Land and Materials Administration

Solid Waste Program - Solid Waste Operations

Maryland
Department of the Environment

Memorandum

TO: Andrew Grenzer

FROM: Chris Manning

DATE: April 12, 2019

RE: **Amcelle RF 2nd Semi-Annual 2018 Report** (2019-091)

This memorandum is in reference to the report titled "Second Semi-Annual 2018 Statistical Evaluation Report" for the Amcelle Rubble Landfill in Allegany County, Maryland. This report was prepared by The Hutchinson Group, Inc. on behalf of the County Commissioners of Allegany County. Sampling for the Fall 2018 groundwater monitoring event occurred on September 17, 2018. Geochemical Testing was the lab that analyzed the groundwater monitoring samples. The Maryland Department of the Environment (MDE) received the report on February 4, 2019.

The Amcelle Rubble landfill is an inactive landfill that started operations in 1994 and ceased operations in 1997. The landfill was capped in 2010. The landfill is located in the Folded Appalachian Mountains Section of the Ridge and Valley Province in the Potomac River floodplain on the southeast side of the Haystack and Wills Mountain anticline. The groundwater quality of the Waynesburg Coal Hydrostratigraphic Unit is monitored semi-annually through a well network of 8 groundwater monitoring wells labeled MW-3 through MW-7 and MW-11 through MW-13 that are screened within the Silurian strata or floodplain deposits. Groundwater monitoring well MW-13 is the upgradient well. Landfill gas (LFG) migration is monitored quarterly through a series of 4 gas probes labeled GMP-1 through GMP-4, and 6 borehole locations.

No volatile organic compounds (VOCs) exceeded their respective maximum concentration limits (MCL) during this sampling event. No VOCs were detected higher than their respective practical quantitation limit (PQL) during this sampling event. Iodomethane was detected below its PQL as estimated values (J values) in all 8 groundwater monitoring wells.

One metal exceeded its respective MCL during this monitoring event. Consistent with previous results from the site, arsenic was detected at a concentration above its MCL of 0.01 mg/L in groundwater monitoring well MW-4 (0.011 mg/L). Consistent with previous results from the site, arsenic and barium were detected above their respective PQL during this monitoring event. Elevated metal concentrations have been attributed to acid mine drainage (AMD) related to previous land use at the site.

The secondary drinking water standards (SMCLs) for iron, manganese, TDS, and sulfate were exceeded in most upgradient and downgradient groundwater monitoring wells during this monitoring event. SMCLs are designated to protect the aesthetic characteristics of treated drinking water such as: color, taste, and odor. These SMCLs are guidelines and not enforceable limits.

There were no intra-well statistical significant increases (SSIs) during this monitoring event. There were inter-well SSIs for barium (MW-3, MW-4, MW-7, MW-12), cobalt (MW-3, MW-4, MW-5, MW-6, MW-11), nickel (MW-5, MW-6), and zinc (MW-4, MW-6, MW-11) during this monitoring event.

LFG is monitored through the quarterly testing of 4 gas monitoring probes. During the 3rd and 4th quarter 2018 LFG monitoring events on September 26 and November 30, 2018, there were no detections of methane.

On behalf of the County Commissioners of Allegany County, the Hutchinson Group should continue with semi-annual groundwater monitoring, quarterly landfill gas migration monitoring, and statistical reporting at the Amcelle Rubble Landfill.

CM

THG GEOPHYSICS
4280 Old William Penn Highway
Murrysville, PA 15668-1922
(724) 325-3996 Fax: (724) 733-7901

Letter of Transmittal

DATE: 1/30/2019

PROJECT NO.: 7027, 7208, 7029

RE: Vale, Westernport and Rubble
2nd Semi-Annual Report 2018

RECEIVED
FEB 04 2019
LAND MANAGEMENT ADMIN
SOLID WASTE PROGRAM

TO: Martha Hynson
MDEP
1800 Washington Blvd
Baltimore, MD 21230

WE ARE SENDING YOU ☑ Attached Via: _____

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Copy of letter

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1	1/30/2019	7028	Westernport 2nd Semi-Annual Report 2018 Statistical Evaulation Report & CD PDF
1	1/30/2019	7029	Rubble 2nd Semi-Annual Report 2018 Statistical Evaulation Report & CD PDF

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REMARKS: _____

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The Hutchinson Group, Ltd.
Geophysical and Environmental Services

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AMCELLE RUBBLE FILL
Allegany County, Maryland
Permit No. 1999WRF-0206

SECOND SEMI-ANNUAL 2018 STATISTICAL EVALUATION REPORT
(DECEMBER 31, 2018)

Prepared for:

County Commissioners of
Allegany County, Maryland
January 29, 2018

Prepared by:

The Hutchinson Group, Ltd.
4280 Old William Penn Highway
Murrysville, Pennsylvania 15668
724-325-3996
THG Project No. 187-7029

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1.0 INTRODUCTION

1.1 Historical Background

The Amcelle Rubble Fill (Permit no. 1999-WRF-0206) located in Allegany County, Maryland, is an inactive construction-and-demolition waste disposal site that received a permit for the former Amcelle Mill demolition debris (Figure 1). The site started receiving rubble fill on 2 June 1994 and received an interim closure in 1997. Final capping of the rubble fill occurred on October 1, 2010, and the mandatory 5 year post closure care period began upon final approval by the Maryland Department of the Environment (MDE) on July 11, 2015.

As of 23 July 2001, the landfill property was deeded by Allegany County to the Maryland Department of Public Safety and Correctional Services.

1.2 Reporting Requirements

The groundwater quality at the landfill is monitored semi-annually through 8 groundwater monitoring wells that are screened in the water-table aquifer. The permit requires semi-annual sampling and the submission of a statistical report that discusses groundwater quality from all of the monitoring wells specified in the groundwater monitoring plan. The report is to include analytical data (Appendix A), a Quality Assurance/Quality Control report (Appendix B), statistical analysis of the sampling results (Table 3), a groundwater contour map depicting the groundwater elevation, gradient, and flow direction (Figure 2), time-series analysis of historic data (Figure 3), and geochemical diagrams (Figures 4 and 5).

In the event that statistical analysis reveals a statistically significant increase of any Appendix I constituent, the Maryland Department of the Environment (MDE) is to be notified within 14 days of the determination. Allegany County will then consult with the MDE in preparing an assessment monitoring plan.

1.3 Work Scope

The purpose of this document is to provide a statistical report of the impact the facility has had to groundwater. A total of 45 sampling events have been collected and a statistical analysis was performed on the geochemistry of the groundwater from the 45 sampling events to determine the impact if any to groundwater from the landfill. Quarterly gas monitoring began March 2001.

2.0 GEOLOGY AND HYDROGEOLOGY

2.1 Introduction

The landfill is situated approximately 4 miles southwest of Cumberland, MD in the Potomac River floodplain between Haystack and Knobley mountains, adjacent to the border of Maryland and West Virginia (Figure 1). The landfill rests on the southeast side of the Haystack and Wills Mountain anticline with strata dipping to the southeast. Stratigraphy in the area of the landfill is dominated by Silurian-aged sedimentary rocks consisting of shale, sandstones, and limestones. The Rose Hill Formation, the McKenzie Formation, and the Wills Creek Shale have gradational contacts and all crop out in the area. The McKenzie Formation is the unit that most likely underlies the landfill. Additionally, thin river floodplain deposits are present at the site.

2.2 Local Hydrogeology

The local hydrogeology is dominated by topography, with the groundwater gradient trending southeast towards the north branch of the Potomac River. The unit is recharged by surface infiltration from precipitation, runoff from the surrounding slopes and transmission from adjacent rock strata. The wells range in depth from 20 to 62 feet and are screened within the Silurian strata or floodplain deposits.

Gradient is approximately 0.0068 ft/ft to the east-southeast toward the North Branch of the Potomac River.

3.0 GROUNDWATER MONITORING PROGRAM

3.1 Well Network

The water-table aquifer is monitored at the landfill through 8 wells; 1 upgradient (MW-13) and 7 down-gradient (MW-3, MW-4, MW-5, MW-6, MW-7, MW-11, and MW-12). The monitoring wells are screened through the water-table aquifer.

The wells were sampled September 17, 2018 (Tables 1 and 2). Based on available records, these wells have been sampled 45 times.

3.2 Sampling Program

The groundwater monitoring plan for the site includes 40 CFR Part 258, Appendix I metals, volatile organic compounds (VOC's), chlorides, COD, alkalinity, nitrate, pH, specific conductivity, temperature, dissolved oxygen, and common cations and anions (Appendix A). All wells at the site have been equipped with dedicated sampling equipment and are sampled semi-annually. Each well is equipped with low-flow bladder pumps and is sampled after the field parameters stabilize. No difficulties were encountered during this sampling event.

3.3 Quality Assurance/Quality Control

Sampling of Amcelle Rubble Fill is performed according to the sampling and analysis plan. The program includes the collection and analysis of several quality assurance/quality control samples including field and laboratory duplicates, field blanks, and trip blanks.

The laboratory provides a quality assurance/quality control report for each sampling event (Appendix B). These reports include the analysis of the quality assurance/quality control samples and document the laboratory split analyses for verification analysis (i.e. lab duplicate).

4.0 STATISTICAL EVALUATION

4.1 Introduction

Subtitle D allows for a variety of statistical techniques for the evaluation of groundwater data (CFR V. 56, No. 196; §258.53). Several different statistical strategies were implemented at Rubble Fill at the request of MDE. The Mann-Kendall Test for Trend was used for intra-well analyses and either the Kruskal-Wallis test or the Wilcoxon Rank-Sum test was used for the inter-well comparisons (Table 3). Time-series (control chart) analyses were performed on every constituent (Table 4; Figures 3).

4.2 Data Evaluations

Two types of statistical comparisons were used to test for trends: an intra-well test for trend and an inter-well comparison where upgradient water quality is compared to downgradient water quality. The statistical procedures used are distribution-free methods, whereby the tests do not assume these data to be normally distributed. This eliminates the concern of reaching a false conclusion from violating assumptions. The Type I error rate, or false positive rate, was set at 0.01 for each test. Concentrations of parameters reported as less than the limit of detection were set equal to half of the detection limit.

4.2.1 Intra-Well Test for Trend

The Mann-Kendall Test for Trend was applied to each constituent in each monitoring well. The Mann-Kendall test is a nonparametric or distribution free test for trend (U.S. Environmental Protection Agency (EPA) guidance document 1992; Gilbert 1987)

Increasing trends can be represented mathematically in several formulas, and the most common is a linear increase expressed as (Gilbert 1987):

$$C_i = \alpha + \beta \times X_i + e_i$$

Where, $\mathbf{C_i}$ represents the concentration at time $\boldsymbol{I}$; α represents the concentration at time 0; β represents the slope coefficient or rate of increase in concentration; $\boldsymbol{X_i}$ represents the sample date; and, $\boldsymbol{e_i}$ represents the random deviations about the line. Random deviations from a continuum can be thought of as variability in concentration in a given monitoring well over a short period of time. If the slope coefficient (β) is not statistically greater than zero, then it is concluded that there is no statistically significant increase in concentration over time (Gilbert, 1987). Hollander and Wolfe (1973) apply the Mann-Kendall test as a distribution-free test for the slope coefficient.

The Mann-Kendall test is designed to identify increasing or decreasing trends in data and is applied to a constituent in a given monitoring well by comparing the current concentration to each prior concentration observed. An indicator variable is assigned a value of 1, 0, or -1, if the current concentration is greater than, equal to or less than, respectively, each prior concentration. The sum of indicator variables (**K**) is then compared to a critical value as a test for trend. The critical statistic is defined to have a 5 percent chance of falsely concluding a trend exists. Large positive values of **K** indicate a positive trend over time; negative values of **K** indicate a negative trend over time.

The test for trend was performed using data collected from the 1st semi-annual 2018 through the 2nd semi-annual event of 2018 and a second trend test was performed using data collected from the 1995 annual event through the 2nd semi-annual event of 2018 (Table 3).

4.2.2 Inter-Well Comparison

Inter-well comparisons of constituent concentrations are used to evaluate the difference in downgradient water quality with the upgradient water quality. It is again emphasized, however, that for this analysis, inter-well comparisons are used as a general screening tool since spatial variability is not accounted for (i.e., either one or no upgradient wells per zone). Comparisons were made by using either the Kruskal-Wallis test or the Wilcoxon Rank-Sum test. The Kruskal-Wallis test was used if less than 50 percent of the concentrations of the constituents were reported as less than the limit of detection. The Wilcoxon Rank-Sum test was used if at least 50 percent of the concentrations of the constituent were reported as less than the limit of detection (EPA 1992).

4.2.2.1 Kruskal-Wallis Test - The Kruskal-Wallis test compares a groundwater constituent's median concentration over time. The objective of this test is to determine if the median concentration at a given downgradient location is significantly greater than that upgradient within the same water-bearing zone.

The Kruskal-Wallis test simultaneously evaluates monitoring well constituent data by comparing their median concentrations over time. For a given constituent in a given zone, the initial step of the Kruskal-Wallis test is to replace concentration with its rank. The rank is obtained by jointly ranking all concentrations from lowest to highest, regardless of monitoring well, and a rank of 1 is assigned to the lowest observed concentration, a rank of 2 to the second lowest concentration, and so on. The average rank is used for concentrations that have the same value.

A statistic is then calculated using the sum of the ranks for each monitoring well. If this statistic is less than or equal to the critical value, it is concluded that there is no difference among monitoring wells. The critical value is obtained from the chi-square distribution with appropriate degrees of freedom. If this statistic exceeds the critical value, then it is concluded that a difference between at least two monitoring wells exists. Further investigation is necessary to evaluate if this difference is attributable to differences in downgradient and upgradient concentrations. This is accomplished by statistically comparing each downgradient monitoring well's mean rank to the upgradient mean rank using the procedure presented in EPA (1992).

4.2.2.2 Wilcoxon Rank-Sum Test - EPA (1992) recommends the Wilcoxon Rank-Sum test over its prior recommendation, the Test of Proportions (EPA 1989), because the Wilcoxon Rank-Sum has a better chance of concluding a difference does exists. The Wilcoxon Rank-Sum test compares the median concentration of the two groups (i.e., the upgradient well and the downgradient wells). The Wilcoxon Rank-Sum test is quite similar to the Kruskal-Wallis test except the Kruskal-Wallis test compares the median concentration of more than two groups. The objective of the Wilcoxon Rank-Sum test is to determine if the median concentration of the group of downgradient monitoring wells is significantly greater than that of the upgradient group.

For a given constituent in a given zone, the initial step of the Wilcoxon Rank-Sum test is to replace concentration with its rank. The rank is obtained by jointly ranking all concentrations from lowest to highest, regardless of monitoring group, and assigning a

rank of 1 to the lowest concentration, a rank of 2 to the second lowest concentration, and so on. The average rank is used for concentrations that have the same value.

A statistic is then calculated using the sum of the ranks at the downgradient monitoring well group. If this statistic is less than or equal to the critical value, it is concluded that there is no difference among the downgradient and upgradient groups. The critical value is obtained from the standard normal distribution. If this statistic exceeds the critical value, then verification sampling may be required to determine if the downgradient group is statistically greater than the upgradient group.

4.2.3 Time-Series Evaluation

Time-series or control chart evaluations provide graphic representations of how a dataset varies through time (Figure 3). This allows historical trends to be observed simultaneously for each well.

4.3 Decision Criteria

The results of these statistical tests are used together with other analyses to assess the potential of a leachate release. Decision criteria used in this analysis include:

1) Time-series plots;
2) Comparison of constituents to control limits (i.e., background);
3) Water quality comparisons at upgradient and downgradient wells using trilinear plots, Stiff diagrams, etc.;
4) Source characterization (i.e., leachate results vs. groundwater results) summarized through geochemical plots (i.e., trilinear and/or Stiff diagrams);
5) The natural spatial variability between monitored geologic zones; and,
6) The historical absence of VOCs.

5.0 RESULTS OF STATISTICAL ANALYSES

5.1 Volatile Organic Analyses

No VOC's were detected above established maximum concentration levels (MCLs) or medium specific concentrations (MSCs) during the 2nd semi-annual sampling event of 2018.

5.2 Metals and Inorganic Statistical Analysis

For the 2nd semi-annual event of 2018, no intra-well statistically significant increases (SSIs) were present.

During previous semi-annual sampling events, inter-well statistical analyses indicated that statistically significant increases occurred with several metals and inorganic constituents. Low-flow sampling protocols have been employed to reduce the turbidity problem that was creating these exceedances. Currently, barium (MW-3, MW-4, MW-7, MW-12), cobalt (MW-3, MW-4, MW-5, MW-6, MW-11), nickel (MW-5, MW-6), and zinc (MW-4, MW-6, MW-11) show inter-well statistical exceedances (Table 3). Historical trends show that these constituents are quite stable over time (Figure 3).

No monitoring well showed both intra- and inter-well statistical exceedances for any parameter.

No drinking water MCLs for inorganic constituents were exceeded during the 2nd semi-annual sampling event of 2018 except for arsenic in MW-4 (0.011 mg/L) compared to the MCL of 0.01 mg/L.

Typical geochemical analyses of the groundwater show that groundwater is a calcium-bicarbonate type of water, whereas the typical leachate has a strong component of sodium and chloride ions (Figures 4 and 5). The geochemical similarity of the groundwater samples and the dissimilarity of groundwater to typical leachate provide strong evidence that the groundwater at the facility has not been impacted by leachate.

6.0 LANDFILL GAS MONITORING

The Amcelle Rubble Fill landfill gas monitoring program was established October 2000 and includes 6 borehole locations. The gas monitoring program was modified in 2012 to include 4 gas monitoring probes. Soil gas sampling for the 3rd and 4th quarter 2018 occurred on September 26 and November 30, 2018, respectively. Soil gas monitoring includes connecting a quick connect couple to the soil gas probe and measuring the gas extracted from the soil at the depth of the probe (Appendix D).

If an exceedance above the Lower Explosive Limit (LEL) occurs in a gas monitoring probe, then another sample is collected within 7 days.

Consequently, no LEL exceedances for methane were detected in the soil and thus the facility has been in compliance during the 3rd and 4th quarterly gas sampling events for 2018 (Appendix D).

7.0 SUMMARY

A statistical analysis of groundwater monitoring data collected during the 2nd semi-annual sampling event of 2018 at Amcelle Rubble Landfill shows that the landfill has not impacted groundwater.

Past sampling events had shown statistically significant increases in inter-well analyses for total metal analyses. Rehabilitation of the wells and the installation of low-flow pumps reduced the concentrations of total metals. Currently, all wells at the facility have dedicated low-flow pumps. Some previously noted constituents remain slightly elevated during the 2nd semi-annual sampling event and verification resampling will occur during the next semi-annual event.

This analysis included data collected from 1995 through the 2nd Semi-Annual 2018 sampling event. The major conclusions of this report are:

1. Soil gas samples show that methane does not exist in the soils at a reasonable distance from the landfill (<5 feet).

2. No VOCs were detected above drinking water standards.

3. No statistically significant increases exist for both intra- and inter-well analysis for any constituent. No maximum concentration levels (MCLs) for metals and inorganic constituents were exceeded except for arsenic in MW-4.

4. In an October 22, 2002 letter to the Maryland Department of the Environment, the Maryland Department of Public Safety and Correctional Services indicated that they plan no further use of the Rubble landfill and that plans to cap the landfill were pending.

5. Although the final cap was completed during October 2010, the post closure monitoring and maintenance period did not officially begin until the Department conducted a final walk through inspection and documented their approval in a letter dated July 11, 2011. The mandatory 5 year period extended through July 2016.

6. In order to determine if a site is prepared to exit the post closure care, the site owner must show the Department that the site does not, and will not have a detrimental impact on the environment and that the site is meeting all regulatory requirements for groundwater quality, landfill gas migration, and cap maintenance.

7. Based on a review of the last 5 years of monitoring data at the site, the Department has indicated that a total cessation of groundwater monitoring at the facility is unlikely to be approved due to occasional very low VOC detections and intra- and interwell SSIs. However, the site has shown little/no evidence of landfill gas migration and visual inspection reports submitted since 2012 have shown that the cap has been maintained in good working order.

7.1 Recommended Actions

1. Submit a revised environmental monitoring plan for Department review now that the mandatory 5 year post closure period is over. This plan may request to modify of cease some portions of the groundwater and landfill gas monitoring plans which have proven to be in compliance for the entire post closure car period.

2. Continue semi-annual sampling as approved by the Department.

8.0 REFERENCES

Gilbert, R. O. (1987). Statistical Methods for Environmental Pollution Monitoring. New York, Van Nostrand Reinhold.

Green Associates, Inc. (with Gannett Fleming Corddry and Carpenter, Inc.), 1972, Mlne Drainage Abatement Investigations, Northwest Allegany County and Lower Georges Creek Complex, Allegany and Garret Counties, Maryland: State of Maryland, Department of Natural Resources.

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TABLE 1

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

SECOND SEMI-ANNUAL 2018
FIELD PARAMETERS

SAMPLE LOCATION[1]	SAMPLE DATE	SAMPLE TIME	WATER LEVEL[2] (ft)	WELL DEPTH[2] (ft)	WATER PURGED (L)	FIELD PARAMETERS						COMMENTS
						TEMP (C)	COND (µS/m)	TDS (PPM)	pH (SU)	Turb (FNU)	DO (Mg/L)	
MW-3	9/17/2018	11:15 AM	15.97	21.80	7.0	14.4	577	289	6.65	31.9	5.2	Field Duplicate Taken
MW-4	9/17/2018	11:55 AM	14.49	28.00	9.0	13.4	498	249	5.97	9.8	3.8	
MW-5	9/17/2018	1:39 PM	12.42	22.50	8.0	14.5	346	172	6.38	5.3	6.0	
MW-6	9/17/2018	2:55 PM	9.38	24.60	10.5	14.5	476	237	6.75	9.6	2.9	
MW-7	9/17/2018	3:55 PM	9.72	20.60	9.0	18.9	540	271	7.20	48.5	5.2	
MW-11	9/17/2018	12:35 PM	15.02	33.00	8.0	13.8	284	143	5.90	12.2	4.8	
MW-12	9/17/2018	2:22 PM	13.23	62.05	12.0	13.5	382	191	7.44	9.4	2.9	
MW-13	9/17/2018	4:47 PM	2.72	49.80	10.5	15.1	1127	564	6.97	140	3.8	

Notes:
[1] All wells sampled with dedicated low flow pumps
[2] Measured from top of inner casing

ft = feet
L = Liters
C = Degrees Centigrade

COND = Conductivity
TDS = Total Dissolved Solids
TURB = Turbidity
DO = Dissolved Oxygen

µS/m = microSiemens/meter
FNU = Formazin Nephelometric Unit

TABLE 2

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

SECOND SEMI-ANNUAL 2018
WATER-LEVEL ELEVATIONS

MONITORING POINT	MEASUREMENT DATE	MEASUREMENT POINT ELEV.[1] (ft amsl)	WATER LEVEL[2] (ft)	WATER LEVEL ELEV. (ft amsl)
MW-3	9/17/2018	655.13	15.97	639.16
MW-4	9/17/2018	653.76	14.49	639.27
MW-5	9/17/2018	654.40	12.42	641.98
MW-6	9/17/2018	653.21	9.38	643.83
MW-7	9/17/2018	653.20	9.72	643.48
MW-11	9/17/2018	654.75	15.02	639.73
MW-12	9/17/2018	654.87	13.23	641.64
MW-13	9/17/2018	651.69	2.72	648.97

Notes:
[1] Elevation for the top of the PVC from well logs.
[2] Measured from the top of the 4" PVC riser pipe.
ft amsl = Feet above mean sea level.

TABLE 3

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

STATISTICAL ANALYSIS

MW-13 Upgradient					
Analyte[1]	**Mann-Kendall Test for Trend Through:**		**Downgradient to Upgradient Comparison Through:**		**Statistically Significant Increase**
	1st SA '18	**2nd SA '18**	**2nd SA '18**	**WR or KW[2]**	
Antimony	No	No			
Arsenic	No	No			
Barium	No	No			
Beryllium	No	No			
Cadmium	No	No			
Chromium	No	No			
Cobalt	No	No			
Copper	No	No			
Lead	No	No			
Nickel	No	No			
Selenium	No	No			
Silver	No	No			
Thallium	No	No			
Vanadium	No	No			
Zinc	No	No			

[1] Inorganic Constituents from 40 CFR, Part 258, Appendix I

[2] Kruskal-Wallis or Wilcoxon Rank-Sum Test (Inter-well Comparison)

TABLE 3

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

STATISTICAL ANALYSIS

MW-3 Downgradient					
Analyte[1]	**Mann-Kendall Test for Trend Through:**		**Downgradient to Upgradient Comparison Through:**		**Statistically Significant Increase**
	1st SA '18	**2nd SA '18**	**2nd SA '18**	**WR or KW[2]**	
Antimony	No	No	No	WR	No
Arsenic	No	No	No	KW	No
Barium	No	No	Yes	KW	No
Beryllium	No	No	No	WR	No
Cadmium	No	No	No	WR	No
Chromium	No	No	No	WR	No
Cobalt	No	No	Yes	KW	No
Copper	No	No	No	WR	No
Lead	No	No	No	WR	No
Nickel	No	No	No	KW	No
Selenium	No	No	No	WR	No
Silver	No	No	No	WR	No
Thallium	No	No	No	WR	No
Vanadium	No	No	No	WR	No
Zinc	No	No	No	WR	No

[1] Inorganic Constituents from 40 CFR, Part 258, Appendix I

[2] Kruskal-Wallis or Wilcoxon Rank-Sum Test (Inter-well Comparison)

TABLE 3

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

STATISTICAL ANALYSIS

MW-4 Downgradient					
Analyte[1]	**Mann-Kendall Test for Trend Through:**		**Downgradient to Upgradient Comparison Through:**		**Statistically Significant Increase**
	1st SA '18	**2nd SA '18**	**2nd SA '18**	**WR or KW[2]**	
Antimony	No	No	No	WR	No
Arsenic	No	No	No	KW	No
Barium	No	No	Yes	KW	No
Beryllium	No	No	No	WR	No
Cadmium	No	No	No	WR	No
Chromium	No	No	No	WR	No
Cobalt	No	No	Yes	KW	No
Copper	No	No	No	WR	No
Lead	No	No	No	WR	No
Nickel	No	No	No	WR	No
Selenium	No	No	No	WR	No
Silver	No	No	No	WR	No
Thallium	No	No	No	WR	No
Vanadium	No	No	No	WR	No
Zinc	No	No	Yes	WR	No

[1] Inorganic Constituents from 40 CFR, Part 258, Appendix I

[2] Kruskal-Wallis or Wilcoxon Rank-Sum Test (Inter-well Comparison)

TABLE 3

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

STATISTICAL ANALYSIS

MW-5 Downgradient					
Analyte[1]	**Mann-Kendall Test for Trend Through:**		**Downgradient to Upgradient Comparison Through:**		**Statistically Significant Increase**
	1st SA '18	**2nd SA '18**	**2nd SA '18**	**WR or KW[2]**	
Antimony	No	No	No	WR	No
Arsenic	No	No	No	WR	No
Barium	No	No	No	KW	No
Beryllium	No	No	No	WR	No
Cadmium	No	No	No	WR	No
Chromium	No	No	No	WR	No
Cobalt	No	No	Yes	KW	No
Copper	No	No	No	WR	No
Lead	No	No	No	WR	No
Nickel	No	No	Yes	KW	No
Selenium	No	No	No	WR	No
Silver	No	No	No	WR	No
Thallium	No	No	No	WR	No
Vanadium	No	No	No	WR	No
Zinc	No	No	No	WR	No

[1] Inorganic Constituents from 40 CFR, Part 258, Appendix I

[2] Kruskal-Wallis or Wilcoxon Rank-Sum Test (Inter-well Comparison)

TABLE 3

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

STATISTICAL ANALYSIS

MW-6 Downgradient					
Analyte[1]	**Mann-Kendall Test for Trend Through:**		**Downgradient to Upgradient Comparison Through:**		**Statistically Significant Increase**
	1st SA '18	**2nd SA '18**	**2nd SA '18**	**WR or KW[2]**	
Antimony	No	No	No	WR	No
Arsenic	No	No	No	WR	No
Barium	No	No	No	KW	No
Beryllium	No	No	No	WR	No
Cadmium	No	No	No	WR	No
Chromium	No	No	No	WR	No
Cobalt	No	No	Yes	KW	No
Copper	No	No	No	WR	No
Lead	No	No	No	WR	No
Nickel	No	No	Yes	KW	No
Selenium	No	No	No	WR	No
Silver	No	No	No	WR	No
Thallium	No	No	No	WR	No
Vanadium	No	No	No	WR	No
Zinc	No	No	Yes	WR	No

[1] Inorganic Constituents from 40 CFR, Part 258, Appendix I

[2] Kruskal-Wallis or Wilcoxon Rank-Sum Test (Inter-well Comparison)

TABLE 3

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

STATISTICAL ANALYSIS

MW-7 Downgradient					
Analyte[1]	**Mann-Kendall Test for Trend Through:**		**Downgradient to Upgradient Comparison Through:**		**Statistically Significant Increase**
	1st SA '18	**2nd SA '18**	**2nd SA '18**	**WR or KW[2]**	
Antimony	No	No	No	WR	No
Arsenic	No	No	No	WR	No
Barium	No	No	Yes	KW	No
Beryllium	No	No	No	WR	No
Cadmium	No	No	No	WR	No
Chromium	No	No	No	WR	No
Cobalt	No	No	No	WR	No
Copper	No	No	No	WR	No
Lead	No	No	No	WR	No
Nickel	No	No	No	WR	No
Selenium	No	No	No	WR	No
Silver	No	No	No	WR	No
Thallium	No	No	No	WR	No
Vanadium	No	No	No	WR	No
Zinc	No	No	No	WR	No

[1] Inorganic Constituents from 40 CFR, Part 258, Appendix I

[2] Kruskal-Wallis or Wilcoxon Rank-Sum Test (Inter-well Comparison)

TABLE 3

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

STATISTICAL ANALYSIS

MW-11 Downgradient					
Analyte[1]	**Mann-Kendall Test for Trend Through:**		**Downgradient to Upgradient Comparison Through:**		**Statistically Significant Increase**
	1st SA '18	**2nd SA '18**	**2nd SA '18**	**WR or KW[2]**	
Antimony	No	No	No	WR	No
Arsenic	No	No	No	WR	No
Barium	No	No	No	KW	No
Beryllium	No	No	No	WR	No
Cadmium	No	No	No	WR	No
Chromium	No	No	No	WR	No
Cobalt	No	No	Yes	KW	No
Copper	No	No	No	KW	No
Lead	No	No	No	WR	No
Nickel	No	No	No	KW	No
Selenium	No	No	No	WR	No
Silver	No	No	No	WR	No
Thallium	No	No	No	WR	No
Vanadium	No	No	No	WR	No
Zinc	No	No	Yes	WR	No

[1] Inorganic Constituents from 40 CFR, Part 258, Appendix I

[2] Kruskal-Wallis or Wilcoxon Rank-Sum Test (Inter-well Comparison)

TABLE 3

AMCELLE RUBBLE FILL
ALLEGANY COUNTY, MARYLAND
Permit No. 1999-WRF-0206

STATISTICAL ANALYSIS

MW-12 Downgradient					
Analyte[1]	**Mann-Kendall Test for Trend Through:**		**Downgradient to Upgradient Comparison Through:**		**Statistically Significant Increase**
	1st SA '18	**2nd SA '18**	**2nd SA '18**	**WR or KW[2]**	
Antimony	No	No	No	WR	No
Arsenic	No	No	No	WR	No
Barium	No	No	Yes	KW	No
Beryllium	No	No	No	WR	No
Cadmium	No	No	No	WR	No
Chromium	No	No	No	WR	No
Cobalt	No	No	No	WR	No
Copper	No	No	No	WR	No
Lead	No	No	No	WR	No
Nickel	No	No	No	WR	No
Selenium	No	No	No	WR	No
Silver	No	No	No	WR	No
Thallium	No	No	No	WR	No
Vanadium	No	No	No	WR	No
Zinc	No	No	No	KW	No

[1] Inorganic Constituents from 40 CFR, Part 258, Appendix I

[2] Kruskal-Wallis or Wilcoxon Rank-Sum Test (Inter-well Comparison)

TABLE 4

AMCELLE RUBBLE FILL
TIME SERIES
CONSTITUENT HISTORY (mg/L)*

MW-3

Date	Alkalinity	Arsenic	Barium	Cadmium	Calcium	Chloride	Chromium	COD	Hardness	Lead	Magnesium	Mercury	Nitrogen	pH	Zinc
1/24/97	210	0.003	0.11	0.0005		2.5	0.003	25	240	0.017		0.0003		6.65	0.010
12/2/98	247	0.010	0.51	0.0003	104.0	5.0	0.030	33	303	0.022	10.7	0.0001	0.84	7.10	0.096
3/30/99	216	0.005	0.20	0.0003	89.0	5.0	0.005	26	256	0.007	8.1	0.0001	0.64	7.60	0.041
9/28/99	195	0.005	0.23	0.0006	71.8	7.0	0.005	8	202	0.009	5.6	0.0001	0.11	6.60	0.047
3/28/00	284	0.020	0.31	0.0003	116.0	9.0	0.020	37	327	0.012	9.0	0.0001	0.13	6.80	0.111
11/3/00	173	0.005	0.06	0.0003	49.9	10.0	0.005	19	142	0.003	4.2	0.0001	0.10	6.70	0.006
4/24/01	179	0.005	0.07	0.0003	71.0	5.0	0.005	8	196	0.003	4.5	0.0001	0.03	6.70	0.023
10/24/01	131	0.005	0.07	0.0003	55.1	3.0	0.005	8	155	0.003	4.3	0.0001	0.03	6.40	0.017
3/21/02	166	0.005	0.06	0.0003	68.6	6.0	0.005	8	191	0.003	4.8	0.0001	0.16	6.80	0.014
9/25/02	99	0.005	0.06	0.0003	41.7	6.0	0.005	8	122	0.003	4.4	0.0001	0.03	6.50	0.017
3/25/03	221	0.005	0.36	0.00025J	81.2	4.0	0.005	8	226	0.003	5.6	0.0001	0.06	6.50	0.257
10/6/03	286	0.005	0.41	0.00025J	79.4	4.0	0.005	8	229	0.003	7.4	0.0001	0.03	6.60	0.194
3/24/04	243	0.005	0.12	0.0010	79.9	13.0	0.005	10	260	0.003	7.7	0.0001	0.35	6.55	0.039
9/22/04	188	0.011	0.14	0.0025	74.4	6.0	0.005	20	213	0.003	6.7	0.0001	0.03	6.44	0.040
3/29/05	237	0.005	0.17	0.0010	86.1	7.0	0.005	48	253	0.003	9.1	0.0001	0.03	6.73	0.026
8/23/05	209	0.005	0.17	0.0010	84.4	9.0	0.005	48	246	0.003	8.6	0.0001	0.03	6.44	0.040
3/9/06	197	0.014	0.13	0.0025	84.4	13.0	0.005	20	240	0.003	7.1	0.0001	1.31	6.35	0.040
9/15/06	158	0.013	0.11	0.0025	78.0	10.0	0.005	12	217	0.008	5.4	0.0001	0.03	6.46	0.040
3/9/07	162	0.021	0.14	0.0025	114.0	9.0	0.005	31	324	0.008	9.2	0.0001	0.03	6.43	0.100
9/27/07	162	0.027	0.15	0.0025	102.0	9.0	0.005	11	291	0.010	9.0	0.0001	0.03	6.47	0.120
3/14/08	187	0.023	0.18	0.0025	126.0	9.0	0.005	34	356	0.010	9.8	0.0001	0.03	7.32	0.140
9/26/08	202	0.030	0.20	0.0025	156.0	26.0	0.010	25	444	0.010	13.0	0.0001	0.03	6.53	0.170
3/26/09	230	0.015	0.14	0.0025	145.0	10.0	0.005	20	400	0.007	9.4	0.0001	0.06	6.67	0.100
9/10/09	213	0.017	0.16	0.0025	141.0	8.0	0.005	13	390	0.006	9.2	0.0001	0.00	6.66	0.100
5/7/10	236	0.019	0.15	0.0025	156.0	6.0	0.005	11	429	0.007	9.8	0.0001	0.07	6.74	0.110
10/20/10	171	0.017	0.13	0.0025	94.6	7.3	0.005	14	270	0.006	8.1	0.0001	0.00	6.62	0.092
2/25/11	218	0.021	0.16	0.0025	147.0	7.2	0.005	5	410	0.008	10.7	0.0001	0.00	6.28	0.120
9/28/11	225	0.017	0.12	0.0025	138.0	6.8	0.005	5	378	0.006	8.1	0.0001	0.00	6.81	0.080
3/15/12	145	0.008	0.11	0.0025	66.7	4.6	0.005	5	193	0.003	6.4	0.0001	0.33	8.02	0.040
8/23/12	84	0.004	0.07	0.0020	48.5	7.9	0.005	5	142	0.001	5.0	0.0001	0.26	6.71	0.020
3/21/13	171	0.006	0.09	0.0020	77.3	5.4	0.005	5	217	0.001	5.9	0.0010	0.08	8.20	0.020
9/18/13	136	0.007	0.09	0.0020	65.0	15.1	0.005	5	187	0.001	5.9	0.0010	0.74	7.03	0.020
3/13/14	125	0.005	0.08	0.0020	67.8	13.7	0.005	5	194	0.001	5.9	0.0010	0.72	7.04	0.020
8/29/14	100	0.006	0.08	0.0020	50.1	13.5	0.005	15	149	0.001	5.8	0.0010	0.53	6.42	0.020
3/25/15	109	0.009	0.07	0.0020	60.5	19.1	0.005	15	175	0.001	5.9	0.0010	0.41	6.61	0.020
9/29/15	125	0.005	0.07	0.0020	62.2	24.0	0.005	5	181	0.001	6.3	0.0001	0.03	6.41	0.010
3/25/16	122	0.005	0.08	0.0020	65.7	23.5	0.005	5	189	0.001	6.0	0.0001	0.03	6.07	0.005
9/1/16	137	0.018	0.07	0.0020	63.0	22.6	0.005	5	184	0.001	6.0	0.0001	0.03	6.46	0.010
3/24/17	117	0.001	0.08	0.0020	65.3	24.5	0.005	5	190	0.001	6.4	0.0001	0.03	6.30	0.005
9/18/17	147	0.009	0.07	0.0020	60.9	20.1	0.005	5	176	0.001	5.8	0.0001	0.03	6.61	0.005
3/13/18	146	0.004	0.08	0.0020	76.3	18.1	0.005	5	219	0.001	7.0	0.0001	0.03	6.95	0.010
9/17/18	289	0.004	0.09	0.0020	111.0	12.4	0.005	5	310	0.001	7.8	0.0001	0.03	6.84	0.005

TABLE 4

AMCELLE RUBBLE FILL
TIME SERIES
CONSTITUENT HISTORY (mg/L)*

MW-4

Date	Alkalinity	Arsenic	Barium	Cadmium	Calcium	Chloride	Chromium	COD	Hardness	Lead	Magnesium	Mercury	Nitrogen	pH	Zinc
1/24/97	200	0.023	0.11	0.0005		2.5	0.003	8	310	0.014		0.0003		6.49	0.030
4/30/98	970	0.130	0.56	0.0012	623.0	3.0	0.080	82	1760	0.074	48.4	0.0001	0.03	7.40	0.705
12/2/98	654	0.020	0.10	0.0006	209.0	3.0	0.010	5	567	0.010	11.2	0.0001	0.03	7.30	0.056
3/30/99	408	0.020	0.09	0.0003	158.0	3.0	0.005	20	434	0.008	9.4	0.0001	0.03	7.80	0.083
9/28/99	545	0.020	0.10	0.0006	199.0	3.0	0.005	25	544	0.007	11.5	0.0001	0.10	6.90	0.070
3/28/00	533	0.030	0.10	0.0003	204.0	4.0	0.005	8	549	0.008	9.6	0.0001	0.03	6.90	0.035
11/3/00	223	0.005	0.07	0.0003	86.6	5.0	0.005	8	243	0.003	6.6	0.0001	0.03	6.60	0.003
4/24/01	137	0.005	0.08	0.0003	49.7	4.0	0.005	8	149	0.003	5.9	0.0001	0.03	6.60	0.011
10/24/01	229	0.005	0.08	0.0003	97.4	4.0	0.005	8	272	0.003	7.0	0.0001	0.03	6.80	0.015
3/21/02	143	0.005	0.07	0.0003	56.6	5.0	0.005	8	165	0.003	5.9	0.0001	0.03	6.80	0.010
9/25/02	221	0.005	0.07	0.0003	89.3	5.0	0.005	8	252	0.003	7.0	0.0001	0.03	7.00	0.015
3/25/03	133	0.020	0.09	0.00025J	49.8	4.0	0.005	8	150	0.003	6.2	0.0001	0.03	6.40	0.019
10/6/03	145	0.005	0.07	0.00025U	48.2	2.0	0.005	8	144	0.003	5.7	0.0001	0.03	6.40	0.008
3/24/04	131	0.012	0.08	0.0010	46.9	2.0	0.005	5	160	0.003	6.2	0.0001	0.03	6.39	0.014
9/22/04	148	0.005	0.07	0.0025	62.8	3.0	0.005	5	183	0.003	6.4	0.0001	0.03	6.36	0.020
3/29/05	127	0.005	0.05	0.0010	35.4	2.0	0.005	5	106	0.003	4.2	0.0001	0.03	6.50	0.005
8/23/05	181	0.012	0.08	0.0010	76.7	3.0	0.005	5	221	0.003	7.2	0.0001	0.03	6.52	0.010
3/9/06	157	0.016	0.08	0.0025	68.1	6.0	0.005	5	197	0.003	6.6	0.0001	0.13	6.39	0.005
9/15/06	197	0.022	0.09	0.0025	81.6	4.0	0.005	5	233	0.003	7.0	0.0001	0.03	6.87	0.020
3/9/07	177	0.005	0.08	0.0025	65.3	4.0	0.005	5	190	0.003	6.5	0.0001	0.03	6.32	0.005
9/27/07	199	0.026	0.11	0.0025	80.2	5.0	0.005	5	229	0.003	7.1	0.0001	0.03	6.63	0.005
3/14/08	141	0.011	0.10	0.0025	57.0	5.0	0.005	5	172	0.003	7.2	0.0001	0.03	6.99	0.005
9/26/08	200	0.010	0.10	0.0025	80.3	5.0	0.005	5	233	0.003	7.9	0.0001	0.03	6.57	0.005
3/26/09	163	0.021	0.13	0.0025	77.1	6.0	0.005	5	225	0.003	7.9	0.0001	0.00	6.51	0.005
9/10/09	177	0.011	0.10	0.0025	78.2	5.0	0.005	5	227	0.003	7.7	0.0001	0.00	6.73	0.005
5/7/10	143	0.019	0.11	0.0025	66.6	5.0	0.005	5	196	0.003	7.3	0.0001	0.00	6.37	0.005
10/20/10	217	0.010	0.10	0.0003	86.6	3.0	0.005	5	244	0.001	6.7	0.0001	0.00	6.77	0.005
2/25/11	200	0.009	0.13	0.0025	91.6	7.2	0.005	5	261	0.001	7.9	0.0001	0.18	6.49	0.005
9/28/11	177	0.010	0.13	0.0025	95.2	5.6	0.005	5	275	0.001	9.1	0.0001	0.00	6.61	0.005
3/15/12	90	0.010	0.12	0.0025	66.6	5.5	0.005	5	205	0.001	9.3	0.0001	0.32	7.69	0.005
8/23/12	191	0.010	0.13	0.0020	108.0	5.5	0.005	5	312	0.001	10.5	0.0010	0.49	7.08	0.010
3/21/13	102	0.009	0.14	0.0020	86.5	6.8	0.005	5	266	0.001	12.1	0.0010	0.03	7.79	0.010
9/18/13	165	0.011	0.17	0.0020	109.0	9.1	0.005	5	326	0.001	12.9	0.0010	0.35	6.78	0.005
3/13/14	100	0.010	0.15	0.0020	95.3	9.0	0.005	15	292	0.001	13.2	0.0010	0.89	6.81	0.010
8/29/14	113	0.018	0.16	0.0020	92.8	9.3	0.005	5	285	0.001	12.9	0.0010	0.03	6.44	0.020
3/25/15	98	0.015	0.12	0.0020	77.0	8.7	0.005	5	242	0.001	12.0	0.0010	0.38	6.43	0.020
9/29/15	214	0.010	0.12	0.0020	101.0	6.8	0.005	5	294	0.001	9.8	0.0001	0.03	6.80	0.020
3/25/16	89	0.010	0.13	0.0020	84.6	12.3	0.005	11	264	0.001	12.9	0.0001	0.03	5.95	0.020
9/1/16	223	0.013	0.13	0.0020	110.0	11.4	0.005	5	322	0.001	12.9	0.0001	0.03	6.67	0.020
3/24/17	103	0.001	0.16	0.0020	85.8	16.7	0.005	5	261	0.001	11.4	0.0001	0.03	6.32	0.005
9/18/17	197	0.012	0.14	0.0020	104.0	18.2	0.005	5	307	0.005	11.4	0.0001	0.03	6.66	0.010
3/13/18	117	0.009	0.12	0.0020	80.2	19.5	0.005	11	249	0.001	11.8	0.0001	0.03	6.30	0.010
9/17/18	104	0.011	0.12	0.0020	72.3	18.6	0.005	5	229	0.001	13.1	0.0001	0.03	6.65	0.020

TABLE 4

AMCELLE RUBBLE FILL
TIME SERIES
CONSTITUENT HISTORY (mg/L)*

MW-5

Date	Alkalinity	Arsenic	Barium	Cadmium	Calcium	Chloride	Chromium	COD	Hardness	Lead	Magnesium	Mercury	Nitrogen	pH	Zinc
1/24/97	240	0.003	0.11	0.0005		2.5	0.015	8	340	0.015		0.0003		6.65	0.090
4/30/98	271	0.010	0.18	0.0011	120.0	3.0	0.030	5	341	0.024	10.1	0.0001	0.17	7.60	0.154
12/2/98	285	0.005	0.13	0.0031	111.0	3.0	0.020	25	329	0.015	12.7	0.0001	0.08	7.40	0.113
3/30/99	314	0.005	0.08	0.0015	139.0	3.0	0.005	8	378	0.008	7.8	0.0001	0.18	7.90	0.096
9/28/99	314	0.005	0.12	0.0015	131.0	3.0	0.010	8	363	0.012	9.0	0.0001	0.09	7.30	0.095
3/28/00	303	0.005	0.07	0.0012	142.0	4.0	0.005	8	396	0.007	10.2	0.0001	0.97	6.70	0.055
11/3/00	242	0.005	0.04	0.0008	85.3	5.0	0.005	8	233	0.003	4.9	0.0001	0.14	7.20	0.019
4/24/01	248	0.005	0.03	0.0003	110.0	3.0	0.005	8	295	0.003	5.2	0.0001	0.64	7.10	0.035
10/24/01	227	0.005	0.04	0.0003	95.3	3.0	0.005	8	263	0.003	6.2	0.0001	0.03	7.00	0.021
3/21/02	194	0.005	0.04	0.0007	102.0	4.0	0.005	8	279	0.003	6.0	0.0001	0.13	7.00	0.047
9/25/02	289	0.005	0.04	0.0007	120.0	4.0	0.005	8	327	0.003	6.4	0.0001	0.13	7.40	0.034
3/25/03	259	0.005	0.04	0.00025J	110.0	3.0	0.005	8	298	0.003	5.9	0.0001	0.69	7.10	0.063
10/6/03	247	0.005	0.05	0.0007	101.0	2.0	0.005	8	275	0.003	5.6	0.0001	0.16	6.70	0.069
3/24/04	256	0.005	0.05	0.0010	115.0	4.0	0.005	5	350	0.003	6.7	0.0001	0.16	6.87	0.052
9/22/04	193	0.005	0.04	0.0025	83.8	0.5	0.005	5	233	0.003	5.8	0.0001	0.03	6.80	0.070
3/29/05	261	0.005	0.05	0.0010	108.0	2.0	0.005	5	299	0.003	6.9	0.0001	0.03	7.06	0.024
8/23/05	205	0.005	0.04	0.0010	82.2	2.0	0.005	5	238	0.003	7.9	0.0001	0.03	6.74	0.030
3/9/06	199	0.005	0.03	0.0025	83.0	3.0	0.005	5	226	0.003	4.5	0.0001	0.07	6.81	0.070
9/15/06	253	0.005	0.08	0.0025	115.0	3.0	0.005	5	324	0.003	9.3	0.0001	0.03	6.90	0.070
3/9/07	215	0.005	0.06	0.0025	91.6	3.0	0.005	5	254	0.003	6.2	0.0001	0.18	6.83	0.050
9/27/07	249	0.005	0.04	0.0025	92.8	3.0	0.005	5	255	0.003	5.6	0.0001	0.06	6.90	0.060
3/14/08	219	0.005	0.07	0.0025	114.0	3.0	0.005	15	323	0.007	9.7	0.0001	0.10	7.66	0.090
9/26/08	98	0.005	0.04	0.0025	47.5	2.0	0.005	5	139	0.003	4.9	0.0001	0.03	6.34	0.040
3/26/09	211	0.005	0.06	0.0025	101.0	3.0	0.005	5	292	0.003	9.8	0.0001	0.03	6.84	0.080
9/10/09	131	0.005	0.06	0.0025	56.0	2.0	0.005	5	162	0.003	5.5	0.0001	0.03	6.63	0.020
5/7/10	199	0.005	0.05	0.0025	82.0	2.0	0.005	5	240	0.003	8.5	0.0001	0.03	6.67	0.050
10/20/10	239	0.005	0.04	0.0025	99.8	1.8	0.005	5	274	0.003	6.1	0.0001	0.14	6.85	0.013
2/25/11	142	0.005	0.04	0.0025	78.7	2.1	0.005	5	274	0.003	7.1	0.0001	0.25	6.92	0.013
9/28/11	233	0.005	0.04	0.0025	100.0	1.7	0.005	5	281	0.001	7.5	0.0001	0.03	6.94	0.040
3/15/12	186	0.005	0.04	0.0025	78.8	2.3	0.005	5	226	0.001	7.0	0.0001	0.35	8.29	0.010
8/23/12	116	0.001	0.04	0.0020	44.9	1.3	0.005	5	145	0.001	8.0	0.0001	0.29	7.03	0.030
3/21/13	209	0.001	0.05	0.0020	82.1	1.3	0.005	5	241	0.004	8.8	0.0010	0.08	8.33	0.060
9/18/13	95	0.001	0.04	0.0020	38.9	1.9	0.005	15	126	0.001	7.0	0.0010	0.38	7.07	0.020
3/14/13	150	0.001	0.04	0.0020	81.4	1.6	0.005	5	233	0.001	7.2	0.0010	0.05	7.07	0.030
8/29/14	88	0.001	0.04	0.0020	38.1	1.6	0.005	5	118	0.001	5.6	0.0010	0.49	6.44	0.030
3/25/15	264	0.001	0.03	0.0020	110.0	1.4	0.005	5	300	0.001	6.4	0.0010	0.42	7.33	0.010
9/29/15	252	0.001	0.04	0.0020	103.0	1.7	0.005	5	304	0.001	11.1	0.0001	0.03	6.94	0.020
3/25/16	200	0.001	0.03	0.0020	95.9	1.5	0.005	5	267	0.001	6.7	0.0001	0.03	6.48	0.010
9/1/16	108	0.001	0.03	0.0020	39.9	1.7	0.005	5	129	0.001	6.7	0.0001	0.03	6.64	0.030
3/24/17	194	0.001	0.04	0.0020	86.2	2.0	0.005	5	240	0.001	6.1	0.0001	0.03	6.97	0.005
9/18/17	103	0.001	0.04	0.0020	37.7	2.0	0.005	5	120	0.001	6.3	0.0001	0.03	6.59	0.005
3/13/18	172	0.001	0.03	0.0020	75.2	2.4	0.005	5	211	0.001	5.5	0.0001	0.03	6.71	0.005
9/17/18	162	0.001	0.04	0.0020	72.2	2.9	0.005	5	206	0.001	6.3	0.0001	0.03	7.06	0.005

TABLE 4

AMCELLE RUBBLE FILL
TIME SERIES
CONSTITUENT HISTORY (mg/L)*

MW-6

Date	Alkalinity	Arsenic	Barium	Cadmium	Calcium	Chloride	Chromium	COD	Hardness	Lead	Magnesium	Mercury	Nitrogen	pH	Zinc
1/24/97	220	0.003	0.06	0.0005		10.0	0.008	8	380	0.007		0.0003		6.68	0.040
4/30/98	123	0.010	0.21	0.0003	75.8	4.0	0.030	5	253	0.029	15.4	0.0001	2.30	7.30	0.134
12/2/98	142	0.005	0.04	0.0008	88.5	4.0	0.005	5	276	0.003	13.5	0.0001	0.28	7.20	0.053
3/30/99	255	0.005	0.06	0.0013	135.0	5.0	0.005	8	392	0.006	13.3	0.0001	2.05	7.90	0.067
9/28/99	164	0.005	0.04	0.0012	80.9	4.0	0.005	8	248	0.003	11.2	0.0001	0.19	6.60	0.052
3/28/00	230	0.005	0.04	0.0011	122.0	8.0	0.005	8	357	0.006	12.4	0.0001	3.78	6.50	0.051
11/3/00	114	0.005	0.02	0.0008	62.9	8.0	0.005	8	203	0.003	11.1	0.0001	0.29	6.60	0.031
4/24/01	185	0.005	0.02	0.0003	103.0	7.0	0.005	8	306	0.003	11.6	0.0001	1.35	6.80	0.052
10/23/01	72	0.005	0.02	0.0010	53.3	6.0	0.005	8	183	0.003	12.1	0.0001	0.49	6.50	0.056
3/20/02	51	0.005	0.02	0.0007	43.4	6.0	0.005	8	149	0.003	9.9	0.0001	0.68	6.50	0.033
9/25/02	80	0.005	0.02	0.0007	50.7	7.0	0.005	8	174	0.003	11.4	0.0001	0.15	6.60	0.031
3/25/03	117	0.005	0.02	0.00025J	74.5	9.0	0.005	8	235	0.003	11.8	0.0001	1.20	6.20	0.052
10/6/03	168	0.005	0.02	0.0005	93.1	7.0	0.005	8	284	0.007	12.5	0.0001	0.16	6.60	0.038
3/24/04	173	0.005	0.02	0.0010	97.5	5.0	0.005	5	320	0.003	12.4	0.0001	0.03	6.74	0.031
9/22/04	167	0.005	0.02	0.0025	91.6	5.0	0.005	5	277	0.003	11.6	0.0001	0.15	6.65	0.050
3/29/05	198	0.005	0.02	0.0010	101.0	3.0	0.005	5	300	0.003	11.9	0.0001	0.06	6.95	0.036
8/23/05	135	0.005	0.02	0.0010	81.1	5.0	0.005	5	257	0.003	13.2	0.0001	0.08	6.77	0.150
3/9/06	250	0.005	0.01	0.0025	126.0	6.0	0.005	5	364	0.003	12.1	0.0001	0.60	7.27	0.080
9/15/06	78	0.005	0.02	0.0130	55.5	6.0	0.005	5	188	0.003	11.9	0.0001	0.12	6.94	0.090
3/9/07	285	0.005	0.01	0.0025	134.0	5.0	0.005	5	388	0.003	12.6	0.0001	3.36	7.85	0.030
9/27/07	131	0.005	0.02	0.0025	59.3	8.0	0.005	5	200	0.003	12.5	0.0001	0.15	7.64	0.040
3/14/08	295	0.005	0.01	0.0025	143.0	8.0	0.005	5	410	0.003	12.8	0.0001	0.37	7.36	0.060
9/26/08	91	0.005	0.02	0.0025	69.5	10.0	0.005	5	237	0.003	15.4	0.0001	0.03	6.92	0.060
3/26/09	217	0.005	0.01	0.0025	124.0	8.0	0.005	5	366	0.003	13.8	0.0001	0.16	7.05	0.060
9/10/09	89	0.005	0.02	0.0025	66.7	6.0	0.005	5	225	0.003	14.3	0.0001	0.14	6.83	0.050
5/7/10	206	0.005	0.02	0.0025	106.0	6.1	0.005	5	318	0.003	13.2	0.0001	0.14	7.02	0.050
10/20/10	90	0.005	0.02	0.0025	51.8	5.0	0.005	5	182	0.001	12.9	0.0001	0.76	7.09	0.044
2/25/11	278	0.005	0.01	0.0025	155.0	3.6	0.005	5	448	0.001	14.9	0.0001	2.24	7.25	0.020
9/28/11	246	0.005	0.02	0.0025	142.0	10.0	0.005	5	422	0.001	16.3	0.0001	0.00	7.11	0.070
3/15/12	201	0.005	0.02	0.0025	110.0	4.9	0.005	5	336	0.001	14.9	0.0001	0.20	8.40	0.050
8/23/12	139	0.001	0.02	0.0020	88.6	4.1	0.005	5	284	0.001	15.3	0.0001	0.13	7.53	0.050
3/21/13	222	0.001	0.01	0.0020	111.0	4.8	0.005	5	335	0.001	14.1	0.0010	0.20	8.38	0.040
9/18/13	130	0.001	0.02	0.0020	77.1	7.6	0.005	5	254	0.001	14.9	0.0010	0.03	7.15	0.050
3/14/13	228	0.001	0.01	0.0020	131.0	5.8	0.005	5	392	0.001	15.7	0.0010	0.95	7.76	0.060
8/29/14	203	0.001	0.02	0.0020	109.0	8.4	0.005	5	338	0.001	15.9	0.0010	0.03	7.50	0.060
3/25/15	210	0.001	0.01	0.0020	102.0	4.9	0.005	5	317	0.001	14.9	0.0010	0.16	7.77	0.030
9/29/15	147	0.001	0.02	0.0020	79.8	5.3	0.005	5	271	0.001	17.4	0.0001	0.06	7.55	0.050
3/25/16	191	0.001	0.01	0.0020	113.0	6.2	0.005	5	350	0.001	16.7	0.0001	0.03	7.08	0.060
9/1/16	164	0.001	0.02	0.0020	106.0	9.3	0.005	5	328	0.001	16.7	0.0001	0.13	7.59	0.060
3/24/17	196	0.001	0.02	0.0020	111.0	7.7	0.005	5	344	0.001	16.1	0.0001	0.03	7.41	0.010
9/18/17	197	0.001	0.01	0.0020	117.0	12.0	0.005	5	362	0.001	17.0	0.0001	0.03	7.56	0.070
3/13/18	174	0.001	0.01	0.0020	101.0	6.5	0.005	5	320	0.001	16.8	0.0001	0.71	7.75	0.050
9/17/18	142	0.001	0.01	0.0020	82.2	6.2	0.005	5	270	0.001	15.8	0.0001	0.03	7.47	0.050

TABLE 4

AMCELLE RUBBLE FILL
TIME SERIES
CONSTITUENT HISTORY (mg/L)*

MW-7

Date	Alkalinity	Arsenic	Barium	Cadmium	Calcium	Chloride	Chromium	COD	Hardness	Lead	Magnesium	Mercury	Nitrogen	pH	Zinc
1/24/97	240	0.003	0.04	0.0005		10.0	0.003	8	380	0.011		0.0003		7.26	0.010
4/30/98	167	0.005	0.04	0.0003	90.3	6.0	0.005	13	290	0.009	15.7	0.0001	0.03	7.80	0.008
12/2/98	451	0.005	0.13	0.0003	179.0	10.0	0.010	18	552	0.014	25.3	0.0001	0.03	7.90	0.016
3/30/99	293	0.005	0.07	0.0003	161.0	9.0	0.005	8	498	0.003	23.2	0.0001	0.23	8.10	0.126
9/28/99	418	0.005	0.15	0.0003	205.0	8.0	0.005	8	630	0.027	28.8	0.0001	0.03	7.50	0.053
3/28/00	481	0.005	0.13	0.0003	238.0	8.0	0.010	21	719	0.030	30.0	0.0001	0.29	7.10	0.050
11/3/00	461	0.005	0.09	0.0003	156.0	9.0	0.005	8	490	0.003	24.4	0.0001	0.03	7.70	0.003
4/24/01	370	0.005	0.06	0.0003	131.0	6.0	0.005	8	420	0.003	22.5	0.0001	0.12	7.40	0.036
10/24/01	495	0.005	0.14	0.0003	159.0	7.0	0.005	8	508	0.003	26.8	0.0001	0.03	7.40	0.003
3/20/02	375	0.005	0.10	0.0003	213.0	8.0	0.005	8	636	0.003	25.1	0.0001	0.11	7.60	0.012
9/25/02	451	0.005	0.13	0.0003	218.0	10.0	0.005	8	678	0.003	32.2	0.0001	0.07	7.50	0.021
3/25/03	406	0.005	0.12	0.00025J	144.0	7.0	0.005	8	455	0.003	23.3	0.0001	0.03	7.00	0.024
10/6/03	444	0.005	0.39	0.00025U	118.0	6.0	0.005	8	370	0.003	18.1	0.0001	0.03	7.20	0.003
3/24/04	188	0.005	0.08	0.0010	91.1	7.0	0.005	5	320	0.003	15.3	0.0001	0.03	7.23	0.005
9/22/04	413	0.005	0.16	0.0025	176.0	68.0	0.005	5	540	0.003	24.4	0.0001	0.03	7.35	0.005
3/29/05	244	0.005	0.06	0.0010	102.0	4.0	0.005	5	317	0.003	15.1	0.0001	0.06	7.50	0.005
8/23/05	402	0.005	0.14	0.0010	151.0	6.0	0.005	5	462	0.003	20.3	0.0001	0.03	7.18	0.010
3/9/06	398	0.005	0.12	0.0025	270.0	11.0	0.010	5	807	0.003	32.2	0.0001	0.14	6.98	0.005
9/15/06	521	0.005	0.16	0.0025	265.0	10.0	0.005	48	801	0.013	33.7	0.0001	0.09	7.26	0.030
3/9/07	339	0.005	0.09	0.0025	395.0	9.0	0.005	5	1130	0.003	35.6	0.0001	0.09	6.94	0.005
9/27/07	452	0.005	0.08	0.0025	338.0	12.0	0.005	5	732	0.003	35.5	0.0001	0.13	6.95	0.030
3/14/08	406	0.005	0.06	0.0025	329.0	10.0	0.005	5	974	0.003	37.1	0.0001	0.03	7.11	0.010
9/26/08	510	0.005	0.13	0.0025	332.0	15.0	0.005	5	1010	0.003	43.7	0.0001	0.03	7.18	0.060
3/26/09	433	0.005	0.08	0.0025	383.0	16.0	0.005	11	1140	0.003	44.1	0.0001	0.03	7.06	0.010
9/10/09	557	0.010	0.17	0.0025	377.0	16.0	0.005	17	1140	0.010	49.3	0.0001	0.03	7.42	0.040
5/7/10	208	0.005	0.04	0.0025	117.0	5.0	0.005	5	359	0.003	16.5	0.0001	0.03	7.23	0.010
10/20/10	429	0.012	0.12	0.0025	275.0	10.9	0.005	5	809	0.017	29.9	0.0001	0.03	7.33	0.036
2/25/11	442	0.002	0.08	0.0025	318.0	12.6	0.005	5	927	0.017	32.5	0.0001	0.24	7.43	0.040
9/28/11	573	0.002	0.15	0.0025	259.0	27.2	0.005	11	783	0.017	33.0	0.0001	0.03	7.02	0.005
3/15/12	279	0.002	0.07	0.0025	136.0	16.5	0.005	5	411	0.003	17.6	0.0001	0.22	8.14	0.005
8/23/12	506	0.001	0.17	0.0020	164.0	17.8	0.005	5	498	0.001	21.5	0.0001	0.08	8.05	0.020
3/21/13	464	0.001	0.13	0.0020	191.0	16.4	0.010	5	578	0.001	24.7	0.0010	0.35	8.26	0.020
9/18/13	579	0.001	0.15	0.0020	191.0	18.1	0.005	5	587	0.001	26.8	0.0010	0.39	7.38	0.020
3/14/14	457	0.001	0.12	0.0020	244.0	15.9	0.005	5	728	0.001	28.9	0.0010	0.46	7.77	0.100
8/29/14	499	0.001	0.11	0.0020	164.0	8.8	0.005	5	496	0.001	21.0	0.0010	0.58	7.31	0.090
3/25/15	403	0.001	0.10	0.0020	237.0	11.9	0.005	5	701	0.001	26.3	0.0010	0.58	7.52	0.010
9/29/15	501	0.001	0.12	0.0020	269.0	11.9	0.005	12	793	0.001	29.6	0.0001	0.03	7.38	0.940
3/25/16	366	0.001	0.07	0.0020	203.0	14.3	0.005	5	604	0.001	23.6	0.0001	0.03	6.98	0.170
9/1/16	555	0.001	0.10	0.0020	219.0	9.9	0.005	5	652	0.001	23.6	0.0001	0.22	7.29	0.460
3/24/17	432	0.001	0.09	0.0020	262.0	13.7	0.005	5	768	0.001	28.0	0.0001	0.03	7.63	0.010
9/18/17	512	0.003	0.11	0.0020	166.0	8.3	0.005	11	488	0.001	17.9	0.0001	0.03	7.54	0.020
3/13/18	438	0.001	0.10	0.0020	185.0	9.4	0.005	5	547	0.001	20.4	0.0001	0.03	7.73	0.070
9/17/18	308	0.001	0.06	0.0020	112.0	3.0	0.005	10	315	0.001	8.8	0.0001	0.03	8.04	0.010

TABLE 4

AMCELLE RUBBLE FILL
TIME SERIES
CONSTITUENT HISTORY (mg/L)*

MW-11

Date	Alkalinity	Arsenic	Barium	Cadmium	Calcium	Chloride	Chromium	COD	Hardness	Lead	Magnesium	Mercury	Nitrogen	pH	Zinc
1/24/97	66	0.003	0.09	0.0005		2.5	0.003	8	240	0.003		0.0003	0.03	5.88	0.010
4/30/98	71		0.10	0.0003	44.6	4.0	0.005	5	152	0.007	9.8	0.0001	0.03	6.80	0.025
12/2/98	61	0.005	0.10	0.0003	38.6	4.0	0.010	5	134	0.007	9.2	0.0001	0.03	6.60	0.051
3/30/99	66	0.005	0.08	0.0003	40.8	6.0	0.005	8	141	0.006	9.4	0.0001	0.03	6.80	0.105
9/28/99	64	0.005	0.08	0.0006	36.7	6.0	0.005	8	128	0.003	8.7	0.0001	0.03	6.10	0.034
3/28/00	83	0.050	0.78	0.0011	49.1	14.0	0.120	54	199	0.076	18.6	0.0004	0.03	6.10	0.397
11/3/00	135	0.005	0.05	0.0003	66.5	12.0	0.005	8	221	0.003	13.4	0.0001	0.03	6.40	0.015
4/24/01	128	0.005	0.03	0.0003	72.8	7.0	0.005	8	242	0.003	14.5	0.0001	0.09	6.70	0.017
10/24/01	154	0.005	0.03	0.0003	80.5	5.0	0.005	8	272	0.003	17.3	0.0001	0.03	6.50	0.003
3/21/02	150	0.005	0.25	0.0003	74.2	8.0	0.005	8	246	0.003	14.8	0.0001	0.03	6.80	0.168
9/25/02	134	0.005	0.04	0.0003	69.4	6.0	0.005	8	236	0.003	15.3	0.0001	0.03	6.60	0.027
3/25/03	119	0.005	0.03	0.00025J	59.3	6.0	0.005	8	201	0.003	12.9	0.0001	0.15	6.60	0.029
10/6/03	105	0.005	0.03	0.00025U	55.7	3.0	0.005	8	194	0.003	13.5	0.0001	0.03	5.90	0.013
3/24/04	127	0.005	0.02	0.0010	66.4	5.0	0.005	5	250	0.003	15.7	0.0001	0.14	6.30	0.034
9/22/04	102	0.005	0.03	0.0025	52.3	5.0	0.005	5	181	0.003	12.3	0.0001	0.03	6.37	0.010
3/29/05	106	0.005	0.02	0.0010	58.2	3.0	0.005	5	200	0.003	13.3	0.0001	0.12	6.45	0.098
8/23/05	121	0.005	0.02	0.0010	57.3	3.0	0.005	5	195	0.003	12.7	0.0001	0.09	6.31	0.005
3/9/06	119	0.005	0.02	0.0025	60.6	3.0	0.005	5	206	0.003	13.4	0.0001	0.16	7.55	0.142
9/15/06	106	0.005	0.03	0.0025	53.0	4.0	0.005	5	183	0.003	12.3	0.0001	0.74	6.21	0.030
3/9/07	102	0.005	0.02	0.0025	52.1	3.0	0.005	5	180	0.003	12.1	0.0001	0.28	6.49	0.030
9/27/07	105	0.005	0.02	0.0025	49.0	3.0	0.005	5	169	0.003	11.4	0.0001	0.08	6.74	0.060
3/14/08	107	0.005	0.02	0.0025	54.0	4.0	0.005	5	184	0.003	12.0	0.0001	0.15	7.33	0.080
9/26/08	120	0.005	0.03	0.0025	54.7	2.0	0.005	5	190	0.003	13.1	0.0001	0.09	6.27	0.020
3/26/09	96	0.005	0.02	0.0025	55.9	4.0	0.005	5	192	0.003	12.8	0.0001	0.13	6.48	0.060
9/10/09	105	0.005	0.03	0.0025	56.1	3.0	0.005	5	193	0.003	12.8	0.0001	0.10	6.60	0.030
5/7/10	134	0.005	0.02	0.0025	70.2	2.0	0.005	5	235	0.003	14.4	0.0001	0.11	6.85	0.020
10/20/10	98	0.005	0.04	0.0025	49.9	2.1	0.005	5	172	0.004	11.5	0.0001	0.17	7.00	0.050
2/25/11	91	0.003	0.06	0.0025	52.9	2.3	0.005	5	182	0.006	12.2	0.0001	0.23	6.10	0.050
9/28/11	81	0.002	0.05	0.0025	46.7	2.1	0.005	5	164	0.005	11.4	0.0001	0.13	6.39	0.050
3/15/12	87	0.003	0.05	0.0025	46.3	1.9	0.005	5	161	0.006	11.1	0.0001	0.27	7.89	0.050
8/23/12	74	0.001	0.05	0.0020	46.6	1.9	0.005	5	162	0.004	11.2	0.0001	0.23	7.05	0.030
3/21/13	80	0.001	0.03	0.0020	52.1	3.6	0.005	5	177	0.002	11.4	0.0010	0.14	7.68	0.030
9/18/13	82	0.001	0.04	0.0020	45.9	2.4	0.005	5	158	0.002	10.5	0.0010	0.27	7.04	0.030
3/13/14	79	0.001	0.02	0.0020	49.1	2.0	0.005	5	169	0.001	11.3	0.0010	0.17	7.22	0.030
8/29/14	82	0.001	0.05	0.0020	45.0	1.9	0.005	5	156	0.005	10.5	0.0010	0.03	6.73	0.040
3/25/15	73	0.001	0.05	0.0020	45.8	1.8	0.005	5	161	0.003	11.4	0.0010	0.39	6.67	0.050
9/29/15	69	0.008	0.23	0.0020	42.4	1.8	0.020	5	155	0.054	12.0	0.0001	0.13	6.40	0.220
3/25/16	75	0.001	0.08	0.0020	45.9	2.0	0.005	5	154	0.008	9.6	0.0001	0.03	6.06	0.040
9/1/16	72	0.004	0.10	0.0020	44.9	1.9	0.005	5	159	0.015	9.6	0.0001	0.10	6.28	0.200
3/24/17	77	0.004	0.06	0.0020	45.3	2.2	0.005	5	154	0.001	10.0	0.0001	0.07	6.54	0.010
9/18/17	74	0.003	0.07	0.0020	41.7	2.2	0.005	5	143	0.009	9.5	0.0001	0.20	6.43	0.060
3/13/18	68	0.001	0.03	0.0020	42.5	2.4	0.005	5	144	0.001	9.2	0.0001	0.20	6.39	0.020
9/17/18	79	0.001	0.05	0.0020	42.7	1.8	0.005	5	146	0.001	9.7	0.0001	0.24	6.51	0.020

TABLE 4

AMCELLE RUBBLE FILL
TIME SERIES
CONSTITUENT HISTORY (mg/L)*

MW-12

Date	Alkalinity	Arsenic	Barium	Cadmium	Calcium	Chloride	Chromium	COD	Hardness	Lead	Magnesium	Mercury	Nitrogen	pH	Zinc
1/24/97	43	0.003	0.07	0.0005		9.2	0.003	8	88	0.003		0.0003		5.88	0.010
4/30/98	51	0.005	0.08	0.0003	27.9	5.0	0.005	5	102	0.010	7.9	0.0001	0.03	7.00	0.024
12/2/98	152	0.010	0.31	0.0003	52.8	16.0	0.040	5	175	0.020	10.5	0.0001	0.03	7.60	0.117
3/30/99	79	0.005	0.22	0.0003	37.3	7.0	0.020	8	130	0.013	9.0	0.0001	0.03	7.40	0.079
9/28/99	136	0.010	0.28	0.0006	49.4	17.0	0.040	8	165	0.020	10.1	0.0001	0.03	7.10	0.122
3/28/00	103	0.005	0.20	0.0003	45.3	14.0	0.020	8	153	0.010	0.0	0.0001	0.03	6.50	0.067
11/3/00	182	0.005	0.06	0.0003	57.8	18.0	0.005	8	181	0.003	8.9	0.0001	0.03	7.60	0.003
4/24/01	173	0.005	0.08	0.0003	55.2	11.0	0.005	8	185	0.003	11.4	0.0001	0.03	7.50	0.013
10/24/01	177	0.005	0.05	0.0003	61.3	21.0	0.005	8	185	0.003	7.7	0.0001	0.03	7.90	0.007
3/21/02	187	0.005	0.07	0.0003	54.7	13.0	0.005	8	182	0.003	11.0	0.0001	0.03	8.00	0.003
9/25/02	173	0.005	0.04	0.0003	59.6	22.0	0.005	8	178	0.003	7.1	0.0001	0.03	7.80	0.005
3/25/03	185	0.005	0.08	0.00025J	55.7	11.0	0.005	8	187	0.003	11.7	0.0001	0.03	7.40	0.003
10/6/03	224	0.005	0.11	0.00025U	63.5	6.0	0.005	8	221	0.003	15.0	0.0001	0.03	7.40	0.003
3/24/04	211	0.005	0.10	0.0010	76.7	7.0	0.005	5	270	0.003	13.2	0.0001	0.03	7.18	0.005
9/22/04	223	0.005	0.11	0.0025	67.6	7.0	0.005	5	228	0.003	14.3	0.0001	0.03	7.34	0.005
3/29/05	211	0.005	0.09	0.0010	66.9	6.0	0.005	5	226	0.003	14.2	0.0001	0.03	7.47	0.005
8/23/05	170	0.005	0.06	0.0010	64.1	19.0	0.005	5	194	0.003	8.2	0.0001	0.03	7.16	0.005
3/9/06	190	0.005	0.07	0.0025	55.8	18.0	0.005	5	183	0.003	10.6	0.0010	0.13	8.15	0.005
9/15/06	174	0.005	0.04	0.0025	65.6	22.0	0.005	5	193	0.003	7.0	0.0001	0.03	7.35	0.005
3/9/07	183	0.005	0.05	0.0025	62.2	17.0	0.005	5	187	0.003	7.6	0.0001	0.03	7.76	0.005
9/27/07	177	0.005	0.05	0.0025	49.9	20.0	0.005	5	148	0.003	5.8	0.0001	0.03	7.65	0.020
3/14/08	183	0.005	0.07	0.0025	58.7	14.0	0.005	5	190	0.003	10.6	0.0001	0.03	8.20	0.005
9/26/09	211	0.005	0.07	0.0025	58.2	13.0	0.005	5	191	0.003	11.2	0.0001	0.03	7.58	0.005
3/26/09	181	0.005	0.09	0.0025	61.6	14.0	0.005	5	204	0.003	12.1	0.0001	0.03	7.33	0.005
9/10/09	201	0.005	0.08	0.0025	67.0	11.0	0.005	5	220	0.003	12.9	0.0001	0.03	7.52	0.005
5/7/10	193	0.006	0.10	0.0025	68.6	7.0	0.005	5	223	0.003	12.6	0.0001	0.03	7.48	0.005
10/20/10	181	0.001	0.05	0.0025	65.2	17.9	0.005	5	192	0.001	7.1	0.0001	0.03	7.67	0.005
2/25/11	191	0.001	0.07	0.0025	67.3	14.6	0.005	5	214	0.001	11.2	0.0001	0.03	7.56	0.005
9/28/11	173	0.001	0.06	0.0025	68.6	18.8	0.005	5	206	0.001	8.4	0.0001	0.03	7.49	0.005
3/15/12	157	0.001	0.09	0.0025	59.5	5.8	0.005	5	198	0.001	12.0	0.0001	0.17	8.28	0.005
8/23/12	214	0.004	0.10	0.0020	73.7	5.6	0.005	5	245	0.001	14.8	0.0001	0.03	8.02	0.005
3/21/13	191	0.001	0.08	0.0020	68.0	6.7	0.005	5	221	0.001	12.4	0.0010	0.12	8.40	0.005
9/18/13	195	0.001	0.08	0.0020	66.4	12.0	0.005	5	218	0.001	12.6	0.0010	0.03	7.99	0.005
3/14/14	189	0.001	0.08	0.0020	66.1	14.2	0.005	5	218	0.001	12.7	0.0010	0.03	8.10	0.005
8/29/14	208	0.001	0.09	0.0060	67.6	10.8	0.005	5	235	0.005	16.1	0.0010	0.03	7.83	0.005
3/25/15	193	0.001	0.07	0.0060	65.4	15.4	0.005	5	214	0.005	12.3	0.0010	0.03	7.82	0.005
9/29/15	178	0.001	0.05	0.0020	71.7	18.9	0.005	5	211	0.001	7.7	0.0001	0.03	7.69	0.005
3/25/16	187	0.001	0.08	0.0020	66.6	17.5	0.005	5	219	0.001	12.8	0.0001	0.03	7.45	0.005
9/1/16	180	0.001	0.05	0.0020	73.6	19.4	0.005	5	217	0.001	12.8	0.0001	0.03	7.64	0.005
3/24/17	190	0.012	0.08	0.0020	65.9	17.0	0.005	5	214	0.001	12.1	0.0001	0.16	8.03	0.070
9/18/17	197	0.001	0.07	0.0020	63.1	14.6	0.005	5	212	0.001	13.2	0.0001	0.03	7.83	0.005
3/13/18	195	0.001	0.08	0.0020	69.8	17.1	0.005	5	230	0.001	13.4	0.0001	0.03	7.70	0.010
9/17/18	158	0.001	0.09	0.0020	63.3	12.8	0.005	5	214	0.001	13.6	0.0001	0.22	7.47	0.005

TABLE 4

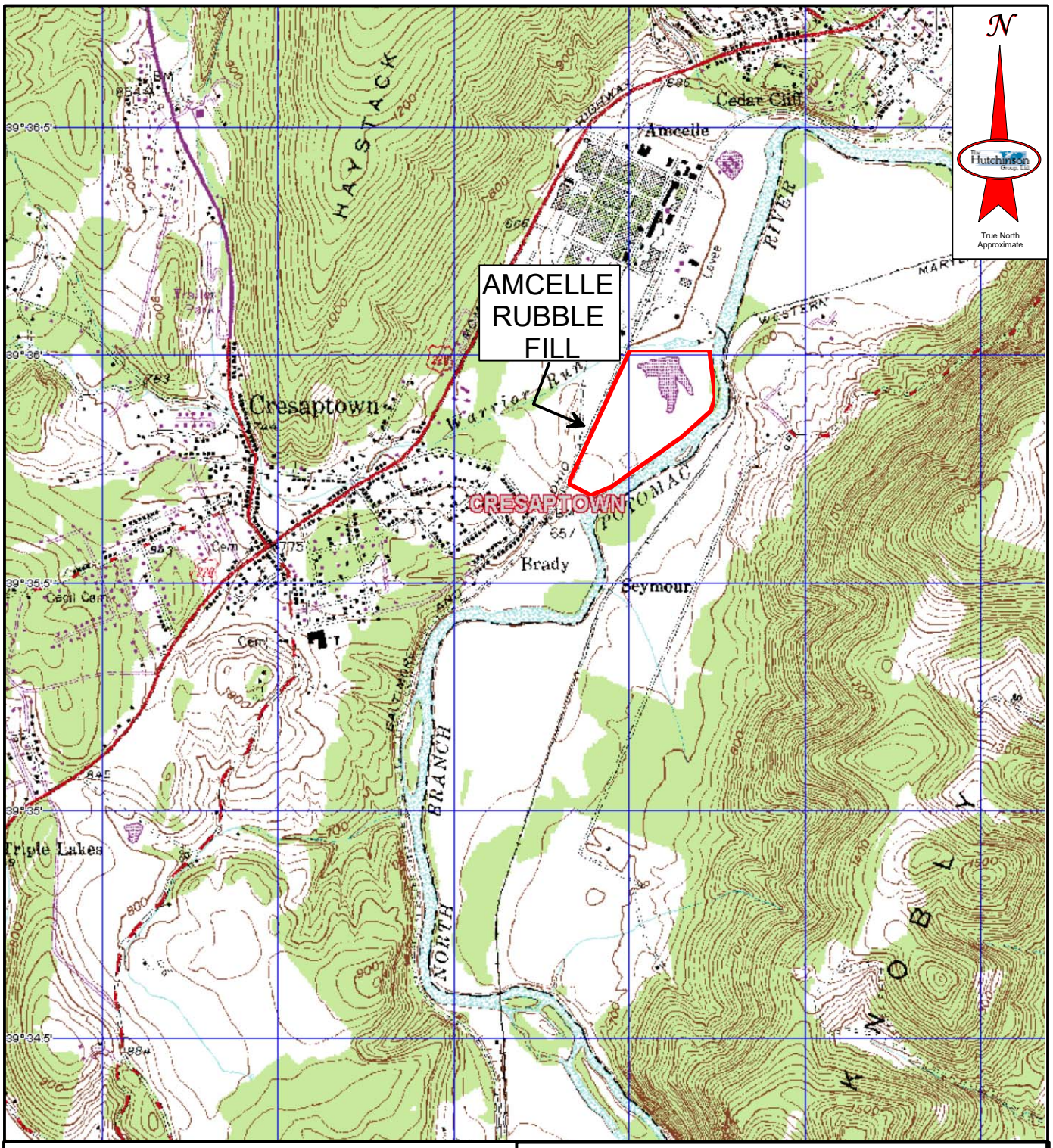
AMCELLE RUBBLE FILL
TIME SERIES
CONSTITUENT HISTORY (mg/L)*

MW-13

Date	Alkalinity	Arsenic	Barium	Cadmium	Calcium	Chloride	Chromium	COD	Hardness	Lead	Magnesium	Mercury	Nitrogen	pH	Zinc
1/24/97	230	0.003	0.02	0.0005		11.0	0.003	8	630	0.003		0.0003		7.02	0.010
4/30/98	225	0.005	0.02	0.0003	183.0	12.0	0.005	11	547	0.003	21.6	0.0001	0.03	7.90	0.007
12/2/98	256	0.005	0.05	0.0003	297.0	11.0	0.005	5	918	0.003	42.8	0.0001	0.03	7.60	0.009
3/30/99	248	0.005	0.05	0.0003	315.0	11.0	0.005	8	953	0.003	40.2	0.0001	0.03	7.90	0.050
9/28/99	250	0.005	0.04	0.0003	263.0	10.0	0.005	8	814	0.003	38.1	0.0001	0.03	7.00	0.012
3/28/00	244	0.005	0.05	0.0003	335.0	11.0	0.005	8	1010	0.003	42.1	0.0001	0.03	7.10	0.013
11/3/00	203	0.005	0.07	0.0003	251.0	10.0	0.005	8	911	0.003	69.3	0.0001	0.06	7.50	0.016
4/24/01	212	0.005	0.04	0.0003	251.0	9.0	0.005	8	860	0.003	56.5	0.0002	0.03	7.30	0.023
10/24/01	194	0.005	0.05	0.0003	263.0	8.0	0.005	8	970	0.003	76.1	0.0001	0.03	7.70	0.003
3/21/02	195	0.005	0.04	0.0003	284.0	8.0	0.005	8	987	0.003	67.6	0.0001	0.03	7.80	0.003
9/25/02	188	0.005	0.04	0.0025	248.0	8.0	0.005	8	905	0.003	69.0	0.0001	0.03	7.80	0.003
3/25/03	206	0.005	0.05	0.00025J	283.0	7.0	0.005	8	986	0.003	67.9	0.0001	0.03	7.10	0.003
10/6/03	190	0.005	0.04	0.00025U	270.0	6.0	0.005	8	986	0.003	75.8	0.0001	0.03	7.20	0.013
3/24/04	191	0.005	0.04	0.0010	267.0	9.0	0.005	5	1000	0.003	70.6	0.0001	0.03	7.30	0.005
9/22/04	187	0.005	0.05	0.0025	275.0	9.0	0.005	5	990	0.003	73.4	0.0001	0.03	7.10	0.005
3/29/05	201	0.005	0.05	0.0010	283.0	7.0	0.005	5	996	0.003	70.0	0.0001	0.03	7.41	0.005
8/23/05	195	0.005	0.04	0.0010	280.0	7.0	0.005	5	990	0.003	70.9	0.0001	0.03	7.24	0.020
3/9/06	211	0.005	0.05	0.0025	267.0	11.0	0.010	5	916	0.003	60.8	0.0001	0.14	7.98	0.030
9/15/06	220	0.005	0.04	0.0025	257.0	9.0	0.005	5	893	0.003	60.7	0.0001	0.03	7.32	0.005
3/9/07	217	0.005	0.05	0.0025	256.0	8.0	0.005	5	834	0.003	47.2	0.0001	0.03	7.11	0.005
9/27/07	205	0.005	0.04	0.0025	214.0	6.0	0.005	5	763	0.003	55.2	0.0001	0.50	7.20	0.010
3/14/08	224	0.005	0.03	0.0025	256.0	9.0	0.005	5	862	0.003	53.7	0.0001	0.03	7.27	0.005
9/26/08	245	0.005	0.02	0.0025	277.0	9.0	0.005	5	869	0.003	43.2	0.0001	0.03	7.00	0.005
3/26/09	218	0.005	0.05	0.0025	266.0	11.0	0.005	5	877	0.003	51.9	0.0001	0.03	7.15	0.005
9/10/09	245	0.005	0.02	0.0025	295.0	9.0	0.005	5	925	0.003	45.6	0.0001	0.03	7.11	0.005
5/7/10	243	0.003	0.03	0.0025	274.0	9.0	0.005	5	866	0.003	44.1	0.0001	0.03	7.18	0.005
10/20/10	246	0.001	0.02	0.0025	262.0	9.2	0.005	5	821	0.001	40.5	0.0001	0.03	7.17	0.005
2/25/11	227	0.003	0.03	0.0025	272.0	7.9	0.005	5	863	0.001	44.9	0.0001	0.15	7.66	0.005
9/28/11	248	0.008	0.03	0.0025	309.0	8.7	0.005	5	958	0.001	45.3	0.0001	0.03	7.23	0.005
3/15/12	241	0.003	0.03	0.0025	286.0	8.3	0.005	5	906	0.003	46.2	0.0001	0.12	7.39	0.005
8/23/12	239	0.002	0.03	0.0020	305.0	7.7	0.005	5	960	0.001	48.2	0.0001	0.03	7.59	0.005
3/22/13	235	0.003	0.03	0.0020	288.0	6.9	0.005	5	926	0.001	50.3	0.0010	0.20	8.32	0.005
9/18/13	239	0.004	0.03	0.0020	278.0	9.7	0.005	5	884	0.001	46.0	0.0010	0.22	7.08	0.005
3/14/14	225	0.004	0.04	0.0020	287.0	8.4	0.005	5	911	0.001	47.5	0.0010	0.03	7.60	0.005
8/29/14	244	0.006	0.04	0.0020	271.0	9.6	0.005	5	876	0.001	48.4	0.0010	0.03	7.11	0.005
3/25/15	225	0.006	0.03	0.0020	257.0	8.0	0.005	5	829	0.001	45.5	0.0010	0.03	7.35	0.005
9/29/15	241	0.003	0.02	0.0020	292.0	8.4	0.005	5	922	0.001	46.8	0.0001	0.03	7.25	0.005
3/25/16	235	0.002	0.04	0.0020	293.0	9.8	0.005	5	929	0.001	47.9	0.0001	0.03	6.92	0.005
9/1/16	242	0.001	0.02	0.0020	300.0	9.3	0.005	5	941	0.001	47.9	0.0001	0.03	7.26	0.005
3/24/17	233	0.003	0.03	0.0020	283.0	9.9	0.005	5	902	0.006	47.2	0.0001	0.16	7.53	0.040
9/18/17	244	0.001	0.02	0.0020	287.0	11.3	0.005	5	894	0.001	43.1	0.0001	0.03	7.40	0.005
3/13/18	246	0.001	0.03	0.0020	287.0	9.6	0.005	5	902	0.001	45.2	0.0001	0.03	7.71	0.005
9/17/18	246	0.001	0.03	0.0020	291.0	9.4	0.005	5	915	0.001	45.8	0.0001	0.03	7.60	0.005

J = The associated value is an estimated quantity.
U = The analyte was not detected at or above the listed concentration, which is below the laboratory quantitation limit.
*pH Unit: su

All non-detects converted to 1/2 the non-detection limit
Blank cells = Not analyzed for this constituent.



The Hutchinson Group, Ltd.
Geophysical and Environmental Services

4280 Old William Penn Hwy
Murrysville, Pennsylvania 15668
(724) 325-3996 Fax: (724) 733-7901

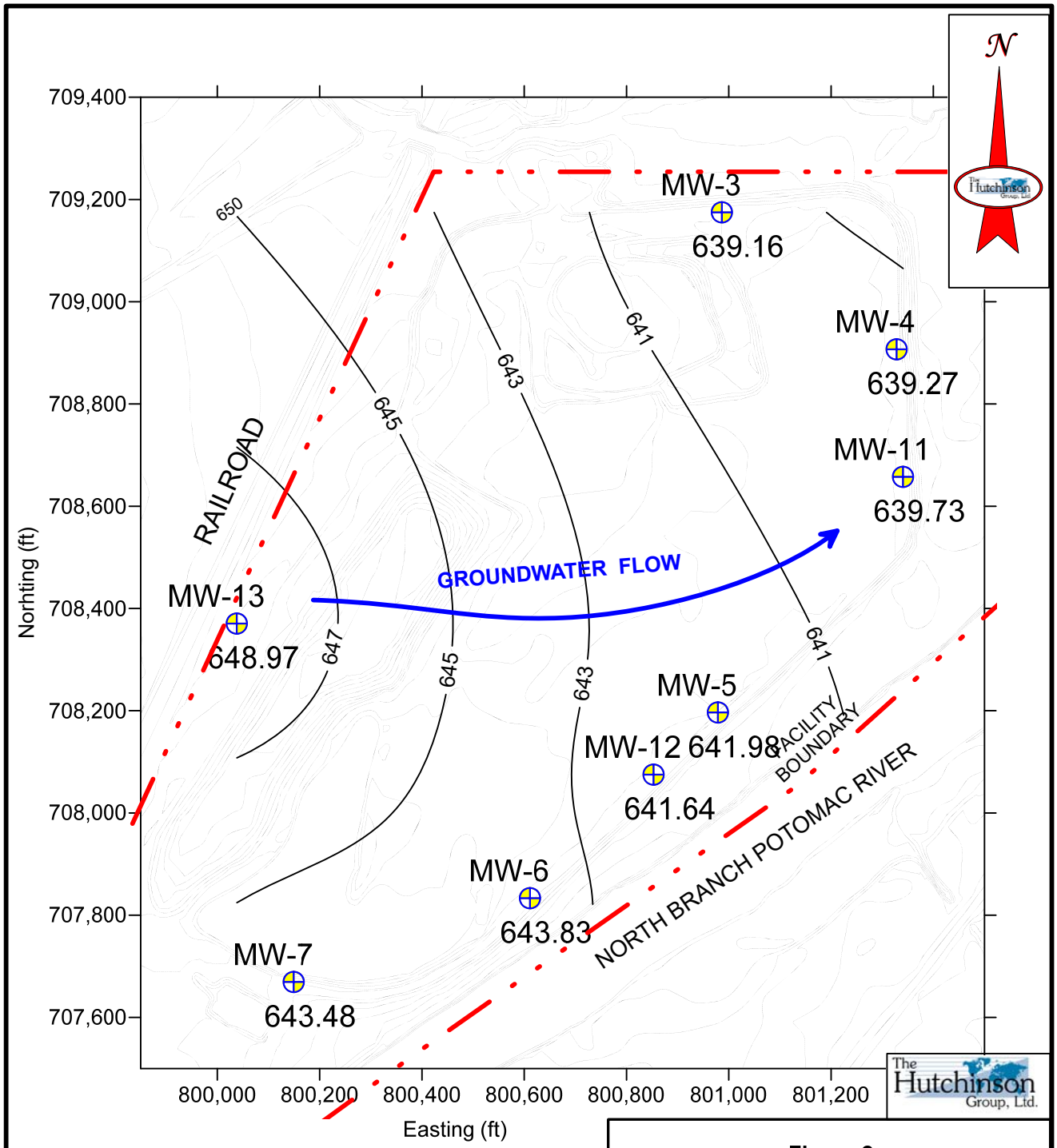
www.thggeophysics.com

Contour Interval = 20 feet

FIGURE 1
SITE LOCATION MAP

Amcelle Rubble Landfill
Permit No. 1999WRF-0206

SCALE:	PROJECT NO.:	DRAWING NO.:
1:24,000	187-7029	DWG7029F1
DRAWN BY: PJH	SOURCE: 1981 Cresapetown, MD USGS 7.5' Quadrangle	
CHECKED BY: PJH		



NOTE

$i_{(MW\text{-}13 \text{ to } MW\text{-}11)} = 0.0068$ ft/ft

Scale 1" = 300'
Potentiometric Contour Interval = 2 ft
Topographic Interval = 2'

0ft 100ft 200ft 300ft 400ft

Figure 2
Uppermost Groundwater Zone
Potentiometric Map 9/17/18

Amcelle Rubble Landfill
Allegany County, Maryland

SCALE: 1 in = 300 ft	PROJECT NO: 187-7029	DRAWING NO: DWG7029F2
DATE: 1/29/19		
DRAWN BY: AXB	SOURCE: Base map from Allegany County Aerial Photography, 2006	
CHECKED BY: PJH		

FIGURE 3

UPPERMOST AQUIFER

Time Series

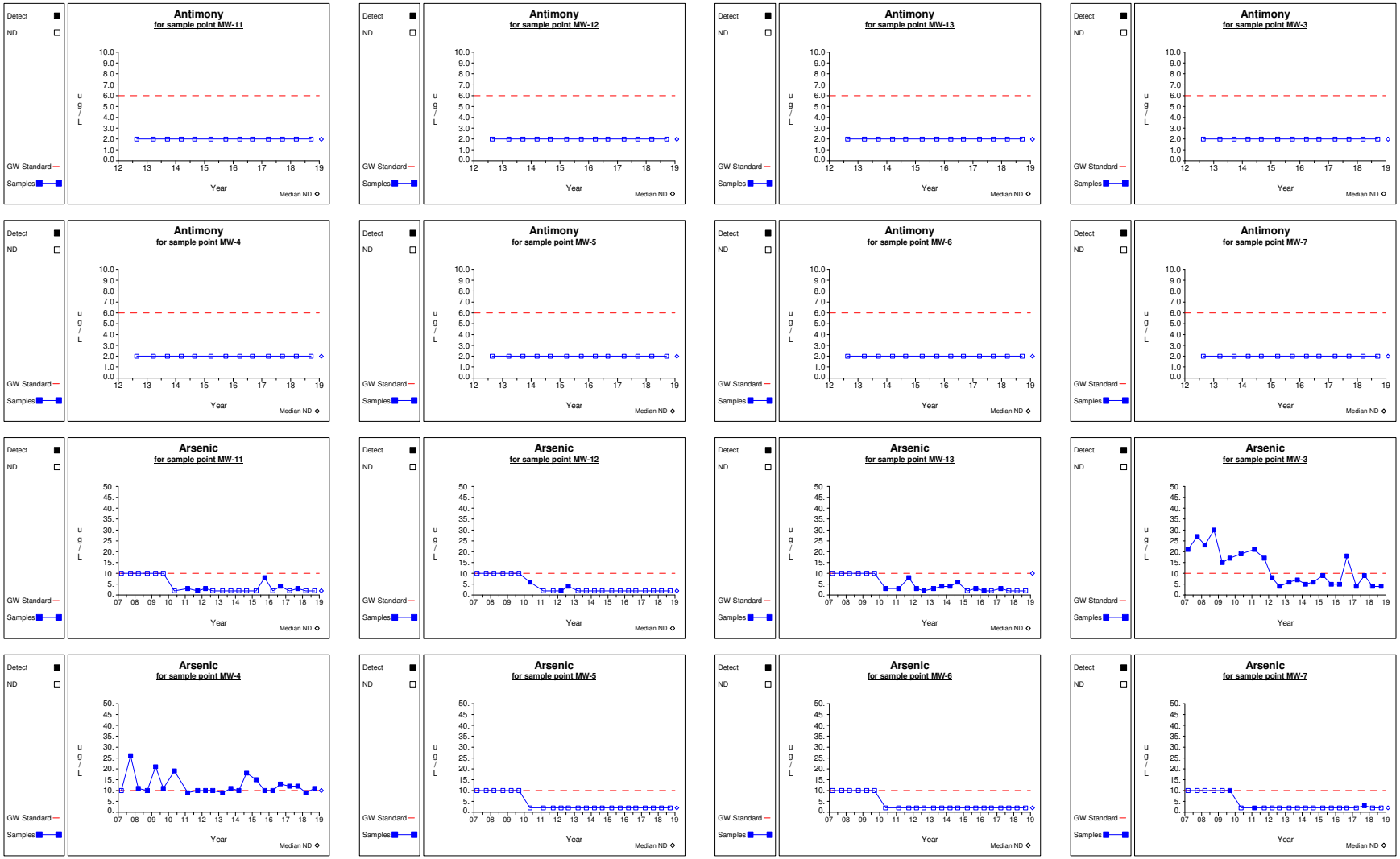


FIGURE 3

UPPERMOST AQUIFER

Time Series

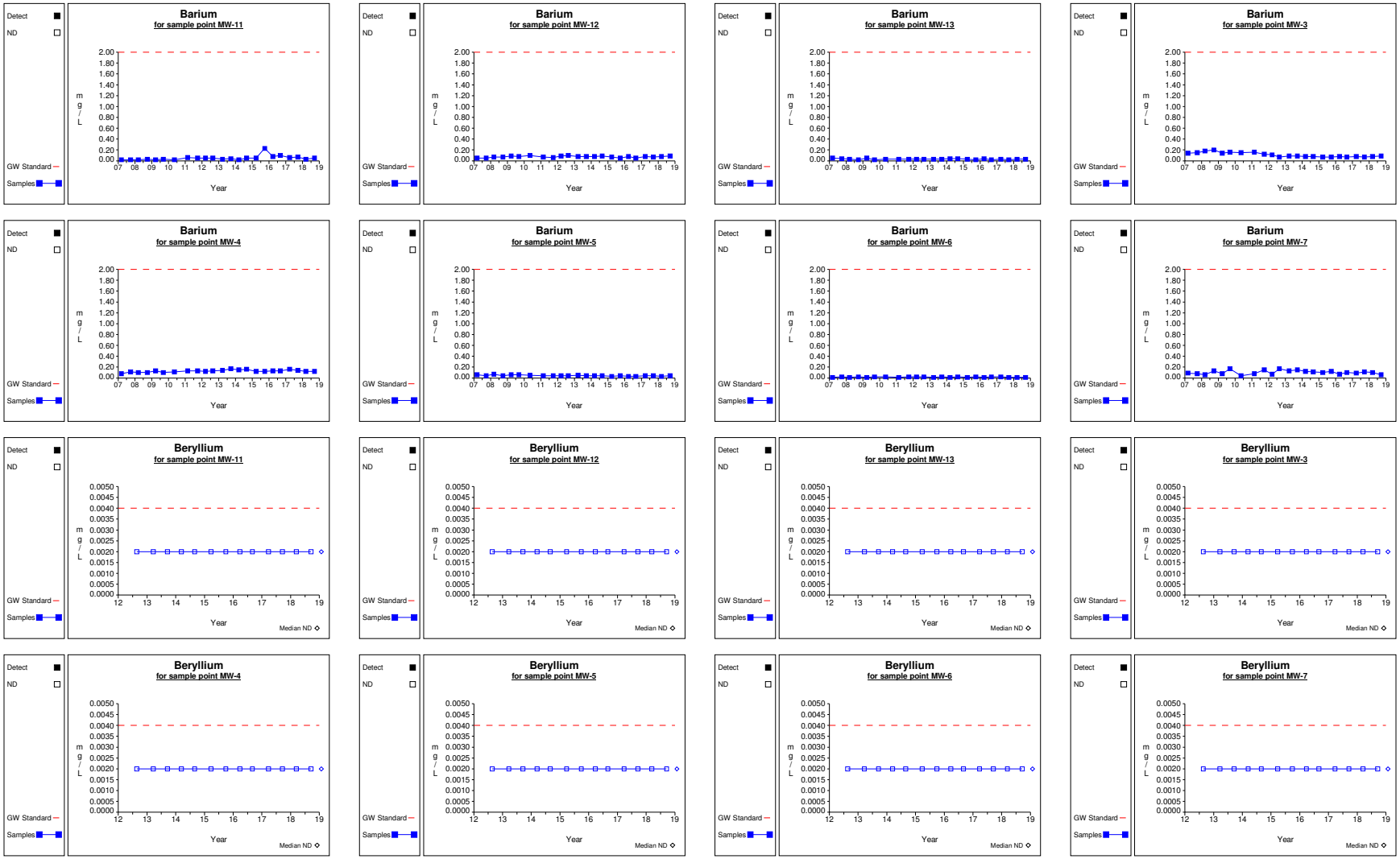


FIGURE 3

UPPERMOST AQUIFER

Time Series

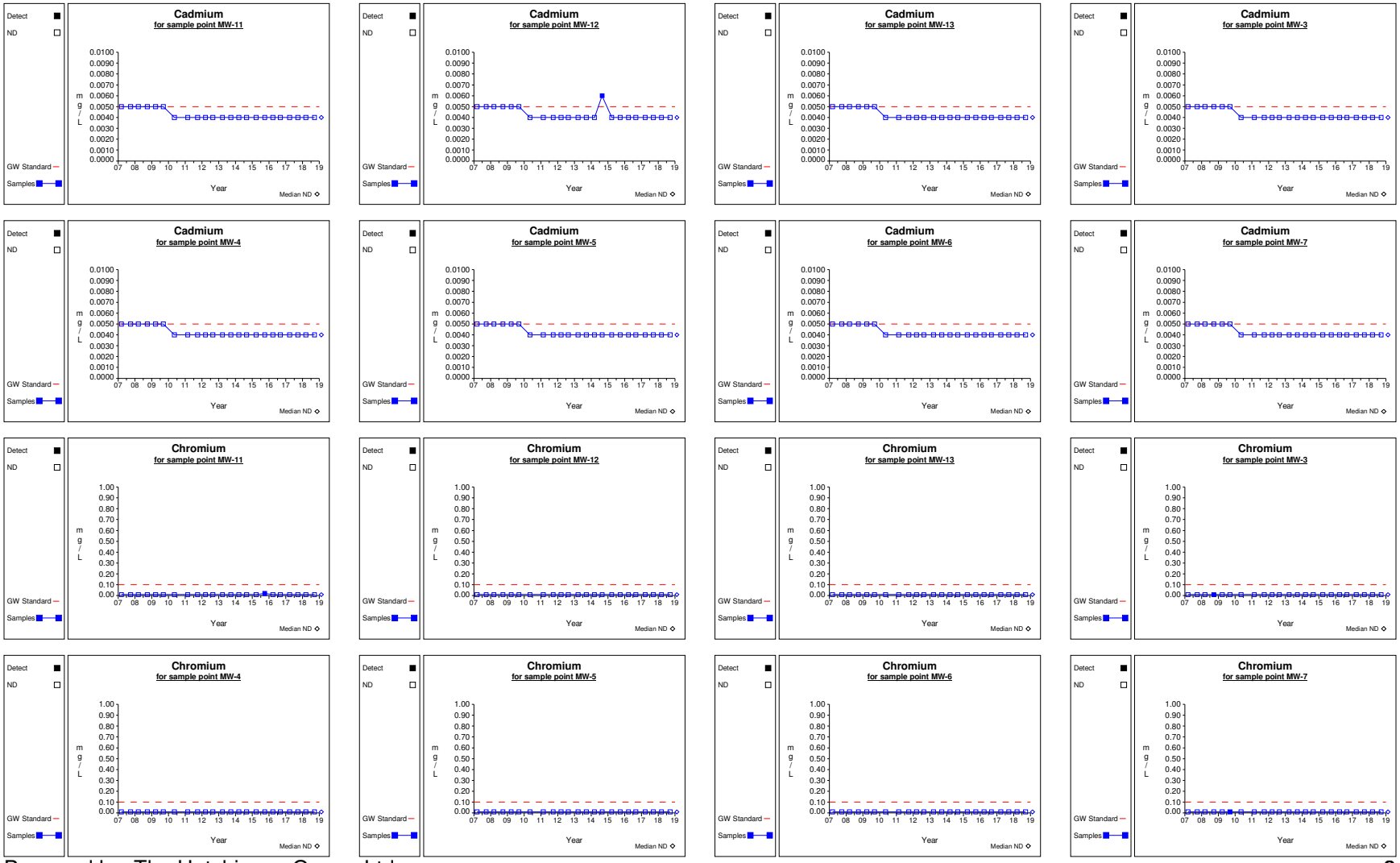


FIGURE 3

UPPERMOST AQUIFER

Time Series

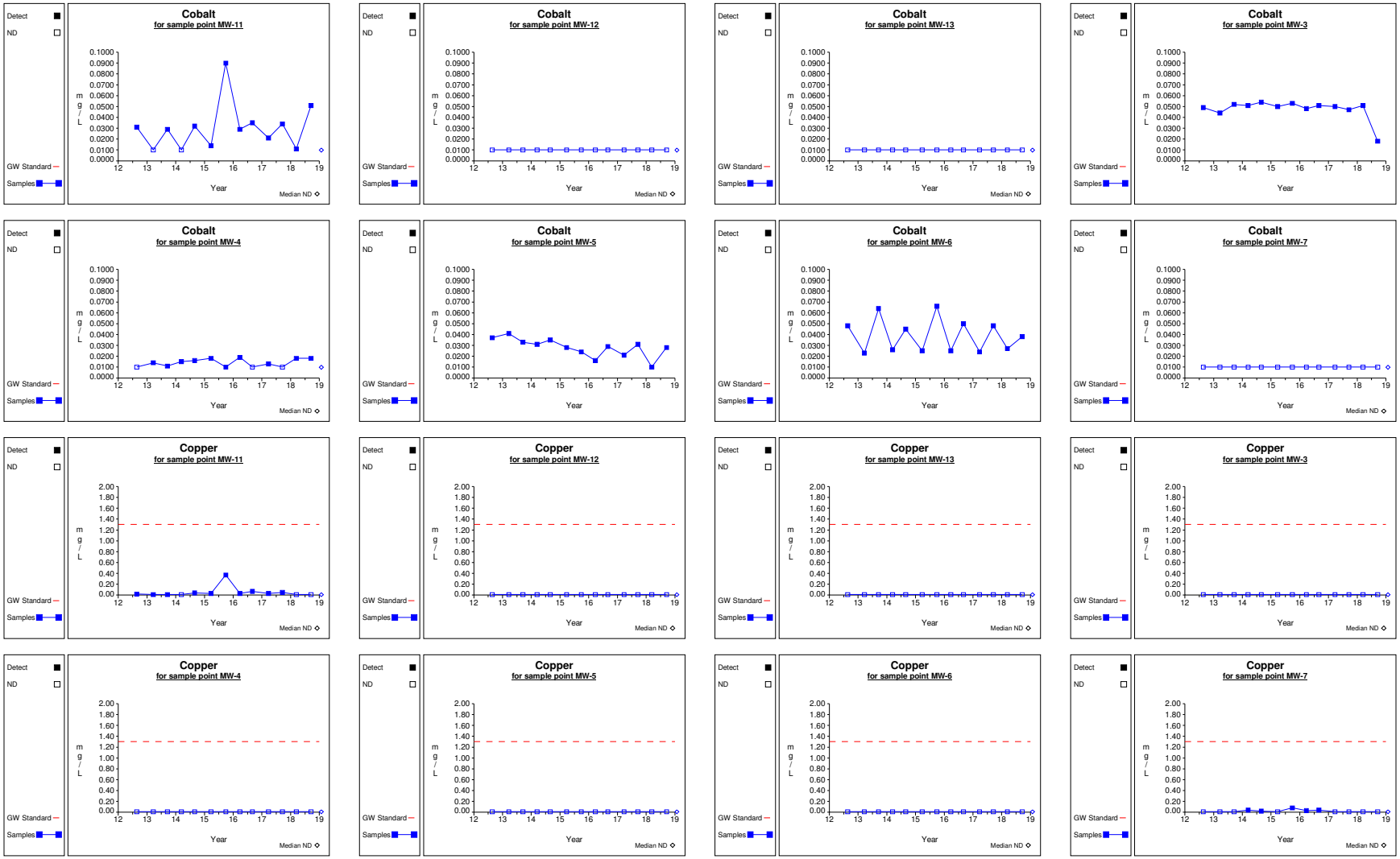


FIGURE 3

UPPERMOST AQUIFER

Time Series

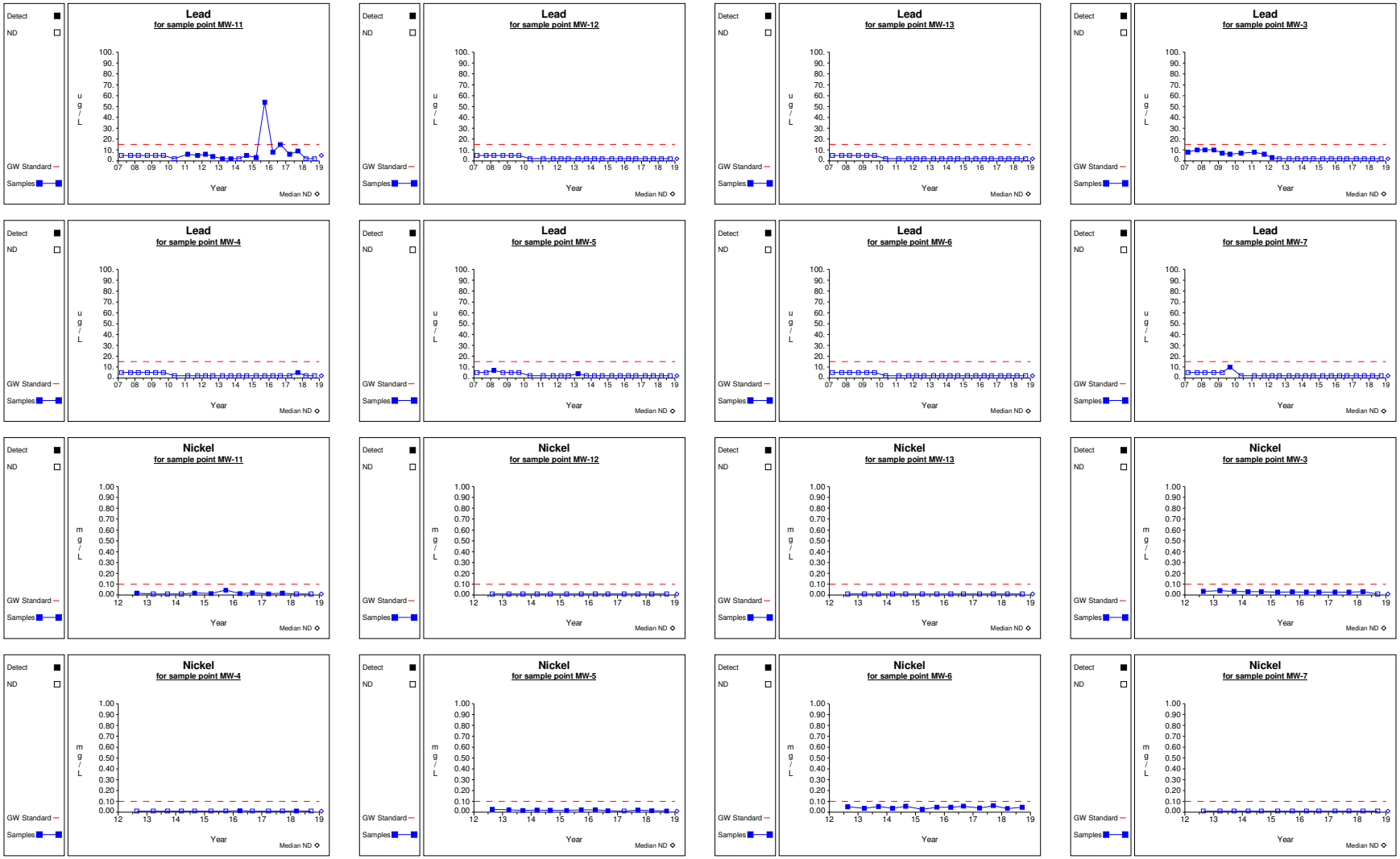


FIGURE 3

UPPERMOST AQUIFER

Time Series

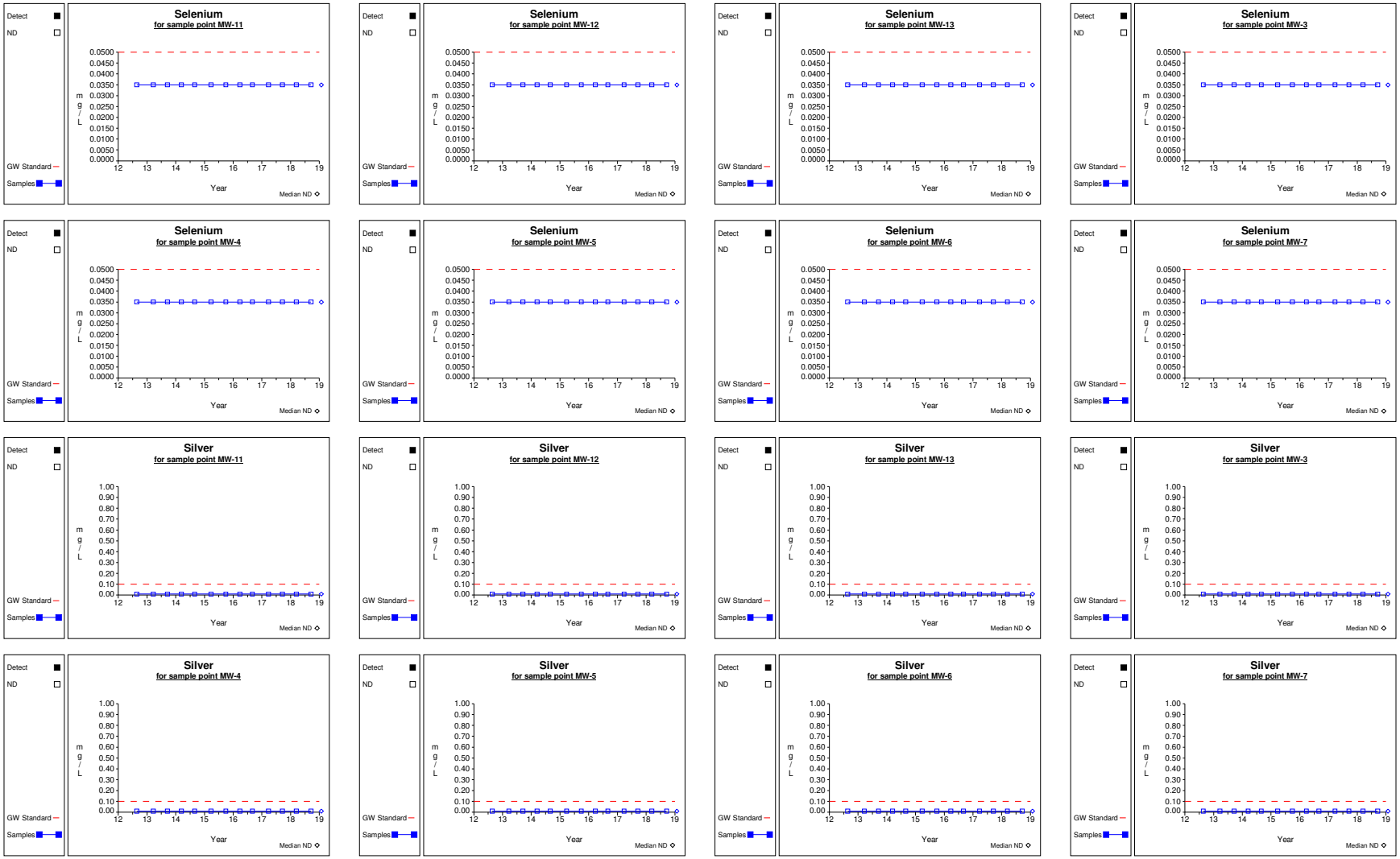


FIGURE 3

UPPERMOST AQUIFER

Time Series

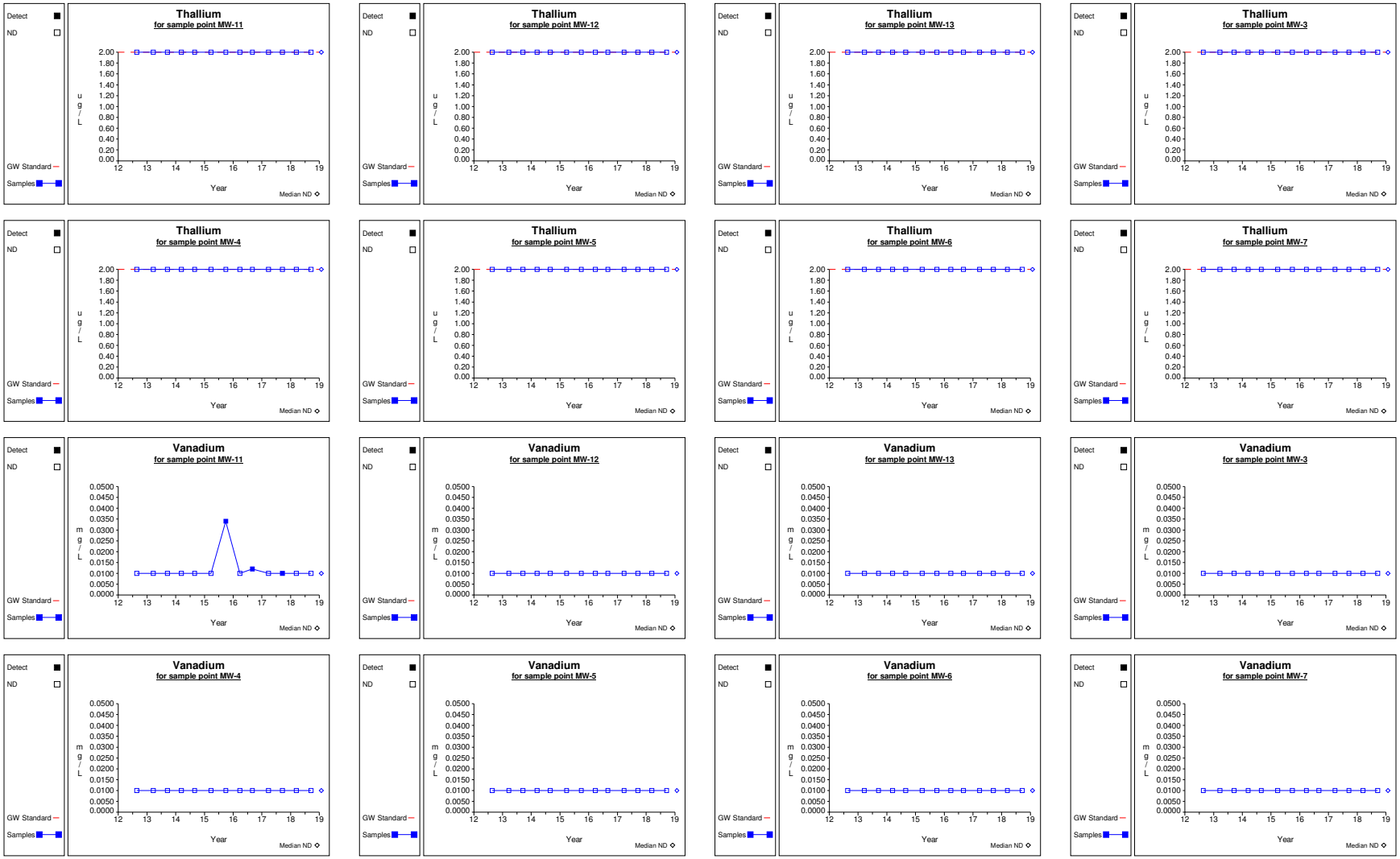
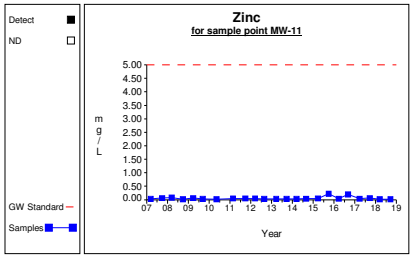
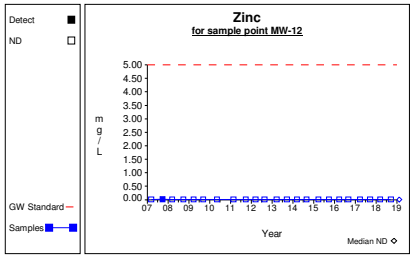


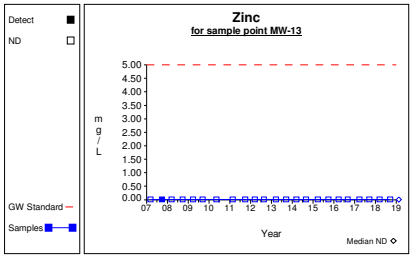
FIGURE 3

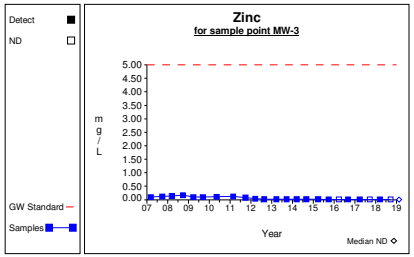
UPPERMOST AQUIFER

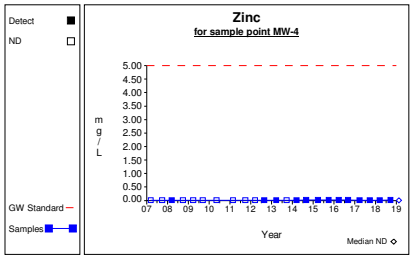
Time Series

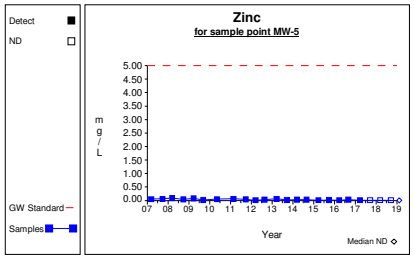


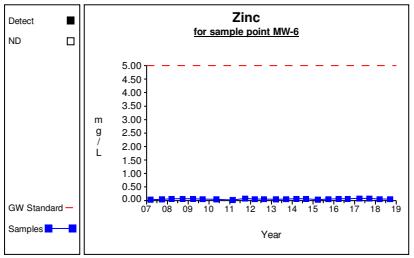


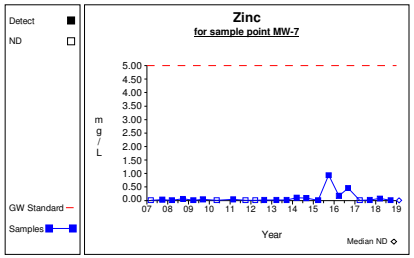




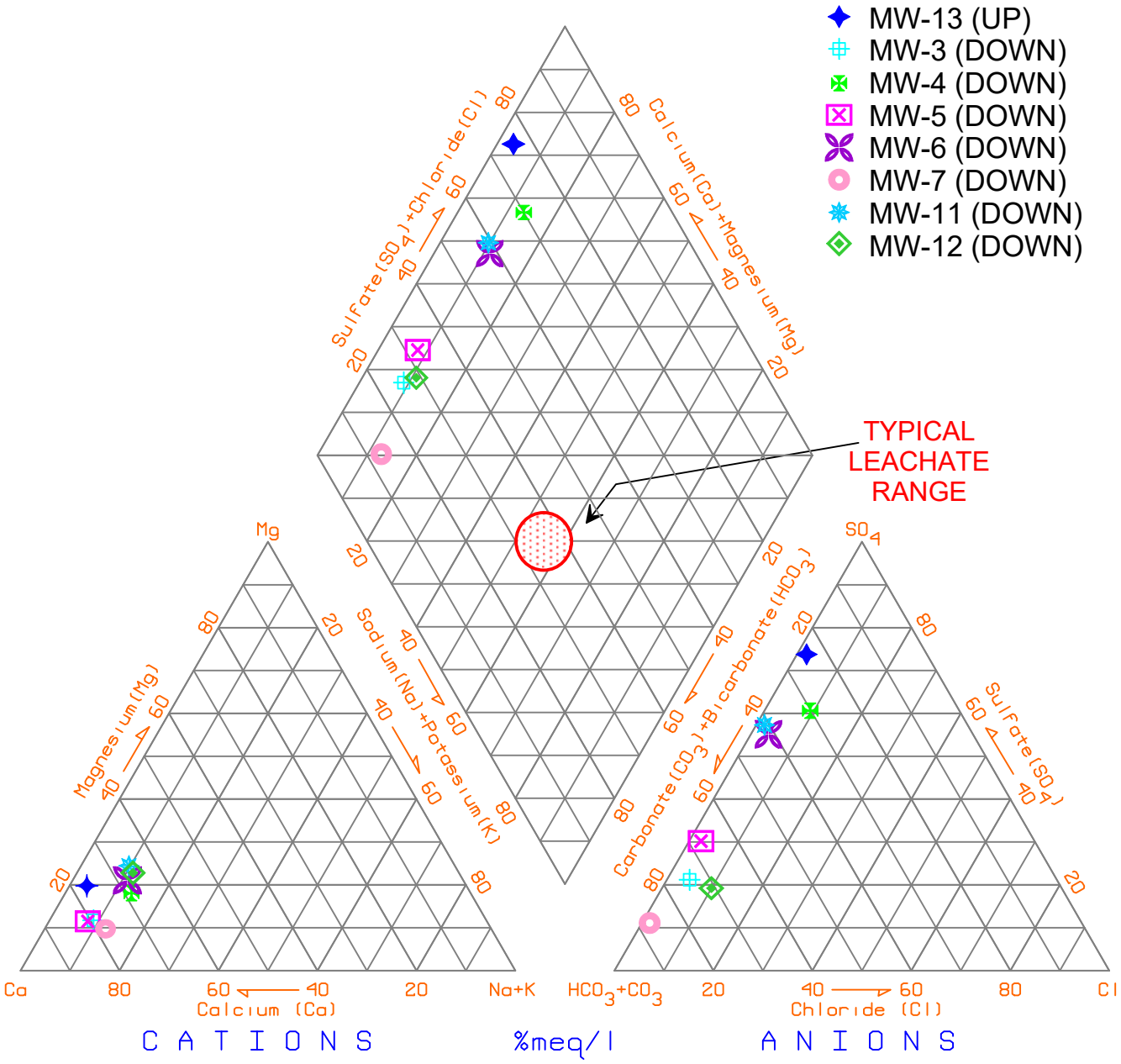








Prepared by: The Hutchinson Group, Ltd.



The Hutchinson Group, Ltd
Geophysical and Environmental Services

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

DRN	AXB	1/29/19
DES	AXB	1/29/19
CHK	PJH	1/29/19
REV		
PROJ. MGR.	AXB	1/29/19

PROJECT:
Amcelle Rubble Landfill
Allegany County, Maryland
2nd Semi-Annual 2018 Report

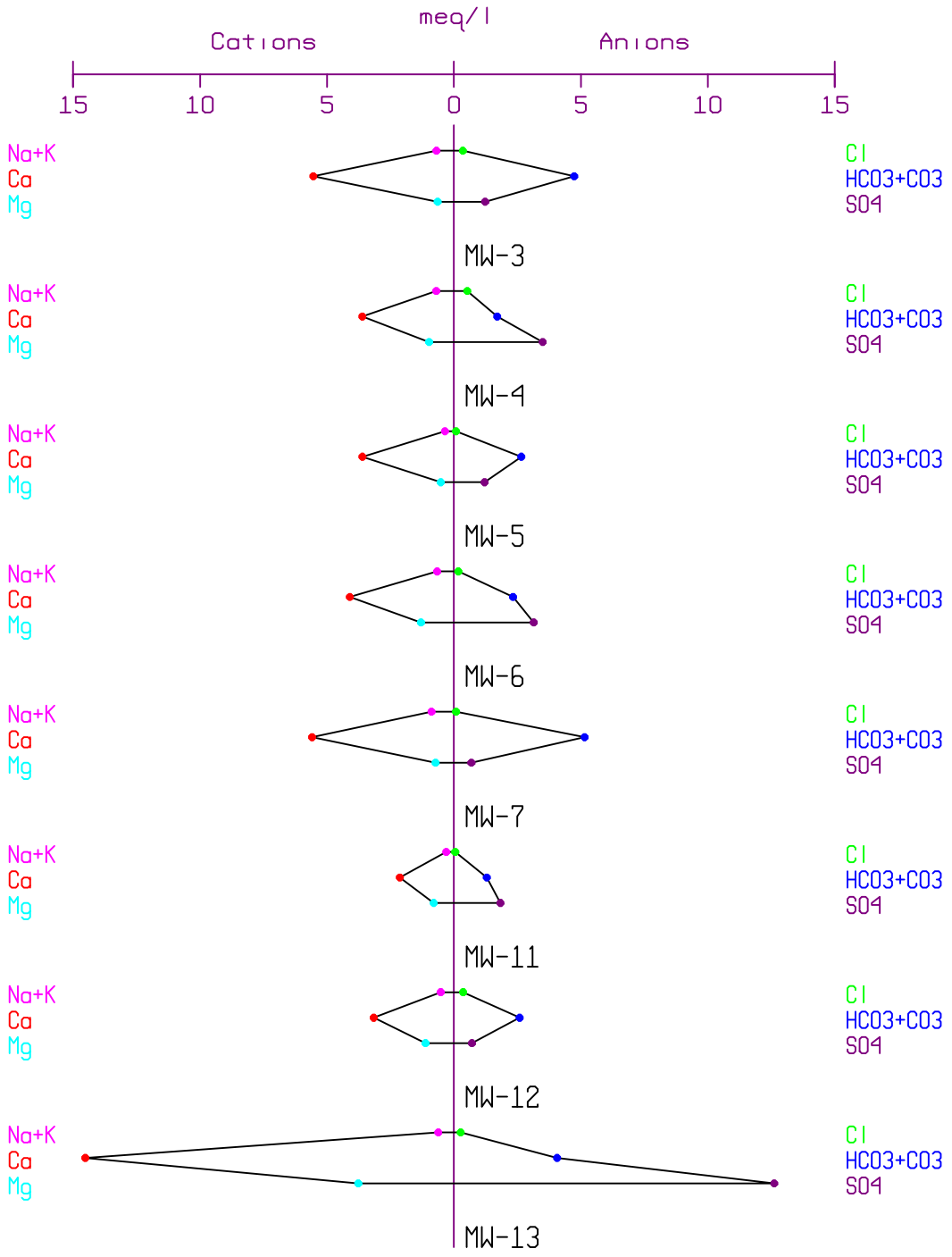
Sample Date:
September 17, 2018

DRAWING NO.:
Figure 4
Trilinear Diagram

PREPARED FOR:
Allegany County
Department of Public Works

PROJECT NO.:
187-7029

SHEET TITLE:
DWG7029F4



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DRN	AXB	1/29/19
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REV		
PROJ. MGR.	AXB	1/29/19

PROJECT:
Amcelle Rubble Landfill
Allegany County, Maryland
2nd Semi-Annual 2018 Report

Sample Date:
September 17, 2018

DRAWING NO.:
Figure 5
Stiff Diagram

PREPARED FOR:
Allegany County
Department of Public Works

PROJECT NO.:
187-7029

SHEET TITLE:
DWG7029F4

AMCELLE RUBBLE FILL
Permit No. 1999-WRF-0206

APPENDIX A

ANALYTICAL RESULTS

SECOND SEMI-ANNUAL
2018

The Hutchinson Group, Ltd.

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-3
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-002	**Collection Date:**	9/17/2018 11:15:00 AM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS		Analyst:					**FIELD**
pH (Field)	6.65			S.U.			09/17/18 11:15 AM
Specific Conductance (Field)	577			µmhos/cm			09/17/18 11:15 AM
Temperature (Field)	14.4			deg C			09/17/18 11:15 AM
Turbidity (Field)	31.9			NTU			09/17/18 11:15 AM
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	289	10		mg/L CaCO3	1		09/19/18 10:17 AM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	703	5		µmhos/cm	1		09/19/18 10:17 AM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	6.84		H	S.U.	1		09/19/18 10:17 AM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	442	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	289	10		mg/L CaCO3	1		09/19/18 10:17 AM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	12.4	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 10:04 AM
Sulfate	59	2		mg/L	1	09/19/18 8:55 AM	09/19/18 10:04 AM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	1.18	0.10		mg/L as N	1		09/19/18 4:18 PM
INORGANIC NON-METALS		Analyst:	**DMM**			**EPA 353.2**	**EPA 353.2**
Nitrate Nitrogen	< 0.05	0.05		mg/L as N	1	09/24/18 11:50 AM	09/24/18 1:15 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	50.0	0.2		NTU	2	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 9:05 AM	09/25/18 8:44 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.09	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-3
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-002	**Collection Date:**	9/17/2018 11:15:00 AM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Calcium	111	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Cobalt	0.018	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Iron	20.7	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Magnesium	7.8	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Manganese	6.61	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Potassium	6.50	0.39		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Sodium	12.0	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Zinc	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:15 PM
Hardness (SM 2340B)	310	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 9:15 PM
INORGANIC METALS		Analyst: **LXM**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:09 PM
Arsenic	4	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:09 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:09 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:09 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/19/18 5:40 PM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
2-Hexanone	< 5.0	5.0		µg/L	1		09/19/18 5:40 PM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/19/18 5:40 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-3
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-002	**Collection Date:**	9/17/2018 11:15:00 AM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Acetone	5.0	5.0	U	µg/L	1		09/19/18 5:40 PM
Acrolein	< 10	10		µg/L	1		09/19/18 5:40 PM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/19/18 5:40 PM
Benzene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Bromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Chloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Chloromethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Dibromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/19/18 5:40 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/19/18 5:40 PM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/19/18 5:40 PM
Styrene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Toluene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/19/18 5:40 PM
Tribromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Trichloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Trichloromethane	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/19/18 5:40 PM
Total Xylene	1.0	1.0	U	µg/L	1		09/19/18 5:40 PM
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1		09/19/18 5:40 PM
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1		09/19/18 5:40 PM
Surr: Dibromofluoromethane	97.7	70-130		%REC	1		09/19/18 5:40 PM
Surr: Toluene-d8	99.0	70-130		%REC	1		09/19/18 5:40 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-4
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-004	**Collection Date:**	9/17/2018 11:55:00 AM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS		Analyst:					**FIELD**
pH (Field)	5.97			S.U.			09/17/18 11:55 AM
Specific Conductance (Field)	498			µmhos/cm			09/17/18 11:55 AM
Temperature (Field)	13.4			deg C			09/17/18 11:55 AM
Turbidity (Field)	9.8			NTU			09/17/18 11:55 AM
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	104	10		mg/L CaCO3	1		09/19/18 1:56 PM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	631	5		µmhos/cm	1		09/19/18 1:56 PM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	6.65		H	S.U.	1		09/19/18 1:56 PM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	440	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	104	10		mg/L CaCO3	1		09/19/18 1:56 PM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	18.6	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 10:39 AM
Sulfate	168	2		mg/L	1	09/19/18 8:55 AM	09/19/18 10:39 AM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	0.71	0.10		mg/L as N	1		09/19/18 4:28 PM
INORGANIC NON-METALS		Analyst:	**DMM**			**EPA 353.2**	**EPA 353.2**
Nitrate Nitrogen	< 0.05	0.05		mg/L as N	1	09/24/18 11:50 AM	09/24/18 1:17 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	9.4	0.1		NTU	1	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 9:05 AM	09/25/18 9:14 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.12	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-4
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-004	**Collection Date:**	9/17/2018 11:55:00 AM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Calcium	72.3	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Cobalt	0.018	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Iron	34.1	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Magnesium	11.9	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Manganese	13.1	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Potassium	2.71	0.39		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Sodium	14.4	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Zinc	0.02	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:06 PM
Hardness (SM 2340B)	229	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 10:06 PM
INORGANIC METALS		Analyst: **LXM**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:16 PM
Arsenic	11	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:16 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:16 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:16 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/19/18 6:32 PM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
2-Hexanone	< 5.0	5.0		µg/L	1		09/19/18 6:32 PM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/19/18 6:32 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-4
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-004	**Collection Date:**	9/17/2018 11:55:00 AM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Acetone	5.0	5.0	U	µg/L	1		09/19/18 6:32 PM
Acrolein	< 10	10		µg/L	1		09/19/18 6:32 PM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/19/18 6:32 PM
Benzene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Bromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Chloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Chloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Dibromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/19/18 6:32 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/19/18 6:32 PM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/19/18 6:32 PM
Styrene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Toluene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/19/18 6:32 PM
Tribromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Trichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Trichloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/19/18 6:32 PM
Total Xylene	1.0	1.0	U	µg/L	1		09/19/18 6:32 PM
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1		09/19/18 6:32 PM
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1		09/19/18 6:32 PM
Surr: Dibromofluoromethane	95.5	70-130		%REC	1		09/19/18 6:32 PM
Surr: Toluene-d8	98.1	70-130		%REC	1		09/19/18 6:32 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-5
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-003	**Collection Date:**	9/17/2018 1:39:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS		Analyst:					**FIELD**
pH (Field)	6.38			S.U.			09/17/18 1:39 PM
Specific Conductance (Field)	346			µmhos/cm			09/17/18 1:39 PM
Temperature (Field)	14.5			deg C			09/17/18 1:39 PM
Turbidity (Field)	5.3			NTU			09/17/18 1:39 PM
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	162	10		mg/L CaCO3	1		09/19/18 1:40 PM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	452	5		µmhos/cm	1		09/19/18 1:40 PM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	7.06		H	S.U.	1		09/19/18 1:40 PM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	324	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	162	10		mg/L CaCO3	1		09/19/18 1:40 PM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	2.88	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 11:39 AM
Sulfate	58	2		mg/L	1	09/19/18 8:55 AM	09/19/18 11:39 AM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	< 0.10	0.10		mg/L as N	1		09/19/18 4:20 PM
INORGANIC NON-METALS		Analyst:	**DMM**			**EPA 353.2**	**EPA 353.2**
Nitrate Nitrogen	< 0.05	0.05		mg/L as N	1	09/24/18 11:50 AM	09/24/18 1:16 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	1.0	0.1		NTU	1	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 9:05 AM	09/25/18 9:09 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.04	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-5
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-003	**Collection Date:**	9/17/2018 1:39:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Calcium	72.2	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Cobalt	0.028	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Iron	0.90	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Magnesium	6.3	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Manganese	2.70	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Nickel	0.012	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Potassium	4.30	0.39		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Sodium	5.6	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Zinc	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 9:29 PM
Hardness (SM 2340B)	206	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 9:29 PM
INORGANIC METALS		Analyst: **LXM**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:13 PM
Arsenic	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:13 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:13 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:13 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/19/18 6:06 PM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
2-Hexanone	< 5.0	5.0		µg/L	1		09/19/18 6:06 PM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/19/18 6:06 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-5
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-003	**Collection Date:**	9/17/2018 1:39:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Acetone	5.0	5.0	U	µg/L	1		09/19/18 6:06 PM
Acrolein	< 10	10		µg/L	1		09/19/18 6:06 PM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/19/18 6:06 PM
Benzene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Bromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Chloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Chloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Dibromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/19/18 6:06 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/19/18 6:06 PM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/19/18 6:06 PM
Styrene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Toluene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/19/18 6:06 PM
Tribromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Trichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Trichloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/19/18 6:06 PM
Total Xylene	1.0	1.0	U	µg/L	1		09/19/18 6:06 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1		09/19/18 6:06 PM
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1		09/19/18 6:06 PM
Surr: Dibromofluoromethane	99.4	70-130		%REC	1		09/19/18 6:06 PM
Surr: Toluene-d8	97.9	70-130		%REC	1		09/19/18 6:06 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-6
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-001	**Collection Date:**	9/17/2018 2:55:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS		Analyst:					**FIELD**
pH (Field)	6.75			S.U.			09/17/18 2:55 PM
Specific Conductance (Field)	476			µmhos/cm			09/17/18 2:55 PM
Temperature (Field)	14.5			deg C			09/17/18 2:55 PM
Turbidity (Field)	9.6			NTU			09/17/18 2:55 PM
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	142	10		mg/L CaCO3	1		09/19/18 2:13 PM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	594	5		µmhos/cm	1		09/19/18 2:13 PM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	7.47		H	S.U.	1		09/19/18 2:13 PM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	416	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	142	10		mg/L CaCO3	1		09/19/18 2:13 PM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Nitrate Nitrogen	< 0.06	0.06		mg/L as N	1	09/19/18 8:55 AM	09/19/18 12:03 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	6.17	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 12:03 PM
Sulfate	151	2		mg/L	1	09/19/18 8:55 AM	09/19/18 12:03 PM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	0.90	0.10		mg/L as N	1		09/19/18 4:36 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	1.8	0.1		NTU	1	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 9:05 AM	09/25/18 9:27 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-6
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-001	**Collection Date:**	9/17/2018 2:55:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Calcium	82.2	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Cobalt	0.038	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Iron	< 0.05	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Magnesium	15.8	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Manganese	7.51	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Nickel	0.046	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Potassium	4.06	0.39		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Sodium	12.8	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Zinc	0.05	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:38 PM
Hardness (SM 2340B)	270	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 10:38 PM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/04/18 9:48 AM
Arsenic	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:35 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:35 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:35 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/19/18 11:43 PM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
2-Hexanone	< 5.0	5.0		µg/L	1		09/19/18 11:43 PM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/19/18 11:43 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-6
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-001	**Collection Date:**	9/17/2018 2:55:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Acetone	5.0	5.0	U	µg/L	1		09/19/18 11:43 PM
Acrolein	< 10	10		µg/L	1		09/19/18 11:43 PM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/19/18 11:43 PM
Benzene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Bromomethane	< 1.0	1.0		µg/L	1		09/21/18 4:32 PM
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Chloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Chloromethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Dibromomethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/21/18 4:32 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/19/18 11:43 PM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/19/18 11:43 PM
Styrene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Toluene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/19/18 11:43 PM
Tribromomethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Trichloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Trichloromethane	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/19/18 11:43 PM
Total Xylene	1.0	1.0	U	µg/L	1		09/19/18 11:43 PM
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1		09/19/18 11:43 PM
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1		09/19/18 11:43 PM
Surr: Dibromofluoromethane	95.9	70-130		%REC	1		09/19/18 11:43 PM
Surr: Toluene-d8	97.1	70-130		%REC	1		09/19/18 11:43 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-7
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-002	**Collection Date:**	9/17/2018 3:35:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS		Analyst:					**FIELD**
pH (Field)	7.20			S.U.			09/17/18 3:35 PM
Specific Conductance (Field)	540			µmhos/cm			09/17/18 3:35 PM
Temperature (Field)	18.9			deg C			09/17/18 3:35 PM
Turbidity (Field)	48.5			NTU			09/17/18 3:35 PM
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	305	10		mg/L CaCO3	1		09/19/18 2:20 PM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	652	5		µmhos/cm	1		09/19/18 2:20 PM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	8.04		H	S.U.	1		09/19/18 2:20 PM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	398	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	308	10		mg/L CaCO3	1		09/19/18 2:20 PM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Nitrate Nitrogen	< 0.06	0.06		mg/L as N	1	09/19/18 8:55 AM	09/19/18 12:15 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	2.95	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 12:15 PM
Sulfate	33	2		mg/L	1	09/19/18 8:55 AM	09/19/18 12:15 PM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	0.27	0.10		mg/L as N	1		09/19/18 4:38 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	17.0	0.1		NTU	1	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 9:05 AM	09/25/18 9:29 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.06	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-7
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-002	**Collection Date:**	9/17/2018 3:35:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Calcium	112	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Cobalt	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Iron	1.14	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Magnesium	8.8	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Manganese	0.16	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Potassium	4.93	0.39		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Sodium	17.4	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Zinc	0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:01 PM
Hardness (SM 2340B)	315	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 11:01 PM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/04/18 10:00 AM
Arsenic	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:37 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:37 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:37 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/19/18 10:46 AM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
2-Chloroethylvinyl ether	< 1.0	1.0	S	µg/L	1		09/19/18 10:46 AM
2-Hexanone	< 5.0	5.0		µg/L	1		09/19/18 10:46 AM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/19/18 10:46 AM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-7
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-002	**Collection Date:**	9/17/2018 3:35:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Acetone	5.0	5.0	U	µg/L	1		09/19/18 10:46 AM
Acrolein	< 10	10		µg/L	1		09/19/18 10:46 AM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/19/18 10:46 AM
Benzene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Bromomethane	< 1.0	1.0	R	µg/L	1		09/19/18 10:46 AM
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Chloroethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Chloromethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Dibromomethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Iodomethane	< 1.0	1.0	RJ	µg/L	1		09/19/18 10:46 AM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/19/18 10:46 AM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/19/18 10:46 AM
Styrene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Toluene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/19/18 10:46 AM
Tribromomethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Trichloroethene	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Trichloromethane	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/19/18 10:46 AM
Total Xylene	1.0	1.0	U	µg/L	1		09/19/18 10:46 AM
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1		09/19/18 10:46 AM
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1		09/19/18 10:46 AM
Surr: Dibromofluoromethane	98.1	70-130		%REC	1		09/19/18 10:46 AM
Surr: Toluene-d8	97.5	70-130		%REC	1		09/19/18 10:46 AM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-7
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-002	**Collection Date:**	9/17/2018 3:35:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS	Analyst: **JAW**						**EPA 8260**

NOTES:

R - RPD above control limits between matrix spike and MS duplicates.

S - Matrix spike recovery was low; the method control sample recovery was acceptable.

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-11
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-003	**Collection Date:**	9/17/2018 1:35:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS		Analyst:					**FIELD**
pH (Field)	5.89			S.U.			09/17/18 1:35 PM
Specific Conductance (Field)	284			µmhos/cm			09/17/18 1:35 PM
Temperature (Field)	13.8			deg C			09/17/18 1:35 PM
Turbidity (Field)	12.0			NTU			09/17/18 1:35 PM
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	79	10		mg/L CaCO3	1		09/19/18 2:32 PM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	368	5		µmhos/cm	1		09/19/18 2:32 PM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	6.51		H	S.U.	1		09/19/18 2:32 PM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	248	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	79	10		mg/L CaCO3	1		09/19/18 2:32 PM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Nitrate Nitrogen	0.49	0.06		mg/L as N	1	09/19/18 8:55 AM	09/19/18 10:51 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	1.81	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 10:51 AM
Sulfate	88	2		mg/L	1	09/19/18 8:55 AM	09/19/18 10:51 AM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	0.24	0.10		mg/L as N	1		09/19/18 4:40 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	65.0	0.2		NTU	2	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 9:05 AM	09/25/18 9:31 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.05	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-11
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-003	**Collection Date:**	9/17/2018 1:35:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Calcium	42.7	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Cobalt	0.051	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Iron	7.04	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Magnesium	9.7	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Manganese	8.30	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Potassium	1.36	0.39		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Sodium	6.2	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Zinc	0.02	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:10 AM
Hardness (SM 2340B)	146	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 11:10 AM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/04/18 10:05 AM
Arsenic	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:46 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:46 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:46 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/19/18 11:17 PM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
2-Hexanone	< 5.0	5.0		µg/L	1		09/19/18 11:17 PM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/19/18 11:17 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-11
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-003	**Collection Date:**	9/17/2018 1:35:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Acetone	5.0	5.0	U	µg/L	1		09/19/18 11:17 PM
Acrolein	< 10	10		µg/L	1		09/19/18 11:17 PM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/19/18 11:17 PM
Benzene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Bromomethane	< 1.0	1.0		µg/L	1		09/21/18 4:57 PM
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Chloroethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Chloromethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Dibromomethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/21/18 4:57 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/19/18 11:17 PM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/19/18 11:17 PM
Styrene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Toluene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/19/18 11:17 PM
Tribromomethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Trichloroethene	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Trichloromethane	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/19/18 11:17 PM
Total Xylene	1.0	1.0	U	µg/L	1		09/19/18 11:17 PM
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1		09/19/18 11:17 PM
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1		09/19/18 11:17 PM
Surr: Dibromofluoromethane	96.9	70-130		%REC	1		09/19/18 11:17 PM
Surr: Toluene-d8	97.5	70-130		%REC	1		09/19/18 11:17 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-12
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-001	**Collection Date:**	9/17/2018 2:22:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS		Analyst:					**FIELD**
pH (Field)	7.44			S.U.			09/17/18 2:22 PM
Specific Conductance (Field)	382			µmhos/cm			09/17/18 2:22 PM
Temperature (Field)	13.5			deg C			09/17/18 2:22 PM
Turbidity (Field)	9.4			NTU			09/17/18 2:22 PM
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	158	10		mg/L CaCO3	1		09/19/18 12:53 PM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	412	5		µmhos/cm	1		09/19/18 12:53 PM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	7.47		H	S.U.	1		09/19/18 12:53 PM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	278	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	158	10		mg/L CaCO3	1		09/19/18 12:53 PM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Nitrate Nitrogen	< 0.05	0.05		mg/L as N	1	09/19/18 8:55 AM	09/19/18 11:27 AM
Nitrite Nitrogen	< 0.05	0.05		mg/L as N	1	09/19/18 8:55 AM	09/19/18 11:27 AM
Nitrate - Nitrite	< 0.05	0.05		mg/L as N	1	09/19/18 8:55 AM	09/19/18 11:27 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	12.8	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 11:27 AM
Sulfate	34	2		mg/L	1	09/19/18 8:55 AM	09/19/18 11:27 AM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	0.22	0.10		mg/L as N	1		09/19/18 4:16 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	65.0	0.2		NTU	2	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 9:05 AM	09/25/18 7:46 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.09	0.01		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-12
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-001	**Collection Date:**	9/17/2018 2:22:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Calcium	63.3	0.08		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Cobalt	< 0.010	0.010		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Copper	< 0.01	0.01		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Iron	10.4	0.05		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Magnesium	13.6	0.1		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Manganese	1.19	0.01		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Potassium	2.64	0.39		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Silver	< 0.010	0.010		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Sodium	10.4	0.2		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 10:15 AM	09/21/18 2:37 PM
Zinc	< 0.01	0.01		mg/L	1	09/20/18 10:15 AM	09/24/18 5:45 PM
Hardness (SM 2340B)	214	0.5		mg/L CaCO3	1	09/20/18 10:15 AM	09/21/18 2:37 PM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 10:15 AM	09/25/18 7:13 PM
Arsenic	< 2	2		µg/L	1	09/20/18 10:15 AM	09/25/18 7:13 PM
Lead	< 2	2		µg/L	1	09/20/18 10:15 AM	09/25/18 7:13 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 10:15 AM	09/25/18 7:13 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/19/18 5:14 PM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-12
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-001	**Collection Date:**	9/17/2018 2:22:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
2-Hexanone	< 5.0	5.0		µg/L	1		09/19/18 5:14 PM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/19/18 5:14 PM
Acetone	5.0	5.0	U	µg/L	1		09/19/18 5:14 PM
Acrolein	< 10	10		µg/L	1		09/19/18 5:14 PM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/19/18 5:14 PM
Benzene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Bromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Chloroethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Chloromethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Dibromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/19/18 5:14 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/19/18 5:14 PM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/19/18 5:14 PM
Styrene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Toluene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/19/18 5:14 PM
Tribromomethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Trichloroethene	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Trichloromethane	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/19/18 5:14 PM
Total Xylene	1.0	1.0	U	µg/L	1		09/19/18 5:14 PM
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1		09/19/18 5:14 PM
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1		09/19/18 5:14 PM
Surr: Dibromofluoromethane	97.9	70-130		%REC	1		09/19/18 5:14 PM
Surr: Toluene-d8	99.0	70-130		%REC	1		09/19/18 5:14 PM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-13
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-004	**Collection Date:**	9/17/2018 4:47:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
FIELD PARAMETERS		Analyst:					**FIELD**
pH (Field)	6.97			S.U.			09/17/18 4:47 PM
Specific Conductance (Field)	1127			µmhos/cm			09/17/18 4:47 PM
Temperature (Field)	15.1			deg C			09/17/18 4:47 PM
Turbidity (Field)	140			NTU			09/17/18 4:47 PM
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	245	10		mg/L CaCO3	1		09/19/18 2:38 PM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	1510	5		µmhos/cm	1		09/19/18 2:38 PM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	7.60		H	S.U.	1		09/19/18 2:38 PM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	1250	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	246	10		mg/L CaCO3	1		09/19/18 2:38 PM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Nitrate Nitrogen	< 0.06	0.06		mg/L as N	1	09/19/18 8:55 AM	09/19/18 12:50 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	9.40	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 12:50 PM
Sulfate	606	2		mg/L	1	09/19/18 8:55 AM	09/19/18 12:50 PM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	0.14	0.10		mg/L as N	1		09/19/18 4:42 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	25.0	0.1		NTU	1	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 11:10 AM	09/25/18 9:40 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.03	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-13
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-004	**Collection Date:**	9/17/2018 4:47:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Calcium	291	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Cobalt	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Iron	7.38	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Magnesium	45.8	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Manganese	10.4	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Potassium	2.34	0.39		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Sodium	12.8	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Zinc	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:23 AM
Hardness (SM 2340B)	915	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 11:23 AM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/04/18 10:55 AM
Arsenic	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 7:11 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:51 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:51 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/20/18 12:09 AM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
2-Hexanone	< 5.0	5.0		µg/L	1		09/20/18 12:09 AM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/20/18 12:09 AM

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I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	MW-13
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-004	**Collection Date:**	9/17/2018 4:47:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Acetone	5.0	5.0	U	µg/L	1		09/20/18 12:09 AM
Acrolein	< 10	10		µg/L	1		09/20/18 12:09 AM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/20/18 12:09 AM
Benzene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Bromomethane	< 1.0	1.0		µg/L	1		09/21/18 5:22 PM
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Chloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Chloromethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Dibromomethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/21/18 5:22 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/20/18 12:09 AM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/20/18 12:09 AM
Styrene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Toluene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/20/18 12:09 AM
Tribromomethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Trichloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Trichloromethane	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/20/18 12:09 AM
Total Xylene	1.0	1.0	U	µg/L	1		09/20/18 12:09 AM
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1		09/20/18 12:09 AM
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1		09/20/18 12:09 AM
Surr: Dibromofluoromethane	96.3	70-130		%REC	1		09/20/18 12:09 AM
Surr: Toluene-d8	97.6	70-130		%REC	1		09/20/18 12:09 AM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	FIELD DUP
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-005	**Collection Date:**	9/17/2018 4:47:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC NON METALS		Analyst:	**AM**				**SM 4500-CO2D**
Bicarbonate	247	10		mg/L CaCO3	1		09/19/18 2:03 PM
PHYSICAL TESTS		Analyst:	**AM**				**EPA 120.1**
Specific Conductance	1510	5		µmhos/cm	1		09/19/18 2:03 PM
PH BY SM 4500 H+B		Analyst:	**AM**				**SM 4500-H+ B**
Lab pH	7.68		H	S.U.	1		09/19/18 2:03 PM
INORGANIC NON-METALS		Analyst:	**KLS**			**SM 2540C**	**SM 2540 C**
Total dissolved solids	1220	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst:	**AM**				**ASTM D 1067-11**
Alkalinity to pH 4.5	248	10		mg/L CaCO3	1		09/19/18 2:03 PM
INDICATOR ORGANIC PARAMETERS		Analyst:	**GST**			**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:15 PM	09/20/18 11:40 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Nitrate Nitrogen	< 0.06	0.06		mg/L as N	1	09/19/18 8:55 AM	09/19/18 11:51 AM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 300.0**	**EPA 300.0**
Chloride	9.32	0.39		mg/L	1	09/19/18 8:55 AM	09/19/18 11:51 AM
Sulfate	595	2		mg/L	1	09/19/18 8:55 AM	09/19/18 11:51 AM
INORGANIC NON-METALS		Analyst:	**GMG**				**EPA 350.1**
Ammonia Nitrogen	0.14	0.10		mg/L as N	1		09/19/18 4:34 PM
INORGANIC NON-METALS		Analyst:	**MBG**			**EPA 180.1**	**EPA 180.1**
Turbidity	26.0	0.1		NTU	1	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst:	**GXI**			**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 9:05 AM	09/25/18 9:25 AM
INORGANIC METALS		Analyst:	**KXY**			**EPA 200.2**	**EPA 200.7**
Barium	0.02	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Calcium	274	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Cobalt	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Iron	6.53	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Magnesium	44.0	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	FIELD DUP
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-005	**Collection Date:**	9/17/2018 4:47:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Manganese	9.42	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Potassium	2.18	0.39		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Sodium	11.8	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Zinc	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 10:10 PM
Hardness (SM 2340B)	867	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 10:10 PM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/04/18 9:46 AM
Arsenic	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:32 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 6:32 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 6:32 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/19/18 6:58 PM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
2-Hexanone	< 5.0	5.0		µg/L	1		09/19/18 6:58 PM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/19/18 6:58 PM
Acetone	5.0	5.0	U	µg/L	1		09/19/18 6:58 PM
Acrolein	< 10	10		µg/L	1		09/19/18 6:58 PM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/19/18 6:58 PM
Benzene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Bromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	FIELD DUP
Lab Order:	G1809996		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809996-005	**Collection Date:**	9/17/2018 4:47:00 PM
Matrix:	GROUNDWATER	**Received Date:**	9/19/2018 5:12:59 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Chloroethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Chloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Dibromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/19/18 6:58 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/19/18 6:58 PM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/19/18 6:58 PM
Styrene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Toluene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/19/18 6:58 PM
Tribromomethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Trichloroethene	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Trichloromethane	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/19/18 6:58 PM
Total Xylene	1.0	1.0	U	µg/L	1		09/19/18 6:58 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1		09/19/18 6:58 PM
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1		09/19/18 6:58 PM
Surr: Dibromofluoromethane	97.3	70-130		%REC	1		09/19/18 6:58 PM
Surr: Toluene-d8	97.1	70-130		%REC	1		09/19/18 6:58 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	FIELD BLANK
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-006	**Collection Date:**	9/17/2018 12:00:00 PM
Matrix:	AQUEOUS	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC NON METALS		Analyst: **AM**					**SM 4500-CO2D**
Bicarbonate	< 10	10		mg/L CaCO3	1		09/19/18 2:52 PM
PHYSICAL TESTS		Analyst: **AM**					**EPA 120.1**
Specific Conductance	7	5		µmhos/cm	1		09/19/18 2:52 PM
PH BY SM 4500 H+B		Analyst: **AM**					**SM 4500-H+ B**
Lab pH	5.62	0.10	H	S.U.	1		09/19/18 2:52 PM
INORGANIC NON-METALS		Analyst: **KLS**				**SM 2540C**	**SM 2540 C**
Total dissolved solids	< 20	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst: **AM**					**ASTM D 1067-11**
Alkalinity to pH 4.5	< 10	10		mg/L CaCO3	1		09/19/18 2:52 PM
INDICATOR ORGANIC PARAMETERS		Analyst: **GST**				**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:45 PM	09/20/18 6:45 PM
INORGANIC NON-METALS		Analyst: **MBG**				**EPA 300.0**	**EPA 300.0**
Nitrate Nitrogen	< 0.06	0.06		mg/L as N	1	09/19/18 8:55 AM	09/19/18 11:15 AM
INORGANIC NON-METALS		Analyst: **MBG**				**EPA 300.0**	**EPA 300.0**
Chloride	< 0.39	0.39	J	mg/L	1	09/19/18 8:55 AM	09/19/18 11:15 AM
Sulfate	< 2	2		mg/L	1	09/19/18 8:55 AM	09/19/18 11:15 AM
INORGANIC NON-METALS		Analyst: **GMG**					**EPA 350.1**
Ammonia Nitrogen	< 0.10	0.10		mg/L as N	1		09/19/18 4:46 PM
INORGANIC NON-METALS		Analyst: **MBG**				**EPA 180.1**	**EPA 180.1**
Turbidity	0.2	0.1		NTU	1	09/19/18 10:12 AM	09/19/18 10:21 AM
INORGANIC METALS		Analyst: **GXI**				**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 11:10 AM	09/25/18 9:49 AM
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Barium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Calcium	0.22	0.08		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Cobalt	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Iron	< 0.05	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Magnesium	< 0.1	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	FIELD BLANK
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-006	**Collection Date:**	9/17/2018 12:00:00 PM
Matrix:	AQUEOUS	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Manganese	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Potassium	< 0.39	0.39	J	mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Sodium	0.3	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Vanadium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Zinc	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:33 AM
Hardness (SM 2340B)	0.6	0.5	J	mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 11:33 AM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/04/18 10:22 AM
Arsenic	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 7:20 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 7:20 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 7:20 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/20/18 1:01 AM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
2-Hexanone	< 5.0	5.0		µg/L	1		09/20/18 1:01 AM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/20/18 1:01 AM
Acetone	5.0	5.0	U	µg/L	1		09/20/18 1:01 AM
Acrolein	< 10	10		µg/L	1		09/20/18 1:01 AM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/20/18 1:01 AM
Benzene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Bromomethane	< 1.0	1.0		µg/L	1		09/21/18 6:13 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	FIELD BLANK
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-006	**Collection Date:**	9/17/2018 12:00:00 PM
Matrix:	AQUEOUS	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Chloroethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Chloromethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Dibromomethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/21/18 6:13 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/20/18 1:01 AM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/20/18 1:01 AM
Styrene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Toluene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/20/18 1:01 AM
Tribromomethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Trichloroethene	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Trichloromethane	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/20/18 1:01 AM
Total Xylene	1.0	1.0	U	µg/L	1		09/20/18 1:01 AM
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1		09/20/18 1:01 AM
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1		09/20/18 1:01 AM
Surr: Dibromofluoromethane	97.0	70-130		%REC	1		09/20/18 1:01 AM
Surr: Toluene-d8	98.4	70-130		%REC	1		09/20/18 1:01 AM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	TRIP BLANK
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-005	**Collection Date:**	9/18/2018 8:15:00 PM
Matrix:	AQUEOUS	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC NON METALS		Analyst: **AM**					**SM 4500-CO2D**
Bicarbonate	< 10	10		mg/L CaCO3	1		09/19/18 2:48 PM
PHYSICAL TESTS		Analyst: **AM**					**EPA 120.1**
Specific Conductance	8	5		µmhos/cm	1		09/19/18 2:48 PM
PH BY SM 4500 H+B		Analyst: **AM**					**SM 4500-H+ B**
Lab pH	5.14			S.U.	1		09/19/18 2:48 PM
INORGANIC NON-METALS		Analyst: **KLS**				**SM 2540C**	**SM 2540 C**
Total dissolved solids	< 20	20		mg/L	1	09/19/18 1:50 PM	09/19/18 1:53 PM
INORGANIC NON-METALS		Analyst: **AM**					**ASTM D 1067-11**
Alkalinity to pH 4.5	< 10	10		mg/L CaCO3	1		09/19/18 2:48 PM
INDICATOR ORGANIC PARAMETERS		Analyst: **GST**				**HACH 8000**	**HACH 8000**
Chemical Oxygen Demand	< 10	10		mg/L	1	09/19/18 4:45 PM	09/20/18 6:45 PM
INORGANIC NON-METALS		Analyst: **MBG**				**EPA 300.0**	**EPA 300.0**
Nitrate Nitrogen	< 0.06	0.06		mg/L as N	1	09/19/18 8:55 AM	09/19/18 11:03 AM
INORGANIC NON-METALS		Analyst: **MBG**				**EPA 300.0**	**EPA 300.0**
Chloride	< 0.39	0.39	J	mg/L	1	09/19/18 8:55 AM	09/19/18 11:03 AM
Sulfate	< 2	2		mg/L	1	09/19/18 8:55 AM	09/19/18 11:03 AM
INORGANIC NON-METALS		Analyst: **GMG**					**EPA 350.1**
Ammonia Nitrogen	< 0.10	0.10		mg/L as N	1		09/19/18 4:44 PM
INORGANIC NON-METALS		Analyst: **MBG**				**EPA 180.1**	**EPA 180.1**
Turbidity	1.1	0.1		NTU	1	09/19/18 9:50 AM	09/19/18 10:12 AM
INORGANIC METALS		Analyst: **GXI**				**SM 3112 B**	**SM 3112 B**
Mercury	< 0.20	0.20		µg/L	1	09/24/18 11:10 AM	09/25/18 9:47 AM
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Barium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Beryllium	< 0.002	0.002		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Cadmium	< 0.004	0.004		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Calcium	< 0.08	0.08	J	mg/L	1	09/20/18 11:10 AM	10/08/18 5:27 PM
Chromium	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Cobalt	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Copper	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Iron	< 0.05	0.05		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Magnesium	< 0.1	0.1		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	TRIP BLANK
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-005	**Collection Date:**	9/18/2018 8:15:00 PM
Matrix:	AQUEOUS	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
INORGANIC METALS		Analyst: **KXY**				**EPA 200.2**	**EPA 200.7**
Manganese	0.02	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Nickel	< 0.011	0.011		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Potassium	< 0.39	0.39	J	mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Selenium	< 0.035	0.035		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Silver	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Sodium	< 0.2	0.2		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Vanadium	< 0.010	0.010		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Zinc	< 0.01	0.01		mg/L	1	09/20/18 11:10 AM	09/24/18 11:28 AM
Hardness (SM 2340B)	1.2	0.5		mg/L CaCO3	1	09/20/18 11:10 AM	09/24/18 11:28 AM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/04/18 10:20 AM
Arsenic	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 7:15 PM
Lead	< 2	2		µg/L	1	09/20/18 11:10 AM	10/03/18 7:15 PM
Thallium	< 2.0	2.0		µg/L	1	09/20/18 11:10 AM	10/03/18 7:15 PM
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
1,1,1,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,1,1-Trichloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,1,2,2-Tetrachloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,1,2-Trichloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,1-Dichloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,1-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,2,3-Trichloropropane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,2-Dibromo-3-chloropropane	1.0	1.0	U	µg/L	1		09/20/18 12:35 AM
1,2-Dibromoethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,2-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,2-Dichloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,2-Dichloropropane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,3-Dichloropropane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
1,4-Dichlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
2-Chloroethylvinyl ether	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
2-Hexanone	< 5.0	5.0		µg/L	1		09/20/18 12:35 AM
4-Methyl-2-Pentanone	< 5.0	5.0		µg/L	1		09/20/18 12:35 AM
Acetone	5.0	5.0	U	µg/L	1		09/20/18 12:35 AM
Acrolein	< 10	10		µg/L	1		09/20/18 12:35 AM
Acrylonitrile	< 5.0	5.0		µg/L	1		09/20/18 12:35 AM
Benzene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Bromochloromethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Bromomethane	< 1.0	1.0		µg/L	1		09/21/18 5:47 PM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

Laboratory Results

Geochemical Testing

Date: *10-Oct-18*

CLIENT:	ALLEGANY COUNTY MARYLAND	**Client Sample ID:**	TRIP BLANK
Lab Order:	G1809997		
Project:	Rubble L.F. 200 S	**Sampled By:**	The Hutchinson Group
Lab ID:	G1809997-005	**Collection Date:**	9/18/2018 8:15:00 PM
Matrix:	AQUEOUS	**Received Date:**	9/19/2018 5:13:12 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
VOLATILE ORGANIC COMPOUNDS		Analyst: **JAW**					**EPA 8260**
Carbon Disulfide	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Carbon Tetrachloride	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Chlorobenzene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Chlorodibromomethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Chloroethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Chloromethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
cis-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
cis-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Dibromomethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Dichlorobromomethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Ethylbenzene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Iodomethane	< 1.0	1.0	J	µg/L	1		09/21/18 5:47 PM
Methyl Ethyl Ketone	< 5.0	5.0		µg/L	1		09/20/18 12:35 AM
Methylene Chloride	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Methyl-tert-butyl ether	< 2.0	2.0		µg/L	1		09/20/18 12:35 AM
Styrene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Tetrachloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Toluene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
trans-1,2-Dichloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
trans-1,3-Dichloropropene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
trans-1,4-Dichloro-2-butene	< 5.0	5.0		µg/L	1		09/20/18 12:35 AM
Tribromomethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Trichloroethene	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Trichlorofluoromethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Trichloromethane	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Vinyl Acetate	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Vinyl Chloride	< 1.0	1.0		µg/L	1		09/20/18 12:35 AM
Total Xylene	1.0	1.0	U	µg/L	1		09/20/18 12:35 AM
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1		09/20/18 12:35 AM
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1		09/20/18 12:35 AM
Surr: Dibromofluoromethane	95.1	70-130		%REC	1		09/20/18 12:35 AM
Surr: Toluene-d8	99.1	70-130		%REC	1		09/20/18 12:35 AM

ACCREDITED IN ACCORDANCE WITH nelac

I.D. 56-00306 PA DEP

AMCELLE RUBBLE FILL
Permit No. 1999-WRF-0206

APPENDIX B

QUALITY ASSURANCE REPORT
&
FIELD FORMS

SECOND SEMI-ANNUAL
2018

The Hutchinson Group, Ltd.

Geochemical Testing

Quality Assurance Project Report
Prepared for
ALLEGANY COUNTY MARYLAND

10/15/2018

Signed: _____
Leslie Ann Nemeth
Project Manager

Signed: _____
David M. Glessner
Quality Assurance Coordinator

Geochemical Testing

Date: *15-Oct-18*

CLIENT: ALLEGANY COUNTY MARYLAND
Project: Rubble L.F. 200 S
Lab Order: G1809996

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
G1809996-001A	MW-12		9/17/2018 2:22:00 PM	9/19/2018
G1809996-001B	MW-12		9/17/2018 2:22:00 PM	9/19/2018
G1809996-001C	MW-12		9/17/2018 2:22:00 PM	9/19/2018
G1809996-001D	MW-12		9/17/2018 2:22:00 PM	9/19/2018
G1809996-001E	MW-12		9/17/2018 2:22:00 PM	9/19/2018
G1809996-002A	MW-3		9/17/2018 11:15:00 AM	9/19/2018
G1809996-002B	MW-3		9/17/2018 11:15:00 AM	9/19/2018
G1809996-002C	MW-3		9/17/2018 11:15:00 AM	9/19/2018
G1809996-002D	MW-3		9/17/2018 11:15:00 AM	9/19/2018
G1809996-002E	MW-3		9/17/2018 11:15:00 AM	9/19/2018
G1809996-003A	MW-5		9/17/2018 1:39:00 PM	9/19/2018
G1809996-003B	MW-5		9/17/2018 1:39:00 PM	9/19/2018
G1809996-003C	MW-5		9/17/2018 1:39:00 PM	9/19/2018
G1809996-003D	MW-5		9/17/2018 1:39:00 PM	9/19/2018
G1809996-003E	MW-5		9/17/2018 1:39:00 PM	9/19/2018
G1809996-004A	MW-4		9/17/2018 11:55:00 AM	9/19/2018
G1809996-004B	MW-4		9/17/2018 11:55:00 AM	9/19/2018
G1809996-004C	MW-4		9/17/2018 11:55:00 AM	9/19/2018
G1809996-004D	MW-4		9/17/2018 11:55:00 AM	9/19/2018
G1809996-004E	MW-4		9/17/2018 11:55:00 AM	9/19/2018
G1809996-005A	FIELD DUP		9/17/2018 4:47:00 PM	9/19/2018
G1809996-005B	FIELD DUP		9/17/2018 4:47:00 PM	9/19/2018
G1809996-005C	FIELD DUP		9/17/2018 4:47:00 PM	9/19/2018
G1809996-005D	FIELD DUP		9/17/2018 4:47:00 PM	9/19/2018
G1809996-005E	FIELD DUP		9/17/2018 4:47:00 PM	9/19/2018

Geochemical Testing

Date: *15-Oct-18*

CLIENT: ALLEGANY COUNTY MARYLAND
Project: Rubble L.F. 200 S
Lab Order: G1809997

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
G1809997-001A	MW-6		9/17/2018 2:55:00 PM	9/19/2018
G1809997-001B	MW-6		9/17/2018 2:55:00 PM	9/19/2018
G1809997-001C	MW-6		9/17/2018 2:55:00 PM	9/19/2018
G1809997-001D	MW-6		9/17/2018 2:55:00 PM	9/19/2018
G1809997-001E	MW-6		9/17/2018 2:55:00 PM	9/19/2018
G1809997-002A	MW-7		9/17/2018 3:35:00 PM	9/19/2018
G1809997-002B	MW-7		9/17/2018 3:35:00 PM	9/19/2018
G1809997-002C	MW-7		9/17/2018 3:35:00 PM	9/19/2018
G1809997-002D	MW-7		9/17/2018 3:35:00 PM	9/19/2018
G1809997-002E	MW-7		9/17/2018 3:35:00 PM	9/19/2018
G1809997-003A	MW-11		9/17/2018 1:35:00 PM	9/19/2018
G1809997-003B	MW-11		9/17/2018 1:35:00 PM	9/19/2018
G1809997-003C	MW-11		9/17/2018 1:35:00 PM	9/19/2018
G1809997-003D	MW-11		9/17/2018 1:35:00 PM	9/19/2018
G1809997-003E	MW-11		9/17/2018 1:35:00 PM	9/19/2018
G1809997-004A	MW-13		9/17/2018 4:47:00 PM	9/19/2018
G1809997-004B	MW-13		9/17/2018 4:47:00 PM	9/19/2018
G1809997-004C	MW-13		9/17/2018 4:47:00 PM	9/19/2018
G1809997-004D	MW-13		9/17/2018 4:47:00 PM	9/19/2018
G1809997-004E	MW-13		9/17/2018 4:47:00 PM	9/19/2018
G1809997-005A	TRIP BLANK		9/18/2018 8:15:00 PM	9/19/2018
G1809997-005B	TRIP BLANK		9/18/2018 8:15:00 PM	9/19/2018
G1809997-005C	TRIP BLANK		9/18/2018 8:15:00 PM	9/19/2018
G1809997-005D	TRIP BLANK		9/18/2018 8:15:00 PM	9/19/2018
G1809997-005E	TRIP BLANK		9/18/2018 8:15:00 PM	9/19/2018
G1809997-006A	FIELD BLANK		9/17/2018 12:00:00 PM	9/19/2018
G1809997-006B	FIELD BLANK		9/17/2018 12:00:00 PM	9/19/2018
G1809997-006C	FIELD BLANK		9/17/2018 12:00:00 PM	9/19/2018
G1809997-006D	FIELD BLANK		9/17/2018 12:00:00 PM	9/19/2018
G1809997-006E	FIELD BLANK		9/17/2018 12:00:00 PM	9/19/2018

Qualifier Exception Code

1) Spike recovery limits are not applicable when the sample concentration exceeds the spike concentration by a factor of four or greater.

2) Batch data is acceptable when the matrix spike exceeds control limits but the corresponding LCS is within control limits.

3) Laboratory duplicate. If one or both of the values is less than 5 times the PQL, the allowed difference is +/- the PQL.

4) The TNI standard allows for a specific number of LCS parameters to be within four standard deviations, also known as a Marginal Exceedance. The recovery for this analyte is outside the standard limits but within the allowed marginal exceedance.

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: COD_HACH 8000

Sample ID: **LCS 50-148423** SampType: **LCS1** TestCode: **COD_HACH 8** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204545**
Client ID: Batch ID: **148423** TestNo: **HACH 8000** Analysis Date: **9/20/2018** SeqNo: **5003759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	53.91	10	50	0	108	90	110				

Sample ID: **G1809997-004BMS** SampType: **MS** TestCode: **COD_HACH 8** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204545**
Client ID: Batch ID: **148423** TestNo: **HACH 8000** Analysis Date: **9/20/2018** SeqNo: **5003790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	56.88	10	50	0	114	75	125				

Sample ID: **G1809997-004BMSD** SampType: **MSD** TestCode: **COD_HACH 8** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204545**
Client ID: Batch ID: **148423** TestNo: **HACH 8000** Analysis Date: **9/20/2018** SeqNo: **5003791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	54.90	10	0	0	0	0	0	56.88	3.54	20	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: COND_EPA 120.1

Sample ID: **COND LL** SampType: **COND LL** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5002197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	157.0	5.00	146.9	0	107	90	110				

Sample ID: **COND LL** SampType: **COND LL** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5002286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	156.0	5.00	146.9	0	106	90	110				

Sample ID: **COND LL** SampType: **COND LL** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	152.0	5.00	146.9	0	103	90	110				

Sample ID: **COND LL** SampType: **COND LL** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	151.0	5.00	146.9	0	103	90	110				

Sample ID: **COND LL** SampType: **COND LL** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	149.0	5.00	146.9	0	101	90	110				

Sample ID: **COND LL** SampType: **COND LL** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	152.0	5.00	146.9	0	103	90	110				

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: COND_EPA 120.1

Sample ID: **COND LL** SampType: **COND LL** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	156.0	5.00	146.9	0	106	90	110				

Sample ID: **COND LL** SampType: **COND LL** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	156.0	5.00	146.9	0	106	90	110				

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5002196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1433	5.00	1409	0	102	90	110				

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5002228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1452	5.00	1409	0	103	90	110				

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5002285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1431	5.00	1409	0	102	90	110				

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1432	5.00	1409	0	102	90	110				

CLIENT: ALLEGANY COUNTY MARYLAND
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ANALYTICAL QC SUMMARY REPORT

TestCode: COND_EPA 120.1

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1380	5.00	1409	0	97.9	90	110				

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1412	5.00	1409	0	100	90	110				

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1374	5.00	1409	0	97.5	90	110				

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1393	5.00	1409	0	98.9	90	110				

Sample ID: **COND LCS** SampType: **LCS** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1393	5.00	1409	0	98.9	90	110				

Sample ID: **G1809996-002ADUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204512**
Client ID: **MW-3** Batch ID: **R204512** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5002202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	692.0	5.00						703	1.58	20	

CLIENT: ALLEGANY COUNTY MARYLAND
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ANALYTICAL QC SUMMARY REPORT

TestCode: COND_EPA 120.1

Sample ID: **G1809996-003ADUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204512**
Client ID: **MW-5** Batch ID: **R204512** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5002233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	446.0	5.00						452	1.34	20	

Sample ID: **G1809931-001ADUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	328.0	5.00						327	0.305	20	

Sample ID: **G1809977-004ADUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1798	5.00						1785	0.726	20	

Sample ID: **G1809998-006ADUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6890	5.00						7000	1.58	20	

Sample ID: **G1809A34-004CDUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1357	5.00						1379	1.61	20	

Sample ID: **G1809A34-005CDUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1658	5.00						1668	0.601	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: COND_EPA 120.1

Sample ID: **G1809A55-003CDUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	550.0	5.00						556	1.08	20	

Sample ID: **G1809964-001BDUP** SampType: **DUP** TestCode: **COND_EPA 1** Units: **µmhos/cm** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **EPA 120.1** Analysis Date: **9/19/2018** SeqNo: **5003488**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	661.0	5.00						663	0.302	20	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_3112B

Sample ID: **PB-148531** SampType: **PB** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: Batch ID: **148531** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5010956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.200	0.200									

Sample ID: **PB-148536** SampType: **PB** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: Batch ID: **148536** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5011008**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.200	0.200									

Sample ID: **LCS-148531** SampType: **LCS** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: Batch ID: **148531** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5010959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.750	0.200	2	0	87.5	85	115				

Sample ID: **LCS-148536** SampType: **LCS** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: Batch ID: **148536** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5011011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.900	0.200	2	0	95.0	85	115				

Sample ID: **G1809996-001DMS** SampType: **MS** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: **MW-12** Batch ID: **148531** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5010965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.750	0.200	2	0	87.5	85	115				

Sample ID: **G1809756-001BMS** SampType: **MS** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: Batch ID: **148531** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5010969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.990	0.200	2	0	99.5	85	115				

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: HG_3112B

Sample ID: **G1809918-001DMS** SampType: **MS** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: Batch ID: **148531** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5010990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.140	0.200	2	0	107	85	115				

Sample ID: **G1809996-002DMS** SampType: **MS** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: **MW-3** Batch ID: **148536** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5011015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.890	0.200	2	0	94.5	85	115				

Sample ID: **G1809996-004DMS** SampType: **MS** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: **MW-4** Batch ID: **148536** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5011038**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.000	0.200	2	0	100	85	115				

Sample ID: **G1809996-001DDUP** SampType: **DUP** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: **MW-12** Batch ID: **148531** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5010963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.200	0.200						0	0	20	

Sample ID: **G1809996-002DDUP** SampType: **DUP** TestCode: **HG_3112B** Units: **µg/L** Prep Date: **9/24/2018** RunNo: **204745**
Client ID: **MW-3** Batch ID: **148536** TestNo: **SM 3112 B** Analysis Date: **9/25/2018** SeqNo: **5011013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.200	0.200						0	0	20	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: IC_300.0

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	14.88	0.0500	15	0	99.2	90	110				
Nitrate Nitrogen	10.04	0.0500	10	0	100	90	110				
Nitrite Nitrogen	4.843	0.0500	5	0	96.9	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	< 0.0500	0.0500									
Nitrate Nitrogen	< 0.0500	0.0500									
Nitrite Nitrogen	< 0.0500	0.0500									

Sample ID: **QCS** SampType: **QCS** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	7.693	0.0500	8	0	96.2	90	110				
Nitrate Nitrogen	3.892	0.0500	4	0	97.3	90	110				
Nitrite Nitrogen	3.801	0.0500	4	0	95.0	90	110				

Sample ID: **G1809996-002CLFM** SampType: **LFM** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: **MW-3** Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	4.917	0.0500	5	0.74242	83.5	80	120				
Nitrate Nitrogen	2.761	0.0500	2.5	0.74242	80.7	80	120				
Nitrite Nitrogen	2.156	0.0500	2.5	0	86.2	80	120				

Sample ID: **G1809997-004CLFM** SampType: **LFM** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	5.034	0.0500	5	0	101	80	120				
Nitrate Nitrogen	2.662	0.0500	2.5	0	106	80	120				
Nitrite Nitrogen	2.372	0.0500	2.5	0	94.9	80	120				

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: IC_300.0

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	14.86	0.0500	15	0	99.1	90	110				
Nitrate Nitrogen	10.02	0.0500	10	0	100	90	110				
Nitrite Nitrogen	4.842	0.0500	5	0	96.8	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	< 0.0500	0.0500									
Nitrate Nitrogen	< 0.0500	0.0500									
Nitrite Nitrogen	< 0.0500	0.0500									

Sample ID: **G1809A95-001DLFM** SampType: **LFM** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	5.249	0.0500	5	0.35458	97.9	80	120				
Nitrate Nitrogen	2.810	0.0500	2.5	0.35458	98.2	80	120				
Nitrite Nitrogen	2.439	0.0500	2.5	0	97.6	80	120				

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	14.93	0.0500	15	0	99.5	90	110				
Nitrate Nitrogen	10.08	0.0500	10	0	101	90	110				
Nitrite Nitrogen	4.845	0.0500	5	0	96.9	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	< 0.0500	0.0500									
Nitrate Nitrogen	< 0.0500	0.0500									
Nitrite Nitrogen	< 0.0500	0.0500									

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: IC_300.0

Sample ID: **QCS** SampType: **QCS** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	7.694	0.0500	8	0	96.2	90	110				
Nitrate Nitrogen	3.891	0.0500	4	0	97.3	90	110				
Nitrite Nitrogen	3.804	0.0500	4	0	95.1	90	110				

Sample ID: **G1809996-002CDUP** SampType: **DUP** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: **MW-3** Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002763**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	0.7394	0.0500						0.7424	0	20	
Nitrate Nitrogen	0.7394	0.0500						0.7424	0.413	20	
Nitrite Nitrogen	< 0.0500	0.0500						0	0	20	

Sample ID: **G1809997-004CDUP** SampType: **DUP** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	< 0.0500	0.0500						0	0	20	
Nitrate Nitrogen	< 0.0500	0.0500						0	0	20	
Nitrite Nitrogen	< 0.0500	0.0500						0	0	20	

Sample ID: **G1809A95-001DDUP** SampType: **DUP** TestCode: **IC_300.0** Units: **mg/L as N** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5002936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate - Nitrite	0.3472	0.0500						0.3546	0	20	
Nitrate Nitrogen	0.3472	0.0500						0.3546	2.09	20	
Nitrite Nitrogen	< 0.0500	0.0500						0	0	20	

CLIENT: ALLEGANY COUNTY MARYLAND
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TestCode: IC_300.0_28

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.693	0.200	5	0	93.9	90	110				
Chloride	49.19	1.00	50	0	98.4	90	110				
Fluoride	4.875	0.100	5	0	97.5	90	110				
Sulfate	48.40	2.00	50	0	96.8	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200									
Chloride	< 1.00	1.00									
Fluoride	< 0.100	0.100									
Sulfate	< 2.00	2.00									

Sample ID: **QCS** SampType: **QCS** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.560	0.200	8	0	94.5	90	110				
Chloride	23.04	1.00	24	0	96.0	90	110				
Fluoride	3.860	0.100	4	0	96.5	90	110				
Sulfate	30.71	2.00	32	0	96.0	90	110				

Sample ID: **HRQC** SampType: **HRQC** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	250.8	1.00	250	0	100	90	110				
Sulfate	251.1	2.00	250	0	100	90	110				

Sample ID: **G1809996-002CLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: **MW-3** Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.765	0.200	5	0	95.3	80	120				

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ANALYTICAL QC SUMMARY REPORT

TestCode: IC_300.0_28

Sample ID: **G1809996-002CLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: **MW-3** Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24.55	1.00	15	12.421	80.9	80	120				
Fluoride	2.201	0.100	2.5	0.051838	86.0	80	120				
Sulfate	77.26	2.00	20	58.733	92.6	80	120				

Sample ID: **G1809997-004CLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.865	0.200	5	0.12005	94.9	80	120				
Chloride	23.29	1.00	15	9.4042	92.6	80	120				
Fluoride	2.224	0.100	2.5	0	89.0	80	120				
Sulfate	611.5	2.00	20	605.51	29.7	80	120				1

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.699	0.200	5	0	94.0	90	110				
Chloride	49.24	1.00	50	0	98.5	90	110				
Fluoride	4.879	0.100	5	0	97.6	90	110				
Sulfate	48.31	2.00	50	0	96.6	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200									
Chloride	< 1.00	1.00									
Fluoride	< 0.100	0.100									
Sulfate	< 2.00	2.00									

Sample ID: **G1809A95-001DLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

CLIENT: ALLEGANY COUNTY MARYLAND
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Project: Rubble L.F. 200 S

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TestCode: IC_300.0_28

Sample ID: **G1809A95-001DLFM** SampType: **LFM** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.822	0.200	5	0	96.4	80	120				
Chloride	15.93	1.00	15	0.82991	101	80	120				
Fluoride	2.484	0.100	2.5	0	99.4	80	120				
Sulfate	32.93	2.00	20	13.457	97.3	80	120				

Sample ID: **LFB** SampType: **LFB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.692	0.200	5	0	93.8	90	110				
Chloride	49.24	1.00	50	0	98.5	90	110				
Fluoride	4.881	0.100	5	0	97.6	90	110				
Sulfate	48.16	2.00	50	0	96.3	90	110				

Sample ID: **LRB** SampType: **LRB** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200									
Chloride	< 1.00	1.00									
Fluoride	< 0.100	0.100									
Sulfate	< 2.00	2.00									

Sample ID: **QCS** SampType: **QCS** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	7.554	0.200	8	0	94.4	90	110				
Chloride	23.09	1.00	24	0	96.2	90	110				
Fluoride	3.863	0.100	4	0	96.6	90	110				
Sulfate	30.70	2.00	32	0	95.9	90	110				

CLIENT: ALLEGANY COUNTY MARYLAND
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Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: IC_300.0_28

Sample ID: **HRQC** SampType: **HRQC** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	250.6	1.00	250	0	100	90	110				
Sulfate	251.1	2.00	250	0	100	90	110				

Sample ID: **G1809996-002CDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: **MW-3** Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200						0	0	20	
Chloride	12.43	1.00						12.42	0.0636	20	
Fluoride	< 0.100	0.100						0.05184	0	20	
Sulfate	58.79	2.00						58.73	0.0957	20	

Sample ID: **G1809997-004CDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200						0.12	0	20	
Chloride	9.433	1.00						9.404	0.304	20	
Fluoride	< 0.100	0.100						0	0	20	
Sulfate	604.4	2.00						605.5	0.185	20	

Sample ID: **G1809A95-001DDUP** SampType: **DUP** TestCode: **IC_300.0_28** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204522**
Client ID: Batch ID: **148307** TestNo: **EPA 300.0** Analysis Date: **9/19/2018** SeqNo: **5003216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	< 0.200	0.200						0	0	20	
Chloride	< 1.00	1.00						0.8299	0	20	
Fluoride	< 0.100	0.100						0	0	20	
Sulfate	13.33	2.00						13.46	0.938	20	

CLIENT: ALLEGANY COUNTY MARYLAND
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Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: NH3_350.1

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001272**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.7956	0.100	0.82	0	97.0	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.7816	0.100	0.82	0	95.3	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.7918	0.100	0.82	0	96.6	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.7846	0.100	0.82	0	95.7	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.7825	0.100	0.82	0	95.4	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.8103	0.100	0.82	0	98.8	90	110				

CLIENT: ALLEGANY COUNTY MARYLAND
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TestCode: NH3_350.1

Sample ID: **G1809887-001AMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.168	0.100	1	0.26078	90.7	90	110				

Sample ID: **G1809918-002CMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001277**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.384	0.100	1	0.47166	91.3	90	110				

Sample ID: **G1809927-003AMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.131	0.100	1	0.22864	90.3	90	110				

Sample ID: **G1809948-001AMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.013	0.100	1	0.11261	90.1	90	110				

Sample ID: **G1809977-001BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.128	0.100	1	0.20541	92.2	90	110				

Sample ID: **G1809980-004BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.9237	0.100	1	0	92.4	90	110				

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ANALYTICAL QC SUMMARY REPORT

TestCode: NH3_350.1

Sample ID: **G1809996-004BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: **MW-4** Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.616	0.100	1	0.70823	90.8	90	110				

Sample ID: **G1809998-004BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001413**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.9271	0.100	1	0	92.7	90	110				

Sample ID: **G1809A10-001BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.9554	0.100	1	0.042855	91.3	90	110				

Sample ID: **G1809A26-002AMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	1.200	0.100	1	0.27428	92.5	90	110				

Sample ID: **G1809A31-004BMS** SampType: **MS** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.9039	0.100	1	0	90.4	90	110				

Sample ID: **G1809887-001ADUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.2602	0.100						0.2608	0.209	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: NH3_350.1

Sample ID: **G1809918-002CDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.4603	0.100						0.4717	2.45	20	

Sample ID: **G1809927-003ADUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.2300	0.100						0.2286	0.574	20	

Sample ID: **G1809948-001ADUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.1100	0.100						0.1126	2.37	20	

Sample ID: **G1809977-001BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.2042	0.100						0.2054	0.585	20	

Sample ID: **G1809980-004BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	< 0.100	0.100						0	0	20	

Sample ID: **G1809996-004BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: **MW-4** Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.7079	0.100						0.7082	0.0491	20	

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TestCode: NH3_350.1

Sample ID: **G1809998-004BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	< 0.100	0.100						0	0	20	

Sample ID: **G1809A10-001BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	< 0.100	0.100						0.04286	0	20	

Sample ID: **G1809A26-002ADUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	0.2741	0.100						0.2743	0.0791	20	

Sample ID: **G1809A31-004BDUP** SampType: **DUP** TestCode: **NH3_350.1** Units: **mg/L as N** Prep Date: RunNo: **204499**
Client ID: Batch ID: **R204499** TestNo: **EPA 350.1** Analysis Date: **9/19/2018** SeqNo: **5001455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ammonia Nitrogen	< 0.100	0.100						0	0	20	

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TestCode: NO3_353.2

Sample ID: **LCS** SampType: **LCS** TestCode: **NO3_353.2** Units: **mg/L as N** Prep Date: RunNo: **204708**
Client ID: Batch ID: **148545** TestNo: **EPA 353.2** Analysis Date: **9/24/2018** SeqNo: **5010716**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate Nitrogen	1.023	0.0500	1	0	102	90	110				

Sample ID: **LCS** SampType: **LCS** TestCode: **NO3_353.2** Units: **mg/L as N** Prep Date: RunNo: **204708**
Client ID: Batch ID: **148545** TestNo: **EPA 353.2** Analysis Date: **9/24/2018** SeqNo: **5010740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate Nitrogen	1.021	0.0500	1	0	102	90	110				

Sample ID: **G1809B06-00BCMS** SampType: **MS** TestCode: **NO3_353.2** Units: **mg/L as N** Prep Date: **9/24/2018** RunNo: **204708**
Client ID: Batch ID: **148545** TestNo: **EPA 353.2** Analysis Date: **9/24/2018** SeqNo: **5010731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate Nitrogen	1.051	0.0500	1	0	105	90	110				
Nitrate - Nitrite	1.051	0.0500	1	0	105	90	110				

Sample ID: **G1809B06-006BDUP** SampType: **DUP** TestCode: **NO3_353.2** Units: **mg/L as N** Prep Date: **9/24/2018** RunNo: **204708**
Client ID: Batch ID: **148545** TestNo: **EPA 353.2** Analysis Date: **9/24/2018** SeqNo: **5010730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate Nitrogen	< 0.0500	0.0500						0	0	20	

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ANALYTICAL QC SUMMARY REPORT

TestCode: PH_4500_HB

Sample ID: **pH LCS 7** SampType: **LCS** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5002194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.040	0	7	0	101	98	102				

Sample ID: **pH LCS 7** SampType: **LCS** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5002283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.050	0	7	0	101	98	102				

Sample ID: **pH LCS 7** SampType: **LCS** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.030	0	7	0	100	98	102				

Sample ID: **pH LCS 7** SampType: **LCS** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.050	0	7	0	101	98	102				

Sample ID: **pH LCS 7** SampType: **LCS** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.060	0	7	0	101	98	102				

Sample ID: **pH LCS 7** SampType: **LCS** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.070	0	7	0	101	98	102				

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Project: Rubble L.F. 200 S

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TestCode: PH_4500_HB

Sample ID: **pH LCS 7** SampType: **LCS** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.010	0	7	0	100	98	102				

Sample ID: **pH LCS 7** SampType: **LCS** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	6.960	0	7	0	99.4	98	102				

Sample ID: **G1809996-002ADUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204512**
Client ID: **MW-3** Batch ID: **R204512** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5002203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	6.840	0						6.84	0	20	H

Sample ID: **G1809996-003ADUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204512**
Client ID: **MW-5** Batch ID: **R204512** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5002234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.050	0						7.06	0.142	20	H

Sample ID: **G1809931-001ADUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	7.850	0						8.06	2.64	20	H

Sample ID: **G1809977-004ADUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	6.350	0						6.31	0.632	20	H

ANALYTICAL QC SUMMARY REPORT

TestCode: PH_4500_HB

Sample ID: **G1809998-006ADUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	5.960	0						5.94	0.336	20	H

Sample ID: **G1809A34-004CDUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	8.030	0						8.06	0.373	20	H

Sample ID: **G1809A34-005CDUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	8.020	0						7.99	0.375	20	H

Sample ID: **G1809A55-003CDUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	8.340	0						8.44	1.19	20	H

Sample ID: **G1809964-001BDUP** SampType: **DUP** TestCode: **PH_4500_HB** Units: **S.U.** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **SM 4500-H+** Analysis Date: **9/19/2018** SeqNo: **5003489**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lab pH	8.720	0						8.7	0.230	20	H

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ANALYTICAL QC SUMMARY REPORT

TestCode: TDS_SM 2540-C

Sample ID: **LCS-148355** SampType: **LCS** TestCode: **TDS_SM 254** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204521**
Client ID: Batch ID: **148355** TestNo: **SM 2540 C** Analysis Date: **9/19/2018** SeqNo: **5002725**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total dissolved solids	294.0	20.0	292	0	101	85	115				

Sample ID: **LCS-148355** SampType: **LCS** TestCode: **TDS_SM 254** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204521**
Client ID: Batch ID: **148355** TestNo: **SM 2540 C** Analysis Date: **9/19/2018** SeqNo: **5002805**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total dissolved solids	306.0	20.0	292	0	105	85	115				

Sample ID: **G1809982-003EDUP** SampType: **DUP** TestCode: **TDS_SM 254** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204521**
Client ID: Batch ID: **148355** TestNo: **SM 2540 C** Analysis Date: **9/19/2018** SeqNo: **5002715**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total dissolved solids	62.00	20.0						74	17.6	10	3

Sample ID: **G1809995-010FDUP** SampType: **DUP** TestCode: **TDS_SM 254** Units: **mg/L** Prep Date: **9/19/2018** RunNo: **204521**
Client ID: Batch ID: **148355** TestNo: **SM 2540 C** Analysis Date: **9/19/2018** SeqNo: **5002765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total dissolved solids	1546	20.0						1546	0	10	

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ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **PB-148422** SampType: **PB** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 0.100	0.100									
Arsenic	< 0.0200	0.0200									
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									
Boron	< 0.0500	0.0500									
Cadmium	< 0.00200	0.00200									
Chromium	< 0.0100	0.0100									
Cobalt	< 0.00500	0.00500									
Copper	< 0.0100	0.0100									
Lead	< 0.0200	0.0200									
Lithium	< 0.0100	0.0100									
Manganese	< 0.0100	0.0100									
Molybdenum	< 0.0200	0.0200									
Nickel	< 0.0100	0.0100									
Phosphorus	< 0.0100	0.0100									
Potassium	< 0.500	0.500									
Selenium	< 0.0200	0.0200									
Silicon	< 0.100	0.100									
Silver	< 0.00500	0.00500									
Sodium	< 0.200	0.200									
Strontium	< 0.0100	0.0100									
Thallium	< 0.0200	0.0200									
Tin	< 0.100	0.100									
Titanium	< 0.00500	0.00500									
Vanadium	< 0.00500	0.00500									

Sample ID: **LCS1-148422** SampType: **LCS1** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.9525	0.100	1	0	95.2	85	115				
Arsenic	0.9826	0.0200	1	0	98.3	85	115				
Barium	1.010	0.0100	1	0	101	85	115				
Beryllium	0.2096	0.00100	0.2	0	105	85	115				
Boron	1.006	0.0500	1	0	101	85	115				

CLIENT: ALLEGANY COUNTY MARYLAND
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Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **LCS1-148422** SampType: **LCS1** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.4040	0.00200	0.4	0	101	85	115				
Calcium	10.45	0.100	10	0	104	85	115				
Chromium	0.9941	0.0100	1	0	99.4	85	115				
Cobalt	0.4010	0.00500	0.4	0	100	85	115				
Copper	1.016	0.0100	1	0	102	85	115				
Iron	10.06	0.100	10	0	101	85	115				
Lead	1.021	0.0200	1	0	102	85	115				
Lithium	0.1994	0.0100	0.2	0	99.7	85	115				
Magnesium	2.056	0.100	2	0	103	85	115				
Manganese	1.036	0.0100	1	0	104	85	115				
Molybdenum	0.3846	0.0200	0.4	0	96.2	85	115				
Nickel	1.026	0.0100	1	0	103	85	115				
Phosphorus	1.988	0.0100	2	0	99.4	85	115				
Potassium	10.01	0.500	10	0	100	85	115				
Selenium	1.009	0.0200	1	0	101	85	115				
Silicon	20.01	0.100	20	0	100	85	115				
Silver	0.008700	0.00500	0.01	0	87.0	85	115				
Sodium	10.07	0.200	10	0	101	85	115				
Strontium	1.003	0.0100	1	0	100	85	115				
Thallium	1.031	0.0200	1	0	103	85	115				
Tin	0.9839	0.100	1	0	98.4	85	115				
Titanium	1.016	0.00500	1	0	102	85	115				
Vanadium	0.4101	0.00500	0.4	0	103	85	115				
Zinc	0.9927	0.0100	1	0	99.3	85	115				

Sample ID: **PB-148422** SampType: **PB** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	< 0.100	0.100									
Calcium	< 0.100	0.100									
Iron	< 0.100	0.100									
Magnesium	< 0.100	0.100									

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ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **LCS1-148422** SampType: **LCS1** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.074	0.100	1	0	107	85	115				

Sample ID: **PB-148428** SampType: **PB** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204618**
Client ID: Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	< 0.100	0.100									
Antimony	< 0.100	0.100									
Arsenic	< 0.0200	0.0200									
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									
Cadmium	< 0.00200	0.00200									
Calcium	< 0.100	0.100									
Chromium	< 0.0100	0.0100									
Cobalt	< 0.00500	0.00500									
Copper	< 0.0100	0.0100									
Iron	< 0.100	0.100									
Lead	< 0.0200	0.0200									
Lithium	< 0.0100	0.0100									
Magnesium	< 0.100	0.100									
Manganese	< 0.0100	0.0100									
Molybdenum	< 0.0200	0.0200									
Nickel	< 0.0100	0.0100									
Phosphorus	< 0.0100	0.0100									
Potassium	< 0.500	0.500									
Selenium	< 0.0200	0.0200									
Silicon	< 0.100	0.100									
Silver	< 0.00500	0.00500									
Sodium	< 0.200	0.200									
Strontium	< 0.0100	0.0100									
Thallium	< 0.0200	0.0200									
Tin	< 0.100	0.100									
Titanium	< 0.00500	0.00500									
Vanadium	< 0.00500	0.00500									

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **LCS1-148428** SampType: **LCS1** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204618**
Client ID: Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.026	0.100	1	0	103	85	115				
Antimony	1.033	0.100	1	0	103	85	115				
Arsenic	1.050	0.0200	1	0	105	85	115				
Barium	1.013	0.0100	1	0	101	85	115				
Beryllium	0.1970	0.00100	0.2	0	98.5	85	115				
Cadmium	0.4176	0.00200	0.4	0	104	85	115				
Calcium	9.848	0.100	10	0	98.5	85	115				
Chromium	1.008	0.0100	1	0	101	85	115				
Cobalt	0.4027	0.00500	0.4	0	101	85	115				
Copper	0.9372	0.0100	1	0	93.7	85	115				
Iron	10.05	0.100	10	0	101	85	115				
Lead	1.004	0.0200	1	0	100	85	115				
Lithium	0.1972	0.0100	0.2	0	98.6	85	115				
Magnesium	1.958	0.100	2	0	97.9	85	115				
Manganese	1.035	0.0100	1	0	103	85	115				
Molybdenum	0.3957	0.0200	0.4	0	98.9	85	115				
Nickel	1.039	0.0100	1	0	104	85	115				
Phosphorus	2.096	0.0100	2	0	105	85	115				
Potassium	9.794	0.500	10	0	97.9	85	115				
Selenium	1.074	0.0200	1	0	107	85	115				
Silicon	20.25	0.100	20	0	101	85	115				
Silver	0.009400	0.00500	0.01	0	94.0	85	115				
Sodium	10.09	0.200	10	0	101	85	115				
Strontium	1.011	0.0100	1	0	101	85	115				
Thallium	0.9449	0.0200	1	0	94.5	85	115				
Tin	1.003	0.100	1	0	100	85	115				
Titanium	0.9778	0.00500	1	0	97.8	85	115				
Vanadium	0.3807	0.00500	0.4	0	95.2	85	115				
Zinc	1.048	0.0100	1	0	105	85	115				

Sample ID: **PB-148422** SampType: **PB** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204652**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5007458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	< 0.100	0.100									

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **PB-148422** SampType: **PB** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204652**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5007458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 0.100	0.100									
Arsenic	< 0.0200	0.0200									
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									
Boron	< 0.0500	0.0500									
Cadmium	< 0.00200	0.00200									
Calcium	< 0.100	0.100									
Chromium	< 0.0100	0.0100									
Cobalt	< 0.00500	0.00500									
Copper	< 0.0100	0.0100									
Iron	< 0.100	0.100									
Lithium	< 0.0100	0.0100									
Magnesium	< 0.100	0.100									
Manganese	< 0.0100	0.0100									
Molybdenum	< 0.0200	0.0200									
Nickel	< 0.0100	0.0100									
Phosphorus	< 0.0100	0.0100									
Potassium	< 0.500	0.500									
Selenium	< 0.0200	0.0200									
Silicon	< 0.100	0.100									
Silver	< 0.00500	0.00500									
Sodium	< 0.200	0.200									
Strontium	< 0.0100	0.0100									
Thallium	< 0.0200	0.0200									
Tin	< 0.100	0.100									
Titanium	< 0.00500	0.00500									
Vanadium	< 0.00500	0.00500									
Zinc	< 0.0100	0.0100									

Sample ID: **LCS1-148422** SampType: **LCS1** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204652**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5007459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.9926	0.100	1	0	99.3	85	115				
Antimony	1.063	0.100	1	0	106	85	115				

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **LCS1-148422** SampType: **LCS1** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204652**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5007459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.058	0.0200	1	0	106	85	115				
Barium	1.008	0.0100	1	0	101	85	115				
Beryllium	0.2133	0.00100	0.2	0	107	85	115				
Boron	1.024	0.0500	1	0	102	85	115				
Cadmium	0.4100	0.00200	0.4	0	103	85	115				
Calcium	10.13	0.100	10	0	101	85	115				
Chromium	1.027	0.0100	1	0	103	85	115				
Cobalt	0.4097	0.00500	0.4	0	102	85	115				
Copper	1.068	0.0100	1	0	107	85	115				
Iron	10.48	0.100	10	0	105	85	115				
Lithium	0.1943	0.0100	0.2	0	97.1	85	115				
Magnesium	1.987	0.100	2	0	99.4	85	115				
Manganese	1.044	0.0100	1	0	104	85	115				
Molybdenum	0.4069	0.0200	0.4	0	102	85	115				
Nickel	1.090	0.0100	1	0	109	85	115				
Phosphorus	2.139	0.0100	2	0	107	85	115				
Potassium	9.642	0.500	10	0	96.4	85	115				
Selenium	1.053	0.0200	1	0	105	85	115				
Silicon	19.46	0.100	20	0	97.3	85	115				
Silver	0.01068	0.00500	0.01	0	107	85	115				
Sodium	10.13	0.200	10	0	101	85	115				
Strontium	0.9872	0.0100	1	0	98.7	85	115				
Thallium	1.090	0.0200	1	0	109	85	115				
Tin	1.046	0.100	1	0	105	85	115				
Titanium	1.023	0.00500	1	0	102	85	115				
Vanadium	0.4031	0.00500	0.4	0	101	85	115				
Zinc	1.033	0.0100	1	0	103	85	115				

Sample ID: **LCS1-148428** SampType: **LCS1** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204720**
Client ID: Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/24/2018** SeqNo: **5009708**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.016	0.0500	1	0	102	85	115				

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **PB-148428** SampType: **MBLK** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204630**
Client ID: Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	< 0.0100	0.0100									

Sample ID: **PB-148428** SampType: **MBLK** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204720**
Client ID: Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/24/2018** SeqNo: **5009704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	< 0.0500	0.0500									

Sample ID: **G1809981-001FMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.210	0.100	1	0.1271	108	75	125				
Antimony	0.9544	0.100	1	0	95.4	75	125				
Arsenic	0.9835	0.0200	1	0	98.4	75	125				
Barium	1.062	0.0100	1	0.052	101	75	125				
Beryllium	0.2121	0.00100	0.2	0	106	75	125				
Boron	1.018	0.0500	1	0	102	75	125				
Cadmium	0.4029	0.00200	0.4	0	101	75	125				
Calcium	20.40	0.100	10	10.63	97.7	75	125				
Chromium	0.9942	0.0100	1	0	99.4	75	125				
Cobalt	0.4056	0.00500	0.4	0.0052	100	75	125				
Copper	1.019	0.0100	1	0	102	75	125				
Iron	10.79	0.100	10	0.8637	99.3	75	125				
Lead	1.014	0.0200	1	0	101	75	125				
Lithium	0.2163	0.0100	0.2	0.0146	101	75	125				
Magnesium	11.15	0.100	2	8.861	114	75	125				
Manganese	2.628	0.0100	1	1.66	96.8	75	125				
Molybdenum	0.3855	0.0200	0.4	0	96.4	75	125				
Nickel	1.044	0.0100	1	0.0239	102	75	125				
Phosphorus	2.003	0.0100	2	0.0165	99.3	75	125				
Potassium	11.76	0.500	10	1.705	101	75	125				
Selenium	0.9985	0.0200	1	0	99.8	75	125				
Silicon	25.02	0.100	20	5.165	99.3	75	125				
Silver	0.008600	0.00500	0.01	0	86.0	75	125				

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **G1809981-001FMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10.83	0.200	10	0.6604	102	75	125				
Strontium	1.044	0.0100	1	0.0415	100	75	125				
Thallium	1.030	0.0200	1	0	103	75	125				
Tin	0.9854	0.100	1	0	98.5	75	125				
Titanium	1.015	0.00500	1	0	101	75	125				
Vanadium	0.4097	0.00500	0.4	0	102	75	125				

Sample ID: **G1809982-004GMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.089	0.100	1	0	109	75	125				
Antimony	0.9808	0.100	1	0	98.1	75	125				
Arsenic	1.006	0.0200	1	0	101	75	125				
Barium	1.131	0.0100	1	0.128	100	75	125				
Beryllium	0.2085	0.00100	0.2	0	104	75	125				
Boron	1.393	0.0500	1	0.5892	80.4	75	125				
Cadmium	0.4010	0.00200	0.4	0	100	75	125				
Calcium	42.82	0.100	10	33.69	91.3	75	125				
Chromium	1.003	0.0100	1	0	100	75	125				
Cobalt	0.4021	0.00500	0.4	0	101	75	125				
Copper	1.016	0.0100	1	0	102	75	125				
Iron	15.31	0.100	10	5.601	97.1	75	125				
Lead	1.014	0.0200	1	0	101	75	125				
Lithium	0.2293	0.0100	0.2	0.0276	101	75	125				
Magnesium	9.986	0.100	2	8.816	58.5	75	125				1
Manganese	1.687	0.0100	1	0.6705	102	75	125				
Molybdenum	0.3921	0.0200	0.4	0	98.0	75	125				
Nickel	1.014	0.0100	1	0	101	75	125				
Phosphorus	2.058	0.0100	2	0.0286	101	75	125				
Potassium	12.76	0.500	10	2.75	100	75	125				
Selenium	1.029	0.0200	1	0	103	75	125				
Silicon	22.94	0.100	20	3.341	98.0	75	125				
Silver	0.008100	0.00500	0.01	0	81.0	75	125				
Sodium	13.26	0.200	10	3.364	99.0	75	125				

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **G1809982-004GMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Strontium	1.391	0.0100	1	0.4013	99.0	75	125				
Thallium	1.045	0.0200	1	0	104	75	125				
Tin	0.9877	0.100	1	0	98.8	75	125				
Titanium	0.9849	0.00500	1	0	98.5	75	125				
Vanadium	0.3974	0.00500	0.4	0	99.3	75	125				
Zinc	1.000	0.0100	1	0	100	75	125				

Sample ID: **G1809981-001FMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204652**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5007463**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	1.066	0.0100	1	0	107	75	125				

Sample ID: **G1809996-002DMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204720**
Client ID: **MW-3** Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/24/2018** SeqNo: **5010005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.101	0.100	1	0	110	75	125				
Antimony	0.9644	0.100	1	0	96.4	75	125				
Arsenic	0.9705	0.0200	1	0	97.0	75	125				
Barium	1.066	0.0100	1	0.092	97.4	75	125				
Beryllium	0.2043	0.00100	0.2	0	102	75	125				
Boron	1.120	0.0500	1	0.1108	101	75	125				
Cadmium	0.3852	0.00200	0.4	0	96.3	75	125				
Calcium	119.4	0.100	10	111.2	82.0	75	125				
Chromium	0.9708	0.0100	1	0	97.1	75	125				
Cobalt	0.4008	0.00500	0.4	0.0182	95.6	75	125				
Copper	0.9797	0.0100	1	0	98.0	75	125				
Iron	29.68	0.100	10	20.69	89.9	75	125				
Lead	0.9717	0.0200	1	0	97.2	75	125				
Lithium	0.2298	0.0100	0.2	0.0321	98.9	75	125				
Magnesium	9.602	0.100	2	7.81	89.6	75	125				
Manganese	7.475	0.0100	1	6.61	86.5	75	125				
Molybdenum	0.3753	0.0200	0.4	0	93.8	75	125				
Nickel	0.9796	0.0100	1	0.0077	97.2	75	125				

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **G1809996-002DMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204720**
Client ID: **MW-3** Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/24/2018** SeqNo: **5010005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus	1.997	0.0100	2	0.0292	98.4	75	125				
Potassium	16.08	0.500	10	6.501	95.8	75	125				
Selenium	0.9649	0.0200	1	0	96.5	75	125				
Silicon	32.03	0.100	20	12.9	95.6	75	125				
Silver	0.008700	0.00500	0.01	0	87.0	75	125				
Sodium	21.51	0.200	10	11.96	95.5	75	125				
Strontium	2.403	0.0100	1	1.463	94.0	75	125				
Thallium	0.9940	0.0200	1	0	99.4	75	125				
Tin	0.9548	0.100	1	0	95.5	75	125				
Titanium	0.9923	0.00500	1	0	99.2	75	125				
Vanadium	0.4048	0.00500	0.4	0.0029	100	75	125				
Zinc	1.012	0.0100	1	0.0084	100	75	125				

Sample ID: **G1809996-005DMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204720**
Client ID: **FIELD DUP** Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/24/2018** SeqNo: **5010021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1.098	0.100	1	0	110	75	125				
Antimony	0.9895	0.100	1	0	98.9	75	125				
Arsenic	1.019	0.0200	1	0	102	75	125				
Barium	1.010	0.0100	1	0.0248	98.5	75	125				
Beryllium	0.2030	0.00100	0.2	0	101	75	125				
Boron	1.087	0.0500	1	0.048	104	75	125				
Cadmium	0.3916	0.00200	0.4	0	97.9	75	125				
Calcium	293.3	0.100	10	274.5	188	75	125				1
Chromium	0.9925	0.0100	1	0	99.3	75	125				
Cobalt	0.3926	0.00500	0.4	0.0036	97.2	75	125				
Copper	0.9999	0.0100	1	0	100	75	125				
Iron	16.02	0.100	10	6.527	94.9	75	125				
Lead	0.9841	0.0200	1	0	98.4	75	125				
Lithium	0.2110	0.0100	0.2	0.0068	102	75	125				
Magnesium	47.35	0.100	2	43.98	168	75	125				1
Manganese	10.82	0.0100	1	9.42	140	75	125				1
Molybdenum	0.3870	0.0200	0.4	0	96.7	75	125				
Nickel	0.9878	0.0100	1	0	98.8	75	125				

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **G1809996-005DMS** SampType: **MS** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204720**
Client ID: **FIELD DUP** Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/24/2018** SeqNo: **5010021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus	2.116	0.0100	2	0.0334	104	75	125				
Potassium	12.50	0.500	10	2.18	103	75	125				
Selenium	1.014	0.0200	1	0	101	75	125				
Silicon	26.10	0.100	20	6.159	99.7	75	125				
Silver	0.008500	0.00500	0.01	0	85.0	75	125				
Sodium	22.23	0.200	10	11.76	105	75	125				
Strontium	2.661	0.0100	1	1.638	102	75	125				
Thallium	0.9966	0.0200	1	0	99.7	75	125				
Tin	0.9776	0.100	1	0	97.8	75	125				
Titanium	0.9968	0.00500	1	0	99.7	75	125				
Vanadium	0.4088	0.00500	0.4	0.0031	101	75	125				
Zinc	1.028	0.0100	1	0.0045	102	75	125				

Sample ID: **G1809981-001FDUP** SampType: **DUP** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	< 0.100	0.100						0.1271	0	20	
Antimony	< 0.100	0.100						0	0	20	
Arsenic	< 0.0200	0.0200						0	0	20	
Barium	0.05210	0.0100						0.052	0.192	20	
Beryllium	< 0.00100	0.00100						0	0	20	
Boron	< 0.0500	0.0500						0	0	20	
Cadmium	< 0.00200	0.00200						0	0	20	
Calcium	10.63	0.100						10.63	0	20	
Chromium	< 0.0100	0.0100						0	0	20	
Cobalt	0.005100	0.00500						0.0052	1.94	20	
Copper	< 0.0100	0.0100						0	0	20	
Iron	0.8707	0.100						0.8637	0.807	20	
Lead	< 0.0200	0.0200						0	0	20	
Lithium	0.01500	0.0100						0.0146	2.70	20	
Magnesium	8.914	0.100						8.861	0.596	20	
Manganese	1.652	0.0100						1.66	0.483	20	
Molybdenum	< 0.0200	0.0200						0	0	20	
Nickel	0.02370	0.0100						0.0239	0.840	20	

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **G1809981-001FDUP** SampType: **DUP** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204615**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5006281**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus	0.01710	0.0100						0.0165	3.57	20	
Potassium	1.698	0.500						1.705	0.411	20	
Selenium	< 0.0200	0.0200						0	0	20	
Silicon	5.169	0.100						5.165	0.0774	20	
Silver	< 0.00500	0.00500						0	0	20	
Sodium	0.6549	0.200						0.6604	0.836	20	
Strontium	0.04130	0.0100						0.0415	0.483	20	
Thallium	< 0.0200	0.0200						0	0	20	
Tin	< 0.100	0.100						0	0	20	
Titanium	< 0.00500	0.00500						0	0	20	
Vanadium	< 0.00500	0.00500						0	0	20	

Sample ID: **G1809981-001FDUP** SampType: **DUP** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204652**
Client ID: Batch ID: **148422** TestNo: **EPA 200.7** Analysis Date: **9/21/2018** SeqNo: **5007462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	0.02532	0.0100						0.02526	0.225	20	

Sample ID: **G1809996-002DDUP** SampType: **DUP** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204720**
Client ID: **MW-3** Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/24/2018** SeqNo: **5010003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	< 0.100	0.100						0	0	20	
Antimony	< 0.100	0.100						0	0	20	
Arsenic	< 0.0200	0.0200						0	0	20	
Barium	0.09140	0.0100						0.092	0.654	20	
Beryllium	< 0.00100	0.00100						0	0	20	
Boron	0.1097	0.0500						0.1108	0.998	20	
Cadmium	< 0.00200	0.00200						0	0	20	
Calcium	111.3	0.100						111.2	0.0899	20	
Chromium	< 0.0100	0.0100						0	0	20	
Cobalt	0.01840	0.00500						0.0182	1.09	20	
Copper	< 0.0100	0.0100						0	0	20	
Iron	20.53	0.100						20.69	0.776	20	
Lead	< 0.0200	0.0200						0	0	20	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT_METALS

Sample ID: **G1809996-002DDUP** SampType: **DUP** TestCode: **TOT_METAL** Units: **mg/L** Prep Date: **9/20/2018** RunNo: **204720**
Client ID: **MW-3** Batch ID: **148428** TestNo: **EPA 200.7** Analysis Date: **9/24/2018** SeqNo: **5010003**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lithium	0.03270	0.0100						0.0321	1.85	20	
Magnesium	7.807	0.100						7.81	0.0384	20	
Manganese	6.585	0.0100						6.61	0.379	20	
Molybdenum	< 0.0200	0.0200						0	0	20	
Nickel	< 0.0100	0.0100						0.0077	0	20	
Phosphorus	0.02650	0.0100						0.0292	9.69	20	
Potassium	6.505	0.500						6.501	0.0615	20	
Selenium	< 0.0200	0.0200						0	0	20	
Silicon	12.83	0.100						12.9	0.544	20	
Silver	< 0.00500	0.00500						0	0	20	
Sodium	11.96	0.200						11.96	0	20	
Strontium	1.451	0.0100						1.463	0.824	20	
Thallium	< 0.0200	0.0200						0	0	20	
Tin	< 0.100	0.100						0	0	20	
Titanium	< 0.00500	0.00500						0	0	20	
Vanadium	< 0.00500	0.00500						0.0029	0	20	
Zinc	< 0.0100	0.0100						0.0084	0	20	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT-ICPMS_200.8

Sample ID: **PB-148426** SampType: **PB** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **204795**
Client ID: Batch ID: **148426** TestNo: **EPA 200.8** Analysis Date: **9/25/2018** SeqNo: **5012226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 1.00	1.00									
Barium	< 5.00	5.00									
Beryllium	< 1.00	1.00									
Chromium	< 1.00	1.00									
Copper	< 1.00	1.00									
Lead	< 1.00	1.00									
Nickel	< 0.500	0.500									
Selenium	< 1.00	1.00									
Silver	< 0.200	0.200									
Thallium	< 0.200	0.200									

Sample ID: **LCS2-148426** SampType: **LCS2** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **204795**
Client ID: Batch ID: **148426** TestNo: **EPA 200.8** Analysis Date: **9/25/2018** SeqNo: **5012227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.42	1.00	10	0	104	85	115				
Barium	51.08	5.00	50	0	102	85	115				
Beryllium	5.854	1.00	4	0	146	85	115				NA
Chromium	51.51	1.00	50	0	103	85	115				
Copper	49.69	1.00	50	0	99.4	85	115				
Lead	4.884	1.00	5	0	97.7	85	115				
Nickel	51.20	0.500	50	0	102	85	115				
Selenium	18.31	1.00	20	0	91.6	85	115				
Silver	4.955	0.200	5	0	99.1	85	115				
Thallium	1.887	0.200	2	0	94.4	85	115				

Sample ID: **PB-148426** SampType: **PB** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205057**
Client ID: Batch ID: **148426** TestNo: **EPA 200.8** Analysis Date: **10/1/2018** SeqNo: **5019757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 1.00	1.00									
Cadmium	< 0.200	0.200									

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT-ICPMS_200.8

Sample ID: **LCS2-148426** SampType: **LCS2** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205057**
Client ID: Batch ID: **148426** TestNo: **EPA 200.8** Analysis Date: **10/1/2018** SeqNo: **5019758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	6.220	1.00	6	0	104	85	115				
Cadmium	5.075	0.200	5	0	102	85	115				

Sample ID: **PB-148430** SampType: **PB** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205225**
Client ID: Batch ID: **148430** TestNo: **EPA 200.8** Analysis Date: **10/3/2018** SeqNo: **5023990**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 1.00	1.00									
Arsenic	< 1.00	1.00									
Barium	< 5.00	5.00									
Beryllium	< 1.00	1.00									
Cadmium	< 0.200	0.200									
Chromium	< 1.00	1.00									
Copper	< 1.00	1.00									
Lead	< 1.00	1.00									
Nickel	< 0.500	0.500									
Selenium	< 1.00	1.00									
Silver	< 0.200	0.200									
Thallium	< 0.200	0.200									

Sample ID: **LCS2-148430** SampType: **LCS2** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205225**
Client ID: Batch ID: **148430** TestNo: **EPA 200.8** Analysis Date: **10/3/2018** SeqNo: **5023991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	6.349	1.00	6	0	106	85	115				
Arsenic	10.91	1.00	10	0	109	85	115				
Barium	48.54	5.00	50	0	97.1	85	115				
Beryllium	5.113	1.00	4	0	128	85	115				NA
Cadmium	5.260	0.200	5	0	105	85	115				
Chromium	51.78	1.00	50	0	104	85	115				
Copper	49.75	1.00	50	0	99.5	85	115				
Lead	4.992	1.00	5	0	99.8	85	115				
Nickel	50.48	0.500	50	0	101	85	115				
Selenium	20.51	1.00	20	0	103	85	115				
Silver	5.013	0.200	5	0	100	85	115				

CLIENT: ALLEGANY COUNTY MARYLAND
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ANALYTICAL QC SUMMARY REPORT

TestCode: TOT-ICPMS_200.8

Sample ID: **LCS2-148430** SampType: **LCS2** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205225**
Client ID: Batch ID: **148430** TestNo: **EPA 200.8** Analysis Date: **10/3/2018** SeqNo: **5023991**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	1.836	0.200	2	0	91.8	85	115				

Sample ID: **G1809987-001EMS** SampType: **MS** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **204795**
Client ID: Batch ID: **148426** TestNo: **EPA 200.8** Analysis Date: **9/25/2018** SeqNo: **5012232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.213	1.00	6	0	154	75	125				NA
Arsenic	11.06	1.00	10	0	111	75	125				
Barium	1607	5.00	50	1559.2	95.9	75	125				
Beryllium	4.523	1.00	4	0	113	75	125				
Cadmium	5.320	0.200	5	0	106	75	125				
Chromium	52.58	1.00	50	0	105	75	125				
Copper	52.56	1.00	50	3.572	98.0	75	125				
Lead	5.569	1.00	5	0.311	105	75	125				
Nickel	52.44	0.500	50	0	105	75	125				
Selenium	19.14	1.00	20	0	95.7	75	125				
Silver	5.249	0.200	5	0	105	75	125				
Thallium	1.807	0.200	2	0	90.4	75	125				

Sample ID: **G1809996-004DMS** SampType: **MS** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205225**
Client ID: **MW-4** Batch ID: **148430** TestNo: **EPA 200.8** Analysis Date: **10/3/2018** SeqNo: **5025726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	6.723	1.00	6	0	112	75	125				
Arsenic	22.08	1.00	10	11.291	108	75	125				
Barium	168.5	5.00	50	116.3	104	75	125				
Beryllium	4.502	1.00	4	0	113	75	125				
Cadmium	5.200	0.200	5	0	104	75	125				
Chromium	54.24	1.00	50	0	108	75	125				
Copper	50.27	1.00	50	0	101	75	125				
Lead	5.160	1.00	5	0	103	75	125				
Nickel	60.26	0.500	50	9.796	101	75	125				
Selenium	21.39	1.00	20	0	107	75	125				
Silver	5.278	0.200	5	0	106	75	125				
Thallium	2.014	0.200	2	0	101	75	125				

ANALYTICAL QC SUMMARY REPORT

TestCode: TOT-ICPMS_200.8

Sample ID: **G1809997-002DMS** SampType: **MS** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205225**
Client ID: Batch ID: **148430** TestNo: **EPA 200.8** Analysis Date: **10/3/2018** SeqNo: **5025743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.486	1.00	10	0	94.9	75	125				
Barium	100.8	5.00	50	60.773	80.1	75	125				
Beryllium	3.937	1.00	4	0	98.4	75	125				
Cadmium	4.443	0.200	5	0	88.9	75	125				
Chromium	46.80	1.00	50	0	93.6	75	125				
Copper	44.04	1.00	50	0	88.1	75	125				
Lead	5.288	1.00	5	0.654	92.7	75	125				
Nickel	44.81	0.500	50	1.106	87.4	75	125				
Selenium	12.00	1.00	20	0	60.0	75	125				NA
Silver	4.550	0.200	5	0	91.0	75	125				
Thallium	1.730	0.200	2	0	86.5	75	125				

Sample ID: **G1809997-002DMS** SampType: **MS** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205289**
Client ID: Batch ID: **148430** TestNo: **EPA 200.8** Analysis Date: **10/4/2018** SeqNo: **5026201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	5.982	1.00	6	0	99.7	75	125				

Sample ID: **G1809981-001FDUP** SampType: **DUP** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **204795**
Client ID: Batch ID: **148426** TestNo: **EPA 200.8** Analysis Date: **9/25/2018** SeqNo: **5012229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 1.00	1.00						0	0	20	
Arsenic	< 1.00	1.00						0.642	0	20	
Barium	54.05	5.00						50.63	6.53	20	
Beryllium	< 1.00	1.00						0	0	20	
Cadmium	< 0.200	0.200						0	0	20	
Chromium	< 1.00	1.00						0	0	20	
Copper	3.851	1.00						3.825	0.677	20	
Lead	< 1.00	1.00						0	0	20	
Nickel	25.22	0.500						25.11	0.409	20	
Selenium	< 1.00	1.00						0	0	20	
Silver	< 0.200	0.200						0.134	0	20	
Thallium	< 0.200	0.200						0	0	20	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
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ANALYTICAL QC SUMMARY REPORT

TestCode: TOT-ICPMS_200.8

Sample ID: **G1809996-002DDUP** SampType: **DUP** TestCode: **TOT-ICPMS_** Units: **µg/L** Prep Date: **9/20/2018** RunNo: **205225**
Client ID: **MW-3** Batch ID: **148430** TestNo: **EPA 200.8** Analysis Date: **10/3/2018** SeqNo: **5025719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 1.00	1.00						0	0	20	
Arsenic	3.364	1.00						3.76	11.1	20	
Barium	95.11	5.00						95.58	0.497	20	
Beryllium	< 1.00	1.00						0	0	20	
Cadmium	< 0.200	0.200						0	0	20	
Chromium	< 1.00	1.00						0	0	20	
Copper	< 1.00	1.00						0	0	20	
Lead	< 1.00	1.00						0	0	20	
Nickel	9.053	0.500						9.584	5.70	20	
Selenium	< 1.00	1.00						0	0	20	
Silver	< 0.200	0.200						0	0	20	
Thallium	< 0.200	0.200						0	0	20	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: TURB_EPA 180.1

Sample ID: **G1809987-001ADUP** SampType: **DUP** TestCode: **TURB_EPA 1** Units: **NTU** Prep Date: **9/19/2018** RunNo: **204468**
Client ID: Batch ID: **148313** TestNo: **EPA 180.1** Analysis Date: **9/19/2018** SeqNo: **5000984**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	26.00	0.10						26	0	20	

Sample ID: **G1809997-005CDUP** SampType: **DUP** TestCode: **TURB_EPA 1** Units: **NTU** Prep Date: **9/19/2018** RunNo: **204468**
Client ID: Batch ID: **148313** TestNo: **EPA 180.1** Analysis Date: **9/19/2018** SeqNo: **5000995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	1.100	0.10						1.1	0	20	

CLIENT: ALLEGANY COUNTY MARYLAND
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ANALYTICAL QC SUMMARY REPORT

TestCode: VOA_EPA 8260B

Sample ID: **20 PPB LCS** SampType: **LCS** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5039665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.44	1.00	20	0	102	81	125				
1,1,1-Trichloroethane	21.03	1.00	20	0	105	71	125				
1,1,2,2-Tetrachloroethane	19.58	1.00	20	0	97.9	80	116				
1,1,2-Trichloroethane	20.22	1.00	20	0	101	83	126				
1,1-Dichloroethane	19.92	1.00	20	0	99.6	73	122				
1,1-Dichloroethene	20.92	1.00	20	0	105	74	121				
1,1-Dichloropropene	20.04	1.00	20	0	100	74	120				
1,2,3-Trichlorobenzene	17.99	5.00	20	0	90.0	61	136				
1,2,3-Trichloropropane	21.01	1.00	20	0	105	77	118				
1,2,4-Trichlorobenzene	18.61	1.00	20	0	93.0	68	126				
1,2,4-Trimethylbenzene	19.53	1.00	20	0	97.6	78	128				
1,2-Dibromo-3-chloropropane	19.71	5.00	20	0	98.6	64	126				
1,2-Dibromoethane	20.87	1.00	20	0	104	83	119				
1,2-Dichlorobenzene	19.43	1.00	20	0	97.2	85	119				
1,2-Dichloroethane	20.31	1.00	20	0	102	72	123				
1,2-Dichloropropane	20.64	1.00	20	0	103	83	122				
1,3,5-Trimethylbenzene	19.13	1.00	20	0	95.6	85	119				
1,3-Dichlorobenzene	19.38	1.00	20	0	96.9	82	119				
1,3-Dichloropropane	20.33	1.00	20	0	102	80	118				
1,4-Dichlorobenzene	19.69	1.00	20	0	98.5	83	120				
2,2-Dichloropropane	22.68	1.00	20	0	113	32	157				
2-chloro-1,3-butadiene	21.08	1.00	20	0	105	70	124				
2-Chloroethylvinyl ether	19.22	1.00	20	0	96.1	49	138				
2-Chlorotoluene	20.16	1.00	20	0	101	82	123				
2-Hexanone	21.09	5.00	20	0	105	58	132				
2-Methyl-1-propanol	229.9	50.0	200	0	115	29	163				
3-Chloro-1-Propene	23.04	1.00	20	0	115	65	127				
4-Chlorotoluene	18.79	1.00	20	0	93.9	80	121				
4-Isopropyltoluene	18.25	1.00	20	0	91.2	83	117				
4-Methyl-2-Pentanone	21.64	1.00	20	0	108	68	127				
Acetone	21.25	10.0	20	0	106	60	133				
Acetonitrile	182.1	20.0	200	0	91.1	61	132				
Acrolein	17.78	10.0	20	0	88.9	30	152				
Acrylonitrile	19.97	5.00	20	0	99.8	67	128				
Benzene	19.99	1.00	20	0	100	76	122				
Bromobenzene	20.29	1.00	20	0	101	78	120				

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: VOA_EPA 8260B

Sample ID: **20 PPB LCS** SampType: **LCS** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5039665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromochloromethane	20.81	1.00	20	0	104	78	124				
Bromomethane	23.62	1.00	20	0	118	47	152				
Carbon Disulfide	18.88	1.00	20	0	94.4	63	123				
Carbon Tetrachloride	21.40	1.00	20	0	107	68	133				
Chlorobenzene	19.85	1.00	20	0	99.3	83	118				
Chlorodibromomethane	22.36	1.00	20	0	112	74	131				
Chloroethane	23.93	1.00	20	0	120	56	127				
Chloromethane	19.84	1.00	20	0	99.2	65	129				
cis-1,2-Dichloroethene	20.17	1.00	20	0	101	75	121				
cis-1,3-Dichloropropene	19.10	1.00	20	0	95.5	71	129				
Dibromomethane	21.18	1.00	20	0	106	83	118				
Dichlorobromomethane	21.60	1.00	20	0	108	56	145				
Dichlorodifluoromethane	21.05	1.00	20	0	105	60	138				
Dichlorofluoromethane	22.50	1.00	20	0	112	74	123				
Ethyl Methacrylate	21.56	1.00	20	0	108	72	126				
Ethylbenzene	20.86	1.00	20	0	104	84	120				
Hexachlorobutadiene	18.05	5.00	20	0	90.2	70	118				
Iodomethane	20.88	5.00	20	0	104	29	162				
Isopropylbenzene	18.87	1.00	20	0	94.4	83	124				
m,p-Xylene	39.89	2.00	40	0	99.7	86	117				
Methacrylonitrile	204.3	10.0	200	0	102	69	126				
Methyl Ethyl Ketone	21.76	5.00	20	0	109	72	131				
Methyl methacrylate	21.30	1.00	20	0	106	74	122				
Methylene Chloride	20.31	1.00	20	0	102	73	133				
Methyl-tert-butyl ether	21.80	1.00	20	0	109	75	125				
Naphthalene	20.24	5.00	20	0	101	59	134				
n-Butylbenzene	17.71	1.00	20	0	88.6	79	116				
n-Propylbenzene	19.50	1.00	20	0	97.5	82	119				
o-Xylene	19.71	1.00	20	0	98.6	86	117				
Propionitrile	215.8	10.0	200	0	108	63	129				
sec-Butylbenzene	18.60	1.00	20	0	93.0	82	119				
Styrene	20.42	1.00	20	0	102	88	116				
tert-Butylbenzene	19.20	1.00	20	0	96.0	79	127				
Tetrachloroethene	21.55	1.00	20	0	108	76	127				
Tetrahydrofuran	20.30	5.00	20	0	102	62	129				
Toluene	20.44	1.00	20	0	102	80	118				

ANALYTICAL QC SUMMARY REPORT

TestCode: VOA_EPA 8260B

Sample ID: **20 PPB LCS** SampType: **LCS** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5039665**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Xylene	59.60	2.00	60	0	99.3	87	116				
trans-1,2-Dichloroethene	20.60	1.00	20	0	103	73	120				
trans-1,3-Dichloropropene	22.10	1.00	20	0	110	70	126				
trans-1,4-Dichloro-2-butene	21.97	2.00	20	0	110	46	137				
Tribromomethane	20.59	1.00	20	0	103	71	125				
Trichloroethene	20.59	1.00	20	0	103	73	123				
Trichlorofluoromethane	23.74	1.00	20	0	119	69	125				
Trichloromethane	20.22	1.00	20	0	101	73	123				
Vinyl Acetate	20.59	1.00	20	0	103	67	131				
Vinyl Chloride	22.38	1.00	20	0	112	56	125				
Surr: 1,2-Dichloroethane-d4	29.77	0	30	0	99.2	70	130				
Surr: 4-Bromofluorobenzene	30.19	0	30	0	101	70	130				
Surr: Dibromofluoromethane	29.56	0	30	0	98.5	70	130				
Surr: Toluene-d8	29.93	0	30	0	99.8	70	130				

Sample ID: **G1809997-002EMS** SampType: **MS** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5001940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	18.54	1.00	20	0	92.7	76	117				
1,1,1-Trichloroethane	18.84	1.00	20	0	94.2	72	122				
1,1,2,2-Tetrachloroethane	17.66	1.00	20	0	88.3	72	110				
1,1,2-Trichloroethane	18.93	1.00	20	0	94.6	76	126				
1,1-Dichloroethane	17.50	1.00	20	0	87.5	66	126				
1,1-Dichloroethene	18.94	1.00	20	0	94.7	66	121				
1,1-Dichloropropene	18.06	1.00	20	0	90.3	71	120				
1,2,3-Trichlorobenzene	16.39	5.00	20	0	82.0	43	148				
1,2,3-Trichloropropane	17.84	1.00	20	0	89.2	72	112				
1,2,4-Trichlorobenzene	16.65	1.00	20	0	83.3	61	127				
1,2,4-Trimethylbenzene	17.10	1.00	20	0	85.5	78	128				
1,2-Dibromo-3-chloropropane	17.44	5.00	20	0	87.2	57	121				
1,2-Dibromoethane	18.53	1.00	20	0	92.6	75	113				
1,2-Dichlorobenzene	17.59	1.00	20	0	88.0	76	108				
1,2-Dichloroethane	17.97	1.00	20	0	89.8	69	116				
1,2-Dichloropropane	18.82	1.00	20	0	94.1	78	122				

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: VOA_EPA 8260B

Sample ID: **G1809997-002EMS** SampType: **MS** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5001940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3,5-Trimethylbenzene	17.02	1.00	20	0	85.1	79	111				
1,3-Dichlorobenzene	17.17	1.00	20	0	85.8	76	119				
1,3-Dichloropropane	17.90	1.00	20	0	89.5	76	110				
1,4-Dichlorobenzene	17.19	1.00	20	0	86.0	76	117				
1,4-Dioxane	213.8	50.0	200	0	107	33	189				
2,2-Dichloropropane	21.34	1.00	20	0	107	29	160				
2-chloro-1,3-butadiene	18.91	1.00	20	0	94.5	74	122				
2-Chlorotoluene	17.72	1.00	20	0	88.6	80	114				
2-Hexanone	18.65	5.00	20	0	93.3	63	120				
2-Methyl-1-propanol	185.7	50.0	200	0	92.9	37	145				
2-Methylnaphthalene	< 20.0	20.0	20	0	77.5	24	165				
2-Nitropropane	18.62	1.00	20	0	93.1	57	128				
3-Chloro-1-Propene	19.41	1.00	20	0	97.0	64	124				
4-Chlorotoluene	17.63	1.00	20	0	88.1	75	118				
4-Isopropyltoluene	16.21	1.00	20	0	81.1	76	114				
4-Methyl-2-Pentanone	19.14	1.00	20	0	95.7	68	116				
Acetone	15.42	10.0	20	0	77.1	51	133				
Acetonitrile	155.0	20.0	200	0	77.5	50	134				
Acrolein	15.33	10.0	20	0	76.7	8	140				
Acrylonitrile	17.39	5.00	20	0	87.0	64	122				
Benzene	18.08	1.00	20	0	90.4	52	125				
Bromobenzene	17.51	1.00	20	0	87.6	75	116				
Bromochloromethane	17.85	1.00	20	0	89.2	71	117				
Bromodichloromethane	19.49	1.00	20	0	97.4	68	132				
Bromomethane	19.54	1.00	20	0	97.7	40	156				
Carbon Disulfide	17.27	1.00	20	0	86.3	60	123				
Carbon Tetrachloride	19.04	1.00	20	0	95.2	67	132				
Chlorobenzene	17.84	1.00	20	0	89.2	78	111				
Chlorodibromomethane	20.42	1.00	20	0	102	70	123				
Chloroethane	19.91	1.00	20	0	99.5	46	132				
Chloromethane	16.76	1.00	20	0	83.8	51	129				
cis-1,2-Dichloroethene	17.42	1.00	20	0	87.1	71	117				
cis-1,3-Dichloropropene	17.15	1.00	20	0	85.7	71	117				
Cyclohexane	17.29	5.00	20	0	86.4	73	120				
Dibromomethane	18.78	1.00	20	0	93.9	77	110				
Dichlorobromomethane	19.49	1.00	20	0	97.4	77	115				

CLIENT: ALLEGANY COUNTY MARYLAND
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Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: VOA_EPA 8260B

Sample ID: **G1809997-002EMS** SampType: **MS** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5001940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dichlorodifluoromethane	18.95	1.00	20	0	94.8	34	140				
Dichlorofluoromethane	20.31	1.00	20	0	102	70	123				
Diethyl Ether	18.57	10.0	20	0	92.9	54	142				
Ethyl Acetate	17.23	5.00	20	0	86.1	55	132				
Ethyl Methacrylate	19.14	1.00	20	0	95.7	71	127				
Ethylbenzene	18.35	1.00	20	0	91.7	72	122				
Hexachlorobutadiene	16.61	5.00	20	0	83.0	63	129				
Hexachloroethane	14.00	5.00	20	0	70.0	59	123				
Iodomethane	19.80	5.00	20	0	99.0	19	156				
Isopropylbenzene	16.43	1.00	20	0	82.1	73	124				
m,p-Xylene	35.58	2.00	40	0	89.0	78	119				
Methacrylonitrile	181.7	10.0	200	0	90.8	65	119				
Methyl Ethyl Ketone	18.18	5.00	20	0	90.9	59	121				
Methyl methacrylate	18.94	1.00	20	0	94.7	71	121				
Methylene Chloride	17.38	1.00	20	0	86.9	64	121				
Methyl-tert-butyl ether	19.29	1.00	20	0	96.4	71	123				
Naphthalene	17.57	5.00	20	0	87.9	48	140				
n-Butanol	171.2	10.0	200	0	85.6	42	130				
n-Butylbenzene	15.90	1.00	20	0	79.5	68	131				
n-Propylbenzene	17.40	1.00	20	0	87.0	76	128				
o-Xylene	17.73	1.00	20	0	88.7	81	118				
Propionitrile	178.9	10.0	200	0	89.5	59	122				
sec-Butylbenzene	16.26	1.00	20	0	81.3	74	121				
Styrene	17.70	1.00	20	0	88.5	78	117				
tert-Butylbenzene	16.94	1.00	20	0	84.7	73	121				
Tetrachloroethene	19.24	1.00	20	0	96.2	76	114				
Tetrahydrofuran	17.57	5.00	20	0	87.9	44	135				
Toluene	18.51	1.00	20	0	92.5	75	115				
Total Xylene	53.32	2.00	60	0	88.9	80	122				
trans-1,2-Dichloroethene	18.60	1.00	20	0	93.0	69	118				
trans-1,3-Dichloropropene	19.56	1.00	20	0	97.8	70	120				
trans-1,4-Dichloro-2-butene	15.48	2.00	20	0	77.4	46	131				
Tribromomethane	18.50	1.00	20	0	92.5	65	117				
Trichloroethene	18.67	1.00	20	0	93.3	78	115				
Trichlorofluoromethane	21.44	1.00	20	0	107	69	125				
Trichloromethane	17.93	1.00	20	0	89.7	69	117				

ANALYTICAL QC SUMMARY REPORT

TestCode: VOA_EPA 8260B

Sample ID: **G1809997-002EMS** SampType: **MS** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5001940**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl Acetate	17.96	1.00	20	0	89.8	46	126				
Vinyl Chloride	20.76	1.00	20	0	104	54	128				
Surr: 1,2-Dichloroethane-d4	29.73	0	30	0	99.1	70	130				
Surr: 4-Bromofluorobenzene	30.28	0	30	0	101	70	130				
Surr: Dibromofluoromethane	29.46	0	30	0	98.2	70	130				
Surr: Toluene-d8	29.41	0	30	0	98.0	70	130				

Sample ID: **G1809997-002EMSD** SampType: **MSD** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5001941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	18.30	1.00	20	0	91.5	76	117	18.54	1.36	11	
1,1,1-Trichloroethane	19.17	1.00	20	0	95.9	72	122	18.84	1.75	12	
1,1,2,2-Tetrachloroethane	17.75	1.00	20	0	88.8	72	110	17.66	0.520	14	
1,1,2-Trichloroethane	18.48	1.00	20	0	92.4	76	126	18.93	2.39	15	
1,1-Dichloroethane	18.27	1.00	20	0	91.3	66	126	17.5	4.28	12	
1,1-Dichloroethene	19.09	1.00	20	0	95.4	66	121	18.94	0.752	14	
1,1-Dichloropropene	18.56	1.00	20	0	92.8	71	120	18.06	2.68	13	
1,2,3-Trichlorobenzene	16.28	5.00	20	0	81.4	43	148	16.39	0.649	30	
1,2,3-Trichloropropane	17.90	1.00	20	0	89.5	72	112	17.84	0.336	14	
1,2,4-Trichlorobenzene	16.52	1.00	20	0	82.6	61	127	16.65	0.796	23	
1,2,4-Trimethylbenzene	17.23	1.00	20	0	86.2	78	128	17.1	0.751	13	
1,2-Dibromo-3-chloropropane	17.48	5.00	20	0	87.4	57	121	17.44	0.223	20	
1,2-Dibromoethane	18.43	1.00	20	0	92.2	75	113	18.53	0.525	17	
1,2-Dichlorobenzene	17.42	1.00	20	0	87.1	76	108	17.59	0.971	13	
1,2-Dichloroethane	18.78	1.00	20	0	93.9	69	116	17.97	4.42	11	
1,2-Dichloropropane	18.37	1.00	20	0	91.9	78	122	18.82	2.38	12	
1,3,5-Trimethylbenzene	16.96	1.00	20	0	84.8	79	111	17.02	0.353	13	
1,3-Dichlorobenzene	17.26	1.00	20	0	86.3	76	119	17.17	0.529	16	
1,3-Dichloropropane	18.35	1.00	20	0	91.7	76	110	17.9	2.49	17	
1,4-Dichlorobenzene	17.22	1.00	20	0	86.1	76	117	17.19	0.139	16	
1,4-Dioxane	375.7	50.0	200	0	188	33	189	213.8	54.9	41	
2,2-Dichloropropane	21.39	1.00	20	0	107	29	160	21.34	0.215	13	
2-chloro-1,3-butadiene	18.96	1.00	20	0	94.8	74	122	18.91	0.254	20.9	
2-Chlorotoluene	17.71	1.00	20	0	88.6	80	114	17.72	0.0395	16	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: VOA_EPA 8260B

Sample ID: **G1809997-002EMSD** SampType: **MSD** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5001941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Hexanone	19.93	5.00	20	0	99.6	63	120	18.65	6.62	18	
2-Methyl-1-propanol	247.1	50.0	200	0	124	37	145	185.7	28.4	24	
2-Methylnaphthalene	< 20.0	20.0	20	0	76.1	24	165	15.51	0	52	
2-Nitropropane	19.03	1.00	20	0	95.2	57	128	18.62	2.18	17	
3-Chloro-1-Propene	22.82	1.00	20	0	114	64	124	19.41	16.2	24	
4-Chlorotoluene	17.83	1.00	20	0	89.2	75	118	17.63	1.16	15	
4-Isopropyltoluene	15.98	1.00	20	0	79.9	76	114	16.21	1.47	13	
4-Methyl-2-Pentanone	19.05	1.00	20	0	95.3	68	116	19.14	0.424	18	
Acetone	18.32	10.0	20	0	91.6	51	133	15.42	17.2	23	
Acetonitrile	197.6	20.0	200	0	98.8	50	134	155	24.1	28	
Acrolein	17.15	10.0	20	0	85.8	8	140	15.33	11.2	25	
Acrylonitrile	18.33	5.00	20	0	91.7	64	122	17.39	5.26	16	
Benzene	18.44	1.00	20	0	92.2	52	125	18.08	2.02	15	
Bromobenzene	17.39	1.00	20	0	87.0	75	116	17.51	0.693	15	
Bromochloromethane	18.97	1.00	20	0	94.9	71	117	17.85	6.11	12	
Bromodichloromethane	18.92	1.00	20	0	94.6	68	132	19.49	2.94	18	
Bromomethane	11.82	1.00	20	0	59.1	40	156	19.54	49.2	22	
Carbon Disulfide	17.32	1.00	20	0	86.6	60	123	17.27	0.324	13	
Carbon Tetrachloride	19.43	1.00	20	0	97.1	67	132	19.04	2.01	12	
Chlorobenzene	17.67	1.00	20	0	88.3	78	111	17.84	0.963	10	
Chlorodibromomethane	20.05	1.00	20	0	100	70	123	20.42	1.84	16	
Chloroethane	17.89	1.00	20	0	89.4	46	132	19.91	10.7	17	
Chloromethane	16.76	1.00	20	0	83.8	51	129	16.76	0.0298	16	
cis-1,2-Dichloroethene	18.60	1.00	20	0	93.0	71	117	17.42	6.53	12	
cis-1,3-Dichloropropene	16.88	1.00	20	0	84.4	71	117	17.15	1.60	16	
Cyclohexane	17.62	5.00	20	0	88.1	73	120	17.29	1.91	13	
Dibromomethane	18.88	1.00	20	0	94.4	77	110	18.78	0.483	14	
Dichlorobromomethane	18.92	1.00	20	0	94.6	77	115	19.49	2.94	13	
Dichlorodifluoromethane	17.65	1.00	20	0	88.3	34	140	18.95	7.09	18	
Dichlorofluoromethane	20.59	1.00	20	0	103	70	123	20.31	1.38	17	
Diethyl Ether	19.97	10.0	20	0	99.9	54	142	18.57	7.26	12	
Ethyl Acetate	17.94	5.00	20	0	89.7	55	132	17.23	4.03	20	
Ethyl Methacrylate	19.04	1.00	20	0	95.2	71	127	19.14	0.540	17	
Ethylbenzene	18.45	1.00	20	0	92.2	72	122	18.35	0.544	16	
Hexachlorobutadiene	15.48	5.00	20	0	77.4	63	129	16.61	7.04	21	
Hexachloroethane	13.64	5.00	20	0	68.2	59	123	14	2.62	17	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: VOA_EPA 8260B

Sample ID: **G1809997-002EMSD** SampType: **MSD** TestCode: **VOA_EPA 82** Units: **µg/L** Prep Date: RunNo: **204506**
Client ID: Batch ID: **R204506** TestNo: **EPA 8260** Analysis Date: **9/19/2018** SeqNo: **5001941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iodomethane	10.50	5.00	20	0	52.5	19	156	19.8	61.3	19	
Isopropylbenzene	16.54	1.00	20	0	82.7	73	124	16.43	0.698	15	
m,p-Xylene	35.51	2.00	40	0	88.8	78	119	35.58	0.197	14	
Methacrylonitrile	189.3	10.0	200	0	94.7	65	119	181.7	4.11	14	
Methyl Ethyl Ketone	21.12	5.00	20	0	106	59	121	18.18	14.9	21	
Methyl methacrylate	19.20	1.00	20	0	96.0	71	121	18.94	1.36	14	
Methylene Chloride	18.15	1.00	20	0	90.7	64	121	17.38	4.30	17	
Methyl-tert-butyl ether	19.94	1.00	20	0	99.7	71	123	19.29	3.33	14	
Naphthalene	17.67	5.00	20	0	88.4	48	140	17.57	0.567	33	
n-Butanol	253.7	10.0	200	0	127	42	130	171.2	38.8	21	
n-Butylbenzene	15.57	1.00	20	0	77.8	68	131	15.9	2.12	14	
n-Propylbenzene	17.05	1.00	20	0	85.3	76	128	17.4	1.99	15	
o-Xylene	17.89	1.00	20	0	89.5	81	118	17.73	0.898	12	
Propionitrile	208.5	10.0	200	0	104	59	122	178.9	15.3	22	
sec-Butylbenzene	16.41	1.00	20	0	82.1	74	121	16.26	0.924	13	
Styrene	17.90	1.00	20	0	89.5	78	117	17.7	1.17	12	
tert-Butylbenzene	16.87	1.00	20	0	84.4	73	121	16.94	0.408	17	
Tetrachloroethene	19.26	1.00	20	0	96.3	76	114	19.24	0.125	16	
Tetrahydrofuran	19.21	5.00	20	0	96.1	44	135	17.57	8.92	21	
Toluene	18.38	1.00	20	0	91.9	75	115	18.51	0.667	13	
Total Xylene	53.41	2.00	60	0	89.0	80	122	53.32	0	18	
trans-1,2-Dichloroethene	18.70	1.00	20	0	93.5	69	118	18.6	0.499	13	
trans-1,3-Dichloropropene	19.20	1.00	20	0	96.0	70	120	19.56	1.90	15	
trans-1,4-Dichloro-2-butene	15.69	2.00	20	0	78.5	46	131	15.48	1.38	17	
Tribromomethane	18.06	1.00	20	0	90.3	65	117	18.5	2.42	13	
Trichloroethene	18.70	1.00	20	0	93.5	78	115	18.67	0.166	11	
Trichlorofluoromethane	21.98	1.00	20	0	110	69	125	21.44	2.51	15	
Trichloromethane	18.63	1.00	20	0	93.2	69	117	17.93	3.84	12	
Vinyl Acetate	18.76	1.00	20	0	93.8	46	126	17.96	4.35	11	
Vinyl Chloride	20.34	1.00	20	0	102	54	128	20.76	2.04	15	
Surr: 1,2-Dichloroethane-d4	30.47	0	30	0	102	70	130	29.73	0	0	
Surr: 4-Bromofluorobenzene	30.07	0	30	0	100	70	130	30.28	0	0	
Surr: Dibromofluoromethane	30.49	0	30	0	102	70	130	29.46	0	0	
Surr: Toluene-d8	29.23	0	30	0	97.4	70	130	29.41	0	0	

ANALYTICAL QC SUMMARY REPORT

TestCode: WATER_ALK_D1067

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5002195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	49.00	10.0	47.5	0	103	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5002227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	48.00	10.0	47.5	0	101	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204512**
Client ID: Batch ID: **R204512** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5002284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	46.00	10.0	47.5	0	96.8	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	50.00	10.0	47.5	0	105	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003200**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	46.00	10.0	47.5	0	96.8	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	47.00	10.0	47.5	0	98.9	85	115				

ANALYTICAL QC SUMMARY REPORT

TestCode: WATER_ALK_D1067

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	47.00	10.0	47.5	0	98.9	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	47.00	10.0	47.5	0	98.9	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	47.00	10.0	47.5	0	98.9	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	48.00	10.0	47.5	0	101	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	47.00	10.0	47.5	0	98.9	85	115				

Sample ID: **ALK LCS** SampType: **LCS** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	47.00	10.0	47.5	0	98.9	85	115				

ANALYTICAL QC SUMMARY REPORT

TestCode: WATER_ALK_D1067

Sample ID: **G1809996-002ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204512**
Client ID: **MW-3** Batch ID: **R204512** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5002204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	307.0	10.0						289	6.04	20	

Sample ID: **G1809996-003ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204512**
Client ID: **MW-5** Batch ID: **R204512** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5002235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	160.0	10.0						162	1.24	20	

Sample ID: **G1809931-001ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	157.0	10.0						157	0	20	

Sample ID: **G1809977-004ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	20.00	10.0						20	0	20	

Sample ID: **G1809998-006ADUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	132.0	10.0						138	4.44	20	

Sample ID: **G1809A34-004CDUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	93.00	10.0						94	1.07	20	

CLIENT: ALLEGANY COUNTY MARYLAND
Work Order: G1809996
Project: Rubble L.F. 200 S

ANALYTICAL QC SUMMARY REPORT

TestCode: WATER_ALK_D1067

Sample ID: **G1809A34-005CDUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	366.0	10.0						368	0.545	20	

Sample ID: **G1809A55-003CDUP** SampType: **DUP** TestCode: **WATER_ALK** Units: **mg/L CaCO3** Prep Date: RunNo: **204531**
Client ID: Batch ID: **R204531** TestNo: **ASTM D 1067** Analysis Date: **9/19/2018** SeqNo: **5003443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity to pH 4.5	231.0	10.0						233	0.862	20	

GLOSSARY OF TERMS

Aliquot: A separate measured and representative portion of a sample used for analysis.

Analyte: The specific chemicals or components that a sample is used for analysis.

Acceptance Criteria: Specified limits established either from a method or by the laboratory for a target analyte.

Accuracy: The measured agreement between an observed value and an accepted reference value.

Corporate Detection Limit (CDL): The value based on method detection limits that may encompass multiple studies generated from several instruments. The CDL is based on the highest MDL study and is rounded to a useable value.

Corporate Quantitation Limit (CQL): The laboratory's lowest level of data quantification for reporting a target analyte at a concentration level that does not require use of data qualifiers. The CQL is calculated as two times the Corporate Detection Limit (CDL) or two times the CDL times any dilution factor.

Batch: Samples prepared or analyzed together with the same process and personnel, using the same lot(s) of reagents. A **preparation batch** is a group of one to twenty samples of the same defined matrix, meeting the above-mentioned conditions and with a maximum time between the start of processing of the first and last sample in the batch to be 24 hours. An **analytical batch** is comprised of prepared samples (extracts, digestates or concentrates) that are analyzed together as a group. An analytical batch can include prepared samples originating from various sample matrices and may exceed 20 samples.

Chain of Custody: A form that documents the possession of the samples from the time of collection to lab receipt. This record includes: sample matrix, the number and types of containers; the mode of collection; collector; time of collection; preservation; and requested analyses.

Equipment Blank: Sampling equipment rinsed with laboratory water immediately before use in sampling with the rinsing submitted to the laboratory as a sample for analysis. Data from the analysis of equipment blanks provides a check on sampling device cleanliness.

Field Duplicate: Two separate samples taken from the same source (e.g. monitoring well) and analyzed independently. The data obtained from field duplicate samples is used to evaluate the variability of the sampling procedures and the source from which the sample was obtained. There are no acceptance criteria for comparing field duplicate data results.

Laboratory Control Sample (LCS): A sample matrix, free from the analytes of interest, spiked with known amounts of analytes or a material containing known and verified amounts of analytes. It is used to establish intra-laboratory or analyst-specific precision and bias or to assess the performance of a method.

Matrix: The component or substrate that contains the analyte of interest. For purposes of batch and QC requirement determinations, the following matrix distinctions are used:

- Aqueous: Any aqueous sample excluded from the definition of Drinking Water matrix or Saline/Estuarine source. Includes surface water, groundwater, effluents and TCLP or other extracts.
- Drinking water: Any aqueous sample designated a potable or potential potable water source.

- Non-aqueous Liquid: Any organic liquid with < 15% settleable solids.
- Solids: Includes soils, sediments, sludges and other matricies with > 15% settleable solids.
- Chemical Waste: A product or by-product of an industrial process that results in a matrix not previously defined.

Matrix Spike (MS): A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. Matrix spikes are used to determine the effect of the matrix on a method's recovery efficiency. Calculation of recovery data is not quality assessed when the concentration of the target analyte in the unspiked sample is $\geq$ 4x the spiking concentration.

Matrix Spike Duplicate (MSD): A second replicate matrix spike prepared in the laboratory and analyzed to obtain a measure of the precision of the recovery for each analyte. Calculation of recovery data is not required when the concentration of the target analyte in the unspiked sample is $\geq$ 4x the spiking concentration.

Method Detection Limit: The minimum concentration of an analyte that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in deionized water containing the analyte. MDLs are verified annually and are subject to change.

Preservation: Refrigeration and/or reagents added at the time of sample collection to maintain the chemical and/or biological integrity of the sample.

Recovery: The total amount of the analyte found in the sample divided by the amount of the analyte added into the sample as a spike.

Relative Percent Difference (RPD): The difference between two values divided by the average of the values, expressed as percent. Quality assessment on RPD is not used when at least one of the two values is $\leq$ 5x the reporting limit; assessment between the two values is based on whether the absolute difference is at or within 2x the reporting limit.

Reporting Limit: A data value set by the laboratory based on the CDL and CQL. Any value at or above the CQL requires no qualification. Any reported values required by the client from an analysis that shows a non-detect at the CDL is flagged with a "U" qualifier. Any reported value required by the client when an analyte is detected between the CDL and CQL is flagged with a "J" that reports the result as an estimated value.

Sample: A portion for analysis in a single or multiple containers with a composition known to the submitter and identified by lab number to the analyst.

Surrogates: Compounds added to the sample before preparation, then measured after analysis to detect problems in the sample preparation procedure.

Shuttle/Cooler ID#: 268

CHAIN OF CUSTODY

Geochemical Testing

Form F-5002, 12.16

Geochemical Testing • 2005 North Center Avenue • Somerset PA 15501 • (814) 443-1671 • Fax (814) 445-6729

Billing Client: ALLEGANY CO of MD.	Contact (Company): TTG	Phone: (724) 325-3996
Address: 701 KELLY RD	e-mail:	Fax: ( )
City: CUMBERLAND State: MD Zip: 21502	Sampled by: S. EYDEN	State Sampled: MD
WO#: G1869996	Project: 2nd S/A for sample 20.8	PO/Quote#:

Sample Matrix:	GW Ground Water	SW Surface Water	PW Potable Water	WW Wastewater	SO Soil	SL Sludge	nHZ Not Hazardous / HZ Hazardous	PCBs
Sample Type:	G Grab	C Composite	D Distribution/DW	R Raw/DW	S Special/DW	O Other		

Sample Location/ Description	Lab Number	Sample Matrix	Date	Time (Military)	Sample Type	**Analyses Requested	Remarks/ Preservatives, etc	Number of Containers
**NOTE: IF multiple analytes from one bottle, OR if multiple bottles for one analyte, THEN list separately on one line UNLESS LISTED ON ATTACHED FIELD LOG								
MW-12	001	GW	9/17/18	1422	G	As Per Contract	Field Filtered: Y / N	7
MW-3	002	GW	↓	1115	G	↓	Field Filtered: Y / N	7
MW-5	003	GW		1339	G		Field Filtered: Y / N	7
MW-4	004	GW		1355	G		Field Filtered: Y / N	7
F. DUP	005	GW	↓	1647	G	↓	Field Filtered: Y / N	7
							Field Filtered: Y / N	
							Field Filtered: Y / N	
							Field Filtered: Y / N	

Note Deficiencies Here:

Relinquished by (Company & Signature)	Date	Time (Military)	Received by (Company & Signature):	Date	Time (Military)
TTG [signature]	9/18/18	2015	Meredith J Kherzinger	9-18-18	20:15
			[signature]	~~9-18~~ BLL 9-18	05:13
				9-19-18	

SAMPLES MUST BE PRESERVED ON ICE.

Ice present on receipt: ✓ Yes or ___ No | Cooler Temp (°C) on receipt: 2

Sample Receiving (1st Review): DL | Client Support (2nd Review): _____

Shuttle/Cooler ID#:	**CHAIN OF CUSTODY**	Geochemical Testing

Form F-5002, 12.16

Geochemical Testing • 2005 North Center Avenue • Somerset PA 15501 • (814) 443-1671 • Fax (814) 445-6729

Billing Client: ALLEGANY COUNTY, MD	**Contact (Company):** TRG	**Phone:** (724) 325-3996
Address: 701 KELLY RD	e-mail:	Fax: ( )
City: CUMBERLAND **State:** MD **Zip:** 21502	**Sampled by:** S. EYOUN	**State Sampled:** MD
WO#: G1809997	Project:	PO/Quote#:

Sample Matrix:	**GW** Ground Water	**SW** Surface Water	**PW** Potable Water	**WW** Wastewater	**SO** Soil	**SL** Sludge	**nHZ** Not Hazardous / **HZ** Hazardous	**PCBs**
Sample Type:	**G** Grab	**C** Composite	**D** Distribution/DW	**R** Raw/DW	**S** Special/DW	**O** Other		

Sample Location/ Description	Lab Number	Sample Matrix	Date	Time (Military)	Sample Type	**Analyses Requested	Remarks/ Preservatives, etc	Number of Containers
**NOTE: IF multiple analytes from one bottle, OR if multiple bottles for one analyte, THEN list separately on one line UNLESS LISTED ON ATTACHED FIELD LOG								
MW-6	001	GW	9/17/18	1455	G	As per Contract	Field Filtered: Y / N	7
MW-7	002	GW		1535	G		Field Filtered: Y / N	7
MW-11	003	GW		1335	G		Field Filtered: Y / N	8
MW-13	004	GW		1647	G		Field Filtered: Y / N	7
TRIP BLANK	005	—		—	—		Field Filtered: Y / N	7
F. BLANK	006	—		1700	—		Field Filtered: Y / N	7
							Field Filtered: Y / N	
							Field Filtered: Y / N	

Note Deficiencies Here:

Relinquished by (Company & Signature)	Date	Time (Military)	Received by (Company & Signature):	Date	Time (Military)
TRG [signature]	9/18/18	2015	Heather J. Rimmer	9-18-18	2015
			[signature]	9-18-18 BM	05:15
				9/19/18	

SAMPLES MUST BE PRESERVED ON ICE.

Ice present on receipt: ✓ Yes or ___ No | Cooler Temp (°C) on receipt: 2

Sample Receiving (1st Review): [initials] | Client Support (2nd Review): _____

The Hutchinson Group, Ltd.

FIELD SAMPLING LOG

Facility Name: AMCELLE RUBBLE FILL Sample Point: MW-3

Permit #: 1999-WRF-0206

Purge Date	Start Purge	End Purge	Elapsed Time	H2O Vol. CSG	Vol. Purged
9/17/18	1046	1113	27 min	3.78 G	7L

Purge Method: Dedicated Low-Flow Pump Sample Date/Time: 9/17/18 1115

Sampler Type: C
- A Submersible Pump
- B RediFlo2
- C Bladder Pump
- D Bailer
- E Scoop/Shovel
- F Other

Sampler Material: A
- A Teflon
- B Metal
- E Other
- C PVC
- D Plastic

Tubing Material C
- A Teflon
- B Tygon
- E Other
- C Polyethylene
- D Silicon

Samples Composited Y N Comments:

Samples Filtered: [ ] Yes [X] No

Number of Filters Used: _____ Type of Filters Used: _____

FIELD MEASUREMENTS

Depth to Groundwater: 15.97 ft	Well Depth: 21.80 ft	Measurement Point Elevation: 655.13 ft	Water-Level Elevation: 639.16 ft

Temp. 14.4 °C	Cond. 595	µS/cm	TDS 296	ppm	pH 6.65	su	Turbidity 31.9	FNU	DO 5.1	mg/L
Temp. 14.4 °C	Cond. 576	µS/cm	TDS 290	ppm	pH 6.65	su	Turbidity 31.5	FNU	DO 5.1	mg/L
Temp. 14.4 °C	Cond. 570	µS/cm	TDS 285	ppm	pH 6.65	su	Turbidity 31.3	FNU	DO 5.2	mg/L
Temp. 14.4 °C	Cond. 568	µS/cm	TDS 285	ppm	pH 6.65	su	Turbidity 32.9	FNU	DO 5.3	mg/L
Avrg. 14.4 °C	Avrg. 577	µS/cm	Avrg. 289	ppm	Avrg. 6.65	su	Avrg. 31.9	FNU	Avrg. 5.2	mg/L

FIELD COMMENTS

Sample Appearance: SLIGHTLY TURBID, CONDRESS, MODERATE MUSTY ODOR

Weather Conditions: 66 °F, OVERCAST, RAIN

Other: 7 BOTTLES

Samplers: S. EYDUN / B. VARKO

I certify that sampling procedures were in accordance with applicable EPA and state protocols:

Signature: [signature] *Date* 9/17/18

4280 Old William Penn Highway, Murrysville, Pennsylvania 15668 Telephone: 724-325-3996 Fax: 724-733-7901

The Hutchinson Group, Ltd.

FIELD SAMPLING LOG

Facility Name: AMCELLE RUBBLE FILL Sample Point: MW-4

Permit #: 1999-WRF-0206

Purge Date	Start Purge	End Purge	Elapsed Time	H2O Vol. CSG	Vol. Purged
9/17/18	1126	1153	27 min	8.78 G	9L

Purge Method: Ded. Low Flow (Bladder) Pump Sample Date/Time: 9/17/18 1155

Sampler Type: C
- A Submersible Pump
- B RediFlo2
- C Bladder Pump
- D Bailer
- E Scoop/Shovel
- F Other

Sampler Material: A
- A Teflon
- B Metal
- E Other
- C PVC
- D Plastic

Tubing Material C
- A Teflon
- B Tygon
- E Other
- C Polyethylene
- D Silicon

Samples Composited Y N Comments:

Samples Filtered: [ ] Yes [X] No

Number of Filters Used: _____ Type of Filters Used: _____

FIELD MEASUREMENTS

Depth to Groundwater: 14.49 ft	Well Depth: 28.00 ft	Measurement Point Elevation: 653.76 ft	Water-Level Elevation: 639.27 ft

Temp. 13.6 °C	Cond. 490	µS/cm	TDS 246	ppm	pH 5.94	su	Turbidity 10.4	FNU	DO 3.6	mg/L
Temp. 13.2 °C	Cond. 497	µS/cm	TDS 242	ppm	pH 5.95	su	Turbidity 9.3	FNU	DO 3.7	mg/L
Temp. 13.4 °C	Cond. 499	µS/cm	TDS 249	ppm	pH 5.99	su	Turbidity 9.8	FNU	DO 3.8	mg/L
Temp. 13.2 °C	Cond. 504	µS/cm	TDS 252	ppm	pH 6.01	su	Turbidity 9.7	FNU	DO 3.9	mg/L
Avrg. 13.4 °C	Avrg. 498	µS/cm	Avrg. 249	ppm	Avrg. 5.97	su	Avrg. 9.8	FNU	Avrg. 3.8	mg/L

FIELD COMMENTS

Sample Appearance: SLIGHTLY TURBID, COLORLESS, SLIGHT MUSTY ODOR

Weather Conditions: 66°F, OVERCAST, RAIN

Other: 7 BOTTLES

Samplers: J. EYPRON / B. VALKO

I certify that sampling procedures were in accordance with applicable EPA and state protocols:

Signature: [signature] *Date* 9/17/18

4280 Old William Penn Highway, Murrysville, Pennsylvania 15668 Telephone: 724-325-3996 Fax: 724-733-7901

The Hutchinson Group, Ltd.

FIELD SAMPLING LOG

Facility Name: AMCELLE RUBBLE FILL Sample Point: MW-5

Permit #: 1999-WRF-0206

Purge Date	Start Purge	End Purge	Elapsed Time	H2O Vol. CSG	Vol. Purged
9/17/18	1301	1336	35 Min	6.55 G	8L

Purge Method: Dedicated Low-Flow Pump Sample Date/Time: 9/17/18 1339

Sampler Type: C
- A Submersible Pump
- B RediFlo2
- C Bladder Pump
- D Bailer
- E Scoop/Shovel
- F Other

Sampler Material: A
- A Teflon
- B Metal
- E Other
- C PVC
- D Plastic

Tubing Material C
- A Teflon
- B Tygon
- E Other
- C Polyethylene
- D Silicon

Samples Composited Y N Comments:

Samples Filtered: [ ] Yes [X] No

Number of Filters Used: _____ Type of Filters Used: _____

FIELD MEASUREMENTS

Depth to Groundwater: 12.42 ft	Well Depth: 22.50 ft	Measurement Point Elevation: 654.40 ft	Water-Level Elevation: 641.98 ft

Temp.	14.4 °C	Cond.	351 µS/cm	TDS	172 ppm	pH	6.39 su	Turbidity	5.2 FNU	DO	6.3 mg/L
Temp.	14.5 °C	Cond.	348 µS/cm	TDS	172 ppm	pH	6.39 su	Turbidity	5.3 FNU	DO	6.0 mg/L
Temp.	14.4 °C	Cond.	342 µS/cm	TDS	171 ppm	pH	6.35 su	Turbidity	5.3 FNU	DO	5.9 mg/L
Temp.	14.6 °C	Cond.	342 µS/cm	TDS	171 ppm	pH	6.37 su	Turbidity	5.4 FNU	DO	5.8 mg/L
Avrg.	14.5 °C	Avrg.	346 µS/cm	Avrg.	172 ppm	Avrg.	6.38 su	Avrg.	5.3 FNU	Avrg.	6.0 mg/L

FIELD COMMENTS

Sample Appearance: CLEAR, COLORLESS, MODERATELY MUSTY ODOR

Weather Conditions: 66 °F, OVERCAST, RAIN

Other: 7 BOTTLES

Samplers: S. EYRIN / B. VALKO

I certify that sampling procedures were in accordance with applicable EPA and state protocols:

Signature: [signature] *Date* 9/17/18

4280 Old William Penn Highway, Murrysville, Pennsylvania 15668 Telephone: 724-325-3996 Fax: 724-733-7901

The Hutchinson Group, Ltd.

FIELD SAMPLING LOG

Facility Name: AMCELLE RUBBLE FILL Sample Point: MW-6

Permit #: 1999-WRF-0206

Purge Date	Start Purge	End Purge	Elapsed Time	H2O Vol. CSG	Vol. Purged
9/17/18	1429	1452	23 min	9.93 G	10.5 L

Purge Method: Dedicated Low Flow (Bladder) Pump Sample Date/Time: 9/17/18 1455

Sampler Type: C
- A Submersible Pump
- B RediFlo2
- C Bladder Pump
- D Bailer
- E Scoop/Shovel
- F Other

Sampler Material: A
- A Teflon
- B Metal
- E Other
- C PVC
- D Plastic

Tubing Material C
- A Teflon
- B Tygon
- E Other
- C Polyethylene
- D Silicon

Samples Composited Y N Comments:

Samples Filtered: [ ] Yes [X] No

Number of Filters Used: _____ Type of Filters Used: _____

FIELD MEASUREMENTS

Depth to Groundwater: 9.38 ft	Well Depth: 24.60 ft	Measurement Point Elevation: 653.21 ft	Water-Level Elevation: 643.83 ft

Temp. 14.8 °C	Cond. 484	µS/cm	TDS 242	ppm	pH 6.77	su	Turbidity 9.8	FNU	DO 2.8	mg/L
Temp. 14.5 °C	Cond. 480	µS/cm	TDS 240	ppm	pH 6.76	su	Turbidity 9.6	FNU	DO 2.7	mg/L
Temp. 14.6 °C	Cond. 477	µS/cm	TDS 236	ppm	pH 6.73	su	Turbidity 9.5	FNU	DO 3.0	mg/L
Temp. 14.4 °C	Cond. 463	µS/cm	TDS 231	ppm	pH 6.72	su	Turbidity 9.4	FNU	DO 3.0	mg/L
Avrg. 14.5 °C	Avrg. 476	µS/cm	Avrg. 237	ppm	Avrg. 6.75	su	Avrg. 9.6	FNU	Avrg. 2.9	mg/L

FIELD COMMENTS

Sample Appearance: CLEAR, COLORLESS, FINE SUSPENDED SOLIDS, SLIGHT MUSTY ODOR

Weather Conditions: 66° F, OVERCAST, RAIN

Other: 7 BOTTLES

Samplers: S. EYDUN / B. VALKO

I certify that sampling procedures were in accordance with applicable EPA and state protocols:

Signature: [signature] *Date* 9/17/18

4280 Old William Penn Highway, Murrysville, Pennsylvania 15668 Telephone: 724-325-3996 Fax: 724-733-7901

The Hutchinson Group, Ltd.

FIELD SAMPLING LOG

Facility Name: AMCELLE RUBBLE FILL Sample Point: MW-7

Permit #: 1999-WRF-0206

Purge Date	Start Purge	End Purge	Elapsed Time	H2O Vol. CSG	Vol. Purged
9/17/18	1505	1552	47 min	15.13 g	9L

Purge Method: Ded. Low Flow (Bladder) Pump Sample Date/Time: 9/17/18 1555

Sampler Type: C
- A Submersible Pump
- B RediFlo2
- C Bladder Pump
- D Bailer
- E Scoop/Shovel
- F Other

Sampler Material: A
- A Teflon
- B Metal
- E Other
- C PVC
- D Plastic

Tubing Material C
- A Teflon
- B Tygon
- E Other
- C Polyethylene
- D Silicon

Samples Composited Y N Comments:

Samples Filtered: [ ] Yes [X] No

Number of Filters Used: _____ Type of Filters Used: _____

FIELD MEASUREMENTS

Depth to Groundwater: 9.72 ft	Well Depth: 20.60 ft	Measurement Point Elevation: 653.20 ft	Water-Level Elevation: 643.48 ft

Temp.	19.1 °C	Cond.	565 µS/cm	TDS	287 ppm	pH	7.18 su	Turbidity	48.8 FNU	DO	5.2 mg/L
Temp.	19.0 °C	Cond.	545 µS/cm	TDS	273 ppm	pH	7.22 su	Turbidity	48.5 FNU	DO	5.1 mg/L
Temp.	18.9 °C	Cond.	530 µS/cm	TDS	265 ppm	pH	7.21 su	Turbidity	48.4 FNU	DO	5.2 mg/L
Temp.	18.7 °C	Cond.	520 µS/cm	TDS	260 ppm	pH	7.19 su	Turbidity	48.3 FNU	DO	5.3 mg/L
Avrg.	18.9 °C	Avrg.	540 µS/cm	Avrg.	271 ppm	Avrg.	7.20 su	Avrg.	48.5 FNU	Avrg.	5.2 mg/L

FIELD COMMENTS

Sample Appearance: SLIGHTLY TURBID, COLORLESS, SUSPENDED SOLIDS, STRONG MUSTY ODOR

Weather Conditions: 66 °F; OVERCAST; RAIN

Other: 7 BOTTLES

Samplers: S. EYDUN / B. VALKO

I certify that sampling procedures were in accordance with applicable EPA and state protocols:

Signature _____ *Date* 9/17/18

4280 Old William Penn Highway, Murrysville, Pennsylvania 15668 Telephone: 724-325-3996 Fax: 724-733-7901

The Hutchinson Group, Ltd.

FIELD SAMPLING LOG

Facility Name: AMCELLE RUBBLE FILL Sample Point: MW-11

Permit #: 1999-WRF-0206

Purge Date	Start Purge	End Purge	Elapsed Time	H2O Vol. CSG	Vol. Purged
9/17/18	1208	1232	24 min	11.68	8 L

Purge Method: Ded. Low Flow (Bladder) Pump Sample Date/Time: 9/17/18 1235

Sampler Type: C
- A Submersible Pump
- B RediFlo2
- C Bladder Pump
- D Bailer
- E Scoop/Shovel
- F Other

Sampler Material: A
- A Teflon
- B Metal
- E Other
- C PVC
- D Plastic

Tubing Material C
- A Teflon
- B Tygon
- E Other
- C Polyethylene
- D Silicon

Samples Composited Y N Comments:

Samples Filtered: [ ] Yes [X] No

Number of Filters Used: _____ Type of Filters Used: _____

FIELD MEASUREMENTS

Depth to Groundwater: 15.02 ft	Well Depth: 33.00 ft	Measurement Point Elevation: 654.75 ft	Water-Level Elevation: 639.73 ft

Temp. 13.6 °C	Cond. 289	µS/cm	TDS 144	ppm	pH 5.91	su	Turbidity 12.1	FNU	DO 4.7	mg/L
Temp. 13.7 °C	Cond. 287	µS/cm	TDS 144	ppm	pH 5.90	su	Turbidity 12.5	FNU	DO 4.8	mg/L
Temp. 13.8 °C	Cond. 286	µS/cm	TDS 143	ppm	pH 5.89	su	Turbidity 12.3	FNU	DO 4.8	mg/L
Temp. 13.9 °C	Cond. 282	µS/cm	TDS 141	ppm	pH 5.89	su	Turbidity 12.0	FNU	DO 4.9	mg/L
Avrg. 13.8 °C	Avrg. 284	µS/cm	Avrg. 143	ppm	Avrg.	su	Avrg.	FNU	Avrg. 4.8	mg/L

FIELD COMMENTS

Sample Appearance: MODERATELY TURBID, LIGHT BROWN, STRONG MUSTY ODOR

Weather Conditions: 66 °F, OVERCAST, CALM

Other: 8 BOTTLES

Samplers: J. EYRON / B. VALICO

I certify that sampling procedures were in accordance with applicable EPA and state protocols:

Signature _____ *Date* 9/17/18

4280 Old William Penn Highway, Murrysville, Pennsylvania 15668 Telephone: 724-325-3996 Fax: 724-733-7901

The Hutchinson Group, Ltd.

FIELD SAMPLING LOG

Facility Name: AMCELLE RUBBLE FILL Sample Point: MW-12

Permit #: 1999-WRF-0206

Purge Date	Start Purge	End Purge	Elapsed Time	H2O Vol. CSG	Vol. Purged
9/17/18	1352	1420	28 min	31.73	12L

Purge Method: Ded. Low Flow (Bladder) Pump Sample Date/Time: 9/17/18 1422

Sampler Type: C
- A Submersible Pump
- B RediFlo2
- C Bladder Pump
- D Bailer
- E Scoop/Shovel
- F Other

Sampler Material: A
- A Teflon
- B Metal
- E Other
- C PVC
- D Plastic

Tubing Material C
- A Teflon
- B Tygon
- E Other
- C Polyethylene
- D Silicon

Samples Composited Y N Comments:

Samples Filtered: [ ] Yes [X] No

Number of Filters Used: _____ Type of Filters Used: _____

FIELD MEASUREMENTS

Depth to Groundwater: 13.23 ft	Well Depth: 62.05 ft	Measurement Point Elevation: 654.87 ft	Water-Level Elevation: 641.64 ft

Temp. 13.4 °C	Cond. 404	µS/cm	TDS 202	ppm	pH 7.42	su	Turbidity 9.5	FNU	DO 3.0	mg/L
Temp. 13.5 °C	Cond. 398	µS/cm	TDS 197	ppm	pH 7.46	su	Turbidity 9.4	FNU	DO 3.0	mg/L
Temp. 13.6 °C	Cond. 370	µS/cm	TDS 186	ppm	pH 7.42	su	Turbidity 9.3	FNU	DO 2.9	mg/L
Temp. 13.5 °C	Cond. 355	µS/cm	TDS 177	ppm	pH 7.40	su	Turbidity 9.0	FNU	DO 2.8	mg/L
Avrg. 13.5 °C	Avrg. 382	µS/cm	Avrg. 191	ppm	Avrg. 7.44	su	Avrg. 9.4	FNU	Avrg. 2.9	mg/L

FIELD COMMENTS

Sample Appearance: SLIGHTLY TURBID, COLORLESS, STRONG MUSTY ODOR

Weather Conditions: 66 °F, OVERCAST, RAIN

Other: 7 BOTTLES

Samplers: J. Eyman / B. Nauco

I certify that sampling procedures were in accordance with applicable EPA and state protocols:

Signature: [signature] *Date* 9/17/18

4280 Old William Penn Highway, Murrysville, Pennsylvania 15668 Telephone: 724-325-3996 Fax: 724-733-7901

The Hutchinson Group, Ltd.

FIELD SAMPLING LOG

Facility Name: AMCELLE RUBBLE FILL Sample Point: MW-13

Permit #: 1999-WRF-0206

Purge Date	Start Purge	End Purge	Elapsed Time	H2O Vol. CSG	Vol. Purged
9/17/18	1605	1644	39 min	30.60 g	10.5 L

Purge Method: Ded. Low Flow (Bladder) Pump Sample Date/Time: 9/17/18 1647

Sampler Type: C
- A Submersible Pump
- B RediFlo2
- C Bladder Pump
- D Bailer
- E Scoop/Shovel
- F Other

Sampler Material: A
- A Teflon
- B Metal
- E Other
- C PVC
- D Plastic

Tubing Material C
- A Teflon
- B Tygon
- E Other
- C Polyethylene
- D Silicon

Samples Composited Y N Comments:

Samples Filtered: [ ] Yes [X] No

Number of Filters Used: _____ Type of Filters Used: _____

FIELD MEASUREMENTS

Depth to Groundwater: 2.72 ft	Well Depth: 49.80 ft	Measurement Point Elevation: 651.69 ft	Water-Level Elevation: 648.97 ft

Temp.	15.1 °C	Cond.	1125 µS/cm	TDS	563 ppm	pH	6.98 su	Turbidity	138 FNU	DO	3.6 mg/L
Temp.	15.1 °C	Cond.	1128 µS/cm	TDS	564 ppm	pH	6.97 su	Turbidity	142 FNU	DO	3.6 mg/L
Temp.	15.1 °C	Cond.	1127 µS/cm	TDS	564 ppm	pH	6.97 su	Turbidity	141 FNU	DO	3.8 mg/L
Temp.	15.0 °C	Cond.	1127 µS/cm	TDS	565 ppm	pH	6.96 su	Turbidity	140 FNU	DO	3.9 mg/L
Avrg.	15.1 °C	Avrg.	1127 µS/cm	Avrg.	564 ppm	Avrg.	6.97 su	Avrg.	140 FNU	Avrg.	3.8 mg/L

FIELD COMMENTS

Sample Appearance: SLIGHTLY TURBID, LIGHT BROWN, SLIGHT MUSTY ODOR

Weather Conditions: 66 °F, OVERCAST, RAIN

Other: 7 BOTTLES

Samplers: S. EYDUN / B. VARKO

I certify that sampling procedures were in accordance with applicable EPA and state protocols:

Signature: [signature] *Date* 9/17/18

4280 Old William Penn Highway, Murrysville, Pennsylvania 15668 Telephone: 724-325-3996 Fax: 724-733-7901

AMCELLE RUBBLE FILL
Permit No. 1999-WRF-0206

APPENDIX C

MUNICIPAL LANDFILL CLOSURE CAP
INSPECTION REPORT

SECOND SEMI-ANNUAL
2018

The Hutchinson Group, Ltd.

Municipal Landfill Closure Cap Inspection Report

Reporting Period: Second Semi-Annual 2018 **Date of Inspection:** 9/17/18

Section 1 - Facility			
Name of Facility: Amcelle Rubble Fill			
Owner of Facility: Allegany County, MD			
Location Address: Allegany County, MD			
Latitude :	39 35.776	Longitude:	78 49.120
Closure Cap Area completion date: 9/23/2010		Approximate cap area: 25 acres	
Inspectors: Simon Eydlin & Brandon Valko		Inspection date: 9/17/18	

Section 2 - Vegetation	
Type(s) of growth (check all that apply): ☒ grasses ☐ legumes ☐ herbaceous plants ☒ other (specify: *small shrubs*)	Remarks: *Uniform grass cover*
Condition of growth: ☒ Excellent (thick growth) ☐ Good ☐ Poor (thin growth, bare soil, etc.)	Remarks: *Uniform thick & healthy coverage*
Woody plants present? ☐ Yes ☒ No	Remarks: *None on the cap, only some small growth around perimeter of cap*
Invasive plants present? ☐ Yes ☐ Phragmites ☐ Other ☒ No	Remarks: *None observed on or near landfill cap*
Dead spots present? ☐ Yes ☒ No	Remarks:

Municipal Landfill Closure Cap Inspection Report

Reporting Period: Second Semi-Annual 2018 **Date of Inspection:** 9/17/18

Section 3 – Final Cover Condition	
Is there subsidence (depressions in the cap)? ☐ Yes ☒ No	Remarks:
Is there any evidence of water ponding on the cap? ☐ Yes ☒ No	Remarks: *Cover grading in good condition*
Are there colored leachate seeps through the cap? ☐ Yes ☒ No	Remarks:
Are there colored leachate seeps at toe slope? ☐ Yes ☒ No	Remarks:
Are there signs of burrowing animals? ☐ Yes ☒ No	Remarks: *None observed*
Is there any waste pushing through the cap? ☐ Yes ☒ No	Remarks:
Does the cap cover all of the solid waste? ☒ Yes ☐ No	Remarks:
Is there evidence of erosion? ☐ Yes ☒ No	Remarks:
Is there vehicle tracking damage to the cap or vegetation? ☐ Yes ☒ No	Remarks:

Municipal Landfill Closure Cap Inspection Report

Reporting Period: Second Semi-Annual 2018 **Date of Inspection:** 9/17/18

Section 4 - Drainage and Surface Water	
Conditions/Stability of streams/swales/ditches etc. ☒ Excellent (unobstructed) ☐ Good /Fair ☐ Poor (overgrown or sediment filled)	Remarks:
Is there evidence of colored leachate in surface waters? ☐ Yes ☒ No	Remarks:
Is there surface water monitoring? ☐ Yes ☒ No	Remarks:
Are results submitted to MDE? ☐ Yes ☒ No	Remarks: *N/A*

Section 5 - Groundwater	
Is there groundwater monitoring? ☒ Yes ☐ No	Remarks: *Semi-Annually*
Are results submitted to MDE? ☒ Yes ☐ No	Remarks: *Semi-Annually*
Condition of groundwater monitoring wells (if present): ☒ Excellent ☐ Good ☐ Poor (missing covers, missing locks, deteriorated seals, frost heaved, etc.)	Remarks: *No issues.*

Municipal Landfill Closure Cap Inspection Report

Reporting Period: Second Semi-Annual 2018 **Date of Inspection:** 9/17/18

Section 6 - Landfill Gas (LFG) Management System	
Is there an LFG collection system? ☐ Yes ☒ No	Remarks *Passive ventilation on the cap.*
Are the LFG wells damaged? ☐ Yes ☒ No	Remarks:
Is LFG monitoring done? ☒ Yes ☐ No	Remarks: *Quarterly*
Are results submitted to MDE? ☒ Yes ☐ No	Remarks: *Semi-Annually*
Does the LFG produce any odors? ☐ Yes ☒ No	Remarks:

Section 7 - Other Facility Conditions	
Condition of Access Roads? ☒ Good ☐ Fair ☐ Poor	Remarks:
Is there litter present? ☐ Yes ☒ No	Remarks:

Municipal Landfill Closure Cap Inspection Report

Reporting Period: Second Semi-Annual 2018 **Date of Inspection:** 9/17/18

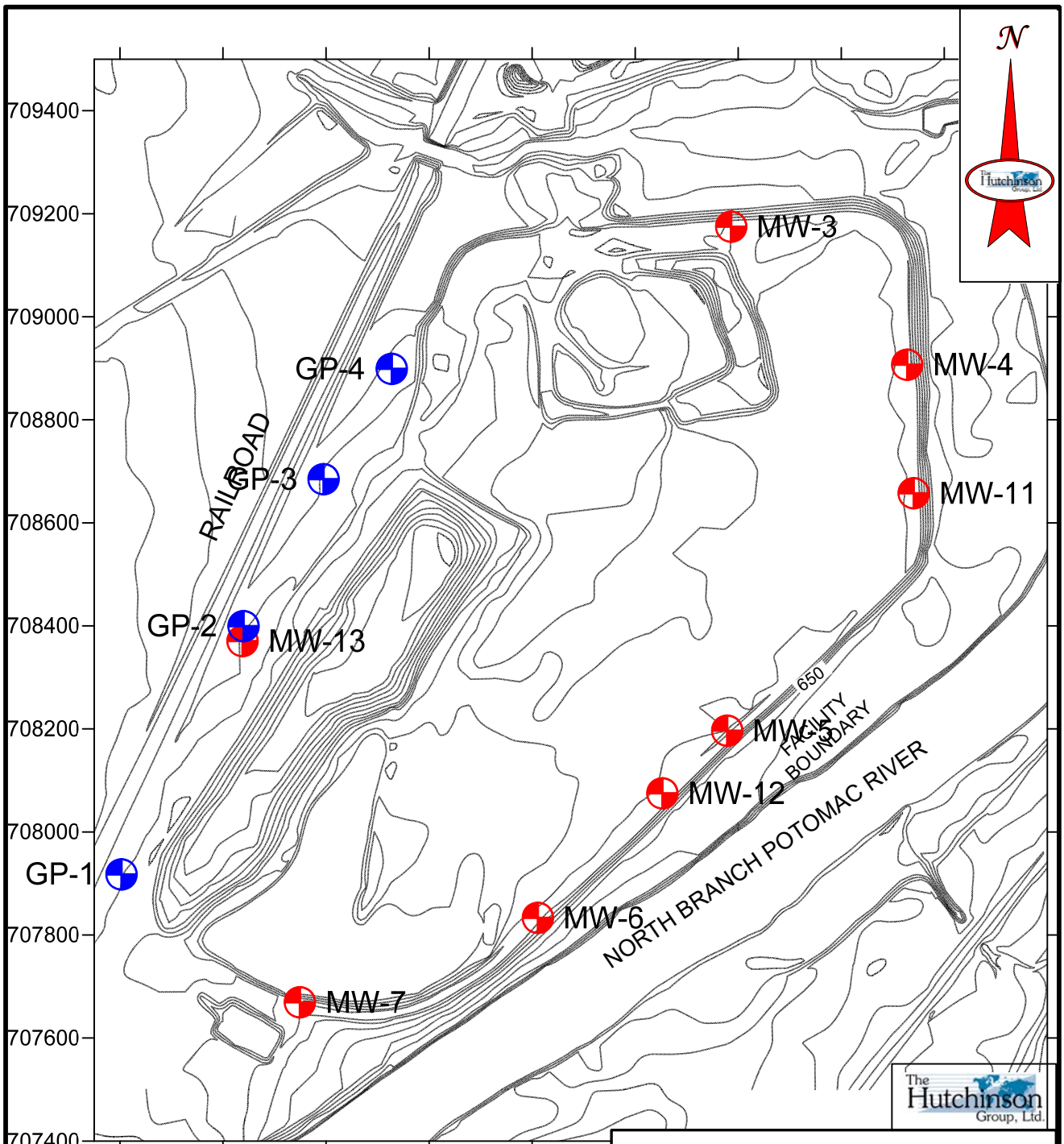
Section 8 – Corrective Actions (Describe any corrective actions planned or taken as a result of conditions noted during the inspection)
None required at this time.

AMCELLE RUBBLE FILL
Permit No. 1999-WRF-0206

APPENDIX D

GAS SAMPLING LOGS
THIRD AND FOURTH QUARTERLY
2018

The Hutchinson Group, Ltd.



Scale 1" = 300'
Topographic Interval = 2 ft

0 ft 200 ft 400 ft 600 ft 800 ft

Legend

GP-8 Gas Monitoring Probe

MW-11 Existing Groundwater Monitoring Well

Gas Sampling Location Map
3rd & 4th Quarter 2018

Amcelle Rubble Landfill
Allegany County, Maryland

SCALE: 1 in = 300 ft	PROJECT NO: 187-7029	DRAWING NO: DWG7029G1
DATE: 1/29/19		
DRAWN BY: PJH	SOURCE: Base map from Allegany County Aerial Photography, 2006	
CHECKED BY: PJH		

AMCELLE RUBBLE FILL

GAS SAMPLING LOG

Sampling Technician: Simon Eydlin
Date: 9/26/2018
Gas Meter Make & Serial #: Bascom-Turner Gas-Sentry
Temperature (Deg. F.): 74
Date Last Calibrated: 9/26/2018
Barometric Pressure (In. H_2O):
Weather Conditions: Sunny, Wind SW 5-10 MPH

SAMPLING POINT	TIME	PRESSURE (inches)	CH_4 (%)	CO_2 (%)	O_2 (%)	BALANCE (%)	LEL (%)	NOTES
GMP-1	11:20		0.00				0.00	
GMP-2	11:25		0.00				0.00	
GMP-3	11:27		0.00				0.00	
GMP-4	11:30		0.00				0.00	

LEL % = Methane reading in % / 0.05
The flammable range for methane is 5% to 15%

AMCELLE RUBBLE FILL

GAS SAMPLING LOG

Sampling Technician: Simon Eydlin
Date: 11/30/2018
Gas Meter Make & Serial #: Bascom-Turner Gas-Sentry
Temperature (Deg. F.): 33
Date Last Calibrated: 11/30/2018
Barometric Pressure (In. H_2O):
Weather Conditions: Sunny, Clam

SAMPLING POINT	TIME	PRESSURE (inches)	CH_4 (%)	CO_2 (%)	O_2 (%)	BALANCE (%)	LEL (%)	NOTES
GMP-1	14:50		0.00				0.00	
GMP-2	14:52		0.00				0.00	
GMP-3	14:54		0.00				0.00	
GMP-4	14:57		0.00				0.00	

LEL % = Methane reading in % / 0.05
The flammable range for methane is 5% to 15%