baltimore, Maryland 21202
Attn: Ms. Sylvia Kang

Prepared by:
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GTA Project No: 31201536

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

September 18, 2023

Quantum Maryland, LLC
One South Street, Suite 2800
Baltimore, Maryland 21202

Attn: Ms. Sylvia Kang

Re: Site Stabilization Work Plan Completion Report
Quantum Frederick (Former Alcoa Eastalco Works)
Frederick County, Maryland

Dear Ms. Kang:

On behalf of Quantum Maryland LLC, Geo-Technology Associates, Inc. has prepared the following Site Stabilization Work Plan Completion Report for site stabilization activities at the Quantum Frederick property (Former Alcoa Eastalco Works, "Site"). These activities were performed in accordance with a Maryland Department of the Environment (MDE) approved *Site Stabilization Work Plan* and with oversight from the MDE Land Restoration Program (LRP), the MDE Water and Sciences Administration (WSA), and the Frederick County Government Division of Planning & Permitting (Frederick County).

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 our office at (410) 792-9446.

Sincerely,

GEO-TECHNOLOGY ASSOCIATES, INC.

Kevin Plocek
Associate

cc: Ms. Anuradha Mohanty / MDE LRP,
Ms. Barbara Brown / MDE LRP,
Ms. Kate Ansalvish / MDE WSA,
Mr. Douglas Cochran / Frederick County

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TABLE OF CONTENTS

Appendices

1.0 INTRODUCTION

On behalf of Quantum Maryland LLC, Geo-Technology Associates, Inc. has prepared the following Site Stabilization Work Plan Completion Report for site stabilization activities at the Quantum Frederick property (Former Alcoa Eastalco Works, "Site"). These activities were performed in accordance with a Maryland Department of the Environment (MDE) approved *Site Stabilization Work Plan* and with oversight from the MDE Land Restoration Program (LRP), the MDE Water and Sciences Administration (WSA), and the Frederick County Government Division of Planning & Permitting (Frederick County).

2.0 AGENCY CORRESPONDENCE

2.1 Work Plan Submittal and Approval

On June 30, 2023, GTA submitted a Site Stabilization Work Plan (herein identified as the "work plan") to the MDE LRP and WSA for review and approval. A copy of the work plan is included as *Appendix A*. The proposed work was generally associated with the return of the floodplain areas to their natural state and to stabilize the Site. Specifically, the work plan called for (1) the removal of gravel, filter bags, and straw bales from the portions of the floodplain located outside of the Limits of Disturbance (LOD); (2) relocation of several stockpiles from the floodplain to areas outside of the floodplain and within the LOD; and (3) relocation of materials associated with the excavation of the proposed DA-11 sediment basin. The work plan stated that each of these areas would be stabilized after removal and relocation activities.

2.2 Work Plan Approval

On July 12, 2023, the MDE LRP approved the work plan via electronic mail (email) with the following conditions:

1. All stockpiles must be identified in the field by the number identified in the work plan and only approved soil may be moved. No unauthorized excavations are approved under the work plan.
2. Revisions to previously provided figures to clearly identify the floodplain, Environmental Covenant (EC), and Soil Management Area (SMA) boundaries.
3. Clarification of a stockpile located outside of the LOD but within the floodplain.
4. Soil in a stockpile from the borrow area (identified as Stockpile 1 in the work plan and herein) be treated as unauthorized material.
5. Soil and concrete from the DA-11 excavation (identified as Stockpile 2 in the work plan and herein) is considered impacted until proven otherwise through sampling.
6. Ensure impacted soil is not moving through the site via surface transportation.
7. Soil stored in a natural swale south of DA-11 and outside of the LOD be relocated to Stockpile 2, WSA requirements are met, and site stabilization is complete.
8. Provide clarification and rectify discrepant information regarding Stockpile 16 in GTA's June 30, 2023 *Soil Disposition Memorandum*.

9. Designation of an environmental professional familiar with the EC requirements and the site superintendent information provided in writing prior to the commencement with the remedial work.
10. Implementation of a site-specific HASP during the remedial work activities.
11. WSA requested that the slopes of DA-2 and DA-11 be stabilized.
12. All stockpiles and disturbed areas must be stabilized.
13. A daily report must be prepared and submitted to the MDE.
14. Notification to the MDE in writing of a date and schedule of the proposed remedial work.

In addition, the MDE requested that the work plan activities be summarized in a site stabilization completion report. These conditions were addressed during the work plan implementation and are summarized herein or as attachments to this completion report. A copy of the MDE LRP approval email is included as Appendix B.

2.3 Notifications and Reporting

On July 13, 2023, GTA notified the MDE LRP via email of a tentative start date of the work plan implementation activities for July 17, 2023. A copy of the email notification is included as Appendix C. In the same email and a subsequent email on July 17, 2023, the following individuals were identified as the site superintendent and the environmental professionals familiar with the EC requirements:

Personnel	Company Affiliation	Site Responsibilities
John Castillo	Petillo MD, LLC	Site superintendent, primary contact/responsible person
Kevin Plocek	Geo-Technology Associates, Inc.	Environmental oversight
Colleen McMullen	Geo-Technology Associates, Inc.	Environmental oversight
Justin Martins	Geo-Technology Associates, Inc.	Environmental oversight
Ben Salazar	Geo-Technology Associates, Inc.	Environmental oversight
AJ Wood	GEI Consultants, Inc. (GEI)	Environmental oversight

Regular verbal and email correspondence was provided by GTA, GEI, and Quantum Maryland, LLC to the MDE LRP (Ms. Anuradha Mohanty and Ms. Barbara Brown), MDE WSA (Ms. Kate Ansalvish, Mr. Greg Hazzard, and Mr. Brad Metzger), and Frederick County (Mr. Douglas Cochran) pertaining to the work plan implementation activities. In addition, daily reports were provided to the above referenced agencies on each day work plan implementation activities were conducted on the Site.

2.4 Work Plan Modifications

During the implementation of the work plan various modifications were requested and approved to complete the remedial activities. These modifications included the following:

2.4.1 Stockpile 13 Relocation

Upon arrival at the Site and reviewing the day's work on July 18, 2023, the proposed Stockpile 13 relocation area in the MDE-approved work plan was not a viable relocation area due to the presence of a farmer's access road. After internal discussions, the eastern portion of Basin 3 was proposed as a new relocation area to the MDE LRP (see Figures 4 and 8, Appendix D). Basin 3 is located within the LOD and outside of the floodplain. The MDE LRP verbally approved Basin 3 as a suitable relocation area. The MDE LRP indicated that future use of the relocated soil from Stockpile 13 would require additional environmental evaluation should it be considered for use on other portions of the Site. Stockpile 13 relocation activities are discussed in more detail in Section 3.4.

2.4.2 Roadway Stabilization

On July 24, 2023, GTA provided the MDE WSA specifications for an alternative erosion control measure for use on the proposed roadways at the Site. Specifically, Rollmax EroNet S75 Erosion Control Blanket was proposed for the portions of the site the roadways that will be paved in the future (specifically Quantum Place South, Clear Energy Parkway, and Happy Landing Road). On July 25, 2023, the MDE WSA indicated that "This matting is acceptable for roadway temporary stabilization, sans seed. Please stake/staple down as per manufacturer's specs, at minimum. Cover must be maintained. Maintenance may be necessary." Installation observations of the sediment erosion control matting in the proposed roadways are discussed in more detail in Section 3.7.

2.4.3 Additional Stockpile Generation

On July 24, 2023, GTA proposed two alternatives for a fourth soil stockpile being relocated from the floodplains due to a lack of capacity at the three original stockpile locations specified in the MDE-approved work plan. These alternative locations were (1) Option 1, an area between Happy Landing Road and proposed Basin 2; and (2) Option 2, an area southeast of MH-15. Both areas were within the LOD and outside of the floodplain. On July 25, 2023, the MDE LRP, the MDE WSA, and Frederick County Government Division of Planning & Permitting approved Option 1; however, it was requested that the new stockpile, referred to in this report as Stockpile D, be placed southwest of Basin 2 (see Figures 3 and 8, Appendix D). In addition, appropriate sediment erosion control and stabilization measures were also stipulated by each agency/program, and the MDE LRP indicated that additional environmental evaluation of the soil stockpile may be requested in the future. Stockpile D relocation activities are discussed in Section 3.4.

2.4.4 Stockpile Covering

On July 25, 2023, Frederick County indicated via email and telephone conversations that the soil stockpiles that were excavated from the EC and were relocated as part of the MDE-approved work plan needed to be covered with plastic sheeting. These stockpiles included Stockpiles A, B, C, and D and the soil moved to Stockpile 2 as part of the DA-11 remedial

efforts. The MDE LRP and MDE WSA concurred with Frederick County via email on July 25, 2023. These remedial activities are discussed in Sections 3.4 and 3.7.

2.4.5 Tuscarora Creek Turbidity Observations

On July 26, 2023, the MDE LRP requested that observations of the turbidity of Tuscarora Creek be performed at two locations: (1) as the creek entered the site at Manor Woods Road and (2) on the southern portion of the site, as the creek exits the property. These locations are specified on Figures 2 and 4, Appendix D. The MDE LRP also requested that these observations be performed in the morning prior to site work and at the end of the workday, and that photo documentation be provided in the daily reports. The Tuscarora Creek turbidity observations are discussed in Section 3.9.

2.4.6 Floodplain Straw Bale Removal

On August 1, 2023, GTA submitted a request for an alternative means of removal of an area of straw bales in the floodplain since some straw bales were in an area of standing water and were not able to be removed via manual methods. Specifically, GTA requested that the straw bales be removed via mechanical methods utilizing an excavator. The excavator was proposed to sit on higher/stable ground and reach into to the floodplain area to perform the remedial work. On August 5, 2023, the MDE WSA approved the alternative means of removal; however, they requested that the excavator be positioned slightly further away from the area of straw bales in the floodplain when the work was conducted. These remedial activities are discussed in more detail in Section 3.3.

2.4.7 Frac Tank Relocation

On August 16, 2023, GEI provided a relocation plan to the MDE LRP and WSA for the removal of two frac tanks (herein identified as Frac Tank #1 and #2) from the floodplain on the southern portion of the Site. Specifically, the plan proposed (1) relocate an empty frac tank (Frac Tank #2) to an area within the LOD and outside of the floodplains on the north-central portion of the Site; (2) pump water stored in Frac Tank #2 into an onsite water truck and transport the water to the relocated Frac Tank #2 over the course of several trips; (3) once empty, relocate Frac Tank #1 outside of the floodplain and adjacent to Frac Tank #2; and (4) stabilize the former frac tank storage area. Both MDE LRP and WSA provided email comments to the relocation plan which were addressed by GEI on August 17, 2023. The frac tank relocation activities are discussed in more detail in Section 3.5.

2.5 MDE and Frederick County Site Inspections

On July 20, 2023, representatives from the MDE LRP visited the site to observed ongoing and proposed work plan implementation activities. During the MDE LRP site visit the following topics were observed/discussed:

- Turbidity of Tuscarora Creek as it enters/exists the Site;
- Silt fence repair on the northeastern corner of the entrance of the borrow area/northern landfill access road;
- DA-11 basin work plan implementation activities;
- Soil stockpile signage (see item 1, Section 1.1); and
- The need for an additional stockpile relocation area on the Site.

On July 27, 2023, representatives from the MDE WSA and Frederick County visited the site to observed ongoing work plan implementation activities. During the site visits the following topics were observed/discussed:

- Previously repaired silt fence on the northeastern corner of the entrance of the borrow area/northern landfill access road was observed to be upright and intact, but not embedded into the ground;
- Encroachment of relocated Stockpile A (see Section 3.4 below) into a floodplain; and
- The need for additional site stabilization throughout the Site.

On August 24, 2023, a representative from the Frederick County visited the site to observed ongoing work plan implementation activities. During the site visit the following item was observed/discussed:

- Erosion of the side slope of DA-2 and Frederick County requested to stabilize.

On September 5, 2023, a representative from the MDE WSA visited the site to observe work plan implementation activities. During the site visit the following items were observed/discussed:

- Replacement of super-silt fencing needed south of MH-3 where remedial areas outside of the LOD were accessed;
- The need for additional site stabilization throughout the Site (seed has not taken on several areas previously stabilized); and
- The need to cover Stockpile 15 and DA-11 stockpiles with a plastic cover if the stockpiles have contaminated soils in them.

A subsequent email from the MDE WSA on September 11, 2023, clarified the specific pile associated with the DA-11 excavation to be covered and that plastic cover over Stockpile 15 was not necessary since the stockpiled materials originated from and is stored outside of the EC.

On September 12, 2023, a representative from Frederick County visited the site to observe work plan implementation activities. During the site visit the following items were observed/discussed:

- Several tears in site silt fencing needed to be addressed; and
- The need for additional site stabilization throughout the Site (seed has not taken on several areas previously stabilized).

3.0 REMEDIAL ACTIVITIES PERFORMED

Between July 17, 2023 and August 29, 2023, the MDE-approved Site Stabilization Work Plan (Appendix A) was implemented at the Site. These activities were performed in conformance with the approved work plan, the conditions stipulated by the MDE LRP at the time of approval, and the approved/requested work plan modifications. Photographs of the work plan implementation activities are included in Appendix D. Figures depicting the work plan implementation activities are presented in Appendix E. Maintenance/repair of stabilization measures as identified through the September 5th MDE inspection, September 12th Frederick County inspection, and inspections (routine and post-storm-event) by environmental professionals identified in Section 2.3, is ongoing. These primarily including repair/maintenance of stockpile plastic covers and replacement of seed/straw/tack as needed to maintain adequate cover.

3.1 Site Meetings

Prior to the commencement of the work plan implementation activities, copies of GTA's October 13, 2022 Health and Safety Plan (HASP) were provided to site personnel conducting/overseeing the remedial activities (herein identified as the site team). The HASP as well as the requirements and stipulations of the EC and SMA were reviewed during a preconstruction meeting on July 17, 2023. Daily field reports submitted to the MDE LRP and WSA served as the HASP daily log.

Following the preconstruction meeting, the areas where work plan implementation activities would be conducted were visited, specific conditions pertinent to each area were identified (e.g. SMA boundaries at DA-11), and remedial requirements associated with a particular area were discussed (e.g. soil within the SMA cannot be moved outside of the SMA).

A daily preconstruction meeting to discuss planned activities took place each subsequent day work plan implementation activities were performed. During these daily meetings discussions of whether work would be performed within the SMA and/or EC was presented to the site team and special precautions, if any were necessary, were noted.

3.2 DA-11 Remedial Work

Prior to work stoppage, expansion of former Rainwater Pond 102 had commenced. The footprint of the former pond was expanded to the proposed basin DA-11 configuration. This expansion resulted in the excavation of soils along the eastern perimeter of the former pond, including some areas located within the SMA. Several concrete structures previously associated with the former pond were also removed. Most of this soil was placed within a designated stockpile area (herein identified as Stockpile 2) east of DA-11, and within the SMA. Some of the soil as well as concrete structures were placed in an area southeast of DA-11, also within the SMA. This area previously contained a natural swale and encroached upon the LOD.

The South Landfill is located south of DA-11 and prior to the commencement of work plan implementation, GTA obtained construction drawings for the South Landfill Leachate Tank

Management System and these drawings are included as an attachment in the Site Stabilization Work Plan (Appendix A). These drawings were overlain on the proposed development plans to locate the leachate line associated with the above referenced leachate collection system. The leachate line is 7 feet from the limits of disturbance at the South Landfill Leachate Tank Management System and increases to greater than 30 feet as the line progresses to the east and south.

A typical (leachate) trench piping detail included in the plans indicates that an electrical conduit is located adjacent to the leachate pipe. Electrical power for the leachate collection system originates from the northwest of the system. Based on the proximity of electrical and leachate lines near the location of proposed work, a private utility locator was contracted to identify potential utilities in the proposed work area. On June 26, 2023, the utility locator identified and marked the electrical and leachate lines in the field. No additional utilities were identified proximate to the proposed work. The approximate electrical and leachate lines are identified on Figure 1 (Appendix E). Silt fencing had also been placed along the southern boundary of DA-11 until remedial activities commenced.

On July 17, 2023, work plan implementation activities commenced at DA-11 and are depicted on Figures 1 and 2 (Appendix E). Concrete that was associated with a previously removed structures for the former pond was removed, crushed, loaded into and end dump, and relocated to a designated stockpile area east of DA-11 and within the LOD and SMA. The concrete is currently located adjacently east of Stockpile 2. Additional soil that was previously placed southeast of DA-11 and within a natural swale was also removed with and excavator, loaded into an end dump, and relocated to the western portion of Stockpile 2, east of DA-11 and within the LOD and SMA. Materials from the SMA stayed in the SMA.

Northern, eastern, and southern side slopes of DA-11 were bladed and tracked in with a bulldozer, removing previously eroded areas and a depression on the southwestern sidewall of DA-11. These activities were performed from the top of the slope down so areas within the SMA and outside of the SMA did not overlap. Work was performed in the areas outside of the SMA first and progressed to inside the SMA next. Materials from the SMA stayed in the SMA. The side slopes of DA-11 were re-established.

On July 18, 2023, silt fence was re-installed along the southern boundary of the DA-11 work area and around the entirety of Stockpile 2. On August 2, 2023, the side slopes and disturbed areas associated with the DA-11 work area, and Stockpile 2 were strawed and seeded. In addition, the portion of Stockpile 2 that was relocated as part of the work plan implementation was covered with 10-mil plastic sheeting on August 17, 2023. Previously noted deficiencies at the DA-11 work area have been addressed. However, as stated in Section 2.2, the MDE LRP considers Stockpile 2 to be impacted until testing proves otherwise.

3.3 Floodplain Gravel and Straw Bale Removal

Between July 17, 2023 and August 2, 2023, work plan implementation activities associated with gravel, filter bag, and straw bale removal from the floodplain occurred. These removal activities occurred in six distinctive Straw Removal Areas (SRA), identified as SRA-1 through SRA-6, as depicted on the attached Figures 3 through 7 (Appendix E) and summarized in the table below.

Removal Area Identification	Removal Date	Approximate Dimensions of Removal Area	Former Area Location
SRA-1	July 17, 2023	35 feet wide by 70 feet long	Approximately 90 feet east of MH-6, outside of the LOD and in the floodplain
SRA-2	July 17, 2023	35 feet wide by 35 feet long	Approximately 90 feet north of MH-4, primarily inside the LOD and in the floodplain
SRA-3	July 17, 2023	Irregular shaped area, 105 feet wide by 85 feet long	Adjacently west of MH-4, outside of the LOD and in the floodplain
SRA-4	July 19, 2023	15 feet wide by 20 feet long	Approximately 175 feet south of MH-3, outside the LOD and in the floodplain
SRA-5	August 2, 2023	20 feet wide by 20 feet long	Approximately 150 feet southwest of MH-3, outside the LOD and in the floodplain
SRA-6	August 2, 2023	Two straw bales	Approximately 315 feet southwest of MH-3, outside the LOD and in the floodplain

To access SRA-3 and SRA-4/5, approximate 10-foot and 20-foot sections of super silt fence were temporarily removed. The super silt fence was re-installed after removal and stabilization activities were complete. Most of the gravel, filter bag, and straw bale removal activities were initially performed by hand; however, stone that was embedded in the underlying soil required mechanical removal with a skid steer. In addition, removal of the SRA-5 required the use of an excavator. For the removal of SRA-5, the excavator was staged in the area specified by the MDE WSA and the excavator was utilized to reach to and remove gravel, filter bag, and straw bales from this area.

Removed gravel, filter bag, and straw bale materials were placed in an end dump and transported to a stockpile near Happy Landing Road and within the LOD. In total, 13 truckloads of material were removed from the floodplain areas inside and outside of the LOD. Once gravel, filter bag, and straw bale materials were removed, the work areas were stabilized using a seed-fertilizer mix covered with hay. Previously noted deficiencies associated with gravel, filter bag, and straw bale areas within the floodplains have been addressed.

3.4 Soil Stockpile Relocation

Between July 18, 2023 and July 28, 2023, work plan implementation included relocation of soil stockpiles soil from the floodplains. The site stockpile locations prior to and after stockpile relocation are depicted on the attached Figures 2 through 8 (Appendix E). In addition, the former and existing soil stockpiles currently located at the site are summarized in the following table and the paragraphs following the table.

Stockpile Identification	Approximate Cubic Yardage	Origination of Soil and Original Site Location	Current Site Location
1 (existing)	3,500	Topsoil originating from the Lot 110 North Borrow Area, in the LOD but outside of the EC and SMA	Lot 111, approximately 300 feet north of the proposed substation pad, in the LOD and outside the floodplain, in the EC and outside of the SMA
2 (existing)	17,000 (includes material relocated during DA-11 remedial activities)	Excavated material from the eastern bank of former Rainwater Pond 102 (Lot 113), in the EC and partially in the SMA	Lot 112D, east of DA-11 and south of the proposed substation pad, in the LOD and outside the floodplain, in the EC and SMA
3 (existing)	30,000	Unknown	Lot 105, approximately 600 feet south of Quantum Place South, in the LOD and outside the floodplain, in the EC and SMA
4-13 (former)	See below	Sewer Line 1A excavations, in the LOD and in the floodplain, outside of the EC and SMA (Stockpiles 4-6)	Relocated to Stockpile D (see below), in the LOD and outside the floodplain, outside the EC and SMA
		Sewer Line 1A excavations, in the LOD and in the floodplain, in the EC and outside the SMA (Stockpiles 7-10)	Relocated to Stockpile A and D (see below), in the LOD and outside the floodplain, outside the EC and SMA
		Sewer Line 1A excavations, in the LOD and in the floodplain, in the EC and outside the SMA (Stockpiles 11-12)	Relocated to Stockpile B (see below), in the LOD and outside the floodplain, outside the EC and SMA
		Sewer Line 1A excavations, in the LOD and in the floodplain, in the EC and outside the SMA; stockpile in the floodplain but outside EC and SMA (Stockpile 13)	Relocated to Stockpile C (see below), in the LOD and outside the floodplain, outside the EC and SMA
14 (existing)	1,000	Pump Station excavation on Outlot 1, outside of the EC and SMA	Eastern portion of Outlot 1, in the LOD and outside the floodplain, outside the EC and SMA

Stockpile Identification	Approximate Cubic Yardage	Origination of Soil and Original Site Location	Current Site Location
15 (existing)	7,250	Pump Station excavation on Outlot 1, outside of the EC and SMA	Eastern portion of Outlot 1, in the LOD and outside the floodplain, outside the EC and SMA
16 (existing)	1,200	Topsoil from Happy Landing Road, Lot 303, SP-3, Stockpile/Staging Area 2, outside of the EC and SMA	Eastern portion of Outlot 1, in the LOD and outside the floodplain, outside the EC and SMA
A (existing)	700	Former Stockpiles 7 (portion), 8, 9, and 10 (origin inside EC and outside SMA)	Northeast of MH-14, west of the Manor House access road, in the LOD and outside the floodplain, outside the EC and SMA
B (existing)	1,250	Former Stockpiles 11 and 12 (origin inside EC and outside SMA)	East-northeast of MH-8, in the LOD and outside the floodplain, outside the EC and SMA
C (existing)	2,650	Former Stockpile 13 (origin inside EC and outside SMA, stockpiled outside the EC and SMA	Basin 3, in the LOD and outside the floodplain, outside the EC and SMA
D (existing)	3,100	Former Stockpile 4, 5, 6, 7 (portion) and partially relocated Stockpile A material (Stockpile 7 and A material originated inside EC and outside SMA)	Southwest of Basin 2, in the LOD and outside the floodplain, outside the EC and SMA

Notes: Cubic yardage for Stockpiles 1-3 and 14-16 was based on field measurements and estimated stockpile height. Cubic yardage for Stockpiles A-D was estimated by the number of truckloads relocated to each stockpile location. Estimate volume of each truckload was 30 cubic yards. Cubic yardage totals for each stockpile were rounded to the nearest 50 cubic yards.

Prior to the commencement of work plan implementation activities, each of the stockpiles described in the table above and the paragraphs below were labeled in the field with signage.

The source material for Stockpile 1 originated from a borrow area that is in an area on the northern portion of the Site that was historically utilized for agricultural purposes. The borrow area is located outside of the EC and the SMA; however, the current stockpile is in the bounds of the EC, within a designated soil stockpile area. The stockpile is also located in the LOD and outside of the floodplain. Sediment erosion control fencing is currently present, and the stockpile is vegetated and stabilized. The MDE has indicated that because Stockpile 1 originated from a borrow area not included in the EMP and the soil has not been characterized or approved for use, the stockpile must be treated as unauthorized material until further notice.

The source material for Stockpile 2 originated from former Rainwater Pond 102 and areas immediate adjacent east of the pond, both of which are in the EC. While the former Rainwater Pond 102 is not

located in the SMA, excavation activities that were conducted adjacently east of former Rainwater Pond 102 during the expansion of the pond to the DA-11 pond configuration are located within the SMA. The current stockpile is in the bounds of the EC and the SMA, within a designated soil stockpile area located in the LOD and outside of a floodplain. Sediment erosion control fencing is currently present around the entirety of the stockpile. As discussed in Section 3.2, soil that was previously placed southeast of DA-11 and within a natural swale was removed with an excavator, loaded into an end dump, and relocated to the western portion of Stockpile 2. The additional material added to Stockpile 2 was estimated to be approximately 1,000 cubic yards. The MDE has indicated that Stockpile 2 is considered impacted until proven otherwise through sampling.

Stockpile 3 is currently vegetated and stabilized. The source material for Stockpile 3 is unknown. Stockpile 3 was present on the Site prior to Quantum Maryland, LLC's acquisition of the property and prior to the commencement of site construction activities. The stockpile was originally located and is currently located within the EC and the SMA but outside of the floodplain. Based on the unknown origin of the materials located in Stockpile 3, GTA previously prepared a clean fill sampling work plan that was approved by the MDE LRP. Sampling was conducted as summarized in GTA's April 25, 2023 Clean Fill Sampling Report. This report indicated that the soils within the stockpile qualify as Category 1 material (unrestricted use based on analytical data and risk analysis). However, as of the date of this report MDE LRP has not yet concurred with these findings.

The source material for Stockpile 14 and 15 originated from excavation activities associated with the pump station. The stockpiles are currently located in the LOD and outside of the SMA, EC, and floodplain.

The source material for Stockpile 16 consists of topsoil stripped from Happy Landing Road.[1] Stockpile 16 is vegetated, stabilized, and currently located outside of the SMA and EC, within a designated stockpile area in the LOD and outside of the floodplain.

The remaining activities discussed herein were associated with the relocation of Stockpiles 4 through 13 from the floodplain to designated stockpile areas in an LOD, outside of the floodplain, and outside of the EC and SMA. On each day of stockpile relocation activities, soil was placed into tri-axle dump trucks using an excavator and was relocated to a designated stockpile. Once soil was unloaded, it was graded into a stockpile using a bulldozer. In addition, during soil relocation activities, a water suppression truck sprayed water on the main haul roads to control fugitive dust. Water utilized for dust suppression was obtained from an on-site fire hydrant connected to the public water supply.

[1] Prior documentation provided to MDE indicated that Stockpile 16 originated from Basin 3, which was incorrect.

On July 26, 2023, soils from Stockpiles 4, 5 and 6 were relocated to Stockpile D. In total, the removal of Stockpile 4 entailed 20 loads, Stockpile 5 was 6 loads, and Stockpile 6 was 8 truckloads.

On July 21, 2023, soil from a portion of Stockpile 7 was relocated to Stockpile A. On July 26 and 27, 2023, soil from the remaining portion of Stockpile 7 was relocated to Stockpile D. In total, the removal of Stockpile 7 entailed 32 truckloads transported to Stockpile A and 27 truckloads transported to Stockpile D.

On July 21, 2023, soil from Stockpiles 8 and 9 were relocated to Stockpile A. In total, the removal of Stockpiles 8 and 9 entailed 12 truckloads.

On July 21, 2023, soil from Stockpile 10 was relocated to Stockpile A. In total, the removal of Stockpile 10 entailed 21 truckloads.

On July 20, 2023, soil from Stockpile 11 was relocated to Stockpile B. In total, the removal of Stockpile 11 entailed 17 truckloads.

On July 19 and 20, 2023, soil from Stockpile 12 was relocated to Stockpile B. In total, the removal of Stockpile 12 entailed 24 truckloads.

On July 18 and 19, 2023, soil from Stockpile 13 was relocated to Stockpile C. In total, the removal of Stockpile 13 entailed 88 truckloads.

On July 28, 2023, Petillo began corrective actions as mentioned in the July 27, 2023 MDE report (refer to section 1.4 for more details) which referenced portions of Stockpile A that still encroached upon the floodplain. These portions of Stockpile A were relocated to either the eastern portion of Stockpile A or to Stockpile D. Both areas are situated outside of the floodplain and within the LOD. In total, 52 truckloads of material were relocated (10 truckloads to the eastern portion of Stockpile A; 42 truckloads to Stockpile D).

Following the completed relocation of soil stockpiles, a fertilizer and seed mixture was spread across Stockpiles A through D. A layer of straw was then spread across these stockpiles. Each of these stockpiles was also subsequently covered with 10-mil plastic sheeting. Previously noted deficiencies associated with soil stockpiles within the floodplains have been addressed.

3.5 Frac Tank Relocation

Two frac tanks were situated on the southern portion of the property, adjacently north of MH-3 and were located within the floodplain. Tank 1 (Tank ID A1452) contained water generated during the removal of water from MH-4 and MH-8 during two separate events in June 2023, and Tank 2 (Tank ID A3591) was empty and was located approximately 15-feet east of Tank 1.

Between August 18, 2023 and August 22, 2023, Tanks 1 and 2 were relocated to an equipment staging area outside the floodplain, within the LOD, and adjacently south of Quantum Place South on the northwest corner of Lot 105.

Petillo used a front-end loader to lift the then empty Tank 2 from its original location onto flat ground where an Adler trailer truck relocated the tank to the above-mentioned location. Petillo then pumped the contents of Tank 1 into a water truck, and the water was transported to relocated Tank 2. Water was subsequently pumped from the water truck into Tank 2. In total, the water truck completed 5 rounds to relocate the water from Tank 1 to Tank 2 (partial loads were transported each time). Once water was removed from Tank 1, Pettilo used the same procedure to remove/relocate the empty Tank 1 adjacent to Tank 2. The new location of Tanks 1 and 2 and the route traveled to transport the water is depicted on the attached Figure 9 (Appendix E). Previously noted deficiencies associated with the frac tanks located within the floodplains have been addressed.

3.6 Water Disposal

Prior to water disposal activities, GTA collected water samples from Tank 1 on June 15, 2023 and August 4, 2023. Sampling was conducted twice to evaluate the initial water that was placed in the frac tank and once additional water was added. Both samples were analyzed for total/dissolved priority pollutant metals, VOCs, PCBs, PAHs, fluoride, and total cyanide. The August 4, 2023 sample was also analyzed for chlorine. The analysis results did not identify analytes above their applicable regulatory limits. Copies of the Laboratory Reports, including the Chain of Custodies, are include in Appendix F

On August 31, 2023, four loads of water were transported off-site for disposal at Valicor Environmental Services, LLC's Williamsport, Maryland facility. Prior to disposal activities, a materials characterization report was submitted to the disposal facility. This characterization report included the above refenced sampling data for the water. Specifically, the loads of water included:

- 6,030 gallons;
- 6,091 gallons;
- 4,123 gallons; and
- 4,848 gallons.

A total of 21,092 gallons of water was transported off-site for disposal. Manifests for the disposed water are included as Appendix G.

3.7 Stabilization Activities

Once implementation of the work plan activities was completed for the floodplain gravel and straw removal, soil stockpile relocation, and frac tank relocation; disturbed soil associated with these areas was stabilized by Petillo. If needed, disturbed areas were fine graded, scarified, or bladed with the onsite equipment prior to site stabilization. These areas were hydroseeded, then strawed, then tacked via water/tack mixture to secure the straw to the ground. Repairs needed to silt fencing disturbed during the implementation of the work plan were also conducted following each work plan implementation activity that required the disturbance.

Soil Stockpiles A through D and the stockpiled soil generated during DA-11 remedial activities were initially stabilized with straw and seed and were then subsequently covered with 10-mil plastic sheeting. The plastic sheeting sections overlapped one another by a minimum of 6-12 inches and were anchored onto the stockpile using rope and sandbags (and wooden stakes when necessary).

Between August 2, 2023 and August, 29, 2023, Petillo's subcontractor Hawkins Erosion Control (HEC) completed the remaining site stabilization activities. These activities included the placement of the MDE-approved sediment erosion control matting along the center of the Clean Energy Land, Quantum Place South, and Happy Landing Road roadways (future paved roadway bed). The remaining areas of exposed soil were also stabilized. A seed-fertilizer mixture was placed over the exposed areas before using a straw shooter to cover the areas with a layer of straw. These areas were then tacked via water/tack mixture. Areas stabilized by HEC included: (1) the northern borrow area and access road, (2) the substation lot, (3) side slopes of Quantum Place South and Clean Energy Lane, (4) DA-11, (5) DA-2, (6) a portion of a construction staging area southwest of the construction trailers, (7) side slopes of Happy Landing Road, (8) Basin 2, (9) Basin 3, (10) Pump Station area, and (11) former site construction roadways. In addition, HEC placed silt fencing around the entirety of Stockpile 2, Stockpile A, Stockpile B, Stockpile D, and an area adjacent MH-85. Previously noted deficiencies associated with site stabilization have been addressed. These stabilization locations are depicted on the attached Figures 2 through 7 (Appendix E).

3.8 Stored Materials Relocation

Between August 22, 2023 and September 1, 2023, heavy machinery situated within the floodplain located near the main site entrance (entrance "A") was relocated west to a staging area outside the floodplain and within the LOD. In addition, site personnel also relocated stored construction materials (piping, pallets, etc.) from inside the floodplain locations near the main site entrance to outside the floodplain and within the LOD.

3.9 Tuscarora Creek Observations

Beginning on July 26, 2023, the turbidity of the water in the Tuscarora Creek was visually observed as it entered the site at Manor Woods Road and on the southern portion of the site, as the creek exits the property. Observations were conducted prior to each day's work and at the end of the day, once work was complete. Water turbidity was generally observed to be comparable during morning and afternoon observations. Increases in turbidity were generally observed immediately following rain events. Site activities did not appear to impact the turbidity of Tuscarora Creek. Turbidity observations were noted, and photo documentation was provided in the daily reports provided to the MDE during the work plan implementation.

4.0 CONCLUSIONS

As outlined in the preceding sections, activities associated with the MDE-approved Site Stabilization Work Plan (including approval conditions described in Section 2.2) have been completed. In addition, all items subsequently requested by the MDE LRP, MDE WSA, listed in Section 2.4 Work Plan

Modifications have been addressed. Regular inspection and maintenance of erosion controls including plastic covers, silt fence, erosion mat, and straw/vegetation will continue as required by the 2011 Maryland Standards and Specifications for soil erosion and sediment control.

APPENDIX A
MDE-Approved Site Stabilization Work Plan

Site Stabilization Work Plan -

Former East Alcoa Property
June 30, 2023

Geo-Technology Associates, Inc. (GTA), on behalf of Quantum Maryland LLC, has prepared the following Work Plan for site stabilization activities at the Former East Alcoa Property ("Site"). These activities are proposed to address concerns transmitted by the Water and Sciences Administration.

Various activities are needed to return floodplain areas to their natural state and to stabilize the Site. These activities are detailed below and are highlighted on the attached figures (Figures 1 through 6). All work below is proposed to be conducted by Petillo, the site grading and utility contractor.

Mulch (seed and straw) and tack (fibrous erosion control blanket) has been the most common sediment erosion control measure utilized on the Site to stabilize disturbed areas. Mulch and tack involve the placement of seed and straw via a hydroseeder over an area and then is anchored in place by with a fibrous erosion control blanket. Straw utilized on the Site is from Jody Bell Farms, a local farmer with farms all throughout Frederick County. Straw is brought to the site on an as needed basis, with a supply of over 800 bails currently stored on the Site for the work proposed herein. The erosion control blankets are commercially available.

Floodplain Gravel and Straw Bale Removal – Gravel, filter bags, and straw bales are to be removed from the portions of the floodplain located outside of the LOD. These areas are primarily located west of MH-3 and MH-5, and east of MH-6 (see Figure 1).

Work associated with the area west of MH-3 and MH-5 is anticipated to take approximately 1½ days and would involve the use of a dump truck and a skid steer. Hay bales, gravel, and filter bags are to be removed by hand, placed into the skid steer, then loaded into a dump truck. Removed materials are to be relocated to a temporary storage area along the proposed Happy Landing Road, within the LOD and outside of the floodplain (see Figure 5). A hydroseeder will be utilized to stabilize the area after work is completed. (Personnel: 1 Operator, 1 Drivers, 2 Laborers)

Work associated with the area east of MH-6 is anticipated to take approximately 1 day and would involve the use of a dump truck and a skid steer. Excess gravel, mulch and tack are to be removed via use of a skid steer and loaded into a dump truck. Removed materials are to be relocated to a temporary storage area along the proposed Happy Landing Road, within the LOD and outside of the floodplain (see Figure 5). A hydroseeder will be utilized to stabilize the area after work is completed. (Personnel: 1 Operator, 1 Drivers, 2 Laborers)

Soil Stockpile Relocation – Nine soil stockpiles are currently located within the sewer LOD, but within the floodplain along sewer line 1A. An additional stockpile is currently located outside of the LOD and within the floodplain. These stockpiles include the following:

Stockpile Identification	Approximate Cubic Yardage	Origination Area	Current Site Location
4	325	Sewer Line 1B	Between MH-18 and MH-19
5	125	Sewer Line 1B	Near MH-18
6	175	Sewer Line 1B	Between MH-17 and MH-18
7	300	Sewer Line 1B	Between MH-12 and MH-13
8	800	Sewer Line 1B	Near MH-10
9	200	Sewer Line 1A	Near MH-10
10	275	Sewer Line 1A	Between MH-8 and MH-9
11	175	Sewer Line 1A	Near MH-8
12	375	Sewer Line 1A	Between MH-7 and MH-8
13	4,000	MH-1 and MH-2 pre-excavation, pump station	West of the pump station

Note: These and additional stockpiles located on the Site and will be summarized under separate cover titled *Soil Disposition Memorandum.*

As indicated above, these stockpiles originated from the installation activities associated with sewer line 1A and 1B and the pump station. No soils located in these stockpiles was transported to the site from an off-site source. These stockpiles are proposed to be relocated into three separate stockpiles located within the LOD but outside of the floodplain. These new stockpiles will be designated Stockpile A (consisting of soil from stockpiles 4 through 8), Stockpile B (consisting of soil from stockpiles 9 through 12), and the relocated Stockpile 13. The proposed stockpile locations are in areas where existing sediment erosion control fencing is in place. These existing and proposed stockpile locations are depicted on the attached Figures 1, 2, 3, and 4. Figure 1 also depicts two additional stockpiles associated with the pump station excavation (Stockpiles 14 and 15).

Work associated with the stockpile relocation is anticipated to take approximately 3-4 days and would involve the use of an excavator, three end dumps, and a bulldozer. The excavator would be utilized to load the existing soil stockpiles into the end dumps for relocation of the stockpiles to the designated areas outside of the floodplains. The bulldozer would be utilized to prepare the former stockpile locations to be prepared for mulch and tack. Relocated stockpiles would be strawed and seeded for stabilization. (Personnel: 2 Operators, 3 Drivers, 2 Laborers)

DA-11 Work – Disturbance previously occurred during the expansion of the former Rainwater Pond 102 to the proposed dimensions of the proposed DA-11 sediment basin. These activities resulted in the generation of concrete and soil spoils that are currently located along the southern portion of DA-11. The concrete and soil spoils are proposed to be relocated to a designated stockpile area east of DA-11 (see Figure 6).

GTA obtained construction drawings for the South Landfill Leachate Tank Management System and these drawings are attached to this Work Plan. These drawings were overlain on

the proposed development plans to locate the leachate line associated with the above referenced leachate collection system; and this leachate line is depicted on the attached Figure 6. The leachate line is as close as 7 feet from the limits of disturbance at the leachate collection system and increases to greater than 30 feet as the line progresses to the east and south.

A typical (leachate) trench piping detail included in the plans indicates that an electrical conduit is located adjacent to the leachate pipe. Electrical power for the leachate collection system originates from the northwest of the system.

Based on the proximity of electrical and leachate lines near the location of proposed work, a private utility locator was contracted to identify potential utilities in the proposed work area. On June 26, 2023, the utility locator identified and marked the electrical and leachate lines in the field. No additional utilities were identified proximate to the proposed work. The approximate electrical and leachate lines are identified on Figure 6.

After utilities were identified in the proposed work area, silt fencing was generally placed as show on Figure 6. However, some modifications to the silt fence installation were needed based on existing vegetation. These modifications to the silt fencing configuration were made since no additional ground disturbance is permitted at this time; however, the modifications did not affect the intent to provide a barrier between known disturbed areas and downgradient receptors.

Work associated with the concrete and soil spoils clean-up at DA-11 is anticipated to take approximately 1 day and would involve the use of an excavator, three end dumps, and a bulldozer. The excavator would be utilized to load the concrete and soil spoils into the end dumps for relocation of the material to a stockpile located immediately east of DA-11. Aside from loading of the concrete and soil spoils, no additional excavation within the DA-11 is to be performed at this time. The bulldozer would be utilized to prepare the former concrete and soil spoils area to for mulch and tack. Disturbed areas of DA-11 are to be stabilized and stockpile would be strawed and seeded for stabilization. Silt fencing is currently in place at the existing/proposed stockpile location. (Personnel: 2 Operators, 3 Drivers, 2 Laborers)

Figure 1

Remove gravel Mulch and Tack

Mulch and Tack (completed)

Remove hay bales gravel and filter bags from area

Place all excavated material on high s of trench. Only do as much work as can be done on one day so backfilling, final grading, seeding and mulching can occur. No stockpile area is required

Stockpile 15 Approx. 7,250 CY

Relocated Stockpile 13 Approx. 4,000 CY

Stockpile 13 Approx. 4,000 CY

Stockpile 14 Approx. 1,000 CY

Location of two frac tanks

OUT LOT 1 PUMP STATION (BY OTHERS)

LOT 304

OPEN SPACE

Match Line - See Sheet SC-2

Happy Landing Road MD Route 80 ...blic - Minor Arterial)

Tuscarora Creek

R/W 6 RESERVATION ±34,567 sf ±0.79 acres

Prop Super Silt Fence

Prop FCE

Prop 30' W/S Esm't

Water Body Buffer

100Yr Floodplain Buffer

100Yr Floodplain

Trail E'smt

Fut. 10' Asphalt Trail

Ex. Environmental Covenant L. 12205 F.01

Wetlands Buffer

Wetlands

ST-164 ST-165 ST-166 ST-167 ST-168 ST-169 ST-170 ST-170

DtB MaA LsA UdB

LEGEND

- WATER BODY BUFFER
- WETLANDS
- WETLAND 25' B.R.L.
- 100 YEAR FLOOD PLAIN
- 100 YEAR FLOOD PLAIN B.R.L.
- SOILS LINES
- SOIL TEXT TYPE (GdB)
- 30" > DBH TREE
- EXISTING TREE LINE
- FOREST CONSERVATION EASEMENT
- FOREST PLANTING AREA
- STREAMS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- LIMITS OF DISTURBANCE (LOD)
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)

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

HYDROLOGIC SOIL GROUPS

SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
LsA	Lindside silt loam (0-3% slopes)	C
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

1 INCH = 50 FT

PROFESSIONAL CERTIFICATION

"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 29782 , Expiration Date: 1/16/2023 ".

FREDERICK SOIL CONSERVATION DISTRICT

APPROVED BY _____ DISTRICT MANAGER

DATE _____

SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

STATE OF MARYLAND PHILLIP THOMAS WYSS 29782 PROFESSIONAL ENGINEER

3/24/2022

REVISION	DATE	REVISION	DATE
3/24/2022			

	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

Sediment Control Plan

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

SEWER OUTFALL
Happy Landing Rd to MH10
& Conn. to Lot 300 (Historic Carroll Manor)
QUANTUM FREDERICK
LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE:	1"=50'
JOB No.	1339A
	March, 2022
INDEX No.	SC-1
SHEET No.	2 OF 7

Figure 2

Stockpiles 9 to 12 material to be relocated to this location (Stockpile B Approx. 1025 CY)

Stockpile 9 Approx. 200 CY

Stockpile 10 Approx. 275 CY

Stockpile 11 Approx. 175 CY

Stockpile 12 Approx. 375 CY

Place all excavated material on high side of trench. Only do as much work as can be done on one day so backfilling, final grading, seeding and mulching can occur. No stockpile area is required

Plugged 6" and 24" pipe

Mulch and Tack (completed)

Stockpile material to be removed from floodplain then mulch and tack

Mulch and Tack (completed)

LOT 300
(Carroll Manor
MHT Resource F-1-19)

OPEN SPACE
PARCEL 'A'

Tuscarora Creek

Ex. Environmental Covenant L. 12205 F.01

Prop Stabilized Construction Entrance SCE-1

Prop Staging

Prop Silt Fence

Prop Super Silt Fence

Prop 30' W/S Esm't

Prop FCE

Ex Gravel Drive

Ex Bldg

Ex Water Body Buffer

100Yr Floodplain Buffer

100Yr Floodplain

Ex Potomac Edison 12kV Overhead Distribution Line

Ex Fencing to Remain

Proposed Sheet SC-1 Line

MaA

DtB

UdB

AfB

ST-158

ST-159

ST-160

ST-161

ST-162

ST-163

WT 10

WT 9

WT 8

WT 7

N604000

N603250

E1178900

E1178850

E1178600

24"S

GG1

ISS

SE

SF

SSF

LOD

LEGEND

- WATER BODY BUFFER
- WETLANDS
- WETLAND 25' B.R.L.
- 100 YEAR FLOOD PLAIN
- 100 YEAR FLOOD PLAIN B.R.L.
- SOILS LINES
- SOIL TEXT TYPE — GdB
- 30" > DBH TREE
- EXISTING TREE LINE
- FOREST CONSERVATION EASEMENT
- FOREST PLANTING AREA
- STREAMS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- STABILIZED CONSTRUCTION ENTRANCE — SCE
- LIMITS OF DISTURBANCE — LOD
- SILT FENCE — SF — SF
- SUPER SILT FENCE — SSF — SSF

HYDROLOGIC SOIL GROUPS

SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
LsA	Lindside silt loam (0-3% slopes)	C
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

1 INCH = 50 FT

FREDERICK SOIL CONSERVATION DISTRICT

APPROVED BY _____ DISTRICT MANAGER

DATE _____

SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

PROFESSIONAL CERTIFICATION

"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 29782 , Expiration Date: 1/16/2023 ".

STATE OF MARYLAND

5/24/2022

Released for Bid
2022-07-29

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

Sediment Control Plan

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

SEWER OUTFALL
Happy Landing Rd to MH10
& Conn. to Lot 300 (Historic Carroll Manor)
QUANTUM FREDERICK
LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE: 1"=50'
JOB No. 1339A
March, 2022
INDEX No. SC-2
SHEET No. 3 OF 7

SUBMITTAL 3/24/2022
SUBMITTAL

Figure 3

Stockpile 4 to 8 material to be relocated to this location

Stockpile material to be removed from floodplain then mulch and tack

Stockpile 7 Approx. 300 CY

Stockpile 8 Approx. 800 CY

Place all excavated material on high side of trench. On be done on c grading, seec No stockpile

Match Line - See Sheet SC-3

LOT 300
(Carroll Manor
MHT Resource F-1-19)

OPEN SPACE
PARCEL 'A'

Tuscarora Creek

Trail E'smt
Fut. 10' Asphalt Trail

Ex Water Body Buffer
100 Yr Floodplain Buffer
100 Yr Floodplain

Ex. Environmental Covenant L. 12205 F.01

Prop Super Silt Fence
Prop FCE
Prop Public W/S Esm't
Ex Super Silt Fence
Ex Fence
Ex Wetlands
Ex Wetlands Buffer
Ex. AT&T Esm't L.643 F.437

DtB
LsA
MaA
UdB

24"S

ST-156
ST-157
ST-158
ST-159
ST-160
ST-161

Ex 10

LEGEND

- EXISTING TREE
- EXISTING TREE - TO BE REMOVED
- TREE PROTECTION (ARMOR)
- EXISTING TREELINE
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- EXISTING 100 YEAR FLOODPLAIN
- EXISTING STREAMS
- EXISTING STREAM VALLEY BUFFER
- EXISTING TOPO w/ CONTOUR LABEL
- SOILS LINES
- GdB SOIL TYPE
- EXISTING DRAINAGE DIVIDE
- FOREST CONSERVATION EASEMENT
- FOREST PLANTING AREA
- LOD LIMIT OF DISTURBANCE
- SSF SUPER SILT FENCE
- SF SILT FENCE
- SCE STABILIZED CONSTRUCTION ENTRANCE

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

HYDROLOGIC SOIL GROUPS		
SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

PLAN SCALE
50' 0 25' 50' 100' 200'
1"= 50'

PROFESSIONAL CERTIFICATION
"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 29782 , Expiration Date: 1/16/2023 ".

STATE OF MARYLAND
THOMAS

FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE _____
SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

Released for Bid
2022-07-29

REVISION	DATE	REVISION	DATE

	BY	DATE
BASE DATA	CADD	
DESIGNED		
DRAWN		
REVIEWED		

RELEASE FOR _____ BY DATE

5/9/2022
3/28/2022

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

Sediment Control Plan

RODGERS CONSULTING
19847 Century Boulevard, Suite 200, Germantown, Maryland 20874
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SEWER OUTFALL
MH10 to Quantum Place South
& Conn. to Lots 301 and 302
QUANTUM FREDERICK
LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE: 1"=50'
JOB No. 1339A2
March, 2022
INDEX No. SC-2
SHEET No. 3 OF 11

Figure 4

Prop Stockpile Area #1

Prop Silt Fence

Ex Water Body Buffer

100 Yr Floodplain Buffer

100 Yr Floodplain

Note:
Remove ex. fence sections as necessary to construct prop. sewer. Replace fence once construction is complete.

Lot 301

LOT 300
(Carroll Manor
MHT Resource F-1-19)

Lot 302

Match Line - See Sheet SC-4

Match Line - See Sheet SC-2

Ex Overhead Electric Line

Ex Paved Drive

Prop Super Silt Fence

Ex Pole

Ex Unpaved Drive

Ex Fence

Ex Culvert

Ex Railroad Tracks-Private

OPEN SPACE
PARCEL 'A'

Ex. Gas Esm't
L.804 F.188

Ex. W/S Esm't
L.808 F.198

Ex. W/S Esm't
L.819 F.742

Ex. 18" Force Main
Ex. 24"W

Approx. location of Ex. Gas to be abandoned

Approx. location of Ex. 24"W to be abandoned

Prop Public W/S Esm't

Ex Water Meter

Prop FCE

Prop Super Silt Fence

Stockpile material to be removed from floodplain then mulch and tack

Stockpile 4
Approx.
325 CY

Stockpile 5
Approx.
125 CY

Stockpile 6
Approx.
175 CY

Add Super Silt Fence (completed)

Plugged end of 24" pipe

Remove and replace ex. paving as necessary to construct prop. sewer.

Contractor to [illegible] companies a[illegible] locate ex. ut[illegible] advance of a[illegible] disturbing activities.

Remove ex. railroad tracks, and appurtenances as necessary to construct prop. sewer. Stockpile in Stockpile Area 1

SMA

[illegible] all excavated material on high side [illegible]ch. Only do as much work as can be done on one day so backfilling, final grading, seeding and mulching can occur. No stockpile area is required

Ex Wetlands Buffer

Ex Wetlands

Ex. Environmental Covenant
L. 12205 F.01

Ex Water Body Buffer

100 Yr Floodplain Buffer

100 Yr Floodplain

Prop Public W/S Esm't

Prop Silt Fence

Prop Super Silt Fence

Prop Public W/S Esm't

Ex Pole

Ex Overhead Electric Line

Ex Paved Drive

Remove and replace ex. paving as necessary to construct prop. sewer.

Ex Pole

Ex Pole

Ex Pole

Prop Super Silt Fence

Scale: 1" = 50'

N

E1180500

N605200

E1179800

N605200

Tuscarora Creek

DtB

LsA

W

FM

G

SSF

LOD

SF

SCE

20 19 18 17 16 15 87

LEGEND

- EXISTING TREE
- EXISTING TREE - TO BE REMOVED
- TREE PROTECTION (ARMOR)
- EXISTING TREELINE
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- EXISTING 100 YEAR FLOODPLAIN
- EXISTING STREAMS
- EXISTING STREAM VALLEY BUFFER
- EXISTING TOPO w/ CONTOUR LABEL (380 / 378)
- SOILS LINES
- GdB — SOIL TYPE
- EXISTING DRAINAGE DIVIDE
- FOREST CONSERVATION EASEMENT
- FOREST PLANTING AREA
- LOD — LIMIT OF DISTURBANCE
- SSF — SSF — SUPER SILT FENCE
- SF — SF — SILT FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE

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

HYDROLOGIC SOIL GROUPS

SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
LsA	Lindside silt loam (0-3% slopes)	C
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

PLAN SCALE
50' 0 25' 50' 100' 200'
1"= 50'

FREDERICK SOIL CONSERVATION DISTRICT

APPROVED BY _____ DISTRICT MANAGER

DATE _____

SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

PROFESSIONAL CERTIFICATION

"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 29782 , Expiration Date: 1/16/2023 ".

STATE OF MARYLAND · JUSTIN THOMAS LAND · 29782 · REGISTERED PROFESSIONAL ENGINEER

Released for Bid
2022-07-29

5/9/2022

3/28/2022

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

Sediment Control Plan

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

SEWER OUTFALL
MH10 to Quantum Place South
& Conn. to Lots 301 and 302

QUANTUM FREDERICK

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

SCALE:	1"=50'
JOB No.	1339A2
	March, 2022
INDEX No.	SC-3
SHEET No.	4 OF 11

Figure 5

LEGEND

- EXISTING TREE
- EXISTING TREELINE
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- WASTE DISPOSAL SITE
- EFFECTIVE 100 YEAR FLOODPLAIN
- EFFECTIVE 100 YEAR FLOODPLAIN BUFFER
- PENDING 100 YEAR FLOODPLAIN
- PENDING 100 YEAR FLOODPLAIN BUFFER
- EXISTING STREAM VALLEY BUFFER
- EXISTING TOPO w/ CONTOUR LABEL (380 / 378)
- SOILS LINES
- GdB SOIL TYPE

HYDROLOGIC SOIL GROUPS		
SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
BtC	Buckeystown loam (3-8% slopes)	B
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
HcB	Hagerstown-Opequon silty clay loams (3-8% slopes)rocky	B
LsA	Lindside silt loam (0-3% slopes)	C
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

Proposed stockpile and storage area for hay, gravel, and filter bags removed from the floodplain

GRAPHIC SCALE

500' 0 250' 500' 1000' 2000'

1 INCH = 500 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

Site Exhibit

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

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

SCALE: 1"=500'
JOB No. 1339A2
June, 2023
INDEX No. EXB-1
SHEET No. 1 OF 1

5/16/2022

Division of Planning and Permitting
Department of Development Management
Review Engineering

APPROVED: 03/20/23
APPROVED: 01/31/23

Signature: Signature

Figure 6

MATCHLINE: SEE SHEET SC-3

MATCHLINE: SEE SHEET SC-5

Relocate spoils piles and concrete into existing stockpile

Clean up spoils piles and concrete debris from the perimeter of LOD area

Stabilize Area

Add Silt Fence

Approximate location of the southern landfill leachate line identified during utility location

Approximate location of an electrical line identified during utility location

LOD has increased to account for additional temporary staging/stockpile areas. These areas are temporary and do not require ESD as no imperviousness is being proposed at this time. ESD will be proposed for these areas with future improvement plans. The proposed basins are sized to compensate for any additional volume.

1 LOD expanded to include new stockpile and staging area. SF adjusted.

Maryland Coordinate System (NAD 83/91)

PROPOSED SUPER SILT FENCE

PROPOSED SILT FENCE

STOCKPILE & STAGING AREA #2
MAX HIGHT15'
MAX SLOPE 2:1

N 608,100
E 1,177,500

N 607,110
E 1,176,850

EX. STORM DRAIN PIPE & HEADWALLS TO BE REMOVED

Soil Management Area
L.12205 F.1

Ex. Landfill Boundary

EARTH DIKE B-2

EARTH DIKE

LOW PROTECTION

STA 0+07 BEGIN CORE TRENCH

Prop. FRO Esm't

Ex. Stream

Waterbody Buffer

UrC

UdB

LEGEND

- 50' STREAM B.R.L.
- WETLANDS
- WETLAND 25' B.R.L.
- 100 YEAR FLOOD PLAIN
- 100 YEAR FLOOD PLAIN B.R.L.
- SOILS LINES
- SOIL TEXT TYPE (GdB)
- 30" > DBH TREE
- EXISTING TREE LINE
- FOREST CONSERVATION ESM'T
- STREAMS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- DRAINAGE DIVIDE
- LIMITS OF DISTURBANCE (LOD)
- EX. SILT FENCE (SF)
- EX. SUPER SILT FENCE (SSF)
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- INLET PROTECTION (IP)
- PROPOSED EARTH DIKE
- EXISTING EARTH DIKE
- PROPOSED STOCK PILE

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

GRAPHIC SCALE
50' 0 25' 50' 100' 200'
1 INCH = 50 FT

NOTE: THIS PLAN TO BE USED FOR SEDIMENT CONTROL ONLY
ALL OTHER INFORMATION SHOWN FOR REFERENCE PURPOSE ONLY.

FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE 12/16/2025
SCD approval for sediment and erosion control, and small pond is contingent upon issuance of all applicable regulatory permits.

1 FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE _____
SCD approval for sediment and erosion control, and small pond is contingent upon issuance of all applicable regulatory permits.

PROFESSIONAL CERTIFICATION
"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, and NRCS Standard for Ponds 378.
License No. 29782 , Expiration Date: 01/16/2025 ".
2/22/2023

Submittal 3/8/2023
Submitted 2/22/2023

REVISION	DATE
1 LOD updates & utility layout changes	2/22/2023

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
CONTACT: AD ROBISON
PHONE:530-417-7496

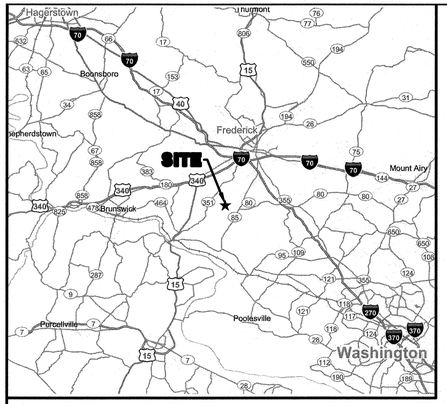
Sediment Control

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

Quantum Frederick
Combined SWM Development and Improvement Plan
Quantum Place South
PW#275128
Liber 15038, Folio 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE:	1"=50'
JOB No.	1339A
INDEX No.	SC-4
SHEET No.	05 OF 54

N:\MD-FREDERICK\ALCOA\AUTOCAD\PLOT PLANS\IMPROVEMENT PLANS\QUANTUM SOUTH\03-06-SED CON.DWG



LOCATION MAP

0 5 10

SCALE: 1" = 5 MILES

OWNER/DEVELOPERS CERTIFICATION

"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."

SIGNATURE OF OWNER/DEVELOPER — DATE
Print Name, Title, Address, Phone Number Below

OSCAR FISHER, JR.
EASTALCO ALUMINUM CO.
5601 MANOR WOODS ROAD
FREDERICK, MD 21701
(301) 696-1721

ENGINEER/ARCHITECT DESIGN CERTIFICATION

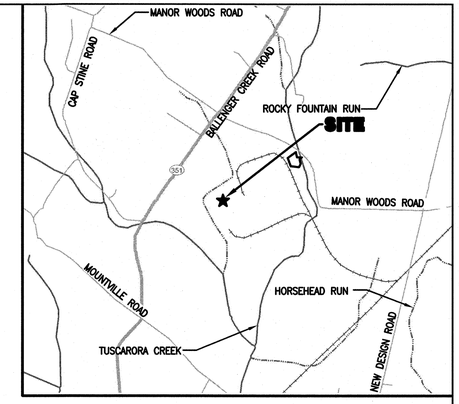
"I HEREBY CERTIFY THAT THE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH LOCAL ORDINANCES, COMAR 08.05.01, AND 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

SIGNATURE — REG. NO. 15453 — DATE 15 August 2013

DISTURBED AREA QUANTITY FOR SOUTH LANDFILL LEACHATE MANAGEMENT TANK

THE TOTAL AREA TO BE DISTURBED SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE APPROXIMATELY 3,800 SQ. FT. AND THE TOTAL AMOUNT OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAS BEEN COMPUTED TO BE APPROXIMATELY 90 CY OF EXCAVATION AND APPROXIMATELY 90 CY OF FILL.

NAME _____ DATE 15 August 2013



VICINITY MAP

0 1000 2000 4000

SCALE: 1" = 2000'

EASTALCO ALUMINUM COMPANY
SOUTH LANDFILL LEACHATE MANAGEMENT TANK
FREDERICK, MARYLAND

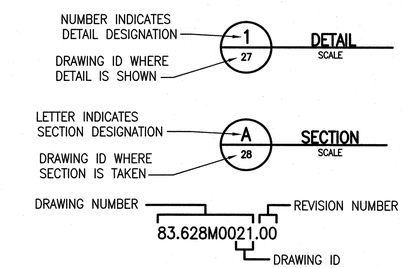
LIST OF DRAWINGS

DRAWING NUMBER	DRAWING ID	SHEET DESCRIPTION
83.628T0042	T-1	TITLE SHEET
83.628C0043	C-1	SITE PLAN
83.628M0044	M-1	LEACHATE STORAGE TANK PLAN
83.628M0045	M-2	DETAILS
83.628E0046	E-1	ELECTRICAL SITE PLAN
83.628E0047	E-2	PUMP CONTROL PANEL

REFERENCE DRAWINGS INCLUDED IN SHEET SET

10.485A0084.02	FINAL COVER SYSTEM AND PIPING PLAN (C-3)
10.485A0085.03	SECTIONS AND DETAILS (C-4)
10.485A0087.01	SECTIONS AND DETAILS (C-6)
10.485A0088.03	SECTIONS AND DETAILS (C-7)

REFERENCE SYMBOLS



REFERENCE DRAWINGS – NIC

EAC INDUSTRIAL WASTE LANDFILL CLOSURE, FREDERICK, MD – CH2M HILL (1993):

PERMITTING FOR INDUSTRIAL WASTE LANDFILL AND CONSTRUCTION DRAWINGS FOR CELL 1 – EA ENGINEERING, SCIENCE AND TECHNOLOGY, INC. (FEB 1993)

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 15453 Expiration Date: 07/02/2015

EA ENGINEERING, SCIENCE, AND TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

STATE OF MARYLAND — GEOFFREY A. TOMPKINS — 15453 — REGISTERED PROFESSIONAL ENGINEER — 8/15/2013

REV. EWR No.	NO.	CHANGES MADE	BY	APP'D	DATE

DATE AUGUST 2013
DRAWN BY TMR
ENGINEER TMR
SCALE AS SHOWN
PLOT SIZE ARCH D
E.W.R. NO.
C.P.A.R. NO.

AN ALUMAX COMPANY

TOLERANCES EXCEPT AS NOTED

FINISH				
ANGULAR				
DIMS.	FRACTIONAL	2 PLS	3 PLS	
INCH				
MM				

EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS ROAD
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2062

TITLE: SOUTH LANDFILL LEACHATE MANAGEMENT TANK TITLE SHEET

DWG. NO. 83.628T0042

DWG. NO. 1 OF 6

FILE PATH: G:\PROJECTS\143505 - EASTALCO CLOSURE\143505T-01TSHT.DWG [T-01] 8/12/13

LEGEND

SYMBOL	DESCRIPTION
110	EXISTING INDEX CONTOUR
108	EXISTING INTERMEDIATE CONTOUR
	EXISTING STRUCTURE
	EXISTING EDGE OF UNPAVED ROAD
	EXISTING EDGE OF PAVED ROAD
	EXISTING CULVERT/STORM DRAIN
FS FS	LIMIT OF FIELD RUN SURVEY
	EXISTING STREAM/SWALE
	EXISTING FENCE
	EXISTING RIPRAP
	EXISTING TREE OR BRUSH LINE
L	EXISTING LEACHATE FORCEMAIN
	EXISTING ANCHOR TRENCH (CELL LINER)
	EXISTING UTILITY POLE
SSF	EXISTING SUPER SILT FENCE
SF	EXISTING SILT FENCE
E	EXISTING UNDERGROUND ELECTRIC LINE
	EXISTING POWER POLE GUY
	EXISTING ROCK(S)
BM	EXISTING BENCHMARK
O/H	EXISTING OVERHEAD ELECTRICAL LINE
LOD	LIMIT OF DISTURBANCE
	EXISTING MANHOLE/WELL
	EXISTING RAILROAD TRACKS
110	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR
	PROPOSED FENCE
SF	PROPOSED SUPER SILT FENCE
SCE	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
L	PROPOSED LEACHATE FORCEMAIN
+110.7	PROPOSED SPOT ELEVATION
DF	PROPOSED DIVERSION FENCE
CD	PROPOSED TEMPORARY STONE CHECK DAM

EX. SEDIMENT POND

EX. LEACHATE FORCEMAIN FROM NORTH LANDFILL

NEW LIGHT

SEE INSET ON DRAWING M-1

1 / M-1 PROPOSED 2200 GALLON ABOVE GROUND LEACHATE STORAGE TANK
CENTER POINT –
N: 49,725.1
E: 19,616.1

INVERT: 319.11'

INVERT: 318.79'

3'-0" DIAMETER ELEC MH

2-36" CMP CULVERTS

INVERT: 318.46'

INVERT: 318.72'

REFER TO DRAWING 10.485A0085.02 (DETAIL 105) FOR TYPICAL CHANNEL SECTION

B / 85.03

EX. 200,000 GALLON ABOVE GROUND LEACHATE TANK

EX. 4" DRAIN OUTFALL (SEE DRAWING 10.485A0084.02)

LIMIT OF FIELD RUN SURVEY (MARCH 2013)

EX. CENTERLINE OF DRAINAGE SWALE

LIMITS OF FINAL COVER SYSTEM (SEE DETAIL 101 ON DRAWING 10.485A0085.03)

REFER TO DRAWING 10.485A0085.03 FOR TYPICAL PERIMETER SECTION

A / 85.03

TRENCH DETAIL ALONG SOUTH LANDFILL 4 / M-2

2 / M-2 TYPICAL PIPING TRENCH DETAIL

EX. 2" DIA. LEACHATE FORCEMAIN

EX. SOUTH LANDFILL (INACTIVE AND CAPPED)

SILT FENCE 5 / M-2

EX. SUMP MANHOLE CONNECTION (SEE DETAIL 118 ON DRAWING 10.485A0087.01)

EX. FORCEMAIN TO PROPOSED FORCEMAIN TIE-IN DETAIL 3 / M-2

EX. LEACHATE SUMP (SEE DETAIL 118 DRAWING 10.485A0087.01)

TEMPORARY STONE CHECK DAM 6 / M-2

TIE PROPOSED 2" DIA. HDPE LEACHATE PIPING INTO EX. 2" DIA. HDPE LEACHATE LINE

REPLACE EX. AIR RELEASE VALVE ON DETAIL 124 WITH CLA-VAL SERIES 36 COMBINATION AIR RELEASE/VACUUM VALVE

N

EASTALCO GRID

24°

N

MARYLAND STATE GRID

40 20 0 40 80
GRAPHIC SCALE IN FEET

SURVEY NOTES:

1. AREA INSIDE OF –FS– LINETYPE PERFORMED BY HARRIS, SMARIGA AND ASSOCIATES IN MARCH 2013.
2. AREA OUTSIDE OF –FS– LINETYPE PERFORMED BY HARRIS, SMARIGA AND ASSOCIATES IN APRIL 2012.

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 15453, Expiration Date: 07/21/2015

STATE OF MARYLAND — JEFFREY A. TYZAK — 15453 — REGISTERED PROFESSIONAL ENGINEER

EA ENGINEERING, SCIENCE, AND TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

REV. EWR No.	NO.	CHANGES MADE	BY	APP'D	DATE

DATE: AUGUST 2013
DRAWN BY: TMR
ENGINEER: TMR
SCALE: AS SHOWN
PLOT SIZE: ARCH D
E.W.R. NO.
C.P.A.R. NO.

AN ALUMAX COMPANY

TOLERANCES EXCEPT AS NOTED
FINISH
ANGULAR
DIMS. FRACTIONAL 2 PLS 3 PLS
INCH
MM

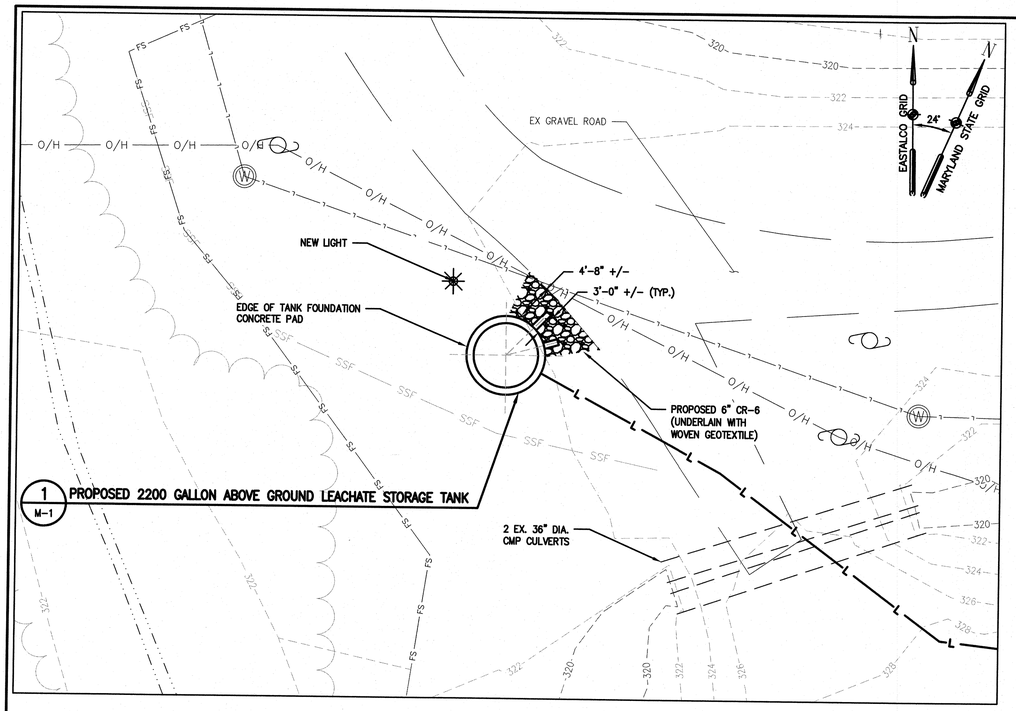
EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS ROAD
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2062

TITLE: SOUTH LANDFILL LEACHATE MANAGEMENT TANK SITE PLAN

DWG. NO. 83.628C0043

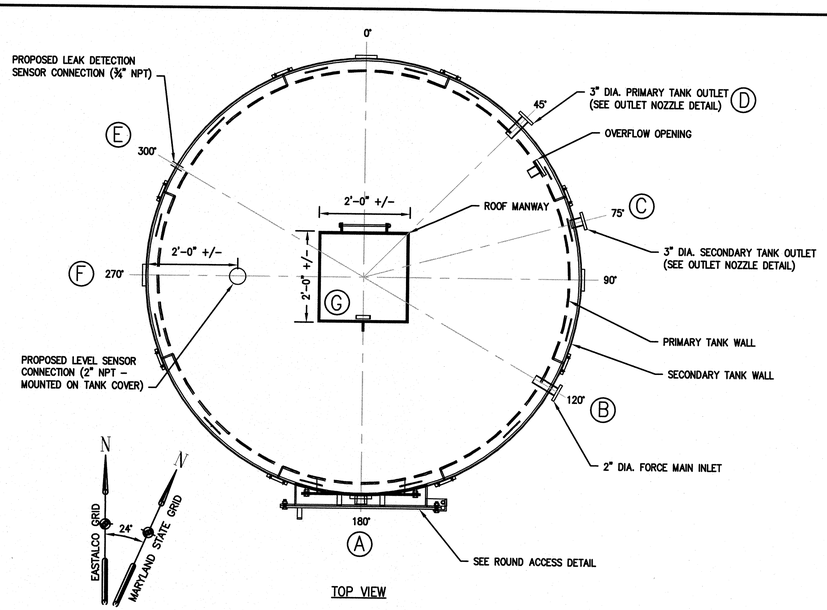
DWG. NO. 2 OF 6

FILE PATH: \\LOVETONCAD\CAD PROJECTS\14.539005 - EASTALCO CLOSURE\14.539005C-DISTPLN.DWG [C-01] 8/15/13

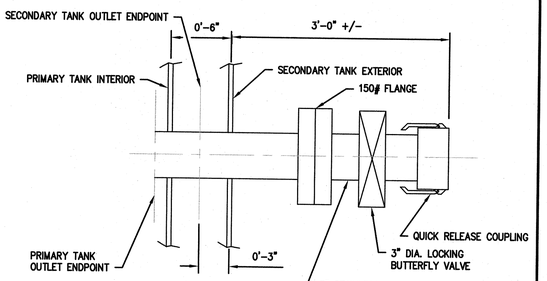


1 / M-1 PROPOSED 2200 GALLON ABOVE GROUND LEACHATE STORAGE TANK

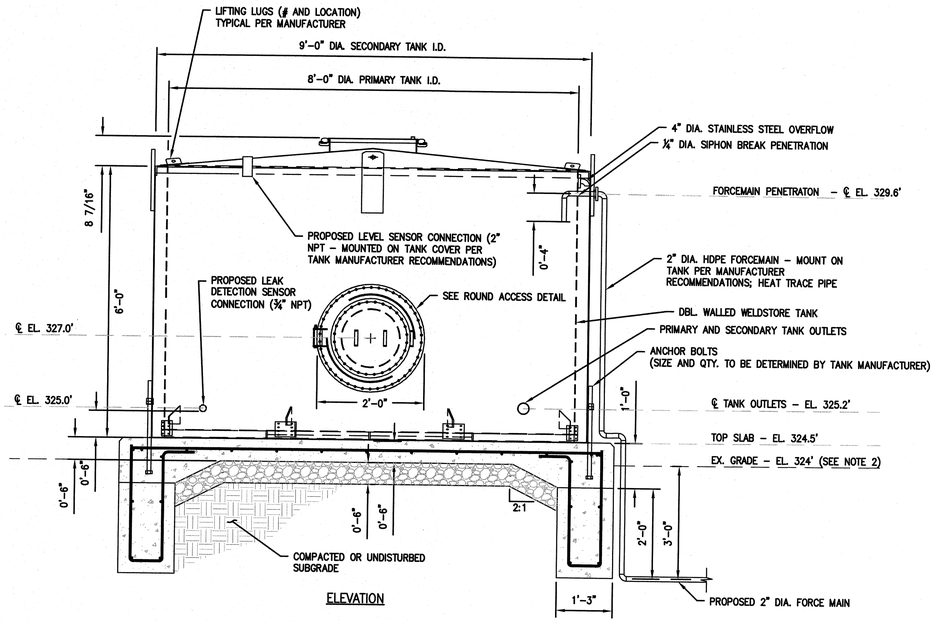
INSET
1"=10'



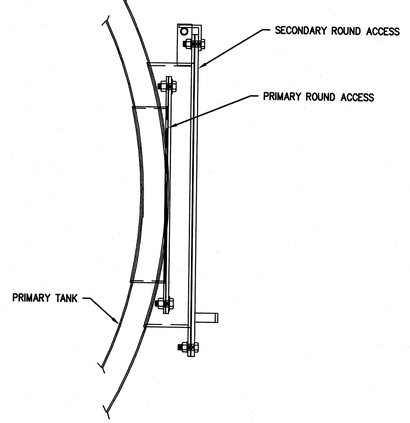
TOP VIEW



OUTLET NOZZLE DETAIL



ELEVATION



ROUND ACCESS DETAIL

GENERAL SEQUENCING NOTES:

1. THE SOUTH LANDFILL LEACHATE PUMPING SYSTEM SHALL CONTINUE TO USE THE 200,000 GALLON TANK UNTIL THE NEW TANK IS READY FOR SERVICE.
2. THE EX. LEACHATE LEVEL SENSOR AND FLOWMETER AT THE 200,000 GALLON TANK SHALL REMAIN IN SERVICE WITH POWER UNTIL THE 200,000 GALLON TANK IS DEMOLISHED AFTER CLOSURE OF THE NORTH LANDFILL. POWER, UTILITIES, TANK, WIRE ETC. SHALL BE DEMOLISHED AND REMOVED AT THE EX. 200,000 GALLON TANK AFTER CLOSURE OF THE NORTH LANDFILL.

NOTES
1. REBAR, FOOTING DEPTH, SLAB THICKNESS, ANCHOR BOLT SIZE AND ANCHOR BOLT QTY. ARE BASED ON SOIL BEARING AND WILL BE DETERMINED BY TANK MANUFACTURER. THIS FOUNDATION DESIGN IS PRELIMINARY.
2. ELEVATION OF EXISTING GRADE WAS APPROXIMATED FROM FIELD RUN SURVEY PERFORMED MARCH 2013. ALL OTHER ELEVATIONS OF TANK ARE RELATIVE TO THIS ELEVATION.
3. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION RELATING TO LEAK DETECTION AND LEVEL SENSORS.
4. EXCAVATE EX. SOILS UNTIL SUITABLE FOUNDATION SOILS ARE ENCOUNTERED AND BACKFILL WITH CR-6 AND TAMP.
5. GUARDRAIL TO ROOF MANWAY NOT SHOWN. GUARDRAIL SHALL BE DESIGNED BY MANUFACTURER TO COMPLY WITH OSHA AND ALCOA FALL PROTECTION STANDARDS.

2,000 GALLON LEACHATE TANK					
SYMBOL	SIZE	QUANTITY	SERVICE	LOCATION	REMARKS
Ⓐ	24" DIA.	1	ACCESS HATCH	SIDE	HINGED
Ⓑ	2" DIA.	1	FORCEMAIN INLET	SIDE	FLANGED
Ⓒ	3" DIA.	1	SECONDARY TANK OUTLET	SIDE	FLANGED
Ⓓ	3" DIA.	1	PRIMARY TANK OUTLET	SIDE	FLANGED
Ⓔ	3/4" NPT	1	LEAK DETECTION SENSOR CONNECTION	SIDE	THREADED
Ⓕ	2" NPT	1	LEVEL SENSOR CONNECTION	TOP	THREADED
Ⓖ	24"X24"	1	TOP TANK HATCH	TOP	HINGED

1 / C-1 PROPOSED 2200 GALLON ABOVE GROUND LEACHATE STORAGE TANK
NOT TO SCALE

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 19453 Expiration Date: 07/22/2015

EA ENGINEERING, SCIENCE, AND TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

STATE OF MARYLAND — GEOFFREY A. KLEMETTI — No. 19453 — REGISTERED PROFESSIONAL ENGINEER
9/13/2013

REV. EWR No.	NO.	CHANGES MADE	BY	APP'D	DATE
DATE AUGUST 2013					
DRAWN BY TMR					
ENGINEER TMR					
SCALE AS SHOWN					
PLOT SIZE ARCH D					
E.W.R. NO.					
C.P.A.R. NO.					

AN ALUMAX COMPANY

TOLERANCES EXCEPT AS NOTED
FINISH
ANGULAR
DIMS. | FRACTIONAL | 2 PLS | 3 PLS
INCH
MM

EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS ROAD
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2062

TITLE: SOUTH LANDFILL LEACHATE MANAGEMENT TANK
LEACHATE STORAGE TANK PLAN

DWG. NO. 83.628M0044

DWG. NO. 3 OF 6

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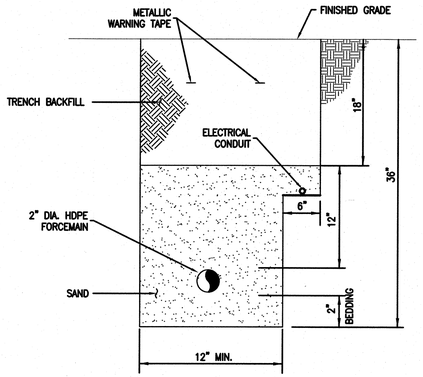
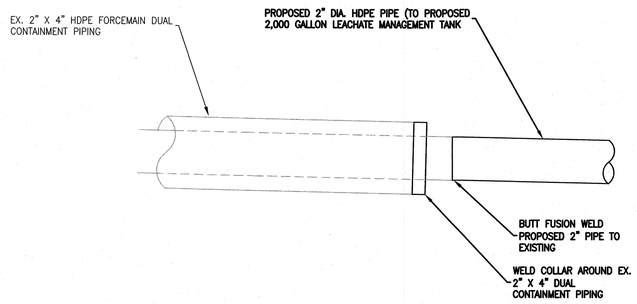


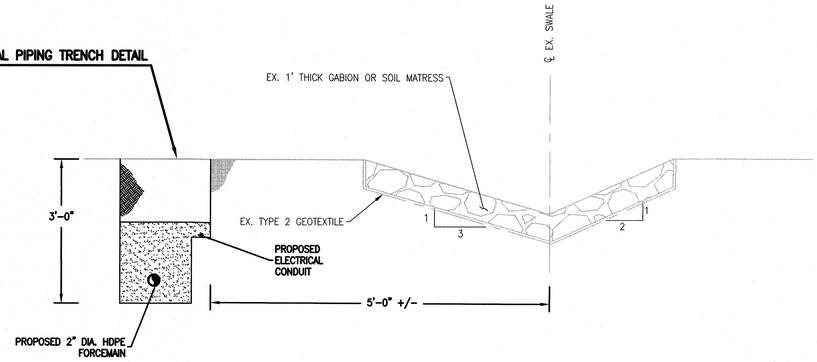
2 C-1 **TYPICAL PIPING TRENCH DETAIL**
NOT TO SCALE



NOTE: CONTRACTOR TO BUTT FUSE NEW COLLAR AROUND EX. FORCEMAIN TO BE ABANDONED.

3 C-1 **EX. FORCEMAIN TO PROPOSED FORCEMAIN TIE-IN DETAIL**
NOT TO SCALE

2 M-2 **TYPICAL PIPING TRENCH DETAIL**

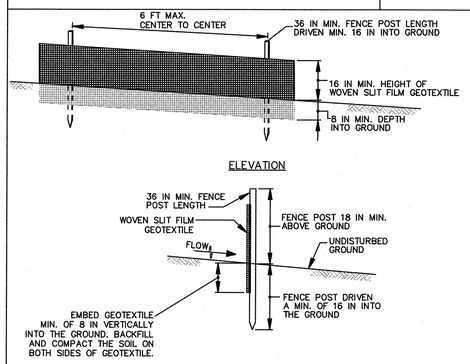


NOTE: THIS DETAIL WAS ADAPTED FROM DETAIL 105 ON DRAWING 10.485A0085.03

4 C-1 **TRENCH DETAIL ALONG SOUTH LANDFILL**
NOT TO SCALE

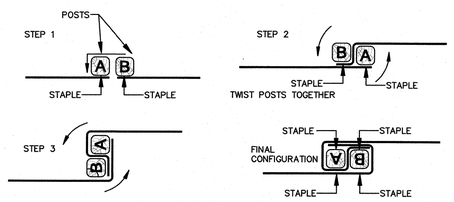
DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



ELEVATION

CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.2

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

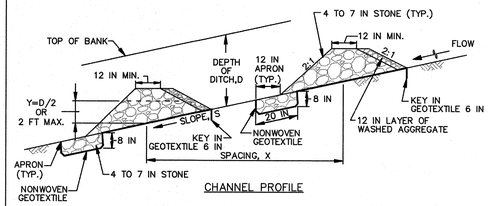
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.3

5 C-1 **SILT FENCE**
NOT TO SCALE

DETAIL D-2 STONE CHECK DAM

STANDARD SYMBOL: CD



CHANNEL PROFILE

CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. PREPARE SWALES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS DESCRIBED IN SECTION C-2, STANDARDS AND SPECIFICATIONS FOR TEMPORARY SWALE, OR AS SPECIFIED ON PLAN.
2. PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, UNDER THE BOTTOM AND SIDES OF THE DAM PRIOR TO PLACEMENT OF STONE. CONSTRUCT THE CHECK DAM WITH WASHED 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) WITH SIDE SLOPES OF 2:1 OR FLATTER AND A MINIMUM TOP WIDTH OF 12 INCHES. PLACE THE STONE SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL AND CHANNEL BANKS. FORM THE WEIR SO THAT TOP OF THE OUTLET CREST IS APPROXIMATELY 6 INCHES LOWER THAN THE OUTER EDGES. LINE THE UPSTREAM FACE OF THE DAM WITH A 1 FOOT THICK LAYER OF WASHED AGGREGATE (¾ TO 1½ INCH).
3. SET THE HEIGHT FOR THE WEIR CREST EQUAL TO ONE-HALF THE DEPTH OF THE CHANNEL OR DITCH. TO AVOID SCOUR THE MAXIMUM HEIGHT OF THE WEIR CREST MUST NOT EXCEED 2.0 FEET.
4. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF OF THE HEIGHT OF THE WEIR CREST. MAINTAIN LINE, GRADE, AND CROSS SECTION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

D.8

6 C-1 **TEMPORARY STONE CHECK DAM**
NOT TO SCALE

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
License No. 19453, Expiration Date: 07/22/2015

EA ENGINEERING, SCIENCE, AND TECHNOLOGY
225 Schilling Circle Suite 400 Hunt Valley, Maryland (410) 584-7000

STATE OF MARYLAND — GEOFFREY A. TIERNEY — 40 YEARS REGISTERED PROFESSIONAL ENGINEER — 9/15/2014

NO.	CHANGES MADE	BY	APP'D	DATE

REV. EWR No.
DATE: AUGUST 2013
DRAWN BY: TMR
ENGINEER: TMR
SCALE: AS SHOWN
PLOT SIZE: ARCH D
E.W.R. NO.
C.P.A.R. NO.

AN ALUMAX COMPANY

TOLERANCES EXCEPT AS NOTED
FINISH
ANGULAR
DIMS. | FRACTIONAL | 2 PLS | 3 PLS
INCH
MM

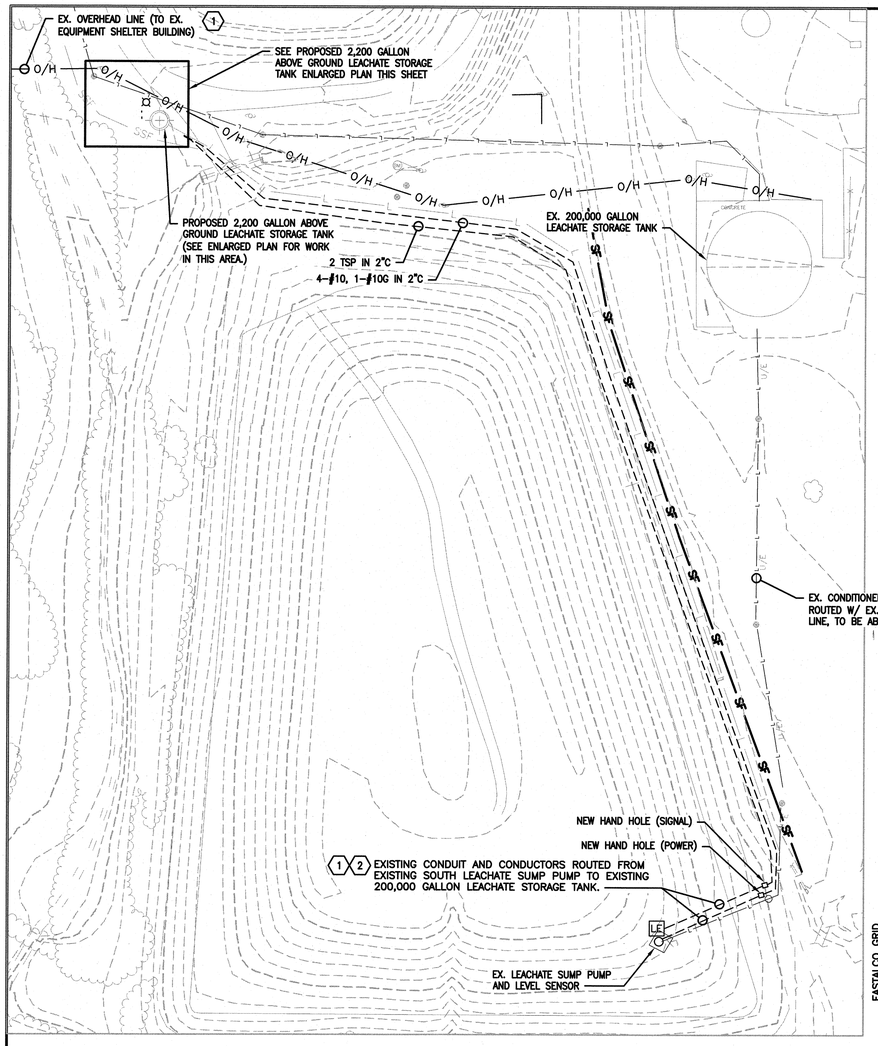
EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS ROAD
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2062

TITLE: SOUTH LANDFILL LEACHATE MANAGEMENT TANK DETAILS

DWG. NO. 83.628M0045

DWG. NO. 4 OF 6

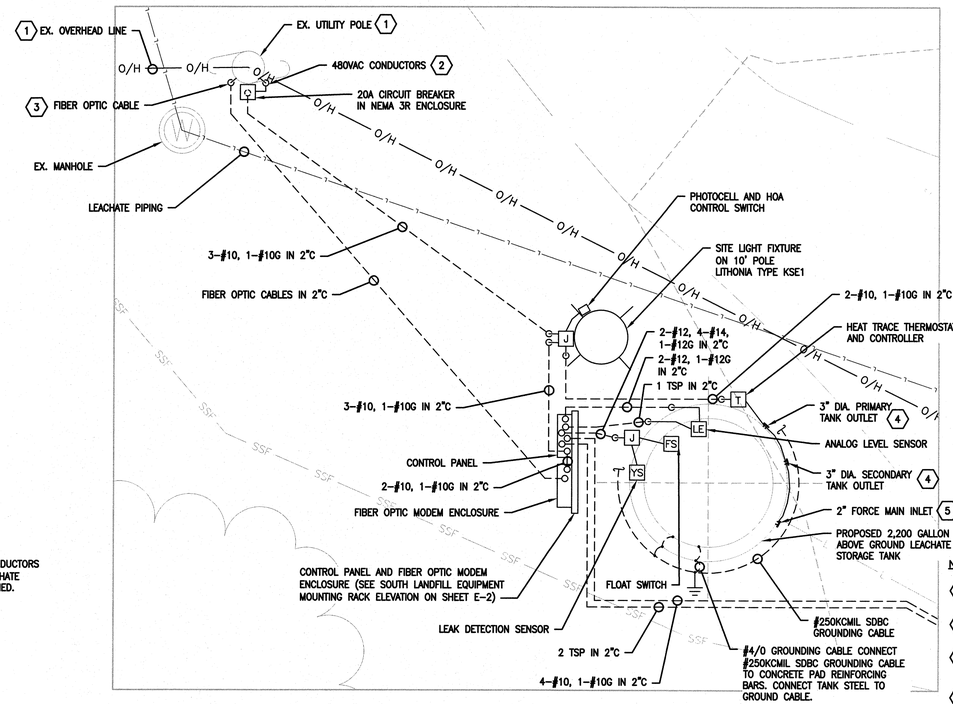
FILE PATH: \\ONTHOMJ\JOB\PROJECTS\435905 - EASTALCO CLOSURE\435905M-022DETAILS.DWG [M-02] 9/15/13

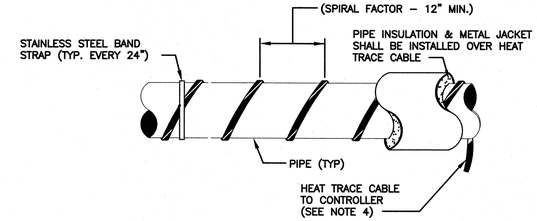


SITE PLAN

SCALE: 1"=40'

40 20 0 40 80
GRAPHIC SCALE IN FEET



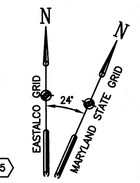


HEAT TRACE CABLE DETAIL

NOT TO SCALE

NOTES:

1. HEAT TRACE SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS ON PORTIONS OF PIPING AS SCHEDULED.
2. PROVIDE HEAT TRACE CAUTION LABELS ON PIPE INSULATION METAL JACKET.
3. CONTRACTOR SHALL INSTALL A COMPLETE, IN-PLACE HEAT TRACE CABLE AS SPECIFIED.



NOTES:

1. EXISTING OVERHEAD LINES ROUTED FROM EXISTING EQUIPMENT SHELTER BUILDING TO PROPOSED 2,200 GALLON LEACHATE STORAGE TANK.
2. OBTAIN 480VAC POWER FROM EXISTING OVERHEAD POWER CONDUCTORS. ROUTE CONDUCTORS TO NEW 60A CIRCUIT BREAKER.
3. OBTAIN PLC COMMUNICATIONS SIGNAL FROM EXISTING FIBER OPTIC CABLES. ROUTE TO NEW FIBER OPTIC MODEM. SPLICE FIBER OPTIC CABLE AS NECESSARY TO CONTINUE ROUTING TO EXISTING 200,000 GALLON TANK
4. INSTALL HEAT TRACE PRIMARY AND SECONDARY TANK OUTLETS.
5. INSTALL HEAT TRACE ON OPPOSED PIPING OF FORCE MAIN INLET PIPING.

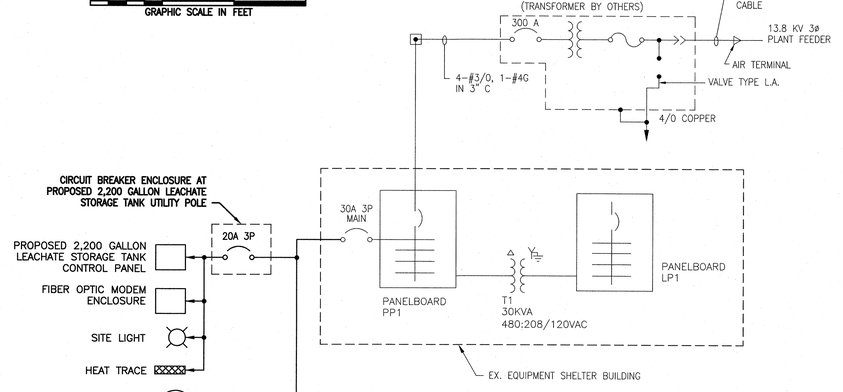
PROPOSED 2,200 GALLON ABOVE GROUND LEACHATE STORAGE TANK ENLARGED PLAN

SCALE: 1"=5'

5 2.5 0 5 10
GRAPHIC SCALE IN FEET

SITE PLAN NOTES:

1. LOCATE CONDUIT AND CONDUCTORS (3-#12, 1-#12G IN 2"C) ROUTED FROM EXISTING SOUTH LEACHATE SUMP PUMP TO EXISTING 200,000 GALLON LEACHATE STORAGE TANK. INSTALL HANDHOLE, CUT INTO CONDUIT AND CONDUCTORS, AND SPLICE INTO EXISTING CONDUCTORS FROM THE SUMP PUMP SO THAT POWER MAY BE OBTAINED FROM THE NEW CONTROL PANEL AT THE NEW 2,200 GALLON LEACHATE TANK
2. LOCATE CONDUIT AND SIGNAL CONDUCTORS ROUTED FROM EXISTING LEVEL TRANSMITTER TO EXISTING GENIUS ENCLOSURE LOCATED AT THE EXISTING 200,000 GALLON LEACHATE STORAGE TANK. INSTALL HAND HOLE, CUT INTO CONDUIT AND SIGNAL CONDUCTORS, AND SPLICE INTO EXISTING SIGNAL CONDUCTORS FROM LEVEL TRANSMITTER SO THAT THE LEVEL SIGNAL IS PROVIDED TO THE NEW CONTROL PANEL AT THE NEW 2,200 GALLON LEACHATE TANK.
3. COORDINATE THE MODIFICATION OF THE EXISTING PLC PROGRAM SO THAT THE EXISTING LEACHATE SUMP PUMP OPERATES THE SAME AS PREPROJECT CONDITIONS (LOW LEVEL ON, HIGH LEVEL OFF), WITH THE ADDITIONAL REQUIREMENT THAT THE PUMP SHALL NOT RUN IF THE 2,200 GALLON LEACHATE TANK IS FULL (USER ADJUSTABLE HIGH-HIGH LEVEL).



ONE LINE DIAGRAM

NOTES:

1. TO BE REMOVED IN FUTURE

ABBREVATIONS

AMP	AMPERE
AC	ALTERNATING CURRENT
AF	AMPS FRAME
APPROX.	APPROXIMATELY
AT	AMPS TRIP
AWG	AMERICAN WIRE GAGE
BKR	BREAKER
BLDG.	BUILDING
CB	CIRCUIT BREAKER
C.E.P.	CONCRETE EQUIPMENT PAD
CKT, CIRC.	CIRCUIT
CP, C.P.	CONTROL PANEL
DC	DIRECT CURRENT
DIA	DIAMETER
D.S.	DISCONNECT SWITCH
DWG	DRAWING
ELEC	ELECTRICAL
ENCL.	ENCLOSURE
EX.,EXIST	EXISTING
FVNR	FULL VOLTAGE NON-REVERSING
G	GREEN OR GROUNDING CONDUCTOR
GF	GROUND FAULT
GFCI, GFI	GROUND FAULT CIRCUIT INTERRUPTER
JB OR JB-()	JUNCTION BOX OR JUNCTION BOX W/DESIGNATION
KCMIL	KILO (THOUSAND) CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
LP	LIGHTING PANELBOARD
LTG.	LIGHTING
M-()	MOTOR STARTER COIL W/DESIGNATION
MTG	MOUNTING
N	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFSS	NON-FUSED SAFETY SWITCH
NO.	NUMBER
NTS	NOT TO SCALE
OL	OVERLOAD
PF-()	POWER FEEDER W/SOURCE DESIGNATION & CIRCUIT DESIGNATION
PH	PHASE
PP-()	POWER PANELBOARD
#P	(#) POLE, # REPRESENTS A NUMBER
P-()	PUMP W/DESIGNATION
QTY	QUANTITY
SDBC	SOFT DRAWN BARE COPPER
S.E.	SERVICE ENTRANCE
T-()	TRANSFORMER W/DESIGNATION
TB-()	TERMINAL BOX W/DESIGNATION
TYP.	TYPICAL
UTIL.	UTILITY
VAC	VOLTS ALTERNATING CURRENT
W/	WITH

SYMBOLS

	CIRCUIT BREAKER
	CIRCUIT CONNECTION
	CONTACTOR
Δ, Y	DELTA, Y
	DISCONNECT SWITCH
	GROUND ROD
	GROUND TEST WELL
J	JUNCTION BOX
	SITE LIGHTING
	MOTOR
#	MOTOR, W/ HP
	OVERLOAD
	TRANSFORMER
LP1-() (PP# OR PF)	HOME RUN TO LIGHTING OR POWER PANELBOARD - INCLUDES CONDUIT AND CIRCUIT (CONDUCTORS)
	CONDUIT CONCEALED BELOW SLAB OR GRADE (UNLESS NOTED OTHERWISE)
	CONDUIT DOWN
	CONDUIT UP
	GROUND GRID OR CONNECTING CONDUCTOR
TB	TERMINAL BOX
	RECEPTICLE
	ELECTRICAL UTILITY POLE
O/H	OVERHEAD ELECTRICAL UTILITY LINE
L	LEACHATE COLLECTION PIPING
SSF	SUPER SILT FENCE
LE	LEVEL ELEMENT
FS	FLOAT SWITCH
FE	FLOW ELEMENT
T	HEAT TRACE THERMOSTAT AND CONTROLLER
	LIGHT FIXTURE
	HEAT TRACE
YS	PROXIMITY SWITCH

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 20812 Expiration Date: April 2015

EA ENGINEERING, SCIENCE, AND TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

STATE OF MARYLAND DANIEL T. YUE 20812 PROFESSIONAL ENGINEER
August 16, 2013

REV. EWR No.	NO.	CHANGES MADE	BY	APP'D	DATE

DATE AUGUST 2013
DRAWN BY JAP
ENGINEER DY
SCALE AS SHOWN
PLOT SIZE ARCH D
E.W.R. NO.
C.P.A.R. NO.

AN ALUMAX COMPANY

TOLERANCES EXCEPT AS NOTED
FINISH
ANGULAR
DIMS. FRACTIONAL 2 PLS 3 PLS
INCH
MM

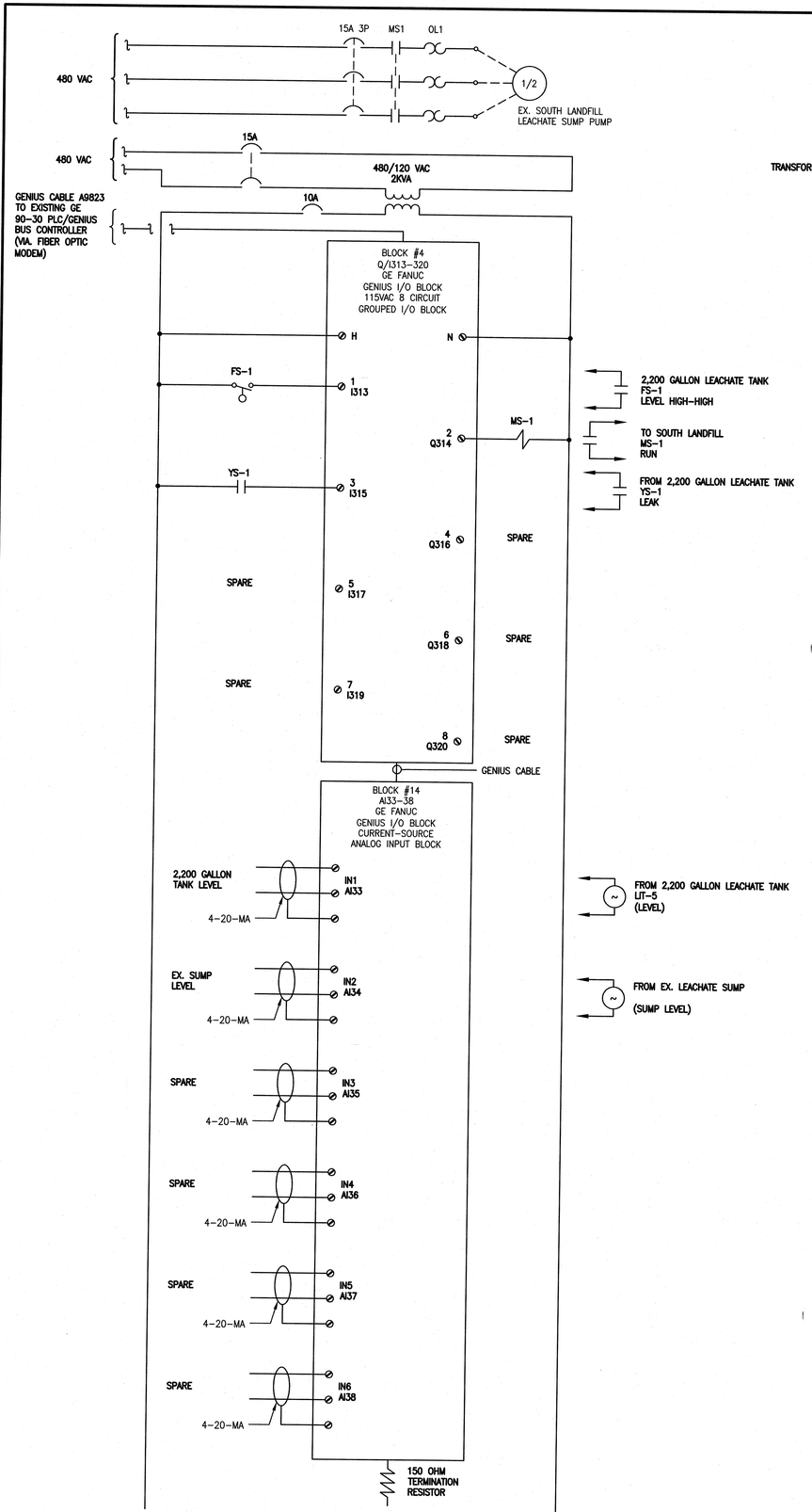
EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS ROAD
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2062

TITLE: SOUTH LANDFILL LEACHATE MANAGEMENT TANK
ELECTRICAL SITE PLAN

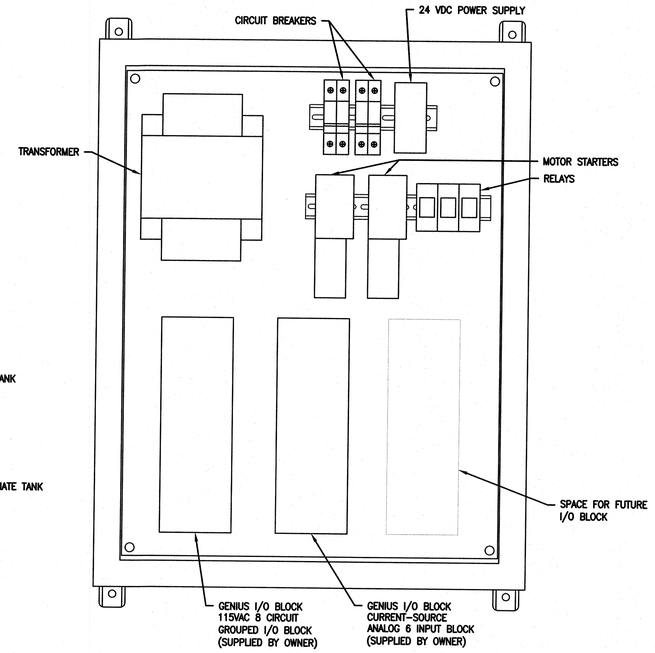
DWG. NO. 83.628E0046

DWG. NO. 5 OF 6

FILE PATH: G:\PROJECTS\143905 - EASTALCO CLOSURE\143905E-SITEPLAN.DWG [E-1] 8/16/13

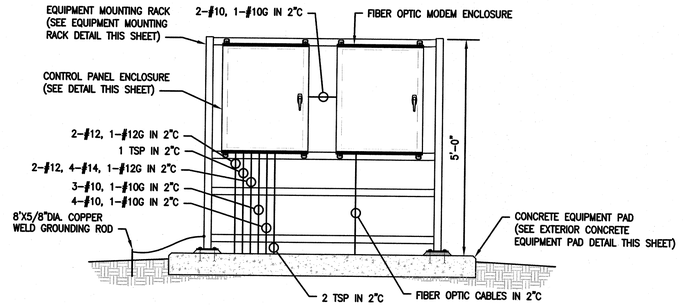


CONTROL PANEL ELEMENTARY
NOT TO SCALE

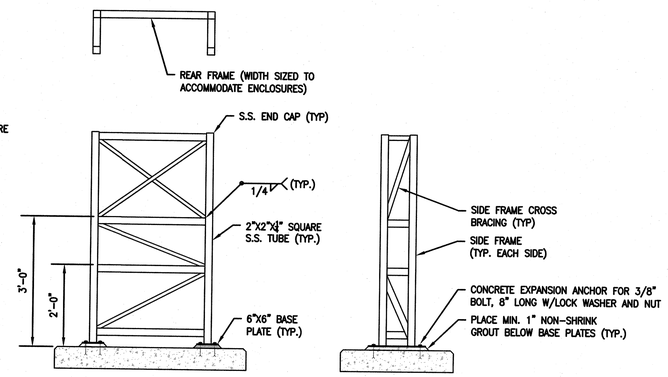


CONTROL PANEL - SUBPANEL LAYOUT
NOT TO SCALE

FIBER OPTIC MODEM - SUBPANEL LAYOUT
NOTE TO SCALE

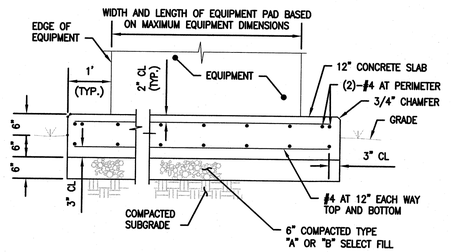


SOUTH LANDFILL EQUIPMENT MOUNTING RACK ELEVATION
NOT TO SCALE



EQUIPMENT MOUNTING RACK DETAIL
NOT TO SCALE

NOTES:
1. SIDE FRAME SHALL BE 10" DEEP MINIMUM. THE SIDE FRAME SHALL BE APPROXIMATELY TWO THIRDS THE SIZE OF THE LARGEST ENCLOSURE DEPTH.
2. CROSS BRACING SHALL BE PROVIDED ON THE REAR FRAME ASSEMBLY FOR EMRs 24" WIDE AND LARGER. CROSS BRACING SHALL BE PROVIDED ON THE SIDE FRAME FOR EMRs 18" DEEP OR LARGER.
3. ENCLOSURES SHALL BE MOUNTED USING STAINLESS STEEL HARDWARE. THE EMR SHALL BE FASTENED TO THE CEP WITH CORROSION RESISTANT EXPANSION ANCHORS.
4. MOUNTING RACK AND CONTROL PANELS SHALL BE STAINLESS STEEL.



NOTE:
1. COORDINATE ANCHOR BOLT LOCATIONS W/ MECHANICAL DRAWINGS AND EQUIPMENT MANUFACTURER.

EXTERIOR CONCRETE EQUIPMENT PAD DETAIL
NOT TO SCALE

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.

License No. 26612 Expiration Date: Apr. 1 2015

EA ENGINEERING, SCIENCE, AND TECHNOLOGY
Loveton Center
15 Loveton Circle
Sparks, Maryland 21152
(410) 771-4950

STATE OF MARYLAND DANIEL T. WISE No. 26612 PROFESSIONAL ENGINEER
August 16 2013

NO.	CHANGES MADE	BY	APP'D	DATE
REV. EWR No.				
DATE AUGUST 2013				
DRAWN BY JAP				
ENGINEER DY				
SCALE AS SHOWN				
PLOT SIZE ARCH D				
E.W.R. NO.				
C.P.A.R. NO.				

AN ALUMAX COMPANY

TOLERANCES EXCEPT AS NOTED

	FRACTIONAL	2 PLS	3 PLS
FINISH			
ANGULAR			
DIMS.			
INCH			
MM			

EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS ROAD
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2062

TITLE: SOUTH LANDFILL LEACHATE MANAGEMENT TANK PUMP CONTROL PANEL

DWG. NO. 83.628E0047

DWG. NO. 6 OF 6

FILE PATH: G:\PROJECTS\A35505 - EASTALCO CLOSURE\1.A35505E-C03.DWG [E-2] 8/16/13

PLANT NORTH

0 50 100 150

SCALE IN FEET

N 48750
E 19500

CLASS I RIPRAP
20'x12'x18"
START RIPRAP
5' BACK FROM PIPE
ENDPOINT

END SECTION
SEE DETAIL (113)

ALCMP, TYPE II
INV EL= 318.0
N 49080.58
E 19569.79

ALCMP, TYPE II
INV EL= 317.0
N 49123.58
E 19583.34

36" ALCMP, TYPE II
STORM SEWER
SEE PROFILE
DWG C-8

15" ALCMP, TYPE II
STORM SEWER
SEE PROFILE
DWG C-8

RISER
N 49123.58
E 19693.34

MANHOLE
SEE DETAIL (116)

MH-2
N 49080.58
E 19821.73
TOP EL= 328.0
INV EL= 319.0±
SEE NOTE 1

SEE NOTE 2

4" DIA DRAIN
OUTFALL
N 49189.21
E 19798.53

36" ALCMP, TYPE II
STORM SEWER
SEE PROFILE DWG C-8

REMOVE AND
REPLACE EXST
MANHOLE
SEE DETAIL (116)

N 48750
E 20000

⊗ MATCH EXST ±
⊗ 316.5

PI
N 49214.15
E 19613.43

4" DIA DRAIN
OUTFALL
N 49240.20
E 19601.40

4" DIA LATERAL DRAINAGE PIPE,
LIMITS OF FINAL COVER SYSTEM,
AND CONSTRUCTION REFERENCE LINE
SEE PERIMETER SECTION
AND NOTE 7 ON DWG C-1. (A) C-4

4" DIA DRAIN
OUTFALL
N 49538.80
E 19630.30

PI
N 49652.93
E 19655.87

4" DIA DRAIN
OUTFALL
N 49654.42
E 19773.70

PI
N 49644.71
E 19841.58

4" DIA DRAIN
OUTFALL
N 49524.23
E 19884.52

(A) C-4

SUMP MANHOLE
AREA
SEE DETAIL (118)

EXST STORM
SEWER

PI
N 49212.61
E 19977.34

4"DIA DRAIN
OUTFALL
N 49241.02
E 19983.97
SEE PERIMETER
SECTION (A) C-4

MH-1
N 49151.87
E 19998.29
TOP EL= 326.5
INV EL= 320.0±
SEE NOTE 1

N 48750
E 20000

N 50000
E 19500

N 50000
E 20000

BENCHMARK
S.W. CORNER OF
CONCRETE SLAB
EL.322.00

APPROX LOCATION
OF FORCE MAIN
LEACHATE LINE
FROM NEW
LANDFILL

BENCHMARK
WELL #26
N. 49316.55
E. 20031.02
TOP OF PVC SLEEVE
324.606

BENCHMARK
N. 48998.07
E. 19773.23
TOP OF PVC
321.682

R= 20'

MW-42 MW-6 MW-25 MW-26 MW-4

WATER

DEBRIS

CONC. WALL PIPES TANK

EDWARD R. UNDERWOOD
No. 13553
REGISTERED PROFESSIONAL ENGINEER
STATE OF MARYLAND
June 15, 1994

NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND CONFIRM THE INVERT ELEVATION OF EXST STORM SEWER PIPE AT MH-1 PRIOR TO START OF STORM SEWER INSTALLATION. CONTRACTOR SHALL REPORT THIS RESULT TO OWNERS REPRESENTATIVE PRIOR TO STARTING CONSTRUCTION TO ASSURE THAT A MINIMUM 0.5% STORM SEWER SLOPE IS ACHIEVED.

2. CONTRACTOR SHALL REGRADE THE SIDE SLOPES OF THE BERM OUTSIDE THE LIMITS OF FINAL COVER SYSTEM TO MEET THE GRADES SHOWN ON DWGS C-2 AND C-3.

FREDERICK COUNTY DEPARTMENT OF PUBLIC WORKS
Approved _____ DIRECTOR DATE 6/30/94
Approved _____ CHIEF ENGINEER DATE 6/30/94

FREDERICK COUNTY DEPARTMENT OF PUBLIC WORKS
Approved _____ SWM DESIGN ENGINEER DATE

FREDERICK SOIL CONSERVATION DISTRICT
Approved By _____ DISTRICT MANAGER
DATE 6/21/94

Reviewed for FREDERICK S.C.D.
and meets Technical Requirements
_____ DATE 6-21-94
Signature
U.S. Soil Conservation Service

SCD and SCS approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

REV. NO.		CHANGES MADE	BY	APP'D	DATE
	2	CHANGED PIPE TYPE FROM CMP TO ALCMP	G.A.	S.B.	5-19-94
	1	ADDED SCD SIGNATURE BLOCK	G.A.	B.P.	2-28-94

DATE 05-31-94
DRAWN BY G. ANDERSON
ENGINEER R. BRAWLEY, B. PARSONS
SCALE 1"= 50'
PLOT SIZE D600
E.W.R. NO.
C.P.A.R. NO.

AN ALUMAX COMPANY

EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS RD.
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2862

TOLERANCES EXCEPT AS NOTED

FINISH	125		
ANGULAR	±0°30'		
DIMS.	FRACTIONAL	2 PLS	3 PLS
INCH	±1/8"	±.01	±.005
MM	–	–	–

TITLE
FINAL COVER SYSTEM AND PIPING PLAN

DWG. NO. 10.485A0084.02

SHEET 4
DWG NO. C-3
DATE SEP 1993
PROJ NO. WDC35015.L1

EASTALCO ALUMINUM COMPANY
INDUSTRIAL LANDFILL CLOSURE
FREDERICK, MARYLAND

CH2MHILL

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
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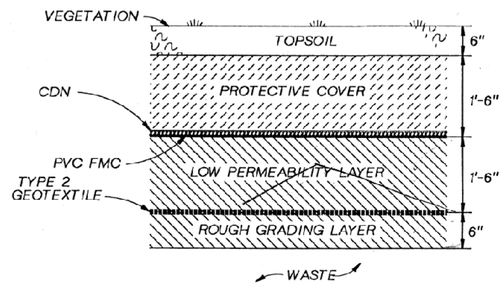
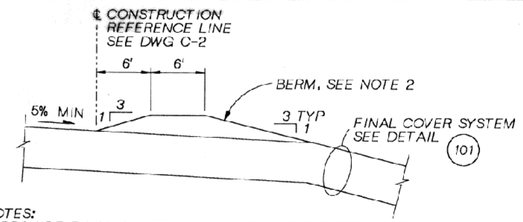
SMP-5015C01.DGN 1:24,48-62
SMP-5015C10.DGN 1:46,48-63

24-May-1994 5015dc01.dgn



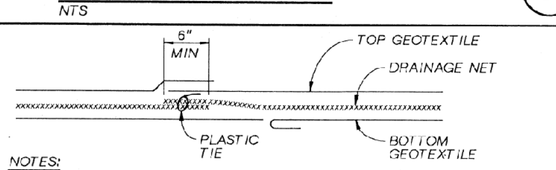
NOTE: PROVIDE A 6" MINIMUM ROUGH GRADING LAYER BETWEEN WASTE HIGH POINTS AND LOW PERMEABILITY LAYER. THICKNESS WILL VARY WITH WASTE SURFACE CONTOURS.

FINAL COVER SYSTEM DETAIL (101)
NTS



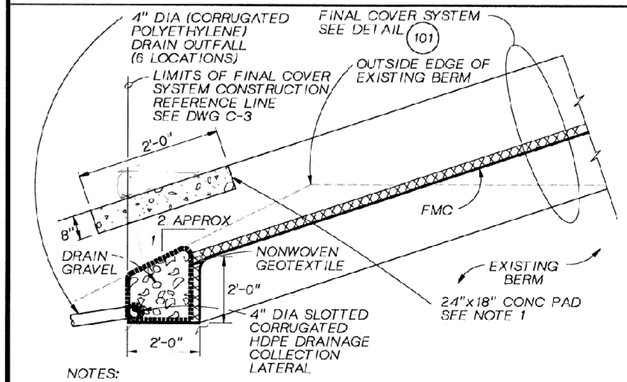
NOTES:
1. PROVIDE FINAL COVER ON A CONTINUOUS SLOPE OF 5% MIN.
2. CONSTRUCT EARTHFILL BERM ON TOP OF FINAL COVER AS SHOWN. THICKEN PROTECTIVE COVER TO FORM THE BERM AND COVER WITH TOPSOIL.

TOP BERM DETAIL (102)
NTS



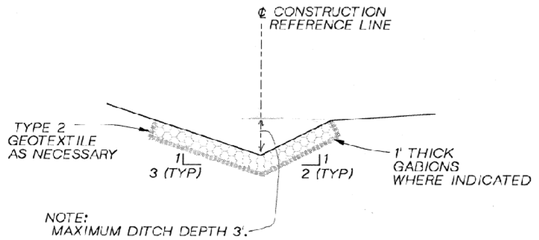
NOTES:
1. OVERLAP DRAINAGE NET 6" MINIMUM AND TIE WITH PLASTIC TIES AT 6-FOOT MAXIMUM INTERVALS
2. TOP GEOTEXTILE SHALL NOT BE PUNCTURED TO INSTALL PLASTIC BANDS FOR CDN SPLICE.
3. OVERLAP TOP GEOTEXTILE 6" MINIMUM AND PROVIDE CONTINUOUS BONDED SEAM.

COMPOSITE DRAINAGE NET (CDN) SPLICE (103)
NTS

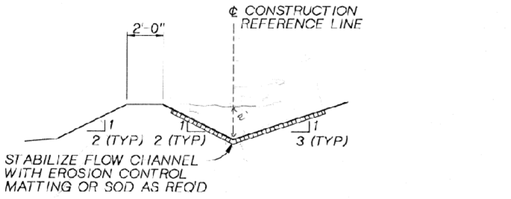


NOTES:
1. CENTER CONCRETE PAD ABOVE THE LINER ANCHOR TRENCH AT THE FOLLOWING LOCATIONS:
   A. AT EVERY ANCHOR TRENCH ALIGNMENT CHANGE OF DIRECTION.
   B. AT A MAXIMUM SPACING OF 100'.

FMC ANCHOR TRENCH (104)
NTS

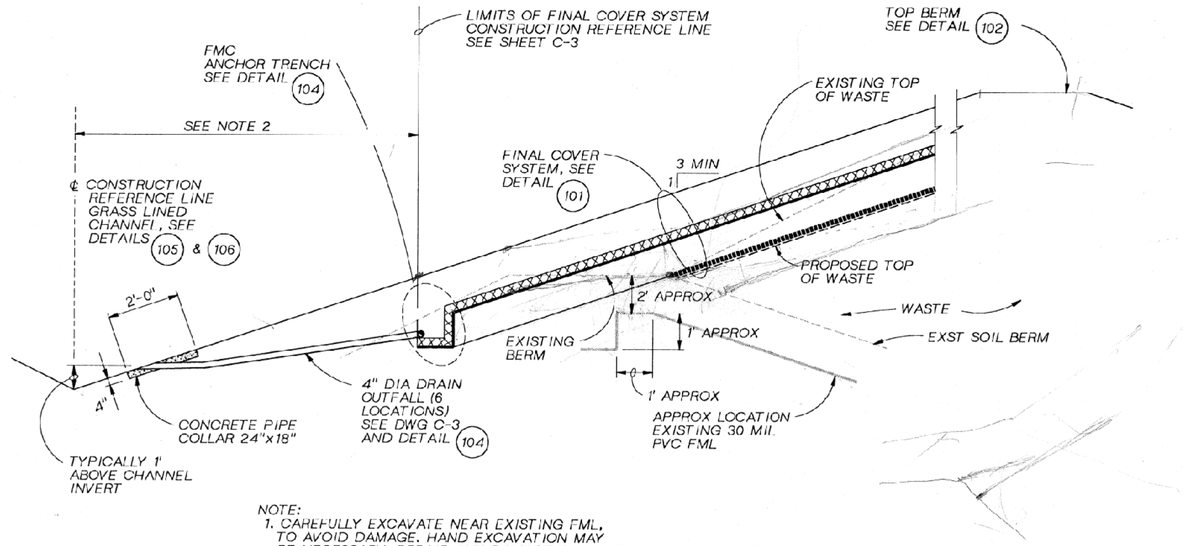


TYPICAL CHANNEL SECTION (105)
NTS



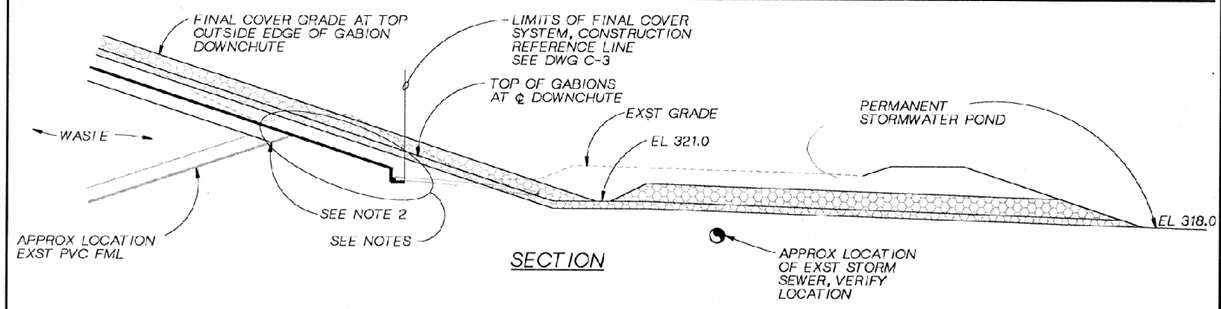
NOTE: BUILD BERM TO MAINTAIN 2' DEPTH.

TYPICAL CHANNEL SECTION WITH BERM (106)
NTS

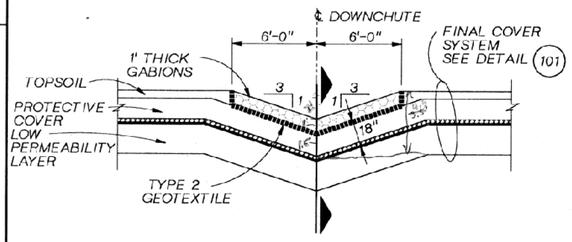


NOTE:
1. CAREFULLY EXCAVATE NEAR EXISTING FML, TO AVOID DAMAGE. HAND EXCAVATION MAY BE NECESSARY. REPAIR ANY DAMAGE TO EXISTING FML.
2. EXTEND PROTECTIVE COVER AND TOPSOIL LAYER THROUGH DITCHLINE TO MEET THE GRADES SHOWN ON DWG C-2.

TYPICAL PERIMETER SECTION (A)
NTS C-2



SECTION



GABION DOWNCHUTE DETAIL (107)
NTS

NOTES:
1. CAREFULLY HAND EXCAVATE EXISTING FML AT DOWNCHUTE LOCATION. REMOVE EXISTING LINER IN ANCHOR TRENCH AS NECESSARY TO GRADE DOWNCHUTE.
2. WELD THE COVER PVC FMC TO EXISTING PVC FML ALONG WIDTH OF REMOVED ANCHOR TRENCH. WELD PVC FMC TO FML AT DOWNCHUTE ONLY.
3. EXTEND COVER PVC FMC TO PROVIDE A CONTINUOUS COVER LINER ANCHOR TRENCH.
4. END THE LOW PERMEABILITY LINER ON INSIDE OF LANDFILL AS REQUIRED TO SEAM THE COVER PVC FMC TO EXST PVC FML.
5. SEE DWG C-2 FOR DOWNCHUTE LOCATION.
6. CONTOUR FINAL COVER GRADE AT DOWNCHUTE AS SHOWN.
7. PROVIDE GABION LINING ON DOWNCHUTE. PLACE GABION ON TOP OF THE FINAL PROTECTIVE COVER LAYER WITHIN THE FINAL COVER SYSTEM.

FREDERICK COUNTY DEPARTMENT OF PUBLIC WORKS
Approved _____ DIRECTOR DATE 6/30/94
Approved _____ CHIEF ENGINEER DATE 6/30/94

FREDERICK COUNTY DEPARTMENT OF PUBLIC WORKS
Approved _____ SWM DESIGN ENGINEER DATE

FREDERICK SOIL CONSERVATION DISTRICT
Approved By _____ DISTRICT MANAGER
DATE 6/21/94

Reviewed for FREDERICK S.C.D. and meets Technical Requirements
_____ DATE 6-21-94
Signature
U.S. Soil Conservation Service

SCD and SCS approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

STATE OF MARYLAND — EDWARD R. UNDERWOOD No. 13553 — REGISTERED PROFESSIONAL ENGINEER
June 15, 1994

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EASTALCO ALUMINUM COMPANY
INDUSTRIAL LANDFILL CLOSURE
FREDERICK, MARYLAND

SHEET 5
DWG NO. C-4
DATE SEP 1993
PROJ NO. WDC35015.L1

NO.	CHANGES MADE	BY	APP'D	DATE
3	CHANGED DOWNCHUTE SECTION ON DETAIL 107	G.A.	G.A.	5-19-94
2	ADDED EROSION CONTROL MAT TO DETAIL 106	M.G.	B.P.	3-17-94
1	ADDED SCD SIGNATURE BLOCK	G.A.	B.P.	2-28-94

REV. EWR No.
DATE 05-31-94
DRAWN BY G. ANDERSON
ENGINEER R. BRAWLEY B. PARSONS
SCALE N/A
PLOT SIZE D1
E.W.N. NO.
C.P.A.R. NO.

ALUMAX COMPANY

EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS RD.
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2862

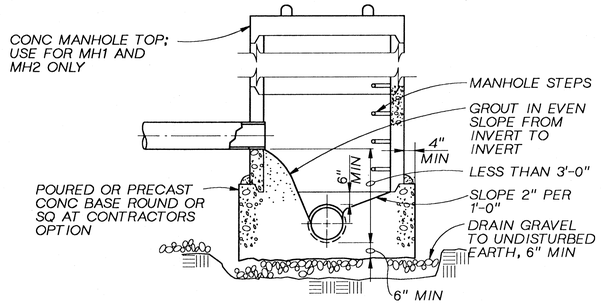
TOLERANCES EXCEPT AS NOTED

FINISH	125		
ANGULAR	±2°30'		
DIMS.	FRACTIONAL	2 PLS	3 PLS
INCH	±1/8"	±.01	±.005
MM	–	–	–

TITLE
SECTIONS AND DETAILS

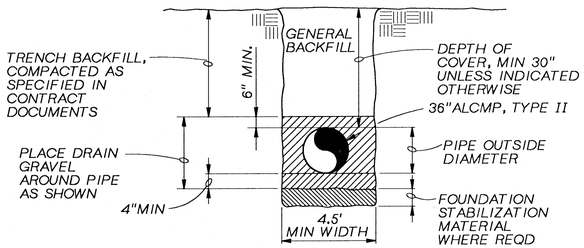
DWG. NO. 10.485A0085.03

scmp-5015dc.dgn 1-63



MANHOLE BASE SECTION PIPE (116)

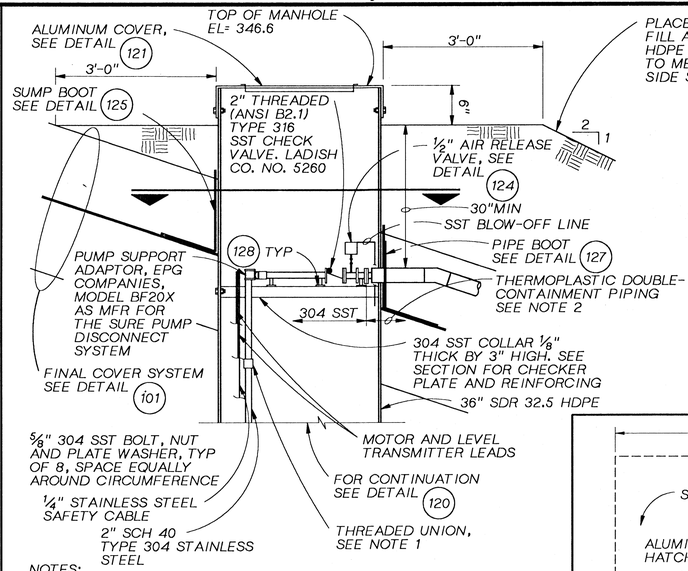
NTS



NOTE: DETAIL DOES NOT APPLY TO ALCMP, TYPE II AT SEDIMENTATION BASIN.

STORM DRAIN PIPE TRENCH (117)

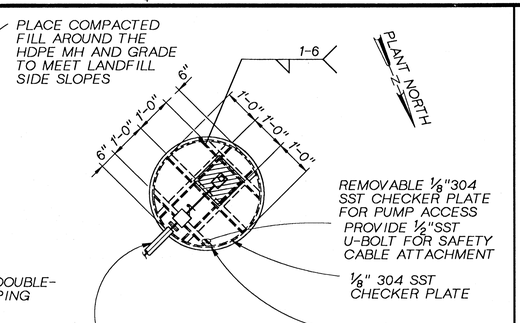
NTS



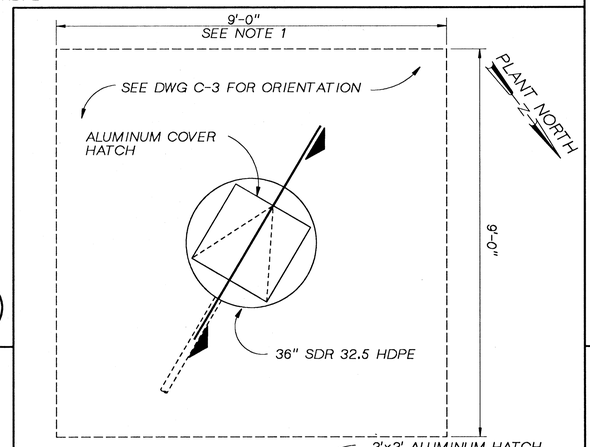
NOTES:
1. SST DISCHARGE PIPE TO BE ASSEMBLED IN 3 SECTIONS, MIN. MAX LENGTH OF EACH SECTION TO BE 10'-0".
2. LOCATE PIPE ON THE FMC AND MAINTAIN 30" COVER OVER PIPE.
3. INSTALL ANGLE REINFORCING AND CHECKER PLATFORM IN HDPE PIPE SECTION PRIOR TO INSTALLING THE PIPE SECTION ON MANHOLE EXTENSION.

LEACHATE SUMP MANHOLE DETAIL (119)

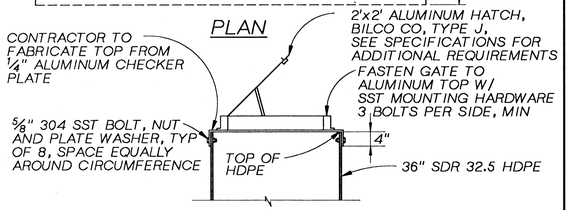
NTS



SECTION



PLAN



NOTE:

SECTION

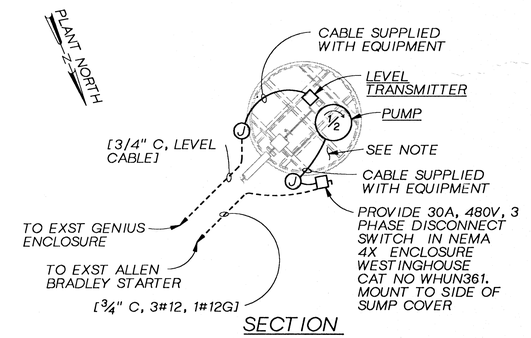
1. 9'-0" SQ AREA TO BE GRADED FLAT AROUND LEACHATE SUMP.

LEACHATE SUMP COVER DETAIL (121)

NTS

ELECTRICAL LEGEND

———	EXPOSED CONDUIT
[¾" C, 3#12, 1#12G]	CONDUIT AND CONDUCTOR SIZE CALLOUT
J	JUNCTION BOX
C	ROBROY CONDUIT
G	GREEN GROUND CONDUCTOR
#12	#12 AWG CONDUCTOR
½	MOTOR, HORSEPOWER INDICATED
- - - - - - -	BURIED CONDUIT



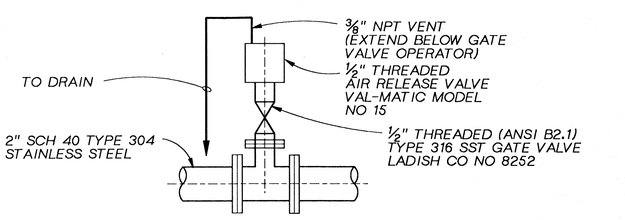
SECTION

NOTE:

SEE ATTACHED EASTALCO DWGS 71.540E0002.02, 71.540E0005.03, 71.540E0006.05, 71.540E0010.02 AND 71.540E0057.01 (REVISED BY CH2M HILL, 11/93) FOR ADDITIONAL ELECTRICAL DEMOLITION DETAILS AND WORK.

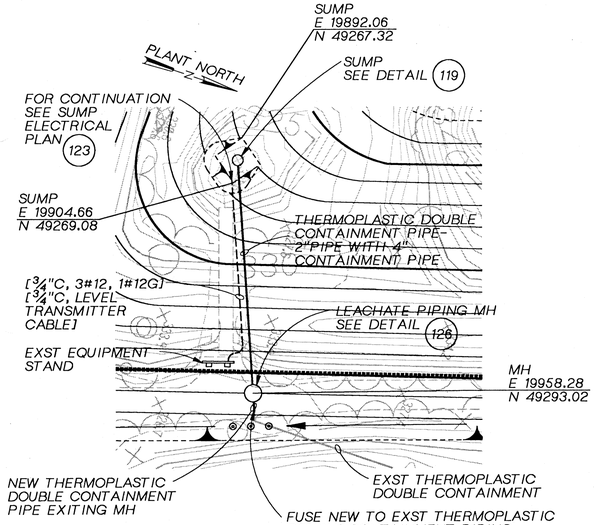
SUMP ELECTRICAL PLAN (123)

NTS



AIR RELEASE VALVE ASSEMBLY (124)

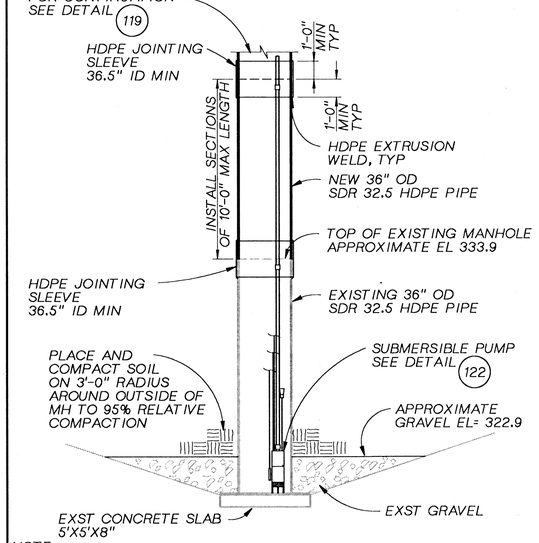
NTS



STATE OF MARYLAND
EDWARD R. UNDERWOOD
No. 13553
REGISTERED PROFESSIONAL ENGINEER
June 15, 1994

SUMP MANHOLE CONNECTION DETAIL (118)

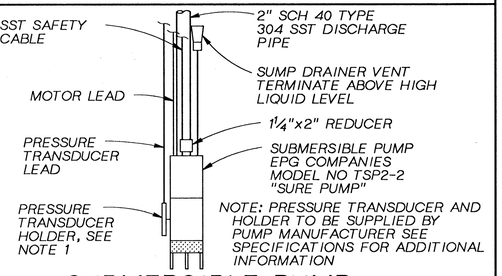
DETAILS ARE NTS, TOPOGRAPHIC INFO IS 1"=20'



NOTE:
THE CONTRACTOR SHALL PROVIDE TEMPORARY PUMPING OF LEACHATE UNTIL THE PERMANENT SYSTEM IS OPERATING AND ACCEPTED BY THE OWNER. LEACHATE SHALL BE CONTAINED WITHIN THE PERIMETER OF THE LINED LANDFILL AND SHALL BE PUMPED FROM THE POINT OF COLLECTION TO THE LEACHATE HOLDING TANK. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND MONITOR THE LEACHATE LEVEL IN THE HOLDING TANK TO PREVENT OVERFILLING THE TANK. LEACHATE SHALL BE DEFINED AS ANY LIQUID WHICH HAS COME INTO CONTACT WITH LANDFILL WASTE.

MANHOLE EXTENSION DETAIL (120)

NTS



SUBMERSIBLE PUMP INSTALLATION (122)

NTS

REV.	NO.	CHANGES MADE	BY	APP'D	DATE
	1	CHANGED PIPE TYPE TO ALCMP, TYPE II DET 117	G.A..	G.A.	5-19-94

DATE 05-31-94
DRAWN BY G. ANDERSON
ENGINEER R. BRAWLEY, B. PARSONS
SCALE N/A
PLOT SIZE D1
E.W.R. NO.
C.P.J.R. NO.

AN ALUMAX COMPANY

TOLERANCES EXCEPT AS NOTED

		FRACTIONAL	2 PLS	3 PLS
FINISH	125			
ANGULAR	±0°30'			
DIMS.	INCH	±1/8"	±.01	±.005
	MM	–	–	–

EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS RD.
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2062

TITLE: SECTIONS AND DETAILS

DWG NO. 10.485A0087.01

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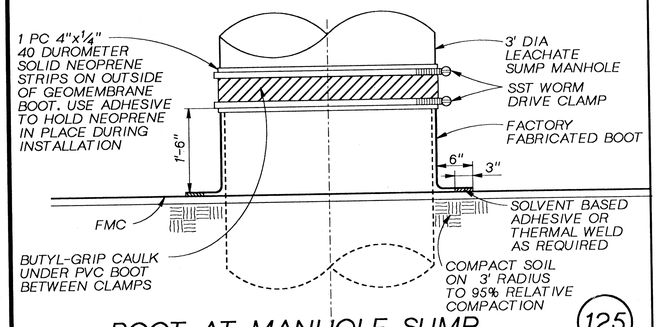
EASTALCO ALUMINUM COMPANY
INDUSTRIAL LANDFILL CLOSURE
FREDERICK, MARYLAND

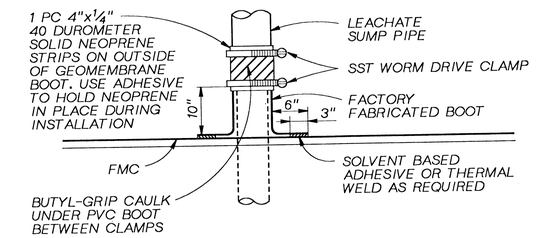
SHEET 7
DWG NO. C-6
DATE SEP 1993
PROJ NO. WDC35015.L1

smp5015dc.dgn



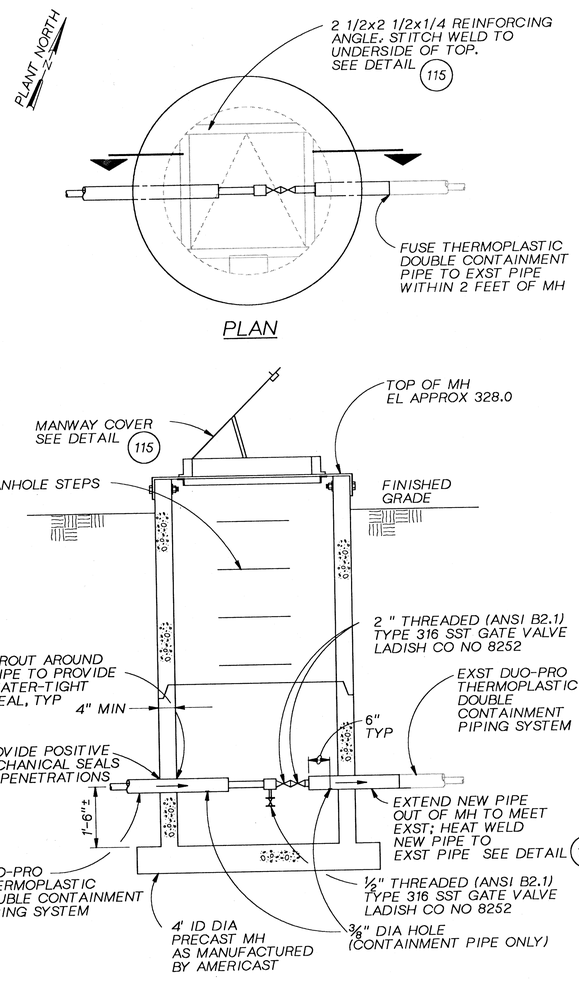
BOOT AT MANHOLE SUMP (125)

NTS



PIPE BOOT (127)

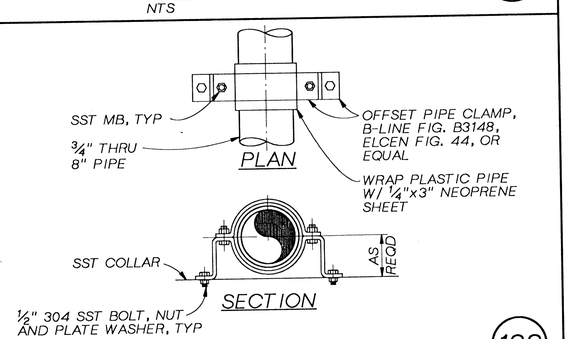
NTS



NOTES:
1. SEE DETAIL (118) FOR ORIENTATION OF MH.
2. SCREENIING IS USED ON THIS DETAIL TO ADD CLARITY. CONTRACTOR IS REQUIRED TO PERFORM ALL WORK DEPICTED WHETHER SCREENED OR NOT.

LEACHATE PIPING MANHOLE (126)

NTS



PIPE SUPPORT (128)

NTS

TABLE 25 PERMANENT SEEDING FOR LOW MAINTENANCE AREAS

MIX	SEED MIX (US CERTIFIED MATERIAL IF AVAILABLE)	PLANTING RATE LBS/1 AC	PLANTING RATE LBS/1 1000	SITE CONDITIONS	USDA HARDINESS ZONES	RECOMMENDED PLANTING DATES 3/1-5/15	3/15-6/1	5/15-9/14	9/2-7/31	8/1-10/1	8/15-10/15	9/15-11/15	COMMENTS
5	TALL FESCUE (80%) OR PERENNIAL RYEGRASS (50%) PLUS CROWNVETCH	110 20 20	2.5 .45 .45	MOIST TO DRY	5b		x			x			USE ON LOW MAINTENANCE STEEP SLOPES. USE TALL FESCUE IN DRAUGHTY CONDITIONS. CROWNVETCH BEST FOR 5b, 6a, 6b
					6a		x			x			
					6b	x					x		
					7a	x						x	
					7b	x						x	

DETAIL (129)

FREDERICK SOIL CONSERVATION DISTRICT

Approved By _____ DISTRICT MANAGER

DATE _____

Reviewed for FREDERICK S.C.D. and meets Technical Requirements

RLMackenzie DATE 06-21-94

Signature

U.S. Soil Conservation Service

SCD and SCS approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

STATE OF MARYLAND — EDWARD R. UNDERWOOD — No. 13553 — REGISTERED PROFESSIONAL ENGINEER — June 15, 1994

SOIL EROSION CONTROL NARRATIVE
EASTALCO ALUMINUM COMPANY,
FREDERICK, MARYLAND

NOTE 1. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS AND SEED WITH THE TEMPORARY SEED MIX AS SPECIFIED BELOW. PERMANENT SEEDING, AS SPECIFIED BELOW, SHALL BE APPLIED TO THE FINISHED SURFACES OF THE LANDFILL COVER SYSTEM. ALL SEEDING SHALL COMPLY WITH THE "1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PUBLISHED JOINTLY BY WATER RESOURCES ADMINISTRATION, SOIL CONSERVATION SERVICE, AND THE STATE SOIL CONSERVATION COMMITTEE.

NOTE 2. SEDIMENT AND EROSION CONTROL NOTES

1. ALL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE "1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AS APPROVED BY THE COUNTY. CONSTRUCTION OF THE FINAL COVER SYSTEM SHALL NOT COMMENCE UNTIL ALL PERIMETER SEDIMENT AND EROSION CONTROLS ARE ESTABLISHED AND SHOWN TO BE EFFECTIVE.

2. ALL DISTURBED AREAS TO BE SEEDED WITHIN 14 DAYS OF INITIAL GRADING. FOR TEMPORARY SEEDING SPECIFICATIONS, SEE SECTION G-20, "1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL".

3. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AT THE INITIATION OF GRADING.

4. ALL STORM DRAIN LINES NOT IN PAVED AREAS ARE TO BE MULCHED AND SEEDED WITHIN 14 DAYS OF INITIAL BACKFILL.

5. UTILITY LINES ARE TO BE COMPACTED, SEEDED, AND MULCHED WITHIN 14 DAYS AFTER INITIAL BACKFILL.

6. ALL EARTH BERMS AND SEDIMENT DAMS ARE TO BE MULCHED AND SEEDED (SEE SECTION G OF ABOVE REFERENCE) WITHIN 7 DAYS AFTER GRADING. ALL SOIL STOCKPILES ARE TO BE MULCHED AND SEEDED WITHIN 14 DAYS.

7. DURING CONSTRUCTION, ALL SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED AFTER EACH RAINFALL AND REPAIRED IF NECESSARY. SEDIMENT IS TO BE REMOVED TO A SUITABLE DISPOSAL AREA AND STABILIZED WITH PERMANENT VEGETATIVE COVER.

8. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT AND EROSION CONTROL MEASURES UNTIL DISTURBED AREAS ARE STABILIZED.

9. AFTER FINE GRADING, ALL DISTURBED AREAS ARE TO BE PERMANENTLY MULCHED AND SEEDED (SEE SECTION G).

10. NO SLOPE SHALL BE GREATER THAN 2:1.

11. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 7 CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. THIS DOES NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLAN AND ARE CURRENTLY BEING USED FOR MATERIAL STORAGE OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS FOR THE "1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."

NOTE 3. TEMPORARY SEEDING NOTES

GENERAL

1. SCOPE: PLANTING SHORT-TERM VEGETATION TO DISTURBED, CLEARED, OR GRADED AREAS SUBJECT TO EROSION FOR A PERIOD OF 14 DAYS OR MORE.

2. STANDARDS: TEMPORARY SEEDING SHALL CONFORM TO ALL REQUIREMENTS OF SECTION G-20 OF THE "1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PUBLISHED JOINTLY BY WATER RESOURCES ADMINISTRATION, SOIL CONSERVATION SERVICE, AND THE STATE SOIL CONSERVATION COMMITTEE.

3. SEDIMENT AND EROSION CONTROL: ALL PERIMETER CONTROLS MUST BE ESTABLISHED WITHIN 2 DAYS AFTER COMPLETION OF GRADING OR DISTURBANCE. ALL INTERIOR CONTROLS MUST BE ESTABLISHED WITHIN 14 DAYS.

SPECIFICATIONS

1. SITE PREPARATION
   A. PRIOR TO SEEDING, INSTALL ALL REQUIRED SEDIMENT AND EROSION CONTROL MEASURES.
   B. FINAL GRADING NOT REQUIRED FOR TEMPORARY SEEDING.
   C. PERFORM ALL GRADING AT RIGHT ANGLES TO THE SLOPE.
2. SOIL AMENDMENTS
   A. FERTILIZER SHALL BE APPLIED AT THE RATE OF 600 LBS/ACRE USING 10-10-10 OR EQUIVALENT.
   B. ACID SOILS SHALL BE LIMED, AS PER MARYLAND STANDARD SPECIFICATIONS.
3. SEEDBED PREPARATION
   A. SOIL SHALL BE LOOSENED TO A DEPTH OF 3 INCHES BY RAKING, DISCING, OR OTHER ACCEPTABLE MEANS, PRIOR TO SEEDING.
4. SEEDING
   A. SELECT A MIXTURE FROM TABLE 26 IN STANDARD SPECIFICATIONS.
   B. APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER DRILL, CULTIPACKER, OR HYDROSEEDER.
5. MULCHING
   A. MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. MULCH MATERIALS AND APPLICATIONS SHALL CONFORM TO THE STANDARD SPECIFICATIONS.

NOTE 4. PERMANENT SEEDING AND SOD NOTES

GENERAL

1. SCOPE: PLANTING PERMANENT, LONG-LIVED VEGETATIVE COVER ON FINAL GRADED OR CLEARED AREAS WITHIN 90 DAYS AFTER COMPLETION OF FINAL GRADED OR OTHERWISE DISTURBED AREAS.

2. STANDARDS: PERMANENT SEEDING SHALL CONFORM TO ALL REQUIREMENTS OF SECTION G-20 OF THE "1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PUBLISHED JOINTLY BY WATER RESOURCES ADMINISTRATION, SOIL CONSERVATION SERVICE, AND THE STATE SOIL CONSERVATION COMMITTEE.

SPECIFICATIONS

1. SITE PREPARATION
   A. PRIOR TO SEEDING, INSTALL ALL REQUIRED SEDIMENT AND EROSION CONTROL MEASURES.
   B. FINE GRADING REQUIRED FOR PERMANENT SEEDING.
2. SOIL AMENDMENTS
   A. FERTILIZER SHALL BE APPLIED AT THE RATE OF 500 LBS/ACRE USING 10-10-10 OR EQUIVALENT.
3. SEEDBED PREPARATION
   A. SOIL SHALL BE LOOSENED TO A DEPTH OF 3 INCHES BY RAKING, DISCING, OR OTHER ACCEPTABLE MEANS PRIOR TO SEEDING.
   B. APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, OR HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER ON A FIRM, MOIST SEEDBED). USE A CULTIPACKER SEEDER WITH CROWN VETCH. MAXIMUM SEEDING DEPTH SHOULD BE 1/4 INCH ON CLAYEY SOILS AND 1/2 INCH ON SANDY SOILS, WHEN USING OTHER THAN HYDROSEEDER METHOD OF APPLICATION. NOTE: IF HYDROSEEDING IS USED AND THE SEED AND FERTILIZER IS MIXED, THEY WILL BE MIXED ONSITE AND THE SEEDING SHALL BE IMMEDIATE WITHOUT INTERRUPTION.
4. SEEDING
   A. USE MIX 5 WITH CROWN VETCH FROM TABLE 25 IN STANDARD SPECIFICATIONS, AS SHOWN IN DETAIL 129.
5. MULCHING
   A. MULCH SHALL BE APPLIED ON ALL DISTURBED AREAS DURING OR IMMEDIATELY AFTER PERMANENT SEEDING. THE CONTRACTOR SHALL IDENTIFY THE TYPE AND APPLICATION RATE OF MULCH TO THE OWNER BEFORE COMMENCING PERMANENT SEEDING WORK.

SEQUENCE OF CONSTRUCTION

1. NOTIFY SEDIMENT CONTROL INSPECTOR 24 HOURS PRIOR TO START OF CONSTRUCTION. (694-1679)
2. PERFORM CLEARING AND GRUBBING REQUIRED FOR POND AND PERIMETER CHANNELS.
3. INSTALL POND AND PERIMETER CONTROLS; NOTIFY SEDIMENT CONTROL INSPECTOR AND OBTAIN APPROVAL BEFORE PROCEDING.
4. COMPLETE ALL REQUIRED CLEARING AND GRUBBING.
5. GRADE ACCESS ROAD TO BORROW AREA; CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
6. START ROUGH GRADING.
7. INSTALL SITE PIPING AND PERFORM DEMOLITION WORK AS INDICATED.
8. COMPLETE CONSTRUCTION OF LANDFILL CLOSURE INCLUDING SITE GRADING, COVER GEOMEMBRANE INSTALLATION, DRAINAGE AND LEACHATE CONTROLS.
9. PERFORM TEMPORARY SEEDING AS INDICATED ON DWG. C-7.
10. WITH APPROVAL OF SEDIMENT CONTROL INSPECTOR, REMOVE TEMPORARY SILT FENCE WHEN SITE IS STABILIZED.
11. PERIODICALLY CLEAN AND REPAIR TEMPORARY SEDIMENT/STORMWATER POND TO DESIGN DIMENSIONS.
12. WHEN CLOSURE CAP FINAL GRADES ARE ACHIEVED, STABILIZE WITH TOPSOIL AND PERMANENT SEEDING AS REQUIRED ON THE DRAWINGS.
13. CHANGE TEMPORARY SEDIMENTATION BASIN TO STORMWATER POND BY REMOVING DEWATERING DEVICE AND CLEANING OUT THE POND TO THE DESIGN ELEVATIONS, AS INDICATED ON DWG C-5.
14. NOTIFY SEDIMENT CONTROL INSPECTOR AND OBTAIN APPROVAL TO REMOVE TEMPORARY SEDIMENT TRAP. PERIMETER CHANNELS AND STORMWATER POND SHALL REMAIN IN PLACE.

*INCLUDES NOTIFICATION OF SEDIMENT CONTROL INSPECTOR, CLEARING AND GRUBBING, STABILIZATION OF PERMANENT SWALES AND BERMS, AND REMOVAL OF TEMPORARY MEASURES UPON APPROVAL.

NO.	CHANGES MADE	BY	APP'D	DATE
3	MODIFIED SEQUENCE OF CONSTRUCTION NOTE 1	G.A.	S.B.	5-19-94
2	MODIFIED SEQUENCE OF CONSTRUCTION NOTE 13	M.G.	B.P.	3-17-94
1	ADDED SCD SIGNATURE BLOCK	G.A.	B.P.	2-28-94

REV. EWR No.

DATE 05-31-94
DRAWN BY G. ANDERSON
ENGINEER R. BRAWLEY B. PARSONS
SCALE N/A
PLOT SIZE D1
E.W.R. NO.
C.P.A.R. NO.

AN ALUMAX COMPANY

EASTALCO ALUMINUM COMPANY
5601 MANOR WOODS RD.
FREDERICK, MARYLAND 21701
(301) 662-6100 FAX (301) 874-2062

TOLERANCES EXCEPT AS NOTED

	FRACTIONAL	2 PLS	3 PLS
FINISH	125		
ANGULAR	±0°30'		
DIMS. INCH	±1/8"	±.01	±.005
DIMS. MM	–	–	–

TITLE: SECTIONS AND DETAILS

DWG. NO. 10.485A0088.03

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

CH2M HILL

EASTALCO ALUMINUM COMPANY
INDUSTRIAL LANDFILL CLOSURE
FREDERICK, MARYLAND

SHEET 8
DWG NO. C-7
DATE SEP 1993
PROJ NO. WDC35015.L1

stmp-5015dc.dgn

APPENDIX B
MDE Work Plan Approval

Kevin Plocek

From: Anuradha Mohanty -MDE- <anuradha.mohanty@maryland.gov>
Sent: Wednesday, July 12, 2023 12:35 PM
To: sylvia@ql.email; AD Robison; Alex Trask; Scott Noteboom
Cc: jcastillo@petillo.com; jgervais@laytonconstruction.com; Adam Finley; Timothy Fowler; Kevin Plocek; Gregory Lomb; Colleen McMullen; Barry Glotfelty; Barbara Brown -MDE-; Kate Ansalvish -MDE-; Brad Metzger -MDE-; Andrew Gosden -MDE-; Paul Hlavinka -MDE-; Gregory Hazzard -MDE-; Tyler D. Abbott -MDE-; Barbara Krupiarz -MDE-
Subject: Re: Quantum Loophole Dewatering violation- Emergency Excavation Work Plan

Good afternoon Everyone

The MDE's Water Science Administration(WSA) and Land Restoration Program(LRP) have reviewed the attached Site Stabilization Work Plan (WP) dated June 30, 2023 submitted by Geo-Technology Associates Inc(GTA). The WP outlines the activities related to the relocation of material stored in the floodplain (FP) without authorization to a more secure and stable area outside of the FP, but within the approved construction limits of disturbance (LOD), or other existing stockpiles outside the FP. These materials include strawbale, gravel, concrete and soil piles. This work plan proposes that the nine (9) soil piles generated from Sewer Line 1 A and 1B and currently stored in the floodplain will be consolidated into two(2) stockpiles to be named Stockpile A and B. In addition, about 4000 CY of soil(Stockpile #13) generated from the unauthorized excavation of the pump station will be relocated to a more stable location(Stockpile C). As noted below material will also be relocated from the excavation at DA 11.

During a joint site visit dated July 6, 2023, MDE's WSA and LRP noted several additional issuess. Further requirements based on these observation are outlined in our comments below:

1. LRP requires that all stockpiles will be properly identified by the number provided in the WP and delineated in the field through visual aids like stakes and/or flags. Some of the stockpiles are currently within the Soil Management Area(SMA) which has additional requirements regarding excavation. Please ensure that only the approved soil is being moved and no unauthorized excavation is carried out during this site work.

2. Revise Figures 1 thru 6 and include the LOD boundary on both sides and the extent of FP as well as EC/SMP boundary when applicable. These boundaries must be clearly identified and/or color coded for easy reference.

3. One stock pile is reportedly stored outside LOD but within FP. But the stockpile location is not clear in the figures and it is not listed in the tables. Please clarify further and identify this stockpile.

4. Stockpile #1 originated from a borrow area which was not included in the EMP and the soil has not been characterized and/or approved for use. This stockpile must be treated as unauthorized material, until further notice.

5. Stockpile #2 contains soil generated from within the SMA area, which is considered impacted soil. In addition, the concrete and soil spoil generated from DA 11 must be considered impacted until

proven otherwise through additional sampling. Due to the location and content, this Stock pile #2 must be staged and stabilized, as a potentially hazardous stockpile.

6. During site visit, several swales were observed emerging from this Stockpile #2 area and discharging into the DA 11 basin. Please ensure that potentially impacted soil is not moving through the site via surface transportation, particularly following precipitation events.

7. Soil and concrete from DA 11 excavation is currently stored in a natural swale and outside of the LOD. Please ensure all WSA requirements are met and site stabilization is completed while relocating this material to Stockpile #2 as proposed.

8. Stockpile #16 is not addressed in this work plan. Please include information including whether its' within the approved LOD. In addition, there is discrepancy in the *Soil Disposition Memo* as to the the source of the Stockpile 16. The Table refers that the soil originates from the Happy Landing Road whereas the text indicates it's from the Basin #3. Please confirm.

9. Please ensure that all site work is conducted in the presence of a qualified environmental personnel who is familiar with the requirements set forth in the EC. This person and the site superintendent in charge of the project or otherwise involved in oversight of this specific site work must be identified by their name, designation and site responsibility. Please submit this information to MDE in writing prior to beginning of work.

10. In addition a site specific HASP must be implemented during site activity.

11. WSA has noted that the slopes of the excavated basins, DA 11 and DA 2 have not been stabilized. This is not acceptable and must be addressed immediately.

12. All stockpiles and disturbed areas must be stabilized and seeded as per the requirements outlined by the WSA. The site must be stabilized in its entirety and not in parts.

13. A daily activity report must be prepared by an authorized person present on site and submitted to MDE by email at the end of each day, along with a photo log showing the site work completed on the day and the proposed work on the next day. MDE will conduct periodic inspections.

14. Please inform the date and schedule to MDE in writing prior to starting site work.

Considering the urgency of the situation and to protect the flood plans from further damage, the WSA/LRP are approving the June 30, 2023 WP with the caveat that the above requirements must be fulfilled at the time of site activity. In lieu of a revised work plan, you must submit a detailed site work completion report confirming that all of the above comments were addressed during site activity.

Please confirm you have received this email conditionally approving the soil relocation work plan and that you agree to confirm the requirements listed.

If you have any questions please feel free to contact Barbara Brown, Kate Ansalvish or me by phone or email.

Regards

Anuradha Mohanty
Project Manager
Land and Materials Administration
Maryland Department of the Environment
1800 Washington Boulevard, Suite: 625
Baltimore, Maryland 21230
anuradha.mohanty@maryland.gov
410-537-3466 (O)
Website | Facebook | Twitter

My work hours are Monday to Thursday between 7 - 5:30 PM.

APPENDIX C
Notification of Commencement of Work Plan

Kevin Plocek

From: Kevin Plocek
Sent: Thursday, July 13, 2023 12:36 PM
To: AD Robison; Anuradha Mohanty -MDE-
Cc: sylvia@ql.email; Alex Trask; Scott Noteboom; jcastillo@petillo.com; John Gervais; Adam Finley; Timothy Fowler; Gregory Lomb; Colleen McMullen; Barry Glotfelty; Barbara Brown -MDE-; Kate Ansalvish -MDE-; Brad Metzger -MDE-; Andrew Gosden -MDE-; Paul Hlavinka -MDE-; Gregory Hazzard -MDE-; Tyler D. Abbott -MDE-; Barbara Krupiarz -MDE-
Subject: RE: Quantum Loophole Dewatering violation- Emergency Excavation Work Plan

Anu,

Thank you for discussing the below yesterday and providing further clarification on a few items. We intend on starting the work on Monday July 17, 2023.

The contact persons associated with the implementation, management, and documentation of the site work discussed below will be:

Site Work:
Petillo MD, LLC
Johnny Castillo
908-798-9398
jcastillo@petillo.com

Environmental Oversight
Geo-Technology Associates, Inc.
Ben Salazar
410-493-9787
bsalazar@gtaeng.com

Geo-Technology Associates, Inc.
Justin Martins
201-937-0749
jmartins@gtaeng.com

Geo-Technology Associates, Inc.
Colleen McMullen
301-775-6596
cmcmullen@gtaeng.com

Geo-Technology Associates, Inc.
Kevin Plocek
443-286-5506
kplocek@gtaeng.com

Ben and Justin will be the primary environmental personnel who will be on-site while work is being completed and providing the documentation. Colleen will be a backup for vacations/potential sick days. I will manage the environmental oversight and provide the daily and final reports to the group. The information provided in the email

below will be documented and summarized in the daily/final reports. Please let me know if you have any questions or concerns.

Thanks,

_____

Kevin Plocek | Associate

GEO-TECHNOLOGY ASSOCIATES, INC.
1414 Key Highway, Suite 201P, Baltimore, MD 21230
Cell: 443-286-5506 | **www.gtaeng.com**

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GTA – Since 1985

From: AD Robison <ad@ql.email>
Sent: Wednesday, July 12, 2023 1:11 PM
To: Anuradha Mohanty -MDE- <anuradha.mohanty@maryland.gov>
Cc: sylvia@ql.email; Alex Trask <alex@ql.email>; Scott Noteboom <scott@ql.email>; jcastillo@petillo.com; John Gervais <jgervais@laytonconstruction.com>; Adam Finley <adam.finley@structuretone.com>; Timothy Fowler <TFowler@gtaeng.com>; Kevin Plocek <KPlocek@gtaeng.com>; Gregory Lomb <GLomb@gtaeng.com>; Colleen McMullen <cmcmullen@gtaeng.com>; Barry Glotfelty <bglotfelty@frederickcountymd.gov>; Barbara Brown -MDE- <barbara.brown1@maryland.gov>; Kate Ansalvish -MDE- <kate.ansalvish1@maryland.gov>; Brad Metzger -MDE- <brad.metzger@maryland.gov>; Andrew Gosden -MDE- <andrew.gosden@maryland.gov>; Paul Hlavinka -MDE- <paul.hlavinka@maryland.gov>; Gregory Hazzard -MDE- <gregory.hazzard@maryland.gov>; Tyler D. Abbott -MDE- <tyler.abbott@maryland.gov>; Barbara Krupiarz -MDE- <barbara.krupiarz2@maryland.gov>
Subject: Re: Quantum Loophole Dewatering violation- Emergency Excavation Work Plan

Hi Anu,

Confirming receipt.

We'll review and let you know if any clarification is required.

Regards,
A.D.

> On Jul 12, 2023, at 9:34 AM, Anuradha Mohanty -MDE- <anuradha.mohanty@maryland.gov> wrote:
>
> Good afternoon Everyone

The MDE's Water Science Administration(WSA) and Land Restoration Program(LRP) have reviewed the attached Site Stabilization Work Plan (WP) dated June 30, 2023 submitted by Geo-Technology Associates Inc(GTA). The WP outlines the activities related to the relocation of material stored in the floodplain (FP) without authorization to a more secure and stable area outside of the FP, but within the approved construction limits of disturbance (LOD), or other existing stockpiles outside the FP. These materials include strawbale, gravel, concrete and soil piles. This work plan proposes that the nine (9) soil piles generated from Sewer Line 1 A and 1B and currently stored in the floodplain will be consolidated into two(2) stockpiles to be named Stockpile A and B. In addition, about 4000 CY of soil(Stockpile #13) generated from the unauthorized excavation of the pump station will be relocated to a more stable location(Stockpile C). As noted below material will also be relocated from the excavation at DA 11.

During a joint site visit dated July 6, 2023, MDE's WSA and LRP noted several additional issuess. Further requirements based on these observation are outlined in our comments below:

1. LRP requires that all stockpiles will be properly identified by the number provided in the WP and delineated in the field through visual aids like stakes and/or flags. Some of the stockpiles are currently within the Soil Management Area(SMA) which has additional requirements regarding excavation. Please ensure that only the approved soil is being moved and no unauthorized excavation is carried out during this site work.

2. Revise Figures 1 thru 6 and include the LOD boundary on both sides and the extent of FP as well as EC/SMP boundary when applicable. These boundaries must be clearly identified and/or color coded for easy reference.

3. One stock pile is reportedly stored outside LOD but within FP. But the stockpile location is not clear in the figures and it is not listed in the tables. Please clarify further and identify this stockpile.

4. Stockpile #1 originated from a borrow area which was not included in the EMP and the soil has not been characterized and/or approved for use. This stockpile must be treated as unauthorized material, until further notice.

5. Stockpile #2 contains soil generated from within the SMA area, which is considered impacted soil. In addition, the concrete and soil spoil generated from DA 11 must be considered impacted until proven otherwise through additional sampling. Due to the location and content, this Stock pile #2 must be staged and stabilized, as a potentially hazardous stockpile.

6. During site visit, several swales were observed emerging from this Stockpile #2 area and discharging into the DA 11 basin. Please ensure that potentially impacted soil is not moving through the site via surface transportation, particularly following precipitation events.

7. Soil and concrete from DA 11 excavation is currently stored in a natural swale and outside of the LOD. Please ensure all WSA requirements are met and site stabilization is completed while relocating this material to Stockpile #2 as proposed.

8. Stockpile #16 is not addressed in this work plan. Please include information including whether its' within the approved LOD. In addition, there is discrepancy in the *Soil Disposition Memo* as to the the source of the Stockpile 16. The Table refers that the soil originates from the Happy Landing Road whereas the text indicates it's from the Basin #3. Please confirm.

9. Please ensure that all site work is conducted in the presence of a qualified environmental personnel who is familiar with the requirements set forth in the EC. This person and the site superintendent in charge of the project or otherwise involved in oversight of this specific site work must be identified by their name, designation and site responsibility. Please submit this information to MDE in writing prior to beginning of work.

10. In addition a site specific HASP must be implemented during site activity.

11. WSA has noted that the slopes of the excavated basins, DA 11 and DA 2 have not been stabilized. This is not acceptable and must be addressed immediately.

12. All stockpiles and disturbed areas must be stabilized and seeded as per the requirements outlined by the WSA. The site must be stabilized in its entirety and not in parts.

13. A daily activity report must be prepared by an authorized person present on site and submitted to MDE by email at the end of each day, along with a photo log showing the site work completed on the day and the proposed work on the next day. MDE will conduct periodic inspections.

14. Please inform the date and schedule to MDE in writing prior to starting site work.

Considering the urgency of the situation and to protect the flood plans from further damage, the WSA/LRP are approving the June 30, 2023 WP with the caveat that the above requirements must be fulfilled at the time of site activity. In lieu of a revised work plan, you must submit a detailed site work completion report confirming that all of the above comments were addressed during site activity.

Please confirm you have received this email conditionally approving the soil relocation work plan and that you agree to confirm the requirements listed.

If you have any questions please feel free to contact Barbara Brown, Kate Ansalvish or me by phone or email.

Regards

Anuradha Mohanty
Project Manager

Land and Materials Administration

Maryland Department of the Environment
1800 Washington Boulevard, Suite: 625
Baltimore, Maryland 21230
anuradha.mohanty@maryland.gov

410-537-3466 (O)
Website | Facebook | Twitter

My work hours are Monday to Thursday between 7 - 5:30 PM.

APPENDIX D
Photographs

Photo 1: Previously excavated concrete crushed by a hoe ram. (July 17, 2023)

Photo 2: North boundary of Basin DA-11. Smoothing operations performed by backhoe. (July 17, 2023)

Photo 3: North boundary of Basin DA-11 following smoothing operations. (July 17, 2023)

Photo 4: South boundary of Basin DA-11. Previously excavated soils were relocated to re-establish a swale. (July 17, 2023)

Photo 5: Southwest corner of Basin DA-11 following smoothing operations. (July 17, 2023)

Photo 6: South boundary of Basin DA-11 following smoothing operations. (July 17, 2023)

Photo 7: Southeast corner of Basin DA-11 following smoothing operations. (July 17, 2023)

Photo 8: Eastern portion of Basin DA-11 following smoothing operations. (July 17, 2023)

Photo 9: Crushed concrete loaded onto end dump with excavator. (July 17, 2023)

Photo 10: Crushed concrete relocated to designated stockpile location within LOD. (July 17, 2023)

Photo 11: Hay and gravel west of MH-4 prepared for removal. (July 17, 2023)

Photo 12: Removal of hay and gravel west of MH-4. (July 17, 2023)

Photo 13: Placing gravel and hay into temporary stockpile location adjacent to Happy Landing Road. (July 17, 2023)

Photo 14: Removal of hay and gravel west of MH-3. (July 17, 2023)

Photo 15: Loading tri-axle dump truck with soil from Stockpile 13 for relocation into Basin 3. (July 18, 2023)

Photo 16: Placing soil from Stockpile 13 into Basin 3. (July 18, 2023)

Photo 17: Using a bulldozer to push soils into Basin 3. (July 18, 2023)

Photo 18: Loading gravel from a floodplain area located east of MH-6. (July 18, 2023)

Photo 19: Removing hay bales and gravel from floodplain area located between MH-4 and MH-5. (July 18, 2023)

Photo 20: Silt fence installation around stockpile areas located east of DA-11. (July 18, 2023)

Photo 21: Silt fence installation to repair super silt fence near MH-4. (July 18, 2023)

Photo 22: Completed super silt fence repair. (July 18, 2023)

Photo 23: Loading tri-axle dump truck with soil from Stockpile 13 for relocation into Basin 3. (July 19, 2023)

Photo 24: Placing soil from Stockpile 13 into Basin 3. (July 19, 2023)

Photo 25: Completed relocation of Stockpile 13. (July 19, 2023)

Photo 26: Re-stabilizing floodplain area west of MH-3 with hay following removal of gravel and hay. (July 19, 2023)

Photo 27: Hay spread across floodplain area west of MH-3. (July 19, 2023)

Photo 28: Hay bales and filter bag located south of MH-3. (July 19, 2023)

Photo 29: Removal of hay bales and filter bag south of MH-3. (July 19, 2023)

Photo 30: Dumping hay into temporary stockpile near Happy Landing Road. (July 19, 2023)

Photo 31: Loading tri-axle dump truck with soil from Stockpile 12 for relocation. (July 17, 2023)

Photo 32: Placing soil from Stockpile 12 into Stockpile A near farmhouse. (July 19, 2023)

Photo 33: Hydroseeding area following removal of hay bales and gravel west of MH-4. (July 19, 2023)

Photo 34: Hydroseeding area following removal of hay bales south of MH-3. (July 19, 2023)

Photo 35: Loading tri-axle end dump with soil from Stockpile 12 for relocation to Stockpile B. (July 20, 2023)

Photo 36: Placing soil from Stockpile 12 into Stockpile B. (July 20, 2023)

Photo 37: Completed relocation of Stockpile 12. (July 20, 2023)

Photo 38: Hydrating haul road to prevent dust generation. (July 20, 2023)

Photo 39: Loading tri-axle end dump with soil from Stockpile 11 for relocation to Stockpile B. (July 20, 2023)

Photo 40: Bulldozer grading deposited soils into Stockpile B. (July 20, 2023)

Photo 41: Stockpile B at the end of relocation activities. (July 20, 2023)

Photo 42: Placing soil from Stockpile 10 into relocation Stockpile A. (July 20, 2023)

Photo 43: Loading tri-axle end dump with soil from Stockpile 10 for relocation to Stockpile A. (July 21, 2023)

Photo 44: Placing soil from Stockpile 10 into Stockpile A. (July 21, 2023)

Photo 45: Bulldozer grading material into Stockpile A. (July 21, 2023)

Photo 46: Bulldozer stabilizing sub-grade from relocation of Stockpile 9. (July 21, 2023)

Photo 47: Shooting straw across disturbed areas from relocation of Stockpile 13. (July 21, 2023)

Photo 48: Loading tri-axle end dump with soil from Stockpile 7 for relocation to Stockpile A. (July 21, 2023)

Photo 49: Reestablished silt fence along access road to the borrow pit. (July 21, 2023)

Photo 50: Straw placed atop Stockpile B for stabilization. (July 21, 2023)

Photo 51: Shooting straw across disturbed area from relocation of Stockpile 10. (July 24, 2023)

Photo 52: Straw covering disturbed area from the relocation of Stockpile 11. (July 24, 2023)

Photo 53: Straw covering disturbed area from relocation of Stockpile 9. (July 24, 2023)

Photo 54: Straw spread across haul road in the LOD leading to Stockpile 7. (July 24, 2023)

Photo 55: Hydroseeding disturbed area associated with former Stockpile 11. (July 24, 2023)

Photo 56: Hydroseeding Stockpile B. (July 24, 2023)

Photo 57: Seeding Stockpile A. (July 25, 2023)

Photo 58: Placing straw atop Stockpile A. (July 25, 2023)

Photo 59: Hydroseeding Stockpile A (July 25, 2023).

Photo 60: Hydroseeding Stockpile B (July 25, 2023).

Photo 61: Loading soil from Stockpile 4 into a dump truck for relocation into Stockpile D. (July 26, 2023)

Photo 62: Dump truck depositing soil at Stockpile D. (July 26, 2023)

Photo 63: Bulldozer grading soil into Stockpile D. (July 26, 2023)

Photo 64: Water suppression for dust control along haul road leading from stockpile locations. (July 26, 2023)

Photo 65: Completed relocation of Stockpiles 4, 5, and 6. (July 26, 2023)

Photo 66: Placing soil into dump truck from Stockpile 7 for relocation to Stockpile D. (July 26, 2023)

Photo 67: View of Tuscarora Creek on the southern portion of the site (afternoon). (July 26, 2023)

Photo 68: View of Tuscarora Creek entering the site at Manor Woods Road (afternoon). (July 26, 2023)

Photo 69: View of Tuscarora Creek entering the site at Manor Woods Road (morning). (July 27, 2023)

Photo 70: View of Tuscarora Creek on the southern portion of the site (morning). (July 26, 2023)

Photo 71: Loading soil from Stockpile 7 into end dump for relocation into Stockpile D. (July 27, 2023)

Photo 72: Grading soil placed into Stockpile D with a bulldozer. (July 27, 2023)

Photo 73: Covering disturbed surface area from stockpile relocation activities with seed. (July 27, 2023)

Photo 74: Spreading straw across disturbed areas following stockpile relocation. (July 27, 2023)

Photo 75: View of Tuscarora Creek entering the site at Manor Woods Road (afternoon). (July 27, 2023)

Photo 76: View of Tuscarora Creek on the southern portion of the site (afternoon). (July 27, 2023)

Photo 77: View of Tuscarora Creek entering the site at Manor Woods Road (morning). (July 28, 2023)

Photo 78: View of Tuscarora Creek on the southern portion of the site (morning). (July 28, 2023)

Photo 79: Loading soil from Stockpile A into dump truck for relocation into Stockpile D. (July 28, 2023)

Photo 80: Grading soil placed into Stockpile D with a bulldozer. (July 28, 2023)

Photo 81: Covering disturbed surface area from Stockpile 7 relocation activities with straw. (July 28, 2023)

Photo 82: Cutting back northern sidewall of Stockpile B to complete buffer between stockpile and farmers access road. (July 28, 2023)

Photo 83: View of Tuscarora Creek entering the site at Manor Woods Road (afternoon). (July 28, 2023)

Photo 84: View of Tuscarora Creek on the southern portion of the site (afternoon). (July 28, 2023)

Photo 85: Tuscarora Creek entering the northern property boundary before work activities. (July 31, 2023)

Photo 86: Tuscarora Creek exiting the southern property boundary before work activities. (July 31, 2023)

Photo 87: Repairing silt fence surrounding MH-85. (July 31, 2023)

Photo 88: Installation of silt fence around Stockpile A. (July 31, 2023)

Photo 89: Silt fence installed around Stockpile C. (July 31, 2023)

Photo 90: Cutting back northern sidewall of Stockpile B to complete buffer between stockpile and farmers access road. (July 31, 2023)

Photo 91: Impaired silt fence near borrow pit entrance. (July 31, 2023)

Photo 92: Installation of new silt fence near borrow pit entrance. (July 31, 2023)

Photo 93: Tuscarora Creek entering the northern property boundary before work activities. (August 1, 2023)

Photo 94: Tuscarora Creek exiting the southern property boundary before work activities. (August 1, 2023)

Photo 95: Covering Stockpile D with straw for stabilization. (August 1, 2023)

Photo 96: Covering Stockpile B with straw for stabilization. (August 1, 2023)

Photo 97: Straw placed atop Stockpile B. (August 1, 2023)

Photo 98: Straw placed atop Stockpile D. (August 1, 2023)

Photo 99: Tuscarora Creek entering the northern property boundary after work activities. (August 1, 2023)

Photo 100: Tuscarora Creek exiting the southern property boundary after work activities. (August 1, 2023)

Photo 101: Tuscarora Creek entering the northern property boundary before work activities. (August 2, 2023)

Photo 102: Tuscarora Creek exiting the southern property boundary before work activities. (August 2, 2023)

Photo 103: Area of straw and filter bags located within the floodplain south of MH-3 prior to removal. (August 2, 2023)

Photo 104: Loading straw and filter bag into a dump truck for disposal into designated relocation stockpile near Happy Landing Road. (August 2, 2023)

Photo 105: Unloading floodplain straw and filter bags into stockpile near Happy Landing Road. (August 2, 2023)

Photo 106: Removal of hay and filter bags from floodplain south of MH-3. (August 2, 2023)

Photo 107: Spraying seed-fertilizer mixture across the edges of Quantum Place South. (August 2, 2023)

Photo 108: Shooting straw across the edges of Quantum Place South. (August 2, 2023)

Photo 109: Shooting straw across disturbed areas associated with the floodplain straw bale and filter bag removal south of MH-3. (August 2, 2023)

Photo 110: Stabilization using seed and hay across disturbed areas during floodplain straw bale and filter bag removal. (August 2, 2023)

Photo 111: Tuscarora Creek entering the northern property boundary after work activities. (August 2, 2023)

Photo 112: Tuscarora Creek exiting the southern property boundary after work activities. (August 2, 2023)

Photo 113: Tuscarora Creek entering the northern property boundary before work activities. (August 2, 2023)

Photo 114: Tuscarora Creek exiting the southern property boundary before work activities. (August 2, 2023)

Photo 115: Repaired silt fence south of MH-3. (August 2, 2023)

Photo 116: Stabilization with straw and seed across the substation pad. (August 2, 2023)

Photo 117: Stabilization of DA-2. (August 2, 2023)

Photo 118: Stabilization across the southern portion of Quantum Place South. (August 2, 2023)

Photo 119: Stabilization across the northern portion of Quantum Place South. (August 2, 2023)

Photo 120: Stabilization of DA-11. (August 7, 2023)

Photo 121: Stabilization across the southwest portion of the substation pad. (August 7, 2023)

Photo 122: Stabilization across the central and eastern portions of the substation pad. (August 7, 2023)

Photo 123: Stabilization across the Borrow Pit. (August 7, 2023)

Photo 124: Stabilization along access road into Borrow Pit from substation. (August 7, 2023)

Photo 125: Tuscarora Creek entering the northern property boundary before work activities. (August 7, 2023)

Photo 126: Tuscarora Creek exiting the southern property boundary before work activities. (August 7, 2023)

Photo 127: Stockpile A covered with plastic sheeting. (August 7, 2023)

Photo 128: Coating the northeastern portion of the substation pad with seed-fertilizer mixture. (August 7, 2023)

Photo 129: Portion of Stockpile B covered with plastic sheeting. (August 7, 2023)

Photo 130: Portion of Stockpile C covered with plastic sheeting. (August 7, 2023)

Photo 131: Tuscarora Creek entering the northern property boundary after work activities. (August 7, 2023)

Photo 132: Tuscarora Creek exiting the southern property boundary after work activities. (August 7, 2023)

Photo 133: Tuscarora Creek entering the northern property boundary before work activities. (August 8, 2023)

Photo 134: Tuscarora Creek exiting the southern property boundary before work activities. (August 8, 2023)

Photo 135: Progress of 10 mil plastic sheeting placed across Stockpile C. (August 8, 2023)

Photo 136: Progress of 10 mil plastic sheeting placed across Stockpile B. (August 8, 2023)

Photo 137: Progress of vegetation regrowth across previously disturbed land associated with floodplain gravel and straw removal west of MH-4. (August 8, 2023)

Photo 138: Progress of vegetation regrowth across disturbed land associated with floodplain soil stockpile removal activities for Stockpile 11. (August 8, 2023)

Photo 139: Tuscarora Creek entering the northern property boundary after work activities. (August 8, 2023)

Photo 140: Tuscarora Creek exiting the southern property boundary after work activities. (August 8, 2023)

Photo 141: Tuscarora Creek entering the northern property boundary before work activities. (August 8, 2023)

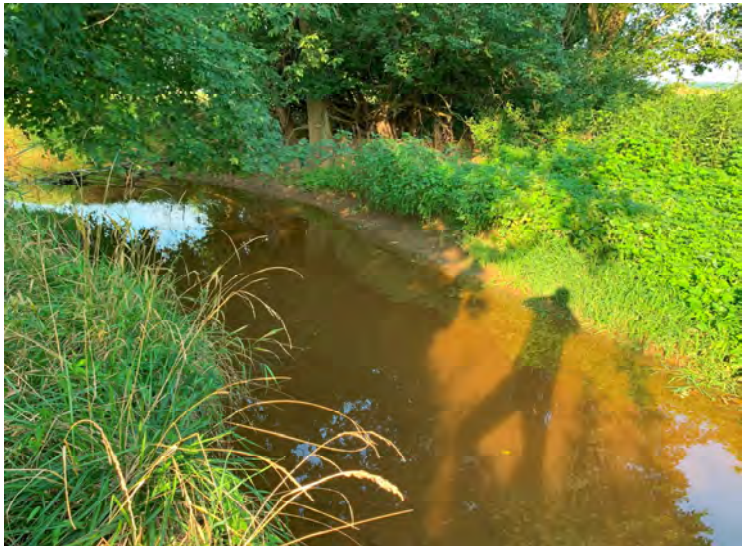


Photo 142: Tuscarora Creek exiting the southern property boundary before work activities. (August 8, 2023)

Photo 143: Placing 10 mil plastic sheeting across Stockpile C. (August 8, 2023)

Photo 1444: Plastic sheeting completely covering Stockpile C. (August 8, 2023)

Photo 145: Plastic sheeting completely covering Stockpile B. (August 8, 2023)

Photo 146: Stockpile D prepared for plastic sheeting. (August 8, 2023)

Photo 147: Tuscarora Creek entering the northern property boundary after work activities. (August 8, 2023)

Photo 148: Tuscarora Creek exiting the southern property boundary after work activities. (August 8, 2023)

Photo 149: Tuscarora Creek entering the northern property boundary before work activities. (August 11, 2023)

Photo 150: Tuscarora Creek exiting the southern property boundary before work activities. (August 11, 2023)

Photo 151: Placing 10 mil plastic sheeting across Stockpile D. (August 11, 2023)

Photo 152: Plastic sheeting completely covering Stockpile D. (August 11, 2023)

Photo 153: Temporarily removed silt fence opened to allow landscaping equipment entry.

Photo 154: Repaired silt fence.

Photo 155: Tuscarora Creek entering the northern property boundary after work activities. (August 11, 2023)

Photo 156: Tuscarora Creek exiting the southern property boundary after work activities. (August 11, 2023)

Photo 157: Tuscarora Creek entering the northern property boundary before work activities. (August 15, 2023)

Photo 158: Tuscarora Creek exiting the southern property boundary before work activities. (August 15, 2023)

Photo 159: Extent of straw matting placed on Happy Landing Road on the previous day. (August 15, 2023)

Photo 160: HEC continuing south on Happy Landing Road, placing additional straw matting to cover the future roadway area. (August 15, 2023)

Photo 161: Replacing plastic sheeting on Stockpile D. (August 15, 2023)

Photo 162: Placing the final straw matting along the southern portion of Happy Landing Road. (August 15, 2023)

Photo 163: Tuscarora Creek entering the northern property boundary after work activities. (August 15, 2023)

Photo 164: Tuscarora Creek exiting the southern property boundary after work activities. (August 15, 2023)

Photo 165: Tuscarora Creek entering the northern property boundary before work activities. (August 17, 2023)

Photo 166: Tuscarora Creek exiting the southern property boundary before work activities. (August 17, 2023)

Photo 167: Placing 10 mil plastic sheeting across stockpile east of DA-11. (August 17, 2023)

Photo 168: Sandbags and wooden stakes used to anchor plastic sheeting. (August 17, 2023)

Photo 169: Placing straw matting along Quantum Place South. (August 17, 2023)

Photo 170: Placing straw matting along Quantum Place South. (August 17, 2023)

Photo 171: Tuscarora Creek entering the northern property boundary after work activities. (August 17, 2023)

Photo 172: Tuscarora Creek exiting the southern property boundary after work activities. (August 17, 2023)

Photo 173: Tuscarora Creek entering the northern property boundary before work activities. (August 18, 2023)

Photo 174: Tuscarora Creek exiting the southern property boundary before work activities. (August 18, 2023)

Photo 175: Relocating Tank 2 to staging location on the northwestern portion of Lot 105. (August 18, 2023)

Photo 176: Tank 2 relocation. (August 18, 2023)

Photo 177: Pumping water from Tank 1 into the water truck for relocation into Tank 2. (August 18, 2023)

Photo 178: Pumping water into Tank 2. (August 18, 2023)

Photo 179: Tuscarora Creek entering the northern property boundary after work activities. (August 18, 2023)

Photo 180: Tuscarora Creek exiting the southern property boundary after work activities. (August 18, 2023)

Photo 181: Tuscarora Creek entering the northern property boundary before work activities. (August 21, 2023)

Photo 182: Tuscarora Creek exiting the southern property boundary before work activities. (August 21, 2023)

Photo 183: Pumping water from Tank 1 into water truck for relocation into Tank 2. (August 21, 2023)

Photo 184: Pumping water from Tank 1. (August 21, 2023)

Photo 185: Pumping water from the water truck into Tank 2. (August 21, 2023)

Photo 186: Water level at top of opening for Tank 2 following the completion of water relocation. (August 21, 2023)

Photo 187: Tuscarora Creek entering the northern property boundary after work activities. (August 21, 2023)

Photo 188: Tuscarora Creek exiting the southern property boundary after work activities. (August 21, 2023)

Photo 189: Tuscarora Creek entering the northern property boundary before work activities. (August 22, 2023)

Photo 190: Tuscarora Creek exiting the southern property boundary before work activities. (August 22, 2023)

Photo 191: Rubber tire loader adjusting Tank 1 location onto flat ground to facilitate tank relocation. (August 22, 2023)

Photo 192: Relocation of Tank 1 to staging area. (August 22, 2023)

Photo 193: Completed relocation of Tank 1 (left) and Tank 2 (right). (August 22, 2023)

Photo 194: Disturbed sub-grade associated with footprint of Tanks 1 and 2. (August 22, 2023)

Photo 195: Tuscarora Creek entering the northern property boundary after work activities. (August 22, 2023)

Photo 196: Tuscarora Creek exiting the southern property boundary after work activities. (August 22, 2023)

Photo 197: Tuscarora Creek entering the northern property boundary before work activities. (August 23, 2023)

Photo 198: Tuscarora Creek exiting the southern property boundary before work activities. (August 23, 2023)

Photo 199: Spraying seed/fertilizer mixture across disturbed sub-grade from the former frac tank location. (August 23, 2023)

Photo 200: Shooting straw atop seed/fertilizer mixture to stabilize disturbed sub-grade. (August 23, 2023)

Photo 201: Completed sub-grade stabilization from former frac tank locations. (August 23, 2023)

Photo 202: Re-securing plastic sheeting atop Stockpile D. (August 23, 2023)

Photo 203: Tuscarora Creek entering the northern property boundary after work activities. (August 23, 2023)

Photo 204: Tuscarora Creek exiting the southern property boundary after work activities. (August 23, 2023)

Photo 205: Tuscarora Creek entering the northern property boundary before work activities. (August 29, 2023)

Photo 206: Tuscarora Creek exiting the southern property boundary before work activities. (August 29, 2023)

Photo 207: Shooting straw atop seed/fertilizer mixture at Basin 3. (August 29, 2023)

Photo 208: Stabilization of Basin 3. (August 29, 2023)

Photo 209: Stockpile 15 following seed/fertilizer mixture and straw application. (August 29, 2023)

Photo 210: Pump station excavation following seed/fertilizer mixture and straw application. (August 29, 2023)

Photo 211: Former construction access road adjacent east of MH-4 following seed/fertilizer mixture and straw application. (August 29, 2023)

Photo 212: Former construction access road adjacent east of MH-7 following seed/fertilizer mixture and straw application. (August 29, 2023)

Photo 213: Former construction access road located adjacently west of Basin DA-2 following seed/fertilizer mixture and straw application. (August 29, 2023)

Photo 214: View of curlex straw matting applied to an approximately 12-foot wide section of the western slope of Basin DA-2. (August 29, 2023)

Photo 215: Tuscarorа Creek entering the northern property boundary after work activities. (August 29, 2023)

Photo 216: Tuscarorа Creek exiting the southern property boundary after work activities. (August 29, 2023)

APPENDIX E
Figures

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 03/20/23

Signature:

Figure 1
DA-11
Stabilization Areas

MATCHLINE: SEE SHEET SC-3

MATCHLINE: SEE SHEET SC-5

PROPOSED SUPER SILT FENCE

30' PRIVATE SD ESM'T

⚠1 LOD expanded to include new stockpile and staging area. SF adjusted.

STOCKPILE & STAGING AREA #2
MAX HIGHT15'
MAX SLOPE 2:1

N 606,100
E 1,177,590

PROPOSED SILT FENCE

Soil Management Area
L.12205 F.1

⚠1 LOD has increased to account for additional temporary staging/stockpile areas. These areas are temporary and do not require ESD as no imperviousness is being proposed at this time. ESD will be proposed for these areas with future improvement plans. The proposed basins are sized to compensate for any additional volume.

PROPOSED INFLOW PROTECTION

STA 5+24
END CORE TRENCH

EARTH DIKE A-2

EX. STORM DRAIN PIPE & HEADWALLS TO BE REMOVED

Soil Management Area
L.12205 F.1

Ex. Landfill Boundary

Waterbody Buffer

N 607,110

E 1,176,850

Prop. FRO Esm't

EARTH DIKE B-2

PROPOSED INFLOW PROTECTION

STA 0+07 BEGIN CORE TRENCH

REMOVE EXISTING ROADWAY AND REPLACE

Ex. Stream

UrC

UdB

LEGEND

- 50' STREAM B.R.L.
- WETLANDS
- WETLAND 25' B.R.L.
- 100 YEAR FLOOD PLAIN
- 100 YEAR FLOOD PLAIN B.R.L.
- SOILS LINES
- SOIL TEXT TYPE (GdB)
- 30" > DBH TREE
- EXISTING TREE LINE
- FOREST CONSERVATION ESM'T
- STREAMS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- DRAINAGE DIVIDE
- LIMITS OF DISTURBANCE (LOD)
- EX. SILT FENCE (SF)
- EX. SUPER SILT FENCE (SSF)
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)
- INLET PROTECTION (IP)
- PROPOSED EARTH DIKE
- EXISTING EARTH DIKE
- PROPOSED STOCK PILE (Stock Pile Area)

Silt Fencing
Soil Management Area
Electrical Line
Leachate Line
Stabilization Area - Seed & Straw

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

GRAPHIC SCALE
50' 0 25' 50' 100' 200'
1 INCH = 50 FT

NOTE: THIS PLAN TO BE USED FOR SEDIMENT CONTROL ONLY
ALL OTHER INFORMATION SHOWN FOR REFERENCE PURPOSE ONLY.

FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE 12/16/2024
SCD approval for sediment and erosion control, and small pond is contingent upon issuance of all applicable regulatory permits.

⚠1 FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE _____
SCD approval for sediment and erosion control, and small pond is contingent upon issuance of all applicable regulatory permits.

PROFESSIONAL CERTIFICATION
"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, and NRCS Latacurt for Ponds 378.
License No. 29782 , Expiration Date: 01/16/2025 ".
2/22/2023

⚠ Submittal 3/8/2023
⚠ Submitted 2/22/2023

REVISION	DATE
⚠1 LOD updates & utility layout changes	2/22/2023

	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
CONTACT: AD ROBISON
PHONE:530-417-7496

Sediment Control

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

Quantum Frederick
Combined SWM Development and Improvement Plan
Quantum Place South
PW#275128
Liber 15038, Folio 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE: 1"=50'
JOB No. 1339A
INDEX No. SC-4
SHEET No. 05 OF 54

N:\MD-FREDERICK\ALCOA\AUTOCAD\PLOT PLANS\IMPROVEMENT PLANS\QUANTUM SOUTH\03-06-SED CON.DWG

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 03/20/23

Signature:

Figure 2 Northern Site Stabilization Areas

LOT 110
±901,141 sf
±20.69 acres

Proposed Borrow Area BA#1

LOT 111
±551,104 sf
±12.65 acres

OPEN SPACE PARCEL 'C'
±1,639,029 sf
±37.63 acres

LOD expanded to include new stockpile and staging area. SF adjusted.

Stockpile 1

SC-5

Temporary Haul Road

Environmental Covenant

Approximate Northern Tuscarora Creek Turbidity Observation Location

100 Year Floodplain

Ex. Manor Woods Road (Public)

Ex. Environmental Covenant L. 12205 F.01

Wetlands

Prop. FRO Esm't

R/W 1 DEDICATION
±181,760 sf
±4.17 acres

LANDFILL
LOT 113
±1,239,946 sf
±28.47 acres

LOT 112A
±845,994 sf
±19.42 acres

Substation Pad

SC-4

LOT 112C
±575,331 sf
±13.21 acres

Proposed Super Silt Fence

Clean Energy Lane

LOT 106
±262,386 sf
±4.89 acres

Quantum Place South

DA-2

OPEN SPACE PARCEL 'G'
±33,433 sf
±0.77 acres

Clean Energy Lane (Private)

Quantum Place South (Public)

Utility Layout Change

LOT 102
±2,078,869 sf
±47.72 acres

Proposed Super Silt Fence

Proposed Stockpile Area SP#1

Proposed Stabilized Construction Entrance SCE #1

Ex. Soils Esm't L. 12205 F.1

LOT 105
±747,953 sf
±17.17 acres

SC-2

Ex. Paved Access Road

Proposed Temporary Access (LOD) to Ponds

Ex. Manor Woods Road (Public)

R/W 4 DEDICATION
±15,182 sf
±0.35 acres

LOT 200
±233,382 sf
±5.36 acres

FRO Esm't L.12233 F.250

Ex. 425ft 100yr Floodplain

Environmental Covenant L. 12205 F.01

W&S Esm't L.16310 F.361

Waterbody Buffer

LOT 112D
±489,340 sf
±11.23 acres

Soil Management Area

Stockpile 3

Stockpile 2

DA-11

LOD expanded to include new stockpile and staging area. SF adjusted.

Ex. AT&T Esm't L. 649 F.300

LOD expanded to include existing stockpile area. SSF adjusted.

Seed and Straw Stabilization Areas or Stockpiles Covered with Plastic

Sediment Erosion Control Matting Stabilization Areas

LEGEND

50' STREAM B.R.L.
WETLANDS
WETLAND 25' B.R.L.
100 YEAR FLOOD PLAIN
100 YEAR FLOOD PLAIN B.R.L. FP
SOILS LINES BRL
SOIL TEXT TYPE GdB
30" > DBH TREE
EXISTING TREE LINE
FOREST CONSERVATION EASEMENT
STREAMS
EXISTING CONTOUR
PROPOSED CONTOUR

STABILIZED CONSTRUCTION ENTRANCE SCE
LIMITS OF DISTURBANCE LOD
EX. SILT FENCE SF
EX. SUPER SILT FENCE SSF
SILT FENCE SF
SUPER SILT FENCE SSF
INLET PROTECTION IP
PROPOSED EARTH DIKE
EXISTING EARTH DIKE
PROPOSED STOCK PILE

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

Symbol	Soil Type/Classification	HSG
DtB	Duffield-Ryder silt loams, 3 to 8 percent slopes	B
UdB	Udorthents, Smooth, 0 to 8 percent slopes, rocky	C
LsA	Lindside silt loam, 0 to 3 percent slopes	C
UrC	Urban Land, 3 to 15 percent slopes	D

1 LOD has increased to account for additional temporary staging/stockpile areas. These areas are temporary and do not require ESD as no imperviousness is being proposed at this time. ESD will be proposed for these areas with future improvement plans. The proposed basins are sized to compensate for any additional volume.

NOTE: THIS PLAN TO BE USED FOR SEDIMENT CONTROL ONLY

ALL OTHER INFORMATION SHOWN FOR REFERENCE PURPOSE ONLY.

GRAPHIC SCALE
200' 0 100' 200' 400' 800'
1 INCH = 200 FT

FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY DISTRICT MANAGER
DATE 12/16/2025

SCD approval for sediment and erosion control, and small pond is contingent upon issuance of all applicable regulatory permits.

1 FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE _____
SCD approval for sediment and erosion control, and small pond is contingent upon issuance of all applicable regulatory permits.

PROFESSIONAL CERTIFICATION
"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, and NRCS Standard for Ponds 378.
License No. 29782 , Expiration Date: 01/16/2025 ".

STATE OF MARYLAND · PHILLIP THOMAS LANGA · 29782 · PROFESSIONAL ENGINEER
2/22/2023

REVISION	DATE
1 LOD updates, Utility layout changes & Lots updated per Preliminary Plan Rev 1	2/22/2023

	BY	DATE
BASE DATA	CADD	
DESIGNED		
DRAWN		
REVIEWED		

RELEASE FOR _____ BY _____ DATE _____

Submittal 3/8/2023
Submitted 2/22/2023

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

Sediment Control Overall

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

Quantum Frederick
Combined SWM Development and Improvement Plan
Quantum Place South
PW#275128
Liber 15038, Folio 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE: 1"=200'
JOB No. 1339A
INDEX No. SC-1
SHEET No. 02 OF 54

N:\MD-FREDERICK\ALCOA\AUTOCAD\PLOT PLANS\IMPROVEMENT PLANS\QUANTUM SOUTH\02-SED CON OVERALL.DWG

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 08/01/22

Signature:

Figure 3 Southern Site Stabilization Areas

See Figures 4-7 for Pump Station and Sewer alignment

Soil Management Area

100 Year Floodplain

Environmental Covenant

Stockpile C, covered with plastic sheeting

Stockpile D, covered with plastic sheeting

Stockpile 16

Stockpile and storage area for hay, gravel, and filter bags removed from the floodplain

Approximate Southern Tuscarora Creek Turbidity Observation Location

25' Wetland Buffer
Wetlands
Water Body Buffer
100 Year Floodplain
100 Year Floodplain Buffer
LOT 300 (Historic Parcel)
Tax Map 94, Parcel 9
Quantum Maryland,
L.15038 F.393
1598.33 Acres
OUT LOT 1 PUMP STATION
LOT 304
BASIN 3
OPEN SPACE PARCEL 'D'
LOT 303
Lot 302
Lot 301
Lot 201
Lot 83
OPEN SPACE PARCEL 'F'
WARREN WOODS RD
Map 94 Parcel 45
St Joseph's on Carrollton Manor
Roman Catholic Congregation Inc
L.8317 F.156
P.882 Pg.165
21.87 AC
Prop. Fro Esm't
BASIN 1
BASIN 2
NEW DESIGN RD
R/W 8 DEDICATION
Map 103 Parcel 7
HAPPY LANDING RD
FUTURE MD-80
OUT LOT 2
PUMP STATION ACCESS LOT/
FUTURE MD ROUTE 80 R/W
DEDICATION
OPEN SPACE PARCEL 'E'

07-18-2022
06-01-2022
05-02-2022
04-04-2022

Seed and Straw Stabilization Areas

Sediment Erosion Control Matting Stabilization Areas

NORTH
0 250 500 750 1000 feet
1" = 250'

FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE 6-9-22
SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

PROFESSIONAL CERTIFICATION
"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 29782 , Expiration Date: 01/16/2023 ".

STATE OF MARYLAND · PHILLIP LEE THOMAS · 29782 · PROFESSIONAL ENGINEER
7/18/2022

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
CONTACT: AD ROBISON
PHONE:530-417-7496

Overall Grading Plan

RODGERS CONSULTING
Knowledge · Creativity · Enduring Values

19847 Century Boulevard
Suite 200
Germantown, Maryland 20874
Ph: 301.948.4700 (Main)
Ph: 301.253.6609 (Frederick)
Fx: 301.948.6256
www.rodgers.com

Area 1 Mass Grading

Quantum Frederick

Liber 15038, Folio 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE:	1"=250'
JOB No.	1339A
INDEX No.	GP-1
SHEET No.	7 OF 40

Figure 4
Southern Site Stabilization Areas; MH-3 to MH-7

Match Line - See Sheet SC-2

Straw Removal Area-1 (SRA-1)

Place all excavated material on high side of trench. Only do as much work as can be done on one day so backfilling, final grading, seeding and mulching can occur. No stockpile area is required

Relocated Stockpile 13 , Stockpile C

Stockpile 15

Stockpile 14

Former Stockpile 13

Former Location of two frac tanks

SRA-2

SRA-3

SRA-4

SRA-5

SRA-6

Approximate Southern Tuscarora Creek Turbidity Observation Location

Seed and Straw Stabilization Areas

LsA
DtB
MaA
UdB
LsA
MaA
MaA
LsA

100Yr Floodplain Buffer
100Yr Floodplain
Trail E'smt
10' Asphalt Trail
Water Body Buffer
Prop Super Silt Fence
Prop FCE
Prop 30' W/S Esm't
24"S
GOT
JSS
LOD
SSF
SF
Ex. Environmental Covenant L. 12205 F.01
Fut. Pump Sta.
(BY OTHERS)
Fut. 24"S
Wetlands Buffer
Wetlands
Tuscarora Creek
OPEN SPACE PARCEL 'A'
LOT 304
ST-164
ST-166
ST-167
ST-169
ST-170
ST-171
WT 7
WT 6
WT 5
WT 4
WT 3
WT 2
WT 1
E1178500
N603000
E1178000
N602250
R/W & RESERVATION
±34,567 sf
±0.79 acres

LEGEND

WATER BODY BUFFER
WETLANDS
WETLAND 25' B.R.L.
100 YEAR FLOOD PLAIN
100 YEAR FLOOD PLAIN B.R.L.
SOILS LINES
SOIL TEXT TYPE — GdB
30" > DBH TREE
EXISTING TREE LINE
FOREST CONSERVATION EASEMENT
FOREST PLANTING AREA
STREAMS
EXISTING CONTOUR
PROPOSED CONTOUR
STABILIZED CONSTRUCTION ENTRANCE — SCE
LIMITS OF DISTURBANCE — LOD
SILT FENCE — SF
SUPER SILT FENCE — SSF

HYDROLOGIC SOIL GROUPS

SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
LsA	Lindside silt loam (0-3% slopes)	C
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

GRAPHIC SCALE
50' 0 25' 50' 100' 200'
1 INCH = 50 FT

PROFESSIONAL CERTIFICATION
"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 29782 , Expiration Date: 1/16/2023 ".

APPROVED BY _____ DISTRICT MANAGER
DATE _____
SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

STATE OF MARYLAND — PHILLIP THOMAS WAGNER — 29782 — PROFESSIONAL ENGINEER
3/24/2022

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

3/24/2022

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

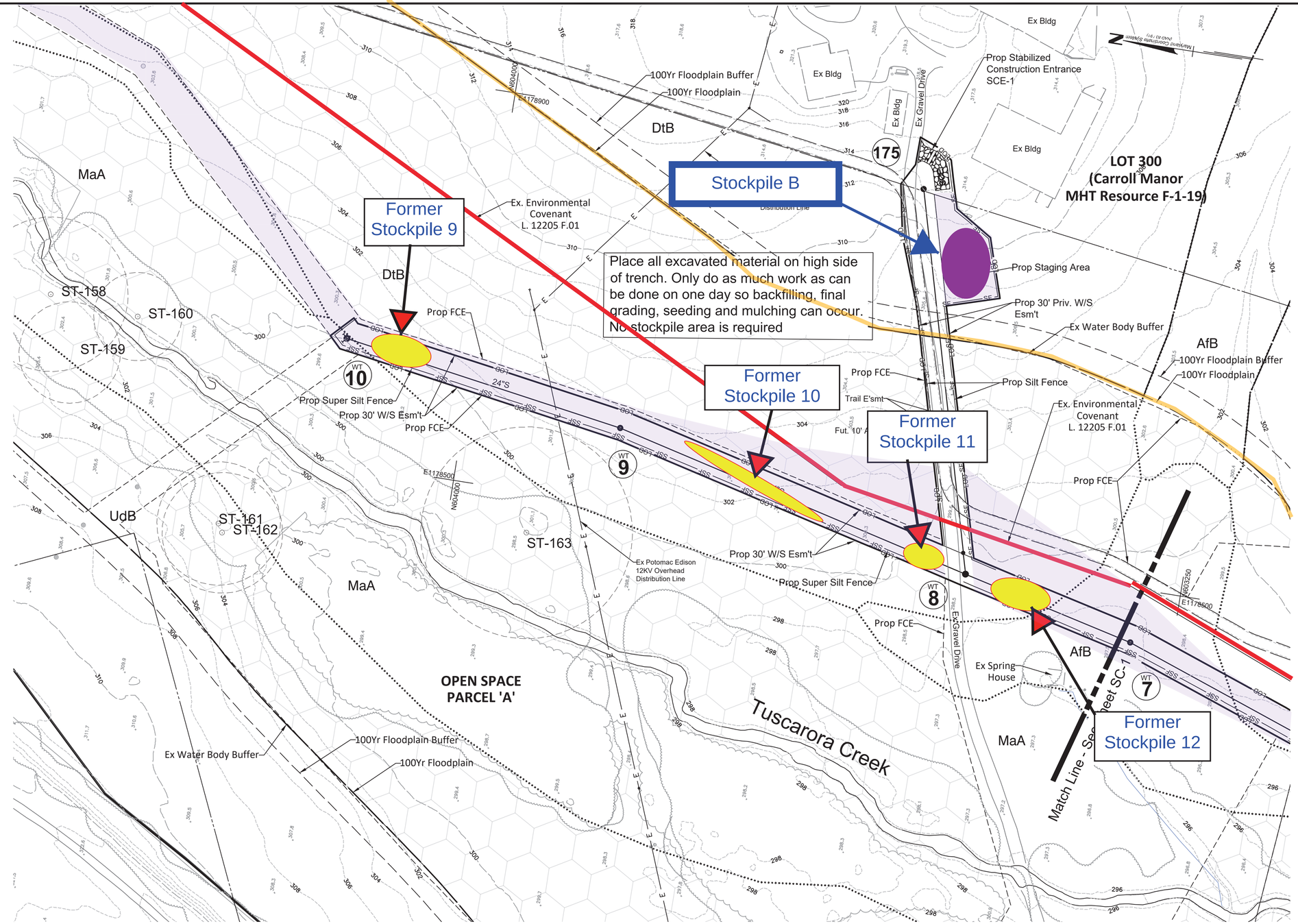
Sediment Control Plan

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

SEWER OUTFALL
Happy Landing Rd to MH10
& Conn. to Lot 300 (Historic Carroll Manor)
QUANTUM FREDERICK
LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE: 1"=50'
JOB No. 1339A
March, 2022
INDEX No. SC-1
SHEET No. 2 OF 7

Figure 5 Southern Site Stabilization Areas; MH-7 to MH-10



LEGEND

- WATER BODY BUFFER
- WETLANDS
- WETLAND 25' B.R.L.
- 100 YEAR FLOOD PLAIN
- 100 YEAR FLOOD PLAIN B.R.L.
- SOILS LINES
- SOIL TEXT TYPE
- 30" > DBH TREE
- EXISTING TREE LINE
- FOREST CONSERVATION EASEMENT
- FOREST PLANTING AREA
- STREAMS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- LIMITS OF DISTURBANCE (LOD)
- SILT FENCE (SF)
- SUPER SILT FENCE (SSF)

Seed and Straw Stabilization Areas

HYDROLOGIC SOIL GROUPS		
SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
LsA	Lindside silt loam (0-3% slopes)	C
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

GRAPHIC SCALE

50' 0 25' 50' 100' 200'

1 INCH = 50 FT

FREDERICK SOIL CONSERVATION DISTRICT

APPROVED BY _____ DISTRICT MANAGER

DATE _____

SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

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STATE OF MARYLAND

3/24/2022

Released for Bid 2022-07-29

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

Sediment Control Plan

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

SEWER OUTFALL
Happy Landing Rd to MH10
& Conn. to Lot 300 (Historic Carroll Manor)
QUANTUM FREDERICK
LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE:	1"=50'
JOB No.	1339A
	March, 2022
INDEX No.	SC-2
SHEET No.	3 OF 7

SUBMITTAL 3/24/2022

SUBMITTAL

Figure 6
Southern Site Stabilization Areas; MH-11 to MH-14

Stockpile A

Former Stockpile 7

Former Stockpile 8

Place all excavated material on high side of trench. Only do as much work as can be done on one day so backfilling, final grading, seeding and mulching can occur. No stockpile area is required

Match - See Sheet SC-3

LOT 300
(Carroll Manor
MHT Resource F-1-19)

OPEN SPACE
PARCEL 'A'

Tuscarora Creek

Ex. Environmental Covenant L. 12205 F.01

Ex. AT&T Esm't L.643 F.437

Trail E'smt
Fut. 10' Asphalt Trail

Ex Water Body Buffer

100 Yr Floodplain Buffer

100 Yr Floodplain

100 YR Floodplain Buffer

100 YR Floodplain

Prop Super Silt Fence

Prop FCE

Prop Public W/S Esm't

Ex Super Silt Fence

Ex Fence

Ex Wetlands

Ex Wetlands Buffer

DtB

LsA

MaA

UdB

24"S

LOD

ISS

IBT

SSF

SF

SCE

Ex 24"S

Ex 10

11

12

13

14

ST-156

ST-157

ST-158

ST-159

ST-160

ST-161

N604800
E1178800

N604900
E1178900

Scale: 1" = 50'

LEGEND

- EXISTING TREE
- EXISTING TREE - TO BE REMOVED
- TREE PROTECTION (ARMOR)
- EXISTING TREELINE
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- EXISTING 100 YEAR FLOODPLAIN
- EXISTING STREAMS
- EXISTING STREAM VALLEY BUFFER
- EXISTING TOPO w/ CONTOUR LABEL (380 / 378)
- SOILS LINES
- GdB — SOIL TYPE
- EXISTING DRAINAGE DIVIDE
- FOREST CONSERVATION EASEMENT
- FOREST PLANTING AREA
- LOD — LIMIT OF DISTURBANCE
- SSF — SSF — SUPER SILT FENCE
- SF — SF — SILT FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE

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

HYDROLOGIC SOIL GROUPS		
SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

PLAN SCALE
50' 0 25' 50' 100' 200'
1"= 50'

Seed and Straw Stabilization Areas

FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE _____
SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

PROFESSIONAL CERTIFICATION
"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 29782 , Expiration Date: 1/16/2023 ".

STATE OF MARYLAND — THOMAS

Released for Bid
2022-07-29

5/9/2022
3/28/2022

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

Sediment Control Plan

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

SEWER OUTFALL
MH10 to Quantum Place South
& Conn. to Lots 301 and 302
QUANTUM FREDERICK
LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE: 1"=50'
JOB No. 1339A2
March, 2022
INDEX No. SC-2
SHEET No. 3 OF 11

Figure 7 Southern Site Stabilization Areas; MH-15 to MH-20

Prop Stockpile Area #1
Prop Silt Fence
Ex Water Body Buffer
100 Yr Floodplain Buffer
100 Yr Floodplain
E1180500
N605200
Lot 301
DtB
Note:
Remove ex. fence sections as necessary to construct prop. sewer. Replace fence once construction is complete.
Ex. W/S Esm't L.808 F.198
Scale: 1" = 50'
Lot 302
Ex. Gas Esm't L.804 F.188
Ex Overhead Electric Line
Ex Paved Drive
Prop Super Silt Fence
Ex Pole
Ex Railroad Tracks-Private
LOT 300 (Carroll Manor MHT Resource F-1-19)
Former Stockpile 4
Match Line - See Sheet SC-4
Ex. 18" Force Main
Ex. 24"W
Ex. W L.819
Super Silt Fence Added
Ex Water Body Buffer
100 Yr Floodplain Buffer
100 Yr Floodplain
Prop Super Silt Fence
Prop Public W/S Esm't
Prop Silt Fence
Remove and replace ex. paving as necessary to construct prop. sewer.
Stockpile A
Ex Pole
Ex Fence
Ex Culvert
Approx. location of Ex. Gas to be abandoned
Approx. location of Ex. 24"W to be abandoned
Prop Public W/S Esm't
Ex Water Meter
Prop FCE
Former Stockpile 6
Former Stockpile 5
Prop Super Silt Fence
Remove ex. private water as necessary to construct prop. sewer.
Ex Wetlands Buffer
Ex Wetlands
Ex. Environmental Covenant L. 12205 F.01
OPEN SPACE PARCEL 'A'
Contractor to companies a locate ex. utilities in advance of any land disturbing activities.
Remove ex. railroad tracks, and appurtenances as necessary to construct prop. sewer. Stockpile in Stockpile Area 1
Soil Management Area
Tuscarora Creek
LsA
Place all excavated material on high side of trench. Only do as much work as can be done on one day so backf grading, seeding and mulchir cur. No stockpile area is required
Seed and Straw Stabilization Areas
Match Line
Prop Super Silt Fence
E1179800
N605200
SCE Sheet SC-2
PROFESSIONAL CERTIFICATION
"I hereby certify that these documents were prepared or approved by me that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 29782 , Expiration Date: 1/16/2023 ".

LEGEND

- EXISTING TREE
- EXISTING TREE - TO BE REMOVED
- TREE PROTECTION (ARMOR)
- EXISTING TREELINE
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- EXISTING 100 YEAR FLOODPLAIN
- EXISTING STREAMS
- EXISTING STREAM VALLEY BUFFER
- EXISTING TOPO w/ C
- SOILS LINES
- GdB — SOIL TYPE
- EXISTING DRAINAGE DIVIDE
- FOREST CONSERVATION EASEMENT
- FOREST PLANTING AREA
- LOD — LIMIT OF DISTURBANCE
- SSF — SSF — SUPER SILT FENCE
- SF — SF — SILT FENCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE

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

HYDROLOGIC SOIL GROUPS

SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
LsA	Lindside silt loam (0-3% slopes)	C
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

PLAN SCALE
50' 0 25' 50' 100' 200'
1"= 50'

Seed and Straw Stabilization Areas

FREDERICK SOIL CONSERVATION DISTRICT
APPROVED BY _____ DISTRICT MANAGER
DATE _____
SCD approval for sediment and erosion control is contingent upon issuance of all applicable regulatory permits.

Released for Bid 2022-07-29

REVISION	DATE	REVISION	DATE
5/9/2022			
3/28/2022			

	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

Sediment Control Plan

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

SEWER OUTFALL
MH10 to Quantum Place South
& Conn. to Lots 301 and 302
# QUANTUM FREDERICK
LIBER 15038 FOLIO 393
ELECTION DISTRICT NO. 1
FREDERICK COUNTY, MARYLAND

SCALE:	1"=50'
JOB No.	1339A2
	March, 2022
INDEX No.	SC-3
SHEET No.	4 OF 11

Figure 8 Existing Stockpile Location Plan

Soil Management Area
Stockpile 1
Stockpile 2
Stockpile 3
Stockpile A
Stockpile B
Stockpile C
Stockpile D
Stockpile 14
Stockpile 15
Stockpile 16
Environmental Covenant
Floodplains

Fut. Quantum Place North
Fut. Quantum Place South
Fut. Cloud Lane
Fut. Energy Lane
Fut. Happy Landing Road
Fut. MD Route 80
Ex. Manor Woods Road
Manor Woods Road
Capstone Road
Ballenger Creek Pike/Md 355
Jefferson Pike/Md 17
Woodsboro Pike/Md 26
New Design Road
Agro Drive
Ex. Dirt Road
Ex. Spring
Ex. Forest
Ex. Landfill
Ex. Railroad
Ex. Water Easement
Ex. Soils Esm't L. 12205 F 01
Ex. Environmental Covenant L.12205 F.001
Ex. Soils Esm't L. 12205 F 01
Ex. Environmental Covenant 12205 F.01
Ex. Residences
Ex. Abandoned Residence
Ex. Concrete
Area identified by DNR as likely RTE habitat
Area identified by DNR as likely RTE habitat
Existing Carrollton Manor House and Farmstead MHT Resource F-1-19*
St. Joseph's Catholic Church MHT Resource F-1-18
Tuscarora Creek
Tributary 25
Ephemeral Channel
Ex. Ephemeral Channels
Ex. Intermittent Stream
Ex. Perennial Stream
Ex. Wetland
Wetlands
Wetlands Buffer
Ex. Hedgerow
Ex. Asphalt
Entrance Asphalt
Ex. Crop Production
Agricultural Use
Residential Use
Commercial Use
Ex. Electric Transmission Lines
Ex. High Voltage Lines
Ex. AT&T Easement
Ex. Railroad Station
Ex. Bank Board
WDS
WDS-1
WDS-3
WDS-4
WDS-5
WDS-6
WDS-8
AG ZONING
GI ZONING
N607400
E1178000
E1181000

Manhole 26 N: 607879.66 E: 1179852.22 Wetlands Buffer
Manhole 24 N: 607423.85 E: 1179972.12
Manhole 23 N: 607164.05 E: 1179964.86
Manhole 25 N: 607778.85 E: 1179892.94
Manhole 22 N: 606817.76 E: 1180070.38
Manhole 21 N: 606623.09 E: 1180129.70
Manhole 20 N: 606458.70 E: 1180197.6
Manhole 19 N: 606361.51 E: 1180183.69
Manhole 18 N: 606014.01 E: 1179982.04
Manhole 17 N: 605645.26 E: 1180119.20
Manhole 16 N: 605510.60 E: 1180088.18
Manhole 15
Manhole 14 N: 604909.24 E: 1179647.45
Manhole 13 N: 604780.44 E: 1179311.21
Manhole 12 N: 604711.56 E: 1178999.46
Manhole 11 N: 604378.69 E: 1178867.11
Manhole 10 N: 604129.76 E: 1178625.66
Manhole 9 N: 603840.54 E: 1178579.38
Manhole 8 N: 603469.43 E: 1178487.74
Manhole 7 N: 603292.70 E: 1178445.19
Manhole 6 N: 602917.98 E: 1178311.5
Manhole 5 N: 602543.41 E: 1178193.55
Manhole 4
Manhole 3 N: 602007.22 E: 1178198.06

LEGEND

- EXISTING TREE
- EXISTING TREELINE
- EXISTING WETLAND
- EXISTING WETLAND BUFFER
- WASTE DISPOSAL SITE
- EFFECTIVE 100 YEAR FLOODPLAIN
- EFFECTIVE 100 YEAR FLOODPLAIN BUFFER
- PENDING 100 YEAR FLOODPLAIN
- PENDING 100 YEAR FLOODPLAIN BUFFER
- EXISTING STREAM VALLEY BUFFER
- 380 / 378 EXISTING TOPO w/ CONTOUR LABEL
- SOILS LINES
- GdB SOIL TYPE

HYDROLOGIC SOIL GROUPS

SOIL NAME	DESCRIPTION	HSG
AfB	Adamstown-Funkstown complex (0-8% slopes)	C
BtC	Buckeystown loam (3-8% slopes)	B
DtB	Duffield-Ryder silt loam (3-8% slopes)	B
HcB	Hagerstown-Opequon silty clay loams (3-8% slopes)rocky	B
LsA	Lindside silt loam (0-3% slopes)	C
MaA	Melvin-Lindside silt loam (0-3% slopes)	B/D

GRAPHIC SCALE
500' 0 250' 500' 1000' 2000'
1 INCH = 500 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

Site Exhibit

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

SCALE: 1"=500'
JOB No. 1339A2
June, 2023
INDEX No. EXB-1
SHEET No. 1 OF 1

S:/16/2022

FIGURE 9
FRAC TANK RELOCATION PLAN

Approximate Haul Route

Approximate 100 Year Floodplain (only areas pertinent to frac tank relocation shown)

Approximate Haul Route

Former Frac Tank 1 and 2 Locations Near MH-3

Lot 76
103 Acres
(existing parcel 76)
±144 acres

LOT 207
±12 acres

OPEN SPACE PARCEL 'H'
±13 acres

LOT 206
±40 acres

LOT 208
±10 acres

OPEN SPACE PARCEL 'J'
±77 acres

LOT 205
±48 acres

LOT 209
±2,224,857 sf
±51.08 acres

MANOR WOODS ROAD

R/W 7 DEDICATION
±4,216 sf
±0.10 acres

Agro Dr.

LOT 114
±254,391 sf
±5.84 acres

LOT 115
±265,184 sf
±6.09 acres

OUTLOT 4
±33,773 sf
±0.77 acres

R/W 3 RESERVATION
±151,182 sf
±3.47 acres

BALLENGER CREEK PIKE

LOT 204
±1,904,135 sf
±43.71 acres

Lunar Lane

LOT 9
±3,525,650 sf
±80.9 acres

LOT 203
±1,582,399 sf
±36.33 acres

LOT 110
±901,141 sf
±20.69 acres

OPEN SPACE PARCEL 'C'
±1,639,029 sf
±37.63 acres

OPEN SPACE PARCEL 'B'
±919,026 sf
±21.10 acres

LOT 106
±3,262,386 sf
±74.89 acres

OPEN SPACE PARCEL 'G'
±33,433 sf
±0.77 acres

LOT 202
±1,128,750 sf
±25.91 acres

Quantum Place North

R/W 5 DEDICATION
±15,630 sf
±0.36 acres

R/W 3 DEDICATION
±181,730 sf
±4.17 acres

LOT 83
±3,609,638sf
±82.9 acres

NEW DESIGN RD

Streamline Terrace

R/W 2 DEDICATION
±234,467 sf
±5.38 acres

LOT 200
±233,382 sf
±5.36 acres

R/W 4 DEDICATION
±15,182 sf
±0.35 acres

LOT 201
±2,288,398 sf
±52.53 acres

LOT 105
±747,993 sf
±17.17 acres

Quantum Place South

CAP STINE ROAD

LANDFILL
LOT 113
±1,239,946 sf
±28.47 acres

LOT 112A
±845,994 sf
±19.42 acres

Clean Energy Lane

MANOR WOODS ROAD

OPEN SPACE PARCEL 'A'
±6,867,637 sf
±157.66 acres

Elementary Lane

LOT 102
±2,078,869 sf
±47.72 acres

OPEN SPACE PARCEL 'F'
±123,337 sf
±2.83 acres

R/W 9 DEDICATION
±5,385 sf
±0.12 acres

LOT 112D
±489,340 sf
±11.23 acres

OPEN SPACE PARCEL 'A'
±6,867,637 sf
±157.66 acres

OPEN SPACE PARCEL 'L'
±17 acres

R/W 8 DEDICATION
±17,452 sf
±0.40 acres

LOT 400
±2,428,775 sf
±55.76 acres

OPEN SPACE PARCEL 'O'
±2,355 sf
±0.05 acres

LOT 101
±1,142,029 sf
±26.22 acres

Lot 301
±3,944,594 sf
±90.56 acres

PROP. SEWER FORCE MAIN

LOT 100
±1,719,146 sf
±39.47 acres

Ex. Historic Carrollton Manor House and Farmstead #97001294

LOT 300
±2,285,393 sf
±52.47 acres
(Carroll Manor MHT Resource F-1-19)

Lot 302
±2,395,081 sf
±54.98 acres

LOT 401
±4,160,294 sf
±95.51 acres

Existing Transmission Corridor

Existing Key Node (typ.)

OPEN SPACE PARCEL 'A'
±6,867,637 sf
±157.66 acres

LOT 303
±2,351,572 sf
±53.98 acres

Happy Landing Road
Future MD Route 80

R/W 12 DEDICATION
±125,151 sf
±2.87 acres

R/W 10 DEDICATION
±34,878 sf
±0.80 acres

R/W 6 RESERVATION
±34,564 sf
±0.79 acres

OUT LOT 1
PUMP STATION
±53,352 sf
±1.22 acres

LOT 304
±1,552,676 sf
±35.64 acres

R/W 13 DEDICATION & ACCESS ESM'T
±562,729 sf
±12.92 acres

OPEN SPACE PARCEL 'M'
±91 acres

LOT 402
±526,183 sf
±12.08 acres

OPEN SPACE PARCEL 'Q'
±76,852 sf
±1.76 acres

R/W 11 DEDICATION
±116,674 sf
±2.68 acres

LOT 403
±1,445,541 sf
±33.19 acres

OPEN SPACE 'P'
±22,664 sf
±0.52 acres

OPEN SPACE PARCEL 'D'
±223,455 sf
±5.13 acres

PROP. SEWER FORCE MAIN

B&O/ CSX RAILROAD

Carroll Manor Elementary School

LOT 307
±26 acres

ADAMSTOWN ROAD

NORTH

0 400 800 1200 1600 feet
1" = 400'

LEGEND

- Lots with a Preliminary Plan
- Forest Conservation Easements
- Roadways
- Fiber Easements
- AT&T Easements
- Power Easements
- Power Lines (OHW/E)
- Utility Easements
- Water & Sewer Easements
- Sewer Lines
- Sewer Force Mains
- Water Lines
- Cooling Water Lines
- Gas Easements
- Lots in Soil Management Area (SMA) with a Preliminary Plan
- SMA in Open Space of Forest Conservation Easements
- Environmental Covenant (EC) Areas

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

Quantum Frederick Property
Easement Exhibit

01/26/2023

N:\MD-Frederick\Alcoa\autocad\Plot Plans\Exhibits\Fiber\Fiber-esmt 2023.01.25.dwg

APPENDIX F
Laboratory Reports

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23061513

June 22, 2023

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

Reference: PSS Project No: **23061513**
Project Name: 31222314
Project Location: Baltimore
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) **23061513**.

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 July 20, 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

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Explanation of Qualifiers

Project Name: 31222314
PSS Project No.: 23061513

Project ID: 31222314

The following samples were received under chain of custody by Phase Separation Science (PSS) on 06/15/2023 at 04:40 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
23061513-001	ST-1	GROUND WATER	06/15/23 12:30

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

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23061513

Sample ID: ST-1 **Date/Time Sampled: 06/15/2023 12:30** **PSS Sample ID: 23061513-001**
Matrix: GROUND WATER **Date/Time Received: 06/15/2023 16:40**

Priority Pollutant Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

Qualifier(s): See Batch 204492 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	06/20/23	06/20/23 22:42	1064
Arsenic	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Beryllium	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Cadmium	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Chromium	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Copper	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Lead	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Mercury	ND	ug/L	0.20		1	06/20/23	06/20/23 22:42	1064
Nickel	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Selenium	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Silver	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Thallium	ND	ug/L	1.0		1	06/20/23	06/20/23 22:42	1064
Zinc	ND	ug/L	20		1	06/20/23	06/20/23 22:42	1064

Dissolved Priority Pollutant Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 204501 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	06/20/23	06/21/23 01:28	1064
Arsenic	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Beryllium	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Cadmium	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Chromium	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Copper	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Lead	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Mercury	ND	ug/L	0.20		1	06/20/23	06/21/23 01:28	1064
Nickel	**1.7**	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Selenium	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Silver	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Thallium	ND	ug/L	1.0		1	06/20/23	06/21/23 01:28	1064
Zinc	ND	ug/L	20		1	06/20/23	06/21/23 01:28	1064

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23061513

Sample ID: ST-1 **Date/Time Sampled: 06/15/2023 12:30** **PSS Sample ID: 23061513-001**
Matrix: GROUND WATER **Date/Time Received: 06/15/2023 16:40**

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

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Fluoride	**0.32**	mg/L	0.25		1	06/16/23	06/16/23 12:52	1053

Polychlorinated Biphenyls (PCBs) — Analytical Method: EPA 608 .3 — Preparation Method: E608.3
Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/L	0.00050		1	06/19/23	06/20/23 20:25	1029
PCB-1221	ND	mg/L	0.00050		1	06/19/23	06/20/23 20:25	1029
PCB-1232	ND	mg/L	0.00050		1	06/19/23	06/20/23 20:25	1029
PCB-1242	ND	mg/L	0.00050		1	06/19/23	06/20/23 20:25	1029
PCB-1248	ND	mg/L	0.00050		1	06/19/23	06/20/23 20:25	1029
PCB-1254	ND	mg/L	0.00050		1	06/19/23	06/20/23 20:25	1029
PCB-1260	ND	mg/L	0.00050		1	06/19/23	06/20/23 20:25	1029

Surrogate(s)	***Recovery***		***Limits***				
Tetrachloro-m-xylene	*72*	*%*	*31-111*		*1*	*06/19/23*	*06/20/23 20:25*	*1029*
Decachlorobiphenyl	*91*	*%*	*76-127*		*1*	*06/19/23*	*06/20/23 20:25*	*1029*

Total Cyanide — Analytical Method: SM 4500-CN C,E -2016 — Preparation Method: SM4500CN-C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	ND	mg/L	0.010		1	06/22/23	06/22/23 13:39	1053

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23061513

Sample ID: ST-1 **Date/Time Sampled: 06/15/2023 12:30** **PSS Sample ID: 23061513-001**
Matrix: GROUND WATER **Date/Time Received: 06/15/2023 16:40**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 204476 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	06/20/23	06/20/23 16:31	1011
Benzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Bromochloromethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Bromodichloromethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Bromoform	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Bromomethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	06/20/23	06/20/23 16:31	1011
Carbon Disulfide	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Carbon tetrachloride	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Chlorobenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Chloroethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Chloroform	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Chloromethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Cyclohexane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Dibromochloromethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Ethylbenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	06/20/23	06/20/23 16:31	1011
Isopropylbenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Methyl Acetate	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Methylcyclohexane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Methylene chloride	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23061513

Sample ID: ST-1 **Date/Time Sampled: 06/15/2023 12:30** **PSS Sample ID: 23061513-001**
Matrix: GROUND WATER **Date/Time Received: 06/15/2023 16:40**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 204476 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	06/20/23	06/20/23 16:31	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Naphthalene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Styrene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Tetrachloroethene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Toluene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Trichloroethene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,2,4-Trimethylbenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
1,3,5-Trimethylbenzene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
Vinyl chloride	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011
m&p-Xylene	ND	ug/L	2.0		1	06/20/23	06/20/23 16:31	1011
o-Xylene	ND	ug/L	1.0		1	06/20/23	06/20/23 16:31	1011

Surrogate(s)	*Recovery*		*Limits*		*06/20/23*	*06/20/23 16:31*	*1011*
4-Bromofluorobenzene	*115*	*%*	*88-120*	*1*			
Dibromofluoromethane	*97*	*%*	*92-107*	*1*	*06/20/23*	*06/20/23 16:31*	*1011*
Toluene-D8	*97*	*%*	*95-106*	*1*	*06/20/23*	*06/20/23 16:31*	*1011*

MDE Polyaromatic Hydrocarbons (PAHs) Analytical Method: SW-846 8270 E Preparation Method: SW3510C

Qualifier(s): See Batch 204475 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Acenaphthylene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Anthracene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Benzo(a)anthracene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Benzo(a)pyrene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Benzo(b)fluoranthene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Benzo(g,h,i)perylene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23061513

Sample ID: ST-1 **Date/Time Sampled: 06/15/2023 12:30** **PSS Sample ID: 23061513-001**
Matrix: GROUND WATER **Date/Time Received: 06/15/2023 16:40**

MDE Polyaromatic Hydrocarbons (PAHs) Analytical Method: SW-846 8270 E Preparation Method: SW3510C

Qualifier(s): See Batch 204475 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Chrysene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Dibenz(a,h)Anthracene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Fluoranthene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Fluorene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
2-Methylnaphthalene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Naphthalene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Phenanthrene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070
Pyrene	ND	ug/L	0.25		1	06/20/23	06/20/23 15:43	1070

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*76*	*%*	*59-108*		*1*	*06/20/23*	*06/20/23 15:43*	*1070*
2-Fluorophenol	*71*	*%*	*47-100*		*1*	*06/20/23*	*06/20/23 15:43*	*1070*
Nitrobenzene-d5	*67*	*%*	*47-108*		*1*	*06/20/23*	*06/20/23 15:43*	*1070*
Phenol-d6	*69*	*%*	*57-102*		*1*	*06/20/23*	*06/20/23 15:43*	*1070*
Terphenyl-D14	*87*	*%*	*77-120*		*1*	*06/20/23*	*06/20/23 15:43*	*1070*
2,4,6-Tribromophenol	*83*	*%*	*55-120*		*1*	*06/20/23*	*06/20/23 15:43*	*1070*

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Project Name: 31222314

PSS Project No.: 23061513

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:

Received one voa vial for sample 001 with headspace.
Sample aliquots for dissolved metals were not field filtered and were received unpreserved; as such, associated sample results are not suitable for compliance under the Clean Water Act and/or Safe Drinking Water Act.

Analytical:

Total Metals

Batch: 204492

Method exceedance: Recovery of the low-level initial calibration readback standard for chromium was 126%; limits are 80 - 120%. The recovery of the mid-level initial calibration readback standard met acceptance criteria. All batch QC was also acceptable.

Analytical:

Dissolved Priority Pollutant Metals

Batch: 204501

The result reported for the dissolved analysis is higher than the result reported for the total analysis. The results reported are within the precision limits associated with the methods.
Method exceedance: Recovery of the low-level initial calibration readback standard for chromium was 126%; limits are 80 - 120%. The recovery of the mid-level initial calibration readback standard met acceptance criteria. All batch QC was also acceptable.

Analytical:

TCL Volatiles plus Oxygenates

Batch: 204476

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Laboratory control sample (LCS) exceedances identified; see QC summary. Exceedances meet marginal exceedance criteria.

Analytical:

Polyaromatic Hydrocarbons (PAHs)

Batch: 204475

Method exceedance: Quality control sample surrogate exceedance identified, see QC summary.

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Project Name: 31222314

PSS Project No.: 23061513

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

PHASE SEPARATION SCIENCE

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Lab Chronology

Project Name: 31222314
PSS Project No.: 23061513

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	ST-1	Initial	23061513-001	W	95935	204492	06/20/2023 11:05	06/20/2023 22:42
	95935-1-BKS	BKS	95935-1-BKS	W	95935	204492	06/20/2023 11:05	06/20/2023 22:12
	95935-1-BLK	BLK	95935-1-BLK	W	95935	204492	06/20/2023 11:05	06/20/2023 22:07
	Dulles Outfall 1 S	MS	23061415-001 S	W	95935	204492	06/20/2023 11:05	06/20/2023 22:22
	Dulles Outfall 1 SD	MSD	23061415-001 S	W	95935	204492	06/20/2023 11:05	06/20/2023 22:27
EPA 200.8 Dissolved	ST-1	Initial	23061513-001	W	95956	204501	06/20/2023 16:45	06/21/2023 01:28
	95956-1-BKS	BKS	95956-1-BKS	W	95956	204501	06/20/2023 16:45	06/21/2023 01:23
	95956-1-BLK	BLK	95956-1-BLK	W	95956	204501	06/20/2023 16:45	06/21/2023 01:18
	ST-1 S	MS	23061513-001 S	W	95956	204501	06/20/2023 16:45	06/21/2023 01:32
	ST-1 SD	MSD	23061513-001 S	W	95956	204501	06/20/2023 16:45	06/21/2023 01:37
EPA 300.0	ST-1	Initial	23061513-001	W	95913	204440	06/16/2023 11:24	06/16/2023 12:52
	95913-1-BKS	BKS	95913-1-BKS	W	95913	204440	06/16/2023 10:32	06/16/2023 12:07
	95913-1-BLK	BLK	95913-1-BLK	W	95913	204440	06/16/2023 10:32	06/16/2023 11:44
	ST-1 S	MS	23061513-001 S	W	95913	204440	06/16/2023 11:24	06/16/2023 13:15
	ST-1 SD	MSD	23061513-001 S	W	95913	204440	06/16/2023 11:24	06/16/2023 13:38
EPA 608 .3	ST-1	Initial	23061513-001	W	95927	204504	06/19/2023 10:21	06/20/2023 20:25
	95927-1-BKS	BKS	95927-1-BKS	W	95927	204504	06/19/2023 10:21	06/20/2023 19:28
	95927-1-BLK	BLK	95927-1-BLK	W	95927	204504	06/19/2023 10:21	06/20/2023 08:11
	95927-1-BSD	BSD	95927-1-BSD	W	95927	204504	06/19/2023 10:21	06/20/2023 19:56
SM 4500-CN C,E - 2016	ST-1	Initial	23061513-001	W	95983	204544	06/22/2023 11:31	06/22/2023 13:39
	95983-1-BKS	BKS	95983-1-BKS	W	95983	204544	06/22/2023 12:07	06/22/2023 13:33
	95983-1-BLK	BLK	95983-1-BLK	W	95983	204544	06/22/2023 12:07	06/22/2023 13:31
	95983-1-BSD	BSD	95983-1-BSD	W	95983	204544	06/22/2023 11:31	06/22/2023 13:35
	23061513-001 S	MS	23061513-001 S	W	95983	204544	06/22/2023 11:31	06/22/2023 13:41
	23061513-001 SD	MSD	23061513-001 S	W	95983	204544	06/22/2023 11:31	06/22/2023 13:43
SW-846 8260 D	ST-1	Initial	23061513-001	W	95959	204476	06/20/2023 10:34	06/20/2023 16:31
	95959-1-BKS	BKS	95959-1-BKS	W	95959	204476	06/20/2023 10:34	06/20/2023 10:34
	95959-1-BLK	BLK	95959-1-BLK	W	95959	204476	06/20/2023 10:34	06/20/2023 11:50
	MW-34 S	MS	23061419-006 S	W	95959	204476	06/20/2023 10:34	06/20/2023 14:51
	MW-34 SD	MSD	23061419-006 S	W	95959	204476	06/20/2023 10:34	06/20/2023 15:14
SW-846 8270 E	ST-1	Initial	23061513-001	W	95947	204475	06/20/2023 09:15	06/20/2023 15:43
	95947-1-BKS	BKS	95947-1-BKS	W	95947	204475	06/20/2023 09:15	06/20/2023 13:01
	95947-1-BLK	BLK	95947-1-BLK	W	95947	204475	06/20/2023 09:15	06/20/2023 11:12
	95947-1-BSD	BSD	95947-1-BSD	W	95947	204475	06/20/2023 09:15	06/20/2023 13:28

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: SM 4500-CN C,E -2016 Prep Method: SM4500CN-CPRE
Seq Number: 204544 Matrix: Water Date Prep: 06/22/23
MB Sample Id: 95983-1-BLK LCS Sample Id: 95983-1-BKS LCSD Sample Id: 95983-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Cyanide, Total	<0.01000	0.1000	0.09399	94	0.09670	97	83-117	3	20	mg/L	

Analytical Method: SM 4500-CN C,E -2016 Prep Method: SM4500CN-CPRE
Seq Number: 204544 Matrix: Ground Water Date Prep: 06/22/23
Parent Sample Id: 23061513-001 MS Sample Id: 23061513-001 S MSD Sample Id: 23061513-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Cyanide, Total	<0.01000	0.1000	0.09761	98	0.09571	96	67-124	2	20	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 204492 Matrix: Water Date Prep: 06/20/23
MB Sample Id: 95935-1-BLK LCS Sample Id: 95935-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Antimony	<5.000	25.00	26.37	105	85-115	ug/L	
Arsenic	<1.000	50.00	52.42	105	85-115	ug/L	
Beryllium	<1.000	50.00	48.33	97	85-115	ug/L	
Cadmium	<1.000	50.00	51.22	102	85-115	ug/L	
Chromium	<1.000	50.00	52.34	105	85-115	ug/L	
Copper	<1.000	50.00	52.12	104	85-115	ug/L	
Lead	<1.000	50.00	51.54	103	85-115	ug/L	
Mercury	<0.2000	1.000	0.9930	99	85-115	ug/L	
Nickel	<1.000	50.00	50.78	102	85-115	ug/L	
Selenium	<1.000	50.00	50.78	102	85-115	ug/L	
Silver	<1.000	5.000	5.155	103	85-115	ug/L	
Thallium	<1.000	50.00	50.69	101	85-115	ug/L	
Zinc	<20.00	100	104.9	105	85-115	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 204501 Matrix: Water Date Prep: 06/20/23
MB Sample Id: 95956-1-BLK LCS Sample Id: 95956-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Antimony	<5.000	25.00	25.07	100	85-115	ug/L	
Arsenic	<1.000	50.00	53.17	106	85-115	ug/L	
Beryllium	<1.000	50.00	46.57	93	85-115	ug/L	
Cadmium	<1.000	50.00	50.18	100	85-115	ug/L	
Chromium	<1.000	50.00	52.75	106	85-115	ug/L	
Copper	<1.000	50.00	52.14	104	85-115	ug/L	
Lead	<1.000	50.00	50.90	102	85-115	ug/L	
Mercury	<0.2000	1.000	1.054	105	85-115	ug/L	
Nickel	<1.000	50.00	51.50	103	85-115	ug/L	
Selenium	<1.000	50.00	53.75	108	85-115	ug/L	
Silver	<1.000	5.000	5.098	102	85-115	ug/L	
Thallium	<1.000	50.00	50.10	100	85-115	ug/L	
Zinc	<20.00	100	103.9	104	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 204501 Matrix: Ground Water Date Prep: 06/20/23
Parent Sample Id: 23061513-001 MS Sample Id: 23061513-001 S MSD Sample Id: 23061513-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Antimony	<5.000	25.00	25.20	101	25.75	103	70-130	2	25	ug/L	
Arsenic	<1.000	50.00	53.85	108	54.73	109	70-130	2	25	ug/L	
Beryllium	<1.000	50.00	48.16	96	49.29	99	70-130	2	25	ug/L	
Cadmium	<1.000	50.00	49.30	99	50.58	101	70-130	3	25	ug/L	
Chromium	<1.000	50.00	51.99	104	52.82	106	70-130	2	25	ug/L	
Copper	<1.000	50.00	49.92	100	50.92	102	70-130	2	25	ug/L	
Lead	<1.000	50.00	49.54	99	50.98	102	70-130	3	25	ug/L	
Mercury	<0.2000	1.000	1.136	114	1.108	111	70-130	2	25	ug/L	
Nickel	1.729	50.00	50.93	98	51.27	99	70-130	1	25	ug/L	
Selenium	<1.000	50.00	62.91	126	62.44	125	70-130	1	25	ug/L	
Silver	<1.000	5.000	4.950	99	5.103	102	70-130	3	25	ug/L	
Thallium	<1.000	50.00	50.17	100	51.34	103	70-130	2	25	ug/L	
Zinc	<20.00	100	102.6	103	105.9	106	70-130	3	25	ug/L	

Analytical Method: EPA 300.0 Prep Method: E300.0P
Seq Number: 204440 Matrix: Water Date Prep: 06/16/23
MB Sample Id: 95913-1-BLK LCS Sample Id: 95913-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Fluoride	<0.2500	2.500	2.390	96	90-110	mg/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: EPA 300.0 Prep Method: E300.0P
Seq Number: 204440 Matrix: Ground Water Date Prep: 06/16/23
Parent Sample Id: 23061513-001 MS Sample Id: 23061513-001 S MSD Sample Id: 23061513-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Fluoride	0.3179	2.500	2.841	101	2.798	99	90-121	2	20	mg/L	

Analytical Method: EPA 608 .3 Prep Method: E608P
Seq Number: 204504 Matrix: Water Date Prep: 06/19/23
MB Sample Id: 95927-1-BLK LCS Sample Id: 95927-1-BKS LCSD Sample Id: 95927-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
PCB-1016	<0.0005	0.002000	0.001798	90	0.001917	96	50-140	6	20	mg/L	
PCB-1260	<0.0005	0.002000	0.001969	98	0.002100	105	8-140	6	20	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Decachlorobiphenyl	108		90		95		76-127	%
Tetrachloro-m-xylene	83		87		94		31-111	%

Analytical Method: SW-846 8270 E Prep Method: SW3510C
Seq Number: 204475 Matrix: Water Date Prep: 06/20/23
MB Sample Id: 95947-1-BLK LCS Sample Id: 95947-1-BKS LCSD Sample Id: 95947-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acenaphthene	<0.2500	5.000	4.000	80	3.680	74	68-108	8	20	ug/L	
Acenaphthylene	<0.2500	5.000	3.970	79	3.690	74	68-112	7	20	ug/L	
Anthracene	<0.2500	5.000	5.090	102	4.800	96	75-114	6	20	ug/L	
Benzo(a)anthracene	<0.2500	5.000	4.710	94	4.460	89	77-116	5	20	ug/L	
Benzo(a)pyrene	<0.2500	5.000	4.890	98	4.630	93	84-138	5	20	ug/L	
Benzo(b)fluoranthene	<0.2500	5.000	4.610	92	4.130	83	77-139	11	20	ug/L	
Benzo(g,h,i)perylene	<0.2500	5.000	4.820	96	4.590	92	79-127	5	20	ug/L	
Benzo(k)fluoranthene	<0.2500	5.000	4.990	100	5.150	103	73-122	3	20	ug/L	
Chrysene	<0.2500	5.000	4.900	98	4.820	96	76-121	2	20	ug/L	
Dibenz(a,h)Anthracene	<0.2500	5.000	4.960	99	4.710	94	80-130	5	20	ug/L	
Fluoranthene	<0.2500	5.000	4.980	100	4.660	93	76-118	7	20	ug/L	
Fluorene	<0.2500	5.000	4.250	85	3.970	79	75-116	7	20	ug/L	
Indeno(1,2,3-c,d)Pyrene	<0.2500	5.000	4.830	97	4.290	86	74-137	12	20	ug/L	
2-Methylnaphthalene	<0.2500	5.000	3.830	77	3.600	72	60-116	6	20	ug/L	
Naphthalene	<0.2500	5.000	3.480	70	3.260	65	65-102	7	20	ug/L	
Phenanthrene	<0.2500	5.000	4.670	93	4.450	89	69-116	5	20	ug/L	
Pyrene	<0.2500	5.000	4.840	97	4.630	93	80-114	4	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	84		66		60		59-108	%
2-Fluorophenol	78		56		54		47-100	%
Nitrobenzene-d5	79		58		55		47-108	%
Phenol-d6	82		60		56	*	57-102	%
Terphenyl-D14	92		85		83		77-120	%
2,4,6-Tribromophenol	87		84		79		55-120	%

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 204476
Matrix: Water
Date Prep: 06/20/23
MB Sample Id: 95959-1-BLK
LCS Sample Id: 95959-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	35.90	72	49-154	ug/L	
Benzene	<1.000	50.00	55.17	110	76-112	ug/L	
Bromochloromethane	<1.000	50.00	49.43	99	74-119	ug/L	
Bromodichloromethane	<1.000	50.00	56.76	114	78-117	ug/L	
Bromoform	<1.000	50.00	50.97	102	69-123	ug/L	
Bromomethane	<1.000	50.00	42.61	85	42-118	ug/L	
2-Butanone (MEK)	<5.000	50.00	45.11	90	55-136	ug/L	
Carbon Disulfide	<1.000	50.00	59.91	120	80-124	ug/L	
Carbon tetrachloride	<1.000	50.00	50.25	101	77-119	ug/L	
Chlorobenzene	<1.000	50.00	52.91	106	76-114	ug/L	
Chloroethane	<1.000	50.00	49.76	100	61-113	ug/L	
Chloroform	<1.000	50.00	53.86	108	75-113	ug/L	
Chloromethane	<1.000	50.00	53.46	107	41-148	ug/L	
Cyclohexane	<1.000	50.00	59.72	119	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	53.93	108	52-131	ug/L	
Dibromochloromethane	<1.000	50.00	51.92	104	79-121	ug/L	
1,2-Dibromoethane	<1.000	50.00	53.11	106	77-119	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	52.54	105	75-121	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.27	105	77-120	ug/L	
Dichlorodifluoromethane	<1.000	50.00	51.36	103	49-122	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	52.33	105	76-118	ug/L	
1,1-Dichloroethane	<1.000	50.00	58.51	117	75-118	ug/L	
1,2-Dichloroethane	<1.000	50.00	53.75	108	72-115	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	51.58	103	75-119	ug/L	
1,1-Dichloroethene	<1.000	50.00	47.12	94	74-119	ug/L	
1,2-Dichloropropane	<1.000	50.00	59.43	119	76-115	ug/L	H
cis-1,3-Dichloropropene	<1.000	50.00	55.65	111	83-122	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	48.86	98	76-118	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	50.99	102	73-121	ug/L	
Ethylbenzene	<1.000	50.00	56.29	113	78-118	ug/L	
2-Hexanone (MBK)	<5.000	50.00	55.08	110	55-136	ug/L	
Isopropylbenzene	<1.000	50.00	55.41	111	76-126	ug/L	
Methyl Acetate	<1.000	50.00	48.60	97	61-117	ug/L	
Methylcyclohexane	<1.000	50.00	51.85	104	82-126	ug/L	
Methylene chloride	<1.000	50.00	54.36	109	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	59.23	118	57-127	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	48.83	98	71-114	ug/L	
Naphthalene	<1.000	50.00	47.16	94	60-122	ug/L	
Styrene	<1.000	50.00	55.70	111	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	56.75	114	66-123	ug/L	
Tetrachloroethene	<1.000	50.00	47.37	95	76-123	ug/L	
Toluene	<1.000	50.00	52.53	105	77-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	46.25	93	73-129	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	46.38	93	73-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.63	99	79-118	ug/L	
Trichloroethene	<1.000	50.00	52.36	105	77-112	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	54.34	109	75-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	45.23	90	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	48.73	97	77-123	ug/L	
1,2,4-Trimethylbenzene	<1.000	50.00	54.90	110	76-127	ug/L	
1,3,5-Trimethylbenzene	<1.000	50.00	54.77	110	76-126	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 204476
Matrix: Water
Date Prep: 06/20/23
MB Sample Id: 95959-1-BLK
LCS Sample Id: 95959-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Vinyl chloride	<1.000	50.00	60.61	121	53-151	ug/L	
m&p-Xylene	<2.000	100	107.5	108	79-121	ug/L	
o-Xylene	<1.000	50.00	53.43	107	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	114		106		88-120	%
Dibromofluoromethane	97		98		92-107	%
Toluene-D8	98		100		95-106	%

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

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 204544 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 06/22/23 13:27

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Cyanide, Total	100	95.46	95	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 204544 Matrix: Water

CCV Sample Id: CCV-02 Analyzed Date: 06/22/23 13:51

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Cyanide, Total	100	93.15	93	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 204096 Matrix: Water

Parent Sample Id: ICV ICV Sample Id: ICV Analyzed Date: 06/06/23 13:15

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Cyanide, Total	100	100.5	101	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 204544 Matrix: Water

Parent Sample Id: MRL MRL Sample Id: MRL Analyzed Date: 06/22/23 13:37

Parameter	Spike Amount	MRL Result	MRL %Rec	Limits	Units	Flag
Cyanide, Total	10.00	9.771	98	50-150	ug/L	

Analytical Method: EPA 200.8
Seq Number: 204492 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 06/20/23 21:57

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	52.52	105	85-115	ug/L	
Arsenic	100	104.9	105	85-115	ug/L	
Beryllium	100	100.9	101	85-115	ug/L	
Cadmium	100	102.1	102	85-115	ug/L	
Chromium	100	104.2	104	85-115	ug/L	
Copper	100	102.1	102	85-115	ug/L	
Lead	100	101.8	102	85-115	ug/L	
Mercury	1.000	0.9720	97	85-115	ug/L	
Nickel	100	101.8	102	85-115	ug/L	
Selenium	100	100	100	85-115	ug/L	
Silver	10.00	10.18	102	85-115	ug/L	
Thallium	100	101.9	102	85-115	ug/L	
Zinc	200	210	105	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 204492 Matrix: Water
CCV Sample Id: CCV 2 Analyzed Date: 06/20/23 23:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	52.21	104	85-115	ug/L	
Arsenic	100	104.5	105	85-115	ug/L	
Beryllium	100	102.7	103	85-115	ug/L	
Cadmium	100	101.7	102	85-115	ug/L	
Chromium	100	103.6	104	85-115	ug/L	
Copper	100	102.2	102	85-115	ug/L	
Lead	100	100.9	101	85-115	ug/L	
Mercury	1.000	0.9660	97	85-115	ug/L	
Nickel	100	101.1	101	85-115	ug/L	
Selenium	100	100.9	101	85-115	ug/L	
Silver	10.00	10.29	103	85-115	ug/L	
Thallium	100	91.13	91	85-115	ug/L	
Zinc	200	207.9	104	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 204492 Matrix: Water

CCV Sample Id: CCV 3 Analyzed Date: 06/21/23 00:03

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	53.21	106	85-115	ug/L	
Arsenic	100	107	107	85-115	ug/L	
Beryllium	100	101.9	102	85-115	ug/L	
Cadmium	100	103.2	103	85-115	ug/L	
Chromium	100	105.5	106	85-115	ug/L	
Copper	100	104	104	85-115	ug/L	
Lead	100	102.3	102	85-115	ug/L	
Mercury	1.000	0.9540	95	85-115	ug/L	
Nickel	100	102.6	103	85-115	ug/L	
Selenium	100	95.60	96	85-115	ug/L	
Silver	10.00	10.25	103	85-115	ug/L	
Thallium	100	94.71	95	85-115	ug/L	
Zinc	200	212.4	106	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 204492 Matrix: Water

Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 06/20/23 20:38

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Antimony	25.00	25.65	103	90-110	ug/L	
Arsenic	50.00	51.55	103	90-110	ug/L	
Beryllium	50.00	49.61	99	90-110	ug/L	
Cadmium	50.00	50.29	101	90-110	ug/L	
Chromium	50.00	51.38	103	90-110	ug/L	
Copper	50.00	51.29	103	90-110	ug/L	
Lead	50.00	50.50	101	90-110	ug/L	
Mercury	1.000	1.024	102	90-110	ug/L	
Nickel	50.00	50.25	101	90-110	ug/L	
Selenium	50.00	51.85	104	90-110	ug/L	
Silver	5.000	5.083	102	90-110	ug/L	
Thallium	50.00	50.07	100	90-110	ug/L	
Zinc	100	103.1	103	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 204501 Matrix: Water

CCV Sample Id: CCV 4 Analyzed Date: 06/21/23 01:08

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	51.62	103	85-115	ug/L	
Arsenic	100	105.9	106	85-115	ug/L	
Beryllium	100	99.32	99	85-115	ug/L	
Cadmium	100	101.7	102	85-115	ug/L	
Chromium	100	105.9	106	85-115	ug/L	
Copper	100	104.3	104	85-115	ug/L	
Lead	100	89.04	89	85-115	ug/L	
Mercury	1.000	0.9600	96	85-115	ug/L	
Nickel	100	103.5	104	85-115	ug/L	
Selenium	100	106.1	106	85-115	ug/L	
Silver	10.00	10.23	102	85-115	ug/L	
Thallium	100	98.22	98	85-115	ug/L	
Zinc	200	209.2	105	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 204501 Matrix: Water

CCV Sample Id: CCV 5 Analyzed Date: 06/21/23 02:07

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	51.70	103	85-115	ug/L	
Arsenic	100	103.4	103	85-115	ug/L	
Beryllium	100	94.00	94	85-115	ug/L	
Cadmium	100	100.7	101	85-115	ug/L	
Chromium	100	103.3	103	85-115	ug/L	
Copper	100	102.4	102	85-115	ug/L	
Lead	100	101.1	101	85-115	ug/L	
Mercury	1.000	0.9760	98	85-115	ug/L	
Nickel	100	100.8	101	85-115	ug/L	
Selenium	100	106.8	107	85-115	ug/L	
Silver	10.00	10.18	102	85-115	ug/L	
Thallium	100	97.74	98	85-115	ug/L	
Zinc	200	206.3	103	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 204501 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 06/20/23 20:38

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Antimony	25.00	25.65	103	90-110	ug/L	
Arsenic	50.00	51.55	103	90-110	ug/L	
Beryllium	50.00	49.61	99	90-110	ug/L	
Cadmium	50.00	50.29	101	90-110	ug/L	
Chromium	50.00	51.38	103	90-110	ug/L	
Copper	50.00	51.29	103	90-110	ug/L	
Lead	50.00	50.50	101	90-110	ug/L	
Mercury	1.000	1.024	102	90-110	ug/L	
Nickel	50.00	50.25	101	90-110	ug/L	
Selenium	50.00	51.85	104	90-110	ug/L	
Silver	5.000	5.083	102	90-110	ug/L	
Thallium	50.00	50.07	100	90-110	ug/L	
Zinc	100	103.1	103	90-110	ug/L	

Analytical Method: EPA 300.0

Seq Number: 204440 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 06/16/23 10:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.418	97	90-110	mg/L	

Analytical Method: EPA 300.0

Seq Number: 204440 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 06/16/23 14:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.399	96	90-110	mg/L	

Analytical Method: EPA 300.0

Seq Number: 204440 Matrix: Water
CCV Sample Id: CCV-03 Analyzed Date: 06/16/23 18:52

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.455	98	90-110	mg/L	

Analytical Method: EPA 300.0

Seq Number: 204300 Matrix: Water

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 06/09/23 15:10

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Fluoride	2.500	2.545	102	90-110	mg/L	

Analytical Method: EPA 608 .3

Seq Number: 204504 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 06/20/23 07:43

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
PCB-1016	0.1000	0.08934	89	75-125	mg/L	
PCB-1016	0.1000	0.09340	93	75-125	mg/L	
PCB-1016	0.1000	0.08869	89	75-125	mg/L	
PCB-1016	0.1000	0.08868	89	75-125	mg/L	
PCB-1016	0.1000	0.09205	92	75-125	mg/L	
PCB-1260	0.1000	0.09503	95	75-125	mg/L	
PCB-1260	0.1000	0.09123	91	75-125	mg/L	
PCB-1260	0.1000	0.09105	91	75-125	mg/L	
PCB-1260	0.1000	0.08890	89	75-125	mg/L	
PCB-1260	0.1000	0.08567	86	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	107	76-127	%	
Tetrachloro-m-xylene	85	31-111	%	

Analytical Method: EPA 608 .3

Seq Number: 204504 Matrix: Water

CCV Sample Id: CCV-02 Analyzed Date: 06/20/23 10:03

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
PCB-1016	0.1000	0.09198	92	75-125	mg/L	
PCB-1016	0.1000	0.09652	97	75-125	mg/L	
PCB-1016	0.1000	0.09185	92	75-125	mg/L	
PCB-1016	0.1000	0.09257	93	75-125	mg/L	
PCB-1016	0.1000	0.09437	94	75-125	mg/L	
PCB-1260	0.1000	0.09780	98	75-125	mg/L	
PCB-1260	0.1000	0.09507	95	75-125	mg/L	
PCB-1260	0.1000	0.09360	94	75-125	mg/L	
PCB-1260	0.1000	0.09304	93	75-125	mg/L	
PCB-1260	0.1000	0.08928	89	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	110	76-127	%	
Tetrachloro-m-xylene	87	31-111	%	

Analytical Method: EPA 608 .3
Seq Number: 204504 Matrix: Water
CCV Sample Id: CCV-03 Analyzed Date: 06/20/23 17:35

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
PCB-1016	0.1000	0.09019	90	75-125	mg/L	
PCB-1016	0.1000	0.09672	97	75-125	mg/L	
PCB-1016	0.1000	0.09899	99	75-125	mg/L	
PCB-1016	0.1000	0.09480	95	75-125	mg/L	
PCB-1016	0.1000	0.09652	97	75-125	mg/L	
PCB-1260	0.1000	0.09875	99	75-125	mg/L	
PCB-1260	0.1000	0.09961	100	75-125	mg/L	
PCB-1260	0.1000	0.09364	94	75-125	mg/L	
PCB-1260	0.1000	0.09485	95	75-125	mg/L	
PCB-1260	0.1000	0.09010	90	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	87	76-127	%	
Tetrachloro-m-xylene	86	31-111	%	

Analytical Method: EPA 608 .3
Seq Number: 204504 Matrix: Water
CCV Sample Id: CCV-04 Analyzed Date: 06/20/23 22:45

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
PCB-1016	0.1000	0.09282	93	75-125	mg/L	
PCB-1016	0.1000	0.09822	98	75-125	mg/L	
PCB-1016	0.1000	0.1006	101	75-125	mg/L	
PCB-1016	0.1000	0.09629	96	75-125	mg/L	
PCB-1016	0.1000	0.09819	98	75-125	mg/L	
PCB-1260	0.1000	0.1005	101	75-125	mg/L	
PCB-1260	0.1000	0.1019	102	75-125	mg/L	
PCB-1260	0.1000	0.09637	96	75-125	mg/L	
PCB-1260	0.1000	0.09815	98	75-125	mg/L	
PCB-1260	0.1000	0.09405	94	75-125	mg/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	94	76-127	%	
Tetrachloro-m-xylene	88	31-111	%	

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: SW-846 8270 E

Seq Number: 204475 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 06/20/23 07:33

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acenaphthene	40000	36820	92	80-120	ug/L	
Acenaphthylene	40000	36320	91	80-120	ug/L	
Anthracene	40000	39440	99	80-120	ug/L	
Benzo(a)anthracene	40000	38940	97	80-120	ug/L	
Benzo(a)pyrene	40000	39200	98	80-120	ug/L	
Benzo(b)fluoranthene	40000	41000	103	80-120	ug/L	
Benzo(g,h,i)perylene	40000	39910	100	80-120	ug/L	
Benzo(k)fluoranthene	40000	36420	91	80-120	ug/L	
Chrysene	40000	37950	95	80-120	ug/L	
Dibenz(a,h)Anthracene	40000	40540	101	80-120	ug/L	
Fluoranthene	40000	37730	94	80-120	ug/L	
Fluorene	40000	37630	94	80-120	ug/L	
Indeno(1,2,3-c,d)Pyrene	40000	38760	97	80-120	ug/L	
2-Methylnaphthalene	40000	36400	91	80-120	ug/L	
Naphthalene	40000	37240	93	80-120	ug/L	
Phenanthrene	40000	37360	93	80-120	ug/L	
Pyrene	40000	38830	97	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	93	80-120	%	
2-Fluorophenol	94	80-120	%	
Nitrobenzene-d5	91	80-120	%	
Phenol-d6	97	80-120	%	
Terphenyl-D14	99	80-120	%	
2,4,6-Tribromophenol	102	80-120	%	

Analytical Method: SW-846 8270 E

Seq Number: 202929 Matrix: Solid

Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 04/21/23 15:08

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acenaphthene	40.00	37.54	94	70-130	mg/kg	
Acenaphthylene	40.00	38.14	95	70-130	mg/kg	
Anthracene	40.00	37.93	95	70-130	mg/kg	
Benzo(a)anthracene	40.00	38.41	96	70-130	mg/kg	
Benzo(a)pyrene	40.00	39.68	99	70-130	mg/kg	
Benzo(b)fluoranthene	40.00	45.17	113	70-130	mg/kg	
Benzo(g,h,i)perylene	40.00	41.01	103	70-130	mg/kg	
Benzo(k)fluoranthene	40.00	32.47	81	70-130	mg/kg	
Chrysene	40.00	38.63	97	70-130	mg/kg	
Dibenz(a,h)Anthracene	40.00	41.53	104	70-130	mg/kg	
Fluoranthene	40.00	38.03	95	70-130	mg/kg	
Fluorene	40.00	36.83	92	70-130	mg/kg	
Indeno(1,2,3-c,d)Pyrene	40.00	43.70	109	70-130	mg/kg	
2-Methylnaphthalene	40.00	36.35	91	70-130	mg/kg	
Naphthalene	40.00	36.18	90	70-130	mg/kg	
Phenanthrene	40.00	36.00	90	70-130	mg/kg	
Pyrene	40.00	38.27	96	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
2-Fluorobiphenyl	96	70-130	%	
2-Fluorophenol	96	70-130	%	
Nitrobenzene-d5	97	70-130	%	
Phenol-d6	93	70-130	%	
Terphenyl-D14	97	70-130	%	
2,4,6-Tribromophenol	106	70-130	%	

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: SW-846 8260 D

Seq Number: 204476 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 06/20/23 10:34

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	35.90	72	80-120	ug/L	X
Benzene	50.00	55.17	110	80-120	ug/L	
Bromochloromethane	50.00	49.43	99	80-120	ug/L	
Bromodichloromethane	50.00	56.76	114	80-120	ug/L	
Bromoform	50.00	50.97	102	80-120	ug/L	
Bromomethane	50.00	42.61	85	80-120	ug/L	
2-Butanone (MEK)	50.00	45.11	90	80-120	ug/L	
Carbon Disulfide	50.00	59.91	120	80-120	ug/L	
Carbon tetrachloride	50.00	50.25	101	80-120	ug/L	
Chlorobenzene	50.00	52.91	106	80-120	ug/L	
Chloroethane	50.00	49.76	100	80-120	ug/L	
Chloroform	50.00	53.86	108	80-120	ug/L	
Chloromethane	50.00	53.46	107	80-120	ug/L	
Cyclohexane	50.00	59.72	119	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	53.93	108	80-120	ug/L	
Dibromochloromethane	50.00	51.92	104	80-120	ug/L	
1,2-Dibromoethane	50.00	53.11	106	80-120	ug/L	
1,2-Dichlorobenzene	50.00	52.54	105	80-120	ug/L	
1,3-Dichlorobenzene	50.00	52.27	105	80-120	ug/L	
Dichlorodifluoromethane	50.00	51.36	103	80-120	ug/L	
1,4-Dichlorobenzene	50.00	52.33	105	80-120	ug/L	
1,1-Dichloroethane	50.00	58.51	117	80-120	ug/L	
1,2-Dichloroethane	50.00	53.75	108	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	51.58	103	80-120	ug/L	
1,1-Dichloroethene	50.00	47.12	94	80-120	ug/L	
1,2-Dichloropropane	50.00	59.43	119	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	55.65	111	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	48.86	98	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	50.99	102	80-120	ug/L	
Ethylbenzene	50.00	56.29	113	80-120	ug/L	
2-Hexanone (MBK)	50.00	55.08	110	80-120	ug/L	
Isopropylbenzene	50.00	55.41	111	80-120	ug/L	
Methyl Acetate	50.00	48.60	97	80-120	ug/L	
Methylcyclohexane	50.00	51.85	104	80-120	ug/L	
Methylene chloride	50.00	54.36	109	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	59.23	118	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	48.83	98	80-120	ug/L	
Naphthalene	50.00	47.16	94	80-120	ug/L	
Styrene	50.00	55.70	111	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	56.75	114	80-120	ug/L	
Tetrachloroethene	50.00	47.37	95	80-120	ug/L	
Toluene	50.00	52.53	105	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	46.25	93	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	46.38	93	80-120	ug/L	
1,1,1-Trichloroethane	50.00	49.63	99	80-120	ug/L	
Trichloroethene	50.00	52.36	105	80-120	ug/L	
1,1,2-Trichloroethane	50.00	54.34	109	80-120	ug/L	
Trichlorofluoromethane	50.00	45.23	90	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	48.73	97	80-120	ug/L	
1,2,4-Trimethylbenzene	50.00	54.90	110	80-120	ug/L	
1,3,5-Trimethylbenzene	50.00	54.77	110	80-120	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: SW-846 8260 D

Seq Number: 204476 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 06/20/23 10:34

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Vinyl chloride	50.00	60.61	121	80-120	ug/L	X
m&p-Xylene	100	107.5	108	80-120	ug/L	
o-Xylene	50.00	53.43	107	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	106	80-120	%	
Dibromofluoromethane	98	80-120	%	
Toluene-D8	100	80-120	%	

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: SW-846 8260 D

Seq Number: 203365 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/23 12:41

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	44.92	90	70-130	ug/L	
Benzene	50.00	47.90	96	70-130	ug/L	
Bromochloromethane	50.00	46.91	94	70-130	ug/L	
Bromodichloromethane	50.00	49.95	100	70-130	ug/L	
Bromoform	50.00	45.02	90	70-130	ug/L	
Bromomethane	50.00	46.46	93	70-130	ug/L	
2-Butanone (MEK)	50.00	45.39	91	70-130	ug/L	
Carbon Disulfide	50.00	49.58	99	70-130	ug/L	
Carbon tetrachloride	50.00	48.79	98	70-130	ug/L	
Chlorobenzene	50.00	47.96	96	70-130	ug/L	
Chloroethane	50.00	47.23	94	70-130	ug/L	
Chloroform	50.00	47.86	96	70-130	ug/L	
Chloromethane	50.00	47.85	96	70-130	ug/L	
Cyclohexane	50.00	48.54	97	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	44.59	89	70-130	ug/L	
Dibromochloromethane	50.00	46.12	92	70-130	ug/L	
1,2-Dibromoethane	50.00	47.99	96	70-130	ug/L	
1,2-Dichlorobenzene	50.00	47.36	95	70-130	ug/L	
1,3-Dichlorobenzene	50.00	47.53	95	70-130	ug/L	
Dichlorodifluoromethane	50.00	42.92	86	70-130	ug/L	
1,4-Dichlorobenzene	50.00	47.56	95	70-130	ug/L	
1,1-Dichloroethane	50.00	48.31	97	70-130	ug/L	
1,2-Dichloroethane	50.00	47.38	95	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	47.15	94	70-130	ug/L	
1,1-Dichloroethene	50.00	47.17	94	70-130	ug/L	
1,2-Dichloropropane	50.00	48.24	96	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	50.40	101	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	46.31	93	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	46.78	94	70-130	ug/L	
Ethylbenzene	50.00	49.23	98	70-130	ug/L	
2-Hexanone (MBK)	50.00	47.16	94	70-130	ug/L	
Isopropylbenzene	50.00	49.22	98	70-130	ug/L	
Methyl Acetate	50.00	44.65	89	70-130	ug/L	
Methylcyclohexane	50.00	49.09	98	70-130	ug/L	
Methylene chloride	50.00	46.97	94	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	46.44	93	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	46.61	93	70-130	ug/L	
Naphthalene	50.00	46.34	93	70-130	ug/L	
Styrene	50.00	50.11	100	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	46.51	93	70-130	ug/L	
Tetrachloroethene	50.00	47.08	94	70-130	ug/L	
Toluene	50.00	47.80	96	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	45.40	91	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	46.02	92	70-130	ug/L	
1,1,1-Trichloroethane	50.00	48.14	96	70-130	ug/L	
Trichloroethene	50.00	47.39	95	70-130	ug/L	
1,1,2-Trichloroethane	50.00	47.10	94	70-130	ug/L	
Trichlorofluoromethane	50.00	47.72	95	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	47.53	95	70-130	ug/L	
1,2,4-Trimethylbenzene	50.00	49.21	98	70-130	ug/L	
1,3,5-Trimethylbenzene	50.00	49.04	98	70-130	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23061513

Analytical Method: SW-846 8260 D

Seq Number: 203365 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 05/10/23 12:41

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Vinyl chloride	50.00	39.90	80	70-130	ug/L	
m&p-Xylene	100	98.57	99	70-130	ug/L	
o-Xylene	50.00	48.32	97	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	101	70-130	%	
Dibromofluoromethane	99	70-130	%	
Toluene-D8	100	70-130	%	

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 #: 23061513 | PAGE 1 OF 1

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

CONTACT: KEVIN PLOCEK | EMAIL: KPLOCEK@GTAENG.COM

PROJECT NAME: 3122314 | PROJECT #: 3122314

SITE LOCATION: BALTIMORE | P.O. #:

SAMPLER(S): BRS | 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 Preservatives Use Codes | Analysis/Method Required ③ | 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

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	VOCs	Total Metals	Dissolved Metals	Fluoride	Total Cyanide	PAHs	PCBs
1	ST-1	6/15/23	12:30	GW	9	G	X	X	X	X	X	X	X

⑤

Relinquished By: (1)	Date	Time	Received By:
[signature]	6/15/23	16:40	[signature]
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

Ice Present: Yes

Custody Seal: Abs

Coolers: 1 Temp: 4.7 - 5.6°C

Shipping Carrier: Client

Special Instructions:

TIER 2 PRICING

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.: 23061513

Client Name GTA - Baltimore
Disposal Date 07/20/2023

Received By Tyler Enwright
Date Received 06/15/2023 04:40:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Tyler Enwright

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	5.6
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Benjamin Salazar
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	1
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	9

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	No
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	Yes
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)	Yes
Do VOA vials have zero headspace?		No
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

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Sample Receipt Checklist

Project Name: 31222314
PSS Project No.: 23061513

Client Name	GTA - Baltimore	**Received By**	Tyler Enwright
Disposal Date	07/20/2023	**Date Received**	06/15/2023 04:40:00 PM
		Delivered By	Client
		Tracking No	Not Applicable
		Logged In By	Tyler Enwright

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.

Received one voa vial for sample 001 with headspace.
Sample aliquots for dissolved metals were not field filtered and were received unpreserved; as such, associated sample results are not suitable for compliance under the Clean Water Act and/or Safe Drinking Water Act.

Samples Inspected/Checklist Completed By: Tyler Enwright Date: 06/15/2023

PM Review and Approval: Lynn Jackson Date: 06/15/2023

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23080425

August 10, 2023

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

Reference: PSS Project No: **23080425**
Project Name: 31222314
Project Location: Frederick Co, 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) **23080425**.

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 September 8, 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,

Dan Prucnal
Laboratory Manager

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Explanation of Qualifiers

Project Name: 31222314
PSS Project No.: 23080425

Project ID: 31222314

The following samples were received under chain of custody by Phase Separation Science (PSS) on 08/04/2023 at 03:30 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
23080425-001	ST-2	GROUND WATER	08/04/23 12:30

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

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23080425

Sample ID: ST-2 **Date/Time Sampled: 08/04/2023 12:30** **PSS Sample ID: 23080425-001**
Matrix: GROUND WATER **Date/Time Received: 08/04/2023 15:30**

Priority Pollutant Metals — Analytical Method: EPA 200.8 — Preparation Method: E200.8

Qualifier(s): See Batch 205746 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	08/09/23	08/09/23 14:05	1059
Arsenic	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Beryllium	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Cadmium	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Chromium	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Copper	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Lead	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Mercury	ND	ug/L	0.20		1	08/09/23	08/09/23 14:05	1059
Nickel	**1.1**	ug/L	1.0		1	08/09/23	08/10/23 11:47	1059
Selenium	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Silver	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Thallium	ND	ug/L	1.0		1	08/09/23	08/09/23 14:05	1059
Zinc	ND	ug/L	20		1	08/09/23	08/09/23 14:05	1059

Dissolved Priority Pollutant Metals — Analytical Method: EPA 200.8 Dissolved — Preparation Method: E200.8

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	08/09/23	08/09/23 12:52	1059
Arsenic	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Beryllium	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Cadmium	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Chromium	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Copper	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Lead	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Mercury	ND	ug/L	0.20		1	08/09/23	08/09/23 12:52	1059
Nickel	**2.0**	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Selenium	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Silver	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Thallium	ND	ug/L	1.0		1	08/09/23	08/09/23 12:52	1059
Zinc	ND	ug/L	20		1	08/09/23	08/09/23 12:52	1059

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23080425

Sample ID: ST-2 **Date/Time Sampled: 08/04/2023 12:30** **PSS Sample ID: 23080425-001**
Matrix: GROUND WATER **Date/Time Received: 08/04/2023 15:30**

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

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Fluoride	**0.34**	mg/L	0.25		1	08/07/23	08/07/23 12:53	1053

Total Residual Chlorine — Analytical Method: SM 4500-CL G -2011
Qualifier(s): See Sample Receipt section on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Total Chlorine	ND	mg/L	0.20		1	08/09/23	08/09/23 16:21	1073

Total Cyanide — Analytical Method: SM 4500-CN C,E -2016 — Preparation Method: SM4500CN-C
Qualifier(s): See Sample Receipt section on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	ND	mg/L	0.010		1	08/09/23	08/09/23 15:49	1053

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3510C
Qualifier(s): See Batch 205731 on Case Narrative. — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	ug/L	0.50		1	08/07/23	08/09/23 11:34	1014
PCB-1221	ND	ug/L	0.50		1	08/07/23	08/09/23 11:34	1014
PCB-1232	ND	ug/L	0.50		1	08/07/23	08/09/23 11:34	1014
PCB-1242	ND	ug/L	0.50		1	08/07/23	08/09/23 11:34	1014
PCB-1248	ND	ug/L	0.50		1	08/07/23	08/09/23 11:34	1014
PCB-1254	ND	ug/L	0.50		1	08/07/23	08/09/23 11:34	1014
PCB-1260	ND	ug/L	0.50		1	08/07/23	08/09/23 11:34	1014

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23080425

Sample ID: ST-2 **Date/Time Sampled: 08/04/2023 12:30** **PSS Sample ID: 23080425-001**
Matrix: GROUND WATER **Date/Time Received: 08/04/2023 15:30**

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3510C
Qualifier(s): See Batch 205731 on Case Narrative. — Clean up Method: SW846 3665A

Surrogate(s)	*Recovery*		*Limits*				
Tetrachloro-m-xylene	*65*	*%*	*33-119*	*1*	*08/07/23*	*08/09/23 11:34*	*1014*
Decachlorobiphenyl	*119*	*%*	*55-144*	*1*	*08/07/23*	*08/09/23 11:34*	*1014*

MDE TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 D — Preparation Method: SW5030B
Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 205719 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	08/09/23	08/09/23 11:19	1011
Benzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Bromochloromethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Bromodichloromethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Bromoform	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Bromomethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	08/09/23	08/09/23 11:19	1011
Carbon Disulfide	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Carbon tetrachloride	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Chlorobenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Chloroethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Chloroform	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Chloromethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Cyclohexane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Dibromochloromethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23080425

Sample ID: ST-2 **Date/Time Sampled: 08/04/2023 12:30** **PSS Sample ID: 23080425-001**
Matrix: GROUND WATER **Date/Time Received: 08/04/2023 15:30**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 205719 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Ethylbenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	08/09/23	08/09/23 11:19	1011
Isopropylbenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Methyl Acetate	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Methylcyclohexane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Methylene chloride	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	08/09/23	08/09/23 11:19	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Naphthalene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Styrene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Tetrachloroethene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Toluene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Trichloroethene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,2,4-Trimethylbenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
1,3,5-Trimethylbenzene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
Vinyl chloride	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011
m&p-Xylene	ND	ug/L	2.0		1	08/09/23	08/09/23 11:19	1011
o-Xylene	ND	ug/L	1.0		1	08/09/23	08/09/23 11:19	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*106*	*%*	*88-120*		*1*	*08/09/23*	*08/09/23 11:19*	*1011*
Dibromofluoromethane	*98*	*%*	*92-107*		*1*	*08/09/23*	*08/09/23 11:19*	*1011*
Toluene-D8	*98*	*%*	*95-106*		*1*	*08/09/23*	*08/09/23 11:19*	*1011*

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Certificate of Analysis

Project Name: 31222314
PSS Project No.: 23080425

Sample ID: ST-2 **Date/Time Sampled: 08/04/2023 12:30** **PSS Sample ID: 23080425-001**
Matrix: GROUND WATER **Date/Time Received: 08/04/2023 15:30**

MDE Polyaromatic Hydrocarbons (PAHs) Analytical Method: SW-846 8270 E Preparation Method: SW3510C

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

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Acenaphthylene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Anthracene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Benzo(a)anthracene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Benzo(a)pyrene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Benzo(b)fluoranthene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Benzo(g,h,i)perylene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Benzo(k)fluoranthene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Chrysene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Dibenz(a,h)Anthracene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Fluoranthene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Fluorene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
2-Methylnaphthalene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Naphthalene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Phenanthrene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070
Pyrene	ND	ug/L	0.25		1	08/09/23	08/09/23 13:38	1070

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*65*	*%*	*59-108*		*1*	*08/09/23*	*08/09/23 13:38*	*1070*
2-Fluorophenol	*55*	*%*	*47-100*		*1*	*08/09/23*	*08/09/23 13:38*	*1070*
Nitrobenzene-d5	*59*	*%*	*47-108*		*1*	*08/09/23*	*08/09/23 13:38*	*1070*
Phenol-d6	*61*	*%*	*57-102*		*1*	*08/09/23*	*08/09/23 13:38*	*1070*
Terphenyl-D14	*86*	*%*	*77-120*		*1*	*08/09/23*	*08/09/23 13:38*	*1070*
2,4,6-Tribromophenol	*79*	*%*	*55-120*		*1*	*08/09/23*	*08/09/23 13:38*	*1070*

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Project Name: 31222314

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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:

The analyses of pH for soil/waste samples and chlorine, pH, dissolved oxygen, temperature and sulfite for potable/non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.
Sample aliquots for dissolved metals were not field filtered and were received unpreserved; as such, associated sample results are not suitable for compliance under the Clean Water Act and/or Safe Drinking Water Act.
Received sample with headspace, inappropriate for the following analyses: chlorine.
Storage temperatures exceeded 6°C but were less than 13°C for approximately eight hours for chlorine, cyanide, VOC, and SVOC analysis for sample -001 due to a power outage.

Analytical:

Priority Pollutant Metals

Batch: 205746
Method exceedance: A target analyte was detected in the method blank; see QC summary.

Analytical:

Polychlorinated Biphenyls

Batch: 205731
Method exceedance: Quality control sample surrogate exceedances identified, see QC summary.

Analytical:

MDE TCL Volatile Organic Compounds

Batch: 205719
Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

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.: 23080425

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8	ST-2	Initial	23080425-001	W	96585	205746	08/09/2023 09:35	08/09/2023 14:05
	96585-1-BKS	BKS	96585-1-BKS	W	96585	205746	08/09/2023 09:35	08/09/2023 13:59
	96585-1-BLK	BLK	96585-1-BLK	W	96585	205746	08/09/2023 09:35	08/09/2023 13:54
	ST-2 S	MS	23080425-001 S	W	96585	205746	08/09/2023 09:35	08/09/2023 14:10
	ST-2 SD	MSD	23080425-001 S	W	96585	205746	08/09/2023 09:35	08/09/2023 14:15
	96585-1-BKS	Reanalysis	96585-1-BKS	W	96585	205792	08/09/2023 09:35	08/10/2023 11:42
	96585-1-BLK	Reanalysis	96585-1-BLK	W	96585	205792	08/09/2023 09:35	08/10/2023 11:36
	ST-2	Reanalysis	23080425-001	W	96585	205792	08/09/2023 09:35	08/10/2023 11:47
EPA 200.8 Dissolved	ST-2	Initial	23080425-001	W	96590	205750	08/09/2023 10:54	08/09/2023 12:52
	96590-1-BKS	BKS	96590-1-BKS	W	96590	205750	08/09/2023 10:54	08/09/2023 12:30
	96590-1-BLK	BLK	96590-1-BLK	W	96590	205750	08/09/2023 10:54	08/09/2023 12:24
	ST-2 S	MS	23080425-001 S	W	96590	205750	08/09/2023 10:54	08/09/2023 12:57
	ST-2 SD	MSD	23080425-001 S	W	96590	205750	08/09/2023 10:54	08/09/2023 13:02
EPA 300.0	ST-2	Initial	23080425-001	W	96574	205725	08/07/2023 10:32	08/07/2023 12:53
	96574-1-BKS	BKS	96574-1-BKS	W	96574	205725	08/07/2023 10:32	08/07/2023 12:07
	96574-1-BLK	BLK	96574-1-BLK	W	96574	205725	08/07/2023 10:32	08/07/2023 11:44
	ST-2 S	MS	23080425-001 S	W	96574	205725	08/07/2023 10:32	08/07/2023 13:16
	ST-2 SD	MSD	23080425-001 S	W	96574	205725	08/07/2023 10:32	08/07/2023 13:39
SM 4500-CL G - 2011	ST-2	Initial	23080425-001	W	205751	205751	08/09/2023 16:21	08/09/2023 16:21
	205751-1-BKS	BKS	205751-1-BKS	W	205751	205751	08/09/2023 16:21	08/09/2023 16:21
	205751-1-BLK	BLK	205751-1-BLK	W	205751	205751	08/09/2023 16:21	08/09/2023 16:21
	ST-2 D	MD	23080425-001 D	W	205751	205751	08/09/2023 16:21	08/09/2023 16:21
SM 4500-CN C,E - 2016	ST-2	Initial	23080425-001	W	96598	205749	08/09/2023 12:16	08/09/2023 15:49
	96598-1-BKS	BKS	96598-1-BKS	W	96598	205749	08/09/2023 12:16	08/09/2023 15:38
	96598-1-BLK	BLK	96598-1-BLK	W	96598	205749	08/09/2023 12:16	08/09/2023 15:36
	96598-1-BSD	BSD	96598-1-BSD	W	96598	205749	08/09/2023 12:16	08/09/2023 15:40
	23080411-001 S	MS	23080411-001 S	W	96598	205749	08/09/2023 12:16	08/09/2023 15:46
	23080411-001 SD	MSD	23080411-001 S	W	96598	205749	08/09/2023 12:16	08/09/2023 15:48
SW-846 8082 A	ST-2	Initial	23080425-001	W	96576	205731	08/07/2023 14:53	08/09/2023 11:34
	96576-1-BKS	BKS	96576-1-BKS	W	96576	205731	08/07/2023 14:53	08/09/2023 10:37
	96576-1-BLK	BLK	96576-1-BLK	W	96576	205731	08/07/2023 14:53	08/09/2023 10:09
	96576-1-BSD	BSD	96576-1-BSD	W	96576	205731	08/07/2023 14:53	08/09/2023 11:05
SW-846 8260 D	ST-2	Initial	23080425-001	W	96600	205719	08/09/2023 09:44	08/09/2023 11:19
	96600-1-BKS	BKS	96600-1-BKS	W	96600	205719	08/09/2023 09:44	08/09/2023 09:44
	96600-1-BLK	BLK	96600-1-BLK	W	96600	205719	08/09/2023 09:44	08/09/2023 10:57
	ST-2 S	MS	23080425-001 S	W	96600	205719	08/09/2023 09:44	08/09/2023 11:40
	ST-2 SD	MSD	23080425-001 S	W	96600	205719	08/09/2023 09:44	08/09/2023 12:01
SW-846 8270 E	ST-2	Initial	23080425-001	W	96588	205732	08/09/2023 10:06	08/09/2023 13:38
	96588-1-BKS	BKS	96588-1-BKS	W	96588	205732	08/09/2023 10:06	08/09/2023 12:44
	96588-1-BLK	BLK	96588-1-BLK	W	96588	205732	08/09/2023 10:06	08/09/2023 12:17
	96588-1-BSD	BSD	96588-1-BSD	W	96588	205732	08/09/2023 10:06	08/09/2023 13:11

Analytical Method: SM 4500-CL G -2011
Seq Number: 205751 Matrix: Water
MB Sample Id: 205751-1-BLK LCS Sample Id: 205751-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Total Chlorine	<0.2000	1.000	0.9840	98	90-110	mg/L	

Analytical Method: SM 4500-CL G -2011
Seq Number: 205751 Matrix: Ground Water
Parent Sample Id: 23080425-001 MD Sample Id: 23080425-001 D

Parameter	Parent Result	MD Result	RPD	RPD Limit	Units	Flag
Total Chlorine	<0.2000	<0.2000	NC	20	mg/L	

Analytical Method: SM 4500-CN C,E -2016 Prep Method: SM4500CN-CPRE
Seq Number: 205749 Matrix: Water Date Prep: 08/09/23
MB Sample Id: 96598-1-BLK LCS Sample Id: 96598-1-BKS LCSD Sample Id: 96598-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Cyanide, Total	<0.01000	0.1000	0.09337	93	0.09362	94	83-117	0	20	mg/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 205746 Matrix: Water Date Prep: 08/09/23
MB Sample Id: 96585-1-BLK LCS Sample Id: 96585-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Antimony	<5.000	25.00	24.41	98	85-115	ug/L	
Arsenic	<1.000	50.00	47.87	96	85-115	ug/L	
Beryllium	<1.000	50.00	50.38	101	85-115	ug/L	
Cadmium	<1.000	50.00	46.87	94	85-115	ug/L	
Chromium	<1.000	50.00	47.57	95	85-115	ug/L	
Copper	<1.000	50.00	47.05	94	85-115	ug/L	
Lead	<1.000	50.00	46.17	92	85-115	ug/L	
Mercury	<0.2000	1.000	0.9550	96	85-115	ug/L	
Selenium	<1.000	50.00	45.94	92	85-115	ug/L	
Silver	<1.000	5.000	4.712	94	85-115	ug/L	
Thallium	<1.000	50.00	46.98	94	85-115	ug/L	
Zinc	<20.00	100	91.05	91	85-115	ug/L	

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 205792 Matrix: Water Date Prep: 08/09/23
MB Sample Id: 96585-1-BLK LCS Sample Id: 96585-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Nickel	<1.000	50.00	47.02	94	85-115	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: EPA 200.8 Prep Method: E200.8_PREP
Seq Number: 205746 Matrix: Ground Water Date Prep: 08/09/23
Parent Sample Id: 23080425-001 MS Sample Id: 23080425-001 S MSD Sample Id: 23080425-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Antimony	<5.000	25.00	24.96	100	24.47	98	70-130	2	25	ug/L	
Arsenic	<1.000	50.00	48.86	98	48.63	97	70-130	0	25	ug/L	
Beryllium	<1.000	50.00	49.31	99	51.17	102	70-130	4	25	ug/L	
Cadmium	<1.000	50.00	47.53	95	46.04	92	70-130	3	25	ug/L	
Chromium	<1.000	50.00	49.03	98	47.94	96	70-130	2	25	ug/L	
Copper	<1.000	50.00	46.42	93	45.70	91	70-130	2	25	ug/L	
Lead	<1.000	50.00	46.65	93	46.45	93	70-130	0	25	ug/L	
Mercury	<0.2000	1.000	0.9660	97	0.9780	98	70-130	1	25	ug/L	
Nickel	1.259	50.00	47.04	92	46.08	90	70-130	2	25	ug/L	
Selenium	<1.000	50.00	47.06	94	47.58	95	70-130	1	25	ug/L	
Silver	<1.000	5.000	4.712	94	4.679	94	70-130	1	25	ug/L	
Thallium	<1.000	50.00	49.47	99	48.41	97	70-130	2	25	ug/L	
Zinc	<20.00	100	95.69	96	94.18	94	70-130	2	25	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 205750 Matrix: Water Date Prep: 08/09/23
MB Sample Id: 96590-1-BLK LCS Sample Id: 96590-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Antimony	<5.000	25.00	22.46	90	85-115	ug/L	
Arsenic	<1.000	50.00	46.81	94	85-115	ug/L	
Beryllium	<1.000	50.00	48.26	97	85-115	ug/L	
Cadmium	<1.000	50.00	45.22	90	85-115	ug/L	
Chromium	<1.000	50.00	46.37	93	85-115	ug/L	
Copper	<1.000	50.00	45.72	91	85-115	ug/L	
Lead	<1.000	50.00	44.54	89	85-115	ug/L	
Mercury	<0.2000	1.000	1.003	100	85-115	ug/L	
Nickel	<1.000	50.00	45.10	90	85-115	ug/L	
Selenium	<1.000	50.00	46.60	93	85-115	ug/L	
Silver	<1.000	5.000	4.637	93	85-115	ug/L	
Thallium	<1.000	50.00	47.82	96	85-115	ug/L	
Zinc	<20.00	100	88.02	88	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved Prep Method: E200.8_PREP
Seq Number: 205750 Matrix: Ground Water Date Prep: 08/09/23
Parent Sample Id: 23080425-001 MS Sample Id: 23080425-001 S MSD Sample Id: 23080425-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Antimony	<5.000	25.00	23.70	95	24.18	97	70-130	2	25	ug/L	
Arsenic	<1.000	50.00	47.90	96	48.79	98	70-130	2	25	ug/L	
Beryllium	<1.000	50.00	49.11	98	46.23	92	70-130	6	25	ug/L	
Cadmium	<1.000	50.00	46.04	92	46.85	94	70-130	2	25	ug/L	
Chromium	<1.000	50.00	47.76	96	48.65	97	70-130	2	25	ug/L	
Copper	<1.000	50.00	45.65	91	45.98	92	70-130	1	25	ug/L	
Lead	<1.000	50.00	45.29	91	45.61	91	70-130	1	25	ug/L	
Mercury	<0.2000	1.000	0.9880	99	1.006	101	70-130	2	25	ug/L	
Nickel	1.999	50.00	46.97	90	47.42	91	70-130	1	25	ug/L	
Selenium	<1.000	50.00	48.93	98	49.76	100	70-130	2	25	ug/L	
Silver	<1.000	5.000	4.666	93	4.638	93	70-130	1	25	ug/L	
Thallium	<1.000	50.00	49.09	98	49.57	99	70-130	1	25	ug/L	
Zinc	<20.00	100	90.17	90	91.47	91	70-130	1	25	ug/L	

Analytical Method: EPA 300.0 Prep Method: E300.0P
Seq Number: 205725 Matrix: Water Date Prep: 08/07/23
MB Sample Id: 96574-1-BLK LCS Sample Id: 96574-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Fluoride	<0.2500	2.500	2.410	96	90-110	mg/L	

Analytical Method: EPA 300.0 Prep Method: E300.0P
Seq Number: 205725 Matrix: Ground Water Date Prep: 08/07/23
Parent Sample Id: 23080425-001 MS Sample Id: 23080425-001 S MSD Sample Id: 23080425-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Fluoride	0.3372	2.500	3.102	111	2.822	99	90-121	9	20	mg/L	

Analytical Method: SW-846 8082 A Prep Method: SW3510C
Seq Number: 205731 Matrix: Water Date Prep: 08/07/23
MB Sample Id: 96576-1-BLK LCS Sample Id: 96576-1-BKS LCSD Sample Id: 96576-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
PCB-1016	<0.5000	5.000	4.569	91	4.527	91	30-124	1	20	ug/L	
PCB-1260	<0.5000	5.000	5.137	103	5.071	101	41-127	1	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
Decachlorobiphenyl	130		131		129		55-144	%
Tetrachloro-m-xylene	95		91		90		33-119	%

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8270 E Prep Method: SW3510C
Seq Number: 205732 Matrix: Water Date Prep: 08/09/23
MB Sample Id: 96588-1-BLK LCS Sample Id: 96588-1-BKS LCSD Sample Id: 96588-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acenaphthene	<0.2500	5.000	4.470	89	4.430	89	64-104	1	20	ug/L	
Acenaphthylene	<0.2500	5.000	4.460	89	4.450	89	60-111	0	20	ug/L	
Anthracene	<0.2500	5.000	5.560	111	5.700	114	69-130	2	20	ug/L	
Benzo(a)anthracene	<0.2500	5.000	5.080	102	5.230	105	73-119	3	20	ug/L	
Benzo(a)pyrene	<0.2500	5.000	5.210	104	5.360	107	77-126	3	20	ug/L	
Benzo(b)fluoranthene	<0.2500	5.000	4.960	99	4.990	100	61-125	1	20	ug/L	
Benzo(g,h,i)perylene	<0.2500	5.000	5.200	104	5.340	107	81-115	3	20	ug/L	
Benzo(k)fluoranthene	<0.2500	5.000	5.420	108	5.550	111	62-150	2	20	ug/L	
Chrysene	<0.2500	5.000	5.300	106	5.410	108	77-123	2	20	ug/L	
Dibenz(a,h)Anthracene	<0.2500	5.000	5.050	101	5.140	103	76-118	2	20	ug/L	
Fluoranthene	<0.2500	5.000	5.360	107	5.550	111	65-133	3	20	ug/L	
Fluorene	<0.2500	5.000	5.020	100	5.140	103	69-111	2	20	ug/L	
Indeno(1,2,3-c,d)Pyrene	<0.2500	5.000	4.660	93	4.810	96	58-122	3	20	ug/L	
2-Methylnaphthalene	<0.2500	5.000	4.180	84	3.880	78	56-113	7	20	ug/L	
Naphthalene	<0.2500	5.000	3.830	77	3.770	75	51-104	2	20	ug/L	
Phenanthrene	<0.2500	5.000	5.280	106	5.260	105	61-127	0	20	ug/L	
Pyrene	<0.2500	5.000	5.170	103	5.280	106	73-122	2	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	79		68		69		59-108	%
2-Fluorophenol	70		60		62		47-100	%
Nitrobenzene-d5	70		62		62		47-108	%
Phenol-d6	77		63		64		57-102	%
Terphenyl-D14	87		83		86		77-120	%
2,4,6-Tribromophenol	86		91		97		55-120	%

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 205719
Matrix: Water
Date Prep: 08/09/23
MB Sample Id: 96600-1-BLK
LCS Sample Id: 96600-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	50.75	102	49-154	ug/L	
Benzene	<1.000	50.00	48.77	98	76-112	ug/L	
Bromochloromethane	<1.000	50.00	50.77	102	74-119	ug/L	
Bromodichloromethane	<1.000	50.00	49.96	100	78-117	ug/L	
Bromoform	<1.000	50.00	57.49	115	69-123	ug/L	
Bromomethane	<1.000	50.00	47.58	95	42-118	ug/L	
2-Butanone (MEK)	<5.000	50.00	51.17	102	55-136	ug/L	
Carbon Disulfide	<1.000	50.00	53.65	107	80-124	ug/L	
Carbon tetrachloride	<1.000	50.00	50.76	102	77-119	ug/L	
Chlorobenzene	<1.000	50.00	50.96	102	76-114	ug/L	
Chloroethane	<1.000	50.00	47.25	95	61-113	ug/L	
Chloroform	<1.000	50.00	46.43	93	75-113	ug/L	
Chloromethane	<1.000	50.00	36.05	72	41-148	ug/L	
Cyclohexane	<1.000	50.00	44.71	89	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	56.17	112	52-131	ug/L	
Dibromochloromethane	<1.000	50.00	54.43	109	79-121	ug/L	
1,2-Dibromoethane	<1.000	50.00	51.24	102	77-119	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	49.84	100	75-121	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.06	100	77-120	ug/L	
Dichlorodifluoromethane	<1.000	50.00	42.17	84	49-122	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.05	98	76-118	ug/L	
1,1-Dichloroethane	<1.000	50.00	44.59	89	75-118	ug/L	
1,2-Dichloroethane	<1.000	50.00	46.30	93	72-115	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	49.04	98	75-119	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.55	97	74-119	ug/L	
1,2-Dichloropropane	<1.000	50.00	45.22	90	76-115	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	56.08	112	83-122	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	58.70	117	76-118	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	49.80	100	73-121	ug/L	
Ethylbenzene	<1.000	50.00	47.91	96	78-118	ug/L	
2-Hexanone (MBK)	<5.000	50.00	48.13	96	55-136	ug/L	
Isopropylbenzene	<1.000	50.00	50.87	102	76-126	ug/L	
Methyl Acetate	<1.000	50.00	55.03	110	61-117	ug/L	
Methylcyclohexane	<1.000	50.00	48.14	96	82-126	ug/L	
Methylene chloride	<1.000	50.00	47.89	96	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	47.85	96	57-127	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	55.62	111	71-114	ug/L	
Naphthalene	<1.000	50.00	47.85	96	60-122	ug/L	
Styrene	<1.000	50.00	54.81	110	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	45.76	92	66-123	ug/L	
Tetrachloroethene	<1.000	50.00	48.60	97	76-123	ug/L	
Toluene	<1.000	50.00	49.48	99	77-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	48.24	96	73-129	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	48.99	98	73-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.72	97	79-118	ug/L	
Trichloroethene	<1.000	50.00	48.05	96	77-112	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	47.92	96	75-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	45.80	92	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	46.10	92	77-123	ug/L	
1,2,4-Trimethylbenzene	<1.000	50.00	52.71	105	76-127	ug/L	
1,3,5-Trimethylbenzene	<1.000	50.00	51.27	103	76-126	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 205719
Matrix: Water
Date Prep: 08/09/23
MB Sample Id: 96600-1-BLK
LCS Sample Id: 96600-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Vinyl chloride	<1.000	50.00	36.36	73	53-151	ug/L	
m&p-Xylene	<2.000	100	104.4	104	79-121	ug/L	
o-Xylene	<1.000	50.00	50.72	101	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	107		94		88-120	%
Dibromofluoromethane	99		98		92-107	%
Toluene-D8	100		99		95-106	%

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D Prep Method: SW5030B
Seq Number: 205719 Matrix: Ground Water Date Prep: 08/09/23
Parent Sample Id: 23080425-001 MS Sample Id: 23080425-001 S MSD Sample Id: 23080425-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acetone	<5.000	50.00	22.87	46	23.76	48	32-96	4	25	ug/L	
Benzene	<1.000	50.00	45.59	91	45.74	91	73-114	0	25	ug/L	
Bromochloromethane	<1.000	50.00	45.03	90	46.31	93	70-114	3	25	ug/L	
Bromodichloromethane	<1.000	50.00	44.93	90	45.57	91	71-118	1	25	ug/L	
Bromoform	<1.000	50.00	48.22	96	49.49	99	59-127	3	25	ug/L	
Bromomethane	<1.000	50.00	44.62	89	44.67	89	26-131	0	25	ug/L	
2-Butanone (MEK)	<5.000	50.00	29.97	60	32.22	64	45-109	7	25	ug/L	
Carbon Disulfide	<1.000	50.00	52.13	104	52.06	104	71-130	0	25	ug/L	
Carbon tetrachloride	<1.000	50.00	48.70	97	48.88	98	74-119	0	25	ug/L	
Chlorobenzene	<1.000	50.00	46.92	94	47.46	95	73-115	1	25	ug/L	
Chloroethane	<1.000	50.00	46.02	92	44.90	90	60-124	2	25	ug/L	
Chloroform	<1.000	50.00	42.78	86	43.38	87	70-113	1	25	ug/L	
Chloromethane	<1.000	50.00	35.55	71	34.49	69	32-170	3	25	ug/L	
Cyclohexane	<1.000	50.00	45.26	91	44.93	90	64-144	1	25	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	45.95	92	48.80	98	48-140	6	25	ug/L	
Dibromochloromethane	<1.000	50.00	47.24	94	48.09	96	73-120	2	25	ug/L	
1,2-Dibromoethane	<1.000	50.00	45.29	91	46.41	93	71-119	2	25	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	44.46	89	45.46	91	68-122	2	25	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	44.97	90	45.93	92	69-122	2	25	ug/L	
Dichlorodifluoromethane	<1.000	50.00	42.95	86	42.41	85	61-118	1	25	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	43.97	88	44.89	90	68-120	2	25	ug/L	
1,1-Dichloroethane	<1.000	50.00	41.51	83	41.73	83	68-122	1	25	ug/L	
1,2-Dichloroethane	<1.000	50.00	42.26	85	42.88	86	61-120	1	25	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	44.94	90	45.57	91	71-116	1	25	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.79	94	46.91	94	69-120	0	25	ug/L	
1,2-Dichloropropane	<1.000	50.00	41.17	82	42.14	84	69-119	2	25	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.05	98	50.27	101	72-123	2	25	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	50.93	102	52.40	105	67-123	3	25	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	46.88	94	46.88	94	70-118	0	25	ug/L	
Ethylbenzene	<1.000	50.00	45.02	90	44.92	90	74-121	0	25	ug/L	
2-Hexanone (MBK)	<5.000	50.00	33.76	68	36.20	72	44-131	7	25	ug/L	
Isopropylbenzene	<1.000	50.00	47.69	95	47.54	95	68-131	0	25	ug/L	
Methyl Acetate	<1.000	50.00	46.66	93	49.37	99	55-117	6	25	ug/L	
Methylcyclohexane	<1.000	50.00	47.35	95	47.11	94	71-126	1	25	ug/L	
Methylene chloride	<1.000	50.00	44.48	89	45.05	90	72-114	1	25	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	41.16	82	43.21	86	49-133	5	25	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	47.17	94	49.23	98	67-112	4	25	ug/L	
Naphthalene	<1.000	50.00	41.64	83	44.83	90	53-128	7	25	ug/L	
Styrene	<1.000	50.00	50.26	101	50.59	101	75-126	1	25	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	39.74	79	41.60	83	61-125	5	25	ug/L	
Tetrachloroethene	<1.000	50.00	46.07	92	46.17	92	71-121	0	25	ug/L	
Toluene	<1.000	50.00	46.05	92	46.24	92	71-115	0	25	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	42.01	84	44.69	89	60-124	6	25	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	42.57	85	44.54	89	57-126	5	25	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	45.74	91	46.29	93	72-121	1	25	ug/L	
Trichloroethene	<1.000	50.00	45.02	90	45.31	91	72-115	1	25	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	42.77	86	43.77	88	70-114	2	25	ug/L	
Trichlorofluoromethane	<1.000	50.00	45.14	90	45.02	90	66-130	0	25	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	46.41	93	46.00	92	71-121	1	25	ug/L	
1,2,4-Trimethylbenzene	<1.000	50.00	48.25	97	48.44	97	66-133	0	25	ug/L	
1,3,5-Trimethylbenzene	<1.000	50.00	47.39	95	47.26	95	66-133	0	25	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D
Prep Method: SW5030B
Seq Number: 205719
Matrix: Ground Water
Date Prep: 08/09/23
Parent Sample Id: 23080425-001
MS Sample Id: 23080425-001 S
MSD Sample Id: 23080425-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Vinyl chloride	<1.000	50.00	38.77	78	37.27	75	40-160	4	25	ug/L	
m&p-Xylene	<2.000	100	98.80	99	98.10	98	73-125	1	25	ug/L	
o-Xylene	<1.000	50.00	47.15	94	46.92	94	71-126	0	25	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
4-Bromofluorobenzene	94		94		88-120	%
Dibromofluoromethane	98		99		92-107	%
Toluene-D8	100		100		95-106	%

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

Analytical Method: SM 4500-CL G -2011
Seq Number: 205751 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 08/09/23 16:21

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Total Chlorine	1.000	0.9840	98	90-110	mg/L	

Analytical Method: SM 4500-CL G -2011
Seq Number: 205751 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 08/09/23 16:21

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Total Chlorine	1.637	1.614	99	90-110	mg/L	

Analytical Method: SM 4500-CL G -2011
Seq Number: 181400 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 01/12/21 15:18

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Total Chlorine	1.000	1.100	110	90-110	mg/L	

Analytical Method: SM 4500-CL G -2011
Seq Number: 205751 Matrix: Water
Parent Sample Id: MRL-01 MRL Sample Id: MRL-01 Analyzed Date: 08/09/23 16:21

Parameter	Spike Amount	MRL Result	MRL %Rec	Limits	Units	Flag
Total Chlorine	0.2000	0.1850	93	50-150	mg/L	

Analytical Method: SM 4500-CN C,E -2016
Seq Number: 205749 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 08/09/23 15:55

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Cyanide, Total	100	93.24	93	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2016
Seq Number: 205747 Matrix: Water
Parent Sample Id: ICV ICV Sample Id: ICV Analyzed Date: 08/09/23 15:32

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Cyanide, Total	100	93.65	94	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 205749 Matrix: Water

Parent Sample Id: MRL MRL Sample Id: MRL Analyzed Date: 08/09/23 15:42

Parameter	Spike Amount	MRL Result	MRL %Rec	Limits	Units	Flag
Cyanide, Total	10.00	11.22	112	50-150	ug/L	

Analytical Method: EPA 200.8

Seq Number: 205746 Matrix: Water

CCV Sample Id: CCV 2 Analyzed Date: 08/09/23 13:44

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	52.35	105	85-115	ug/L	
Arsenic	100	103.9	104	85-115	ug/L	
Beryllium	100	105.8	106	85-115	ug/L	
Cadmium	100	100.3	100	85-115	ug/L	
Chromium	100	102.2	102	85-115	ug/L	
Copper	100	100.5	101	85-115	ug/L	
Lead	100	100.3	100	85-115	ug/L	
Mercury	1.000	1.056	106	85-115	ug/L	
Nickel	100	99.06	99	85-115	ug/L	
Selenium	100	101	101	85-115	ug/L	
Silver	10.00	10.04	100	85-115	ug/L	
Thallium	100	104.7	105	85-115	ug/L	
Zinc	200	198.9	99	85-115	ug/L	

Analytical Method: EPA 200.8

Seq Number: 205746 Matrix: Water

CCV Sample Id: CCV 3 Analyzed Date: 08/09/23 14:48

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	51.88	104	85-115	ug/L	
Arsenic	100	102.7	103	85-115	ug/L	
Beryllium	100	100.7	101	85-115	ug/L	
Cadmium	100	99.91	100	85-115	ug/L	
Chromium	100	100.8	101	85-115	ug/L	
Copper	100	100.5	101	85-115	ug/L	
Lead	100	100.4	100	85-115	ug/L	
Mercury	1.000	1.050	105	85-115	ug/L	
Nickel	100	98.14	98	85-115	ug/L	
Selenium	100	107.9	108	85-115	ug/L	
Silver	10.00	10.04	100	85-115	ug/L	
Thallium	100	103.9	104	85-115	ug/L	
Zinc	200	197.5	99	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 205792 Matrix: Water
CCV Sample Id: CCV 1 Analyzed Date: 08/10/23 12:13

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Nickel	100	101.9	102	85-115	ug/L	

Analytical Method: EPA 200.8
Seq Number: 205746 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 08/09/23 11:17

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Antimony	25.00	23.29	93	90-110	ug/L	
Arsenic	50.00	48.43	97	90-110	ug/L	
Beryllium	50.00	52.25	105	90-110	ug/L	
Cadmium	50.00	47.94	96	90-110	ug/L	
Chromium	50.00	48.36	97	90-110	ug/L	
Copper	50.00	48.14	96	90-110	ug/L	
Lead	50.00	47.84	96	90-110	ug/L	
Mercury	1.000	1.052	105	90-110	ug/L	
Nickel	50.00	47.11	94	90-110	ug/L	
Selenium	50.00	47.80	96	90-110	ug/L	
Silver	5.000	4.837	97	90-110	ug/L	
Thallium	50.00	49.94	100	90-110	ug/L	
Zinc	100	95.77	96	90-110	ug/L	

Analytical Method: EPA 200.8
Seq Number: 205792 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 08/10/23 10:07

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Nickel	50.00	48.42	97	90-110	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 205750 Matrix: Water

CCV Sample Id: CCV 1 Analyzed Date: 08/09/23 12:40

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	51.66	103	85-115	ug/L	
Arsenic	100	102.5	103	85-115	ug/L	
Beryllium	100	102.7	103	85-115	ug/L	
Cadmium	100	100.4	100	85-115	ug/L	
Chromium	100	101.4	101	85-115	ug/L	
Copper	100	101.4	101	85-115	ug/L	
Lead	100	100.4	100	85-115	ug/L	
Mercury	1.000	1.077	108	85-115	ug/L	
Nickel	100	99.67	100	85-115	ug/L	
Selenium	100	102.7	103	85-115	ug/L	
Silver	10.00	10.04	100	85-115	ug/L	
Thallium	100	105.8	106	85-115	ug/L	
Zinc	200	198.7	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 205750 Matrix: Water

CCV Sample Id: CCV 2 Analyzed Date: 08/09/23 13:44

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	52.35	105	85-115	ug/L	
Arsenic	100	103.9	104	85-115	ug/L	
Beryllium	100	105.8	106	85-115	ug/L	
Cadmium	100	100.3	100	85-115	ug/L	
Chromium	100	102.2	102	85-115	ug/L	
Copper	100	100.5	101	85-115	ug/L	
Lead	100	100.3	100	85-115	ug/L	
Mercury	1.000	1.056	106	85-115	ug/L	
Nickel	100	99.06	99	85-115	ug/L	
Selenium	100	101	101	85-115	ug/L	
Silver	10.00	10.04	100	85-115	ug/L	
Thallium	100	104.7	105	85-115	ug/L	
Zinc	200	198.9	99	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 205750 Matrix: Water
Parent Sample Id: ICV 1 ICV Sample Id: ICV 1 Analyzed Date: 08/09/23 11:17

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Antimony	25.00	23.29	93	90-110	ug/L	
Arsenic	50.00	48.43	97	90-110	ug/L	
Beryllium	50.00	52.25	105	90-110	ug/L	
Cadmium	50.00	47.94	96	90-110	ug/L	
Chromium	50.00	48.36	97	90-110	ug/L	
Copper	50.00	48.14	96	90-110	ug/L	
Lead	50.00	47.84	96	90-110	ug/L	
Mercury	1.000	1.052	105	90-110	ug/L	
Nickel	50.00	47.11	94	90-110	ug/L	
Selenium	50.00	47.80	96	90-110	ug/L	
Silver	5.000	4.837	97	90-110	ug/L	
Thallium	50.00	49.94	100	90-110	ug/L	
Zinc	100	95.77	96	90-110	ug/L	

Analytical Method: EPA 300.0

Seq Number: 205725 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 08/07/23 10:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.452	98	90-110	mg/L	

Analytical Method: EPA 300.0

Seq Number: 205725 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 08/07/23 14:25

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.437	97	90-110	mg/L	

Analytical Method: EPA 300.0

Seq Number: 205650 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 08/03/23 17:57

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Fluoride	2.500	2.533	101	90-110	mg/L	

Analytical Method: SW-846 8082 A
Seq Number: 205731 Matrix: Water
CCV Sample Id: CCV-01 Analyzed Date: 08/09/23 09:03

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
PCB-1016	100	102.4	102	80-120	ug/L	
PCB-1016	100	108.4	108	80-120	ug/L	
PCB-1016	100	102.3	102	80-120	ug/L	
PCB-1016	100	104.1	104	80-120	ug/L	
PCB-1016	100	103.7	104	80-120	ug/L	
PCB-1260	100	107	107	80-120	ug/L	
PCB-1260	100	104.7	105	80-120	ug/L	
PCB-1260	100	102	102	80-120	ug/L	
PCB-1260	100	102.2	102	80-120	ug/L	
PCB-1260	100	98.40	98	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	127	80-120	%	X
Tetrachloro-m-xylene	96	80-120	%	

Analytical Method: SW-846 8082 A
Seq Number: 205731 Matrix: Water
CCV Sample Id: CCV-02 Analyzed Date: 08/09/23 13:02

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
PCB-1016	100	107.1	107	80-120	ug/L	
PCB-1016	100	114.6	115	80-120	ug/L	
PCB-1016	100	114.4	114	80-120	ug/L	
PCB-1016	100	113.2	113	80-120	ug/L	
PCB-1016	100	111.4	111	80-120	ug/L	
PCB-1260	100	113.5	114	80-120	ug/L	
PCB-1260	100	113.7	114	80-120	ug/L	
PCB-1260	100	110	110	80-120	ug/L	
PCB-1260	100	113.4	113	80-120	ug/L	
PCB-1260	100	108.9	109	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
Decachlorobiphenyl	134	80-120	%	X
Tetrachloro-m-xylene	100	80-120	%	

Analytical Method: SW-846 8082 A

Seq Number: 178961 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 10/20/20 12:18

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
PCB-1016	100	107.2	107	80-120	ug/L	
PCB-1016	100	108.8	109	80-120	ug/L	
PCB-1016	100	103.1	103	80-120	ug/L	
PCB-1016	100	106.6	107	80-120	ug/L	
PCB-1016	100	106.7	107	80-120	ug/L	
PCB-1260	100	112	112	80-120	ug/L	
PCB-1260	100	106.8	107	80-120	ug/L	
PCB-1260	100	106	106	80-120	ug/L	
PCB-1260	100	104	104	80-120	ug/L	
PCB-1260	100	103.9	104	80-120	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
Decachlorobiphenyl	82	80-120	%	
Tetrachloro-m-xylene	80	80-120	%	

Analytical Method: SW-846 8082 A

Seq Number: 178961 Matrix: Water
Parent Sample Id: ICV-02 ICV Sample Id: ICV-02 Analyzed Date: 10/20/20 16:36

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
PCB-1221	100	104.5	105	80-120	ug/L	
PCB-1221	100	108.4	108	80-120	ug/L	
PCB-1221	100	101.2	101	80-120	ug/L	
PCB-1221	100	102.1	102	80-120	ug/L	
PCB-1221	100	102.3	102	80-120	ug/L	

Surrogate	ICV Result	Limits	Units	Flag

Analytical Method: SW-846 8082 A

Seq Number: 178961 Matrix: Water
Parent Sample Id: ICV-03 ICV Sample Id: ICV-03 Analyzed Date: 10/20/20 19:53

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
PCB-1232	100	116.5	117	80-120	ug/L	
PCB-1232	100	116.3	116	80-120	ug/L	
PCB-1232	100	112.7	113	80-120	ug/L	
PCB-1232	100	114.6	115	80-120	ug/L	
PCB-1232	100	114	114	80-120	ug/L	

Surrogate	ICV Result	Limits	Units	Flag

Analytical Method: SW-846 8082 A

Seq Number: 178961 Matrix: Water
Parent Sample Id: ICV-04 ICV Sample Id: ICV-04 Analyzed Date: 10/20/20 23:12

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
PCB-1242	100	116.2	116	80-120	ug/L	
PCB-1242	100	110.8	111	80-120	ug/L	
PCB-1242	100	113.8	114	80-120	ug/L	
PCB-1242	100	114.5	115	80-120	ug/L	
PCB-1242	100	113	113	80-120	ug/L	

Surrogate	ICV Result	Limits	Units	Flag

Analytical Method: SW-846 8082 A

Seq Number: 178961 Matrix: Water
Parent Sample Id: ICV-05 ICV Sample Id: ICV-05 Analyzed Date: 10/21/20 02:28

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
PCB-1248	100	104.6	105	80-120	ug/L	
PCB-1248	100	106.6	107	80-120	ug/L	
PCB-1248	100	106.7	107	80-120	ug/L	
PCB-1248	100	105.8	106	80-120	ug/L	
PCB-1248	100	106.1	106	80-120	ug/L	

Surrogate	ICV Result	Limits	Units	Flag

Analytical Method: SW-846 8082 A

Seq Number: 178961 Matrix: Water
Parent Sample Id: ICV-06 ICV Sample Id: ICV-06 Analyzed Date: 10/21/20 05:44

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
PCB-1254	100	106.1	106	80-120	ug/L	
PCB-1254	100	105.6	106	80-120	ug/L	
PCB-1254	100	107.8	108	80-120	ug/L	
PCB-1254	100	108.1	108	80-120	ug/L	
PCB-1254	100	104.5	105	80-120	ug/L	

Surrogate	ICV Result	Limits	Units	Flag

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8270 E

Seq Number: 205732 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 08/09/23 10:30

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acenaphthene	40000	35260	88	80-120	ug/L	
Acenaphthylene	40000	36220	91	80-120	ug/L	
Anthracene	40000	38140	95	80-120	ug/L	
Benzo(a)anthracene	40000	37050	93	80-120	ug/L	
Benzo(a)pyrene	40000	38880	97	80-120	ug/L	
Benzo(b)fluoranthene	40000	38650	97	80-120	ug/L	
Benzo(g,h,i)perylene	40000	40210	101	80-120	ug/L	
Benzo(k)fluoranthene	40000	38900	97	80-120	ug/L	
Chrysene	40000	36050	90	80-120	ug/L	
Dibenz(a,h)Anthracene	40000	40820	102	80-120	ug/L	
Fluoranthene	40000	36660	92	80-120	ug/L	
Fluorene	40000	38530	96	80-120	ug/L	
Indeno(1,2,3-c,d)Pyrene	40000	38030	95	80-120	ug/L	
2-Methylnaphthalene	40000	36090	90	80-120	ug/L	
Naphthalene	40000	37060	93	80-120	ug/L	
Phenanthrene	40000	33430	84	80-120	ug/L	
Pyrene	40000	37190	93	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
2-Fluorobiphenyl	92	80-120	%	
2-Fluorophenol	95	80-120	%	
Nitrobenzene-d5	92	80-120	%	
Phenol-d6	100	80-120	%	
Terphenyl-D14	95	80-120	%	
2,4,6-Tribromophenol	105	80-120	%	

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8270 E

Seq Number: 202929 Matrix: Solid
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 04/21/23 15:08

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acenaphthene	40.00	37.54	94	70-130	mg/kg	
Acenaphthylene	40.00	38.14	95	70-130	mg/kg	
Anthracene	40.00	37.93	95	70-130	mg/kg	
Benzo(a)anthracene	40.00	38.41	96	70-130	mg/kg	
Benzo(a)pyrene	40.00	39.68	99	70-130	mg/kg	
Benzo(b)fluoranthene	40.00	45.17	113	70-130	mg/kg	
Benzo(g,h,i)perylene	40.00	41.01	103	70-130	mg/kg	
Benzo(k)fluoranthene	40.00	32.47	81	70-130	mg/kg	
Chrysene	40.00	38.63	97	70-130	mg/kg	
Dibenz(a,h)Anthracene	40.00	41.53	104	70-130	mg/kg	
Fluoranthene	40.00	38.03	95	70-130	mg/kg	
Fluorene	40.00	36.83	92	70-130	mg/kg	
Indeno(1,2,3-c,d)Pyrene	40.00	43.70	109	70-130	mg/kg	
2-Methylnaphthalene	40.00	36.35	91	70-130	mg/kg	
Naphthalene	40.00	36.18	90	70-130	mg/kg	
Phenanthrene	40.00	36.00	90	70-130	mg/kg	
Pyrene	40.00	38.27	96	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
2-Fluorobiphenyl	96	70-130	%	
2-Fluorophenol	96	70-130	%	
Nitrobenzene-d5	97	70-130	%	
Phenol-d6	93	70-130	%	
Terphenyl-D14	97	70-130	%	
2,4,6-Tribromophenol	106	70-130	%	

Analytical Method: SW-846 8260 D

Seq Number: 205719 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 08/09/23 09:44

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	50.75	102	80-120	ug/L	
Benzene	50.00	48.77	98	80-120	ug/L	
Bromochloromethane	50.00	50.77	102	80-120	ug/L	
Bromodichloromethane	50.00	49.96	100	80-120	ug/L	
Bromoform	50.00	57.49	115	80-120	ug/L	
Bromomethane	50.00	47.58	95	80-120	ug/L	
2-Butanone (MEK)	50.00	51.17	102	80-120	ug/L	
Carbon Disulfide	50.00	53.65	107	80-120	ug/L	
Carbon tetrachloride	50.00	50.76	102	80-120	ug/L	
Chlorobenzene	50.00	50.96	102	80-120	ug/L	
Chloroethane	50.00	47.25	95	80-120	ug/L	
Chloroform	50.00	46.43	93	80-120	ug/L	
Chloromethane	50.00	36.05	72	80-120	ug/L	X
Cyclohexane	50.00	44.71	89	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	56.17	112	80-120	ug/L	
Dibromochloromethane	50.00	54.43	109	80-120	ug/L	
1,2-Dibromoethane	50.00	51.24	102	80-120	ug/L	
1,2-Dichlorobenzene	50.00	49.84	100	80-120	ug/L	
1,3-Dichlorobenzene	50.00	50.06	100	80-120	ug/L	
Dichlorodifluoromethane	50.00	42.17	84	80-120	ug/L	
1,4-Dichlorobenzene	50.00	49.05	98	80-120	ug/L	
1,1-Dichloroethane	50.00	44.59	89	80-120	ug/L	
1,2-Dichloroethane	50.00	46.30	93	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	49.04	98	80-120	ug/L	
1,1-Dichloroethene	50.00	48.55	97	80-120	ug/L	
1,2-Dichloropropane	50.00	45.22	90	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	56.08	112	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	58.70	117	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	49.80	100	80-120	ug/L	
Ethylbenzene	50.00	47.91	96	80-120	ug/L	
2-Hexanone (MBK)	50.00	48.13	96	80-120	ug/L	
Isopropylbenzene	50.00	50.87	102	80-120	ug/L	
Methyl Acetate	50.00	55.03	110	80-120	ug/L	
Methylcyclohexane	50.00	48.14	96	80-120	ug/L	
Methylene chloride	50.00	47.89	96	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	47.85	96	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	55.62	111	80-120	ug/L	
Naphthalene	50.00	47.85	96	80-120	ug/L	
Styrene	50.00	54.81	110	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	45.76	92	80-120	ug/L	
Tetrachloroethene	50.00	48.60	97	80-120	ug/L	
Toluene	50.00	49.48	99	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	48.24	96	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	48.99	98	80-120	ug/L	
1,1,1-Trichloroethane	50.00	48.72	97	80-120	ug/L	
Trichloroethene	50.00	48.05	96	80-120	ug/L	
1,1,2-Trichloroethane	50.00	47.92	96	80-120	ug/L	
Trichlorofluoromethane	50.00	45.80	92	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	46.10	92	80-120	ug/L	
1,2,4-Trimethylbenzene	50.00	52.71	105	80-120	ug/L	
1,3,5-Trimethylbenzene	50.00	51.27	103	80-120	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D

Seq Number: 205719 Matrix: Water

CCV Sample Id: CCV-01 Analyzed Date: 08/09/23 09:44

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Vinyl chloride	50.00	36.36	73	80-120	ug/L	X
m&p-Xylene	100	104.4	104	80-120	ug/L	
o-Xylene	50.00	50.72	101	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	94	80-120	%	
Dibromofluoromethane	98	80-120	%	
Toluene-D8	99	80-120	%	

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D

Seq Number: 205288 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/21/23 16:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	52.74	105	70-130	ug/L	
Benzene	50.00	52.44	105	70-130	ug/L	
Bromochloromethane	50.00	50.74	101	70-130	ug/L	
Bromodichloromethane	50.00	52.99	106	70-130	ug/L	
Bromoform	50.00	55.61	111	70-130	ug/L	
Bromomethane	50.00	50.67	101	70-130	ug/L	
2-Butanone (MEK)	50.00	55.79	112	70-130	ug/L	
Carbon Disulfide	50.00	52.95	106	70-130	ug/L	
Carbon tetrachloride	50.00	52.33	105	70-130	ug/L	
Chlorobenzene	50.00	52.77	106	70-130	ug/L	
Chloroethane	50.00	51.28	103	70-130	ug/L	
Chloroform	50.00	49.88	100	70-130	ug/L	
Chloromethane	50.00	50.94	102	70-130	ug/L	
Cyclohexane	50.00	51.41	103	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	57.44	115	70-130	ug/L	
Dibromochloromethane	50.00	54.99	110	70-130	ug/L	
1,2-Dibromoethane	50.00	53.54	107	70-130	ug/L	
1,2-Dichlorobenzene	50.00	54.53	109	70-130	ug/L	
1,3-Dichlorobenzene	50.00	54.03	108	70-130	ug/L	
Dichlorodifluoromethane	50.00	50.31	101	70-130	ug/L	
1,4-Dichlorobenzene	50.00	53.28	107	70-130	ug/L	
1,1-Dichloroethane	50.00	50.82	102	70-130	ug/L	
1,2-Dichloroethane	50.00	50.07	100	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	51.51	103	70-130	ug/L	
1,1-Dichloroethene	50.00	51.14	102	70-130	ug/L	
1,2-Dichloropropane	50.00	50.78	102	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	57.18	114	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	59.14	118	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	50.99	102	70-130	ug/L	
Ethylbenzene	50.00	52.47	105	70-130	ug/L	
2-Hexanone (MBK)	50.00	56.87	114	70-130	ug/L	
Isopropylbenzene	50.00	56.72	113	70-130	ug/L	
Methyl Acetate	50.00	54.23	108	70-130	ug/L	
Methylcyclohexane	50.00	51.83	104	70-130	ug/L	
Methylene chloride	50.00	49.82	100	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	56.30	113	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	55.54	111	70-130	ug/L	
Naphthalene	50.00	54.53	109	70-130	ug/L	
Styrene	50.00	58.22	116	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	52.12	104	70-130	ug/L	
Tetrachloroethene	50.00	51.16	102	70-130	ug/L	
Toluene	50.00	52.41	105	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	54.88	110	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	55.51	111	70-130	ug/L	
1,1,1-Trichloroethane	50.00	52.93	106	70-130	ug/L	
Trichloroethene	50.00	50.56	101	70-130	ug/L	
1,1,2-Trichloroethane	50.00	51.31	103	70-130	ug/L	
Trichlorofluoromethane	50.00	49.73	99	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	50.33	101	70-130	ug/L	
1,2,4-Trimethylbenzene	50.00	58.81	118	70-130	ug/L	
1,3,5-Trimethylbenzene	50.00	57.11	114	70-130	ug/L	

PHASE SEPARATION SCIENCE

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D

Seq Number: 205288 Matrix: Water
Parent Sample Id: ICV-01 ICV Sample Id: ICV-01 Analyzed Date: 07/21/23 16:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Vinyl chloride	50.00	49.33	99	70-130	ug/L	
m&p-Xylene	100	110.6	111	70-130	ug/L	
o-Xylene	50.00	53.40	107	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	97	70-130	%	
Dibromofluoromethane	99	70-130	%	
Toluene-D8	100	70-130	%	

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D

Seq Number: 205288 Matrix: Water
Parent Sample Id: ICV/LCS ICV Sample Id: ICV/LCS Analyzed Date: 07/21/23 16:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	52.74	105	70-130	ug/L	
Benzene	50.00	52.44	105	70-130	ug/L	
Bromochloromethane	50.00	50.74	101	70-130	ug/L	
Bromodichloromethane	50.00	52.99	106	70-130	ug/L	
Bromoform	50.00	55.61	111	70-130	ug/L	
Bromomethane	50.00	50.67	101	70-130	ug/L	
2-Butanone (MEK)	50.00	55.79	112	70-130	ug/L	
Carbon Disulfide	50.00	52.95	106	70-130	ug/L	
Carbon tetrachloride	50.00	52.33	105	70-130	ug/L	
Chlorobenzene	50.00	52.77	106	70-130	ug/L	
Chloroethane	50.00	51.28	103	70-130	ug/L	
Chloroform	50.00	49.88	100	70-130	ug/L	
Chloromethane	50.00	50.94	102	70-130	ug/L	
Cyclohexane	50.00	51.41	103	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	57.44	115	70-130	ug/L	
Dibromochloromethane	50.00	54.99	110	70-130	ug/L	
1,2-Dibromoethane	50.00	53.54	107	70-130	ug/L	
1,2-Dichlorobenzene	50.00	54.53	109	70-130	ug/L	
1,3-Dichlorobenzene	50.00	54.03	108	70-130	ug/L	
Dichlorodifluoromethane	50.00	50.31	101	70-130	ug/L	
1,4-Dichlorobenzene	50.00	53.28	107	70-130	ug/L	
1,1-Dichloroethane	50.00	50.82	102	70-130	ug/L	
1,2-Dichloroethane	50.00	50.07	100	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	51.51	103	70-130	ug/L	
1,1-Dichloroethene	50.00	51.14	102	70-130	ug/L	
1,2-Dichloropropane	50.00	50.78	102	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	57.18	114	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	59.14	118	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	50.99	102	70-130	ug/L	
Ethylbenzene	50.00	52.47	105	70-130	ug/L	
2-Hexanone (MBK)	50.00	56.87	114	70-130	ug/L	
Isopropylbenzene	50.00	56.72	113	70-130	ug/L	
Methyl Acetate	50.00	54.23	108	70-130	ug/L	
Methylcyclohexane	50.00	51.83	104	70-130	ug/L	
Methylene chloride	50.00	49.82	100	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	56.30	113	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	55.54	111	70-130	ug/L	
Naphthalene	50.00	54.53	109	70-130	ug/L	
Styrene	50.00	58.22	116	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	52.12	104	70-130	ug/L	
Tetrachloroethene	50.00	51.16	102	70-130	ug/L	
Toluene	50.00	52.41	105	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	54.88	110	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	55.51	111	70-130	ug/L	
1,1,1-Trichloroethane	50.00	52.93	106	70-130	ug/L	
Trichloroethene	50.00	50.56	101	70-130	ug/L	
1,1,2-Trichloroethane	50.00	51.31	103	70-130	ug/L	
Trichlorofluoromethane	50.00	49.73	99	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	50.33	101	70-130	ug/L	
1,2,4-Trimethylbenzene	50.00	58.81	118	70-130	ug/L	
1,3,5-Trimethylbenzene	50.00	57.11	114	70-130	ug/L	

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QC Summary

Project Name 31222314
PSS Project No.: 23080425

Analytical Method: SW-846 8260 D

Seq Number: 205288 Matrix: Water
Parent Sample Id: ICV/LCS ICV Sample Id: ICV/LCS Analyzed Date: 07/21/23 16:30

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Vinyl chloride	50.00	49.33	99	70-130	ug/L	
m&p-Xylene	100	110.6	111	70-130	ug/L	
o-Xylene	50.00	53.40	107	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	97	70-130	%	
Dibromofluoromethane	99	70-130	%	
Toluene-D8	100	70-130	%	

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 #: 23080425 | PAGE 1 OF 1

BILL TO (if different): | PHONE #:

CONTACT: Kevin Plocek | EMAIL: KPlocek@gtaeng.com

PROJECT NAME: 31222314 | PROJECT #: 31222314

SITE LOCATION: Frederick Co., M.D. | P.O. #:

SAMPLER(S): JRM | 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 Preservatives Use Codes: 6 | 3 | 6 | 6 | 4 | 6 | 6 | 6

PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	③ Analysis/ Method Required: VOCs	Total Metals	Dissolved Metals	Fluoride	Total cyanide	Chlorine	PAHs	PCBs
1	ST-2	8/4/23	12:30	GW	9	G	X	X	X	X	X	X	X	X

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:	Date	Time	Received By:
(1) J. Martins	8/4/23	15:30	
(2)			
(3)			
(4)			

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

Ice Present: Pres

Custody Seal: MS

Coolers: 1 Temp: 5.2-5.5°C

Shipping Carrier: Client

Special Instructions: Tier 2 Pricing

Please cc: JMartins

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Sample Receipt Checklist

Project Name: 31222314
PSS Project No.: 23080425

Client Name GTA - Baltimore
Disposal Date 09/08/2023

Received By Marissa Vertucci
Date Received 08/04/2023 03:30:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Marissa Vertucci

Shipping Container(s)
No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	5.5
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	JRM
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?	No	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	1
All Samples Received Within Holding Time(s)?	No	Total No. of Containers Received	9

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	No
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	Yes
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)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

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Sample Receipt Checklist

Project Name: 31222314
PSS Project No.: 23080425

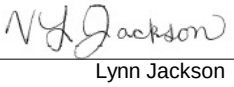
Client Name	GTA - Baltimore	**Received By**	Marissa Vertucci
Disposal Date	09/08/2023	**Date Received**	08/04/2023 03:30:00 PM
		Delivered By	Client
		Tracking No	Not Applicable
		Logged In By	Marissa Vertucci

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.

The analyses of pH for soil/waste samples and chlorine, pH, dissolved oxygen, temperature and sulfite for potable/non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.
Sample aliquots for dissolved metals were not field filtered and were received unpreserved; as such, associated sample results are not suitable for compliance under the Clean Water Act and/or Safe Drinking Water Act.
Received sample with headspace, inapproriate for the following analyses: chlorine.
Storage temperatures exceeded 6°C but were less than 13°C for approximately eight hours for chlorine, cyanide, VOC, and SVOC analysis for sample -001 due to a power outage.

Samples Inspected/Checklist Completed By:  Date: 08/05/2023
Marissa Vertucci

PM Review and Approval:  Date: 08/07/2023
Lynn Jackson

APPENDIX G
Water Disposal Manifest

MANIFEST	1. Generator ID Number: CESQG	2. Page 1 of 1	3. Emergency Response Phone: CHEMTREC (800)424-9300 (CCN #: 659847)	Waste Tracking Number: 236841

5. Generator's Name and Mailing Address	Generator's Site Address (if different than mailing address)
Capitol Environmental Services - Quantum Maryland LLC 5601 Manor Woods Rd Frederick, MD 21703 Generator's Phone:	
6. Transporter 1 Company Name Valicor Environmental Services, LLC MIKE GORDON 717-377-7290	U.S. EPA ID Number OHR000200386
7. Transporter 2 Company Name	U.S. EPA ID Number
8. Designated Facility Name and Site Address Valicor Environmental Services, LLC 16232 Elliott Pkwy, Williamsport, 21795	U.S EPA ID Number: MDR000507863

9. Waste Shipping Name and Description	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	Profile #	PO#
Non-Regulated Leachate Water Treatment (OUT OF COUNTY)	1	TT	6030	gallons		

13. Special Handling Instructions and Additional Information				
	Truck		Driver Arrival at Facility Time	
	Trailer		Driver Departure from Facility Time	
	Driver Start Time		Driver Arrival at Plant and Offload Complete Time	

14. GENERATOR'S/OFFER'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all aspects in proper condition for transport according to application internal and national governmental regulations.

Generator's/Offer's Printed/Typed Name	Signature		Month	Day	Year
A.D. ROBISON			Aug	31	23

15. Transporter Acknowledge of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature		Month	Day	Year
Wrennis Welsh			8	31	23
Transporter 2 Printed/Typed Name	Signature		Month	Day	Year

16. Discrepancy

16a. Discrepancy Indication Space	Quantity	Type	Residue	Partial Rejection	Full Rejection
	☐	☐	☐	☐	☐

Manifest Reference Number:

17. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 15a.

Printed/Typed Name	Signature	Month	Day	Year
Troy Kunkle		8	31	23

MANIFEST	1. Generator ID Number: CESQG	2. Page 1 of 1	3. Emergency Response Phone: CHEMTREC (800)424-9300 (CCN #: 659847)	Waste Tracking Number: 236830

5. Generator's Name and Mailing Address	Generator's Site Address (if different than mailing address)
Capitol Environmental Services - Quantum Maryland LLC 5601 Manor Woods Rd Frederick, MD 21703 Generator's Phone:	
6. Transporter 1 Company Name Valicor Environmental Services, LLC **MIKE GORDON 717-377-7290**	U.S. EPA ID Number OHR000200386
7. Transporter 2 Company Name	U.S. EPA ID Number
8. Designated Facility Name and Site Address Valicor Environmental Services, LLC 16232 Elliott Pkwy, Williamsport, 21795	U.S EPA ID Number: MDR000507863

9. Waste Shipping Name and Description	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	Profile #	PO#
Non-Regulated Leachate Water Treatment (OUT OF COUNTY)	1	TT	6,091	gallons		

13. Special Handling Instructions and Additional Information				
	Truck		Driver Arrival at Facility Time	
	Trailer		Driver Departure from Facility Time	
	Driver Start Time		Driver Arrival at Plant and Offload Complete Time	

14. GENERATOR'S/OFFER'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all aspects in proper condition for transport according to application internal and national governmental regulations.

Generator's/Offer's Printed/Typed Name	Signature		Month	Day	Year
A.D. ROBISON			Aug	31	23

15. Transporter Acknowledge of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature		Month	Day	Year
Craig Long Jr.			8	31	23
Transporter 2 Printed/Typed Name	Signature		Month	Day	Year

16. Discrepancy

16a. Discrepancy Indication Space	Quantity	Type	Residue	Partial Rejection	Full Rejection
	☐	☐	☐	☐	☐

Manifest Reference Number:

17. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 15a.

Printed/Typed Name	Signature	Month	Day	Year
Troy Kuntz		8	31	23

MANIFEST	1. Generator ID Number: CESQG	2. Page 1 of 1	3. Emergency Response Phone: CHEMTREC (800)424-9300 (CCN #: 659847)	Waste Tracking Number: 236842

5. Generator's Name and Mailing Address	Generator's Site Address (if different than mailing address)
Capitol Environmental Services - Quantum Maryland LLC 5601 Manor Woods Rd Frederick, MD 21703 Generator's Phone:	
6. Transporter 1 Company Name Valicor Environmental Services, LLC MIKE GORDON 717-377-7290	U.S. EPA ID Number OHR000200386
7. Transporter 2 Company Name	U.S. EPA ID Number
8. Designated Facility Name and Site Address Valicor Environmental Services, LLC 16232 Elliott Pkwy, Williamsport, 21795	U.S EPA ID Number: MDR000507863

9. Waste Shipping Name and Description	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	Profile #	PO#
Non-Regulated Leachate Water Treatment (OUT OF COUNTY)	1	TT	4123	gallons		

13. Special Handling Instructions and Additional Information				
	Truck		Driver Arrival at Facility Time	
	Trailer		Driver Departure from Facility Time	
	Driver Start Time		Driver Arrival at Plant and Offload Complete Time	

14. GENERATOR'S/OFFER'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all aspects in proper condition for transport according to application internal and national governmental regulations.

Generator's/Offer's Printed/Typed Name	Signature		Month	Day	Year
A.D. ROBISON			Aug	31	23

15. Transporter Acknowledge of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature		Month	Day	Year
Wrennis Welsh			8	31	23
Transporter 2 Printed/Typed Name	Signature		Month	Day	Year

16. Discrepancy

16a. Discrepancy Indication Space	Quantity	Type	Residue	Partial Rejection	Full Rejection
	☐	☐	☐	☐	☐

Manifest Reference Number:

17. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 15a.

Printed/Typed Name	Signature	Month	Day	Year
Troy Kunkle		8	31	23

MANIFEST	1. Generator ID Number: CESQG	2. Page 1 of 1	3. Emergency Response Phone: CHEMTREC (800)424-9300 (CCN #: 659847)	Waste Tracking Number: 236837

5. Generator's Name and Mailing Address	Generator's Site Address (if different than mailing address)
Capitol Environmental Services - Quantum Maryland LLC 5601 Manor Woods Rd Frederick, MD 21703 Generator's Phone:	
6. Transporter 1 Company Name Valicor Environmental Services, LLC **MIKE GORDON 717-377-7290**	U.S. EPA ID Number OHR000200386
7. Transporter 2 Company Name	U.S. EPA ID Number
8. Designated Facility Name and Site Address Valicor Environmental Services, LLC 16232 Elliott Pkwy, Williamsport, 21795	U.S EPA ID Number: MDR000507863

9. Waste Shipping Name and Description	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	Profile #	PO#
Non-Regulated Leachate Water Treatment (OUT OF COUNTY)	1	TT	4,848	gallons		

13. Special Handling Instructions and Additional Information				
	Truck		Driver Arrival at Facility Time	
	Trailer		Driver Departure from Facility Time	
	Driver Start Time		Driver Arrival at Plant and Offload Complete Time	

14. GENERATOR'S/OFFER'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all aspects in proper condition for transport according to application internal and national governmental regulations.

Generator's/Offer's Printed/Typed Name	Signature		Month	Day	Year
A.D. ROBISON			Aug	31	23

15. Transporter Acknowledge of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature		Month	Day	Year
Craig Long Jr.			8	31	23
Transporter 2 Printed/Typed Name	Signature		Month	Day	Year

16. Discrepancy

16a. Discrepancy Indication Space	Quantity	Type	Residue	Partial Rejection	Full Rejection
	☐	☐	☐	☐	☐

Manifest Reference Number:

17. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 15a.

Printed/Typed Name	Signature	Month	Day	Year
Troy Kimble		8	31	23