GEI Consultants

Consulting Engineers and Scientists

October 2, 2024 (Revised October 22, 2024)
Project 2304769

Via Email: paul.hlavinka@maryland.gov; anuradha.mohanty@maryland.gov

Ms. Anuradha Mohanty
Project Manager
Maryland Department of the Environment
Land and Materials Administration
1800 Washington Boulevard, Suite: 625
Baltimore, Maryland 21230

Mr. Paul Hlavinka
Maryland Department of Environment
Water and Science Administration
1800 Washington Blvd
Baltimore, Maryland 21230

Re: Basin DA-2 and DA-11 Water Management Plan – Discharge to Groundwater
Proposed Addendum to EMP-2 Rev 2 (May 20, 2024)
Quantum Maryland
Former Alcoa Eastalco Property
Frederick, Maryland

Dear Ms. Mohanty and Mr. Hlavinka:

GEI Consultants, Inc. (GEI) and Quantum Maryland, LLC (QM) are requesting your approval of the water management plan described herein for the dewatering of stormwater basins DA-2 and DA-11 as part of the Quantum Place (QPS) Improvement Plan. As you are aware, completion of construction of these stormwater basins is the first major step in the construction sequence of QPS. QPS construction is part of the scope of work described within Environmental Management Plan 2 (EMP-2 Rev 2, dated May 20, 2024). It is also the subject of MDE construction stormwater permit Notices of Intent (NOIs) 20CPK08SX (QM) and 20CPK08SY (STO) which were issued by MDE September 6, 2024. The locations of basins DA-2 and DA-11 are shown on **Figure 1**.

This letter seeks approval from Maryland Department of the Environment (MDE) Land and Materials Administration (LMA) for approval to discharge Basin DA-2 and DA-11 waters to groundwater as a proposed Addendum to EMP-2 Rev 2. This letter also seeks approval from MDE Water Science Administration (WSA) as an operational procedure under the recently issued 20-CP Permit.

GEI previously submitted a *Basin DA-2 and DA-11 Water Management Plan* (September 3, 2024, revised September 6, 2024) describing proposed discharge of basin DA-2 and DA-11 water to surface water. WSA provided comment dated September 5, 2024 regarding the discharge flow rate which was addressed in Revision 1 September 6, 2024. LMA provided comments dated

September 12, 2024. These comments related to the June 2024 basin data, consistency with the approved EMP-2 water management procedures, potential groundwater contaminant sources, and ongoing free cyanide monitoring in surface water.

The LMA comment email states that "Another alternative may be to allow the water to infiltrate to groundwater at a low lying area during the construction of the DAs." Based on that email and subsequent conversation with LMA, GEI submitted on September 19 a drawing similar to **Figure 2** of this letter presenting a plan to distribute water over the land surface within the Environmental Covenant (EC) area to infiltrate to groundwater in a manner which does not run off to surface water. The proposed plan was discussed at a September 24, 2024 on-site meeting with LMA, WSA, and Frederick County representatives (Anu Mohanty, Kate Ansalvish, and Douglas Cochran). This ***Basin DA-2 and DA-11 Water Management Plan – Discharge to Groundwater*** presents additional detail and requests LMA and WSA approval.

Discharge to groundwater rather than surface water means that the chronic fresh water free cyanide criterion described in the prior plan is not relevant or applicable. Discharge to groundwater also addresses expressed uncertainty regarding possible changes in basin water quality due to groundwater infiltration as basin dewatering occurs. As water is to be discharged back to the same groundwater from which it came, data for chemicals of concern (COC) which may be slightly above any groundwater cleanup standard cannot result in any deterioration of groundwater quality.

This Plan has been revised to reflect combined LMA and WSA comments transmitted by email dated October 17 from Barbara Krupiarz with clarification by Paul Hlavinka regarding the number of samples.

Purpose

As described below the DA-11 volume has fluctuated between approximately 500,000 and 2,700,000 gallons. As of October 21, DA-11 contained approximately 250,000 gallons of water, with approximately 700,000 gallons in DA-2.

An LMA-approved management procedure for containerization, testing, and use of construction water for dust control is described in Appendix G of EMP-2.[1] On the WSA side, a July 15, 2024 letter and procedure describe WSA requirements for testing of containerized water and the approval process for use for dust control.

The combined LMA (Appendix G) and WSA (July 15 letter) procedures have been applied to evaluate and approve seven frac tanks full of water removed from Basin DA-11 in March 2024 and that water has been used for site dust control. Six tanks have been refilled.

The reason for this letter is to describe the procedure that will be used for removal and management of the entire volume of water present in basins DA-2 and DA-11 as well as for maintaining dry conditions during the remainder of the basin construction and lining process.

[1] Appendix G of EMP's 1A, 2, 3, 4 contained substantially similar water testing and management procedures. Based on discussion with MDE after approval of EMP-2 Rev 2, testing procedures and standards in EMP-1A Appendix G were revised and approved. The same revisions were submitted as a draft modification to EMP-2 as DRAFT EMP-2 Rev 3 (August 13, 2024); however that revision was returned by MDE for reasons unrelated to Appendix G procedures. This letter presumes that approval of the revised EMP-2 Appendix G will be administratively addressed, and references herein to EMP-2 Appendix G refer to the terms of the submitted revision.

The method described in Appendix G to EMP-2 Rev 2 is not practical for management of the entire volume of water present in DA-2 and DA-11.

The proposed water management plan for basins DA-2 and DA-11 will:

- Effectively dewater both basins at a rate necessary to empty the basins and keep them dry during basin construction/lining;
- Provide additional capacity to address precipitation inflow (primarily observed in DA-11) and groundwater seepage (more likely in DA-2 based on basin depth relative to groundwater but also possible in DA-11);
- Ensure the same water quality goals as presently required; and
- Reduce truck traffic to the site (for frac tanks and/or water shipments).

Stormwater Basins Recent Actions and Data

Rain events during the early spring of 2024 filled stormwater Basin DA-11 to beyond capacity (top of berm). Completion of basin construction including the spillway and liner has not yet been completed. Construction is authorized under EMP-2 and the 20-CP construction stormwater permit issued September 6, 2024.

GEI requested and received approval from the Maryland Department of the Environment (MDE) to dewater the basin and place the water into on-site frac tanks per the water management procedure of EMP-1A at the same time that procedure was being written into EMP-2 (which includes Quantum Place South and the basins).

Approximately 200,000 gallons of water was pumped from Basin DA-11 into 10 on-site frac tanks. The dewatering was conducted from April 5 through April 11, 2024 and resulted in lowering the basin water level by approximately 6 inches. Analytical samples were collected from each frac tank (in addition to the initial basin water sample) and sent for laboratory analysis.

The basin water sample and 7 of the 10 tank samples met MDE drinking water standards for all parameters tested (including fluoride, cyanide, pH, DRO, GRO, metals, VOCs, PAHs, PCBs, pesticides). Water in the three tanks which did not pass (tanks A652, N48966, and A1930) was disposed off-site; however, we suspect this was due to cleanliness of the tanks themselves as the basin water sample met MDE drinking water standards. The remaining 7 tanks (A4712, N48962, A2636, A1173, A4209, A3718, A4832) were approved by LMA and WSA and have been used for site dust control.

Basin Water Sampling and Results

Eight water samples were collected by Tetra Tech from Basin DA-11 on June 4, 2024 in accordance with an MDE-approved sampling plan. Four samples were collected from one foot below the water surface and another four samples were collected at prescribed depths. The water samples were analyzed for the following parameters: pH, fluoride, free cyanide, priority pollutant metals (dissolved), volatile organic compounds, polycyclic aromatic hydrocarbons, polychlorinated biphenyls, and total petroleum hydrocarbons (diesel range organics/gasoline range organics). Additionally, field turbidity readings were collected at one-foot depth increments from the surface to base of the basin at the time of the sampling.

On June 5, 2024 six samples were collected from the smaller Basin DA-2 (three shallow and three at varying depth) and tested for the same parameters.

MDE has not made a direct determination whether the same standards described under "Purpose" above apply to a groundwater discharge, and some flexibility is anticipated based on the concept of returning water to the groundwater from which it is generated. Sample results for each basin are tabulated and compared to MDE standards and attached to this letter (**Tables 1 and 2**). The WSA July 15 procedure requires data comparison to MCLs and acute fresh surface water criteria. Based on the LMA Appendix G procedure, samples are compared to MCLs, and where an MCL does not exist compared to MDE groundwater cleanup standards. Per the footnote on the tables, the Environmental Covenant (EC) additionally refers to the chronic surface water criteria of 0.0052 mg/l for free cyanide; however this criterion is not applicable or relevant to a discharge to groundwater. Combining LMA and WSA requirements, the tables flag (highlight) any exceedance of acute surface water criteria, any exceedance of MCLs, and any exceedance of a groundwater standard where an MCL does not exist.

Basin DA-11 Results

- All eight samples from DA-11 met all applicable requirements for all parameters tested.

Basin DA-2 Results

- Aside from diesel range organics (DRO [C10-C28]), all six samples from DA-2 met all applicable requirements for all parameters tested (including chronic free cyanide).
- For DRO:
    - Standards are:
        - There is no drinking water MCL
        - There is no acute fresh water standard
        - The groundwater cleanup standard is 47 ug/l
        - The laboratory reporting limit varies per sample between 45 ug/l and 47 ug/l
    - The six sample results include 5 non-detect samples and one sample at 54 ug/l (J-flag estimated value).
    - QM requests LMA and WSA concurrence that short-term discharge of DA-2 water to ground surface is acceptable and that the single estimated DRO value of 54 ug/l does not prohibit discharge to groundwater of the DA-2 water as most recently tested.

Sampling and Discharge Plan

DA-11 Volume

Basin DA-11 is approximately 11 feet deep from top of existing berm to base of the sediment trap. Timmons Group has surveyed and provided elevations for Basin DA-11 and placed two water monitoring posts in the basin to determine water volumes (one near the west edge useful for

higher water elevations and one in the center capable of reading lower water elevations). A table was developed that correlates the elevation of the water with cubic feet of water in the basin (**Attachment 1**). **Attachment 1** also includes an elevation contour map of DA-11 as it presently exists.

The highest recorded measurement (early April of 2024) was 322.38 (full capacity) or approximately 2,700,000 gallons of water. After removal of approximately 200,000 gallons to tanks, the water level continued to decrease during summer months reaching a low of approximately 550,000 gallons. The approximate 5-inch rainfall on/around August 8 then increased the basin water volume to approximately 1,300,000 gallons. Temporary berms have been constructed in order to reduce the run-on which can reach DA-11. The current water level (10/21/2024) is approximately at elevation 313.7 or approximately 250,300 gallons based on the Timmons table.

DA-2 Volume

Basin DA-2 is approximately 13 feet deep from top of existing berm to base of the sediment trap. While this is deeper than DA-11, DA-2 has steeper sides and a lower typical water pool. Timmons Group has surveyed and provided elevations for Basin DA-2. A table was developed that correlates the elevation of the water with cubic feet of water in the basin (**Attachment 2**). **Attachment 2** also includes an elevation contour map of DA-2 as it presently exists.

The current (October 21) water level is approximately at elevation 315.5 or approximately 700,500 gallons based on the Timmons table.

Proposed Discharge Locations

GEI evaluated locations within the EC where water can be discharged to the ground surface for infiltration to groundwater (without runoff to surface water). These can include locations contained by a physical berm/barrier or large areas where water can be applied at a moderate rate so that runoff does not occur.

Figure 2 shows four discharge locations (Discharge Area 1, 3, 4, and 5) for DA-11 and DA-2 discharge to groundwater. Discharge Area 2 was removed from this request based on MDE comment and was removed from **Figure 2**. Any of the four areas are proposed for use for either basin, although it is anticipated that the most convenient locations will be Discharge Area 1 for Basin DA-11 and Discharge Area 5 for DA-2 based on proximity to the respective basins.

- Discharge Area 1 is a vegetated area primarily comprising the future substation pad north of DA-11 (future Lot 112A) and adjacent area to the east of the substation pad (future Lot 112C). These combined areas comprise approximately 23.4 acres. Applying water at a conservative rate of one inch of water over this area amounts to 610,000 gallons (capacity 50% greater than the present DA-11 volume). One inch per week is a rate typically applied to spray irrigation systems for water disposal or agricultural irrigation. Runoff from the substation pad is partially contained by the berm constructed across the south end of the substation. Runoff from the area to the east is partially contained by the existing contours of the partially constructed Clean Energy Lane to the south. However, these containments are not relied upon in applying/infiltrating the calculated water volume. As a contingency, any excess water would be contained by the berms or would naturally drain back toward DA-11 and would not discharge to surface water.

- Discharge Area 3 is a vegetated area on future lot 102 located south of QPS and east of Sewer Line B. Keeping away from existing swales this area comprises approximately 11.9 acres. The downslope (western) end of this area is contained by the recently constructed berm, allowing water application at a depth up to an average of 0.25 feet, resulting in a total volume of 967,000 gallons. Any excess water in this area would naturally drain toward basin DA-11; the existing temporary berm and DA-11 itself would prevent discharge to surface water.

- Discharge Area 4 is a low-lying area to the west of Basin DA-2 and north of Stockpile 3. This area generally drains to the southeast toward Basin DA-2 but existing berms/topography prevent flow into DA-2. **Figure 2** shows an area of 3.4 acres and a proposed water depth of up to 0.24 feet or approximately 274,000 gallons.

- Discharge Area 5 is a low-lying area to the south of basin DA-2, bounded by former railroad berms and other features with no outlet to surface water. **Figure 2** shows an area of approximately 1.9 acres. Based on an average water depth of 2 feet over this area amounts to 1,207,000 gallons (50% more capacity than the present volume of DA-2). This area is within the mapped floodway; however in reality this area is physically separated from Tuscarora Creek by physical barriers including former rail embankment and provides a convenient water management/infiltration location with no outlet to surface water.

In all areas, additional water may be applied after infiltration of the stated dosage as long as runoff does not occur based on field verification. Based on the calculated capacity of Discharge Areas 1 (for DA-11) and 5 (for DA-2), the entire present basin volumes can be applied in one event, with reapplication only required if needed based on pond seepage during construction once emptied.

Pre-Discharge Sampling and Data Submittal

By email dated October 17, MDE provided a written *WSA Process for Data Analysis and Review of Quantum Loophole DA-2 & DA-11 Standing Pool* (WSA Process, copy attached). Prior to discharge, 8 samples will be collected from each basin at a variety of locations and depths. Proposed sample location plans for DA-2 and DA-11 are attached.

Samples will be analyzed for the list of parameters specified in item 2 of the WSA Process plus diesel range organics (DRO) which is specified under item 6.

Data will be tabulated and submitted in accordance with items 4 and 5 of the WSA Process.

Discharge will commence after review and approval of the data set by MDE per item 7 of the WSA Process.

Due to the decreased level of water in DA-11, and to move forward with basin construction QM may elect to move forward with containerization of the water to empty the basin prior to (in lieu of) sampling the basin, or may containerize the water prior to receipt of laboratory results. QM requests that in the case that 8 samples are collected and the water is then temporarily containerized (with field parameter measurement as described below at each foot of drawdown), WSA authorizes discharge based on the 8 samples from Basin DA-11 rather than subsequently testing the (approximately 15) tanks of water.

Proposed Discharge Methods

A floating inlet located (tethered) at the deepest part of each basin would be used to pump water from the basin to minimize sediment disturbance and lessen the amount of sediment in the discharge. For DA-11, this location is the western half of the basin where the base elevation is approximately 310.3. For DA-2, this is the eastern side of the basin where the base elevation is approximately 309.

As specified by WSA, water must be discharged in a manner with a linear velocity of less than 4 linear feet per second. Water will be distributed via a hose (approximate 4 to 6-inch diameter) following the route indicated by yellow arrows to reach the discharge location(s). The hose will connect to a network of perforated PVC pipe arranged at intervals for low-velocity discharge to ground surface or will be connected to a commercial/agricultural spray head(s) within the approved areas.

Item 8 of the WSA Process specifies field sampling and field analysis of three parameters during discharge. Item 8 states "This procedure should be followed for initial dewatering of the DA-2 & DA-11 standing pool. Drawdown should be taken from the surface or no deeper than 1 foot of depth. For each foot of drawdown, samples of turbidity, fluoride and cyanide must be taken to determine if these are increasing. An increase would indicate an interaction with groundwater and at that point all water must be containerized and then follow the same process used for frac tank processing."

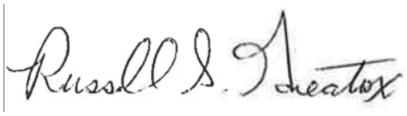
Turbidity will be monitored using an Apera TN420 instrument or similar. Fluoride will be monitored using an ExTech handheld waterproof fluoride meter or equal. Cyanide will be measured using a Hannah Instruments portable Cyanide Photometer HI97714 or equal. Readings will be taken at a minimum at each foot of drawdown of each basin, with data tracked to identify increasing trends approaching selected criteria. Should fluoride or cyanide criteria be reached/exceeded, pumping will be ceased or diverted to tanks. For turbidity, there is no specific discharge criteria for groundwater discharge (not reaching surface water). GEI recommends a screening value of 1500 NTU (10 times the surface water criterion) to cease discharge or modify the intake or discharge to reduce turbidity.

QM proposes to use a 4-inch portable pump with a nominal flow rate of 1,200 gallons per minute for approximately 8 hours per day or approximately 576,000 gallons per day. This rate is adequate to discharge the present basin volumes in approximately 2 working days. In the case of Discharge Area 1, the present DA-11 volume (410,500 gallons) is equal to 0.67 inches when distributed over 23.4 acres, well within the range of typical stormwater events when applied over the course of one day.

Closing

GEI and Quantum Maryland appreciate MDE's review of this request. Please let us know if you have any questions or would like to schedule any further review meeting or discharge location inspection.

Sincerely,



Russell S. Greatorex, CHMM
Senior Scientist

William Silverstein, P.E.
Senior Consultant

cc: Brian Dietz – MDE LMA
Barbara Krupiarz – MDE LMA
Tyler Abbott – MDE LMA
Kate Ansalvish – MDE WSA
Brad Metzger – MDE WSA
Lee Curry – MDE WSA
AD Robison – QL
Josh Mullis – Tetra Tech
Michael Kuykendall - Catellus

Attachments:
Table 1 - Basin DA-11 Water Data – June 4, 2024
Table 2 - Basin DA-2 Water Data – June 5, 2024
Figure 1 - Site Plan
Figure 2 - Proposed Groundwater Discharge Areas
Figure 3 – Proposed DA-2 Sample Location Plan
Figure 3 – Proposed DA-11 Sample Location Plan
Attachment 1. Basin DA-11 Storage Capacity and Elevation Survey
Attachment 2. Basin DA-2 Storage Capacity and Elevation SurveyAttachment 3. WSA Process for Data Analysis and Review of Quantum Loophole DA-2 & DA-11 Standing Pool

Tables

Appendix B6.1
Basin DA-11 Water Sample Results. June 4, 2024

Client Name: Tetra Tech Inc - Germantown Lab: Eurofins Lancaster																															
Specific Method	CAS#	Matrix	Analyte	Results Basis	MD LRP Cleanup Stds_Tbl 1_GWs Aquifers_Oct2018	AWQCFA	MCL	410-174386-2 QL-DA11-SW1-1-060424			410-174386-3 QL-DA11-SW1-5-060424			410-174386-4 QL-DA11-SW2-1-060424			410-174386-5 QL-DA11-SW2-5-060424			410-174386-6 QL-DA11-SW3-1-060424			410-174386-7 QL-DA11-SW3-4-060424			410-174386-8 QL-DA11-SW4-1-060424			410-174386-9 QL-DA11-SW4-3-060424		
								Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier
8260D_LL	71-55-6	Water	1,1,1-Trichloroethane	Total	200	NC	200	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	79-34-5	Water	1,1,2,2-Tetrachloroethane	Total	0.076	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	79-00-5	Water	1,1,2-Trichloroethane	Total	5	NC	5	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	75-34-3	Water	1,1-Dichloroethane	Total	2.8	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	75-35-4	Water	1,1-Dichloroethene	Total	7	NC	7	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	120-82-1	Water	1,2,4-Trichlorobenzene	Total	70	NC	70	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	96-12-8	Water	1,2-Dibromo-3-Chloropropane	Total	0.2	NC	0.2	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	95-50-1	Water	1,2-Dichlorobenzene	Total	600	NC	600	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	107-06-2	Water	1,2-Dichloroethane	Total	5	NC	5	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	78-87-5	Water	1,2-Dichloropropane	Total	5	NC	5	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	541-73-1	Water	1,3-Dichlorobenzene	Total	NC	NC	NC	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	106-46-7	Water	1,4-Dichlorobenzene	Total	75	NC	75	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	78-93-3	Water	2-Butanone	Total	560	NC	NC	<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L	
8260D_LL	591-78-6	Water	2-Hexanone	Total	NC	NC	NC	<2.0	ug/L		<2.0	ug/L		<2.0	ug/L		<2.0	ug/L		<2.0	ug/L		<2.0	ug/L		<2.0	ug/L		<2.0	ug/L	
8260D_LL	108-10-1	Water	4-Methyl-2-pentanone	Total	630	NC	NC	<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L	
8270D_SIM	83-32-9	Water	Acenaphthene	Total	53	NC	NC	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	208-96-8	Water	Acenaphthylene	Total	NC	NC	NC	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8260D_LL	67-64-1	Water	Acetone	Total	1400	NC	NC	<1.5	ug/L		<1.5	ug/L		<1.5	ug/L		<1.5	ug/L		<1.5	ug/L		<1.5	ug/L		<1.5	ug/L		<1.5	ug/L	
6020B	7429-90-5	Water	Aluminum	Dissolved	2000	1100	NC	**15**	ug/L	J	**19**	ug/L	J	**14**	ug/L	J	**38**	ug/L		**18**	ug/L	J	**31**	ug/L		**17**	ug/L	J	**16**	ug/L	J
8270D_SIM	120-12-7	Water	Anthracene	Total	180	NC	NC	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
6020B	7440-36-0	Water	Antimony	Dissolved	6	NC	6	<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L	
6020B	7440-38-2	Water	Arsenic	Dissolved	10	340	10	<0.68	ug/L		**0.74**	ug/L	J	**0.90**	ug/L	J	<0.68	ug/L		**0.79**	ug/L	J	**0.69**	ug/L	J	**0.71**	ug/L	J	<0.68	ug/L	
6020B	7440-39-3	Water	Barium	Dissolved	2000	NC	2000	**9.4**	ug/L		**9.2**	ug/L		**9.4**	ug/L		**9.6**	ug/L		**9.5**	ug/L		**9.8**	ug/L		**8.5**	ug/L		**8.7**	ug/L	
8260D_LL	71-43-2	Water	Benzene	Total	5	NC	5	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8270D_SIM	56-55-3	Water	Benzo[a]anthracene	Total	0.03	NC	0.1	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	50-32-8	Water	Benzo[a]pyrene	Total	0.2	NC	0.2	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	205-99-2	Water	Benzo[b]fluoranthene	Total	0.25	NC	0.2	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	191-24-2	Water	Benzo[g,h,i]perylene	Total	NC	NC	NC	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	207-08-9	Water	Benzo[k]fluoranthene	Total	2.5	NC	0.2	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
6020B	7440-41-7	Water	Beryllium	Dissolved	4	NC	4	<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L	
8260D_LL	75-27-4	Water	Bromodichloromethane	Total	80	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	75-25-2	Water	Bromoform	Total	80	NC	NC	<0.30	ug/L		<0.30	ug/L		<0.30	ug/L		<0.30	ug/L		<0.30	ug/L		<0.30	ug/L		<0.30	ug/L		<0.30	ug/L	
8260D_LL	74-83-9	Water	Bromomethane	Total	0.75	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-43-9	Water	Cadmium	Dissolved	5	1.8	5	<0.15	ug/L		<0.15	ug/L		<0.15	ug/L		<0.15	ug/L		<0.15	ug/L		<0.15	ug/L		<0.15	ug/L		<0.15	ug/L	
6020B	7440-70-2	Water	Calcium	Dissolved	NC	NC	NC	**23000**	ug/L		**23000**	ug/L		**23000**	ug/L		**23000**	ug/L		**23000**	ug/L		**22000**	ug/L		**22000**	ug/L		**23000**	ug/L	
8260D_LL	75-15-0	Water	Carbon disulfide	Total	81	NC	NC	<0.10	ug/L		**0.20**	ug/L	J	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	56-23-5	Water	Carbon tetrachloride	Total	5	NC	5	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	108-90-7	Water	Chlorobenzene	Total	100	NC	100	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	75-00-3	Water	Chloroethane	Total	2100	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	67-66-3	Water	Chloroform	Total	80	NC	NC	<0.090	ug/L		<0.090	ug/L		<0.090	ug/L		<0.090	ug/L		<0.090	ug/L		<0.090	ug/L		<0.090	ug/L		<0.090	ug/L	
8260D_LL	74-87-3	Water	Chloromethane	Total	19	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-47-3	Water	Chromium	Dissolved	100	16	100	<0.55	ug/L		<0.55	ug/L		<0.55	ug/L		<0.55	ug/L		<0.55	ug/L		<0.55	ug/L		<0.55	ug/L		<0.55	ug/L	
8270D_SIM	218-01-9	Water	Chrysene	Total	25	NC	0.2	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8260D_LL	156-59-2	Water	cis-1,2-Dichloroethene	Total	70	NC	70	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	10061-01-5	Water	cis-1,3-Dichloropropene	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-48-4	Water	Cobalt	Dissolved	NC	NC	NC	<0.16	ug/L		<0.16	ug/L		**0.23**	ug/L	J	<0.16	ug/L		<0.16	ug/L		**0.18**	ug/L	J	<0.16	ug/L		<0.16	ug/L	
6020B	7440-50-8	Water	Copper	Dissolved	1300	13	1300	**2.6**	ug/L		**2.6**	ug/L		**2.5**	ug/L		**2.9**	ug/L		**2.9**	ug/L		**2.6**	ug/L		**2.5**	ug/L		**2.5**	ug/L	
9040C	N/A	Water	Corrosivity	Total	NC	NC	NC	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF
1677_Free	N/A	Water	Cyanide, Free	Total	0.2	0.022	0.2	<0.0050	mg/L		**0.0060**	mg/L		**0.0055**	mg/L	J	<0.0050	mg/L		<0.0050	mg/L		<0.0050	mg/L		**0.0060**	mg/L		<0.0050	mg/L	
8260D_LL	110-82-7	Water	Cyclohexane	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8270D_SIM	53-70-3	Water	Dibenz(a,h)anthracene	Total	0.025	NC	0.3	<0.020	ug/L		<0.020	ug/L		<0.020	ug/L		<0.021	ug/L		<0.020	ug/L		<0.020	ug/L		<0.020	ug/L		<0.020	ug/L	
8260D_LL	124-48-1	Water	Dibromochloromethane	Total	80	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	75-71-8	Water	Dichlorodifluoromethane	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8015D_DRO	N/A	Water	DRO (C10-C28)	Total	47	NC	NC	<47	ug/L		<46	ug/L		<46	ug/L		<46	ug/L		<45	ug/L		<46	ug/L		<45	ug/L		<46	ug/L	
8260D_LL	100-41-4	Water	Ethylbenzene	Total	700	NC	700	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8011	106-93-4	Water	Ethylene Dibromide (1,2-dibromomethane)	Total	0.05	NC	0.05	<0.0095	ug/L		<0.0096	ug/L		<0.0096	ug/L		<0.0096	ug/L		<0.0095	ug/L		<0.0097	ug/L		<0.0095	ug/L		<0.0096	ug/L	
8270D_SIM	206-44-0	Water	Fluoranthene	Total	80	NC	NC	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	86-73-7	Water	Fluorene	Total	29	NC	NC	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
300_ORGFM_28D	16984-48-8	Water	Fluoride	Total	NC	NC	4	**1.1**	mg/L		**1.1**	mg/L		**0.98**	mg/L		**1.0**	mg/L		**1.0**	mg/L		**1.0**	mg/L		**1.0**	mg/L		**0.98**	mg/L	
8260D_LL	76-13-1	Water	Freon 113	Total	NC	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8015D_GRO	N/A	Water	GRO	Total	47	NC	NC	<23	ug/L		<23	ug/L		<23	ug/L		<23	ug/L		<23	ug/L		<23	ug/L		<23	ug/L		<23	ug/L	
8270D_SIM	193-39-5	Water	Indeno[1,2,3-cd]pyrene	Total	0.25	NC	0.4	<0.020	ug/L		<0.020	ug/L		<0.020	ug/L		<0.021	ug/L		<0.020	ug/L		<0.020	ug/L		<0.020	ug/L		<0.020	ug/L	
6020B	7439-89-6	Water	Iron	Dissolved	1400	NC	NC	**36**	ug/L	J	**38**	ug/L	J	**32**	ug/L	J	**35**	ug/L	J	**36**	ug/L	J	**62**	ug/L		**38**	ug/L	J	**38**	ug/L	J
8260D_LL	98-82-8	Water	Isopropylbenzene	Total	45	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
6020B	7439-92-1	Water	Lead	Dissolved	15	65	15	<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L	
6020B	7439-95-4	Water	Magnesium	Dissolved	NC	NC	NC	**2400**	ug/L		**2500**	ug/L		**2400**	ug/L		**2500**	ug/L		**2400**	ug/L		**2300**	ug/L		**2300**	ug/L		**2400**	ug/L	
6020B	7439-96-5	Water	Manganese	Dissolved	43	NC	NC	**3.3**	ug/L		**1.4**	ug/L	J	**4.3**	ug/L		**1.3**	ug/L	J	**6.9**	ug/L		**29**	ug/L		**2.9**	ug/L		**2.1**	ug/L	
7470A	7439-97-6	Water	Mercury	Dissolved	2	1.4	2	<0.079	ug/L		**0.088**	ug/L	J	**0.085**	ug/L	J	<0.079	ug/L		<0.079	ug/L		<0.079	ug/L		**0.089**	ug/L	J	<0.079	ug/L	
8260D_LL	79-20-9	Water	Methyl acetate	Total	NC	NC	NC	<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L	
8260D_LL	1634-04-4	Water	Methyl tertiary butyl ether	Total	20	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	108-87-2	Water	Methylcyclohexane	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	75-09-2	Water	Methylene Chloride	Total	5	NC	5	<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L	
8270D_SIM	91-20-3	Water	Naphthalene	Total	0.17	NC	NC	<0.031	ug/L		<0.030	ug/L		<0.030	ug/L		<0.031	ug/L		<0.030	ug/L		<0.030	ug/L		<0.030	ug/L		<0.030	ug/L	
6020B	7440-02-0	Water	Nickel	Dissolved	39	470	NC	**0.54**	ug/L	J	**0.43**	ug/L	J	**0.47**	ug/L	J	<0.40	ug/L		**0.44**	ug/L	J	**0.52**	ug/L	J	**0.42**	ug/L	J	<0.40	ug/L	
8082A_LL	12674-11-2	Water	PCB-1016	Total	0.14	0.014*	0.5**	<0.0077	ug/L		<0.0092	ug/L		<0.0090	ug/L		<0.0086	ug/L		<0.0087	ug/L		<0.0087	ug/L		<0.0086	ug/L		<0.0090	ug/L	
8082A_LL	11104-28-2	Water	PCB-1221	Total	0.0047	0.014*	0.5**	<0.0077	ug/L		<0.0092	ug/L		<0.0090	ug/L		<0.0086	ug/L		<0.0087	ug/L		<0.0087	ug/L		<0.0086	ug/L		<0.0090	ug/L	
8082A_LL	11141-16-5	Water	PCB-1232	Total	0.0047	0.014*	0.5**	<0.0077	ug/L		<0.0092	ug/L		<0.0090	ug/L		<0.0086	ug/L		<0.0087	ug/L		<0.0087	ug/L		<0.0086	ug/L		<0.0090	ug/L	
8082A_LL	53469-21-9	Water	PCB-1242	Total	0.0078	0.014*	0.5**	<0.0077	ug/L		<0.0092	ug/L		<0.0090	ug/L		<0.0086	ug/L		<0.0087	ug/L		<0.0087	ug/L		<0.0086	ug/L		<0.0090	ug/L	
8082A_LL	12672-29-6	Water	PCB-1248	Total	0.0078	0.014*	0.5**	<0.0077	ug/L		<0.0092	ug/L		<0.0090	ug/L		<0.0086	ug/L		<0.0087	ug/L		<0.0087	ug/L		<0.0086	ug/L		<0.0090	ug/L	
8082A_LL	11097-69-1	Water	PCB-1254	Total	0.0078	0.014*	0.5**	<0.0048	ug/L		<0.0058	ug/L		<0.0056	ug/L		<0.0054	ug/L		<0.0054	ug/L		<0.0054	ug/L		<0.0054	ug/L		<0.0056	ug/L	

Appendix B6.1
Basin DA-11 Water Sample Results. June 4, 2024

8082A_LL	11096-82-5	Water	PCB-1260	Total	0.0078	0.014*	0.5**	<0.0048	ug/L		<0.0058	ug/L		<0.0056	ug/L		<0.0054	ug/L		<0.0054	ug/L		<0.0054	ug/L		<0.0054	ug/L		<0.0056	ug/L	
9040C	N/A	Water	pH	Total	NC	6.5-8.5	NC	**7.2**	S.U.	HF	**7.1**	S.U.	HF	**7.2**	S.U.	HF	**7.2**	S.U.	HF	**7.2**	S.U.	HF	**7.1**	S.U.	HF	**7.0**	S.U.	HF	**7.1**	S.U.	HF
8270D_SIM	85-01-8	Water	Phenanthrene	Total	12	NC	NC	<0.031	ug/L		<0.030	ug/L		<0.030	ug/L		<0.031	ug/L		<0.030	ug/L		<0.030	ug/L		<0.030	ug/L		<0.030	ug/L	
6020B	7440-09-7	Water	Potassium	Dissolved	NC	NC	NC	**2100**	ug/L		**2100**	ug/L		**2100**	ug/L		**2100**	ug/L		**2100**	ug/L		**2000**	ug/L		**2000**	ug/L		**2000**	ug/L	
8270D_SIM	129-00-0	Water	Pyrene	Total	12	NC	NC	<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
6020B	7782-49-2	Water	Selenium	Dissolved	50	NC	50	<0.28	ug/L		<0.28	ug/L		<0.28	ug/L		<0.28	ug/L		<0.28	ug/L		<0.28	ug/L		<0.28	ug/L		<0.28	ug/L	
6020B	7440-22-4	Water	Silver	Dissolved	9.4	3.2	9.4	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-23-5	Water	Sodium	Dissolved	NC	NC	NC	**3500**	ug/L		**3800**	ug/L		**3700**	ug/L		**3800**	ug/L		**3900**	ug/L		**3600**	ug/L		**3700**	ug/L		**3700**	ug/L	
8260D_LL	100-42-5	Water	Styrene	Total	100	NC	NC	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
9040C	N/A	Water	Temperature	Total	NC	NC	NC	**20.1**	Degrees C	HF	**20.1**	Degrees C	HF	**20.2**	Degrees C	HF	**20.2**	Degrees C	HF	**20.1**	Degrees C	HF	**20.0**	Degrees C	HF	**20.0**	Degrees C	HF	**20.0**	Degrees C	HF
8260D_LL	127-18-4	Water	Tetrachloroethene	Total	5	NC	5	<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L	
6020B	7440-28-0	Water	Thallium	Dissolved	2	NC	2	<0.13	ug/L		<0.13	ug/L		**0.20**	ug/L	J	<0.13	ug/L		<0.13	ug/L		<0.13	ug/L		<0.13	ug/L		<0.13	ug/L	
8260D_LL	108-88-3	Water	Toluene	Total	1000	NC	1000	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	156-60-5	Water	trans-1,2-Dichloroethene	Total	100	NC	100	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	10061-02-6	Water	trans-1,3-Dichloropropene	Total	NC	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	79-01-6	Water	Trichloroethene	Total	5	NC	5	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	75-69-4	Water	Trichlorofluoromethane	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-62-2	Water	Vanadium	Dissolved	8.6	NC	NC	<0.79	ug/L		<0.79	ug/L		<0.79	ug/L		<0.79	ug/L		<0.79	ug/L		<0.79	ug/L		<0.79	ug/L		<0.79	ug/L	
8260D_LL	75-01-4	Water	Vinyl chloride	Total	2	NC	3	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	1330-20-7	Water	Xylenes, Total	Total	10000	NC	2	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
6020B	7440-66-6	Water	Zinc	Dissolved	600	120	NC	<4.0	ug/L		<4.0	ug/L		<4.0	ug/L		<4.0	ug/L		<4.0	ug/L		<4.0	ug/L		<4.0	ug/L		<4.0	ug/L	

*0.014 ug/L is the aquatic life - chronic criteria for Total PCBs
**0.5 ug/L is the drinking water MCL for Total PCBs.
Results first compared to MCLs, then AWQCFA and MD LRP Cleanup Criteria if MCLs are not available.
Per the soil management plan, free cyanide would also be compared to the chronic AWQ criteria of 0.0052 mg/L, if discharging directly to surface water.
This table presents combined standards as specified by both MDE LMA and WSA. For LMA, results are compared to MCL and where there is no MCL to GWCS. For WSA, results are compared to lower of MCL and acute FW
Bold values indicate the analyte was detected
Qualifier Definitions
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
HF - Parameter with a holding time of 15 minutes. Test performed by the laboratory at client's request. Sample was analyzed outside of hold time.
*1 - LCS/LCSD RPD Exceeds Control Limits

Appendix B6.2
Basin DA-2 Water Sample Results. June 5, 2024

Client Name: Tetra Tech Inc - Germantown Lab: Eurofins Lancaster																										
Specific Method	CAS#	Matrix	Analyte	Results Basis	MD LRP Cleanup Stds_Tbl 1_GWs Aquifers_Oct2018	AWQCFA	MCL	410-174614-2 QL-DA2-SW1-1-060524			410-174614-3 QL-DA2-SW1-3-060524			410-174614-4 QL-DA2-SW2-1-060524			410-174614-5 QL-DA2-SW2-4-060524			410-174614-6 QL-DA2-SW3-1-060524			410-174614-7 QL-DA2-SW3-3-060524		
								Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier	Result	Units	Qualifier
8260D_LL	71-55-6	Water	1,1,1-Trichloroethane	Total	200	NC	200	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	79-34-5	Water	1,1,2,2-Tetrachloroethane	Total	0.076	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	79-00-5	Water	1,1,2-Trichloroethane	Total	5	NC	5	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	75-34-3	Water	1,1-Dichloroethane	Total	2.8	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	75-35-4	Water	1,1-Dichloroethene	Total	7	NC	7	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	120-82-1	Water	1,2,4-Trichlorobenzene	Total	70	NC	NC	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	96-12-8	Water	1,2-Dibromo-3-Chloropropane	Total	0.2	NC	0.2	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	95-50-1	Water	1,2-Dichlorobenzene	Total	600	NC	600	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	107-06-2	Water	1,2-Dichloroethane	Total	5	NC	5	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	78-87-5	Water	1,2-Dichloropropane	Total	5	NC	5	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	541-73-1	Water	1,3-Dichlorobenzene	Total	NC	NC	NC	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	106-46-7	Water	1,4-Dichlorobenzene	Total	75	NC	75	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	78-93-3	Water	2-Butanone	Total	560	NC	NC	<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L	
8260D_LL	591-78-6	Water	2-Hexanone	Total	NC	NC	NC	<2.0	ug/L		<2.0	ug/L		<2.0	ug/L		<2.0	ug/L		<2.0	ug/L		<2.0	ug/L	
8260D_LL	108-10-1	Water	4-Methyl-2-pentanone	Total	630	NC	NC	<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L		<1.0	ug/L	
8270D_SIM	83-32-9	Water	Acenaphthene	Total	53	NC	NC	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	208-96-8	Water	Acenaphthylene	Total	NC	NC	NC	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8260D_LL	67-64-1	Water	Acetone	Total	1400	NC	NC	<1.5	ug/L		**2.5**	ug/L	J	<1.5	ug/L		<1.5	ug/L		<1.5	ug/L		<1.5	ug/L	
6020B	7429-90-5	Water	Aluminum	Dissolved	2000	1100	NC	<12	ug/L		<12	ug/L		<12	ug/L		<12	ug/L		<12	ug/L		<12	ug/L	
8270D_SIM	120-12-7	Water	Anthracene	Total	180	NC	NC	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
6020B	7440-36-0	Water	Antimony	Dissolved	6	NC	6	<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		**0.33**	ug/L	J
6020B	7440-38-2	Water	Arsenic	Dissolved	10	340	6	**0.72**	ug/L	J	**0.85**	ug/L	J	**0.95**	ug/L	J	**0.78**	ug/L	J	**0.76**	ug/L	J	**1.9**	ug/L	J
6020B	7440-39-3	Water	Barium	Dissolved	2000	NC	2000	**22**	ug/L		**23**	ug/L		**23**	ug/L		**23**	ug/L		**23**	ug/L		**24**	ug/L	
8260D_LL	71-43-2	Water	Benzene	Total	5	NC	5	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8270D_SIM	56-55-3	Water	Benzo[a]anthracene	Total	0.03	NC	0.1	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	50-32-8	Water	Benzo[a]pyrene	Total	0.2	NC	0.2	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	205-99-2	Water	Benzo[b]fluoranthene	Total	0.25	NC	0.2	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	191-24-2	Water	Benzo[g,h,i]perylene	Total	NC	NC	NC	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	207-08-9	Water	Benzo[k]fluoranthene	Total	2.5	NC	0.2	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
6020B	7440-41-7	Water	Beryllium	Dissolved	4	NC	4	<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L	
8260D_LL	75-27-4	Water	Bromodichloromethane	Total	80	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	75-25-2	Water	Bromoform	Total	80	NC	NC	<0.30	ug/L		<0.30	ug/L		<0.30	ug/L		<0.30	ug/L		<0.30	ug/L		<0.30	ug/L	
8260D_LL	74-83-9	Water	Bromomethane	Total	0.75	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-43-9	Water	Cadmium	Dissolved	5	1.8	5	<0.15	ug/L		<0.15	ug/L		<0.15	ug/L		<0.15	ug/L		<0.15	ug/L		<0.15	ug/L	
6020B	7440-70-2	Water	Calcium	Dissolved	NC	NC	NC	**35000**	ug/L		**36000**	ug/L		**35000**	ug/L		**36000**	ug/L		**36000**	ug/L		**35000**	ug/L	
8260D_LL	75-15-0	Water	Carbon disulfide	Total	81	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	56-23-5	Water	Carbon tetrachloride	Total	5	NC	5	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	108-90-7	Water	Chlorobenzene	Total	100	NC	100	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
8260D_LL	75-00-3	Water	Chloroethane	Total	2100	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	67-66-3	Water	Chloroform	Total	80	NC	NC	<0.090	ug/L		<0.090	ug/L		<0.090	ug/L		<0.090	ug/L		<0.090	ug/L		<0.090	ug/L	
8260D_LL	74-87-3	Water	Chloromethane	Total	19	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-47-3	Water	Chromium	Dissolved	100	16	100	<0.55	ug/L		<0.55	ug/L		<0.55	ug/L		<0.55	ug/L		<0.55	ug/L		<0.55	ug/L	
8270D_SIM	218-01-9	Water	Chrysene	Total	25	NC	0.2	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8260D_LL	156-59-2	Water	cis-1,2-Dichloroethene	Total	70	NC	70	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	10061-01-5	Water	cis-1,3-Dichloropropene	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-48-4	Water	Cobalt	Dissolved	NC	NC	NC	<0.16	ug/L		<0.16	ug/L		<0.16	ug/L		<0.16	ug/L		<0.16	ug/L		**0.16**	ug/L	J
6020B	7440-50-8	Water	Copper	Dissolved	1300	13	1300	**2.7**	ug/L		**1.1**	ug/L		**2.4**	ug/L		**2.9**	ug/L		**2.7**	ug/L		**2.8**	ug/L	
9040C	N/A	Water	Corrosivity	Total	NC	NC	NC	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF	**no**	NONE	HF
1677_Free	N/A	Water	Cyanide, Free	Total	0.2	0.022	0.2	<0.0050	mg/L	F1 F2	<0.0050	mg/L		<0.0050	mg/L		<0.0050	mg/L		<0.0050	mg/L		<0.0050	mg/L	
8260D_LL	110-82-7	Water	Cyclohexane	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8270D_SIM	53-70-3	Water	Dibenz(a,h)anthracene	Total	0.025	NC	0.3	<0.020	ug/L		<0.021	ug/L		<0.020	ug/L		<0.020	ug/L		<0.020	ug/L		<0.020	ug/L	
8260D_LL	124-48-1	Water	Dibromochloromethane	Total	80	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	75-71-8	Water	Dichlorodifluoromethane	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8015D_DRO	N/A	Water	**DRO (C10-C28)**	Total	**47**	NC	NC	<46	ug/L		<47	ug/L		<46	ug/L		<45	ug/L		<47	ug/L		**54**	ug/L	J
8260D_LL	100-41-4	Water	Ethylbenzene	Total	700	NC	700	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8011	106-93-4	Water	Ethylene Dibromide (1,2-dibromomethane)	Total	0.05	NC	0.5	<0.0095	ug/L		<0.0093	ug/L		<0.0094	ug/L		<0.0094	ug/L		<0.0094	ug/L		<0.0094	ug/L	
8270D_SIM	206-44-0	Water	Fluoranthene	Total	80	NC	NC	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
8270D_SIM	86-73-7	Water	Fluorene	Total	29	NC	NC	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
300_ORGFM_28D	16984-48-8	Water	Fluoride	Total	NC	NC	4	**0.73**	mg/L		**0.73**	mg/L		**0.67**	mg/L		**0.66**	mg/L		**0.66**	mg/L		**0.77**	mg/L	
8260D_LL	76-13-1	Water	Freon 113	Total	NC	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8015D_GRO	N/A	Water	GRO	Total	47	NC	NC	<23	ug/L		<23	ug/L		<23	ug/L		<23	ug/L		<23	ug/L		<23	ug/L	
8270D_SIM	193-39-5	Water	Indeno[1,2,3-cd]pyrene	Total	0.25	NC	0.4	<0.020	ug/L		<0.021	ug/L		<0.020	ug/L		<0.020	ug/L		<0.020	ug/L		<0.020	ug/L	
6020B	7439-89-6	Water	Iron	Dissolved	1400	NC	NC	**24**	ug/L	J	<20	ug/L		**28**	ug/L	J	**32**	ug/L	J	**34**	ug/L	J	**46**	ug/L	J
8260D_LL	98-82-8	Water	Isopropylbenzene	Total	45	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
6020B	7439-92-1	Water	Lead	Dissolved	15	65	15	<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L		<0.12	ug/L	
6020B	7439-95-4	Water	Magnesium	Dissolved	NC	NC	NC	**6900**	ug/L		**7100**	ug/L		**6900**	ug/L		**6900**	ug/L		**6900**	ug/L		**6900**	ug/L	
6020B	7439-96-5	Water	Manganese	Dissolved	43	NC	NC	**3.6**	ug/L		**6.2**	ug/L		**5.5**	ug/L		**7.7**	ug/L		**19**	ug/L		**35**	ug/L	
7470A	7439-97-6	Water	Mercury	Dissolved	2	1.4	2	<0.079	ug/L		<0.079	ug/L		<0.079	ug/L		<0.079	ug/L		<0.079	ug/L		<0.079	ug/L	
8260D_LL	79-20-9	Water	Methyl acetate	Total	NC	NC	NC	<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L	
8260D_LL	1634-04-4	Water	Methyl tertiary butyl ether	Total	20	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	

Appendix B6.2

Basin DA-2 Water Sample Results. June 5, 2024

8260D_LL	108-87-2	Water	Methylcyclohexane	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	75-09-2	Water	Methylene Chloride	Total	5	NC	5	<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L	
8270D_SIM	91-20-3	Water	Naphthalene	Total	0.17	NC	NC	<0.030	ug/L		<0.032	ug/L		<0.030	ug/L		<0.031	ug/L		<0.030	ug/L		<0.030	ug/L	
6020B	7440-02-0	Water	Nickel	Dissolved	39	470	NC	**0.48**	ug/L	J	<0.40	ug/L		<0.40	ug/L		<0.40	ug/L		**0.44**	ug/L	J	**0.60**	ug/L	J
8082A_LL	12674-11-2	Water	PCB-1016	Total	0.14	0.014*	0.5**	<0.011	ug/L		<0.0091	ug/L		<0.0089	ug/L		<0.0096	ug/L		<0.0091	ug/L		<0.0093	ug/L	
8082A_LL	11104-28-2	Water	PCB-1221	Total	0.0047	0.014*	0.5**	<0.011	ug/L		<0.0091	ug/L		<0.0089	ug/L		<0.0096	ug/L		<0.0091	ug/L		<0.0093	ug/L	
8082A_LL	11141-16-5	Water	PCB-1232	Total	0.0047	0.014*	0.5**	<0.011	ug/L		<0.0091	ug/L		<0.0089	ug/L		<0.0096	ug/L		<0.0091	ug/L		<0.0093	ug/L	
8082A_LL	53469-21-9	Water	PCB-1242	Total	0.0078	0.014*	0.5**	<0.011	ug/L		<0.0091	ug/L		<0.0089	ug/L		<0.0096	ug/L		<0.0091	ug/L		<0.0093	ug/L	
8082A_LL	12672-29-6	Water	PCB-1248	Total	0.0078	0.014*	0.5**	<0.011	ug/L		<0.0091	ug/L		<0.0089	ug/L		<0.0096	ug/L		<0.0091	ug/L		<0.0093	ug/L	
8082A_LL	11097-69-1	Water	PCB-1254	Total	0.0078	0.014*	0.5**	<0.0070	ug/L		<0.0057	ug/L		<0.0056	ug/L		<0.0060	ug/L		<0.0057	ug/L		<0.0058	ug/L	
8082A_LL	11096-82-5	Water	PCB-1260	Total	0.0078	0.014*	0.5**	<0.0070	ug/L		**0.014**	ug/L		<0.0056	ug/L		<0.0060	ug/L		<0.0057	ug/L		<0.0058	ug/L	
9040C	N/A	Water	pH	Total	NC	6.5-8.5	NC	**7.0**	S.U.	HF	**7.1**	S.U.	HF	**7.4**	S.U.	HF	**7.3**	S.U.	HF	**7.3**	S.U.	HF	**7.2**	S.U.	HF
8270D_SIM	85-01-8	Water	Phenanthrene	Total	12	NC	NC	<0.030	ug/L		<0.032	ug/L		<0.030	ug/L		<0.031	ug/L		<0.030	ug/L		<0.030	ug/L	
6020B	7440-09-7	Water	Potassium	Dissolved	NC	NC	NC	**2300**	ug/L		**2300**	ug/L		**2400**	ug/L		**2400**	ug/L		**2400**	ug/L		**2500**	ug/L	
8270D_SIM	129-00-0	Water	Pyrene	Total	12	NC	NC	<0.010	ug/L		<0.011	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L		<0.010	ug/L	
6020B	7782-49-2	Water	Selenium	Dissolved	50	NC	50	<0.28	ug/L		<0.28	ug/L		<0.28	ug/L		<0.28	ug/L		<0.28	ug/L		<0.28	ug/L	
6020B	7440-22-4	Water	Silver	Dissolved	9.4	3.2	9.4	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		**0.11**	ug/L	J	**0.14**	ug/L	J	<0.10	ug/L	
6020B	7440-23-5	Water	Sodium	Dissolved	NC	NC	NC	**9900**	ug/L		**9900**	ug/L		**9900**	ug/L		**9900**	ug/L		**10000**	ug/L		**9900**	ug/L	
8260D_LL	100-42-5	Water	Styrene	Total	100	NC	NC	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
9040C	N/A	Water	Temperature	Total	NC	NC	NC	**20.3**	Degrees C	HF	**20.2**	Degrees C	HF	**20.2**	Degrees C	HF	**20.4**	Degrees C	HF	**20.3**	Degrees C	HF	**20.3**	Degrees C	HF
8260D_LL	127-18-4	Water	Tetrachloroethene	Total	5	NC	5	<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L		<0.20	ug/L	
6020B	7440-28-0	Water	Thallium	Dissolved	2	NC	2	<0.13	ug/L		<0.13	ug/L		<0.13	ug/L		<0.13	ug/L		<0.13	ug/L		<0.13	ug/L	
8260D_LL	108-88-3	Water	Toluene	Total	1000	NC	1000	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		**0.36**	ug/L	J
8260D_LL	156-60-5	Water	trans-1,2-Dichloroethene	Total	100	NC	100	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	10061-02-6	Water	trans-1,3-Dichloropropene	Total	NC	NC	NC	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	79-01-6	Water	Trichloroethene	Total	5	NC	5	<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L		<0.080	ug/L	
8260D_LL	75-69-4	Water	Trichlorofluoromethane	Total	NC	NC	NC	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
6020B	7440-62-2	Water	Vanadium	Dissolved	8.6	NC	NC	<0.79	ug/L		<0.79	ug/L		<0.79	ug/L		<0.79	ug/L		<0.79	ug/L		<0.79	ug/L	
8260D_LL	75-01-4	Water	Vinyl chloride	Total	2	NC	2	<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L		<0.10	ug/L	
8260D_LL	1330-20-7	Water	Xylenes, Total	Total	10000	NC	10000	<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L		<0.070	ug/L	
6020B	7440-66-6	Water	Zinc	Dissolved	600	120	600	<4.0	ug/L		<4.0	ug/L		<4.0	ug/L		<4.0	ug/L		<4.0	ug/L		<4.0	ug/L	

*0.014 ug/L is the aquatic life - chronic criteria for Total PCBs

**0.5 ug/L is the drinking water MCL for Total PCBs.

Results first compared to MCLs, then AWQCFA and MD LRP Cleanup Criteria if MCLs are not available.

Per the soil management plan, free cyanide would also be compared to the chronic AWQ criteria of 0.0052 mg/L, if discharging directly to surface water.

This table presents combined standards as specified by both MDE LMA and WSA. For LMA, results are compared to MCL and where there is no MCL to GWCS. For WSA, results are compared to lower of MCL and acute FW.

Bold values indicate the analyte was detected

Qualifier Definitions

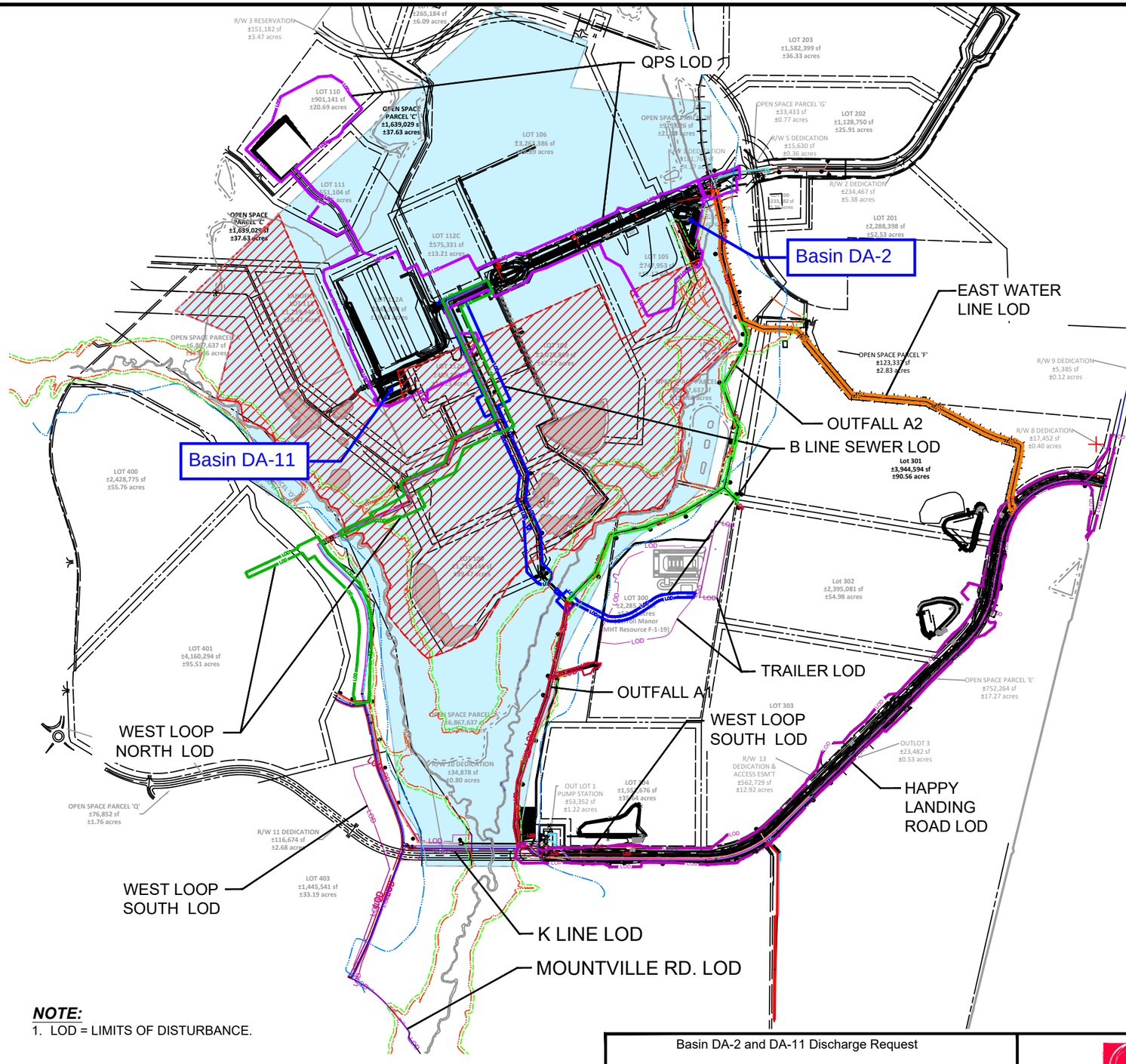
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

HF - Parameter with a holding time of 15 minutes. Test performed by the laboratory at client's request. Sample was analyzed outside of hold time.

*1 - LCS/LCSD RPD Exceeds Control Limits

Figures

1. **Site Plan**
2. **Proposed Groundwater Discharge Areas**
3. **Proposed DA-2 Sample Location Plan**
4. **Proposed DA-11 Sample Location Plan**



LEGEND:

- SOIL MANAGEMENT AREA (SMA) BOUNDARY
- ENVIRONMENTAL COVENANT (EC) BOUNDARY
- WEST LOOP NORTH LIMITS OF DISTURBANCE (LOD)
- QUANTUM PLACE SOUTH LIMITS OF DISTURBANCE (LOD)
- EAST WATER LINE LIMITS OF DISTURBANCE (LOD)
- SEWER LINE B LIMITS OF DISTURBANCE (LOD)
- WEST LOOP LIMITS OF DISTURBANCE (LOD)
- 100 YEAR FEMA FLOODPLAIN BRL LINE
- 100 YEAR FEMA FLOODPLAIN LINE - PRELIMINARY
- 100 YEAR FEMA FLOODPLAIN LINE
- SEWER LINE A1 LIMITS OF DISTURBANCE
- SEWER LINE A2 LIMITS OF DISTURBANCE
- HAPPY LANDING ROAD LOD

NOTE:

1. LOD = LIMITS OF DISTURBANCE.

Basin DA-2 and DA-11 Discharge Request

Quantum Loophole
Frederick, MD

Quantum Maryland
Austin, TX

GEI Consultants

SITE PLAN

Project 2302756 | August 2024 | Fig. 1

Discharge Area 1
Pump to Lot 112A and 112C
0.08 feet of depth (1 Inch/application)
Stay 50 feet south of paved road.
23.4 acres
Approx. 610,000 gallons per application
1 application/week or as conditions allow
Berm at south end of substation pad and Clean Energy Lane contain runoff. Asa contingency any excess water would drain back to DA-11 and not to surface water.

Discharge Area 3
Pump to Lot 102
Under the Project Access Road
.5 to 1 feet of depth at western berm (avg. 0.25 ft)
Stay 50 feet from swale draining to site pond.
11.9 acres
Approx. 967,000 gallons per application

Discharge Area 4
West of DA-2
North of Stockpile 3
0.25 feet of depth contained by existing berms
3.4 acres
Approx. 274,000 gallons

Discharge Area 5
50 feet west of SMA Fence
West of the Railroad Spur
East of Stockpile 3
1-3 feet of depth with no outlet
1.9 acres
Approx. 1,207,000 gallons

BASIN DA-2

BASIN DA-11

Discharge Pipe Path

OUTFALL A2

B LINE SEWER LOD

TRAILER LOD

OUTFALL A1

WEST LOOP SOUTH LOD

WEST LOOP NORTH LOD

HAPPY LANDING ROAD LOD

K LINE LOD

MOUNTVILLE RD. LOD

N

0 1000 2000

SCALE, FEET

Discharge Area				
Discharge Area	Drainage Field Approx. Area (acres)	Avg. Depth of Water (ft)	Vol. (cf)	Vol. (gal)
Discharge Area 1	23.4	0.08	81,544	609,952
Discharge Area 2	Not authorized/not shown on map			
Discharge Area 3	11.9	0.25	129,245	966,754
Discharge Area 4	3.4	0.25	36,635	274,026
Discharge Area 5	1.9	2	161,330	1,206,748

Discharge areas may be shared/phased with more than one application after infiltration and may be used for either basin

LEGEND:

- SOIL MANAGEMENT AREA (SMA) BOUNDARY
- ENVIRONMENTAL COVENANT (EC) BOUNDARY
- WEST LOOP NORTH LIMITS OF DISTURBANCE (LOD)
- QUANTUM PLACE SOUTH LIMITS OF DISTURBANCE (LOD)
- EAST WATER LINE LIMITS OF DISTURBANCE (LOD)
- SEWER LINE B LIMITS OF DISTURBANCE (LOD)
- WEST LOOP LIMITS OF DISTURBANCE (LOD)
- SEWER LINE A1 LIMITS OF DISTURBANCE
- SEWER LINE A2 LIMITS OF DISTURBANCE
- HAPPY LANDING ROAD LOD

Basin Dewatering Plan

Quantum Maryland
Frederick, MD

Quantum Maryland
Frederick, MD

GEI Consultants

BASIN DEWATERING PLAN
PROPOSED GROUNDWATER DISCHARGE AREAS

Project 2302756 | September 2024 | Fig. 2

MARYLAND STATE GRID MERIDIAN (NAD83/91)

QL-DA2-SW-1
Approximately 4 feet deep.
Sample depths:
A: At surface
B: 2 foot below water surface

QL-DA2-SW-2
Approximately 6 feet deep.
Sample depths:
A: 1 foot below water surface
B: 3 feet below surface

WATER SURFACE ELEVATION = 316.21

QL-DA2-SW-3
Approximately 6 feet deep.
A: At surface
B: 1 foot above bottom of basin

Collect turbidity measurements in the field from all sampling locations

QL-DA2-SW-4
Approximately 4 feet deep.
A: 1 foot below water surface
B: 3 feet below water surface

96" CMP
INV. 312.28

AS-BUILT OF DA-2
SCALE: 1"=40'

Current Level of Water in DA-11 extents

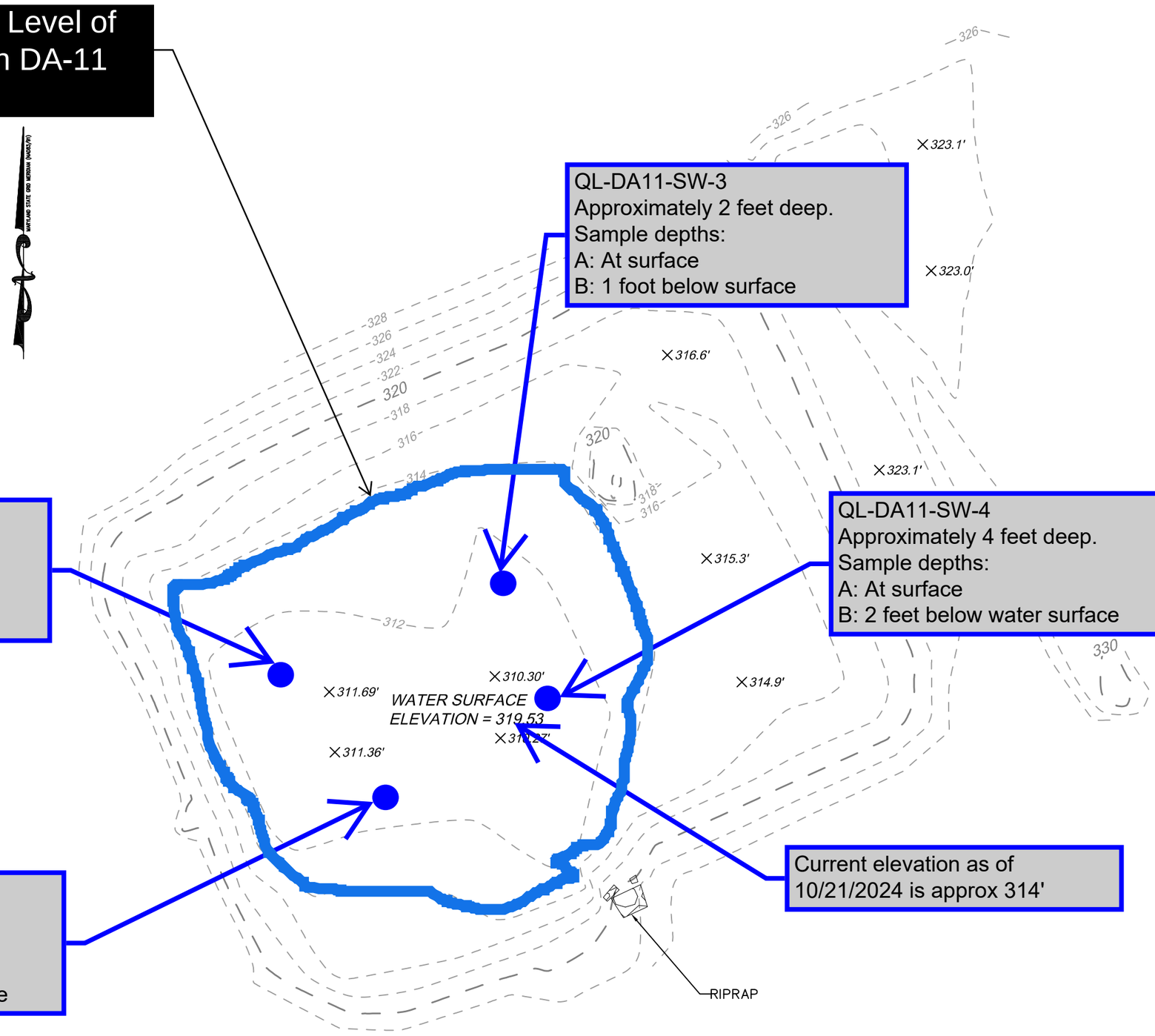
QL-DA11-SW-1
Approximately 2 feet deep.
Sample depths:
A: At surface
B: 1 foot below surface

QL-DA11-SW-2
Approximately 3 feet deep.
Sample depths:
A: At surface
B: 1 foot below water surface

QL-DA11-SW-3
Approximately 2 feet deep.
Sample depths:
A: At surface
B: 1 foot below surface

QL-DA11-SW-4
Approximately 4 feet deep.
Sample depths:
A: At surface
B: 2 feet below water surface

Current elevation as of 10/21/2024 is approx 314'



Collect turbidity measurements in the field from all sampling locations.

AS-BUILT OF DA-11
SCALE: 1"=40'

Attachment 1

Basin DA-11 Storage Capacity and Elevation Survey

Project : **Quantum Frederick**

Computed By: ACS

Date: 04/05/24

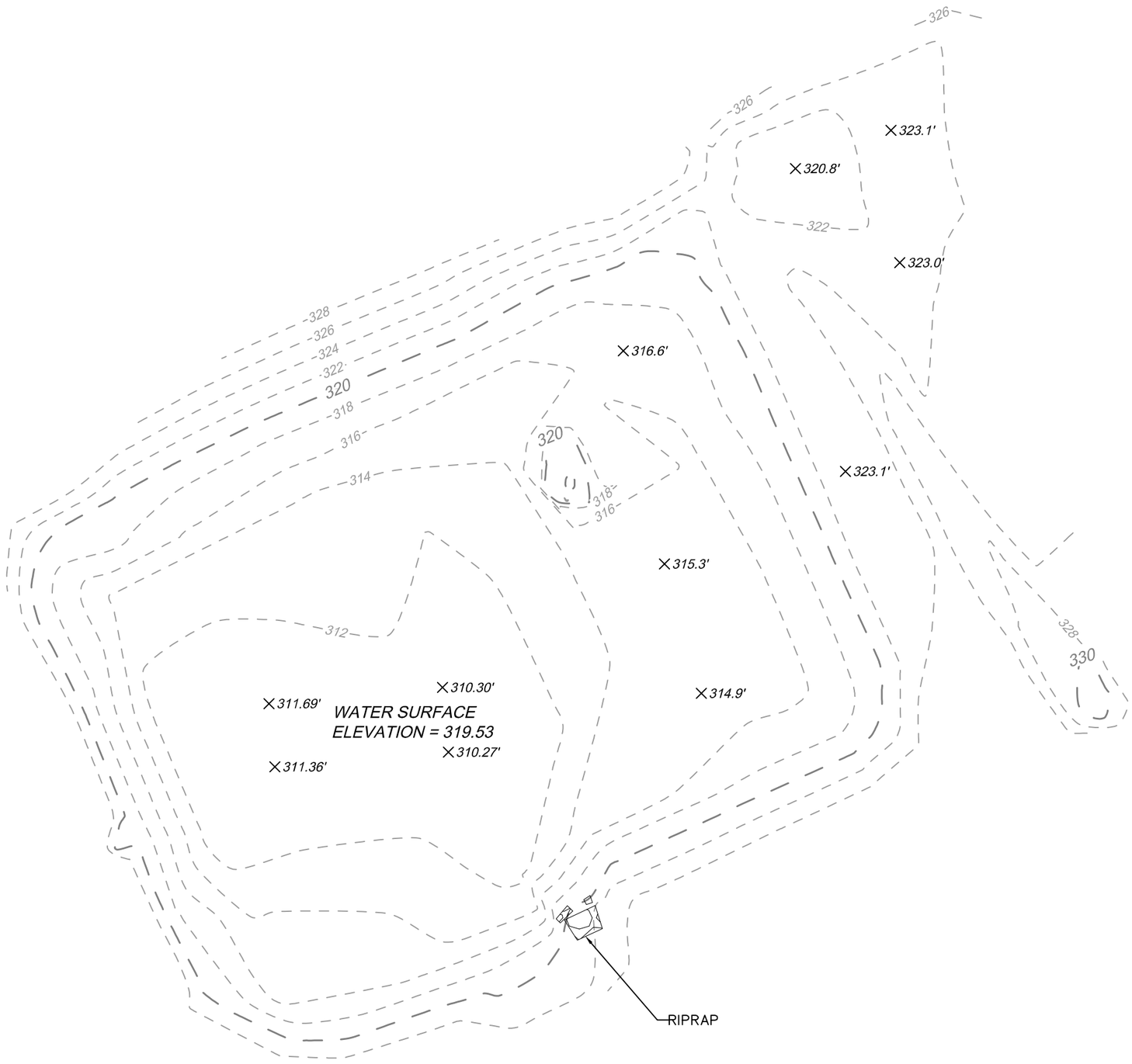
BASIN DA-11

ELEVATION - STORAGE TABLE

Basin As-Built 2/05/24

ELEV. FT.	AREA S.F.	AVG. AREA S.F.	ELEV. INTERVAL FT.	INTERVAL STORAGE C.F.	ACCUM. STORAGE C.F.
311	4,695				0
		7,702	1	7,702	
312	10,709				7,702
		12,853	1	12,853	
313	14,996				20,554
		17,658	1	17,658	
314	20,320				38,212
		23,482	1	23,482	
315	26,645				61,694
		29,537	1	29,537	
316	32,429				91,231
		35,281	1	35,281	
317	38,134				126,512
		40,071	1	40,071	
318	42,009				166,584
		44,011	1	44,011	
319	46,012				210,594
		47,478	1	47,478	
320	48,944				258,072
		50,337	1	50,337	
321	51,730				308,409
		53,130	1	53,130	
322	54,530				361,539

MARYLAND STATE GRID MERIDIAN (NAD83/91)



AS-BUILT OF DA-11
SCALE: 1"=40'

Attachment 2

Basin DA-2 Storage Capacity and Elevation Survey

Project : **Quantum Frederick**

Computed By: ACS

Date: 04/05/24

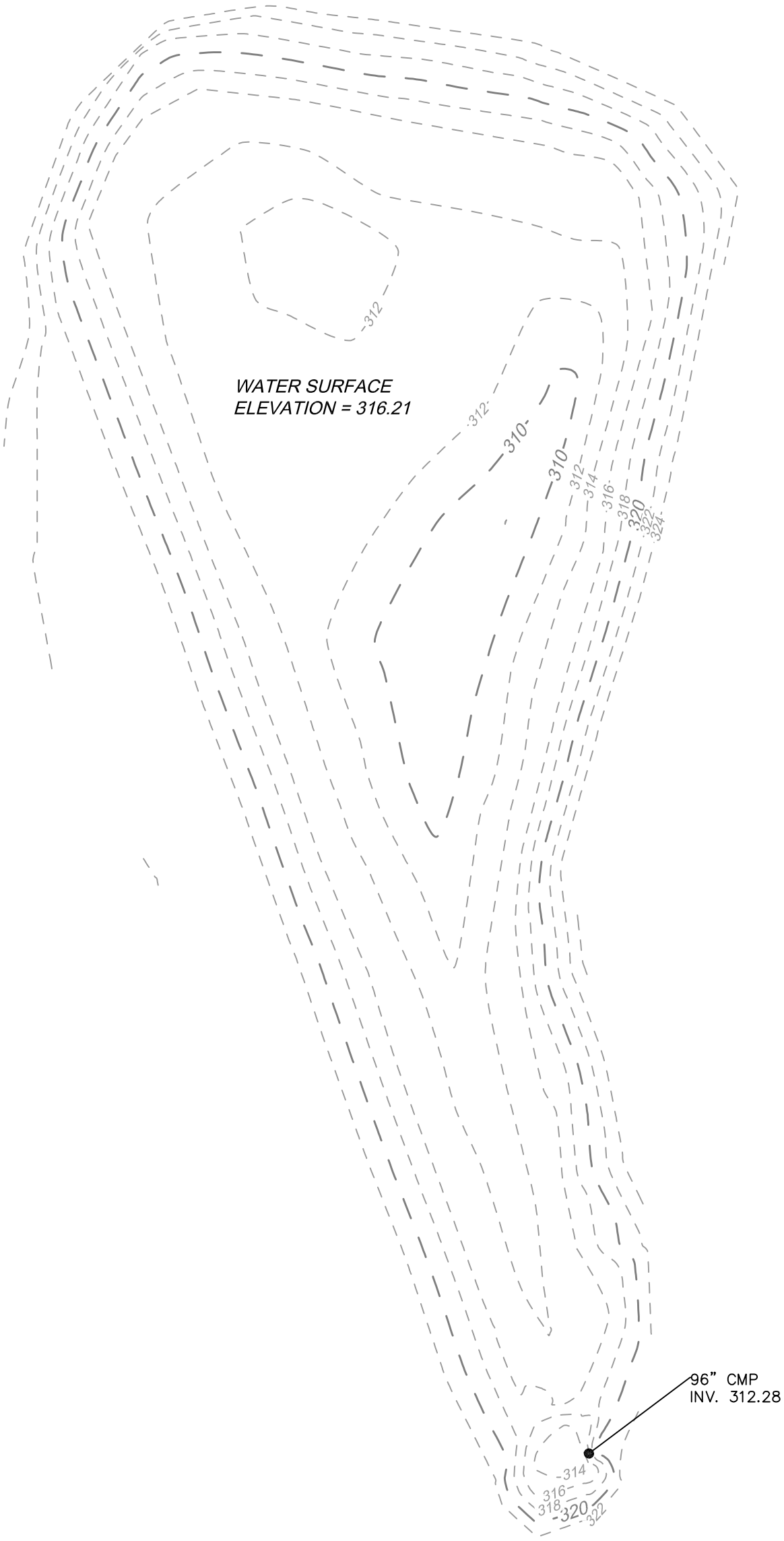
BASIN DA-2

ELEVATION - STORAGE TABLE

Basin As-Built 2/05/24

ELEV. FT.	AREA S.F.	AVG. AREA S.F.	ELEV. INTERVAL FT.	INTERVAL STORAGE C.F.	ACCUM. STORAGE C.F.
309	1,568				0
		2,434	1	2,434	
310	3,299				2,434
		4,324	1	4,324	
311	5,349				6,758
		6,579	1	6,579	
312	7,808				13,337
		12,782	1	12,782	
313	17,755				26,118
		20,918	1	20,918	
314	24,080				47,036
		26,967	1	26,967	
315	29,853				74,003
		32,815	1	32,815	
316	35,776				106,818
		37,589	1	37,589	
317	39,402				144,407
		40,766	1	40,766	
318	42,131				185,173
		43,491	1	43,491	
319	44,850				228,663
		46,217	1	46,217	
320	47,583				274,880
		48,954	1	48,954	
321	50,326				323,834
		51,736	1	51,736	
322	53,147				375,570

MARYLAND STATE GRID MERIDIAN (NAD83/91)



AS-BUILT OF DA-2
SCALE: 1"=40'

Attachment 3

WSA Process for Data Analysis and Review of Quantum Loophole DA-2 & DA-11 Standing Pool

WSA Process for Data Analysis and Review of Quantum Loophole DA-2 & DA-11 Standing Pool Water (10/21/2024)
*Item 8 further defines criteria for resuming frac tank collection.

1) Provide a minimum of 8 samples from representative locations and depths from each pond (DA-11 & DA-2). The June samples shall not be included.
2) Analyze for full set of analytes expected using detection sufficiently sensitive test methods. At a minimum test for:
   *Specify Test Method specified in Part III.C.8.e of the 20CP.

	Aquatic Life - Acute	Drinking Water MCL
fluoride		4000 ug/l
aluminum	1100 ug/l	
benzo(a)pyrene		0.2 ug/l
antimony		6.0 ug/l
nickel	470 ug/l	
cyanide (free)	22 ug/l	200 ug/l
cadmium	1.8 ug/l	5 ug/l
chromium Total		100 ug/l
Total PCB	0.014 ug/l (chronic)	0.5 ug/l
pH	6.5-8.5	
VOC - PCE		5 ug/L
lead	65 ug/l	15 ppb
copper	13 ug/l	1300 ug/l

3) The water should have no discernible odor or oil sheen.
4) The results should then be reported using Form 2C: https://mde.maryland.gov/programs/permits/WaterManagementPermits/Documents/www.mde.state.md.us/assets/document/permit/3510-2C.pdf
5) Present the dataset, with a map, to MDE through the ePermits website.
   a) Instructions:Upload as an attachment similar to uploading turbidity reports.
   b) Instructions:email us in permitting to verify it is ready for review.
6) We will analyze this as compared to : The Numerical Criteria for Toxic Substances in Surface Waters are provided in the Code of Maryland Regulations (COMAR) Section 26.08.02.03-2 acute criteria. They can be accessed through the web at: https://dsd.maryland.gov/regulations/Pages/26.08.02.03-2.aspx. We will also analyze

this as compared to our safe drinking standards for fluoride: https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations. Additionally, we screen for DRO using Soil and Groundwater Cleanup Standards.

7) MDE will provide you with a confirmation email that this is either uncontaminated (falls below the State's water criteria) or if it is considered contaminated.
    a) If uncontaminated, you will be able to use this for dust suppression, landscape watering, fire suppression or other uses as provided in the construction stormwater permit, including return to the ground through surface infiltration. Surface water discharge is not authorized.
    b) If contaminated, you will need to haul to a treatment plant.

8) This procedure should be followed for initial dewatering of the DA-2 & DA-11 standing pool. Drawdown should be taken from the surface or no deeper than 1 foot of depth. For each foot of drawdown, samples of turbidity, fluoride and cyanide must be taken to determine if these are increasing. An increase would indicate an interaction with groundwater and at that point all water must be containerized and then follow the same process used for frac tank processing. Containerization of groundwater and testing procedures as outlined in the July 15, 2024 WSA document must be followed through the duration of pond construction.

9) The above procedure should be followed in addition to requirements of the MDE Land and Materials Administration and the applicable Environmental Management Plan.