



Maryland
Department of
the Environment

Memorandum

TO: Andrew Grenzer *AG*
FROM: Brenda Keister *BK*
DATE: April 14, 2020
RE: **Al-Ray (Sands Road) Rubble Landfill (2019-414)**

This memo is in reference to the **2019 Second Semi-Annual Groundwater Monitoring Report** for Sands Road Landfill, located in Anne Arundel County. The report was prepared by Maryland Environmental Service (MES) and was received by MDE on December 27, 2019. The rubble landfill operated from 1984 until April 1994 when it ceased accepting waste and was capped in December 1994. It is approximately 180 acres, unlined, and does not have a leachate collection system.

SITE MONITORING PLAN

The groundwater monitoring program for the landfill consists of six monitoring wells: MW-6, MW-7, MW-8, MW-9, MW-10 and MW-11. MW-6 serves as the upgradient well for the site. The landfill has a gas monitoring network of seven gas probes: GP-1 through GP-7. This groundwater monitoring event was conducted in August 2019.

VOLATILE ORGANIC COMPOUNDS (VOCs)

Low level VOCs were detected this event. Trace chlorobenzene was detected in MW-6 and MW-11. MTBE was detected in wells MW-6, MW-7, and MW-10. Sporadic low level MTBE detections are consistent with historical data. Surface location SW-3 detected acetone though acetone was not found in any well. Carbon disulfide and chloromethane were detected in the rinsate blanks.

METALS & GENERAL CHEMISTRY

Arsenic was over the MCL in MW-7 (57 ug/L). This exceedance is consistent with historical data. The most upstream surface water location, SW-1 was over the ambient human health consumption standard (0.18 ug/L) at 1.1 ug/L. This concentration was below the ambient aquatic life standard (150 ug/L).

STATISTICAL SIGNIFICANT INCREASES (SSIs)

The downgradient monitoring wells: MW-7, MW-8, MW-9, MW-10 and MW-11, were compared to the background monitoring well MW-6 for SSIs. MW-7 had SSIs for alkalinity, iron, arsenic, chromium, and vanadium. MW-9 reported SSIs for nickel, potassium, and sulfate. MW-10 returned SSIs for alkalinity, chloride, and sulfate. MW-11 had SSIs for alkalinity, iron, nickel, potassium, and sulfate. No trend was indicated

for the arsenic in MW-7 using intra-well analysis. Surface water location SW-2 is in the vicinity of MW-7 and was below the ambient standard.

LANDFILL GAS

Quarterly gas monitoring was conducted on August 8 and October 21, 2019 from seven gas probes. LFG probes GP-3, GP-4, GP-5, GP-6 and GP-7 are constructed as multiple depth monitoring probes, so gas is sampled at 12 locations. Methane was below the LEL during the two quarters.

The post-closure site inspection was conducted on August 8, 2019. Matters of routine maintenance were recommended to the County. The County has an ongoing issue with the trespass of ATVs, but has indicated that to completely barrier the site from such activity is cost prohibitive. They continue to post signs and replace gate locks as necessary at the site.

Anne Arundel County should continue with the semiannual groundwater and quarterly gas monitoring. Any questions concerning this matter may be directed to me at Ext. 3331.

bk

2019 SECOND SEMI-ANNUAL ENVIRONMENTAL MONITORING REPORT



SANDS ROAD LANDFILL

LOTHIAN, MARYLAND

**PREPARED FOR:
ANNE ARUNDEL COUNTY GOVERNMENT**

DECEMBER 2019

PREPARED BY:

**MARYLAND ENVIRONMENTAL SERVICE
259 NAJOLAS ROAD
MILLERSVILLE, MARYLAND 21108**

Sands Road Landfill
2019 Second Semi-Annual Environmental Monitoring Report
July 1, 2019 through December 31, 2019

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**Sands Road Landfill
2019 Second Semi-Annual Environmental Monitoring Report
July 1, 2019 through December 31, 2019**

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Sands Road Landfill
Anne Arundel County, MD
2019 Second Semi-Annual Environmental Monitoring Report

1.0 INTRODUCTION

This Semi-Annual Monitoring Report covers the July 1, 2019 through December 31, 2019 monitoring period at the Sands Road Landfill in Anne Arundel County, Maryland. The United States Environmental Protection Agency (USEPA) National Primary Drinking Water Standards Maximum Contaminant Levels (MCLs) provide numerical cleanup standards for hazardous substances in groundwater as is stipulated in COMAR 26.04.07. Therefore, groundwater monitoring data collected at the Sands Road Landfill was compared to those levels as stipulated by the Maryland Department of Environment (MDE) and the Environmental Monitoring Plan for the Site. This work was completed in accordance with the facility's groundwater discharge permit (# 2014-GWD-2130). The Code of Maryland Regulations (COMAR) 26.08.02.03-2 Drinking Water and Organisms specifies Numerical Criteria for Toxic Substances (NCTS) in surface water. Surface water monitoring data collected at Sands Road Landfill was compared to the NCTS.

1.1 General Site Conditions

The closed rubble landfill at Sands Road Park is comprised of approximately 180 acres and is located at 4910 Sands Road in Lothian, Anne Arundel County, Maryland. The property is currently owned by the Anne Arundel County Government and is maintained by the County Department of Recreation and Parks. The Anne Arundel County Government acquired the site, including the closed rubble landfill in December 2003.

The closed rubble landfill at Sands Road Park was permitted and operated as a construction and demolition debris landfill from 1984 until 1994 by the Al-Ray Super Concrete Corporation. Construction materials, white-goods, tree stumps, and other land clearing debris were accepted at the site in accordance with the operating permit. According to the former owner/operator, no hazardous waste, household waste, or liquid wastes were disposed of at the landfill. It should be noted that this landfill is not lined and does not have a leachate collection system.

In April 1994, the landfill ceased accepting waste, and was capped in December 1994. Two feet of soil were placed on top of the compacted debris, followed by a synthetic membrane. Six inches of sand and two feet of soil were then placed over the synthetic membrane. Thus, there are 30 inches of cover material above the membrane and 24 inches of cover beneath the membrane. The synthetic membrane was not placed over areas where the slope was too steep for placement. The MDE approved a variance to use

soil cover only on the steep slopes. A coarse sand layer and an additional four feet of soil were compacted above the membrane and the site was vegetated using shallow rooting materials.

1.2 Site Geology

1.1.1 Regional Geologic Setting

The site is located within the Coastal Plain Physiographic Province of Maryland. The landfill overlies the following geologic formations, listed here in order of approximate depth below ground surface, Quaternary Lowland Deposits, the Calvert Formation, the Nanjemoy Formation, the Marlboro Clay, and the Aquia Formation. Below is a description of each strata and its relationship to the site (Marshall, 1982).

- The Lowland Deposits consist of gravel, sand, silts, and clays. The sands and gravels tend to be medium to coarse-grained. Cobbles and boulders are located near the base. Layers and seams of clay exist at various locations and depths; however, they are limited in both lateral and vertical extent. This deposit was mined prior to the construction of the landfill and is therefore not present at most locations. On the eastern side of the site, the thickness of this stratum was found to vary from about 10 to 40 feet.
- The Calvert Formation consists of olive green to olive brown fine-grained silty to clayey sand and silt. The thickness of the Calvert Formation in the vicinity of the site is approximately 40 feet.
- The Nanjemoy Formation is part of the Pamunkey Group and consists of dark green to gray, argillaceous, glauconitic, fine to medium-grained sand and minor gray to pale brown clay. This formation is approximately 80 feet thick.
- The Marlboro Clay Member consists of pink to gray homogenous plastic clay with local lenses of very fine-grained white sand. This formation is approximately 30 feet thick.
- The Aquia Formation consists of dark green to gray-green argillaceous, highly glauconitic, well sorted fine to medium-grained sand. This formation is described as “muddy” sand that contains sandy limestone interbeds and is relatively low in yield in comparison to deeper aquifers in the area. The Aquia Formation is approximately 100 feet thick in the vicinity of the site.

1.2 Hydrogeology

Groundwater flow direction onsite generally mimics the topography, with groundwater flowing towards the surface water features located west and south of the landfill. Although a minor component of groundwater discharges to Ferry Branch, located to the south of the Site, groundwater primarily flows from east to west toward the Patuxent River.

1.3 Semi-Annual Monitoring Event

The 2019 Second Semi-Annual Environmental Monitoring Event for the Sands Road Landfill was conducted on July 31, 2019 and August 01, 2019. Prior to sampling, the six (6) monitoring wells were inspected and the groundwater elevations were measured. All wells were sampled with a submersible pump that was thoroughly decontaminated between sampling locations. The pump intake was set within each well's screened interval, where the well was pumped so as to induce minimum drawdown of the water column. The water purged from each well was discharged downgradient of the wellhead. The discharge water was monitored with a water quality meter, and upon stabilization of the field parameters the sample was collected and then sent to a contracted laboratory to be analyzed for the MDE Tables I and II. The measured field parameters (temperature, specific conductance, turbidity, pH, dissolved oxygen and oxidation reduction potential) from the discharge water, as well as drawdown, for each well were measured and recorded in the field logbook. Three (3) Surface Water samples were collected from locations designated SW-1 through SW-3 as part of this semi-annual monitoring event. Copies of the field logs from the 2019 Second Semi-Annual Environmental Monitoring Event are included in Appendix A of this report.

Quarterly landfill gas (LFG) monitoring for the third and fourth quarters was conducted on August 8, 2019 and October 21, 2019. The Semi-Annual Closed Landfill Inspection was conducted on August 8, 2019.

1.4 Quality Assurance / Quality Control

In addition to the Quality Assurance (QA) and Quality Control (QC) performed by the contract laboratory, blank and duplicate samples were collected to establish QC for sampling and handling techniques. Rinsate blanks were prepared on-site by running deionized water over sampling equipment after decontamination. The rinsate blank and duplicate samples establish QC for sample collection techniques in the field. All samples were analyzed by ALS Global Environmental of Middletown, Pennsylvania. The laboratory analytical data can be found in Appendix B.

There were no VOC detections in the laboratory prepared trip blanks.

Rinsate Blanks were collected on July 31, and August 1, 2019 during the 2019 Second Semi-Annual Monitoring Event. Carbon disulfide, Calcium, Iron, Alkalinity, Hardness, and Total Dissolved Solids were detected above their MDE PQLs in the rinsate blank prepared on July 31, 2019. Calcium, Iron, Total Dissolved Solids, and Turbidity were detected above their MDE PQLs in the rinsate blank prepared on August 01, 2019. It should be noted Carbon Disulfide was not detected in any of the ground water monitoring wells during this semi-annual monitoring event. There were no other VOCs or inorganic parameters detected above their prescribed MDE PQLs in the rinsate blanks.

Detections in the duplicate sample taken from well MW-11 were of similar concentration to the original sample except for Manganese, Total Dissolved Solids, and Turbidity. Manganese was detected at a concentration of 0.032 mg/L in the original and 0.024 mg/L in the duplicate. Total Dissolved Solids were detected at a concentration of 475 mg/L in the original and 521 mg/L in the duplicate. Turbidity was detected at a concentration of 25 mg/L in the original and 15.2 mg/L in the duplicate. QA/QC data is included with the analytical result summary from the event in Appendix B and historical data summaries for each monitoring well.

1.5 Chain of Custody

Each sample bottle collected at the Sands Road Landfill was marked and recorded on the Chain of Custody (COC) with a unique sample designation. Additionally, the sample location, collection time, sample type, and analysis requested were recorded on the COC form. The COC records are established upon receipt of the bottle ware and transported along with the samples through to submission to the lab. This allows for complete sample accountability throughout the process. The samples were preserved as required by the test method and relinquished to the laboratory personnel for transportation to the laboratory. Copies of the COCs are included in Appendix B along with the analytical data for the sampling event.

2.0 GROUNDWATER ELEVATION CONTOUR MAP

A Groundwater Elevation Contour Map was prepared using depth to water measurements from the July 2019 monitoring event and well casing elevation data supplied by Anne Arundel County. The predominant groundwater flow direction is to the west towards the Patuxent River. The Groundwater Elevation Contour Map is included as Figure 2.

3.0 ANALYTICAL RESULTS

In accordance with the Sands Road Park Rubble Landfill Groundwater Monitoring Plan (SCS, 2017), the groundwater samples were analyzed for a specified parameter list, MDE Table I, Volatile Organic Compounds (VOCs) and MDE Table II, Elements and Indicator Parameters. A tabular summary of the analytical results from the semi-annual monitoring event is included in Appendix B with the historical data summary for each well and raw laboratory data from ALS Global Environmental of Middletown, Pennsylvania.

3.1 Volatile Organic Compounds

Each sample collected was analyzed for the list of VOCs on MDE Table I during the 2019 Second Semi-Annual Environmental Monitoring Event. There was one (1) VOC detection above the PQL in groundwater well MW-10 for Methyl- tert-butyl ether at a concentration of 2.5 ug/L. There were no VOC detections above their PQLs in the surface water during the 2019 Second Semi-Annual Environmental Monitoring Event.

3.2 Inorganic Compounds

The laboratory analysis reported one (1) inorganic compound in exceedance of its MCL in one (1) monitoring well during the 2019 Second Semi-Annual Environmental Monitoring Event (Table 1).

Table 1. Inorganics Detected Above the MCL in Ground Water

Parameter	PQL	MCL	MW-7
Arsenic	0.002	0.01	0.057

**All concentrations in mg/L*

There was one inorganic detection above its respective Numerical Criteria for Toxic Substances (NCTS) in the surface water samples taken during the 2019 Second Semi-Annual Monitoring Event (Table 2).

Table 2. Inorganics Above the MCL in Surface Water

Parameter	PQL	NCTS	SW-1
Arsenic	0.002	0.00018	0.0011

**All Concentrations in mg/L*

4.0 STATISTICAL ANALYSIS

In accordance with 40 CFR part 258, the groundwater monitoring data was statistically evaluated using either the Non-Parametric ANOVA or the One-Way ANOVA procedures. Both the Non-Parametric ANOVA (Kruskal-Wallis) and Parametric ANOVA procedures determine if there is a Statistically Significant Increase (SSI) for a particular analyte in the down-gradient wells as compared to the site's background wells, which are hydraulically upgradient of the waste cells. Upgradient well MW-6 was compared to down-gradient wells MW-7, MW-8, MW-9, MW-10 and MW-11. A commercially available software package (*ChemStat*) was utilized to statistically evaluate the data. The statistical calculations performed for this event are detailed in Appendix C.

Prior to running any statistical tests, the data was transformed to its natural logarithm, as is required by the test method. The chemical data were then tested for fit against a normal distribution using the Shapiro-Wilks-Francia Test for Normality. If the data fit a normal distribution, they were then analyzed using the Levene's Test for Equal Variance in order to determine if Parametric ANOVA analysis or Kruskal-Wallis Non-Parametric Analysis was appropriate.

If the Shapiro-Wilks-Francia test determined that the data did violate normal distribution assumptions, the non-parametric ANOVA method was used (Kruskal-Wallis). When the parametric ANOVA procedure was used, all non-detectable data was replaced by the Laboratory Detection Limit. When the non-parametric procedure was used, the non-detects were replaced by ranked values by treating all the non-detects as tied values. The statistical analysis can be found in Appendix C of this report.

The following detections were determined to be SSIs over background during this monitoring event:

- MW-7 showed SSIs for Alkalinity, Arsenic, Chromium, Iron, and Vanadium.
- MW-9 showed SSIs for Nickel, Potassium and Sulfate.
- MW-10 showed SSIs for Alkalinity, Chloride, and Sulfate.
- MW-11 showed SSIs for Alkalinity, Iron, Nickel, Potassium, and Sulfate.

Of the above Sixteen (16) SSIs, only five (5) are 40 CFR 258 Appendix I parameters. Only one (1) SSI was observed above its USEPA MCL during this monitoring period, Arsenic in well MW-7. Nickel was an SSI in monitoring wells MW-9 and MW-11. Arsenic was an SSI in monitoring well MW-7. Vanadium was an SSI in monitoring well MW-7. Chromium was an SSI in well MW-7. In addition to the ANOVA analysis, MES performed Mann-Kendall Upward and Downward Tests for historical Arsenic detections

in MW-7. The Mann-Kendall Trend Test is a non-parametric test for trends in data over time. Mann-Kendall is an intra-well test that is suitable for data that do not follow a normal distribution. Therefore, the Shapiro-Wilks-Francia Test for Normality was run on the data sets prior to running the Mann-Kendall Test to determine if this analysis was appropriate. The data sets were not normally distributed, so both the Mann-Kendall Upward Trend and Downward Trend Tests were conducted. Both the Upward and Downward Trend Tests were run at a 95% confidence level. There was no evidence of an upward or downward trend for historical Arsenic concentrations in well MW-7. The supplemental Mann-Kendall analysis is included in Appendix C.

5.0 LANDFILL GAS MONITORING

There are seven (7) landfill gas (LFG) monitoring probes at the facility. LFG probes GP-3, GP-4, GP-5, GP-6 and GP-7 are constructed as multiple-depth monitoring probes, while LFG probes GP-1 and GP-2 monitor a single depth interval. The locations of these probes are shown on Figure 2. Each LFG probe was monitored with a GEM 2000 Gas Analyzer or Elkins Earthworks Envision Gas Analyzer System (GAS). The GEM/GAS readings were compared to the 40 CFR § 258.23 and COMAR 26.04.07 compliance limits of 25% of the LEL (lower explosive limit of methane) in onsite structures, and 100% of the LEL at the property boundary. There are no structures at the site currently that require monitoring.

Site gas probes were monitored quarterly as is specified in the monitoring plan. Quarterly LFG Monitoring was conducted on August 8, 2019 October 21, 2019. There were no methane detections to report for the third and fourth quarter events. The results from the quarterly LFG events are included in Appendix D.

6.0 SEMI-ANNUAL LANDFILL INSPECTION

In accordance with COMAR 26.04.07.22, a semi-annual closed landfill inspection was conducted on August 8, 2019. Overall, the former rubble landfill was found to be in good condition. The landfill cap and cover were visually inspected and found in good order. Neither Anne Arundel County nor MES have a fail proof recommendation regarding any type of barricade that could not be violated unless the entire site is fenced. Fencing would be prohibitively costly, and the minor damage by ATVs does not support this expense. Any barricades to the power line right of way would need to be mutually acceptable to the power company. MES recommends replacing the missing lock and chain to the main entrance gate leading to the top of the landfill, and that the county continue with its maintenance and mowing plan as established and that any small trees that show up on the cap are removed as needed. The entire 2019 Second Semi-Annual Closed Landfill Inspection report is attached as Appendix E.

7.0 SUMMARY

There was one (1) VOC detection above the PQL in groundwater well MW-10 for Methyl- tert-butyl ether (MTBE) at a concentration of 2.5 ug/L. It should be noted that MTBE has been historically detected in upgradient monitoring well MW-6 and is in the direct flow path of MW-10, making it possible that the MTBE present in the well could be from another source. There were no VOC detections above their PQLs in the surface water during the 2019 Second Semi-Annual Environmental Monitoring Event.

One (1) inorganic parameter was found in exceedance of its MCL during this monitoring event. Arsenic was detected in exceedance of its MCL of 0.01 mg/L in monitoring well MW-7 at a concentration of 0.057 mg/L. Arsenic has been routinely detected in well MW-7 and has historically had MCL exceedances in other site monitoring wells, including upgradient monitoring well MW-6. Given the sporadic presence of Arsenic throughout the sites wells and historical data sets, including the upgradient, background monitoring well, MES recommends no further action other than continued monitoring. In 2010, the Maryland Geologic Survey released a study entitled, "Arsenic in Groundwater in the Coastal Plain Aquifers of Maryland." The study notes naturally occurring arsenic concentrations in the area of the site at levels above its MCL. The study offers several mechanisms for naturally occurring Arsenic mobilization in groundwater. Some of these mechanisms are possible based on the geochemical aquifer conditions observed at MW-7. Given the seasonal reducing conditions observed and the abundant iron oxyhydroxides found throughout the Maryland Coastal Plain, reductive dissolution of Arsenic from these substrates is a possible mobilization mechanism. Analytical ferrous iron data would provide a strong indicator as to whether this reaction is occurring. The elevated hardness of the samples also indicates that there is sufficient calcite in the aquifer matrix, possibly existing as shell material, to provide a substrate for the dissolution of calcite which often contains a reduced form of Arsenic. At this point, a definitive explanation for the Arsenic detections at the site is not available. However, considering the historical detections and exceedances for Arsenic in the hydraulically upgradient well, the presence of Arsenic in the downgradient wells cannot be attributed entirely to the landfill. Additionally, it should be noted that upgradient well MW-6 is cross-gradient to well MW-7. Drilling an upgradient well more directly in line with the flow path of MW-7 may result in a more statistically accurate view of Arsenic SSIs in well MW-7. It is plausible that the SSI is a function of simple spatial heterogeneity that is prevalent in fluvial sediments.

There was one (1) inorganic detection exceeding its NCTS in the surface water samples collected during the 2019 Second Semi-Annual Monitoring Event. Arsenic was detected in exceedance of its NCTS of 0.00018 mg/L in SW-1 at a concentration of 0.0011 mg/L.

It should be noted that SW-1 is located hydraulically upgradient to the sites waste cells directly off of Sands Road. The location of the sample makes it highly unlikely that the Arsenic exceedance is tied to the landfill. Furthermore, as noted above it has been documented that arsenic is naturally occurring in the coastal plain soils and groundwater.

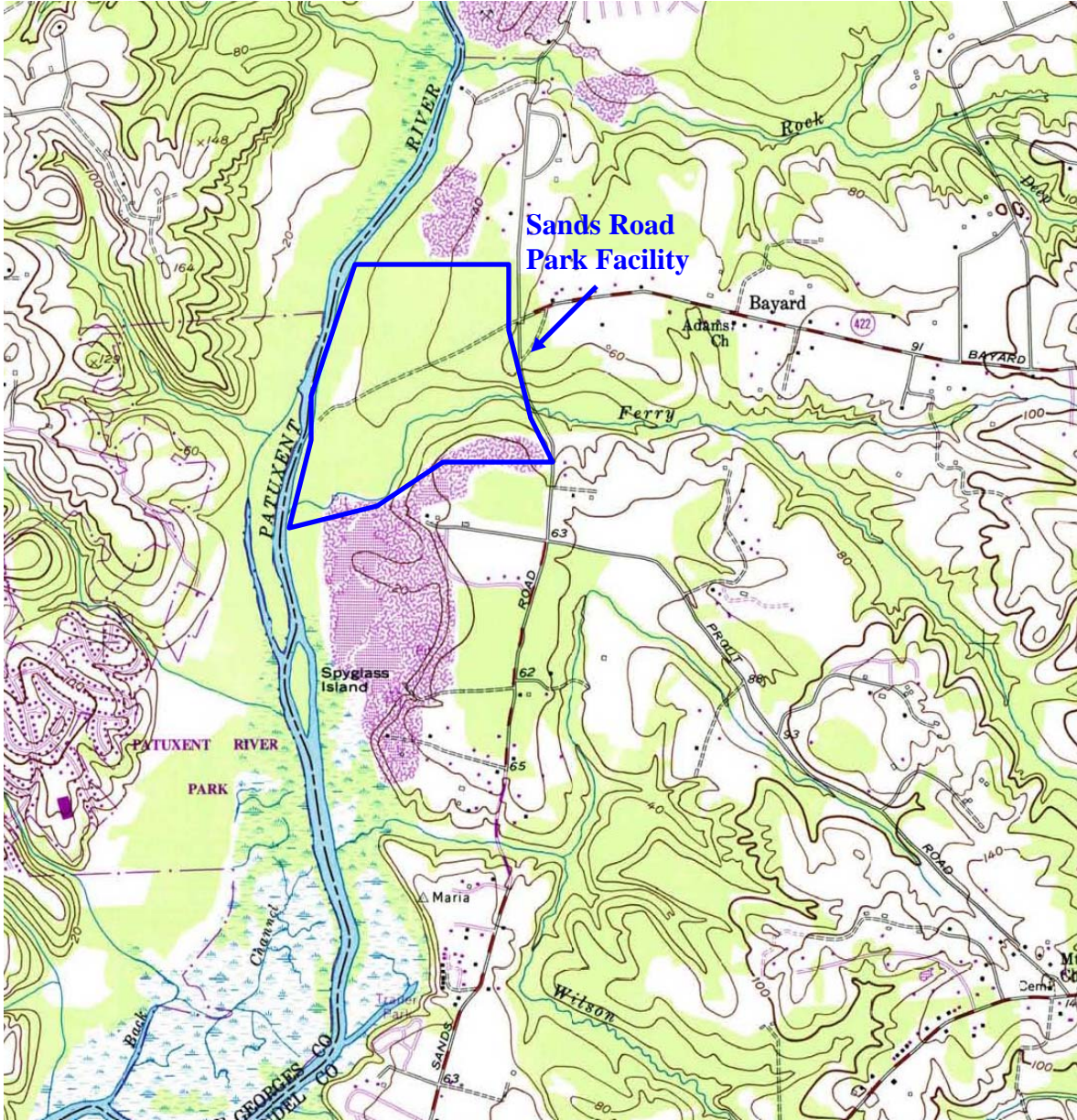
There were no methane exceedances to report for the third and fourth quarter monitoring events.

MES recommends that the Sands Road Rubble Landfill remain in a Detection Monitoring Program.

Figure 1

Site Vicinity Map

Figure 1
Site Location Map
Sands Road Park Closed Rubble Landfill
Lothian, Maryland



Source: USGS Topographic 7.5 Minute Quadrangle - Bristol Quadrangle

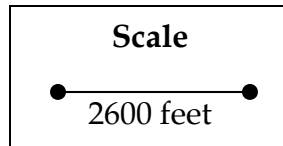
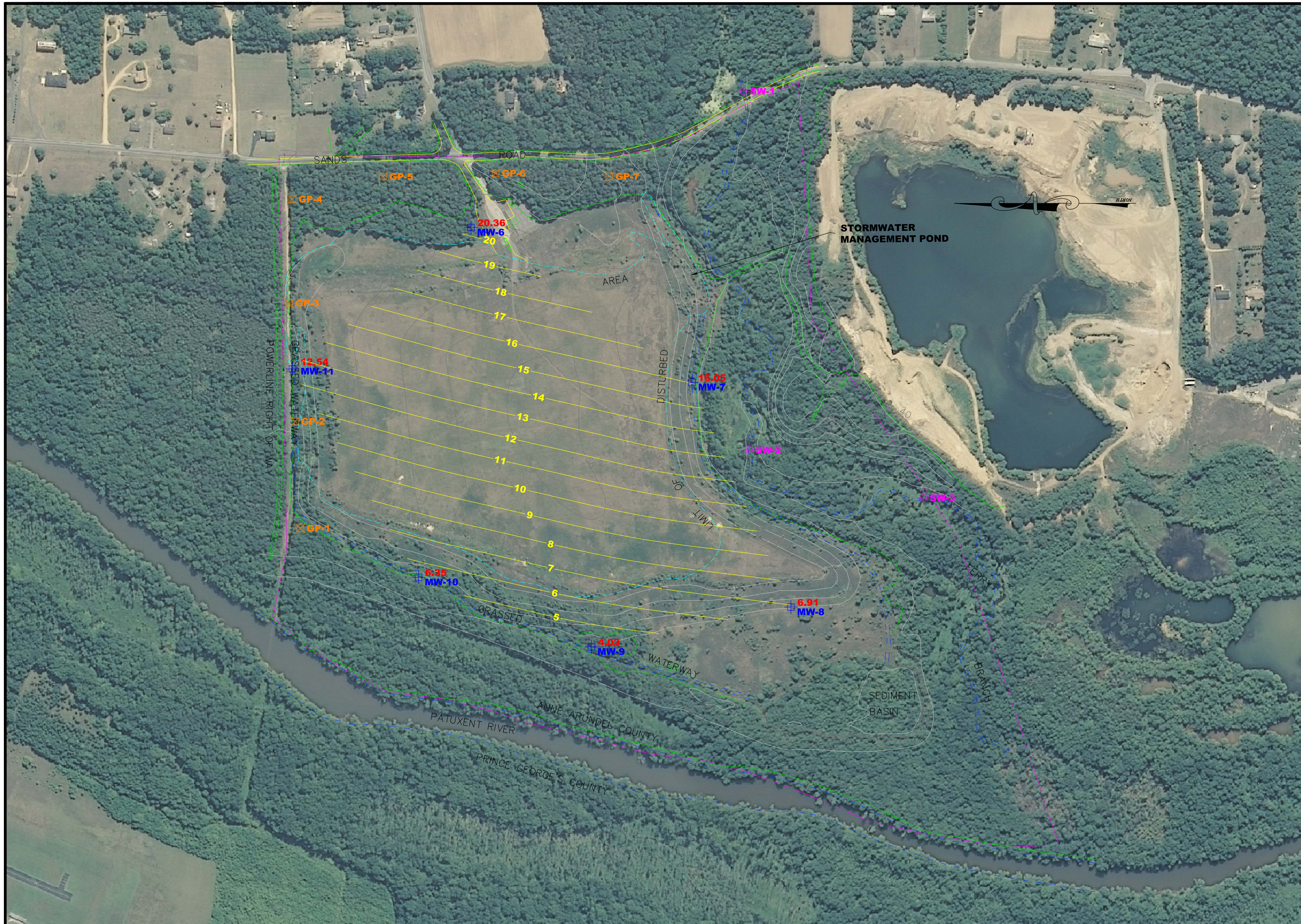


Figure 2

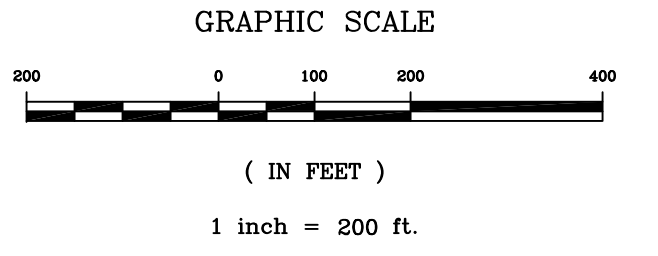
Groundwater Contour Elevation Map



LEGEND

	PROPERTY LINE
	WATER
	MONITORING WELL
	GAS PROBES
	GROUNDWATER CONTOUR ELEVATION
	TOPO CONTOUR ELEVATION
	SURFACE WATER SAMPLING LOCATION

DRAWING SOURCE: SCS ENGINEERS
 1. THIS DRAWING IS A SCANNED AND DIGITIZED IMAGE OF THE "SEDIMENT CONTROL & OPERATIONAL PLANS FOR RUBBLE LANDFILL CLOSING FOR AL-RAY CORPORATION & SUPER CONCRETE CORPORATION", SHEET 1 OF 4, PREPARED BY MARSHALL - MCKEE & ASSOCIATES, HUNT VALLEY, MD, DATED JANUARY 7, 1991, REVISED FEBRUARY 27, 1991.
 2. TOPOGRAPHY FROM AERIAL FLYOVER CONDUCTED BY HARFORD AERIAL SURVEYS, INC. ON SEPTEMBER 5, 1990. IN AREAS WHERE PROPOSED CONTOURS AND EXISTING CONTOURS WERE SHOWN ON THE ORIGINAL DRAWING (SEE NOTE 1) PROPOSED CONTOURS WERE DIGITIZED.
 3. PROPERTY LINE, GAS PROBES, AND GROUNDWATER MONITORING WELLS FROM PARTIAL SURVEY COMPLETED BY AB CONSULTANTS, LANHAM, MD IN JUNE 2008.



**SANDS ROAD PARK CLOSED RUBBLE LANDFILL
 GROUNDWATER CONTOUR MAP JULY 2019
 ANNE ARUNDEL COUNTY, MARYLAND**

NAME

Appendix A

Field Logs

CHAIN OF CUSTODY / SAMPLE INFORMATION FORM

Maryland Environmental Service • 259 Najoles Rd. • Millersville, MD 21108 • (410) 729-8200 • FAX (410) 729-8340

Laboratory: ALS Environmental		Sampler: AD/NZ						
Client Name: Maryland Environmental Service, Attn: Cheryl Griffin		Facility Name: Sands Road Landfill						
Client Address: 259 Najoles Rd, Millersville, MD 21108 410-254-8356		Cost Center / Purpose: 4911-2536 (Surface water Monitoring)						
Invoice To: same								
Turnaround Time: Routine								
Bottle # OR Sample #	Sample ID	Grab or Composite	Container Description/ Preservation Status	Matrix	# of Containers	Date	Time	Analyses Required/Comments
1	SW-1	Grab	1 Liter Plastic Unpreserved	SW	1	7/31/19	16:00	Chloride, TDS, Sulfate, pH, Conductivity, Turbidity
		Grab	1 Liter Plastic Unpreserved	SW	1			Dissolved Metals Sb, As, Be, Ba, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, K, Hg, Ni, Se, Ag, Na, Ti, V, Zn FILTER IN LAB
		Grab	250 ml Plastic H2SO4	SW	1			Ammonia, COD, Nitrate-Nitrite
		Grab	250 ml Plastic HNO3	SW	1			hardness
		Grab	250 ml Plastic Unpreserved	SW	1			Alkalinity
		Grab	40ml Glass VOA Vial, HCL	SW	2			MDE Table I VOC's - 8260 (25 mL purge)
2	SW-2	Grab	Same as number 1	SW	7		11:30	Same as number 1
3	SW-3	Grab	Same as number 1	SW	7			Same as number 1
Transferred by: AMP		Received by: MES Fridge		Date:	Time:	Cooler Receipt Information (LAB USE ONLY)		
Transferred by: Amanda Delap		Received by:		Date:	Time:	Sufficient ice? - Yes/No Temp. = _____ Sample containers properly pres'd? - Yes/No If No, explain		
Transferred by:		Received by:		Date:	Time:	Initials: _____ Date: _____		

CHAIN OF CUSTODY / SAMPLE INFORMATION FORM

Maryland Environmental Service • 259 Najoles Rd. • Millersville, MD 21108 • (410) 729-8200 • FAX (410) 729-8340

Laboratory: ALS Environmental

Sampler: AD/AZ

Client Name: Maryland Environmental Service, Attn: Cheryl Griffin

Facility Name: Sands Road Landfill

Client Address: 259 Najoles Rd, Millersville, MD 21108 410-254-8356

Cost Center / Purpose: 4911-2536 (Groundwater Monitoring)

Invoice To: same

Turnaround Time: Routine

Bottle # OR Sample #	Sample ID	Grab or Composite	Container Description/Status	Preservation	Matrix	# of Containers	Date	Time	Analyses Required/Comments
1	MW-7	Grab	1 Liter Plastic Unpreserved		GW	1	7/31/19	12:14	Chloride, TDS, Sulfate, pH, Conductivity, Turbidity
		Grab	250 ml Plastic H2SO4		GW	1			Ammonia, COD, Nitrate-Nitrite
		Grab	250 ml Plastic HNO3		GW	1			Sb, As, Be, Ba, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, K, Hg, Ni, Se, Ag, Na, Ti, V, Zn & hardness
		Grab	250 ml Plastic Unpreserved		GW	1			Alkalinity
		Grab	40ml Glass VOA Vial, HCL		GW	2			MDE Table I VOC's - 8260 (25 mL purge)
2	MW-10	Grab	Same as number 1		GW	6		14:55	Same as number 1
3	Rinse Blank Grab		↓		DI	↓		15:30	↓
4	Trip Blank Grab		40ml Glass VOA Vial HD		DI	2			MDE Table I VOC's - 8260 (25 mL purge)

Transferred by: Amanda Debye

Received by: MES Fridge

Transferred by:

Received by:

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Cooler Receipt Information (LAB USE ONLY)

Sufficient ice? - Yes/No Temp. =

Sample containers properly pres'd? - Yes/No If No, explain

Initials:

Date:

CHAIN OF CUSTODY / SAMPLE INFORMATION FORM

Maryland Environmental Service • 259 Najoles Rd. • Millersville, MD 21108 • (410) 729-8200 • FAX (410) 729-8340

Laboratory: ALS Environmental

Sampler: ~~SEMP~~ **N2/AD**

Client Name: Maryland Environmental Service, Attn: Cheryl Griffin

Facility Name: Sands Road Landfill

Client Address: 259 Najoles Rd, Millersville, MD 21108 410-254-8356

Cost Center / Purpose: 4911-2536 (Groundwater Monitoring)

Invoice To: same

Turnaround Time: Routine

Bottle # OR Sample #	Sample ID	Grab or Composite	Container Description/ Preservation Status	Matrix	# of Containers	Date	Time	Analyses Required/Comments
1	MW-8	Grab	1 Liter Plastic Unpreserved	GW	1		10:15	Chloride, TDS, Sulfate, pH, Conductivity, Turbidity
		Grab	250 ml Plastic H2SO4	GW	1			Ammonia, COD, Nitrate-Nitrite
		Grab	250 ml Plastic HNO3	GW	1			Sb, As, Be, Ba, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, K, Hg, Ni, Se, Ag, Na, Ti, V, Zn & hardness
		Grab	250 ml Plastic Unpreserved	GW	1			Alkalinity
		Grab	40ml Glass VOA Vial, HCL	GW	2			MDE Table I VOC's - 8260 (25 mL purge)
2	MW-9	Grab	Same as number 1	GW	6		11:03	Same as number 1
3	MW-11			GW	6		12:54	
4	MW-6			GW	6		13:42	
5	Rinse Blank			DI	6		13:45	
6	MW-11 DUP			GW	6		12:57	
7	Trip Blank	Grab	40 ml Glass VOA Vial, HCl	DI	2	8/1/19		MDE Table I VOC's - 8260 (25 ml purge)
Transferred by: AMP		Received by: <i>[Signature]</i>		Date: 8/1/19	Time: 15:00	Cooler Receipt Information (LAB USE ONLY)		
Transferred by: Amanda Petyo		Received by: <i>[Signature]</i>		Date:	Time:	Sufficient ice? - Yes/No Temp. =		
Transferred by:		Received by:		Date:	Time:	Sample containers properly pres'd? - Yes/No If No, explain		
		Received by:		Date:	Time:	Initials: Date:		

CHAIN OF CUSTODY / SAMPLE INFORMATION FORM

Maryland Environmental Service • 259 Najoles Rd. • Millersville, MD 21108 • (410) 729-8200 • FAX (410) 729-8340

Laboratory: ALS Environmental

Sampler: NZ/AD

Client Name: Maryland Environmental Service, Attn: Cheryl Griffin

Facility Name: Sands Road Landfill

Client Address: 259 Najoles Rd, Millersville, MD 21108 410-254-8356

Cost Center / Purpose: 4911-2536 (Surface water Monitoring)

Invoice To: same

Turnaround Time: Routine

Bottle # OR Sample #	Sample ID	Grab or Composite	Container Description/ Preservation Status	Matrix	# of Containers	Date	Time	Analyses Required/Comments
1	SW-3	Grab	1 Liter Plastic Unpreserved	SW	1	8/1/19	9:00	Chloride, TDS, Sulfate, pH, Conductivity, Turbidity
		Grab	1 Liter Plastic Unpreserved	SW	1			Dissolved Metals Sb, As, Be, Ba, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, K, Hg, Ni, Se, Ag, Na, Ti, V, Zn FILTER IN LAB
		Grab	250 ml Plastic H2SO4	SW	1			Ammonia, COD, Nitrate-Nitrite
		Grab	250 ml Plastic HNO3	SW	1			hardness
		Grab	250 ml Plastic Unpreserved	SW	1			Alkalinity
		Grab	40ml Glass VOA Vial, HCL	SW	2			MDE Table I VOC's - 8260 (25 mL purge)
Transferred by: <u>Amanda Debo</u>		Received by: <u>MES Fridge</u>		Date: <u>8/1/19</u>	Time: <u>15:00</u>	Cooler Receipt Information (LAB USE ONLY)		
Transferred by:		Received by:		Date:	Time:	Sufficient ice? - Yes/No Temp. =		
Transferred by:		Received by:		Date:	Time:	Sample containers properly pres'd? - Yes/No If No, explain		

SANDS RD LANDFILL SURFACEWATER MONITORING FIELD NOTES

Samplers: AD/W2 Date: 7/31/19

Weather: sunny Temp: 95 Arrival Time: _____ End Time: _____

Location: **SW-1** Number of bottles Collected: 7
 Field Sample I.D.: SW-1 Sample Time: 16:00

Time	Temp (°C)	pH (pH Units)	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/L)	TDS (g/L)
16:00	25.62	6.87	14	0.170	8.2	7.36	0.111

Stream Condition: clear, good flow stream gauge reading(in/ft) (if any): _____
 *Additional Comments: _____

*Note: Comments to include description of water color, odor, and obstruction of sample location, etc.

Location: **SW-2** Number of bottles Collected: 7
 Field Sample I.D.: SW-2 Sample Time: 11:30

Time	Temp (°C)	pH (pH Units)	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/L)	TDS (g/L)
11:30	25.25	6.44	51	0.180	16.7	8.18	0.117

Stream Condition: good flow Stream gauge reading(in/ft) (if any): _____
 *Additional Comments: _____

*Note: Comments to include description of water color, odor, and obstruction of sample location, etc.

Location: **SW-3**

Field Sample I.D.: SW-3

Sample Time: 9:00

Number of bottles Collected: 7

Time	Temp (°C)	pH (pH Units)	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	D.O. (mg/L)	TDS (g/L)
9:00	22.97	5.10	219	0.202	83.9	18.09	0.137

Stream Condition: cloudy and flow Stream gauge reading(in/ft) (if any): _____

*Additional Comments: rained yesterday

*Note: Comments to include description of water color, odor, and obstruction of sample location, etc.

Project Comments

Note: comments include description of water color, obstructions in accessing sample location, etc.

Comments: _____

**HORIBA
CALIBRATION
LOG**

DATE	TIME	pH	D.O.	SPC	ORP	TEMP	TURBIDITY

SITE: **SANDS ROAD PARK LANDFILL**

Well Tag: AA-81-5565

Well ID: MW-6

Date: 8/1/19 Samplers: NZ/AD

Temperature: 90° Time arrive at well: 13:15

Weather Condition: cloudy Time leave well: 13:50

WELL OBSERVATION

Casing and Lid: okay, damaged, Missing Lock () YES NO COMMENTS: _____

Well Diameter: 2" 3" 4"

HORIBA CALIBRATION LOG

CALIBRATED BY: _____

DATE	TIME	TEMP	pH	ORP	SPC	TURBIDITY	DO

LOW FLOW SAMPLE INFORMATION & RESULTS

* A. Depth to Well Bottom: _____ ft Well Screen Interval _____ ft

B. Depth to Water: 36.24 ft Previous Depth of Well Bottom: 54.6 ft

C. Pump set at: 45 Carbon dioxide (CO₂) Reading _____ PPM

D. Flow Rate (L/Min) 0.400

	Time	Temp (°C)	pH (std. unit)	ORP Mv	SPC (µS) /cm	Turbidity NTU	DO (mg/L)	TDS (g/L)	Depth to Water from TOC (ft)
Initial Reading	13:21	21.02	6.21	145	0.462	1.3	2.20	0.303	36.35
2	13:24	17.50	6.23	143	0.498	1.2	0.56	0.324	36.39
3	13:27	16.40	6.22	147	0.507	1.5	0.43	0.325	36.37
4	13:30	16.63	6.27	149	0.525	1.2	0.41	0.335	36.37
5	13:33	16.42	6.20	153	0.527	2.4	0.40	0.338	36.40
* 6	13:36	_____	_____	_____	_____	_____	_____	_____	_____
7	13:39	16.47	6.17	156	0.526	2.6	0.50	0.357	36.40
8									
9									
10									
11									
12									
13									

Monitor Parameters no less than 15 minutes and/or parameters which stabilized within 10% for three consecutive readings:

Comments: * pump shut off

SAMPLE COLLECTION

Sample Collection Time: 13:42

Duplicate Collection Time: _____

Rinsate Blank Sample Collection Time: 13:43

Sample Method: low flow

Sample Description and Comments: _____

SITE: **SANDS ROAD PARK LANDFILL**

Well Tag: AA-81-5564

Well ID: MW-7

Date: 7/3/19 Samplers: AD/WZ
 Temperature: 85 Time arrive at well: 11:10
 Weather Condition: sunny Time leave well: 12:20

WELL OBSERVATION

Casing and Lid: okay, damaged, Missing Lock () YES () NO COMMENTS: _____
 Well Diameter: 2" 3" 4"

HORIBA CALIBRATION LOG

CALIBRATED BY: AD

DATE	TIME	TEMP	pH	ORP	SPC	TURBIDITY	DO
7/3/19	6:45 am	24.57	3.98	331	4.51	0.1	7.90

LOW FLOW SAMPLE INFORMATION & RESULTS

* A. Depth to Well Bottom: _____ ft Well Screen Interval _____ ft
 B. Depth to Water: 13.15 ft Previous Depth of Well Bottom: 27.4
 C. Pump set at: 20
 D. Flow Rate (L/Min): 0.22 Carbon dioxide (CO₂) Reading _____ PPM

	Time	Temp (°C)	pH (std. unit)	ORP Mv	SPC (µS) / cm	Turbidity NTU	DO (mg/L)	TDS (g/L)	Depth to Water from TOC (ft)
Initial Reading	11:14	24.95	6.32	-77	0.284	94.1	5.84	0.202	13.38
2	11:17	26.70	6.29	-73	0.556	121	1.59	0.357	13.67
3	11:20	18.65	6.30	-81	0.605	109	0.77	0.388	13.78
4	11:23	18.53	6.50	-83	0.618	109	3.83	0.37	13.82
5	11:26	18.25	6.36	-70	0.638	102	1.20	0.411	13.70
6	11:29	17.45	6.30	-76	0.670	77.7	0.49	0.429	13.82
7	11:32	17.48	6.30	-78	0.676	70.6	0.47	0.433	13.83
8	11:35	18.45	6.41	-73	0.687	56.2	7.10	0.439	13.62
9	11:38	18.31	6.32	-72	0.689	55.3	6.52	0.442	13.65
10	11:41	18.56	6.32	-78	0.694	46.6	5.98	0.444	13.55
11	11:44	17.88	6.33	-71	0.708	39.9	0.81	0.453	13.71
12	11:47	18.03	6.32	-78	0.715	34.4	0.35	0.458	13.70
13	11:50	17.66	6.33	-75	0.726	31.0	0.58	0.464	13.75

Monitor Parameters no less than 15 minutes and/or parameters which stabilized within 10% for three consecutive readings:
 Comments: dumped cell at reading 7

SAMPLE COLLECTION

Sample Collection Time: 12:14
 Duplicate Collection Time: _____
 Rinsate Blank Sample Collection Time: _____
 Sample Method: _____
 Sample Description and Comments: _____

LOW FLOW SAMPLE INFORMATION & RESULTS CONTINUED

	Time	Temp (°C)	pH (std. unit)	ORP Mv	SPC (µS) /cm	Turbidity NTU	DO (mg/L)	TDS (g/L)	Depth to Water from TOC (ft)
Initial Reading									
14	11:53	18.01	6.32	-79	0.724	27.8	0.28	0.464	13.65
15	11:56	18.31	6.33	-82	0.724	26.0	0.25	0.463	13.64
16	11:59	17.73	6.35	-77	0.724	22.8	0.80	0.470	13.68
17	12:02	17.81	6.32	-80	0.737	21.7	0.26	0.471	13.70
18	12:05	18.10	6.32	-83	0.735	20.6	0.22	0.470	13.60
19	12:08	18.59	6.32	-85	0.734	19.5	0.20	0.478	13.50
20	12:11	18.74	6.32	-86	0.734	19.5	0.18	0.469	13.48
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									

Monitor Parameters no less than 15 minutes and/or parameters which stabilized within 10% for three consecutive readings

Comments: _____

SAMPLE COLLECTION

Sample Collection Time: 12:14

Duplicate Collection Time: _____

Rinsate Blank Sample Collection Time: _____

Sample Method: _____

Sample Description and Comments: _____

SITE: **SANDS ROAD PARK LANDFILL**

Well Tag: AA-81-5563

Well ID: MW-8

Date: 8/1/19 Samplers: AD/NZ
 Temperature: 80 Time arrive at well: 9:25
 Weather Condition: Sunny Time leave well: 10:20

WELL OBSERVATION

Casing and Lid: Okay, damaged, Missing Lock YES () NO COMMENTS: _____
 Well Diameter: 2" 3" 4"

HORIBA CALIBRATION LOG

CALIBRATED BY: AD

DATE	TIME	TEMP	pH	ORP	SPC	TURBIDITY	DO
8/1/19	6:30am	24.24	3.99	322	4.49	0.0	9.03

LOW FLOW SAMPLE INFORMATION & RESULTS

* A. Depth to Well Bottom: _____ ft Well Screen Interval _____ ft
 B. Depth to Water: 12.39 ft Previous Depth of Well Bottom: 23.67 ft
 C. Pump set at: 20
 D. Flow Rate (L/Min): 0.22 Carbon dioxide (CO₂) Reading _____ PPM

	Time	Temp (°C)	pH (std. unit)	ORP Mv	SPC (µS) / cm	Turbidity NTU	DO (mg/L)	TDS (g/L)	Depth to Water from TOC (ft)
Initial Reading	9:30	17.51	4.60	261	0.090	224	1.17	0.059	12.80
2	9:39	16.71	4.56	281	0.093	174	0.39	0.060	12.90
3	9:42	17.13	4.56	289	0.093	146	0.33	0.061	12.93
4	9:45	16.99	4.59	284	0.094	138	0.89	0.061	13.00
5	9:48	17.39	4.60	288	0.093	117	0.28	0.061	12.86
6	9:51	18.13	4.67	281	0.093	109	2.03	0.060	12.95
7	9:54	18.26	4.61	276	0.092	115	2.01	0.060	12.95
8	9:57	16.70	4.60	267	0.095	50.9	0.31	0.062	13.10
9	10:00	16.78	4.61	265	0.094	46.0	0.24	0.061	13.10
10	10:03	17.29	4.65	263	0.094	48.6	0.25	0.061	13.06
11	10:06	17.64	4.67	261	0.094	50.9	0.19	0.061	13.00
12	10:09	17.35	4.69	260	0.094	51.4	0.19	0.061	13.05
13	10:12	18.05	4.74	257	0.093	50.1	0.19	0.061	13.00

Monitor Parameters no less than 15 minutes and/or parameters which stabilized within 10% for three consecutive readings:
 Comments: _____

SAMPLE COLLECTION

Sample Collection Time: 10:15
 Duplicate Collection Time: _____
 Rinsate Blank Sample Collection Time: _____
 Sample Method: _____
 Sample Description and Comments: _____

SITE: **SANDS ROAD PARK LANDFILL**

Well Tag: AA-81-5562

Well ID: **MW-9**

Date: 8/1/19

Samplers: NZ/AD

Temperature: 85°

Time arrive at well: 10:25

Weather Condition: sunny

Time leave well: 11:10

WELL OBSERVATION

Casing and Lid: okay, damaged, Missing Lock () YES NO COMMENTS: _____
Well Diameter: 2" 3" 4"

HORIBA CALIBRATION LOG

CALIBRATED BY: _____

DATE	TIME	TEMP	pH	ORP	SPC	TURBIDITY	DO
------	------	------	----	-----	-----	-----------	----

LOW FLOW SAMPLE INFORMATION & RESULTS

* A. Depth to Well Bottom: _____ ft Well Screen Interval _____ ft
B. Depth to Water: 13.72 ft Previous Depth of Well Bottom: 20.88 ft
C. Pump set at: 17
D. Flow Rate (L/Min) 0.380 Carbon dioxide (CO₂) Reading _____ PPM

	Time	Temp (°C)	pH (std. unit)	ORP Mv	SPC (µS) /cm	Turbidity NTU	DO (mg/L)	TDS (g/L)	Depth to Water from TOC (ft)
Initial Reading	10:33	17.80	4.82	317	0.245	268	2.40	0.159	14.00
2 *	10:36	17.21	4.81	329	0.249	189	0.53	0.162	14.05
3	10:39	17.17	4.80	332	0.247	98.0	0.54	0.161	14.07
4	10:42	16.78	4.75	340	0.249	86.4	0.45	0.161	14.11
5	10:45	16.60	4.73	339	0.252	67.0	0.48	0.164	14.13
6	10:48	16.40	4.67	344	0.255	46.2	0.36	0.166	14.16
7	10:51	16.39	4.66	344	0.257	33.0	0.34	0.167	14.18
8	10:54	16.28	4.67	337	0.260	17.2	0.32	0.169	14.19
9	10:57	16.26	4.75	325	0.268	13.5	0.29	0.174	14.20
10	11:00	16.33	4.79	318	0.272	7.4	0.28	0.177	14.21
11									
12									
13									

Monitor Parameters no less than 15 minutes and/or parameters which stabilized within 10% for three consecutive readings:

Comments: *dumped cell after reading (red sediment pumped up)

SAMPLE COLLECTION

Sample Collection Time: 11:03
Duplicate Collection Time: _____
Rinsate Blank Sample Collection Time: _____
Sample Method: low flow
Sample Description and Comments: _____

SITE: **SANDS ROAD PARK LANDFILL**

Well Tag: AA-81-5566

Well ID: MW-10

Date: 7/31/19 Samplers: NZ/MD
 Temperature: 95° Time arrive at well: 14:15
 Weather Condition: cloudy Time leave well: 15:00

WELL OBSERVATION

Casing and Lid: okay, damaged, Missing Lock () YES NO COMMENTS: _____
 Well Diameter: 2" 3" 4"

HORIBA CALIBRATION LOG

CALIBRATED BY: _____

DATE	TIME	TEMP	pH	ORP	SPC	TURBIDITY	DO

LOW FLOW SAMPLE INFORMATION & RESULTS

* A. Depth to Well Bottom: _____ ft Well Screen Interval _____ ft
 B. Depth to Water: 22.34 ft Previous Depth of Well Bottom: 39.3 ft
 C. Pump set at: 35
 D. Flow Rate (L/Min) 0.400 Carbon dioxide (CO₂) Reading _____ PPM

	Time	Temp (°C)	pH (std. unit)	ORP Mv	SPC (µS) / cm	Turbidity NTU	DO (mg/L)	TDS (g/L)	Depth to Water from TOC (ft)
Initial Reading	14:22	25.25	6.44	151	0.780	16.7	8.18	0.198	22.43
2	14:25	18.17	6.61	177	0.634	60.6	0.54	0.408	22.46
3	14:28	18.04	6.51	112	0.700	38.1	0.41	0.450	22.40
4	14:31	18.05	6.47	88	0.721	33.2	0.39	0.462	22.40
5	14:34	18.03	6.44	67	0.747	29.0	0.34	0.480	22.40
6	14:37	17.94	6.41	55	0.781	22.5	0.32	0.500	22.40
7	14:40	17.95	6.39	48	0.797	20.2	0.29	0.510	22.40
8	14:43	17.93	6.37	42	0.817	17.6	0.27	0.523	22.40
9	14:46	17.91	6.35	40	0.837	16.2	0.25	0.536	22.40
10	14:49	17.94	6.34	36	0.853	14.0	0.24	0.547	22.40
11	14:52	17.94	6.33	35	0.864	14.6	0.23	0.553	22.40
12									
13									

Monitor Parameters no less than 15 minutes and/or parameters which stabilized within 10% for three consecutive readings:

Comments: tall after casing (subtract 2.6 from all depth to water readings)

SAMPLE COLLECTION

Sample Collection Time: 14:55
 Duplicate Collection Time: _____
 Rinsate Blank Sample Collection Time: _____
 Sample Method: low flow
 Sample Description and Comments: _____

Date: 8/1/19 Well ID: **MW-11**
 Samplers: AD/NZ
 Temperature: 85
 Weather Condition: sunny
 Time arrive at well: 11:18
 Time leave well: 1:00

WELL OBSERVATION

Casing and Lid: okay, damaged, Missing Lock () YES () NO COMMENTS: _____
 Well Diameter: 2" 3" 4"

HORIBA CALIBRATION LOG

CALIBRATED BY: _____

DATE	TIME	TEMP	pH	ORP	SPC	TURBIDITY	DO

LOW FLOW SAMPLE INFORMATION & RESULTS

* A. Depth to Well Bottom: _____ ft Well Screen Interval _____ ft
 B. Depth to Water: 24.60 ft Previous Depth of Well Bottom: 51.9 ft
 C. Pump set at: 45
 D. Flow Rate (L/Min) 0.28

	Time	Temp (°C)	pH (std. unit)	ORP Mv	SPC (µS) / cm	Turbidity NTU	Carbon dioxide (CO ₂) Reading		Depth to Water from TOC (ft)
							DO (mg/L)	TDS (g/L)	
Initial Reading	11:21	22.34	4.34	231	0.276	257	2.86	0.232	25.00
2	11:24	17.81	5.52	44	0.489	331	1.28	0.287	25.15
3	11:27	17.52	5.53	40	0.446	304	0.76	0.298	25.20
4	11:30	17.39	5.56	29	0.457	219	0.52	0.298	25.20
5	11:33	17.14	5.62	26	0.477	163	0.63	0.311	25.25
6	11:36	17.45	5.64	19	0.486	158	0.40	0.316	25.20
7	11:39	17.22	5.67	15	0.500	126	0.57	0.321	25.25
8	11:42	18.03	5.70	9	0.498	104	0.33	0.323	25.05
9	11:45	18.58	5.72	4	0.509	102	0.32	0.326	25.00
10	11:48	18.13	5.82	0	0.520	100	0.35	0.334	25.07
11	11:51	17.79	5.86	-5	0.530	93.1	0.33	0.339	25.11
12	11:54	17.70	5.90	-11	0.539	81.6	0.29	0.345	25.20
13	11:57	17.61	6.02	-18	0.544	292	1.48	0.349	25.25

Monitor Parameters no less than 15 minutes and/or parameters which stabilized within 10% for three consecutive readings:

Comments: dumped cell multiple times; * - pump shut off after
- 3.10 from each depth to water reading

SAMPLE COLLECTION

Sample Collection Time: 12:54
 Duplicate Collection Time: 12:57
 Rinsate Blank Sample Collection Time: _____
 Sample Method: _____
 Sample Description and Comments: _____

LOW FLOW SAMPLE INFORMATION & RESULTS CONTINUED

Initial Reading	Time	Temp (°C)	pH (std. unit)	ORP Mv	SPC (µS) / cm	Turbidity NTU	DO (mg/L)	TDS (g/L)	Depth to Water from TOC (ft)
14	12:00	17.75	5.93	-13	0.538	186	0.35	0.345	25.10
15	12:03	17.54	5.95	-13	0.553	144	0.61	0.355	25.15
16	12:06	18.15	5.96	-16	0.558	119	0.28	0.358	25.10
17	12:09	17.72	5.71	27	0.418	82.3	0.69	0.268	25.20
18	12:12	17.57	5.74	32	0.426	69.1	0.51	0.276	25.20
19	12:15	17.27	5.86	7	0.477	67.2	0.36	0.311	25.25
20	12:18	17.39	5.92	-2	0.514	61.7	0.59	0.330	25.34
21	12:21	17.25	5.93	-7	0.532	55.6	0.27	0.341	25.25
22	12:24	18.34	5.94	-9	0.534	52.4	0.24	0.344	25.08
23	12:27	17.69	5.97	-10	0.564	48.1	0.18	0.361	25.18
24	12:30	17.44	6.04	-23	0.576	38.5	1.00	0.370	25.22
25	12:33	17.37	5.99	-22	0.585	33.3	0.20	0.374	25.26
26	12:36	17.02	5.99	-24	0.596	27.6	0.17	0.380	25.38
27	12:39	18.07	6.07	-31	0.599	23.4	1.39	0.384	25.25
28	12:42	17.87	6.08	-26	0.613	22.5	0.25	0.392	25.27
29	12:45	18.37	6.04	-30	0.616	19.3	0.17	0.395	25.13
30	12:48	18.42	6.05	-33	0.624	17.3	0.18	0.399	25.18
31	12:51	17.48	6.05	-34	0.633	15.0	0.19	0.405	25.20
32									
33									
34									
35									

Monitor Parameters no less than 15 minutes and/or parameters which stabilized within 10% for three consecutive readings

Comments: _____

SAMPLE COLLECTION

Sample Collection Time: 12:54
 Duplicate Collection Time: _____
 Rinsate Blank Sample Collection Time: _____
 Sample Method: _____
 Sample Description and Comments: _____

Appendix B
Analytical Results

Semi-Annual Monitoring Event Table I

Name: Sands Road Rubble Landfill

Sampling Event		7/31/2019				
Number of Sampling Locations:		4				
Parameter Name	Units	MCL	MW-10	MW-7	Rinse Blank	Trip Blank
Acetone	ug/L	–	ND	ND	ND	ND
Acrylonitrile	ug/L	–	ND	ND	ND	ND
Benzene	ug/L	5	ND	ND	ND	ND
Bromochloromethane	ug/L	–	ND	ND	ND	ND
Bromomethane	ug/L	–	ND	ND	ND	ND
2-Butanone (MEK)	ug/L	–	ND	ND	ND	ND
Carbon disulfide	ug/L	–	ND	ND	4	ND
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND
Chlorobenzene	ug/L	100	ND	ND	ND	ND
Chloroethane	ug/L	–	ND	ND	ND	ND
Chloromethane	ug/L	–	ND	ND	0.36 J	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND
Dibromomethane	ug/L	–	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	–	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	–	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	ug/L	–	2.5	0.68 J	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	–	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	–	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND
2-Hexanone	ug/L	–	ND	ND	ND	ND
Iodomethane	ug/L	–	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	–	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND

Sampling Event 7/31/2019

Number of Sampling Locations: 4

Parameter Name	Units	MCL	MW-10	MW-7	Rinse Blank	Trip Blank
1,1,1,2-Tetrachloroethane	ug/L	–	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	–	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	–	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	–	ND	ND	ND	ND
Vinyl acetate	ug/L	–	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND
mp-Xylene	ug/L	–	ND	ND	ND	ND
Xylenes, Total	ug/L	10000	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND
Bromofom	ug/L	80	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	ND

Semi-Annual Monitoring Event Table II

Name: Sands Road Rubble Landfill

Sampling Event		7/31/2019			
Number of Sampling Locations:		3			
Parameter Name	Units	MCL	MW-10	MW-7	Rinse Blank
Antimony, Total	mg/L	0.006	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	0.057	ND
Barium, Total	mg/L	2	0.064	0.021	ND
Beryllium, Total	mg/L	0.004	ND	ND	ND
Cadmium, Total	mg/L	0.005	0.0011 J	ND	ND
Chromium, Total	mg/L	0.1	0.0016 J	0.0038	0.0012 J
Calcium, Total	mg/L	--	137	73.7	0.37
Cobalt, Total	mg/L	--	ND	0.011	ND
Copper, Total	mg/L	1.3	ND	ND	ND
Iron, Total	mg/L	--	0.74	34.4	0.077
Lead, Total	mg/L	0.015	ND	ND	ND
Nickel, Total	mg/L	--	0.0036 J	0.006	ND
Magnesium, Total	mg/L	--	4.3	18.3	ND
Manganese, Total	mg/L	--	0.12	0.45	ND
Mercury, Total	mg/L	0.002	ND	ND	ND
Potassium, Total	mg/L	--	6	5.9	0.051 J
Selenium, Total	mg/L	0.05	ND	ND	ND
Silver, Total	mg/L	--	ND	ND	ND
Sodium, Total	mg/L	--	15.5	21.5	0.14
Thallium, Total	mg/L	0.002	ND	ND	ND
Vanadium, Total	mg/L	--	0.0013 J	0.0029	ND
Zinc, Total	mg/L	--	0.0099	0.012	0.0034 J
Alkalinity, Total	mg/L as CaCO3	--	286 mg/L	285 mg/L	2 mg/L J
Ammonia-N, Low Level	mg/L	--	ND	1.23	ND
Chemical Oxygen Demand (COD)	mg/L	--	15	49	8 J
Chloride	mg/L	--	61.6	40.1	0.19 J
Hardness	mg/L	--	359	259	0.98

Sampling Event 7/31/2019

Number of Sampling Locations: 3

Parameter Name	Units	MCL	MW-10	MW-7	Rinse Blank
Nitrate/Nitrite-N	mg/L	--	ND	ND	ND
pH	SU	--	6.99 pH_Units	6.77 pH_Units	6.68 pH_Units
Specific Conductance	umhos/cm	--	888	697	0.9 J
Sulfate	mg/L	--	93.4	36.9	ND
Total Dissolved Solids	mg/L	--	688	458	139
Turbidity	NTU	--	3.53	143	ND

Semi-Annual Monitoring Event Table I

Name: Sands Road Rubble Landfill

Sampling Event		8/1/2019							
Number of Sampling Locations:		7							
Parameter Name	Units	MCL	MW-11	MW-11 DUP	MW-6	MW-8	MW-9	Rinse Blank	TRIP BLANK
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	1	ND
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	0.22 J	0.22 J	0.22 J	ND	ND	ND	ND
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	--	ND	ND	ND	0.31 J	ND	0.32 J	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	ug/L	--	ND	ND	0.35 J	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Iodomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND

Sampling Event 8/1/2019

Number of Sampling Locations: 7

Parameter Name	Units	MCL	MW-11	MW-11 DUP	MW-6	MW-8	MW-9	Rinse Blank	TRIP BLANK
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	--	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND

Semi-Annual Monitoring Event Table II

Name: Sands Road Rubble Landfill

Sampling Event		8/1/2019						
Number of Sampling Locations:		6						
Parameter Name	Units	MCL	MW-11	MW-11 DUP	MW-6	MW-8	MW-9	Rinse Blank
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	0.0014 J	0.0014 J	ND	0.0039	ND	ND
Barium, Total	mg/L	2	0.081	0.084	0.085	0.038	0.049	ND
Beryllium, Total	mg/L	0.004	0.00049 J	0.00046 J	ND	ND	0.00043 J	ND
Cadmium, Total	mg/L	0.005	0.0033	0.003	0.0025	ND	0.00059 J	ND
Chromium, Total	mg/L	0.1	0.0012 J	0.0012 J	0.00099 J	0.0018 J	0.0017 J	0.0009 J
Calcium, Total	mg/L	--	83.2	84.5	66.2	6.9	17.9	0.15
Cobalt, Total	mg/L	--	0.0023 J	0.0023 J	0.0048 J	ND	0.0052 J	ND
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND
Iron, Total	mg/L	--	42.9	44.8	0.13	4	0.25	0.03 J
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	0.029	0.03	0.0061	0.0038 J	0.025	ND
Magnesium, Total	mg/L	--	2.8	2.9	14.2	3.6	8.6	ND
Manganese, Total	mg/L	--	0.032	0.024	0.8	0.17	0.023	ND
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	8.4	8.5	6.3	1.9	6.2	ND
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	4.7	5	7.9	2.1	16	ND
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	ND	ND	0.0011 J	0.0025	ND	ND
Zinc, Total	mg/L	--	0.0063	0.0058	0.014	0.02	0.019	0.0055 J
Alkalinity, Total	mg/L as CaCO3	--	269 mg/L	267 mg/L	269 mg/L	15 mg/L	32 mg/L	0.9 mg/L J
Ammonia-N, Low Level	mg/L	--	ND	ND	1.77	ND	ND	ND
Chemical Oxygen Demand (COD)	mg/L	--	11 J	9 J	9 J	8 J	13 J	ND
Chloride	mg/L	--	3.8	3.8	12.4	1.8 J	3.2	0.21 J
Hardness	mg/L	--	219	223	224	31.8	80.1	0.44
Nitrate/Nitrite-N	mg/L	--	ND	ND	ND	0.66	0.36	ND
pH	SU	--	6.54 pH_Units	6.57 pH_Units	6.83 pH_Units	5.76 pH_Units	5.72 pH_Units	6.3 pH_Units
Specific Conductance	umhos/cm	--	601	609	532	86	262	2
Sulfate	mg/L	--	95.7	95	34.5	25.9	96.2	ND
Total Dissolved Solids	mg/L	--	475	521	314	214	313	17
Turbidity	NTU	--	25	15.2	0.52	22.8	0.99	0.21

Semi-Annual Surface Water Monitoring Event Table I

Name: Sands Road Rubble Landfill Surface Water

Sample Date:		7/31/2019		
Number of Sampling Locations:		2		
Parameter Name	Units	NCTS	SW-1	SW-2
Acetone	ug/l	--	ND	ND
Acrylonitrile	ug/l	0.51	ND	ND
Benzene	ug/l	22	ND	ND
Bromochloromethane	ug/l	--	ND	ND
Bromomethane	ug/l	--	ND	ND
2-Butanone	ug/l	--	ND	ND
Carbon disulfide	ug/l	--	ND	ND
Carbon tetrachloride	ug/l	2.3	ND	ND
Chlorobenzene	ug/l	130	ND	ND
Chloroethane	ug/l	--	ND	ND
Chloromethane	ug/l	--	ND	ND
1,2-Dibromo-3-chloropropane	ug/l	--	ND	ND
1,2 – Dibromoethane (EDB)	ug/l	--	ND	ND
Dibromomethane	ug/l	--	ND	ND
1,2 – Dichlorobenzene	ug/l	420	ND	ND
1,4 – Dichlorobenzene	ug/l	63	ND	ND
trans-1,4-dichloro-2-butene	ug/l	--	ND	ND
1,1-Dichloroethane	ug/l	--	ND	ND
1,2-Dichloroethane	ug/l	3.8	ND	ND
1,1-Dichloroethene	ug/l	330	ND	ND
cis-1,2-Dichloroethene	ug/l	--	ND	ND
trans-1,2-Dichloroethene	ug/l	--	ND	ND
Methylene chloride	ug/l	46	ND	ND
Methyl t-Butyl Ether	ug/L	--	ND	ND
1,2-Dichloropropane	ug/l	5	ND	ND
Trans-1,3-Dichloropropene	ug/l	--	ND	ND
Cis-1,3-Dichloropropene	ug/l	--	ND	ND
Ethylbenzene	ug/L	530	ND	ND
2-Hexanone	ug/l	--	ND	ND
Iodomethane (Methyl Iodide)	ug/l	--	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND
Styrene	ug/l	--	ND	ND

Sample Date: 7/31/2019
 Number of Sampling Locations: 2

Parameter Name	Units	NCTS	SW-1	SW-2
1,1,1,2-Tetrachloroethane	ug/l	--	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	1.7	ND	ND
Tetrachloroethene	ug/l	6.9	ND	ND
Toluene	ug/l	1300	ND	ND
1,1,1-Trichloroethane	ug/l	200	ND	ND
1,1,2-Trichloroethane	ug/l	5.9	ND	ND
Trichloroethene	ug/l	25	ND	ND
Trichlorofluoromethane	ug/l	--	ND	ND
1,2,3-Trichloropropane	ug/l	--	ND	ND
Vinyl acetate	ug/l	--	ND	ND
Vinyl chloride	ug/l	0.25	ND	ND
o-Xylene	ug/l	--	ND	ND
mp-Xylenes	ug/L	--	ND	ND
Total Xylenes	ug/L	--	ND	ND
Bromodichloromethane	ug/l	80	ND	ND
Dibromochloromethane	ug/L	80	ND	ND
Bromoform	ug/l	80	ND	ND
Chloroform	ug/l	80	ND	ND

Semi-Annual Surface Water Monitoring Event Table II

Name: Sands Road Rubble Landfill Surface Water

Sampling Event		7/31/2019		
Number of Sampling Locations:		2		
Parameter Name	Units	NCTS	SW-1	SW-2
Antimony, Dissolved	mg/L	0.0056	ND	ND
Arsenic, Dissolved	mg/L	0.00018	0.0011 J	ND
Barium, Dissolved	mg/L	1	0.023	0.025
Beryllium, Dissolved	mg/L	0.004	ND	ND
Cadmium, Dissolved	mg/L	0.005	ND	ND
Chromium, Dissolved	mg/L	0.1	0.0015 J	0.0012 J
Calcium, Dissolved	mg/L	--	13.9	14.5
Cobalt, Dissolved	mg/L	--	ND	ND
Copper, Dissolved	mg/L	1.3	ND	ND
Iron, Dissolved	mg/L	--	0.27	0.54
Lead, Dissolved	mg/L	--	ND	ND
Nickel, Dissolved	mg/L	0.61	0.0028 J	0.0027 J
Magnesium, Dissolved	mg/L	--	3.6	3.7
Manganese, Dissolved	mg/L	--	0.039	0.14
Mercury, Dissolved	mg/L	--	ND	ND
Potassium, Dissolved	mg/L	--	2.6	2.5
Selenium, Dissolved	mg/L	0.17	ND	ND
Silver, Dissolved	mg/L	--	ND	ND
Sodium, Dissolved	mg/L	--	11.9	13.9
Thallium, Dissolved	mg/L	0.00024	ND	ND
Vanadium, Dissolved	mg/L	--	ND	ND
Zinc, Dissolved	mg/L	7.4	0.0036 J	0.0037 J
Alkalinity, Total	mg/L	--	16	22
Ammonia-N, Low Level	mg/L	--	ND	ND
Chemical Oxygen Demand (COD)	mg/L	--	10 J	8 J
Chloride	mg/L	--	27.4	28.5
Hardness	mg/L	--	42.7	43.8
Nitrate/Nitrite-N	mg/L	--	0.84	0.76
pH	pH_Units	--	7.05	6.98
Specific Conductance	umhos/cm	--	151	159
Sulfate	mg/L	--	16.4	20.4
Total Dissolved Solids	mg/L	--	208	189

Sampling Event	7/31/2019			
Number of Sampling Locations:	2			
Parameter Name	Units	NCTS	SW-1	SW-2
Turbidity	NTU	--	8.04	14.2

Semi-Annual Surface Water Monitoring Event Table I

Name: Sands Road Rubble Landfill Surface Water

Sample Date:	8/1/2019		
Number of Sampling Locations:	1		
Parameter Name	Units	NCTS	SW-3
Acetone	ug/l	--	3.9
Acrylonitrile	ug/l	0.51	ND
Benzene	ug/l	22	ND
Bromochloromethane	ug/l	--	ND
Bromomethane	ug/l	--	ND
2-Butanone	ug/l	--	ND
Carbon disulfide	ug/l	--	ND
Carbon tetrachloride	ug/l	2.3	ND
Chlorobenzene	ug/l	130	ND
Chloroethane	ug/l	--	ND
Chloromethane	ug/l	--	ND
1,2-Dibromo-3-chloropropane	ug/l	--	ND
1,2 – Dibromoethane (EDB)	ug/l	--	ND
Dibromomethane	ug/l	--	ND
1,2 – Dichlorobenzene	ug/l	420	ND
1,4 – Dichlorobenzene	ug/l	63	ND
trans-1,4-dichloro-2-butene	ug/l	--	ND
1,1-Dichloroethane	ug/l	--	ND
1,2-Dichloroethane	ug/l	3.8	ND
1,1-Dichloroethene	ug/l	330	ND
cis-1,2-Dichloroethene	ug/l	--	ND
trans-1,2-Dichloroethene	ug/l	--	ND
Methylene chloride	ug/l	46	ND
Methyl t-Butyl Ether	ug/L	--	ND
1,2-Dichloropropane	ug/l	5	ND
Trans-1,3-Dichloropropene	ug/l	--	ND
Cis-1,3-Dichloropropene	ug/l	--	ND
Ethylbenzene	ug/L	530	ND
2-Hexanone	ug/l	--	ND
Iodomethane (Methyl Iodide)	ug/l	--	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND
Styrene	ug/l	--	ND

Sample Date: 8/1/2019
 Number of Sampling Locations: 1

Parameter Name	Units	NCTS	SW-3
1,1,1,2-Tetrachloroethane	ug/l	--	ND
1,1,2,2-Tetrachloroethane	ug/l	1.7	ND
Tetrachloroethene	ug/l	6.9	ND
Toluene	ug/l	1300	ND
1,1,1-Trichloroethane	ug/l	200	ND
1,1,2-Trichloroethane	ug/l	5.9	ND
Trichloroethene	ug/l	25	ND
Trichlorofluoromethane	ug/l	--	ND
1,2,3-Trichloropropane	ug/l	--	ND
Vinyl acetate	ug/l	--	ND
Vinyl chloride	ug/l	0.25	ND
o-Xylene	ug/l	--	ND
mp-Xylenes	ug/L	--	ND
Total Xylenes	ug/L	--	ND
Bromodichloromethane	ug/l	80	ND
Dibromochloromethane	ug/L	80	ND
Bromoform	ug/l	80	ND
Chloroform	ug/l	80	ND

Semi-Annual Surface Water Monitoring Event Table II

Name: Sands Road Rubble Landfill Surface Water

Sampling Event		8/1/2019	
Number of Sampling Locations:		1	
Parameter Name	Units	NCTS	SW-3
Antimony, Dissolved	mg/L	0.0056	ND
Arsenic, Dissolved	mg/L	0.00018	ND
Barium, Dissolved	mg/L	1	0.025
Beryllium, Dissolved	mg/L	0.004	ND
Cadmium, Dissolved	mg/L	0.005	ND
Chromium, Dissolved	mg/L	0.1	0.0029
Calcium, Dissolved	mg/L	--	16
Cobalt, Dissolved	mg/L	--	ND
Copper, Dissolved	mg/L	1.3	ND
Iron, Dissolved	mg/L	--	0.13
Lead, Dissolved	mg/L	--	ND
Nickel, Dissolved	mg/L	0.61	0.0026
Magnesium, Dissolved	mg/L	--	3.6
Manganese, Dissolved	mg/L	--	0.0035
Mercury, Dissolved	mg/L	--	ND
Potassium, Dissolved	mg/L	--	3.9
Selenium, Dissolved	mg/L	0.17	ND
Silver, Dissolved	mg/L	--	ND
Sodium, Dissolved	mg/L	--	12.1
Thallium, Dissolved	mg/L	0.00024	ND
Vanadium, Dissolved	mg/L	--	ND
Zinc, Dissolved	mg/L	7.4	0.005
Alkalinity, Total	mg/L	--	23
Ammonia-N, Low Level	mg/L	--	ND
Chemical Oxygen Demand (COD)	mg/L	--	10
Chloride	mg/L	--	27.1
Hardness	mg/L	--	45.7
Nitrate/Nitrite-N	mg/L	--	1.1
pH	pH_Units	--	6.94
Specific Conductance	umhos/cm	--	166
Sulfate	mg/L	--	21.8
Total Dissolved Solids	mg/L	--	183

Sampling Event	8/1/2019		
Number of Sampling Locations:	1		
Parameter Name	Units	NCTS	SW-3
Turbidity	NTU	--	33.6

August 14, 2019

Ms. Cheryl Griffin
Maryland Environmental Services
259 Najoles Road
Millersville, MD 21108

Certificate of Analysis

Project Name:	SANDS ROAD LANDFILL	Workorder:	3049097
Purchase Order:	ENVOPS	Workorder ID:	SANDS ROAD LANDFILL

Dear Ms. Griffin:

Enclosed are the analytical results for samples received by the laboratory on Thursday, August 1, 2019.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vanessa N Badman (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. William Herpel , Maryland Environmental Services-ENVOPS ,
Maryland Environmental Services-LF Data

*This page is included as part of the Analytical Report and
must be retained as a permanent record thereof.*



Mrs. Vanessa N Badman
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3049097001	MW-7	Ground Water	7/31/2019 12:14	8/1/2019 22:18	Collected by Client
3049097002	MW-10	Ground Water	7/31/2019 14:55	8/1/2019 22:18	Collected by Client
3049097003	Rinse Blank	Ground Water	7/31/2019 15:30	8/1/2019 22:18	Collected by Client
3049097004	Trip Blank	Ground Water	8/1/2019 21:00	8/1/2019 21:00	Collected by Client

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SAMPLE SUMMARY

Workorder: 3049097 SANDS ROAD LANDFILL

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097001**

Date Collected: 7/31/2019 12:14

Matrix: Ground Water

Sample ID: **MW-7**

Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 00:40	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 00:40	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 00:40	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 00:40	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 00:40	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 00:40	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 00:40	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 00:40	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 00:40	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 00:40	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 00:40	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 00:40	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 00:40	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 00:40	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 00:40	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 00:40	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 00:40	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 00:40	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 00:40	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 00:40	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 00:40	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 00:40	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 00:40	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 00:40	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 00:40	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 00:40	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 00:40	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 00:40	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 00:40	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 00:40	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 00:40	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 00:40	PDK	A
Methyl t-Butyl Ether	0.68J	J,1	ug/L	1.0	0.33	SW846 8260B		8/6/19 00:40	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 00:40	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 00:40	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 00:40	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097001**

Date Collected: 7/31/2019 12:14

Matrix: Ground Water

Sample ID: **MW-7**

Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 00:40	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 00:40	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 00:40	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 00:40	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 00:40	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 00:40	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 00:40	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 00:40	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 00:40	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 00:40	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 00:40	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 00:40	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 00:40	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 00:40	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	125		%	62 - 133		SW846 8260B		8/6/19 00:40	PDK	A	
4-Bromofluorobenzene (S)	102		%	79 - 114		SW846 8260B		8/6/19 00:40	PDK	A	
Dibromofluoromethane (S)	108		%	78 - 116		SW846 8260B		8/6/19 00:40	PDK	A	
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B		8/6/19 00:40	PDK	A	
WET CHEMISTRY											
Alkalinity, Total	285	4	mg/L	5	0.8	SM2320B-2011		8/6/19 07:23	MBW	C	
Ammonia-N, Low Level	1.23		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	49		mg/L	15	7	EPA 410.4		8/10/19 20:07	AK	E	
Chloride	40.1		mg/L	2.0	0.24	EPA 300.0		8/2/19 06:54	CHW	C	
Nitrate/Nitrite-N	ND		mg/L	0.20	0.057	EPA 300.0		8/2/19 06:54	CHW	C	
pH	6.77	2	pH_Units			S4500HB-11		8/6/19 07:23	MBW	C	
Specific Conductance	697		umhos/cm	1	0.1	SM2510B-2011		8/6/19 07:23	MBW	C	
Sulfate	36.9		mg/L	2.0	0.40	EPA 300.0		8/2/19 06:54	CHW	C	
Total Dissolved Solids	458	3	mg/L	5	5	S2540C-11		8/6/19 12:00	LXW	C	
Turbidity	143		NTU	0.10	0.1	SM2130B-2011		8/2/19 06:29	R2B	C	
METALS											
Hardness	259		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:08	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:08	MSA	F1
Arsenic, Total	0.057		mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:08	MSA	F1
Barium, Total	0.021		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:08	MSA	F1
Beryllium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:08	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097001**

Date Collected: 7/31/2019 12:14

Matrix: Ground Water

Sample ID: **MW-7**

Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Calcium, Total	73.7		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Chromium, Total	0.0038		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Cobalt, Total	0.011		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Iron, Total	34.4		mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Magnesium, Total	18.3		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Manganese, Total	0.45		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:20	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/6/19 10:40 AHI	8/6/19 14:18	AHI	F
Nickel, Total	0.0060		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Potassium, Total	5.9		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Sodium, Total	21.5		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Vanadium, Total	0.0029		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1
Zinc, Total	0.012		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:08	MSA	F1

Vanessa N. Badman
 Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097002**

Date Collected: 7/31/2019 14:55

Matrix: Ground Water

Sample ID: **MW-10**

Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 01:02	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 01:02	PDK	A
Benzene	ND	9	ug/L	1.0	0.23	SW846 8260B		8/6/19 01:02	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:02	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 01:02	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 01:02	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 01:02	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 01:02	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 01:02	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:02	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 01:02	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 01:02	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:02	PDK	A
Chloroform	ND	8	ug/L	1.0	0.21	SW846 8260B		8/6/19 01:02	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:02	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 01:02	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:02	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:02	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 01:02	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 01:02	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 01:02	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:02	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:02	PDK	A
1,1-Dichloroethene	ND	3	ug/L	1.0	0.29	SW846 8260B		8/6/19 01:02	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:02	PDK	A
trans-1,2-Dichloroethene	ND	4	ug/L	1.0	0.26	SW846 8260B		8/6/19 01:02	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 01:02	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:02	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 01:02	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 01:02	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 01:02	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 01:02	PDK	A
Methyl t-Butyl Ether	2.5	5,6,7	ug/L	1.0	0.33	SW846 8260B		8/6/19 01:02	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 01:02	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 01:02	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097002**

Date Collected: 7/31/2019 14:55

Matrix: Ground Water

Sample ID: **MW-10**

Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 01:02	PDK	A	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 01:02	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 01:02	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 01:02	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 01:02	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 01:02	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 01:02	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:02	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:02	PDK	A	
Trichlorofluoromethane	ND	1,2	ug/L	1.0	0.24	SW846 8260B		8/6/19 01:02	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 01:02	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 01:02	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 01:02	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 01:02	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:02	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	126		%	62 - 133		SW846 8260B		8/6/19 01:02	PDK	A	
4-Bromofluorobenzene (S)	102		%	79 - 114		SW846 8260B		8/6/19 01:02	PDK	A	
Dibromofluoromethane (S)	109		%	78 - 116		SW846 8260B		8/6/19 01:02	PDK	A	
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B		8/6/19 01:02	PDK	A	
WET CHEMISTRY											
Alkalinity, Total	286	12	mg/L	5	0.8	SM2320B-2011		8/6/19 07:32	MBW	C	
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	15		mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	61.6		mg/L	2.0	0.24	EPA 300.0			8/2/19 07:10	CHW	C
Nitrate/Nitrite-N	ND		mg/L	0.20	0.057	EPA 300.0			8/2/19 07:10	CHW	C
pH	6.99	10	pH_Units			S4500HB-11			8/6/19 07:32	MBW	C
Specific Conductance	888		umhos/cm	1	0.1	SM2510B-2011			8/6/19 07:32	MBW	C
Sulfate	93.4		mg/L	2.0	0.40	EPA 300.0			8/2/19 07:10	CHW	C
Total Dissolved Solids	688	11	mg/L	5	5	S2540C-11			8/6/19 12:00	LXW	C
Turbidity	3.53		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	359		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:11	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:11	MSA	F1
Arsenic, Total	ND		mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:11	MSA	F1
Barium, Total	0.064		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:11	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097002**

Date Collected: 7/31/2019 14:55

Matrix: Ground Water

Sample ID: **MW-10**

Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Beryllium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Cadmium, Total	0.0011J	J	mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Calcium, Total	137		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Chromium, Total	0.0016J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Cobalt, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Iron, Total	0.74		mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Magnesium, Total	4.3		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Manganese, Total	0.12		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:23	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/6/19 10:40 AHI	8/6/19 14:19	AHI	F
Nickel, Total	0.0036J	J	mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Potassium, Total	6.0		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Sodium, Total	15.5		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Vanadium, Total	0.0013J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1
Zinc, Total	0.0099		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:11	MSA	F1



Mrs. Vanessa N Badman

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097003** Date Collected: 7/31/2019 15:30 Matrix: Ground Water
Sample ID: **Rinse Blank** Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/5/19 23:55	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/5/19 23:55	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/5/19 23:55	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 23:55	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/5/19 23:55	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/5/19 23:55	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/5/19 23:55	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/5/19 23:55	PDK	A
Carbon Disulfide	4.0		ug/L	1.0	0.23	SW846 8260B		8/5/19 23:55	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 23:55	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/5/19 23:55	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/5/19 23:55	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 23:55	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/5/19 23:55	PDK	A
Chloromethane	0.36J	J	ug/L	1.0	0.31	SW846 8260B		8/5/19 23:55	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/5/19 23:55	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 23:55	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 23:55	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/5/19 23:55	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/5/19 23:55	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/5/19 23:55	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 23:55	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 23:55	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 23:55	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 23:55	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/5/19 23:55	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 23:55	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 23:55	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 23:55	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/5/19 23:55	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/5/19 23:55	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/5/19 23:55	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/5/19 23:55	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/5/19 23:55	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/5/19 23:55	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 23:55	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097003**
Sample ID: **Rinse Blank**

Date Collected: 7/31/2019 15:30 Matrix: Ground Water
Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/5/19 23:55	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/5/19 23:55	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/5/19 23:55	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/5/19 23:55	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/5/19 23:55	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/5/19 23:55	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 23:55	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 23:55	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 23:55	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 23:55	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/5/19 23:55	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/5/19 23:55	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/5/19 23:55	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 23:55	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	124		%	62 - 133		SW846 8260B			8/5/19 23:55	PDK	A
4-Bromofluorobenzene (S)	102		%	79 - 114		SW846 8260B			8/5/19 23:55	PDK	A
Dibromofluoromethane (S)	107		%	78 - 116		SW846 8260B			8/5/19 23:55	PDK	A
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B			8/5/19 23:55	PDK	A
WET CHEMISTRY											
Alkalinity, Total	2J	J,4	mg/L	5	0.8	SM2320B-2011			8/6/19 07:42	MBW	C
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	8J	J	mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	0.19J	J	mg/L	1.0	0.12	EPA 300.0			8/2/19 07:26	CHW	C
Nitrate/Nitrite-N	ND		mg/L	0.10	0.028	EPA 300.0			8/2/19 07:26	CHW	C
pH	6.68	2	pH_Units			S4500HB-11			8/6/19 07:42	MBW	C
Specific Conductance	0.9J	J	umhos/cm	1	0.1	SM2510B-2011			8/6/19 07:42	MBW	C
Sulfate	ND		mg/L	1.0	0.20	EPA 300.0			8/2/19 07:26	CHW	C
Total Dissolved Solids	139	3	mg/L	5	5	S2540C-11			8/6/19 12:00	LXW	C
Turbidity	ND		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	0.98		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:15	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:15	MSA	F1
Arsenic, Total	ND		mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:15	MSA	F1
Barium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:15	MSA	F1
Beryllium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10	AHI	8/7/19 11:15	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097003**
Sample ID: **Rinse Blank**

Date Collected: 7/31/2019 15:30 Matrix: Ground Water
Date Received: 8/1/2019 22:18

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Calcium, Total	0.37		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Chromium, Total	0.0012J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Cobalt, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Iron, Total	0.077		mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Magnesium, Total	ND		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Manganese, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:28	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/6/19 10:40 AHI	8/6/19 14:21	AHI	F
Nickel, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Potassium, Total	0.051J	J	mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Sodium, Total	0.14		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Vanadium, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1
Zinc, Total	0.0034J	J	mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 11:15	MSA	F1


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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097004**

Date Collected: 8/1/2019 21:00

Matrix: Ground Water

Sample ID: **Trip Blank**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/5/19 22:24	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/5/19 22:24	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/5/19 22:24	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 22:24	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/5/19 22:24	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/5/19 22:24	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/5/19 22:24	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/5/19 22:24	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/5/19 22:24	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 22:24	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/5/19 22:24	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/5/19 22:24	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 22:24	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/5/19 22:24	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 22:24	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/5/19 22:24	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 22:24	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 22:24	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/5/19 22:24	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/5/19 22:24	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/5/19 22:24	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 22:24	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 22:24	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 22:24	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 22:24	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/5/19 22:24	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 22:24	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 22:24	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 22:24	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/5/19 22:24	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/5/19 22:24	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/5/19 22:24	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/5/19 22:24	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/5/19 22:24	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/5/19 22:24	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 22:24	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID: **3049097004**

Date Collected: 8/1/2019 21:00

Matrix: Ground Water

Sample ID: **Trip Blank**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/5/19 22:24	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/5/19 22:24	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/5/19 22:24	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/5/19 22:24	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/5/19 22:24	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/5/19 22:24	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 22:24	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 22:24	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 22:24	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 22:24	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/5/19 22:24	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/5/19 22:24	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/5/19 22:24	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 22:24	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	120		%	62 - 133		SW846 8260B			8/5/19 22:24	PDK	A
4-Bromofluorobenzene (S)	103		%	79 - 114		SW846 8260B			8/5/19 22:24	PDK	A
Dibromofluoromethane (S)	106		%	78 - 116		SW846 8260B			8/5/19 22:24	PDK	A
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B			8/5/19 22:24	PDK	A



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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3049097001	1	MW-7	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049097001	2	MW-7	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049097001	3	MW-7	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049097001	4	MW-7	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3049097002	1	MW-10	SW846 8260B	Trichlorofluoromethane
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Trichlorofluoromethane. The % Recovery was reported as 146 and the control limits were 38 to 123.				
3049097002	2	MW-10	SW846 8260B	Trichlorofluoromethane
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Trichlorofluoromethane. The % Recovery was reported as 130 and the control limits were 38 to 123.				
3049097002	3	MW-10	SW846 8260B	1,1-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,1-Dichloroethene. The % Recovery was reported as 136 and the control limits were 63 to 128.				
3049097002	4	MW-10	SW846 8260B	trans-1,2-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte trans-1,2-Dichloroethene. The % Recovery was reported as 129 and the control limits were 71 to 122.				
3049097002	5	MW-10	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049097002	6	MW-10	SW846 8260B	Methyl t-Butyl Ether
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 123 and the control limits were 69 to 115.				
3049097002	7	MW-10	SW846 8260B	Methyl t-Butyl Ether
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049097002	8	MW-10	SW846 8260B	Chloroform
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Chloroform. The % Recovery was reported as 125 and the control limits were 78 to 122.				
3049097002	9	MW-10	SW846 8260B	Benzene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Benzene. The % Recovery was reported as 129 and the control limits were 80 to 124.				
3049097002	10	MW-10	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049097002	11	MW-10	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				

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ANALYTICAL RESULTS

Workorder: 3049097 SANDS ROAD LANDFILL

3049097002	12	MW-10	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3049097003	1	Rinse Blank	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049097003	2	Rinse Blank	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049097003	3	Rinse Blank	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049097003	4	Rinse Blank	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3049097004	1	Trip Blank	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3049097 SANDS ROAD LANDFILL

Lab ID	Sample ID	Analysis Method	Prep Method
3049097001	MW-7	EPA 300.0	
3049097001	MW-7	EPA 410.4	
3049097001	MW-7	S2540C-11	
3049097001	MW-7	S4500HB-11	
3049097001	MW-7	SM 4500-NH3G	S4500NH3B
3049097001	MW-7	SM2130B-2011	
3049097001	MW-7	SM2320B-2011	
3049097001	MW-7	SM2510B-2011	
3049097001	MW-7	SW846 6020A	SW846 3015
3049097001	MW-7	SW846 7470A	SW846 7470A
3049097001	MW-7	SW846 8260B	
3049097002	MW-10	EPA 300.0	
3049097002	MW-10	EPA 410.4	
3049097002	MW-10	S2540C-11	
3049097002	MW-10	S4500HB-11	
3049097002	MW-10	SM 4500-NH3G	S4500NH3B
3049097002	MW-10	SM2130B-2011	
3049097002	MW-10	SM2320B-2011	
3049097002	MW-10	SM2510B-2011	
3049097002	MW-10	SW846 6020A	SW846 3015
3049097002	MW-10	SW846 7470A	SW846 7470A
3049097002	MW-10	SW846 8260B	
3049097003	Rinse Blank	EPA 300.0	
3049097003	Rinse Blank	EPA 410.4	
3049097003	Rinse Blank	S2540C-11	
3049097003	Rinse Blank	S4500HB-11	
3049097003	Rinse Blank	SM 4500-NH3G	S4500NH3B
3049097003	Rinse Blank	SM2130B-2011	
3049097003	Rinse Blank	SM2320B-2011	
3049097003	Rinse Blank	SM2510B-2011	
3049097003	Rinse Blank	SW846 6020A	SW846 3015
3049097003	Rinse Blank	SW846 7470A	SW846 7470A
3049097003	Rinse Blank	SW846 8260B	
3049097004	Trip Blank	SW846 8260B	

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CHAIN OF CUSTODY / SAMPLE INFORMATION FORM

Maryland Environmental Service • 259 Najoles Rd. • Millersville, MD 21108 • (410) 729-8200 • FAX (410) 729-8340



Laboratory: ALS Environmental
Sampler: AD/A2
Client Name: Maryland Environmental Service, Attn: Cheryl Griffin
Facility Name: Sands Road Landfill
Client Address: 259 Najoles Rd, Millersville, MD 21108 410-254-8356
Cost Center / Purpose: 4911-2536 (Groundwater Monitoring)
Invoice To: same
Turnaround Time: Routine

Bottle # OR Sample #	Sample ID	Grab or Composite	Container Descriptive Status	Preservation	Matrix	# of Containers	Date	Time	Analyses Required/Comments
1	MW-7	Grab	1 Liter Plastic Unpreserved		GW	1	7/31/19	12:14	Chloride, TDS, Sulfate, pH, Conductivity, Turbidity
		Grab	250 ml Plastic H2SO4		GW	1			Ammonia, COD, Nitrate-Nitrite
		Grab	250 ml Plastic HNO3		GW	1			Sb, As, Be, Ba, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, K, Hg, Ni, Se, Ag, Na, Ti, V, Zn & hardness
		Grab	250 ml Plastic Unpreserved		GW	1			Alkalinity
		Grab	40ml Glass VOA Vial, HCL		GW	2			MDE Table I VOC's - 8260 (25 mL purge)
2	MW-10	Grab	Same as number 1		GW	6		14:55	Same as number 1
3	Ring Blank	Grab			DI	1		15:30	
4	Trip Blank	Grab	40ml Glass VOA Vial		DI	2			MDE Table I VOC's - (2x20/25 mL purge)

Transferred by: Amanda DeBorja
Received by: Cheryl Griffin
Received by: [Signature]
Received by: [Signature]

Received by: MES Fridge
Received by: [Signature]
Received by: [Signature]

Transferred by: [Signature]
Received by: [Signature]
Received by: [Signature]

Cooler Receipt Information (LAB USE ONLY)
 Sufficient ice? - Yes/No
 Sample containers properly pres'd? - Yes/No
 Temp. = 0.5
 If No, explain

Initials: [Signature] [Signature]
Date: 8/1/19 2100
Date: 8/1/19 2100



301 Fulling Mill Road
 Middletown, PA 17057
 P: (717) 944-5541
 F: (717) 944-1430

Condition of Sample Receipt Form

Client: MES Work Order #: 3049097 Initials: DN Date: 8/2

- | | | | |
|--|-------------|------------|-----------|
| 1. Were airbills / tracking numbers present and recorded?..... | <u>NONE</u> | YES | NO |
| Tracking number: _____ | | | |
| 2. Are Custody Seals on shipping containers intact?..... | NONE | <u>YES</u> | NO |
| 3. Are Custody Seals on sample containers intact?..... | NONE | <u>YES</u> | NO |
| 4. Is there a COC (Chain-of-Custody) present?..... | | <u>YES</u> | NO |
| 5. Are the COC and bottle labels complete, legible and in agreement?..... | | <u>YES</u> | NO |
| 5a. Does the COC contain sample locations?..... | | <u>YES</u> | NO |
| 5b. Does the COC contain date and time of sample collection for all samples?..... | | <u>YES</u> | NO |
| 5c. Does the COC contain sample collectors name?..... | | <u>YES</u> | NO |
| 5d. Does the COC note the type(s) of preservation for all bottles?..... | | <u>YES</u> | NO |
| 5e. Does the COC note the number of bottles submitted for each sample?..... | | <u>YES</u> | NO |
| 5f. Does the COC note the type of sample, composite or grab?..... | | <u>YES</u> | NO |
| 5g. Does the COC note the matrix of the sample(s)?..... | | <u>YES</u> | NO |
| 6. Are all aqueous samples requiring preservation preserved correctly? | N/A | <u>YES</u> | NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... | | <u>YES</u> | NO |
| 8. Are all samples within holding times for the requested analyses?..... | | <u>YES</u> | NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... | | <u>YES</u> | NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... | <u>N/A</u> | YES | NO |
| 11. Were the samples received on ice?..... | | <u>YES</u> | NO |
| 12. Were sample temperatures measured at 0.0-6.0°C..... | | <u>YES</u> | NO |
| 13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... | | YES | <u>NO</u> |
| 13a. Are the samples required for SDWA compliance reporting?..... | N/A | YES | NO |
| 13b. Did the client provide a SDWA PWS ID#?..... | N/A | YES | NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... | N/A | YES | NO |
| 13d. Did the client provide the SDWA sample location ID/Description?..... | N/A | YES | NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... | N/A | YES | NO |

Cooler #: _____

Temperature (°C): 0 _____

Thermometer ID: 525 _____

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

August 16, 2019

Ms. Cheryl Griffin
Maryland Environmental Services
259 Najoles Road
Millersville, MD 21108

Certificate of Analysis

Project Name:	SANDS ROAD LANDFILL	Workorder:	3049101
Purchase Order:	ENVOPS	Workorder ID:	SANDS ROAD LANDFILL

Dear Ms. Griffin:

Enclosed are the analytical results for samples received by the laboratory on Thursday, August 1, 2019.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vanessa N Badman (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. William Herpel , Maryland Environmental Services-ENVOPS ,
Maryland Environmental Services-LF Data

*This page is included as part of the Analytical Report and
must be retained as a permanent record thereof.*



Mrs. Vanessa N Badman
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3049101001	MW-8	Ground Water	8/1/2019 10:15	8/1/2019 21:00	Collected by Client
3049101002	MW-9	Ground Water	8/1/2019 11:03	8/1/2019 21:00	Collected by Client
3049101003	MW-11	Ground Water	8/1/2019 12:54	8/1/2019 21:00	Collected by Client
3049101004	MW-6	Ground Water	8/1/2019 13:42	8/1/2019 21:00	Collected by Client
3049101005	Rinse Blank	Ground Water	8/1/2019 13:45	8/1/2019 21:00	Collected by Client
3049101006	MW-11 DUP	Ground Water	8/1/2019 12:57	8/1/2019 21:00	Collected by Client
3049101007	TRIP BLANK	Ground Water	8/1/2019 21:00	8/1/2019 21:00	Collected by Client

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SAMPLE SUMMARY

Workorder: 3049101 SANDS ROAD LANDFILL

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101001**

Date Collected: 8/1/2019 10:15

Matrix: Ground Water

Sample ID: **MW-8**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 02:10	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 02:10	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:10	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:10	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 02:10	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 02:10	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 02:10	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 02:10	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:10	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:10	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 02:10	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 02:10	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:10	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 02:10	PDK	A
Chloromethane	0.31J	J	ug/L	1.0	0.31	SW846 8260B		8/6/19 02:10	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 02:10	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:10	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:10	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 02:10	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 02:10	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 02:10	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:10	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:10	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:10	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:10	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 02:10	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:10	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:10	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:10	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 02:10	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 02:10	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 02:10	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/6/19 02:10	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 02:10	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 02:10	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:10	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101001**

Date Collected: 8/1/2019 10:15

Matrix: Ground Water

Sample ID: **MW-8**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 02:10	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 02:10	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 02:10	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:10	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 02:10	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 02:10	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:10	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:10	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:10	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:10	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 02:10	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 02:10	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 02:10	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:10	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	127		%	62 - 133		SW846 8260B			8/6/19 02:10	PDK	A
4-Bromofluorobenzene (S)	100		%	79 - 114		SW846 8260B			8/6/19 02:10	PDK	A
Dibromofluoromethane (S)	108		%	78 - 116		SW846 8260B			8/6/19 02:10	PDK	A
Toluene-d8 (S)	102		%	76 - 127		SW846 8260B			8/6/19 02:10	PDK	A
WET CHEMISTRY											
Alkalinity, Total	15	5	mg/L	5	0.8	SM2320B-2011			8/6/19 08:41	MBW	C
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	8J	J	mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	1.8J	J	mg/L	2.0	0.24	EPA 300.0			8/2/19 09:38	CHW	C
Nitrate/Nitrite-N	0.66		mg/L	0.20	0.057	EPA 300.0			8/2/19 09:38	CHW	C
pH	5.76	3	pH_Units			S4500HB-11			8/6/19 08:41	MBW	C
Specific Conductance	86		umhos/cm	1	0.1	SM2510B-2011			8/6/19 08:41	MBW	C
Sulfate	25.9		mg/L	2.0	0.40	EPA 300.0			8/2/19 09:38	CHW	C
Total Dissolved Solids	214	6,7	mg/L	5	5	S2540C-11			8/13/19 12:27	D1C	C
Turbidity	22.8		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	31.8		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:20	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:20	MSA	F1
Arsenic, Total	0.0039		mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:20	MSA	F1
Barium, Total	0.038		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:20	MSA	F1
Beryllium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:20	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101001**

Date Collected: 8/1/2019 10:15

Matrix: Ground Water

Sample ID: **MW-8**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Calcium, Total	6.9		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Chromium, Total	0.0018J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Cobalt, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Iron, Total	4.0		mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Magnesium, Total	3.6		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Manganese, Total	0.17		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:31	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/7/19 11:05 AHI	8/7/19 15:43	AHI	F
Nickel, Total	0.0038J	J	mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Potassium, Total	1.9		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Sodium, Total	2.1		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Vanadium, Total	0.0025		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1
Zinc, Total	0.020		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:20	MSA	F1

Vanessa N. Badman
 Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101002**

Date Collected: 8/1/2019 11:03

Matrix: Ground Water

Sample ID: **MW-9**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 02:33	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 02:33	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:33	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:33	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 02:33	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 02:33	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 02:33	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 02:33	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:33	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:33	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 02:33	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 02:33	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:33	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 02:33	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:33	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 02:33	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:33	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:33	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 02:33	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 02:33	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 02:33	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:33	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:33	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:33	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:33	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 02:33	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:33	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:33	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:33	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 02:33	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 02:33	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 02:33	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/6/19 02:33	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 02:33	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 02:33	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:33	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101002**

Date Collected: 8/1/2019 11:03

Matrix: Ground Water

Sample ID: **MW-9**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 02:33	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 02:33	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 02:33	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:33	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 02:33	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 02:33	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:33	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:33	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:33	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:33	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 02:33	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 02:33	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 02:33	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:33	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	127		%	62 - 133		SW846 8260B			8/6/19 02:33	PDK	A
4-Bromofluorobenzene (S)	101		%	79 - 114		SW846 8260B			8/6/19 02:33	PDK	A
Dibromofluoromethane (S)	109		%	78 - 116		SW846 8260B			8/6/19 02:33	PDK	A
Toluene-d8 (S)	102		%	76 - 127		SW846 8260B			8/6/19 02:33	PDK	A
WET CHEMISTRY											
Alkalinity, Total	32	5	mg/L	5	0.8	SM2320B-2011			8/6/19 08:48	MBW	C
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	13J	J	mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	3.2		mg/L	2.0	0.24	EPA 300.0			8/2/19 09:54	CHW	C
Nitrate/Nitrite-N	0.36		mg/L	0.20	0.057	EPA 300.0			8/2/19 09:54	CHW	C
pH	5.72	3	pH_Units			S4500HB-11			8/6/19 08:48	MBW	C
Specific Conductance	262		umhos/cm	1	0.1	SM2510B-2011			8/6/19 08:48	MBW	C
Sulfate	96.2		mg/L	2.0	0.40	EPA 300.0			8/2/19 09:54	CHW	C
Total Dissolved Solids	313	4	mg/L	5	5	S2540C-11			8/6/19 13:40	LXW	C
Turbidity	0.99		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	80.1		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:24	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:24	MSA	F1
Arsenic, Total	ND		mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:24	MSA	F1
Barium, Total	0.049		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:24	MSA	F1
Beryllium, Total	0.00043J	J	mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:24	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101002**

Date Collected: 8/1/2019 11:03

Matrix: Ground Water

Sample ID: **MW-9**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Total	0.00059J	J	mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Calcium, Total	17.9		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Chromium, Total	0.0017J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Cobalt, Total	0.0052J	J	mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Iron, Total	0.25		mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Magnesium, Total	8.6		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Manganese, Total	0.023		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:34	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/7/19 11:05 AHI	8/7/19 15:44	AHI	F
Nickel, Total	0.025		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Potassium, Total	6.2		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Sodium, Total	16.0		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Vanadium, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1
Zinc, Total	0.019		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:24	MSA	F1

Vanessa N. Badman
 Mrs. Vanessa N Badman
 Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101003**

Date Collected: 8/1/2019 12:54

Matrix: Ground Water

Sample ID: **MW-11**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 02:55	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 02:55	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:55	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:55	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 02:55	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 02:55	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 02:55	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 02:55	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:55	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:55	PDK	A
Chlorobenzene	0.22J	J	ug/L	1.0	0.19	SW846 8260B		8/6/19 02:55	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 02:55	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:55	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 02:55	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:55	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 02:55	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:55	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:55	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 02:55	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 02:55	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 02:55	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:55	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:55	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:55	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 02:55	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 02:55	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:55	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 02:55	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:55	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 02:55	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 02:55	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 02:55	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/6/19 02:55	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 02:55	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 02:55	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:55	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101003**

Date Collected: 8/1/2019 12:54

Matrix: Ground Water

Sample ID: **MW-11**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 02:55	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 02:55	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 02:55	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 02:55	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 02:55	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 02:55	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:55	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 02:55	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 02:55	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 02:55	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 02:55	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 02:55	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 02:55	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 02:55	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	129		%	62 - 133		SW846 8260B			8/6/19 02:55	PDK	A
4-Bromofluorobenzene (S)	102		%	79 - 114		SW846 8260B			8/6/19 02:55	PDK	A
Dibromofluoromethane (S)	108		%	78 - 116		SW846 8260B			8/6/19 02:55	PDK	A
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B			8/6/19 02:55	PDK	A
WET CHEMISTRY											
Alkalinity, Total	269	5	mg/L	5	0.8	SM2320B-2011			8/6/19 08:58	MBW	C
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	11J	J	mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	3.8		mg/L	2.0	0.24	EPA 300.0			8/2/19 10:10	CHW	C
Nitrate/Nitrite-N	ND		mg/L	0.20	0.057	EPA 300.0			8/2/19 10:10	CHW	C
pH	6.54	3	pH_Units			S4500HB-11			8/6/19 08:58	MBW	C
Specific Conductance	601		umhos/cm	1	0.1	SM2510B-2011			8/6/19 08:58	MBW	C
Sulfate	95.7		mg/L	2.0	0.40	EPA 300.0			8/2/19 10:10	CHW	C
Total Dissolved Solids	475	4	mg/L	5	5	S2540C-11			8/6/19 13:40	LXW	C
Turbidity	25.0		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	219		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:27	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:27	MSA	F1
Arsenic, Total	0.0014J	J	mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:27	MSA	F1
Barium, Total	0.081		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:27	MSA	F1
Beryllium, Total	0.00049J	J	mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:27	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101003**


Date Collected: 8/1/2019 12:54

Matrix: Ground Water

Sample ID: **MW-11**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Total	0.0033		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Calcium, Total	83.2		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Chromium, Total	0.0012J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Cobalt, Total	0.0023J	J	mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Iron, Total	42.9		mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Magnesium, Total	2.8		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Manganese, Total	0.032		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:38	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/7/19 11:05 AHI	8/7/19 15:45	AHI	F
Nickel, Total	0.029		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Potassium, Total	8.4		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Sodium, Total	4.7		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Vanadium, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1
Zinc, Total	0.0063		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:27	MSA	F1



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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101004**

Date Collected: 8/1/2019 13:42

Matrix: Ground Water

Sample ID: **MW-6**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 03:18	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 03:18	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 03:18	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 03:18	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 03:18	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 03:18	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 03:18	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 03:18	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 03:18	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 03:18	PDK	A
Chlorobenzene	0.22J	J	ug/L	1.0	0.19	SW846 8260B		8/6/19 03:18	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 03:18	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 03:18	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 03:18	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 03:18	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 03:18	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 03:18	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 03:18	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 03:18	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 03:18	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 03:18	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 03:18	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 03:18	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 03:18	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 03:18	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 03:18	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 03:18	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 03:18	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 03:18	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 03:18	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 03:18	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 03:18	PDK	A
Methyl t-Butyl Ether	0.35J	J,1	ug/L	1.0	0.33	SW846 8260B		8/6/19 03:18	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 03:18	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 03:18	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 03:18	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101004**

Date Collected: 8/1/2019 13:42

Matrix: Ground Water

Sample ID: **MW-6**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 03:18	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 03:18	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 03:18	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 03:18	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 03:18	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 03:18	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 03:18	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 03:18	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 03:18	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 03:18	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 03:18	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 03:18	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 03:18	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 03:18	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	128		%	62 - 133		SW846 8260B			8/6/19 03:18	PDK	A
4-Bromofluorobenzene (S)	102		%	79 - 114		SW846 8260B			8/6/19 03:18	PDK	A
Dibromofluoromethane (S)	108		%	78 - 116		SW846 8260B			8/6/19 03:18	PDK	A
Toluene-d8 (S)	102		%	76 - 127		SW846 8260B			8/6/19 03:18	PDK	A
WET CHEMISTRY											
Alkalinity, Total	269	5	mg/L	5	0.8	SM2320B-2011			8/6/19 09:08	MBW	C
Ammonia-N, Low Level	1.77		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	9J	J	mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	12.4		mg/L	2.0	0.24	EPA 300.0			8/2/19 10:27	CHW	C
Nitrate/Nitrite-N	ND		mg/L	0.20	0.057	EPA 300.0			8/2/19 10:27	CHW	C
pH	6.83	3	pH_Units			S4500HB-11			8/6/19 09:08	MBW	C
Specific Conductance	532		umhos/cm	1	0.1	SM2510B-2011			8/6/19 09:08	MBW	C
Sulfate	34.5		mg/L	2.0	0.40	EPA 300.0			8/2/19 10:27	CHW	C
Total Dissolved Solids	314	4	mg/L	5	5	S2540C-11			8/6/19 13:40	LXW	C
Turbidity	0.52		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	224		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:30	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:30	MSA	F1
Arsenic, Total	ND		mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:30	MSA	F1
Barium, Total	0.085		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:30	MSA	F1
Beryllium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:30	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101004**


Date Collected: 8/1/2019 13:42

Matrix: Ground Water

Sample ID: **MW-6**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Total	0.0025		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Calcium, Total	66.2		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Chromium, Total	0.00099J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Cobalt, Total	0.0048J	J	mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Iron, Total	0.13		mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Magnesium, Total	14.2		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Manganese, Total	0.80		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:41	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/7/19 11:05 AHI	8/7/19 15:47	AHI	F
Nickel, Total	0.0061		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Potassium, Total	6.3		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Sodium, Total	7.9		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Vanadium, Total	0.0011J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1
Zinc, Total	0.014		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:30	MSA	F1



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101005** Date Collected: 8/1/2019 13:45 Matrix: Ground Water
Sample ID: **Rinse Blank** Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 00:17	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 00:17	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 00:17	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 00:17	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 00:17	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 00:17	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 00:17	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 00:17	PDK	A
Carbon Disulfide	1.0		ug/L	1.0	0.23	SW846 8260B		8/6/19 00:17	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 00:17	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 00:17	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 00:17	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 00:17	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 00:17	PDK	A
Chloromethane	0.32J	J	ug/L	1.0	0.31	SW846 8260B		8/6/19 00:17	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 00:17	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 00:17	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 00:17	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 00:17	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 00:17	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 00:17	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 00:17	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 00:17	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 00:17	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 00:17	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 00:17	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 00:17	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 00:17	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 00:17	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 00:17	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 00:17	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 00:17	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/6/19 00:17	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 00:17	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 00:17	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 00:17	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101005** Date Collected: 8/1/2019 13:45 Matrix: Ground Water
Sample ID: **Rinse Blank** Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 00:17	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 00:17	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 00:17	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 00:17	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 00:17	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 00:17	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 00:17	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 00:17	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 00:17	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 00:17	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 00:17	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 00:17	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 00:17	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 00:17	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	125		%	62 - 133		SW846 8260B		8/6/19 00:17	PDK	A	
4-Bromofluorobenzene (S)	102		%	79 - 114		SW846 8260B		8/6/19 00:17	PDK	A	
Dibromofluoromethane (S)	107		%	78 - 116		SW846 8260B		8/6/19 00:17	PDK	A	
Toluene-d8 (S)	103		%	76 - 127		SW846 8260B		8/6/19 00:17	PDK	A	
WET CHEMISTRY											
Alkalinity, Total	0.9J	J,4	mg/L	5	0.8	SM2320B-2011		8/6/19 09:17	MBW	C	
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	ND		mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	0.21J	J	mg/L	1.0	0.12	EPA 300.0			8/2/19 10:43	CHW	C
Nitrate/Nitrite-N	ND		mg/L	0.10	0.028	EPA 300.0			8/2/19 10:43	CHW	C
pH	6.30	2	pH_Units			S4500HB-11			8/6/19 09:17	MBW	C
Specific Conductance	2		umhos/cm	1	0.1	SM2510B-2011			8/6/19 09:17	MBW	C
Sulfate	ND		mg/L	1.0	0.20	EPA 300.0			8/2/19 10:43	CHW	C
Total Dissolved Solids	17	3	mg/L	5	5	S2540C-11			8/6/19 13:40	LXW	C
Turbidity	0.21		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	0.44		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:34	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:34	MSA	F1
Arsenic, Total	ND		mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:34	MSA	F1
Barium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:34	MSA	F1
Beryllium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:34	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101005**

Date Collected: 8/1/2019 13:45

Matrix: Ground Water

Sample ID: **Rinse Blank**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Calcium, Total	0.15		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Chromium, Total	0.00090J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Cobalt, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Iron, Total	0.030J	J	mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Magnesium, Total	ND		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Manganese, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:54	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/7/19 11:05 AHI	8/7/19 15:48	AHI	F
Nickel, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Potassium, Total	ND		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Sodium, Total	ND		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Vanadium, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1
Zinc, Total	0.0055J	J	mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:34	MSA	F1

Vanessa N. Badman
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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101006**
Sample ID: **MW-11 DUP**

Date Collected: 8/1/2019 12:57 Matrix: Ground Water
Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 03:41	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 03:41	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 03:41	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 03:41	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 03:41	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 03:41	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 03:41	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 03:41	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 03:41	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 03:41	PDK	A
Chlorobenzene	0.22J	J	ug/L	1.0	0.19	SW846 8260B		8/6/19 03:41	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 03:41	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 03:41	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 03:41	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 03:41	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 03:41	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 03:41	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 03:41	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 03:41	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 03:41	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 03:41	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 03:41	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 03:41	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 03:41	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 03:41	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 03:41	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 03:41	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 03:41	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 03:41	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 03:41	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 03:41	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 03:41	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/6/19 03:41	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 03:41	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 03:41	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 03:41	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101006**

Date Collected: 8/1/2019 12:57

Matrix: Ground Water

Sample ID: **MW-11 DUP**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 03:41	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 03:41	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 03:41	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 03:41	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 03:41	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 03:41	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 03:41	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 03:41	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 03:41	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 03:41	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 03:41	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 03:41	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 03:41	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 03:41	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	127		%	62 - 133		SW846 8260B			8/6/19 03:41	PDK	A
4-Bromofluorobenzene (S)	100		%	79 - 114		SW846 8260B			8/6/19 03:41	PDK	A
Dibromofluoromethane (S)	109		%	78 - 116		SW846 8260B			8/6/19 03:41	PDK	A
Toluene-d8 (S)	102		%	76 - 127		SW846 8260B			8/6/19 03:41	PDK	A
WET CHEMISTRY											
Alkalinity, Total	267	5	mg/L	5	0.8	SM2320B-2011			8/6/19 09:26	MBW	C
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	9J	J	mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	3.8		mg/L	2.0	0.24	EPA 300.0			8/2/19 11:00	CHW	C
Nitrate/Nitrite-N	ND		mg/L	0.20	0.057	EPA 300.0			8/2/19 11:00	CHW	C
pH	6.57	3	pH_Units			S4500HB-11			8/6/19 09:26	MBW	C
Specific Conductance	609		umhos/cm	1	0.1	SM2510B-2011			8/6/19 09:26	MBW	C
Sulfate	95.0		mg/L	2.0	0.40	EPA 300.0			8/2/19 11:00	CHW	C
Total Dissolved Solids	521	4	mg/L	5	5	S2540C-11			8/7/19 13:30	D1C	C
Turbidity	15.2		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	223		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:37	MSA	F1
Antimony, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:37	MSA	F1
Arsenic, Total	0.0014J	J	mg/L	0.0033	0.0011	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:37	MSA	F1
Barium, Total	0.084		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:37	MSA	F1
Beryllium, Total	0.00046J	J	mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:37	MSA	F1

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101006**


Date Collected: 8/1/2019 12:57

Matrix: Ground Water

Sample ID: **MW-11 DUP**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Total	0.0030		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Calcium, Total	84.5		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Chromium, Total	0.0012J	J	mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Cobalt, Total	0.0023J	J	mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Copper, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Iron, Total	44.8		mg/L	0.056	0.019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Lead, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Magnesium, Total	2.9		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Manganese, Total	0.024		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/8/19 15:57	MSA	F1
Mercury, Total	ND		mg/L	0.00050	0.00017	SW846 7470A	8/7/19 11:05 AHI	8/7/19 16:05	AHI	F
Nickel, Total	0.030		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Potassium, Total	8.5		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Selenium, Total	ND		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Silver, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Sodium, Total	5.0		mg/L	0.11	0.037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Thallium, Total	ND		mg/L	0.0011	0.00037	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Vanadium, Total	ND		mg/L	0.0022	0.00074	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1
Zinc, Total	0.0058		mg/L	0.0056	0.0019	SW846 6020A	8/5/19 18:10 AHI	8/7/19 10:37	MSA	F1



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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101007**
Sample ID: **TRIP BLANK**

Date Collected: 8/1/2019 21:00 Matrix: Ground Water
Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/5/19 22:47	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/5/19 22:47	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/5/19 22:47	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 22:47	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/5/19 22:47	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/5/19 22:47	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/5/19 22:47	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/5/19 22:47	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/5/19 22:47	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 22:47	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/5/19 22:47	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/5/19 22:47	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 22:47	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/5/19 22:47	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 22:47	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/5/19 22:47	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 22:47	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 22:47	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/5/19 22:47	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/5/19 22:47	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/5/19 22:47	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 22:47	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 22:47	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 22:47	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/5/19 22:47	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/5/19 22:47	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 22:47	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/5/19 22:47	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 22:47	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/5/19 22:47	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/5/19 22:47	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/5/19 22:47	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/5/19 22:47	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/5/19 22:47	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/5/19 22:47	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 22:47	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID: **3049101007**
Sample ID: **TRIP BLANK**

Date Collected: 8/1/2019 21:00 Matrix: Ground Water
Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/5/19 22:47	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/5/19 22:47	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/5/19 22:47	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/5/19 22:47	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/5/19 22:47	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/5/19 22:47	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 22:47	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/5/19 22:47	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/5/19 22:47	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/5/19 22:47	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/5/19 22:47	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/5/19 22:47	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/5/19 22:47	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/5/19 22:47	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	120		%	62 - 133		SW846 8260B		8/5/19 22:47	PDK	A	
4-Bromofluorobenzene (S)	103		%	79 - 114		SW846 8260B		8/5/19 22:47	PDK	A	
Dibromofluoromethane (S)	107		%	78 - 116		SW846 8260B		8/5/19 22:47	PDK	A	
Toluene-d8 (S)	104		%	76 - 127		SW846 8260B		8/5/19 22:47	PDK	A	



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3049101001	1	MW-8	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049101001	3	MW-8	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049101001	5	MW-8	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3049101001	6	MW-8	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
3049101001	7	MW-8	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049101002	1	MW-9	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049101002	3	MW-9	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049101002	4	MW-9	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049101002	5	MW-9	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3049101003	1	MW-11	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049101003	3	MW-11	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049101003	4	MW-11	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049101003	5	MW-11	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3049101004	1	MW-6	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049101004	3	MW-6	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049101004	4	MW-6	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049101004	5	MW-6	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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ANALYTICAL RESULTS

Workorder: 3049101 SANDS ROAD LANDFILL

3049101005	1	Rinse Blank	SW846 8260B	Methyl t-Butyl Ether
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The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.

3049101005	2	Rinse Blank	S4500HB-11	pH
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The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.

3049101005	3	Rinse Blank	S2540C-11	Total Dissolved Solids
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The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.

3049101005	4	Rinse Blank	SM2320B-2011	Alkalinity, Total
-------------------	---	-------------	--------------	-------------------

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO₃/L.

3049101006	1	MW-11 DUP	SW846 8260B	Methyl t-Butyl Ether
-------------------	---	-----------	-------------	----------------------

The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.

3049101006	3	MW-11 DUP	S4500HB-11	pH
-------------------	---	-----------	------------	----

The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.

3049101006	4	MW-11 DUP	S2540C-11	Total Dissolved Solids
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The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.

3049101006	5	MW-11 DUP	SM2320B-2011	Alkalinity, Total
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The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO₃/L.

3049101007	1	TRIP BLANK	SW846 8260B	Methyl t-Butyl Ether
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The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID	Sample ID	Analysis Method	Prep Method
3049101001	MW-8	EPA 300.0	
3049101001	MW-8	EPA 410.4	
3049101001	MW-8	S2540C-11	
3049101001	MW-8	S4500HB-11	
3049101001	MW-8	SM 4500-NH3G	S4500NH3B
3049101001	MW-8	SM2130B-2011	
3049101001	MW-8	SM2320B-2011	
3049101001	MW-8	SM2510B-2011	
3049101001	MW-8	SW846 6020A	SW846 3015
3049101001	MW-8	SW846 7470A	SW846 7470A
3049101001	MW-8	SW846 8260B	
3049101002	MW-9	EPA 300.0	
3049101002	MW-9	EPA 410.4	
3049101002	MW-9	S2540C-11	
3049101002	MW-9	S4500HB-11	
3049101002	MW-9	SM 4500-NH3G	S4500NH3B
3049101002	MW-9	SM2130B-2011	
3049101002	MW-9	SM2320B-2011	
3049101002	MW-9	SM2510B-2011	
3049101002	MW-9	SW846 6020A	SW846 3015
3049101002	MW-9	SW846 7470A	SW846 7470A
3049101002	MW-9	SW846 8260B	
3049101003	MW-11	EPA 300.0	
3049101003	MW-11	EPA 410.4	
3049101003	MW-11	S2540C-11	
3049101003	MW-11	S4500HB-11	
3049101003	MW-11	SM 4500-NH3G	S4500NH3B
3049101003	MW-11	SM2130B-2011	
3049101003	MW-11	SM2320B-2011	
3049101003	MW-11	SM2510B-2011	
3049101003	MW-11	SW846 6020A	SW846 3015
3049101003	MW-11	SW846 7470A	SW846 7470A
3049101003	MW-11	SW846 8260B	
3049101004	MW-6	EPA 300.0	
3049101004	MW-6	EPA 410.4	
3049101004	MW-6	S2540C-11	
3049101004	MW-6	S4500HB-11	
3049101004	MW-6	SM 4500-NH3G	S4500NH3B
3049101004	MW-6	SM2130B-2011	
3049101004	MW-6	SM2320B-2011	
3049101004	MW-6	SM2510B-2011	
3049101004	MW-6	SW846 6020A	SW846 3015
3049101004	MW-6	SW846 7470A	SW846 7470A
3049101004	MW-6	SW846 8260B	
3049101005	Rinse Blank	EPA 300.0	
3049101005	Rinse Blank	EPA 410.4	

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3049101 SANDS ROAD LANDFILL

Lab ID	Sample ID	Analysis Method	Prep Method
3049101005	Rinse Blank	S2540C-11	
3049101005	Rinse Blank	S4500HB-11	
3049101005	Rinse Blank	SM 4500-NH3G	S4500NH3B
3049101005	Rinse Blank	SM2130B-2011	
3049101005	Rinse Blank	SM2320B-2011	
3049101005	Rinse Blank	SM2510B-2011	
3049101005	Rinse Blank	SW846 6020A	SW846 3015
3049101005	Rinse Blank	SW846 7470A	SW846 7470A
3049101005	Rinse Blank	SW846 8260B	
3049101006	MW-11 DUP	EPA 300.0	
3049101006	MW-11 DUP	EPA 410.4	
3049101006	MW-11 DUP	S2540C-11	
3049101006	MW-11 DUP	S4500HB-11	
3049101006	MW-11 DUP	SM 4500-NH3G	S4500NH3B
3049101006	MW-11 DUP	SM2130B-2011	
3049101006	MW-11 DUP	SM2320B-2011	
3049101006	MW-11 DUP	SM2510B-2011	
3049101006	MW-11 DUP	SW846 6020A	SW846 3015
3049101006	MW-11 DUP	SW846 7470A	SW846 7470A
3049101006	MW-11 DUP	SW846 8260B	
3049101007	TRIP BLANK	SW846 8260B	

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CHAIN OF CUSTODY / SAMPLE INFORMATION FORM

Maryland Environmental Service • 259 Najoles Rd. • Millersville, MD 21108 • (410) 729-8200 • FAX (410) 729-8340

Laboratory: ALS Environmental

Client Name: Maryland Environmental Service, Attn: Cheryl Griffin

Client Address: 259 Najoles Rd, Millersville, MD 21108 410-254-8356

Invoice To: same

Sampler: ~~66AMP~~ N2/AD

Facility Name: Sands Road Landfill

Cost Center / Purpose: 4911-2536 (Groundwater Monitoring)

Turnaround Time: Routine

Bottle # OR Sample #	Sample ID	Grab or Composite	Container Description/ Preservation Status	Matrix	# of Containers	Date	Time	Analyses Required/Comments
1	MW-8	Grab	1 Liter Plastic Unpreserved	GW	1		10:15	Chloride, TDS, Sulfate, pH, Conductivity, Turbidity
		Grab	250 ml Plastic H2SO4	GW	1			Ammonia, COD, Nitrate-Nitrite
		Grab	250 ml Plastic HNO3	GW	1			Sb, As, Be, Ba, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, K, Hg, Ni, Se, Ag, Na, Ti, V, Zn & hardness
		Grab	250 ml Plastic Unpreserved	GW	1			Alkalinity
2	MW-9	Grab	40ml Glass VOA Vial, HCL	GW	2			MDE Table I VOC's - 8260 (25 mL purge)
		Grab	Same as number 1	GW	6		11:03	Same as number 1
3	MW-11			GW	6		12:54	
4	MW-6			GW	6		13:42	
5	Rinse Blank			DI	6		13:45	
6	MW-11 DUP			GW	6		12:57	
7	Trip Blank	Grab	40 ml Glass VOA Vial, HCl	DI	2	8/1/19		MDE Table I VOC's - 8260 (25 ml purge)
Transferred by: AMP		Received by: MES Fridge		Date	Time			
Transferred by: AMP		Received by: AMP		8/1/19	15:00	Cooler Receipt Information (LAB USE ONLY)		
Transferred by: AMP		Received by: AMP		8/1/19	15:08	Sufficient ice? - Yes/No Temp. = <u>0</u> <u>55</u>		
		Received by: AMP		Date	Time	Sample containers properly pres'd? - Yes/No If No, explain		

Initials: _____ Date: _____

Page 8 of 1

8/1/19 7:00

COMMON COURTESY COURIER

ALS COURIER





301 Fulling Mill Road
 Middletown, PA 17057
 P: (717) 944-5541
 F: (717) 944-1430

Condition of Sample Receipt Form

Client: MES Work Order #: 3049101 Initials: DN Date: 8/2

- | | | | |
|--|-------------|------------|-----------|
| 1. Were airbills / tracking numbers present and recorded?..... | <u>NONE</u> | YES | NO |
| Tracking number: _____ | | | |
| 2. Are Custody Seals on shipping containers intact?..... | NONE | <u>YES</u> | NO |
| 3. Are Custody Seals on sample containers intact?..... | NONE | <u>YES</u> | NO |
| 4. Is there a COC (Chain-of-Custody) present?..... | | <u>YES</u> | NO |
| 5. Are the COC and bottle labels complete, legible and in agreement?..... | | <u>YES</u> | NO |
| 5a. Does the COC contain sample locations?..... | | <u>YES</u> | NO |
| 5b. Does the COC contain date and time of sample collection for all samples?..... | | <u>YES</u> | NO |
| 5c. Does the COC contain sample collectors name?..... | | <u>YES</u> | NO |
| 5d. Does the COC note the type(s) of preservation for all bottles?..... | | <u>YES</u> | NO |
| 5e. Does the COC note the number of bottles submitted for each sample?..... | | <u>YES</u> | NO |
| 5f. Does the COC note the type of sample, composite or grab?..... | | <u>YES</u> | NO |
| 5g. Does the COC note the matrix of the sample(s)?..... | | <u>YES</u> | NO |
| 6. Are all aqueous samples requiring preservation preserved correctly?..... | N/A | <u>YES</u> | NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... | | <u>YES</u> | NO |
| 8. Are all samples within holding times for the requested analyses?..... | | <u>YES</u> | NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... | | <u>YES</u> | NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... | <u>N/A</u> | YES | NO |
| 11. Were the samples received on ice?..... | | <u>YES</u> | NO |
| 12. Were sample temperatures measured at 0.0-6.0°C..... | | <u>YES</u> | NO |
| 13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... | | YES | <u>NO</u> |
| 13a. Are the samples required for SDWA compliance reporting?..... | N/A | YES | NO |
| 13b. Did the client provide a SDWA PWS ID#?..... | N/A | YES | NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... | N/A | YES | NO |
| 13d. Did the client provide the SDWA sample location ID/Description?..... | N/A | YES | NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... | N/A | YES | NO |

Cooler #: _____
 Temperature (°C): 0
 Thermometer ID: 525
 Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):



August 15, 2019

Maryland Environmental Services-LF Data
Maryland Environmental Services
259 Najoles Road
Millersville, MD 21108

Certificate of Analysis

Project Name:	SANDS ROAD LANDFILL	Workorder:	3049100
Purchase Order:	ENVOPS	Workorder ID:	SANDS ROAD LANDFILL

Dear Maryland Services-LF Data:

Enclosed are the analytical results for samples received by the laboratory on Thursday, August 1, 2019.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vanessa N Badman (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. William Herpel , Maryland Environmental Services-ENVOPS ,
Ms. Cheryl Griffin

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Mrs. Vanessa N Badman
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3049100 SANDS ROAD LANDFILL

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3049100001	SW-1	Water	7/31/2019 16:00	8/1/2019 21:00	Collected by Client
3049100002	SW-2	Water	7/31/2019 11:30	8/1/2019 21:00	Collected by Client

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SAMPLE SUMMARY

Workorder: 3049100 SANDS ROAD LANDFILL

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 3049100 SANDS ROAD LANDFILL

Lab ID: **3049100001**

Date Collected: 7/31/2019 16:00

Matrix: Water

Sample ID: **SW-1**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 01:25	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 01:25	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 01:25	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:25	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 01:25	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 01:25	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 01:25	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 01:25	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 01:25	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:25	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 01:25	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 01:25	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:25	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 01:25	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:25	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 01:25	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:25	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:25	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 01:25	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 01:25	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 01:25	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:25	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:25	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 01:25	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:25	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 01:25	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 01:25	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:25	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 01:25	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 01:25	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 01:25	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 01:25	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/6/19 01:25	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 01:25	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 01:25	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 01:25	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049100 SANDS ROAD LANDFILL

Lab ID: **3049100001**

Date Collected: 7/31/2019 16:00

Matrix: Water

Sample ID: **SW-1**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 01:25	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 01:25	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 01:25	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 01:25	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 01:25	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 01:25	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:25	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:25	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 01:25	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 01:25	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 01:25	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 01:25	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 01:25	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:25	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	123		%	62 - 133		SW846 8260B			8/6/19 01:25	PDK	A
4-Bromofluorobenzene (S)	100		%	79 - 114		SW846 8260B			8/6/19 01:25	PDK	A
Dibromofluoromethane (S)	106		%	78 - 116		SW846 8260B			8/6/19 01:25	PDK	A
Toluene-d8 (S)	101		%	76 - 127		SW846 8260B			8/6/19 01:25	PDK	A
WET CHEMISTRY											
Alkalinity, Total	16	5	mg/L	5	0.8	SM2320B-2011			8/6/19 08:25	MBW	C
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	10J	J	mg/L	15	7	EPA 410.4			8/7/19 13:43	AK	E
Chloride	27.4		mg/L	2.0	0.24	EPA 300.0			8/2/19 07:43	CHW	C
Nitrate/Nitrite-N	0.84		mg/L	0.20	0.057	EPA 300.0			8/2/19 07:43	CHW	C
pH	7.05	3	pH_Units			S4500HB-11			8/6/19 08:25	MBW	C
Specific Conductance	151		umhos/cm	1	0.1	SM2510B-2011			8/6/19 08:25	MBW	C
Sulfate	16.4		mg/L	2.0	0.40	EPA 300.0			8/2/19 07:43	CHW	C
Total Dissolved Solids	208	4	mg/L	5	5	S2540C-11			8/6/19 12:00	LXW	C
Turbidity	8.04		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	42.7		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:14	MSA	F1
Antimony, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:49	MSA	G1
Arsenic, Dissolved	0.0011J	J	mg/L	0.0030	0.0010	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:49	MSA	G1
Barium, Dissolved	0.023		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:49	MSA	G1
Beryllium, Dissolved	ND		mg/L	0.0010	0.00030	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:49	MSA	G1

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ANALYTICAL RESULTS

Workorder: 3049100 SANDS ROAD LANDFILL

Lab ID: **3049100001**


Date Collected: 7/31/2019 16:00

Matrix: Water

Sample ID: **SW-1**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Dissolved	ND		mg/L	0.0011	0.00037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Calcium, Dissolved	13.9		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Chromium, Dissolved	0.0015J	J	mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Cobalt, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Copper, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Iron, Dissolved	0.27		mg/L	0.056	0.019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Lead, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Magnesium, Dissolved	3.6		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Manganese, Dissolved	0.039		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Mercury, Dissolved	ND		mg/L	0.00050	0.00017	SW846 7470A	8/10/09 10:15 AHI	8/10/19 14:34	AHI	G
Nickel, Dissolved	0.0028J	J	mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Potassium, Dissolved	2.6		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Selenium, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Silver, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Sodium, Dissolved	11.9		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/15/19 12:36	MO	G1
Thallium, Dissolved	ND		mg/L	0.0010	0.00030	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Vanadium, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1
Zinc, Dissolved	0.0036J	J	mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:49	MSA	G1



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049100 SANDS ROAD LANDFILL

Lab ID: **3049100002**

Date Collected: 7/31/2019 11:30

Matrix: Water

Sample ID: **SW-2**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 01:47	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 01:47	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 01:47	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:47	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 01:47	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 01:47	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 01:47	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 01:47	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 01:47	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:47	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 01:47	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 01:47	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:47	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 01:47	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:47	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 01:47	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:47	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:47	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 01:47	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 01:47	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 01:47	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:47	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:47	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 01:47	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 01:47	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 01:47	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 01:47	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 01:47	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 01:47	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 01:47	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 01:47	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 01:47	PDK	A
Methyl t-Butyl Ether	ND	1	ug/L	1.0	0.33	SW846 8260B		8/6/19 01:47	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 01:47	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 01:47	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 01:47	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049100 SANDS ROAD LANDFILL

Lab ID: **3049100002**

Date Collected: 7/31/2019 11:30

Matrix: Water

Sample ID: **SW-2**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 01:47	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 01:47	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 01:47	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 01:47	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 01:47	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 01:47	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:47	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 01:47	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 01:47	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 01:47	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 01:47	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 01:47	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 01:47	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 01:47	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	88.7		%	62 - 133		SW846 8260B			8/6/19 01:47	PDK	A
4-Bromofluorobenzene (S)	109		%	79 - 114		SW846 8260B			8/6/19 01:47	PDK	A
Dibromofluoromethane (S)	99.3		%	78 - 116		SW846 8260B			8/6/19 01:47	PDK	A
Toluene-d8 (S)	105		%	76 - 127		SW846 8260B			8/6/19 01:47	PDK	A
WET CHEMISTRY											
Alkalinity, Total	22	5	mg/L	5	0.8	SM2320B-2011			8/6/19 08:34	MBW	C
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	8J	J	mg/L	15	7	EPA 410.4			8/10/19 20:07	AK	E
Chloride	28.5		mg/L	2.0	0.24	EPA 300.0			8/2/19 07:59	CHW	C
Nitrate/Nitrite-N	0.76		mg/L	0.20	0.057	EPA 300.0			8/2/19 07:59	CHW	C
pH	6.98	3	pH_Units			S4500HB-11			8/6/19 08:34	MBW	C
Specific Conductance	159		umhos/cm	1	0.1	SM2510B-2011			8/6/19 08:34	MBW	C
Sulfate	20.4		mg/L	2.0	0.40	EPA 300.0			8/2/19 07:59	CHW	C
Total Dissolved Solids	189	4	mg/L	5	5	S2540C-11			8/6/19 12:00	LXW	C
Turbidity	14.2		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	43.8		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:17	MSA	F1
Antimony, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:53	MSA	G1
Arsenic, Dissolved	ND		mg/L	0.0030	0.0010	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:53	MSA	G1
Barium, Dissolved	0.025		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:53	MSA	G1
Beryllium, Dissolved	ND		mg/L	0.0010	0.00030	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:53	MSA	G1

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ANALYTICAL RESULTS

Workorder: 3049100 SANDS ROAD LANDFILL

Lab ID: **3049100002**

Date Collected: 7/31/2019 11:30

Matrix: Water

Sample ID: **SW-2**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Dissolved	ND		mg/L	0.0011	0.00037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Calcium, Dissolved	14.5		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Chromium, Dissolved	0.0012J	J	mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Cobalt, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Copper, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Iron, Dissolved	0.54		mg/L	0.056	0.019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Lead, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Magnesium, Dissolved	3.7		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Manganese, Dissolved	0.14		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Mercury, Dissolved	ND		mg/L	0.00050	0.00017	SW846 7470A	8/10/09 10:15 AHI	8/10/19 14:35	AHI	G
Nickel, Dissolved	0.0027J	J	mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Potassium, Dissolved	2.5		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Selenium, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Silver, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Sodium, Dissolved	13.9		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/15/19 12:40	MO	G1
Thallium, Dissolved	ND		mg/L	0.0010	0.00030	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Vanadium, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1
Zinc, Dissolved	0.0037J	J	mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:53	MSA	G1



Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049100 SANDS ROAD LANDFILL

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3049100001	1	SW-1	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049100001	3	SW-1	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049100001	4	SW-1	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049100001	5	SW-1	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3049100002	1	SW-2	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049100002	3	SW-2	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049100002	4	SW-2	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049100002	5	SW-2	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3049100 SANDS ROAD LANDFILL

Lab ID	Sample ID	Analysis Method	Prep Method
3049100001	SW-1	EPA 300.0	
3049100001	SW-1	EPA 410.4	
3049100001	SW-1	In-House	
3049100001	SW-1	S2540C-11	
3049100001	SW-1	S4500HB-11	
3049100001	SW-1	SM 4500-NH3G	S4500NH3B
3049100001	SW-1	SM2130B-2011	
3049100001	SW-1	SM2320B-2011	
3049100001	SW-1	SM2510B-2011	
3049100001	SW-1	SW846 6020A	SW846 3015
3049100001	SW-1	SW846 7470A	SW846 7470A
3049100001	SW-1	SW846 8260B	
3049100002	SW-2	EPA 300.0	
3049100002	SW-2	EPA 410.4	
3049100002	SW-2	In-House	
3049100002	SW-2	S2540C-11	
3049100002	SW-2	S4500HB-11	
3049100002	SW-2	SM 4500-NH3G	S4500NH3B
3049100002	SW-2	SM2130B-2011	
3049100002	SW-2	SM2320B-2011	
3049100002	SW-2	SM2510B-2011	
3049100002	SW-2	SW846 6020A	SW846 3015
3049100002	SW-2	SW846 7470A	SW846 7470A
3049100002	SW-2	SW846 8260B	

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301 Fulling Mill Road
 Middletown, PA 17057
 P: (717) 944-5541
 F: (717) 944-1430

Condition of Sample Receipt Form

Client: MES Work Order #: 3049100 Initials: DN Date: 8/2

- | | | | |
|--|-------------|------------|-----------|
| 1. Were airbills / tracking numbers present and recorded?..... | <u>NONE</u> | YES | NO |
| Tracking number: _____ | | | |
| 2. Are Custody Seals on shipping containers intact?..... | NONE | <u>YES</u> | NO |
| 3. Are Custody Seals on sample containers intact?..... | NONE | <u>YES</u> | NO |
| 4. Is there a COC (Chain-of-Custody) present?..... | | <u>YES</u> | NO |
| 5. Are the COC and bottle labels complete, legible and in agreement?..... | | <u>YES</u> | NO |
| 5a. Does the COC contain sample locations?..... | | <u>YES</u> | NO |
| 5b. Does the COC contain date and time of sample collection for all samples?..... | | <u>YES</u> | NO |
| 5c. Does the COC contain sample collectors name?..... | | <u>YES</u> | NO |
| 5d. Does the COC note the type(s) of preservation for all bottles?..... | | <u>YES</u> | NO |
| 5e. Does the COC note the number of bottles submitted for each sample?..... | | <u>YES</u> | NO |
| 5f. Does the COC note the type of sample, composite or grab?..... | | <u>YES</u> | NO |
| 5g. Does the COC note the matrix of the sample(s)?..... | | <u>YES</u> | NO |
| 6. Are all aqueous samples requiring preservation preserved correctly?..... | N/A | <u>YES</u> | NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... | | <u>YES</u> | NO |
| 8. Are all samples within holding times for the requested analyses?..... | | <u>YES</u> | NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... | | <u>YES</u> | NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... | <u>N/A</u> | YES | NO |
| 11. Were the samples received on ice?..... | | <u>YES</u> | NO |
| 12. Were sample temperatures measured at 0.0-6.0°C..... | | <u>YES</u> | NO |
| 13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... | | YES | <u>NO</u> |
| 13a. Are the samples required for SDWA compliance reporting?..... | N/A | YES | NO |
| 13b. Did the client provide a SDWA PWS ID#?..... | N/A | YES | NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... | N/A | YES | NO |
| 13d. Did the client provide the SDWA sample location ID/Description?..... | N/A | YES | NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... | N/A | YES | NO |

Cooler #: _____
 Temperature (°C): 1
 Thermometer ID: 525
 Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

August 15, 2019

Ms. Cheryl Griffin
Maryland Environmental Services
259 Najoles Road
Millersville, MD 21108

Certificate of Analysis

Project Name:	SANDS ROAD LANDFILL	Workorder:	3049102
Purchase Order:	ENVOPS	Workorder ID:	SANDS ROAD LANDFILL

Dear Ms. Griffin:

Enclosed are the analytical results for samples received by the laboratory on Thursday, August 1, 2019.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vanessa N Badman (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. William Herpel , Maryland Environmental Services-ENVOPS ,
Maryland Environmental Services-LF Data

*This page is included as part of the Analytical Report and
must be retained as a permanent record thereof.*



Mrs. Vanessa N Badman
Project Coordinator

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SAMPLE SUMMARY

Workorder: 3049102 SANDS ROAD LANDFILL

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3049102001	SW-3	Water	8/1/2019 09:00	8/1/2019 21:00	Collected by Client

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 3049102 SANDS ROAD LANDFILL

Lab ID: **3049102001**

Date Collected: 8/1/2019 09:00

Matrix: Water

Sample ID: **SW-3**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	3.9J	J	ug/L	5.0	1.5	SW846 8260B		8/6/19 04:03	PDK	A
Acrylonitrile	ND		ug/L	5.0	1.2	SW846 8260B		8/6/19 04:03	PDK	A
Benzene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 04:03	PDK	A
Bromochloromethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 04:03	PDK	A
Bromodichloromethane	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 04:03	PDK	A
Bromoform	ND		ug/L	1.0	0.40	SW846 8260B		8/6/19 04:03	PDK	A
Bromomethane	ND		ug/L	1.0	0.39	SW846 8260B		8/6/19 04:03	PDK	A
2-Butanone	ND		ug/L	5.0	1.1	SW846 8260B		8/6/19 04:03	PDK	A
Carbon Disulfide	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 04:03	PDK	A
Carbon Tetrachloride	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 04:03	PDK	A
Chlorobenzene	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 04:03	PDK	A
Chlorodibromomethane	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 04:03	PDK	A
Chloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 04:03	PDK	A
Chloroform	ND		ug/L	1.0	0.21	SW846 8260B		8/6/19 04:03	PDK	A
Chloromethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 04:03	PDK	A
1,2-Dibromo-3-chloropropane	ND		ug/L	1.0	0.19	SW846 8260B		8/6/19 04:03	PDK	A
1,2-Dibromoethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 04:03	PDK	A
Dibromomethane	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 04:03	PDK	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	0.86	SW846 8260B		8/6/19 04:03	PDK	A
1,2-Dichlorobenzene	ND		ug/L	1.0	0.38	SW846 8260B		8/6/19 04:03	PDK	A
1,4-Dichlorobenzene	ND		ug/L	1.0	0.27	SW846 8260B		8/6/19 04:03	PDK	A
1,1-Dichloroethane	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 04:03	PDK	A
1,2-Dichloroethane	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 04:03	PDK	A
1,1-Dichloroethene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 04:03	PDK	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	0.32	SW846 8260B		8/6/19 04:03	PDK	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	0.26	SW846 8260B		8/6/19 04:03	PDK	A
1,2-Dichloropropane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 04:03	PDK	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	0.31	SW846 8260B		8/6/19 04:03	PDK	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 04:03	PDK	A
Ethylbenzene	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 04:03	PDK	A
2-Hexanone	ND		ug/L	5.0	1.3	SW846 8260B		8/6/19 04:03	PDK	A
Iodomethane	ND		ug/L	1.0	0.42	SW846 8260B		8/6/19 04:03	PDK	A
Methyl t-Butyl Ether	ND	2	ug/L	1.0	0.33	SW846 8260B		8/6/19 04:03	PDK	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	1.5	SW846 8260B		8/6/19 04:03	PDK	A
Methylene Chloride	ND		ug/L	1.0	0.45	SW846 8260B		8/6/19 04:03	PDK	A
Styrene	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 04:03	PDK	A

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ANALYTICAL RESULTS

Workorder: 3049102 SANDS ROAD LANDFILL

Lab ID: **3049102001**

Date Collected: 8/1/2019 09:00

Matrix: Water

Sample ID: **SW-3**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr	
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 04:03	PDK	A	
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	0.34	SW846 8260B		8/6/19 04:03	PDK	A	
Tetrachloroethene	ND		ug/L	1.0	0.35	SW846 8260B		8/6/19 04:03	PDK	A	
Toluene	ND		ug/L	1.0	0.23	SW846 8260B		8/6/19 04:03	PDK	A	
Total Xylenes	ND		ug/L	1.5	0.42	SW846 8260B		8/6/19 04:03	PDK	A	
1,1,1-Trichloroethane	ND		ug/L	1.0	0.22	SW846 8260B		8/6/19 04:03	PDK	A	
1,1,2-Trichloroethane	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 04:03	PDK	A	
Trichloroethene	ND		ug/L	1.0	0.33	SW846 8260B		8/6/19 04:03	PDK	A	
Trichlorofluoromethane	ND		ug/L	1.0	0.24	SW846 8260B		8/6/19 04:03	PDK	A	
1,2,3-Trichloropropane	ND		ug/L	1.0	0.29	SW846 8260B		8/6/19 04:03	PDK	A	
Vinyl Acetate	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 04:03	PDK	A	
Vinyl Chloride	ND		ug/L	1.0	0.30	SW846 8260B		8/6/19 04:03	PDK	A	
o-Xylene	ND		ug/L	0.50	0.15	SW846 8260B		8/6/19 04:03	PDK	A	
mp-Xylene	ND		ug/L	1.0	0.28	SW846 8260B		8/6/19 04:03	PDK	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	129		%	62 - 133		SW846 8260B			8/6/19 04:03	PDK	A
4-Bromofluorobenzene (S)	101		%	79 - 114		SW846 8260B			8/6/19 04:03	PDK	A
Dibromofluoromethane (S)	109		%	78 - 116		SW846 8260B			8/6/19 04:03	PDK	A
Toluene-d8 (S)	101		%	76 - 127		SW846 8260B			8/6/19 04:03	PDK	A
WET CHEMISTRY											
Alkalinity, Total	23	5	mg/L	5	0.8	SM2320B-2011			8/6/19 09:34	MBW	C
Ammonia-N, Low Level	ND		mg/L	0.10	0.01	SM 4500-NH3G	8/6/19 13:00	NJA	8/6/19 16:15	NJA	E
Chemical Oxygen Demand (COD)	10J	J	mg/L	15	7	EPA 410.4			8/10/19 20:07	AK	E
Chloride	27.1		mg/L	2.0	0.24	EPA 300.0			8/2/19 11:16	CHW	C
Nitrate/Nitrite-N	1.1		mg/L	0.20	0.057	EPA 300.0			8/2/19 11:16	CHW	C
pH	6.94	3	pH_Units			S4500HB-11			8/6/19 09:34	MBW	C
Specific Conductance	166		umhos/cm	1	0.1	SM2510B-2011			8/6/19 09:34	MBW	C
Sulfate	21.8		mg/L	2.0	0.40	EPA 300.0			8/2/19 11:16	CHW	C
Total Dissolved Solids	183	4	mg/L	5	5	S2540C-11			8/7/19 13:30	D1C	C
Turbidity	33.6		NTU	0.10	0.1	SM2130B-2011			8/2/19 06:29	R2B	C
METALS											
Hardness	45.7		mg/L			SW846 6020A	8/5/19 18:10	AHI	8/7/19 10:40	MSA	F1
Antimony, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:56	MSA	G1
Arsenic, Dissolved	ND		mg/L	0.0030	0.0010	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:56	MSA	G1
Barium, Dissolved	0.025		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:56	MSA	G1
Beryllium, Dissolved	ND		mg/L	0.0010	0.00030	SW846 6020A	8/12/19 18:25	AHI	8/14/19 11:56	MSA	G1

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ANALYTICAL RESULTS

Workorder: 3049102 SANDS ROAD LANDFILL

Lab ID: **3049102001**

Date Collected: 8/1/2019 09:00

Matrix: Water

Sample ID: **SW-3**

Date Received: 8/1/2019 21:00

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
Cadmium, Dissolved	ND		mg/L	0.0011	0.00037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Calcium, Dissolved	16.0		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Chromium, Dissolved	0.0029		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Cobalt, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Copper, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Iron, Dissolved	0.13		mg/L	0.056	0.019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Lead, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Magnesium, Dissolved	3.6		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Manganese, Dissolved	0.0035J	J	mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Mercury, Dissolved	ND		mg/L	0.00050	0.00017	SW846 7470A	8/10/09 10:15 AHI	8/10/19 14:39	AHI	G
Nickel, Dissolved	0.0026J	J	mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Potassium, Dissolved	3.9		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Selenium, Dissolved	ND		mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Silver, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Sodium, Dissolved	12.1		mg/L	0.11	0.037	SW846 6020A	8/12/19 18:25 AHI	8/15/19 12:43	MO	G1
Thallium, Dissolved	ND		mg/L	0.0010	0.00030	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Vanadium, Dissolved	ND		mg/L	0.0022	0.00074	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1
Zinc, Dissolved	0.0050J	J	mg/L	0.0056	0.0019	SW846 6020A	8/12/19 18:25 AHI	8/14/19 11:56	MSA	G1



Mrs. Vanessa N Badman

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3049102 SANDS ROAD LANDFILL

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3049102001	2	SW-3	SW846 8260B	Methyl t-Butyl Ether
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Methyl t-Butyl Ether. The % Recovery was reported as 120 and the control limits were 69 to 115.				
3049102001	3	SW-3	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3049102001	4	SW-3	S2540C-11	Total Dissolved Solids
The Method Blank for method S2540C-11 reported a value greater than the reporting level for the analyte Total Dissolved Solids.				
3049102001	5	SW-3	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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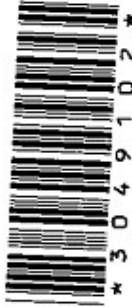
ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3049102 SANDS ROAD LANDFILL

Lab ID	Sample ID	Analysis Method	Prep Method
3049102001	SW-3	EPA 300.0	
3049102001	SW-3	EPA 410.4	
3049102001	SW-3	In-House	
3049102001	SW-3	S2540C-11	
3049102001	SW-3	S4500HB-11	
3049102001	SW-3	SM 4500-NH3G	S4500NH3B
3049102001	SW-3	SM2130B-2011	
3049102001	SW-3	SM2320B-2011	
3049102001	SW-3	SM2510B-2011	
3049102001	SW-3	SW846 6020A	SW846 3015
3049102001	SW-3	SW846 7470A	SW846 7470A
3049102001	SW-3	SW846 8260B	

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Mexico: Monterrey



CHAIN OF CUSTODY / SAMPLE INFORMATION FORM

Maryland Environmental Service • 259 Najoles Rd. • Millersville, MD 21108 • (410) 729-8200 • FAX (410) 729-8340

Laboratory: ALS Environmental

Sampler: NZ/AD

Client Name: Maryland Environmental Service, Attn: Cheryl Griffin

Facility Name: Sands Road Landfill

Client Address: 259 Najoles Rd, Millersville, MD 21108 410-254-8356

Cost Center / Purpose: 4911-2536 (Surface water Monitoring)

Invoice To: same

Turnaround Time: Routine

Bottle # OR Sample #	Sample ID	Grab or Composite	Container Description/ Preservation Status	Matrix	# of Containers	Date	Time	Analyses Required/Comments
1	SW-3	Grab	1 Liter Plastic Unpreserved	SW	1	8/1/19	9:00	Chloride, TDS, Sulfate, pH, Conductivity, Turbidity
		Grab	1 Liter Plastic Unpreserved	SW	1			Dissolved Metals Sb, As, Be, Ba, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, K, Hg, Ni, Se, Ag, Na, Ti, V, Zn FILTER-IN-LAB
		Grab	250 ml Plastic H2SO4	SW	1			Ammonia, COD, Nitrate-Nitrite
		Grab	250 ml Plastic HNO3	SW	1			hardness
		Grab	250 ml Plastic Unpreserved	SW	1			Alkalinity
		Grab	40ml Glass VOA Vial, HCL	SW	2			MDE Table I VOC's - 8260 (25 mL purge)
								Also REC ZX HCL
								Trip Blanks
								DN
								8/2

Transferred by: Amanda DeJoy Received by: MES Fridge [Signature] Date: 8/1/19 Time: 15:00

Transferred by: [Signature] Received by: [Signature] Date: 8/1/19 Time: 15:28

Transferred by: [Signature] Received by: [Signature] Date: 8/1/19 Time: 15:28

Cooler Receipt Information (LAB USE ONLY)
 Sufficient ice? - Yes/No Temp. = 16-52S
 Sample containers properly pres'd? - Yes/No If No, explain

Initials: _____ Date: _____
 Page () of ()
 8/1/19 2100
 COMMON COURIER / ALS COURIER
 COMMON COURIER / ALS COURIER



301 Fulling Mill Road
 Middletown, PA 17057
 P: (717) 944-5541
 F: (717) 944-1430

Condition of Sample Receipt Form

Client: MES Work Order #: 3049102 Initials: DN Date: 8/2

1. Were airbills / tracking numbers present and recorded?.....	<u>NONE</u>	YES	NO
Tracking number: _____			
2. Are Custody Seals on shipping containers intact?.....	NONE	<u>YES</u>	NO
3. Are Custody Seals on sample containers intact?.....	NONE	<u>YES</u>	NO
4. Is there a COC (Chain-of-Custody) present?.....		<u>YES</u>	NO
5. Are the COC and bottle labels complete, legible and in agreement?.....		<u>YES</u>	NO
5a. Does the COC contain sample locations?.....		<u>YES</u>	NO
5b. Does the COC contain date and time of sample collection for all samples?.....		<u>YES</u>	NO
5c. Does the COC contain sample collectors name?.....		<u>YES</u>	NO
5d. Does the COC note the type(s) of preservation for all bottles?.....		<u>YES</u>	NO
5e. Does the COC note the number of bottles submitted for each sample?.....		<u>YES</u>	NO
5f. Does the COC note the type of sample, composite or grab?.....		<u>YES</u>	NO
5g. Does the COC note the matrix of the sample(s)?.....		<u>YES</u>	NO
6. Are all aqueous samples requiring preservation preserved correctly?	N/A	<u>YES</u>	NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?.....		<u>YES</u>	NO
8. Are all samples within holding times for the requested analyses?.....		<u>YES</u>	NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.).....		<u>YES</u>	NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?.....	<u>N/A</u>	YES	NO
11. Were the samples received on ice?.....		<u>YES</u>	NO
12. Were sample temperatures measured at 0.0-6.0°C.....		<u>YES</u>	NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below.....		YES	<u>NO</u>
13a. Are the samples required for SDWA compliance reporting?.....	N/A	YES	NO
13b. Did the client provide a SDWA PWS ID#?.....	N/A	YES	NO
13c. Are all aqueous unpreserved SDWA samples pH 5-9?.....	N/A	YES	NO
13d. Did the client provide the SDWA sample location ID/Description?.....	N/A	YES	NO
13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?.....	N/A	YES	NO

Cooler #: _____
 Temperature (°C): 1
 Thermometer ID: 525
 Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill

Location ID: MW-6														
Number of Sampling Dates: 52														
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	8/13/1991	11/5/1991	2/27/1992	5/27/1992	8/10/1992	
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Acrylonitrile	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Benzene	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Bromochloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Bromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
2-Butanone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Carbon tetrachloride	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Chlorobenzene	ug/L	100	--	--	--	--	--	--	--	--	--	--	--	
Chloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Chloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	--	--	--	--	--	--	
Dibromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichlorobenzene	ug/L	600	--	--	--	--	--	--	--	--	--	--	--	
1,4-Dichlorobenzene	ug/L	75	--	--	--	--	--	--	--	--	--	--	--	
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloroethane	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethene	ug/L	7	--	--	--	--	--	--	--	--	--	--	--	
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	--	--	--	--	--	--	
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	--	--	--	--	--	--	
Methylene chloride	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloropropane	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Ethylbenzene	ug/L	700	--	--	--	--	--	--	--	--	--	--	--	
2-Hexanone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Styrene	ug/L	100	--	--	--	--	--	--	--	--	--	--	--	
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,2,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Tetrachloroethene	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Toluene	ug/L	1000	--	--	--	--	--	--	--	--	--	--	--	
1,1,1-Trichloroethane	ug/L	200	--	--	--	--	--	--	--	--	--	--	--	
1,1,2-Trichloroethane	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Trichloroethene	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Trichlorofluoromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Vinyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Vinyl chloride	ug/L	2	--	--	--	--	--	--	--	--	--	--	--	
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--	--	
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--	--	
Total Xylenes	ug/L	10000	--	--	--	--	--	--	--	--	--	--	--	
Bromodichloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--	--	
Dibromochloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--	--	

Location ID: MW-6														
Number of Sampling Dates: 52														
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	8/13/1991	11/5/1991	2/27/1992	5/27/1992	8/10/1992	
Bromofom	ug/L	80	-	-	-	-	-	-	-	-	-	-	-	
Chlorofom	ug/L	80	-	-	-	-	-	-	-	-	-	-	-	

Location ID: MW-6														
Number of Sampling Dates: 52														
Parameter Name	Units	MCL	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994	11/30/1995	11/15/1996	
Acetone	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
Acrylonitrile	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Benzene	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Bromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
Bromomethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND	
2-Butanone	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon disulfide	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
Carbon tetrachloride	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Chloroethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Chloromethane	ug/L	-	14	-	-	-	ND	-	-	-	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dibromoethane	ug/L	0.05	ND	-	-	-	-	-	-	-	-	-	-	
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichlorobenzene	ug/L	600	-	-	-	-	-	-	-	-	-	-	-	
1,4-Dichlorobenzene	ug/L	75	-	-	-	-	-	-	-	-	-	-	-	
trans-1,4-Dichloro-2-butene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
1,1-Dichloroethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	7	ND	
1,2-Dichloroethane	ug/L	5	-	-	-	-	ND	-	-	-	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	-	-	-	ND	-	-	-	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	-	-	-	-	-	-	-	-	-	-	-	
trans-1,2-Dichloroethene	ug/L	100	-	-	-	-	-	-	-	-	-	-	-	
Methylene chloride	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Methyl t-Butyl Ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
1,2-Dichloropropane	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	-	-	-	-	-	-	-	-	-	ND	ND	ND	
cis-1,3-Dichloropropene	ug/L	-	-	-	-	-	-	-	-	-	ND	ND	ND	
Ethylbenzene	ug/L	700	ND	-	-	-	ND	-	-	-	ND	ND	ND	
2-Hexanone	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
Iodomethane (Methyl Iodide)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
4-Methyl-2-Pentanone(MIBK)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
Styrene	ug/L	100	-	-	-	-	-	-	-	-	-	-	-	
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
1,1,2,2-Tetrachloroethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Toluene	ug/L	1000	ND	-	-	-	ND	-	-	-	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	-	-	-	ND	-	-	-	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Trichloroethene	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND	
Trichlorofluoromethane	ug/L	-	ND	-	-	-	ND	-	-	-	14	ND	ND	
1,2,3-Trichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
Vinyl acetate	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	
Vinyl chloride	ug/L	2	ND	-	-	-	ND	-	-	-	ND	ND	ND	
o-Xylene	ug/L	10000	-	-	-	-	-	-	-	-	-	-	-	
mp-Xylene	ug/L	10000	-	-	-	-	-	-	-	-	-	-	-	

Location ID: MW-6		Number of Sampling Dates: 52												
Parameter Name	Units	MCL	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994	11/30/1995	11/15/1996	
Total Xylenes	ug/L	10000	ND	--	--	--	ND	--	--	--	ND	ND	ND	
Bromodichloromethane	ug/L	80	ND	--	--	--	ND	--	--	--	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	--	--	--	ND	--	--	--	ND	ND	ND	
Bromofom	ug/L	80	ND	--	--	--	ND	--	--	--	ND	ND	ND	
Chlorofom	ug/L	80	ND	--	--	--	ND	--	--	--	ND	ND	ND	

Location ID: MW-6		Number of Sampling Dates: 52												
Parameter Name	Units	MCL	11/24/1997	11/17/1998	11/16/1999	1/4/2002	6/6/2002	4/14/2008	7/10/2008	9/29/2008	3/9/2009	9/29/2009	6/4/2010	
Acetone	ug/L	--	--	--	--	ND	--	ND	--	ND	ND	ND	ND	
Acrylonitrile	ug/L	--	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
Bromochloromethane	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
Bromomethane	ug/L	--	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
2-Butanone	ug/L	--	--	--	--	ND	--	ND	--	ND	ND	ND	ND	
Carbon disulfide	ug/L	--	--	--	--	ND	--	ND	--	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	ND	--	ND	--	0.9	ND	0.7	ND	
Chloroethane	ug/L	--	ND	ND	ND	ND	--	0.3	--	0.9	ND	1	ND	
Chloromethane	ug/L	--	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	ND	--	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	ND	--	ND	ND	ND	ND	
Dibromomethane	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	--	--	ND	--	0.3	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	--	--	--	ND	--	ND	--	0.2	ND	ND	ND	
trans-1,2-Dichloroethene	ug/L	100	--	--	--	ND	--	ND	--	ND	ND	ND	ND	
Methylene chloride	ug/L	5	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	1.2	1	2	ND	
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
Ethylbenzene	ug/L	700	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
2-Hexanone	ug/L	--	--	--	--	ND	--	ND	--	ND	ND	ND	ND	
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
Styrene	ug/L	100	--	--	--	ND	--	ND	--	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
Toluene	ug/L	1000	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
Trichloroethene	ug/L	5	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
Vinyl acetate	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	

Location ID: MW-6		Number of Sampling Dates: 52												
Parameter Name	Units	MCL	11/24/1997	11/17/1998	11/16/1999	1/4/2002	6/6/2002	4/14/2008	7/10/2008	9/29/2008	3/9/2009	9/29/2009	6/4/2010	
Vinyl chloride	ug/L	2	ND	ND	ND	ND	-	ND	-	ND	ND	ND	ND	
o-Xylene	ug/L	10000	-	-	-	-	-	-	-	ND	ND	ND	ND	
mp-Xylene	ug/L	10000	-	-	-	-	-	-	-	ND	ND	ND	ND	
Total Xylenes	ug/L	10000	ND	ND	ND	ND	-	ND	-	ND	-	-	ND	
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	-	ND	-	ND	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	-	ND	-	ND	ND	ND	ND	
Bromoform	ug/L	80	ND	ND	ND	ND	-	ND	-	ND	ND	ND	ND	
Chloroform	ug/L	80	ND	ND	ND	ND	-	ND	-	ND	ND	ND	ND	

Location ID: MW-6		Number of Sampling Dates: 52												
Parameter Name	Units	MCL	11/5/2010	1/4/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	9/23/2015	
Acetone	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acrylonitrile	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromochloromethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Butanone	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon disulfide	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	ug/L	-	ND	ND	1.6	ND	ND	ND	ND	ND	ND	ND	ND	
Chloromethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromomethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methyl t-Butyl Ether	ug/L	-	ND	1.1	1.7	ND	ND	ND	1.13	ND	ND	ND	ND	
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-Dichloropropene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Hexanone	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Iodomethane (Methyl Iodide)	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
4-Methyl-2-Pentanone(MIBK)	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ug/L	1000	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-6		Number of Sampling Dates: 52												
Parameter Name	Units	MCL	11/5/2010	1/4/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	9/23/2015	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
o-Xylene	ug/L	10000	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
mp-Xylene	ug/L	10000	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total Xylenes	ug/L	10000	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-6		Number of Sampling Dates: 52											
Parameter Name	Units	MCL	2/12/2016	9/21/2016	1/18/2017	8/3/2017	3/14/2018	8/29/2018	1/9/2019	8/1/2019			
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND			
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND			
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	0.22 J			
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND			
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND			
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND			
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND			
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND			
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND			
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND			
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND			
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND			
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND	0.49 J	0.62 J	0.35 J			
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND			
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND			
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND			
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND			
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND			
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND			

Location ID: MW-6

Number of Sampling Dates: 52

Parameter Name	Units	MCL	2/12/2016	9/21/2016	1/18/2017	8/3/2017	3/14/2018	8/29/2018	1/9/2019	8/1/2019
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill

Location ID: MW-6		Number of Sampling Dates: 52											
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	8/13/1991	11/5/1991	2/27/1992	5/27/1992	8/10/1992
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	ND	--	--	--	ND	--	--	ND	--	--	--
Barium, Total	mg/L	2	ND	--	--	--	ND	--	--	ND	--	--	--
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	0.0028	--	--	--	0.004	--	--	0.004	--	--	--
Chromium, Total	mg/L	0.1	0.0026	--	--	--	0.001	--	--	0.0034	--	--	--
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	ND	--	--	--	ND	--	--	ND	--	--	--
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	ND	--	--	--	ND	--	--	ND	--	--	--
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	0.04	--	--	--	0.05	--	--	0.01	--	--	--
Alkalinity, Total	mg/L as CaCO3	--	5 mg/L	5 mg/L	5 mg/L	5 mg/L	5 mg/L	5 mg/L	5 mg/L	5 mg/L	5 mg/L	5 mg/L	5.1 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	54	--	--	--	ND	--	--	ND	--	--	--
Chloride	mg/L	--	4	4	3.9	4.9	4	4	2	2	5	2	2
Hardness	mg/L	--	15.5	19	15	20	20	16	23	23	23	22	19
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	ND	--	--	--	--	--	--
pH	SU	--	4.7	5.4	5.8	5.5	5.2	5.3	5.1	5.4	5.1	5.3	4.7
Specific Conductance	umhos/cm	--	0.117 mS/cm	0.57 mS/cm	0.546 mS/cm	0.0724 mS/cm	0.0642 mS/cm	0.129 mS/cm	0.053 mS/cm	0.053 mS/cm	0.074 mS/cm	0.056 mS/cm	0.051 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--	--

Location ID: MW-6		Number of Sampling Dates: 52											
Parameter Name	Units	MCL	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994	11/30/1995	11/15/1996
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	ND	--	--	--	ND	--	--	--	ND	ND	ND
Barium, Total	mg/L	2	ND	--	--	--	0.04	--	--	--	0.011	0.01	0.01
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	0.0041	--	--	--	--	--	--	--	0.067	0.026	0.011
Chromium, Total	mg/L	0.1	0.003	--	--	--	ND	--	--	--	ND	ND	ND
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	ND	--	--	--	ND	--	--	--	ND	ND	ND
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	ND	--	--	--	ND	--	--	--	ND	ND	ND
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	0.05	--	--	--	0.12	--	--	--	0.54	0.24	0.07
Alkalinity, Total	mg/L as CaCO3	--	5.1 mg/L	5.1 mg/L	6 mg/L	6 mg/L	6 mg/L	ND mg/L	6 mg/L	6 mg/L	7 mg/L	7 mg/L	7 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	ND	--	--	--	14	--	--	--	52	70	110
Chloride	mg/L	--	6	6	8	13	17	15	32	23	51	110	67
Hardness	mg/L	--	32	84	170	120	110	150	420	300	640	660	970
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	--	--	--	--	--
pH	SU	--	5.2	5.4	4.8	5.2	5.1	5	4.9	5	5	5.8	6.1
Specific Conductance	umhos/cm	--	0.077 mS/cm	0.092 mS/cm	0.441 mS/cm	0.247 mS/cm	0.272 mS/cm	0.425 mS/cm	1.07 mS/cm	0.673 mS/cm	1.336 mS/cm	1.45 mS/cm	1.971 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--	--

Location ID: MW-6													
Number of Sampling Dates: 52													
Parameter Name	Units	MCL	11/24/1997	11/17/1998	11/16/1999	1/4/2002	6/6/2002	4/14/2008	7/10/2008	9/29/2008	3/9/2009	9/29/2009	6/4/2010
Antimony, Total	mg/L	0.006	--	--	--	--	--	ND	--	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	0.008	--	0.0274	0.003	--	ND	ND	0.0033	0.003
Barium, Total	mg/L	2	0.1	0.1	0.1	--	--	0.091	--	0.134	0.097	0.17	0.124
Beryllium, Total	mg/L	0.004	--	--	--	--	--	0.0001	--	ND	ND	ND	ND
Cadmium, Total	mg/L	0.005	0.006	0.0029	0.0024	0.127	0.009	0.0139	0.0028	0.0023	0.014	ND	ND
Chromium, Total	mg/L	0.1	0.003	0.002	0.0028	0.0374	--	ND	--	ND	ND	ND	ND
Calcium, Total	mg/L	--	140	110	120	39.4	--	7.21	--	135	82	170	151
Cobalt, Total	mg/L	--	--	--	--	--	--	0.027	--	0.035	0.024	0.059	0.047
Copper, Total	mg/L	1.3	--	--	--	--	--	ND	--	0.003	ND	ND	ND
Iron, Total	mg/L	--	--	--	--	56	--	1.56	--	2.75	0.51	5.5	6.8
Lead, Total	mg/L	0.015	ND	ND	ND	ND	--	ND	--	ND	ND	ND	ND
Nickel, Total	mg/L	--	--	--	--	--	--	0.008	--	0.007	0.0087	0.0086	0.006
Magnesium, Total	mg/L	--	44	32	37	14.1	--	1.72	--	3.19	--	40	34.9
Manganese, Total	mg/L	--	--	--	--	--	--	0.86	--	1.05	0.92	1.3	1.36
Mercury, Total	mg/L	0.002	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND
Potassium, Total	mg/L	--	--	--	--	--	--	4.19	--	5.56	--	6.1	6.97
Selenium, Total	mg/L	0.05	--	--	--	--	--	ND	--	ND	ND	ND	ND
Silver, Total	mg/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND
Sodium, Total	mg/L	--	--	--	--	--	--	9.2	--	1.57	--	17	13.7
Thallium, Total	mg/L	0.002	--	--	--	--	--	ND	--	ND	ND	ND	ND
Vanadium, Total	mg/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND
Zinc, Total	mg/L	--	0.08	0.05	0.006	--	--	0.033	--	0.019	0.03	0.019	0.032
Alkalinity, Total	mg/L as CaCO3	--	8 mg/L	8 mg/L	8 mg/L	--	--	8.1 mg/L	--	13 mg/L	248 mg/L	680 mg/L	460
Ammonia as N	mg/L	--	--	--	--	--	--	2.05	--	4.55	0.97	4.29	3.97
Chemical Oxygen Demand (COD)	mg/L	--	54	20	36	--	--	ND	--	22.6	ND	30	25
Chloride	mg/L	--	29	17	25	4.8	--	6.2	--	12.6	6.1	14	8.46
Hardness	mg/L	--	530	410	450	--	--	251	--	469	266	581	521 mg/L as CaCO3
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	3.44	--	ND	0.4	ND	ND
pH	SU	--	5.9	6.8	6.2	--	--	5.68	6.36	6.38	6.15	6.06	6.15 pH Units
Specific Conductance	umhos/cm	--	1.036 mS/cm	0.777 mS/cm	0.95 mS/cm	--	--	0.486 mS/cm	1.27 mS/cm	0.945 mS/cm	0.438 mS/cm	1.242 mS/cm	1004 umhos @ 25°C
Sulfate	mg/L	--	--	--	--	--	--	14.8	--	18.9	15	11	33.3
Total Dissolved Solids	mg/L	--	--	--	--	--	--	270	--	525	150	740	541
Turbidity	NTU	--	--	--	--	--	--	9.1	9.19	3.81	8.3	1	22

Location ID: MW-6													
Number of Sampling Dates: 52													
Parameter Name	Units	MCL	11/5/2010	1/4/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	9/23/2015
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	0.003	ND	0.003	0.003	0.003	ND	ND	ND	ND	ND	ND
Barium, Total	mg/L	2	0.113	0.1	0.112	0.082	0.0613	0.0532	0.0919	0.115	0.0907	0.0636	0.116
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	mg/L	0.005	0.002	0.006	0.003	ND	ND	0.0086	0.0048	0.0039	0.0022	0.0028	0.0041
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/L	--	132	95.7	157	122	103	38.8	113	27.3	112	40.6	82.5
Cobalt, Total	mg/L	--	0.045	0.023	0.059	0.04	0.0351	0.0075	0.0198	ND	0.017	0.0055	0.0127
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	0.0053	ND	ND	ND	ND	ND
Iron, Total	mg/L	--	2.76	0.67	3.99	10.1	3.37	1.19	1.75	0.169	ND	0.585	0.301
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	0.006	0.008	ND	0.005	0.0071	0.0051	0.0077	0.0055	0.0073	0.0054	0.0077
Magnesium, Total	mg/L	--	29.1	21.1	37.6	27.6	25.6	9.93	26.7	9.82	27.8	11.2	23.3
Manganese, Total	mg/L	--	1.28	0.968	1.48	0.966	0.986	0.236	0.961	0.0098	0.851	0.264	0.611
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	6.86	5.62	6.82	6.42	4.75	4.39	5.78	4.32	4.36	3.42	4
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	13.5	9.27	13.9	11.4	9.54	4.36	9.89	3.09	9.2	4.78	7.95
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	mg/L	--	0.027	0.024	0.043	0.036	0.0252	0.0208	0.0248	0.0275	0.0114	0.0184	0.0307
Alkalinity, Total	mg/L as CaCO3	--	420	304	481	380	316 mg/l	113 mg/l	374 mg/l	62.6 mg/l	433 mg/l	121 mg/l	259 mg/l
Ammonia as N	mg/L	--	3.69	2.68	3.41	2.9	1.58	ND	ND	ND	1.42	ND	ND
Chemical Oxygen Demand (COD)	mg/L	--	12	11.6	14	22	11.5	ND	11.5	12	14	12	ND
Chloride	mg/L	--	8.27	6.47	9.6	9.85	7.14	4.36	7.95	3.7	8.41	7.05	6.67
Hardness	mg/L	--	450 mg/L as CaCO3	326 mg/L as CaCO3	547 mg/L as CaCO3	419 mg/L as CaCO3	363	138	392	109	394	147	302
Nitrate/Nitrite-N	mg/L	10	0.9	1.16	ND	ND	0.216	3.33	0.111	3.96	0.205	2.01	0.53
pH	SU	--	6.24 pH Units	6.06 pH Units	6.81 pH Units	6.69 pH Units	6.39 units	6.22 units	6.44 units	6.02 units	6.96 units	5.92 units	5.92 units
Specific Conductance	umhos/cm	--	900 umhos @ 25°C	679 umhos @ 25°C	1060 umhos @ 25°C	949 umhos @ 25°C	719 umhos	399 umhos	854 umhos	171.8 umhos	588 umhos	350 umhos	637
Sulfate	mg/L	--	28.6	20.6	23.4	44.1	22.7	12.8	20.5	52.9	15.2	22.5	31
Total Dissolved Solids	mg/L	--	484	332	569	470	386	160	420	165	469	172	333
Turbidity	NTU	--	2.9	2	5.2	27	2.27	8.9	7.03	0.268	0.657	1.79	1.38

Location ID: MW-6										
Number of Sampling Dates: 52										
Parameter Name	Units	MCL	2/12/2016	9/21/2016	1/18/2017	8/3/2017	3/14/2018	8/29/2018	1/9/2019	8/1/2019
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-6

Number of Sampling Dates: 52

Parameter Name	Units	MCL	2/12/2016	9/21/2016	1/18/2017	8/3/2017	3/14/2018	8/29/2018	1/9/2019	8/1/2019
Barium, Total	mg/L	2	0.0713	0.0692	0.0572	0.0581	0.0638	0.097	0.15	0.085
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	mg/L	0.005	0.0044	0.0046	0.0046	0.0054	0.0043	0.004	0.0082	0.0025
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	0.00088 J	0.0026	0.00099 J
Calcium, Total	mg/L	--	30.6	27.8	24.2	22.7	20.3	22.9	34.1	66.2
Cobalt, Total	mg/L	--	0.0131	0.0117	0.0104	0.0104	0.0084	ND	ND	0.0048 J
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/L	--	0.798	0.551	ND	ND	ND	ND	0.032 J	0.13
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	0.0063	0.0078	0.0058	0.0083	0.0068	0.0062	0.025	0.0061
Magnesium, Total	mg/L	--	10.9	10.7	8.84	8.35	7.62	13.6	16.4	14.2
Manganese, Total	mg/L	--	0.437	0.485	0.394	0.378	0.28	0.11	0.032	0.8
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	3.37	2.81	3.74	3.52	3.18	2.2	4.7	6.3
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	4.12	5.56	5.31	5.78	6.29	5.7	4.6	7.9
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	ND	0.0019	ND	ND	ND	ND	0.0025	0.0011 J
Zinc, Total	mg/L	--	0.0145	ND	ND	ND	ND	0.011	0.041	0.014
Alkalinity, Total	mg/L as CaCO3	--	76.6 mg/l	64.8 mg/l	50.6 mg/l	45.4 mg/l	44.7 mg/l	108 mg/L	149 mg/L	269 mg/L
Ammonia as N	mg/L	--	ND	ND	ND	ND	ND	0.082 J	0.093 J	1.77
Chemical Oxygen Demand (COD)	mg/L	--	ND	ND	ND	ND	ND	ND	11 J	9 J
Chloride	mg/L	--	7.35	8.39	12	16.4	18.1	4.9	5.7	12.4
Hardness	mg/L	--	121	113	96.8	91	82	113	153	224
Nitrate/Nitrite-N	mg/L	10	1.6	0.467	0.873	1.1	0.82	2.04	4	ND
pH	SU	--	5.94 units	6.31 units	5.43 units	6.69 units	6.3 s.u.	6.29 pH_Units	6.64 pH_Units	6.83 pH_Units
Specific Conductance	umhos/cm	--	294	286	256	240	213	269	330	532
Sulfate	mg/L	--	26.4	43.8	34.3	33.5	26.5	30.8	23.1	34.5
Total Dissolved Solids	mg/L	--	134	149	133	133	121	153	212	314
Turbidity	NTU	--	2.64	1.53	0.432	0.165	ND	0.12	0.24	0.52

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill

Location ID: MW-7		Number of Sampling Dates: 53												
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992	8/10/1992	
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Acrylonitrile	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Benzene	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Bromochloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Bromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
2-Butanone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Carbon tetrachloride	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Chlorobenzene	ug/L	100	--	--	--	--	--	--	--	--	--	--	--	
Chloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Chloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	--	--	--	--	--	--	
Dibromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichlorobenzene	ug/L	600	--	--	--	--	--	--	--	--	--	--	--	
1,4-Dichlorobenzene	ug/L	75	--	--	--	--	--	--	--	--	--	--	--	
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloroethane	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethene	ug/L	7	--	--	--	--	--	--	--	--	--	--	--	
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	--	--	--	--	--	--	
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	--	--	--	--	--	--	
Methylene chloride	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloropropane	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Ethylbenzene	ug/L	700	--	--	--	--	--	--	--	--	--	--	--	
2-Hexanone	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Styrene	ug/L	100	--	--	--	--	--	--	--	--	--	--	--	
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,1,2,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Tetrachloroethene	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Toluene	ug/L	1000	--	--	--	--	--	--	--	--	--	--	--	
1,1,1-Trichloroethane	ug/L	200	--	--	--	--	--	--	--	--	--	--	--	
1,1,2-Trichloroethane	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Trichloroethene	ug/L	5	--	--	--	--	--	--	--	--	--	--	--	
Trichlorofluoromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Vinyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	
Vinyl chloride	ug/L	2	--	--	--	--	--	--	--	--	--	--	--	
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--	--	
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--	--	
Total Xylenes	ug/L	10000	--	--	--	--	--	--	--	--	--	--	--	
Bromodichloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--	--	
Dibromochloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--	--	

Location ID: MW-7													
Number of Sampling Dates: 53													
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992	8/10/1992
Bromofom	ug/L	80	-	-	-	-	-	-	-	-	-	-	-
Chlorofom	ug/L	80	-	-	-	-	-	-	-	-	-	-	-

Location ID: MW-7													
Number of Sampling Dates: 53													
Parameter Name	Units	MCL	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994	11/30/1995	11/15/1996
Acetone	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND
Benzene	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND
Bromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND
2-Butanone	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND
Chlorobenzene	ug/L	100	ND	-	-	-	ND	-	-	-	ND	ND	ND
Chloroethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND
Chloromethane	ug/L	-	17	-	-	-	ND	-	-	-	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	ug/L	0.05	ND	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	600	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/L	75	-	-	-	-	-	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND
1,2-Dichloroethane	ug/L	5	-	-	-	-	ND	-	-	-	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	-	-	-	ND	-	-	-	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	ug/L	100	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND
Methyl t-Butyl Ether	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	-	-	-	-	-	-	-	-	-	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	-	-	-	-	-	-	-	-	-	ND	ND	ND
Ethylbenzene	ug/L	700	ND	-	-	-	ND	-	-	-	ND	ND	ND
2-Hexanone	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
Iodomethane (Methyl Iodide)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone(MIBK)	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	100	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND
Toluene	ug/L	1000	ND	-	-	-	ND	-	-	-	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	-	-	-	ND	-	-	-	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND
Trichloroethene	ug/L	5	ND	-	-	-	ND	-	-	-	ND	ND	ND
Trichlorofluoromethane	ug/L	-	ND	-	-	-	ND	-	-	-	ND	ND	ND
1,2,3-Trichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl acetate	ug/L	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/L	2	ND	-	-	-	ND	-	-	-	ND	ND	ND
o-Xylene	ug/L	10000	-	-	-	-	-	-	-	-	-	-	-
mp-Xylene	ug/L	10000	-	-	-	-	-	-	-	-	-	-	-

Location ID: MW-7		Number of Sampling Dates: 53												
Parameter Name	Units	MCL	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994	11/30/1995	11/15/1996	
Total Xylenes	ug/L	10000	ND	--	--	--	ND	--	--	--	ND	ND	ND	
Bromodichloromethane	ug/L	80	ND	--	--	--	ND	--	--	--	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	--	--	--	ND	--	--	--	ND	ND	ND	
Bromofom	ug/L	80	ND	--	--	--	ND	--	--	--	ND	ND	ND	
Chlorofom	ug/L	80	ND	--	--	--	ND	--	--	--	ND	ND	ND	

Location ID: MW-7		Number of Sampling Dates: 53												
Parameter Name	Units	MCL	11/24/1997	11/24/1998	11/16/1999	6/6/2002	11/4/2002	4/14/2008	7/10/2008	9/30/2008	3/9/2009	9/30/2009	6/4/2010	
Acetone	ug/L	--	--	--	--	--	ND	ND	--	ND	ND	ND	ND	
Acrylonitrile	ug/L	--	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
Bromochloromethane	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
Bromomethane	ug/L	--	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
2-Butanone	ug/L	--	--	--	--	--	ND	ND	--	ND	ND	ND	ND	
Carbon disulfide	ug/L	--	--	--	--	--	ND	ND	--	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	--	ND	ND	--	0.2	1	ND	ND	
Chloroethane	ug/L	--	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
Chloromethane	ug/L	--	ND	ND	ND	--	ND	ND	--	0.6	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	ND	--	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	ND	--	ND	ND	ND	ND	
Dibromomethane	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	--	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	ND	ND	--	ND	ND	ND	ND	
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	ND	ND	--	ND	ND	ND	ND	
Methylene chloride	ug/L	5	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	1.6	2	ND	ND	
1,2-Dichloropropane	ug/L	5	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
Ethylbenzene	ug/L	700	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
2-Hexanone	ug/L	--	--	--	--	--	ND	ND	--	ND	ND	ND	ND	
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	ND	ND	--	ND	ND	ND	ND	
Styrene	ug/L	100	--	--	--	--	ND	ND	--	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
Toluene	ug/L	1000	ND	ND	--	--	--	ND	--	ND	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	--	ND	--	--	ND	ND	ND	ND	
Trichloroethene	ug/L	5	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	
Vinyl acetate	ug/L	--	--	--	--	--	--	ND	--	ND	ND	ND	ND	

Location ID: MW-7
Number of Sampling Dates: 53

Parameter Name	Units	MCL	11/24/1997	11/24/1998	11/16/1999	6/6/2002	11/4/2002	4/14/2008	7/10/2008	9/30/2008	3/9/2009	9/30/2009	6/4/2010
Vinyl chloride	ug/L	2	ND	ND	ND	--	--	ND	--	ND	ND	ND	ND
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	ND	ND	ND	ND
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	11	--	--	ND	--	ND	--	--	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND
Bromoform	ug/L	80	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	--	ND	ND	--	ND	ND	ND	ND

Location ID: MW-7
Number of Sampling Dates: 53

Parameter Name	Units	MCL	11/5/2010	1/3/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	5/11/2015
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	ND	4.6	ND	ND	ND	1.37	ND	ND	ND	ND	ND
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	ND	1.6	ND	ND	ND	1.58	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-7		Number of Sampling Dates: 53												
Parameter Name	Units	MCL	11/5/2010	1/3/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	5/11/2015	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-7		Number of Sampling Dates: 53												
Parameter Name	Units	MCL	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/14/2018	8/28/2018	1/10/2019	7/31/2019			
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Chlorobenzene	ug/L	100	ND	ND	ND	ND	1	ND	ND	ND	ND			
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND			
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND			
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND			
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68 J		
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND			
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND			
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND			
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND			

Location ID: MW-7

Number of Sampling Dates: 53

Parameter Name	Units	MCL	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/14/2018	8/28/2018	1/10/2019	7/31/2019
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill

Location ID: MW-7
Number of Sampling Dates: 53

Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	ND	--	--	--	ND	--	--	--
Barium, Total	mg/L	2	0.038	--	--	--	0.048	--	--	--
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	0.0066	--	--	--	0.0039	--	--	--
Chromium, Total	mg/L	0.1	0.0025	--	--	--	ND	--	--	--
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	ND	--	--	--	ND	--	--	--
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	ND	--	--	--	ND	--	--	--
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	0.01	--	--	--	0.1	--	--	--
Alkalinity, Total	mg/L as CaCO3	--	16 mg/L	17 mg/L	21 mg/L	22.7 mg/L	24 mg/L	24 mg/L	30 mg/L	30.8 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	40	--	--	--	19	--	--	--
Chloride	mg/L	--	33	68	60	47	52	52	68	88
Hardness	mg/L	--	49	119	133	120	79	86	86	100
Nitrate/Nitrite-N	mg/L	10	ND	--	--	--	--	--	--	--
pH	SU	--	4.3	4.9	5.5	5.6	5.2	5.2	5	4.7
Specific Conductance	umhos/cm	--	0.26 mS/cm	41.5 mS/cm	0.448 mS/cm	0.397 mS/cm	0.323 mS/cm	0.796 mS/cm	0.361 mS/cm	0.427 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--

Location ID: MW-7
Number of Sampling Dates: 53

Parameter Name	Units	MCL	11/5/1991	2/27/1992	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	ND	--	--	ND	--	--	--	0.02
Barium, Total	mg/L	2	0.009	--	--	0.13	--	--	--	ND
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	0.0077	--	--	0.0054	--	--	--	ND
Chromium, Total	mg/L	0.1	0.0028	--	--	0	--	--	--	ND
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	ND	--	--	ND	--	--	--	ND
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	ND	--	--	ND	--	--	--	ND
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--

Location ID: MW-7		Number of Sampling Dates: 53								
Parameter Name	Units	MCL	11/5/1991	2/27/1992	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993
Zinc, Total	mg/L	--	0.01	--	--	0.1	--	--	--	0.02
Alkalinity, Total	mg/L as CaCO3	--	32.6 mg/L	41 mg/L	60.6 mg/L	61 mg/L	61 mg/L	62 mg/L	66 mg/L	70 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	25	--	--	77	--	--	--	120
Chloride	mg/L	--	80	89	73	68	62	58	120	150
Hardness	mg/L	--	170	210	490	580	540	500	870	920
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	--	--
pH	SU	--	5.6	5.5	6	5.9	6.1	6.1	6.6	6.5
Specific Conductance	umhos/cm	--	0.558 mS/cm	0.654 mS/cm	1.04 mS/cm	1.2 mS/cm	0.93 mS/cm	1.25 mS/cm	2.08 mS/cm	1.2 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--

Location ID: MW-7		Number of Sampling Dates: 53								
Parameter Name	Units	MCL	2/21/1994	6/1/1994	9/2/1994	11/2/1994	11/30/1995	11/15/1996	11/24/1997	11/24/1998
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	--	--	--	0.038	0.014	0.032	0.017	0.053
Barium, Total	mg/L	2	--	--	--	0.041	0.02	0.03	0.02	0.04
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	--	--	--	0.0009	0.0017	0.0022	0.0014	0.001
Chromium, Total	mg/L	0.1	--	--	--	ND	ND	ND	ND	ND
Calcium, Total	mg/L	--	--	--	--	--	--	--	22	80
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	--	--	--	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	9.8	23
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	--	--	--	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	--	--	--	ND	0.03	0.04	ND	0.03
Alkalinity, Total	mg/L as CaCO3	--	72 mg/L	73.8 mg/L	75 mg/L	76 mg/L	76 mg/L	77 mg/L	82 mg/L	82 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	--	--	--	63	29	54	40	40
Chloride	mg/L	--	95	86	83	76	40	59	6	46
Hardness	mg/L	--	580	310	330	310	230	290	95	290
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	--	--
pH	SU	--	6.5	6.2	6.1	6.3	6.1	6.3	5.8	6.5
Specific Conductance	umhos/cm	--	1.41 mS/cm	0.98 mS/cm	0.917 mS/cm	0.946 mS/cm	0.712 mS/cm	0.68 mS/cm	0.313 mS/cm	0.574 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--

Location ID: MW-7		Number of Sampling Dates: 53								
Parameter Name	Units	MCL	11/16/1999	6/6/2002	11/4/2002	4/14/2008	7/10/2008	9/30/2008	3/9/2009	9/30/2009
Antimony, Total	mg/L	0.006	--	--	--	ND	--	ND	ND	0.002
Arsenic, Total	mg/L	0.01	0.12	0.0184	--	0.034	0.042	0.058	0.067	0.067
Barium, Total	mg/L	2	0.02	--	--	0.011	--	0.037	0.046	0.046
Beryllium, Total	mg/L	0.004	--	--	--	ND	--	ND	ND	0.002
Cadmium, Total	mg/L	0.005	ND	ND	0.01	0.0003	--	0.0002	ND	0.004
Chromium, Total	mg/L	0.1	ND	--	0.0055	ND	--	0.001	ND	0.005
Calcium, Total	mg/L	--	41	--	167	2.87	--	139	190	170
Cobalt, Total	mg/L	--	--	--	--	0.002	--	0.01	0.011	0.0091

Location ID: MW-7										
Number of Sampling Dates: 53										
Parameter Name	Units	MCL	11/16/1999	6/6/2002	11/4/2002	4/14/2008	7/10/2008	9/30/2008	3/9/2009	9/30/2009
Copper, Total	mg/L	1.3	--	--	--	ND	--	ND	ND	0.005
Iron, Total	mg/L	--	--	--	34.8	1.03	--	39	54	45
Lead, Total	mg/L	0.015	ND	--	ND	ND	--	ND	ND	0.002
Nickel, Total	mg/L	--	--	--	--	ND	--	0.003	0.0036	0.0037
Magnesium, Total	mg/L	--	12	--	45.6	6.03	--	3.2	--	42
Manganese, Total	mg/L	--	--	--	--	0.197	--	0.892	1.2	1
Mercury, Total	mg/L	0.002	ND	ND	--	ND	--	ND	ND	0.0002
Potassium, Total	mg/L	--	--	--	--	4.48	--	1.27	--	14
Selenium, Total	mg/L	0.05	--	--	--	ND	--	ND	ND	0.005
Silver, Total	mg/L	--	--	--	--	ND	--	ND	ND	0.005
Sodium, Total	mg/L	--	--	--	--	4.29	--	2.65	--	32
Thallium, Total	mg/L	0.002	ND	--	--	ND	--	ND	ND	0.002
Vanadium, Total	mg/L	--	--	--	--	ND	--	ND	ND	0.005
Zinc, Total	mg/L	--	0.02	--	--	ND	--	0.012	0.018	0.031
Alkalinity, Total	mg/L as CaCO3	--	82 mg/L	--	--	85 mg/L	--	99 mg/L	586 mg/L	556 mg/L
Ammonia as N	mg/L	--	--	--	--	1.67	--	4.11	3.79	4.42
Chemical Oxygen Demand (COD)	mg/L	--	31	--	--	13.3	--	53	92	58
Chloride	mg/L	--	6	--	46.6	2.9	--	28.1	30	36
Hardness	mg/L	--	150	--	--	96.4	--	479	590	564
Nitrate/Nitrite-N	mg/L	10	--	--	--	0.17	--	ND	ND	0.2
pH	SU	--	6.3	--	--	5.87	6.45	6.39	6.47	6.32
Specific Conductance	umhos/cm	--	0.398 mS/cm	--	--	0.246 mS/cm	0.64 mS/cm	1.2 mS/cm	1.28 mS/cm	1.36 mS/cm
Sulfate	mg/L	--	--	--	--	41.9	--	62.8	88	84
Total Dissolved Solids	mg/L	--	--	--	--	136	--	651	340	710
Turbidity	NTU	--	--	--	--	30	3.24	1.82	38.4	9.7

Location ID: MW-7										
Number of Sampling Dates: 53										
Parameter Name	Units	MCL	6/4/2010	11/5/2010	1/3/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	0.058	0.068	0.079	0.059	0.117	0.0611	0.0541	0.0584
Barium, Total	mg/L	2	0.033	0.036	0.04	0.021	0.031	0.026	0.0283	0.0227
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/L	--	126	117	148	44.5	117	120	119	103
Cobalt, Total	mg/L	--	0.009	0.007	0.009	ND	0.01	0.0143	0.0103	0.009
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/L	--	36	31.1	44.6	15	43.7	38.9	36.6	29.2
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	ND	ND	ND	ND	ND	0.0074	0.0058	ND
Magnesium, Total	mg/L	--	28.4	30.3	34.3	10.3	28.4	30.1	28.8	22
Manganese, Total	mg/L	--	0.829	0.774	0.806	0.33	0.657	0.661	0.692	0.497
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	0.0002	ND	ND	ND
Potassium, Total	mg/L	--	10.6	8.62	9.83	5.27	7.47	7.87	7.54	7.45
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	20.2	27.5	29.8	13.1	27.7	33.8	30.6	19.6
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	mg/L	--	0.01	0.011	0.012	0.009	0.014	0.0099	0.0165	0.017
Alkalinity, Total	mg/L as CaCO3	--	354	363	447	139	356	342 mg/l	363 mg/l	317 mg/l
Ammonia as N	mg/L	--	3.24	2.99	4.02	1.78	2.53	2.35	2.46	2.22
Chemical Oxygen Demand (COD)	mg/L	--	36	42	57.3	16	40	54.5	60.7	30.4
Chloride	mg/L	--	24.9	33	30.9	6.39	36.3	40.1	38.4	23.9
Hardness	mg/L	--	432 mg/L as CaCO3	417 mg/L as CaCO3	511 mg/L as CaCO3	153 mg/L as CaCO3	409 mg/L as CaCO3	424	416	348
Nitrate/Nitrite-N	mg/L	10	ND	ND	0.32	ND	ND	ND	ND	ND
pH	SU	--	6.1 pH Units	6.48 pH Units	6.21 pH Units	6.84 pH Units	6.63 pH Units	6.51 units	6.59 units	6.55 units
Specific Conductance	umhos/cm	--	926 umhos @ 25°C	927 umhos @ 25°C	1113 umhos @ 25°C	370 umhos @ 25°C	982 umhos @ 25°C	904 umhos	965 umhos	831 umhos
Sulfate	mg/L	--	67.8	57.8	76.4	23.3	65.2	54.5	46.7	42
Total Dissolved Solids	mg/L	--	519	539	636	209	534	510	531	418

Location ID: MW-7											
Number of Sampling Dates: 53											
Parameter Name	Units	MCL	6/4/2010	11/5/2010	1/3/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	
Turbidity	NTU	--	232	19	437	54	354	104	165	188	

Location ID: MW-7											
Number of Sampling Dates: 53											
Parameter Name	Units	MCL	1/29/2014	7/14/2014	3/12/2015	5/11/2015	9/23/2015	2/12/2016	9/21/2016	1/19/2017	
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
Arsenic, Total	mg/L	0.01	0.0361	0.0474	0.0307	0.0404	0.0484	0.0328	0.0666	0.0373	
Barium, Total	mg/L	2	0.0154	0.0209	0.0197	0.0232	0.0231	0.0117	0.025	0.0091	
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND	
Chromium, Total	mg/L	0.1	0.0055	ND	ND	ND	ND	ND	ND	ND	
Calcium, Total	mg/L	--	42.7	92.8	78.2	99.8	92.5	48.5	105	43.1	
Cobalt, Total	mg/L	--	ND	0.012	0.0078	0.0113	0.0108	ND	0.0115	0.0039	
Copper, Total	mg/L	1.3	ND	ND	ND	0.0144	ND	ND	ND	ND	
Iron, Total	mg/L	--	13.2	29.1	22.3	32.5	29.9	13	30	13.2	
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	
Nickel, Total	mg/L	--	ND	0.005	ND	ND	0.005	ND	0.0053	ND	
Magnesium, Total	mg/L	--	9.8	24.5	20.8	25.5	23.4	11.2	23.1	10	
Manganese, Total	mg/L	--	0.204	0.453	0.464	0.537	0.478	0.203	0.482	0.16	
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	
Potassium, Total	mg/L	--	4.09	7.19	5.34	6.56	7.5	4.76	7.75	5.14	
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	
Sodium, Total	mg/L	--	7.82	19.3	14.1	19.1	14.6	7.11	16.2	10.6	
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	
Vanadium, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	0.0028	
Zinc, Total	mg/L	--	0.0162	0.0071	0.0165	0.0134	0.0167	ND	ND	ND	
Alkalinity, Total	mg/L as CaCO3	--	141 mg/l	301 mg/l	255 mg/l	295 mg/l	264 mg/l	120 mg/l	291 mg/l	108 mg/l	
Ammonia as N	mg/L	--	0.889	2.01	1.75	2.09	1.95	1.15	1.64	0.549	
Chemical Oxygen Demand (COD)	mg/L	--	ND	31	29	21	31	20	24	18	
Chloride	mg/L	--	8.21	24	16.1	30.3	23	6.58	25.5	25.9	
Hardness	mg/L	--	147	333	281	354	327	167	357	149	
Nitrate/Nitrite-N	mg/L	10	0.326	ND	0.133	ND	0.0608	ND	0.072	0.315	
pH	SU	--	6.49 units	6.65 units	6.16 units	6.07 units	5.91 units	6.1 units	5.95 units	5.56 units	
Specific Conductance	umhos/cm	--	265.4 umhos	727 umhos	557 umhos	549	731	374	773	390	
Sulfate	mg/L	--	22.5	33.4	42.2	42.4	37.5	23.6	41.4	19.7	
Total Dissolved Solids	mg/L	--	196	423	325	390	391	172	412	199	
Turbidity	NTU	--	38.4	91.5	47.7	216	23	124	82.9	83.4	

Location ID: MW-7											
Number of Sampling Dates: 53											
Parameter Name	Units	MCL	8/3/2017	3/14/2018	8/28/2018	1/10/2019	7/31/2019				
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND				
Arsenic, Total	mg/L	0.01	0.0535	0.0218	0.035	0.0076	0.057				
Barium, Total	mg/L	2	0.0184	0.0159	0.022	0.013	0.021				
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND				
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND				
Chromium, Total	mg/L	0.1	ND	0.0049	0.008	0.0042	0.0038				
Calcium, Total	mg/L	--	70	55.1	33.3	19.2	73.7				
Cobalt, Total	mg/L	--	0.0075	0.0032	0.0041 J	ND	0.011				
Copper, Total	mg/L	1.3	ND	ND	0.0051 J	0.0032 J	ND				
Iron, Total	mg/L	--	24.8	12.7	18.8	4.2	34.4				
Lead, Total	mg/L	0.015	ND	ND	0.0025	0.00092 J	ND				
Nickel, Total	mg/L	--	ND	ND	0.0049 J	0.0022 J	0.006				
Magnesium, Total	mg/L	--	17	12.7	9.6	5.6	18.3				
Manganese, Total	mg/L	--	0.369	0.185	0.24	0.17	0.45				
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND				
Potassium, Total	mg/L	--	6.4	5.61	4.4	2.9	5.9				
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND				
Silver, Total	mg/L	--	ND	ND	ND	ND	ND				
Sodium, Total	mg/L	--	13.4	13	9.3	2.2	21.5				

Location ID: MW-7
 Number of Sampling Dates: 53

Parameter Name	Units	MCL	8/3/2017	3/14/2018	8/28/2018	1/10/2019	7/31/2019
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	0.0023	0.0035	0.0069	0.0028	0.0029
Zinc, Total	mg/L	--	ND	ND	0.014	0.0099	0.012
Alkalinity, Total	mg/L as CaCO3	--	197 mg/l	196 mg/l	138 mg/L	74 mg/L	285 mg/L
Ammonia as N	mg/L	--	1.6	0.61	0.918	2.81	1.23
Chemical Oxygen Demand (COD)	mg/L	--	26	ND	28	10 J	49
Chloride	mg/L	--	27.9	23	26.3	2.1	40.1
Hardness	mg/L	--	245	190	123	70.7	259
Nitrate/Nitrite-N	mg/L	10	0.216	0.67	0.8	ND	ND
pH	SU	--	6.74 units	6.9 s.u.	6.81 pH_Units	7.29 pH_Units	6.77 pH_Units
Specific Conductance	umhos/cm	--	561	482	317	168	697
Sulfate	mg/L	--	25	17.1	22.1	22.1	36.9
Total Dissolved Solids	mg/L	--	301	262	190	150	458
Turbidity	NTU	--	56.7	65	171	29.3	143

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill

Location ID: MW-8		Number of Sampling Dates: 50										
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992
Acetone	ug/L	-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile	ug/L	-	-	-	-	-	-	-	-	-	-	-
Benzene	ug/L	5	-	-	-	-	-	-	-	-	-	-
Bromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
2-Butanone	ug/L	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	ug/L	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	5	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/L	100	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	ug/L	0.2	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	ug/L	0.05	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	600	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/L	75	-	-	-	-	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/L	5	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/L	7	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ug/L	70	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	ug/L	100	-	-	-	-	-	-	-	-	-	-
Methylene chloride	ug/L	5	-	-	-	-	-	-	-	-	-	-
Methyl t-Butyl Ether	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/L	5	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	ug/L	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	ug/L	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	700	-	-	-	-	-	-	-	-	-	-
2-Hexanone	ug/L	-	-	-	-	-	-	-	-	-	-	-
Iodomethane (Methyl iodide)	ug/L	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone(MIBK)	ug/L	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	100	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/L	5	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	1000	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	ug/L	200	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	ug/L	5	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/L	5	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-
Vinyl acetate	ug/L	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/L	2	-	-	-	-	-	-	-	-	-	-
o-Xylene	ug/L	10000	-	-	-	-	-	-	-	-	-	-
mp-Xylene	ug/L	10000	-	-	-	-	-	-	-	-	-	-

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992
Total Xylenes	ug/L	10000	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--
Bromoform	ug/L	80	--	--	--	--	--	--	--	--	--	--
Chloroform	ug/L	80	--	--	--	--	--	--	--	--	--	--

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	5/27/1992	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Acrylonitrile	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
Benzene	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Bromochloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
2-Butanone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Chlorobenzene	ug/L	100	--	--	ND	--	--	--	ND	--	--	--
Chloroethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
Chloromethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	--	--	--	--	--
Dibromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	600	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	75	--	--	--	--	--	--	--	--	--	--
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
1,2-Dichloroethane	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
1,1-Dichloroethene	ug/L	7	--	--	ND	--	--	--	ND	--	--	--
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	--	--	--	--	--
Methylene chloride	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	ug/L	700	--	--	ND	--	--	--	ND	--	--	--
2-Hexanone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	--	--	--	--	--
Styrene	ug/L	100	--	--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
Tetrachloroethene	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Toluene	ug/L	1000	--	--	ND	--	--	--	ND	--	--	--
1,1,1-Trichloroethane	ug/L	200	--	--	ND	--	--	--	ND	--	--	--
1,1,2-Trichloroethane	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Trichloroethene	ug/L	5	--	--	ND	--	--	--	ND	--	--	--

Location ID:		MW-8										
Number of Sampling Dates:		50										
Parameter Name	Units	MCL	5/27/1992	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994
Trichlorofluoromethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	--	--	--	--	--
Vinyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	ug/L	2	--	--	ND	--	--	--	ND	--	--	--
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--
Total Xylenes	ug/L	10000	--	--	ND	--	--	--	ND	--	--	--
Bromodichloromethane	ug/L	80	--	--	ND	--	--	--	ND	--	--	--
Dibromochloromethane	ug/L	80	--	--	ND	--	--	--	ND	--	--	--
Bromofom	ug/L	80	--	--	ND	--	--	--	ND	--	--	--
Chlorofom	ug/L	80	--	--	ND	--	--	--	ND	--	--	--

Location ID:		MW-8										
Number of Sampling Dates:		50										
Parameter Name	Units	MCL	11/2/1994	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/30/2009
Acetone	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Carbon disulfide	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	0.6	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	--	ND	ND	ND	ND
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	--	ND	ND	ND	ND
Dibromomethane	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	--	--	--	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	--	--	--	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	--	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	--	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	ND	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Styrene	ug/L	100	--	--	--	--	--	--	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND

Location ID: MW-8		Number of Sampling Dates: 50											
Parameter Name	Units	MCL	11/2/1994	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/30/2009	
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND	
Vinyl acetate	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND	
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	ND	ND	ND	
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	ND	ND	ND	
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	--	--	
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-8		Number of Sampling Dates: 50											
Parameter Name	Units	MCL	6/4/2010	11/4/2010	1/3/2011	9/7/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-8		Number of Sampling Dates: 50											
Parameter Name	Units	MCL	6/4/2010	11/4/2010	1/3/2011	9/7/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromofom	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorofom	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-8		Number of Sampling Dates: 50											
Parameter Name	Units	MCL	3/12/2015	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/13/2018	8/28/2018	1/10/2019	8/1/2019	
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.31 J	
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-8

Number of Sampling Dates: 50

Parameter Name	Units	MCL	3/12/2015	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/13/2018	8/28/2018	1/10/2019	8/1/2019
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	ND	--	--	--	ND	--	--	--	ND	--
Barium, Total	mg/L	2	0.53	--	--	--	0.66	--	--	--	0.082	--
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	0.0007	--	--	--	0.0012	--	--	--	0.0011	--
Chromium, Total	mg/L	0.1	0.0026	--	--	--	0.001	--	--	--	0.0042	--
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	ND	--	--	--	ND	--	--	--	ND	--
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	ND	--	--	--	ND	--	--	--	ND	--
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	0.07	--	--	--	0.1	--	--	--	0.12	--
Alkalinity, Total	mg/L as CaCO3	--	100 mg/L	110 mg/L	110 mg/L	ND mg/L	120 mg/L	130 mg/L	130 mg/L	140 mg/L	140 mg/L	150 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	24	--	--	--	ND	--	--	--	ND	--
Chloride	mg/L	--	14	11	14	21	22	14	16	17	17	12
Hardness	mg/L	--	64.4	70	67	78	80	84	100	78	110	110
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	--	--	--	--
pH	SU	--	3.6	4.8	4.6	4.8	4.6	4.8	4.6	4.4	4.5	4.4
Specific Conductance	umhos/cm	--	0.306 mS/cm	0.219 mS/cm	0.213 mS/cm	0.264 mS/cm	0.261 mS/cm	0.669 mS/cm	0.322 mS/cm	0.236 mS/cm	0.36 mS/cm	35.8 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	--
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	5/27/1992	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	--	--	ND	--	--	--	ND	--	--	--
Barium, Total	mg/L	2	--	--	0.07	--	--	--	0.05	--	--	--
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	--	--	ND	--	--	--	0.002	--	--	--
Chromium, Total	mg/L	0.1	--	--	0.006	--	--	--	ND	--	--	--
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	--	--	0.009	--	--	--	ND	--	--	--
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	--	--	ND	--	--	--	ND	--	--	--
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	--	--	0.08	--	--	--	0.08	--	--	--
Alkalinity, Total	mg/L as CaCO3	--	150 mg/L	ND mg/L	0.15 mg/L	150 mg/L	160 mg/L	160 mg/L	160 mg/L	ND mg/L	160 mg/L	160 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	--	--	ND	--	--	--	11	--	--	--
Chloride	mg/L	--	8	7	0.007	6	4	7	13	5	4	5
Hardness	mg/L	--	94	80	0.075	80	42	100	56	64	170	190
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	--	--	--	--
pH	SU	--	4.7	4.7	4.4	4.9	4.5	4.7	5	5.7	7.1	7.1
Specific Conductance	umhos/cm	--	0.255 mS/cm	0.22 mS/cm	0.235 mS/cm	0.23 mS/cm	0.178 mS/cm	0.201 mS/cm	0.195 mS/cm	0.183 mS/cm	0.36 mS/cm	0.345 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	--

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	5/27/1992	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994
Total Dissolved Solids	mg/L	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	11/2/1994	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/30/2009
Antimony, Total	mg/L	0.006	-	-	-	-	-	-	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	mg/L	2	0.005	ND	ND	0.01	0.01	0.01	0.131	0.118	0.086	0.083
Beryllium, Total	mg/L	0.004	-	-	-	-	-	-	0.0001	0.0003	ND	ND
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND	ND	0.0008	0.0007	ND	ND
Chromium, Total	mg/L	0.1	0.0021	ND	0.002	ND	0.002	0.0026	0.002	0.001	ND	ND
Calcium, Total	mg/L	-	-	-	-	68	65	79	4.36	1.51	15	7.8
Cobalt, Total	mg/L	-	-	-	-	-	-	-	ND	ND	ND	0.0036
Copper, Total	mg/L	1.3	-	-	-	-	-	-	ND	0.004	ND	ND
Iron, Total	mg/L	-	-	-	-	-	-	-	0.059	0.047	0.23	0.42
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	-	-	-	-	-	-	-	0.009	0.01	0.0085	0.012
Magnesium, Total	mg/L	-	-	-	-	1.3	1.2	1.6	7.34	6.91	-	9.5
Manganese, Total	mg/L	-	-	-	-	-	-	-	0.0903	0.704	0.16	0.23
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-	-	-	-	-	-	-	2.35	3.02	-	3.7
Selenium, Total	mg/L	0.05	-	-	-	-	-	-	ND	ND	ND	ND
Silver, Total	mg/L	-	-	-	-	-	-	-	ND	ND	ND	ND
Sodium, Total	mg/L	-	-	-	-	-	-	-	4	3.42	-	3.3
Thallium, Total	mg/L	0.002	-	-	-	-	-	-	ND	ND	ND	ND
Vanadium, Total	mg/L	-	-	-	-	-	-	-	ND	ND	ND	ND
Zinc, Total	mg/L	-	ND	ND	ND	ND	ND	0.02	0.042	0.055	0.052	0.058
Alkalinity, Total	mg/L as CaCO3	-	160 mg/L	180 mg/L	180 mg/L	180 mg/L	190 mg/L	200 mg/L	200 mg/L	215 mg/L	8 mg/L	10 mg/L
Ammonia as N	mg/L	-	-	-	-	-	-	-	ND	ND	ND	0.21
Chemical Oxygen Demand (COD)	mg/L	-	ND	ND	ND	ND	ND	ND	12.6	ND	ND	ND
Chloride	mg/L	-	4	6	4	2	5	4	2.3	2.72	2.9	3.3
Hardness	mg/L	-	180	180	170	180	170	200	139	66.2	62.3	55.6
Nitrate/Nitrite-N	mg/L	10	-	-	-	-	-	-	0.9	0.4	0.9	0.6
pH	SU	-	7.1	7.3	7.3	7.1	7.3	7	5.11	4.85	4.86	4.02
Specific Conductance	umhos/cm	-	0.349 mS/cm	0.363 mS/cm	0.354 mS/cm	0.331 mS/cm	0.335 mS/cm	0.395 mS/cm	0.321 mS/cm	0.188 mS/cm	0.189 mS/cm	0.187 mS/cm
Sulfate	mg/L	-	-	-	-	-	-	-	83.4	64.2	60	63
Total Dissolved Solids	mg/L	-	-	-	-	-	-	-	211	132	ND	160
Turbidity	NTU	-	-	-	-	-	-	-	0.9	0.62	0	0

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	6/4/2010	11/4/2010	1/3/2011	9/7/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	0.003	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	mg/L	2	0.061	0.06	0.057	0.037	0.045	0.0483	0.0516	0.0412	0.0423	0.0376
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/L	-	7.92	8.86	6.46	8.14	8.57	4.73	9.44	6.8	8.04	5.02
Cobalt, Total	mg/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	mg/L	1.3	ND	ND	ND	0.015	ND	ND	ND	ND	ND	ND
Iron, Total	mg/L	-	7.46	1.64	0.222	0.099	4.72	0.886	0.118	0.071	0.331	ND
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	-	0.005	0.006	ND	0.032	0.005	0.0078	0.009	0.0056	ND	ND
Magnesium, Total	mg/L	-	6.08	4.43	6.63	4.73	5.34	7.02	4.25	4.7	4.13	4.4
Manganese, Total	mg/L	-	0.206	0.19	0.089	0.078	0.129	0.0551	0.057	0.0695	0.0401	0.0367
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-	3.09	2.88	3.06	2.44	2.43	3.13	2.11	2.57	1.89	2.16
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	-	3.34	2.8	3.13	2.1	2.41	2.72	1.93	2.24	1.74	1.9
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	mg/L	-	0.035	0.033	0.052	0.034	0.028	0.0394	0.032	0.0383	0.0349	0.0228
Alkalinity, Total	mg/L as CaCO3	-	12	13	8.2	14	14	6.6 mg/l	14.2 mg/l	11.6 mg/l	11.2 mg/l	2.2 mg/l
Ammonia as N	mg/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand (COD)	mg/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloride	mg/L	-	1.97	1.97	2	2	2.08	2.37	2.28	2.41	2.39	2.15
Hardness	mg/L	-	44.8 mg/L as CaCO3	40.3 mg/L as CaCO3	43.4 mg/L as CaCO3	39.8 mg/L as CaCO3	43.4 mg/L as CaCO3	40.7	41.1	36.3	37.1	30.7
Nitrate/Nitrite-N	mg/L	10	0.18	1.72	1.51	0.76	1.07	0.886	0.745	0.667	0.454	0.45

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	6/4/2010	11/4/2010	1/3/2011	9/7/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014
pH	SU	-	5.53 pH Units	5.56 pH Units	5.26 pH Units	5.52 pH Units	5.45 pH Units	5.02 units	5.53 units	5.09 units	5.51 units	5.04 units
Specific Conductance	umhos/cm	-	144 umhos @ 25°C	121 umhos @ 25°C	145 umhos @ 25°C	111 umhos @ 25°C	ND umhos @ 25°C	115.5 umhos	227.3 umhos	109.3 umhos	118.8 umhos	105 umhos
Sulfate	mg/L	-	39.4	26.4	38.9	24.5	33.3	39.3	28.1	28.1	30.7	30
Total Dissolved Solids	mg/L	-	98	48	62	70	76	66	77	101	62	80
Turbidity	NTU	-	63	15	2.4	1.7	32	2.82	0.626	0.257	1.18	0.606

Location ID: MW-8												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	3/12/2015	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/2/2017	3/13/2018	8/28/2018	1/10/2019	8/1/2019
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	0.0012 J	0.0039
Barium, Total	mg/L	2	0.0529	0.0417	0.047	0.0482	0.0648	0.0396	0.0604	0.053	0.044	0.038
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	0.0016 J	0.00084 J	0.0018 J
Calcium, Total	mg/L	-	13.2	4.51	12.2	4.62	10.9	16.4	15.6	17	16	6.9
Cobalt, Total	mg/L	-	ND	ND	ND	0.0031	0.0021	0.0018	ND	ND	ND	ND
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND	ND	0.0021 J	0.0049 J	ND
Iron, Total	mg/L	-	0.271	0.0851	0.0728	2.67	ND	0.573	0.32	0.92	1.3	4
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	-	ND	0.0063	0.0053	0.0078	0.0051	ND	ND	0.0043 J	0.0039 J	0.0038 J
Magnesium, Total	mg/L	-	4.33	5.56	5.63	6.22	6.27	2.9	2.69	4.3	4.9	3.6
Manganese, Total	mg/L	-	0.0386	0.0307	0.133	0.0434	0.0325	0.0915	0.0254	0.22	0.15	0.17
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	-	1.87	2.84	2.35	2.93	2.61	1.49	1.94	2.7	2	1.9
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	-	1.64	2.06	2.01	2.14	2.17	1.35	1.85	2.9	2.9	2.1
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	-	ND	ND	ND	0.0019	ND	ND	ND	0.001 J	ND	0.0025
Zinc, Total	mg/L	-	0.0286	0.0314	0.0263	0.0353	0.0326	ND	ND	0.018	0.026	0.02
Alkalinity, Total	mg/L as CaCO3	-	16.3 mg/l	7.92 mg/l	16.4 mg/l	6.32 mg/l	12.3 mg/l	32.7 mg/l	14.6 mg/l	46 mg/L	40 mg/L	15 mg/L
Ammonia as N	mg/L	-	ND	ND	ND	ND	ND	ND	ND	0.217	0.211	ND
Chemical Oxygen Demand (COD)	mg/L	-	ND	ND	ND	ND	ND	18	ND	10 J	11 J	8 J
Chloride	mg/L	-	2.01	2.19	2.4	2.85	2.72	2.09	3	3.5	1.7 J	1.8 J
Hardness	mg/L	-	50.8	34.2	53.7	37.2	53.1	53	50	60.4	60.4	31.8
Nitrate/Nitrite-N	mg/L	10	0.738	0.688	1.42	0.556	3.27	ND	0.35	0.68	0.22	0.66
pH	SU	-	5.4 units	5.8 units	5.64 units	5.19 units	5.52 units	6.34 units	6.4 s.u.	6.04 pH_Units	6.48 pH_Units	5.76 pH_Units
Specific Conductance	umhos/cm	-	192.3 umhos	117	163	123	157	123	134	163	140	86
Sulfate	mg/L	-	36.9	30.5	30.8	33.6	29.2	19.2	39.8	37.8	39.2	25.9
Total Dissolved Solids	mg/L	-	66	74	64	62	78	80	84	96	129	214
Turbidity	NTU	-	1.5	0.371	0.483	16.9	0.721	1.81	2.6	4.71	7.43	22.8

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill

Location ID: MW-9												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992
Acetone	ug/L	-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile	ug/L	-	-	-	-	-	-	-	-	-	-	-
Benzene	ug/L	5	-	-	-	-	-	-	-	-	-	-
Bromochloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
2-Butanone	ug/L	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	ug/L	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	5	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	ug/L	100	-	-	-	-	-	-	-	-	-	-
Chloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	ug/L	0.2	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane	ug/L	0.05	-	-	-	-	-	-	-	-	-	-
Dibromomethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	600	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	ug/L	75	-	-	-	-	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	ug/L	5	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	ug/L	7	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	ug/L	70	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	ug/L	100	-	-	-	-	-	-	-	-	-	-
Methylene chloride	ug/L	5	-	-	-	-	-	-	-	-	-	-
Methyl t-Butyl Ether	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	ug/L	5	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	ug/L	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	ug/L	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	700	-	-	-	-	-	-	-	-	-	-
2-Hexanone	ug/L	-	-	-	-	-	-	-	-	-	-	-
Iodomethane (Methyl iodide)	ug/L	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone(MIBK)	ug/L	-	-	-	-	-	-	-	-	-	-	-
Styrene	ug/L	100	-	-	-	-	-	-	-	-	-	-
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	302
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	-	-	-	-	-	-	-	100
Tetrachloroethene	ug/L	5	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	1000	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	ug/L	200	-	-	-	-	-	-	-	-	-	32
1,1,2-Trichloroethane	ug/L	5	-	-	-	-	-	-	-	-	-	-
Trichloroethene	ug/L	5	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	ug/L	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	ug/L	-	-	-	-	-	-	-	-	-	-	-
Vinyl acetate	ug/L	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	ug/L	2	-	-	-	-	-	-	-	-	-	-
o-Xylene	ug/L	10000	-	-	-	-	-	-	-	-	-	-
mp-Xylene	ug/L	10000	-	-	-	-	-	-	-	-	-	-

Location ID: MW-9												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	11/15/1989	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992
Total Xylenes	ug/L	10000	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--
Bromoform	ug/L	80	--	--	--	--	--	--	--	--	--	--
Chloroform	ug/L	80	--	--	--	--	--	--	--	--	--	--

Location ID: MW-9												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	5/27/1992	7/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Acrylonitrile	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
Benzene	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Bromochloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
2-Butanone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Chlorobenzene	ug/L	100	--	--	ND	--	--	--	ND	--	--	--
Chloroethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
Chloromethane	ug/L	--	--	--	13	--	--	--	ND	--	--	--
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	--	--	--	--	--
Dibromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	600	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	75	--	--	--	--	--	--	--	--	--	--
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
1,2-Dichloroethane	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
1,1-Dichloroethene	ug/L	7	--	--	ND	--	--	--	ND	--	--	--
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	--	--	--	--	--
Methylene chloride	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	ug/L	700	--	--	ND	--	--	--	ND	--	--	--
2-Hexanone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Iodomethane (Methyl iodide)	ug/L	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	--	--	--	--	--
Styrene	ug/L	100	--	--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
Tetrachloroethene	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Toluene	ug/L	1000	--	--	ND	--	--	--	ND	--	--	--
1,1,1-Trichloroethane	ug/L	200	--	--	ND	--	--	--	ND	--	--	--
1,1,2-Trichloroethane	ug/L	5	--	--	ND	--	--	--	ND	--	--	--
Trichloroethene	ug/L	5	--	--	ND	--	--	--	ND	--	--	--

Location ID:		MW-9										
Number of Sampling Dates:		50										
Parameter Name	Units	MCL	5/27/1992	7/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994
Trichlorofluoromethane	ug/L	--	--	--	ND	--	--	--	ND	--	--	--
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	--	--	--	--	--
Vinyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	ug/L	2	--	--	ND	--	--	--	ND	--	--	--
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--
Total Xylenes	ug/L	10000	--	--	ND	--	--	--	ND	--	--	--
Bromodichloromethane	ug/L	80	--	--	ND	--	--	--	ND	--	--	--
Dibromochloromethane	ug/L	80	--	--	ND	--	--	--	ND	--	--	--
Bromofom	ug/L	80	--	--	ND	--	--	--	ND	--	--	--
Chlorofom	ug/L	80	--	--	ND	--	--	--	ND	--	--	--

Location ID:		MW-9										
Number of Sampling Dates:		50										
Parameter Name	Units	MCL	11/2/1994	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/29/2009
Acetone	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Carbon disulfide	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	--	ND	ND	ND	ND
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	--	ND	ND	ND	ND
Dibromomethane	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	--	--	--	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	--	--	--	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	--	--	--	ND	--	--	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	--	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	2.1	ND	1
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	--	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Styrene	ug/L	100	--	--	--	--	--	--	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND

Location ID: MW-9		Number of Sampling Dates: 50											
Parameter Name	Units	MCL	11/2/1994	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/29/2009	
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	--	ND	ND	ND	--	
Vinyl acetate	ug/L	--	--	--	--	--	--	--	ND	ND	ND	ND	
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	ND	ND	ND	
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	ND	ND	1	
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	21	ND	ND	--	--	
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroform	ug/L	80	ND	ND	ND	ND	ND	33	ND	ND	ND	ND	

Location ID: MW-9		Number of Sampling Dates: 50											
Parameter Name	Units	MCL	6/4/2010	11/4/2010	1/3/2011	9/7/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND	1.47	ND	ND	ND	ND	
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-9		Number of Sampling Dates: 50										
Parameter Name	Units	MCL	6/4/2010	11/4/2010	1/3/2011	9/7/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromofom	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorofom	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-9		Number of Sampling Dates: 50										
Parameter Name	Units	MCL	3/12/2015	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/13/2018	8/29/2018	1/9/2019	8/1/2019
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	0.5 J	ND	ND
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-9

Number of Sampling Dates: 50

Parameter Name	Units	MCL	3/12/2015	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/13/2018	8/29/2018	1/9/2019	8/1/2019
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	-	ND	2.93	ND	2	ND	2.4	ND	0.37 J	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill

Location ID: MW-9
 Number of Sampling Dates: 50

Parameter Name	Units	MCL	11/5/1989	2/8/1990	5/15/1990	8/1/1990	11/5/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	ND	--	--	--	ND	--	--	--	ND	--
Barium, Total	mg/L	2	0.41	--	--	--	0.032	--	--	--	0.061	--
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	0.001	--	--	--	0.0007	--	--	--	0.0015	--
Chromium, Total	mg/L	0.1	0.0025	--	--	--	0.0023	--	--	--	0.0055	--
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	ND	--	--	--	ND	--	--	--	ND	--
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	ND	--	--	--	ND	--	--	--	ND	--
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	0.04	--	--	--	0.03	--	--	--	0.02	--
Alkalinity, Total	mg/L as CaCO3	--	230 mg/L	240 mg/L	240 mg/L	250 mg/L	260 mg/L	260 mg/L	274 mg/L	280 mg/L	280 mg/L	302 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	ND	--	--	--	ND	--	--	--	ND	--
Chloride	mg/L	--	9	6	4.4	4.9	5	32	30	19	24	32
Hardness	mg/L	--	68.1	74	66	57	57	90	88	83	99	100
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	--	--	--	--
pH	SU	--	4	4.9	4.9	5.3	5	5.2	4.2	4.6	5	4.7
Specific Conductance	umhos/cm	--	0.252 mS/cm	0.242 mS/cm	0.249 mS/cm	0.205 mS/cm	0.19 mS/cm	0.67 mS/cm	0.266 mS/cm	0.232 mS/cm	0.244 mS/cm	0.31 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	--
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--

Location ID: MW-9
 Number of Sampling Dates: 50

Parameter Name	Units	MCL	5/27/1992	7/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--	--	--
Arsenic, Total	mg/L	0.01	--	--	ND	--	--	--	ND	--	--	--
Barium, Total	mg/L	2	--	--	0.1	--	--	--	0.04	--	--	--
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--	--	--
Cadmium, Total	mg/L	0.005	--	--	ND	--	--	--	0.0012	--	--	--
Chromium, Total	mg/L	0.1	--	--	0.005	--	--	--	ND	--	--	--
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--	--	--
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Lead, Total	mg/L	0.015	--	--	ND	--	--	--	ND	--	--	--
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Mercury, Total	mg/L	0.002	--	--	ND	--	--	--	ND	--	--	--
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--	--	--
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--	--	--
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--
Zinc, Total	mg/L	--	--	--	0.01	--	--	--	0.03	--	--	--
Alkalinity, Total	mg/L as CaCO3	--	309 mg/L	321 mg/L	340 mg/L	360 mg/L	360 mg/L	370 mg/L	380 mg/L	ND mg/L	400 mg/L	400 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--	--	--
Chemical Oxygen Demand (COD)	mg/L	--	--	--	ND	--	--	--	ND	--	--	--
Chloride	mg/L	--	21	14	17	15	5	5	7	18	5	6
Hardness	mg/L	--	110	100	130	121	100	160	96	120	85	110
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	--	--	--	--
pH	SU	--	4.9	5	4.6	4.9	5	4.8	5	5.5	5.4	5
Specific Conductance	umhos/cm	--	0.301 mS/cm	0.27 mS/cm	0.421 mS/cm	0.29 mS/cm	0.357 mS/cm	0.328 mS/cm	0.258 mS/cm	0.339 mS/cm	0.241 mS/cm	0.318 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	--

Location ID: MW-9												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	5/27/1992	7/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--

Location ID: MW-9												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	11/2/1994	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/29/2009
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	ND	ND	ND	0.005	ND	ND	ND	ND
Barium, Total	mg/L	2	0.025	0.1	0.05	0.06	0.04	0.05	0.055	0.088	0.054	0.07
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	0.0007	0.0001	ND	ND
Cadmium, Total	mg/L	0.005	0.0008	0.0014	0.0008	0.0008	0.0007	0.0006	0.0007	0.001	ND	ND
Chromium, Total	mg/L	0.1	ND	0.004	0.002	ND	ND	ND	0.001	ND	ND	0.005
Calcium, Total	mg/L	--	--	--	--	21	17	17	1.79	154	22	34
Cobalt, Total	mg/L	--	--	--	--	--	--	--	0.004	0.004	0.0042	0.0063
Copper, Total	mg/L	1.3	--	--	--	--	--	--	ND	0.003	ND	ND
Iron, Total	mg/L	--	--	--	--	--	--	--	0.081	0.156	0.073	0.067
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	--	--	--	--	--	--	0.02	0.024	0.022	0.037
Magnesium, Total	mg/L	--	--	--	--	8.4	6.3	7.8	6.92	1.57	--	12
Manganese, Total	mg/L	--	--	--	--	--	--	--	0.017	0.088	0.018	0.035
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	--	--	--	--	--	--	5.94	8.24	--	7.7
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	ND	ND	ND	ND
Silver, Total	mg/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Sodium, Total	mg/L	--	--	--	--	--	--	--	3.06	3.36	--	8.9
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	ND	ND	ND	ND
Vanadium, Total	mg/L	--	--	--	--	--	--	--	ND	ND	ND	ND
Zinc, Total	mg/L	--	ND	ND	ND	ND	0.02	0.02	0.017	0.019	0.023	0.022
Alkalinity, Total	mg/L as CaCO3	--	400 mg/L	410 mg/L	480 mg/L	493 mg/L	504 mg/L	530 mg/L	560 mg/L	724 mg/L	8 mg/L	50.5 mg/L
Ammonia as N	mg/L	--	--	--	--	--	--	--	ND	ND	ND	--
Chemical Oxygen Demand (COD)	mg/L	--	ND	ND	ND	14	ND	ND	ND	13.9	ND	ND
Chloride	mg/L	--	5	22	5	2	5	6	3.3	22.5	3.6	9.5
Hardness	mg/L	--	88	160	85	87	68	75	73.2	448	75.5	130
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	0.57	0.2	1.1	0.6
pH	SU	--	5	4.8	5.1	4.3	5.7	4.9	4.41	5.86	4.8	4.57
Specific Conductance	umhos/cm	--	0.244 mS/cm	0.432 mS/cm	0.273 mS/cm	0.244 mS/cm	0.216 mS/cm	0.216 mS/cm	0.205 mS/cm	0.928 mS/cm	0.224 mS/cm	0.371 mS/cm
Sulfate	mg/L	--	--	--	--	--	--	--	54.8	144	79	110
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	133	571	7	270
Turbidity	NTU	--	--	--	--	--	--	--	1.2	0.33	0	0.1

Location ID: MW-9												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	6/4/2010	11/4/2010	1/3/2011	9/7/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	mg/L	2	0.052	0.035	0.044	0.045	0.054	0.13	0.0528	0.0613	0.0626	0.0577
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/L	--	14.8	21.5	20.1	30.1	16.7	221	23.8	23.4	21.2	15.7
Cobalt, Total	mg/L	--	ND	ND	ND	ND	ND	0.0064	ND	0.0058	ND	ND
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/L	--	ND	0.094	ND	ND	ND	0.368	0.13	0.227	0.0889	ND
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	0.017	0.013	0.023	0.014	0.02	0.0363	0.0266	0.0378	0.0217	0.0272
Magnesium, Total	mg/L	--	6.2	4.94	7.1	5.6	7.17	20.9	8.68	10.3	7.67	8
Manganese, Total	mg/L	--	0.014	0.015	0.016	0.02	0.019	0.134	0.027	0.0331	0.0191	0.0231
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	6.01	5.64	6.22	5.28	5.91	9.3	6.67	7.17	5.55	5.61
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	3.18	3.74	4	5.55	3.16	59.2	3.85	4.77	3.18	3.64
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	mg/L	--	0.02	0.015	0.017	0.018	0.017	0.0154	0.0281	0.0368	0.0316	0.019
Alkalinity, Total	mg/L as CaCO3	--	6.6	25	17	36	7.1	539 mg/l	18.9 mg/l	15.8 mg/l	19.1 mg/l	3.3 mg/l
Ammonia as N	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chemical Oxygen Demand (COD)	mg/L	--	ND	ND	ND	ND	ND	17	ND	ND	ND	ND
Chloride	mg/L	--	3.29	2.22	2.12	5	2.75	--	4.16	5.57	4.3	3.27
Hardness	mg/L	--	62.5 mg/L as CaCO3	74 mg/L as CaCO3	79.4 mg/L as CaCO3	98.3 mg/L as CaCO3	71.2 mg/L as CaCO3	638	95.2	101	84.5	72.1
Nitrate/Nitrite-N	mg/L	10	0.38	1.15	0.55	0.53	0.36	ND	0.235	0.312	0.305	0.183

Location ID: MW-9												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	6/4/2010	11/4/2010	1/2/2011	9/7/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014
pH	SU	--	5.29 pH Units	5.53 pH Units	5.41 pH Units	5.77 pH Units	5.3 pH Units	6.4 units	5.46 units	5.08 units	5.38 units	5.08 units
Specific Conductance	umhos/cm	--	203 umhos @ 25°C	223 umhos @ 25°C	241 umhos @ 25°C	251 umhos @ 25°C	228 umhos @ 25°C	136.6 umhos	362 umhos	312 umhos	118.8 umhos	129 umhos
Sulfate	mg/L	--	61.6	56.7	75.8	59.7	75.2	126	88.3	98.2	85.6	90.3
Total Dissolved Solids	mg/L	--	122	139	129	161	125	835	165	176	147	154
Turbidity	NTU	--	0.57	1.4	0.63	0.21	0.72	0.904	1.18	1.1	0.507	0.558

Location ID: MW-9												
Number of Sampling Dates: 50												
Parameter Name	Units	MCL	3/12/2015	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/2/2017	3/13/2018	8/29/2018	1/9/2019	8/1/2019
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	0.0021 J	ND	ND
Barium, Total	mg/L	2	0.0729	0.128	0.0586	0.0987	0.0648	0.0938	0.0736	0.061	0.057	0.049
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00043 J
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	0.0014	ND	0.001	0.00059 J	0.00037 J	0.00059 J
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	0.0051	0.0021 J	0.0017 J
Calcium, Total	mg/L	--	30.9	250	30.4	225	29.7	226	33.4	18.8	16.4	17.9
Cobalt, Total	mg/L	--	0.0069	ND	0.0055	0.0058	0.0086	0.0049	0.0082	0.0049 J	0.0032 J	0.0052 J
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND	ND	0.0021 J	ND	ND
Iron, Total	mg/L	--	ND	0.247	ND	0.298	ND	ND	ND	1.6	0.32	0.25
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	0.0026	ND
Nickel, Total	mg/L	--	0.0382	0.0217	0.0291	0.0226	0.0466	0.0214	0.0335	0.022	0.014	0.025
Magnesium, Total	mg/L	--	12	12.5	10	11.5	14.4	14.5	11.2	8.2	5.7	8.6
Manganese, Total	mg/L	--	0.0408	0.166	0.0349	0.195	0.0512	0.169	0.0411	0.028	0.026	0.023
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	7.11	9.08	6.78	9.44	8.2	9	7.4	6	5	6.2
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	16.4	61	7.05	59.5	8.8	55.1	9.36	8.6	5.2	16
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	0.001 J	ND	ND
Zinc, Total	mg/L	--	0.0279	0.0149	0.0202	ND	ND	ND	ND	0.018	0.04	0.019
Alkalinity, Total	mg/L as CaCO3	--	33.9 mg/l	601 mg/l	31.8 mg/l	510 mg/l	24.1 mg/l	480 mg/l	34.4 mg/l	22 mg/L	12 mg/L	32 mg/L
Ammonia as N	mg/L	--	ND	ND	ND	ND	ND	ND	ND	0.178	0.276	ND
Chemical Oxygen Demand (COD)	mg/L	--	15	23	11	23	13	22	ND	ND	ND	13 J
Chloride	mg/L	--	19.2	81.1	5.83	84.2	16.2	123	32	11.5	6	3.2
Hardness	mg/L	--	127	676	117	609	133	625	129	80.5	64.3	80.1
Nitrate/Nitrite-N	mg/L	10	0.381	ND	ND	ND	0.84	ND	ND	0.14	ND	0.36
pH	SU	--	5.31 units	6.23 units	5.81 units	6.06 units	5.19 units	6.68 units	6 s.u.	5.42 pH_Units	5.71 pH_Units	5.72 pH_Units
Specific Conductance	umhos/cm	--	409 umhos	1631	323	1433	367	1397	363	254	183	262
Sulfate	mg/L	--	116	93.6	90.3	89.6	121	83.2	90.1	85	68.1	96.2
Total Dissolved Solids	mg/L	--	241	969	181	856	231	829	229	182	128	313
Turbidity	NTU	--	0.153	0.344	0.182	0.311	0.151	0.224	1.3	17.8	1.33	0.99

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill

Location ID: MW-10													
Number of Sampling Dates: 49													
Parameter Name	Units	MCL	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992	5/27/1992	
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Acrylonitrile	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Benzene	ug/L	5	--	--	--	--	--	--	--	--	--	--	
Bromochloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Bromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
2-Butanone	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Carbon tetrachloride	ug/L	5	--	--	--	--	--	--	--	--	--	--	
Chlorobenzene	ug/L	100	--	--	--	--	--	--	--	--	--	--	
Chloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Chloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	--	--	--	--	--	
Dibromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichlorobenzene	ug/L	600	--	--	--	--	--	--	--	--	--	--	
1,4-Dichlorobenzene	ug/L	75	--	--	--	--	--	--	--	--	--	--	
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloroethane	ug/L	5	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethene	ug/L	7	--	--	--	--	--	--	--	--	--	--	
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	--	--	--	--	--	
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	--	--	--	--	--	
Methylene chloride	ug/L	5	--	--	--	--	--	--	--	--	--	--	
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloropropane	ug/L	5	--	--	--	--	--	--	--	--	--	--	
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--	
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Ethylbenzene	ug/L	700	--	--	--	--	--	--	--	--	--	--	
2-Hexanone	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	--	--	--	--	--	
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Styrene	ug/L	100	--	--	--	--	--	--	--	--	--	--	
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
1,1,2,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Tetrachloroethene	ug/L	5	--	--	--	--	--	--	--	--	--	--	
Toluene	ug/L	1000	--	--	--	--	--	--	--	--	--	--	
1,1,1-Trichloroethane	ug/L	200	--	--	--	--	--	--	--	--	--	--	
1,1,2-Trichloroethane	ug/L	5	--	--	--	--	--	--	--	--	--	--	
Trichloroethene	ug/L	5	--	--	--	--	--	--	--	--	--	--	
Trichlorofluoromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Vinyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Vinyl chloride	ug/L	2	--	--	--	--	--	--	--	--	--	--	
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--	

Location ID: MW-10
Number of Sampling Dates: 49

Parameter Name	Units	MCL	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992	5/27/1992
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--
Total Xylenes	ug/L	10000	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	ug/L	80	--	--	--	--	--	--	--	--	--	--
Bromoform	ug/L	80	--	--	--	--	--	--	--	--	--	--
Chloroform	ug/L	80	--	--	--	--	--	--	--	--	--	--

Location ID: MW-10
Number of Sampling Dates: 49

Parameter Name	Units	MCL	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994
Acetone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Acrylonitrile	ug/L	--	--	ND	--	--	--	ND	--	--	--	ND
Benzene	ug/L	5	--	ND	--	--	--	ND	--	--	--	ND
Bromochloromethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	ug/L	--	--	ND	--	--	--	ND	--	--	--	ND
2-Butanone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	ug/L	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	ug/L	5	--	ND	--	--	--	ND	--	--	--	ND
Chlorobenzene	ug/L	100	--	ND	--	--	--	ND	--	--	--	ND
Chloroethane	ug/L	--	--	ND	--	--	--	ND	--	--	--	ND
Chloromethane	ug/L	--	--	ND	--	--	--	ND	--	--	--	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	--	--	--	--	--
Dibromomethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	ug/L	600	--	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	ug/L	75	--	--	--	--	--	--	--	--	--	--
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	ug/L	--	--	ND	--	--	--	ND	--	--	--	ND
1,2-Dichloroethane	ug/L	5	--	ND	--	--	--	ND	--	--	--	ND
1,1-Dichloroethene	ug/L	7	--	ND	--	--	--	ND	--	--	--	ND
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	--	--	--	--	--
Methylene chloride	ug/L	5	--	13	--	--	--	ND	--	--	--	ND
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	5	--	ND	--	--	--	ND	--	--	--	ND
trans-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	ND
cis-1,3-Dichloropropene	ug/L	--	--	--	--	--	--	--	--	--	--	ND
Ethylbenzene	ug/L	700	--	ND	--	--	--	ND	--	--	--	ND
2-Hexanone	ug/L	--	--	--	--	--	--	--	--	--	--	--
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	--	--	--	--	--
Styrene	ug/L	100	--	--	--	--	--	--	--	--	--	--
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	ug/L	--	--	ND	--	--	--	ND	--	--	--	ND
Tetrachloroethene	ug/L	5	--	8	--	--	--	5	--	--	--	ND
Toluene	ug/L	1000	--	ND	--	--	--	ND	--	--	--	ND
1,1,1-Trichloroethane	ug/L	200	--	ND	--	--	--	ND	--	--	--	ND
1,1,2-Trichloroethane	ug/L	5	--	ND	--	--	--	ND	--	--	--	ND

Location ID: MW-10													
Number of Sampling Dates: 49													
Parameter Name	Units	MCL	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994	
Trichloroethene	ug/L	5	--	ND	--	--	--	ND	--	--	--	ND	
Trichlorofluoromethane	ug/L	--	--	ND	--	--	--	ND	--	--	--	ND	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Vinyl acetate	ug/L	--	--	--	--	--	--	--	--	--	--	--	
Vinyl chloride	ug/L	2	--	13	--	--	--	ND	--	--	--	8	
o-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--	
mp-Xylene	ug/L	10000	--	--	--	--	--	--	--	--	--	--	
Total Xylenes	ug/L	10000	--	15	--	--	--	ND	--	--	--	ND	
Bromodichloromethane	ug/L	80	--	ND	--	--	--	ND	--	--	--	ND	
Dibromochloromethane	ug/L	80	--	ND	--	--	--	ND	--	--	--	--	
Bromoform	ug/L	80	--	ND	--	--	--	ND	--	--	--	ND	
Chloroform	ug/L	80	--	ND	--	--	--	ND	--	--	--	ND	

Location ID: MW-10													
Number of Sampling Dates: 49													
Parameter Name	Units	MCL	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/29/2009	6/4/2010	
Acetone	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	ND	ND	0.4	0.3	ND	ND	ND	
Bromochloromethane	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Butanone	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
Carbon disulfide	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	0.2	0.1	ND	ND	ND	
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	ND	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	ND	ND	ND	ND	ND	
Dibromomethane	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	--	--	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	--	--	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	0.3	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	0.3	ND	ND	ND	ND	
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	ND	ND	ND	ND	ND	
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	0.8	0.8	1.3	
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	1.1	1	0.7	ND	
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Hexanone	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
Styrene	ug/L	100	--	--	--	--	--	ND	ND	ND	ND	ND	

Location ID: MW-10													
Number of Sampling Dates: 49													
Parameter Name	Units	MCL	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/29/2009	6/4/2010	
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
Vinyl acetate	ug/L	--	--	--	--	--	--	ND	ND	ND	ND	ND	
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
o-Xylene	ug/L	10000	--	--	--	--	--	--	ND	ND	ND	ND	
mp-Xylene	ug/L	10000	--	--	--	--	--	--	ND	ND	ND	ND	
Total Xylenes	ug/L	10000	ND	ND	ND	ND	21	ND	ND	--	--	ND	
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroform	ug/L	80	ND	ND	ND	ND	33	ND	ND	ND	ND	ND	

Location ID: MW-10													
Number of Sampling Dates: 49													
Parameter Name	Units	MCL	11/4/2010	1/4/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	1.74	4.36	2.96	1.66	1.23	1.22	
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-10		Number of Sampling Dates: 49											
Parameter Name	Units	MCL	11/4/2010	1/4/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-10		Number of Sampling Dates: 49										
Parameter Name	Units	MCL	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/14/2018	8/29/2018	1/9/2019	7/31/2019	
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND	ND	
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Location ID: MW-10

Number of Sampling Dates: 49

Parameter Name	Units	MCL	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/14/2018	8/29/2018	1/9/2019	7/31/2019
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	5.55	1.45	6.8	7.5	6.8	2.2	1.9	ND	2.5
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill

Location ID: MW-10		Number of Sampling Dates: 49											
Parameter Name	Units	MCL	2/8/1990	5/15/1990	8/1/1990	11/15/1990	2/6/1991	5/1/1991	8/13/1991	11/5/1991	2/27/1992	5/27/1992	
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--	--	--	
Arsenic, Total	mg/L	0.01	--	--	--	ND	--	--	--	ND	--	--	
Barium, Total	mg/L	2	--	--	--	0.012	--	--	--	ND	--	--	
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--	--	--	
Cadmium, Total	mg/L	0.005	--	--	--	ND	--	--	--	ND	--	--	
Chromium, Total	mg/L	0.1	--	--	--	0.0068	--	--	--	0.01	--	--	
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--	--	--	
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Lead, Total	mg/L	0.015	--	--	--	ND	--	--	--	ND	--	--	
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Mercury, Total	mg/L	0.002	--	--	--	ND	--	--	--	ND	--	--	
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--	--	--	
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--	--	--	
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Zinc, Total	mg/L	--	--	--	--	0.01	--	--	--	ND	--	--	
Alkalinity, Total	mg/L as CaCO3	--	0 mg/L	0 mg/L	0 mg/L	0 mg/L	0 mg/L	1 mg/L	2 mg/L	2 mg/L	2 mg/L	2 mg/L	
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Chemical Oxygen Demand (COD)	mg/L	--	--	--	--	22	--	--	--	ND	--	--	
Chloride	mg/L	--	4	3.7	ND	3.5	6	9	3	2	15	25	
Hardness	mg/L	--	71	72	120	70	70	69	85	75	93	110	
Nitrate/Nitrite-N	mg/L	10	--	--	--	0.01	--	--	--	--	--	--	
pH	SU	--	6.5	6.6	7.5	7.2	6.6	5.2	7	7.2	6.3	6.1	
Specific Conductance	umhos/cm	--	0.157 mS/cm	0.153 mS/cm	0.255 mS/cm	0.158 mS/cm	0.391 mS/cm	0.168 mS/cm	0.165 mS/cm	0.165 mS/cm	0.254 mS/cm	0.233 mS/cm	
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--	

Location ID: MW-10		Number of Sampling Dates: 49											
Parameter Name	Units	MCL	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994	
Antimony, Total	mg/L	0.006	--	--	--	--	--	--	--	--	--	--	
Arsenic, Total	mg/L	0.01	--	0.01	--	--	--	0.094	--	--	--	ND	
Barium, Total	mg/L	2	--	0.06	--	--	--	ND	--	--	--	ND	
Beryllium, Total	mg/L	0.004	--	--	--	--	--	--	--	--	--	--	
Cadmium, Total	mg/L	0.005	--	ND	--	--	--	ND	--	--	--	ND	
Chromium, Total	mg/L	0.1	--	ND	--	--	--	ND	--	--	--	ND	
Calcium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Cobalt, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Copper, Total	mg/L	1.3	--	--	--	--	--	--	--	--	--	--	
Iron, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Lead, Total	mg/L	0.015	--	ND	--	--	--	ND	--	--	--	ND	
Nickel, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Magnesium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Manganese, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Mercury, Total	mg/L	0.002	--	ND	--	--	--	ND	--	--	--	ND	
Potassium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Selenium, Total	mg/L	0.05	--	--	--	--	--	--	--	--	--	--	
Silver, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Sodium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Thallium, Total	mg/L	0.002	--	--	--	--	--	--	--	--	--	--	
Vanadium, Total	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Zinc, Total	mg/L	--	--	0.01	--	--	--	ND	--	--	--	ND	
Alkalinity, Total	mg/L as CaCO3	--	2 mg/L	2 mg/L	2 mg/L	3 mg/L	3 mg/L	3 mg/L	3 mg/L	3 mg/L	3 mg/L	3.9 mg/L	
Ammonia as N	mg/L	--	--	--	--	--	--	--	--	--	--	--	
Chemical Oxygen Demand (COD)	mg/L	--	--	14	--	--	--	25	--	--	--	ND	
Chloride	mg/L	--	33	41	38	46	41	32	35	12	15	14	
Hardness	mg/L	--	100	280	130	120	180	110	139	110	140	130	
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	--	--	--	--	--	
pH	SU	--	6.4	6.1	5.8	5.8	6	6.4	6.5	6.6	6.8	7.1	
Specific Conductance	umhos/cm	--	0.29 mS/cm	0.46 mS/cm	0.3 mS/cm	0.374 mS/cm	0.417 mS/cm	0.312 mS/cm	0.438 mS/cm	0.261 mS/cm	0.26 mS/cm	0.258 mS/cm	
Sulfate	mg/L	--	--	--	--	--	--	--	--	--	--	--	

Location ID: MW-10												
Number of Sampling Dates: 49												
Parameter Name	Units	MCL	8/10/1992	11/24/1992	2/2/1993	5/12/1993	8/27/1993	11/1/1993	2/21/1994	6/1/1994	9/2/1994	11/2/1994
Total Dissolved Solids	mg/L	--	--	--	--	--	--	--	--	--	--	--
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	--

Location ID: MW-10												
Number of Sampling Dates: 49												
Parameter Name	Units	MCL	11/30/1995	11/15/1996	11/24/1997	11/17/1998	11/16/1999	4/14/2008	9/30/2008	3/9/2009	9/29/2009	6/4/2010
Antimony, Total	mg/L	0.006	--	--	--	--	--	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium, Total	mg/L	2	0.01	0.02	0.03	0.02	0.03	0.067	0.047	0.045	0.041	0.055
Beryllium, Total	mg/L	0.004	--	--	--	--	--	0.0006	0.0002	ND	ND	ND
Cadmium, Total	mg/L	0.005	0.0005	ND	ND	ND	ND	0.001	0.0006	ND	ND	ND
Chromium, Total	mg/L	0.1	ND	ND	ND	0.003	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/L	--	--	--	93	88	100	132	113	110	110	155
Cobalt, Total	mg/L	--	--	--	--	--	--	0.007	ND	ND	ND	ND
Copper, Total	mg/L	1.3	--	--	--	--	--	ND	0.004	ND	ND	ND
Iron, Total	mg/L	--	--	--	--	--	--	0.08	0.39	2.3	0.78	0.151
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	--	--	--	--	--	0.031	0.002	0.01	ND	ND
Magnesium, Total	mg/L	--	--	--	2.6	1.6	3.3	8.83	2.53	--	1.8	2.78
Manganese, Total	mg/L	--	--	--	--	--	--	0.285	0.106	0.11	0.052	0.12
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	--	--	--	--	--	1.04	5.07	--	4.4	6.21
Selenium, Total	mg/L	0.05	--	--	--	--	--	ND	ND	ND	ND	0.002
Silver, Total	mg/L	--	--	--	--	--	--	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	--	--	--	--	--	2.44	9.63	--	ND	12.6
Thallium, Total	mg/L	0.002	--	--	--	--	--	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	--	--	--	--	--	ND	ND	ND	ND	ND
Zinc, Total	mg/L	--	ND	ND	ND	ND	0.03	ND	ND	0.011	ND	ND
Alkalinity, Total	mg/L as CaCO3	--	4 mg/L	4 mg/L	4 mg/L	4 mg/L	4 mg/L	4 mg/L	4 mg/L	216 mg/L	20.9 mg/L	273
Ammonia as N	mg/L	--	--	--	--	--	--	ND	ND	ND	ND	0.31
Chemical Oxygen Demand (COD)	mg/L	--	ND	ND	12	ND	13	11.9	ND	ND	ND	12
Chloride	mg/L	--	72	65	56	43	62	33.2	32.8	55	39	59.4
Hardness	mg/L	--	210	240	240	230	260	366	292	291	202	399 mg/L as CaCO3
Nitrate/Nitrite-N	mg/L	10	--	--	--	--	--	ND	ND	ND	ND	ND
pH	SU	--	6.5	6.6	6.1	7.2	6.1	5.57	6.44	6.17	5.86	6.26 pH Units
Specific Conductance	umhos/cm	--	0.476 mS/cm	0.557 mS/cm	0.515 mS/cm	0.485 mS/cm	0.578 mS/cm	0.774 mS/cm	0.531 mS/cm	0.595 mS/cm	0.591 mS/cm	873 umhos @ 25°C
Sulfate	mg/L	--	--	--	--	--	--	154	66.6	77	33	52.3
Total Dissolved Solids	mg/L	--	--	--	--	--	--	532	425	83	390	580
Turbidity	NTU	--	--	--	--	--	--	--	--	--	--	0.46

Location ID: MW-10												
Number of Sampling Dates: 49												
Parameter Name	Units	MCL	11/4/2010	1/4/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	0.002	0.002	ND	ND	0.0043	ND	ND	0.0022
Barium, Total	mg/L	2	0.033	0.045	0.058	0.066	0.0211	0.0554	0.061	0.0655	0.0535	0.084
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND	ND	0.004	0.0022	ND	ND
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium, Total	mg/L	--	85.3	103	132	132	60.8	111	132	85.3	114	140
Cobalt, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron, Total	mg/L	--	1.23	0.572	1.82	0.649	1.19	1.54	7.39	1.59	0.622	2.96
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	ND	0.013	ND	0.02	ND	0.0107	0.013	0.0274	0.0092	0.0208
Magnesium, Total	mg/L	--	1.78	3.91	3.74	7.2	1.21	4.67	5.34	7.05	5.09	7
Manganese, Total	mg/L	--	0.048	0.11	0.164	0.27	0.0216	0.162	0.247	0.21	0.128	0.256
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	4.64	6.32	6.44	8.31	4.15	6.7	6.2	7.18	5.64	8.07
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	0.0023	ND	ND	0.0031	ND
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	7.45	16.3	18.2	21.4	2.58	21.5	12.1	21	12.5	29
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc, Total	mg/L	--	0.013	0.009	0.005	0.006	ND	0.0103	0.0211	0.0179	ND	0.0161
Alkalinity, Total	mg/L as CaCO3	--	173	177	202	191	111 mg/l	174 mg/l	242 mg/l	120 mg/l	253 mg/l	221 mg/l
Ammonia as N	mg/L	--	ND	ND	ND	ND	0.282	ND	ND	ND	ND	ND
Chemical Oxygen Demand (COD)	mg/L	--	ND	12.9	ND	15	ND	10.6	10	16	ND	10
Chloride	mg/L	--	47.2	44.9	33.5	40.7	21.8	51.7	46.7	23.7	40.9	48.7
Hardness	mg/L	--	220 mg/L as CaCO3	273 mg/L as CaCO3	345 mg/L as CaCO3	360 mg/L as CaCO3	157	296	352	242	306	378
Nitrate/Nitrite-N	mg/L	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-10												
Number of Sampling Dates: 49												
Parameter Name	Units	MCL	11/4/2010	1/4/2011	9/2/2011	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015
pH	SU	--	6.19 pH Units	6.06 pH Units	6.6 pH Units	6.45 pH Units	6.43 units	6.29 units	6.48 units	6.11 units	6.68 units	5.99 units
Specific Conductance	umhos/cm	--	563 umhos @ 25°C	680 umhos @ 25°C	756 umhos @ 25°C	899 umhos @ 25°C	344 umhos	800 umhos	896 umhos	663 umhos	790 umhos	354 umhos
Sulfate	mg/L	--	11.1	73.2	90.3	187	11.5	105	92.2	204	101	221
Total Dissolved Solids	mg/L	--	301	400	468	523	210	457	487	426	514	609
Turbidity	NTU	--	1.5	1.7	3.7	1.7	8.12	16.6	43.3	8.68	3.67	12.7

Location ID: MW-10												
Number of Sampling Dates: 49												
Parameter Name	Units	MCL	9/23/2015	2/12/2016	9/21/2016	1/19/2017	8/3/2017	3/14/2018	8/29/2018	1/9/2019	7/31/2019	
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic, Total	mg/L	0.01	ND	ND	0.0075	ND	ND	ND	0.0076	ND	ND	ND
Barium, Total	mg/L	2	0.0398	0.0823	0.0385	0.0338	0.028	0.0706	0.063	0.049	0.064	
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	ND	ND	0.00067 J	ND	ND	
Cadmium, Total	mg/L	0.005	ND	ND	ND	ND	ND	ND	ND	0.013	0.0011 J	
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	0.0082	0.0021 J	0.0016 J	
Calcium, Total	mg/L	--	103	137	69.8	81.7	81.4	148	95.8	74.5	137	
Cobalt, Total	mg/L	--	ND	ND	0.0013	ND	ND	0.0014	ND	0.0024 J	ND	
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Iron, Total	mg/L	--	2.7	2.43	13.8	2.59	1.42	1.4	9.7	0.39	0.74	
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	0.0042	ND	ND	
Nickel, Total	mg/L	--	ND	0.0227	ND	ND	ND	0.0105	0.0073	0.022	0.0036 J	
Magnesium, Total	mg/L	--	2.26	8.07	1.35	1.59	1.91	7.15	5.8	6.4	4.3	
Manganese, Total	mg/L	--	0.0705	0.403	0.0878	0.0294	0.0413	0.26	0.25	0.26	0.12	
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Potassium, Total	mg/L	--	5.01	8.88	4.41	4.73	4.53	7.64	5.4	7.4	6	
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	0.002 J	ND	ND	
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Sodium, Total	mg/L	--	5.24	34.1	3.22	4.01	4.65	30.5	11.3	18.6	15.5	
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Vanadium, Total	mg/L	--	ND	ND	0.0015	ND	ND	ND	0.0062	0.0013 J	0.0013 J	
Zinc, Total	mg/L	--	0.0082	0.0058	ND	ND	ND	ND	0.01	0.013	0.0099	
Alkalinity, Total	mg/L as CaCO3	--	178 mg/l	188 mg/l	108 mg/l	126 mg/l	120 mg/l	279 mg/l	245 mg/L	114 mg/L	286 mg/L	
Ammonia as N	mg/L	--	ND	ND	ND	ND	ND	ND	0.138	0.134	ND	
Chemical Oxygen Demand (COD)	mg/L	--	ND	19	12	13	ND	ND	12 J	9 J	15	
Chloride	mg/L	--	57.3	32.1	45.9	51.4	53.5	56	35.2	9.4	61.6	
Hardness	mg/L	--	267	375	180	211	211	398	263	213	359	
Nitrate/Nitrite-N	mg/L	10	ND	ND	ND	ND	ND	ND	0.01 J	ND	ND	
pH	SU	--	6.06 units	6.01 units	5.75 units	5.73 units	7.12 units	7.5 s.u.	6.75 pH_Units	6.57 pH_Units	6.99 pH_Units	
Specific Conductance	umhos/cm	--	631	910	441	494	493	890	699	556	888	
Sulfate	mg/L	--	21.4	255	18	18.4	23.6	159	90.8	149	93.4	
Total Dissolved Solids	mg/L	--	386	577	295	304	320	606	389	375	688	
Turbidity	NTU	--	13.5	19.4	78.2	17.9	9.65	11	128	3.07	3.53	

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill

Location ID: MW-11										
Number of Sampling Dates: 32										
Parameter Name	Units	MCL	9/2/1994	11/2/1994	11/30/1995	11/15/1996	11/24/1997	4/14/1998	11/17/1998	11/16/1999
Acetone	ug/L	--	--	--	--	--	--	ND	--	--
Acrylonitrile	ug/L	--	--	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	5	--	ND	ND	ND	ND	0.7	ND	ND
Bromochloromethane	ug/L	--	--	--	--	--	--	ND	--	--
Bromomethane	ug/L	--	--	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ug/L	--	--	--	--	--	--	ND	--	--
Carbon disulfide	ug/L	--	--	--	--	--	--	ND	--	--
Carbon tetrachloride	ug/L	5	--	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	--	ND	ND	ND	ND	0.2	ND	ND
Chloroethane	ug/L	--	--	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	--	--	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	--	--	--	--	--	ND	--	--
1,2-Dibromoethane	ug/L	0.05	--	--	--	--	--	ND	--	--
Dibromomethane	ug/L	--	--	--	--	--	--	ND	--	--
1,2-Dichlorobenzene	ug/L	600	--	--	--	--	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	--	--	--	--	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	--	--	--	--	--	--	ND	--	--
1,1-Dichloroethane	ug/L	--	--	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	--	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	--	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	--	--	--	--	--	ND	--	--
trans-1,2-Dichloroethene	ug/L	100	--	--	--	--	--	ND	--	--
Methylene chloride	ug/L	5	--	ND	8	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	5	--	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	--	--	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	--	--	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	--	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	--	--	--	--	--	ND	--	--
Iodomethane (Methyl Iodide)	ug/L	--	--	--	--	--	--	ND	--	--
4-Methyl-2-Pentanone(MIBK)	ug/L	--	--	--	--	--	--	ND	--	--
Styrene	ug/L	100	--	--	--	--	--	ND	--	--
1,1,1,2-Tetrachloroethane	ug/L	--	--	--	--	--	--	ND	--	--
1,1,2,2-Tetrachloroethane	ug/L	--	--	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	--	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	--	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	--	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	--	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-11

Number of Sampling Dates: 32

Parameter Name	Units	MCL	9/2/1994	11/2/1994	11/30/1995	11/15/1996	11/24/1997	4/14/1998	11/17/1998	11/16/1999
Trichloroethene	ug/L	5	–	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	–	–	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	–	–	–	–	–	–	ND	–	–
Vinyl acetate	ug/L	–	–	–	–	–	–	ND	–	–
Vinyl chloride	ug/L	2	–	8	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	–	–	–	–	–	–	–	–
mp-Xylene	ug/L	10000	–	–	–	–	–	–	–	–
Total Xylenes	ug/L	10000	–	ND	ND	ND	ND	ND	ND	21
Bromodichloromethane	ug/L	80	–	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	–	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	80	–	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	80	–	ND	ND	ND	ND	ND	ND	33

Location ID: MW-11

Number of Sampling Dates: 32

Parameter Name	Units	MCL	9/30/2008	3/9/2009	5/8/2009	9/29/2009	6/4/2010	11/4/2010	1/4/2011	9/2/2011
Acetone	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
Benzene	ug/L	5	0.5	ND	–	ND	ND	ND	ND	ND
Bromochloromethane	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
Bromomethane	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
2-Butanone	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
Carbon disulfide	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	5	ND	ND	–	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	0.2	ND	–	ND	ND	ND	ND	ND
Chloroethane	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
Chloromethane	ug/L	–	0.7	ND	–	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	–	ND	ND	ND	ND	ND
1,2-Dibromoethane	ug/L	0.05	ND	ND	–	ND	ND	ND	ND	ND
Dibromomethane	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	ND	ND	–	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	ND	ND	–	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	–	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	–	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	ND	ND	–	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	ND	ND	–	ND	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	–	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	–	ND	ND	–	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	–	ND	ND	ND	ND	ND

Location ID: MW-11

Number of Sampling Dates: 32

Parameter Name	Units	MCL	9/30/2008	3/9/2009	5/8/2009	9/29/2009	6/4/2010	11/4/2010	1/4/2011	9/2/2011
trans-1,3-Dichloropropene	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	--	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	--	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	2.9	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	--	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	--	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	--	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	--	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	--	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	--	ND	ND	--	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	--	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	--	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	--	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	--	--	--	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	--	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	--	ND	ND	ND	ND	ND
Bromofom	ug/L	80	ND	ND	--	ND	ND	ND	ND	ND
Chlorofom	ug/L	80	ND	ND	--	ND	ND	ND	ND	ND

Location ID: MW-11

Number of Sampling Dates: 32

Parameter Name	Units	MCL	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	9/23/2015
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-11

Number of Sampling Dates: 32

Parameter Name	Units	MCL	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	9/23/2015
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3,3-Dichloropropene	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/L	-	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-11

Number of Sampling Dates: 32

Parameter Name	Units	MCL	2/12/2016	9/21/2016	1/19/2017	8/18/2017	3/14/2018	8/29/2018	1/9/2019	8/1/2019
Acetone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/L	100	ND	ND	ND	ND	ND	ND	0.34 J	0.22 J
Chloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/L	0.2	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ug/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ug/L	600	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	75	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/L	7	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/L	70	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	700	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	ug/L	100	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ug/L	1000	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/L	200	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/L	5	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/L	--	ND	ND	ND	ND	ND	ND	ND	ND

Location ID: MW-11

Number of Sampling Dates: 32

Parameter Name	Units	MCL	2/12/2016	9/21/2016	1/19/2017	8/18/2017	3/14/2018	8/29/2018	1/9/2019	8/1/2019
Vinyl acetate	ug/L	–	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/L	2	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
mp-Xylene	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	10000	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Bromofom	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND
Chlorofom	ug/L	80	ND	ND	ND	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill

Location ID: MW-11		Number of Sampling Dates: 32									
Parameter Name	Units	MCL	9/2/1994	11/2/1994	11/30/1995	11/5/1996	11/24/1997	4/14/1998	11/7/1998	11/16/1999	
Antimony, Total	mg/L	0.006	-	-	-	-	-	ND	-	-	
Arsenic, Total	mg/L	0.01	-	ND	ND	ND	ND	0.003	ND	ND	
Barium, Total	mg/L	2	-	0.022	0.02	0.04	0.06	0.088	0.08	0.08	
Beryllium, Total	mg/L	0.004	-	-	-	-	-	0.0002	-	-	
Cadmium, Total	mg/L	0.005	-	ND	ND	ND	ND	0.0007	ND	ND	
Chromium, Total	mg/L	0.1	-	ND	ND	ND	ND	0.002	ND	ND	
Calcium, Total	mg/L	-	-	-	-	-	110	105	120	120	
Cobalt, Total	mg/L	-	-	-	-	-	-	0.002	-	-	
Copper, Total	mg/L	1.3	-	-	-	-	-	ND	-	-	
Iron, Total	mg/L	-	-	-	-	-	-	7.28	-	-	
Lead, Total	mg/L	0.015	-	ND	ND	ND	ND	ND	ND	ND	
Nickel, Total	mg/L	-	-	-	-	-	-	0.021	-	-	
Magnesium, Total	mg/L	-	-	-	-	-	2.5	2.19	2.7	2.8	
Manganese, Total	mg/L	-	-	-	-	-	-	0.033	-	-	
Mercury, Total	mg/L	0.002	-	ND	ND	ND	ND	ND	ND	ND	
Potassium, Total	mg/L	-	-	-	-	-	-	6.6	-	-	
Selenium, Total	mg/L	0.05	-	-	-	-	-	ND	-	-	
Silver, Total	mg/L	-	-	-	-	-	-	ND	-	-	
Sodium, Total	mg/L	-	-	-	-	-	-	6.37	-	-	
Thallium, Total	mg/L	0.002	-	-	-	-	-	ND	-	-	
Vanadium, Total	mg/L	-	-	-	-	-	-	ND	-	-	
Zinc, Total	mg/L	-	-	ND	ND	ND	ND	0.03	ND	0.04	
Alkalinity, Total	mg/L as CaCO3	-	4 mg/L	4 mg/L	4 mg/L	4 mg/L	4 mg/L	5 mg/L	5 mg/L	5 mg/L	
Ammonia as N	mg/L	-	-	-	-	-	-	ND	-	-	
Chemical Oxygen Demand (COD)	mg/L	-	-	ND	ND	ND	11	10.8	ND	10	
Chloride	mg/L	-	6	6	10	10	4	2.2	11	10	
Hardness	mg/L	-	230	200	250	260	280	270	310	310	
Nitrate/Nitrite-N	mg/L	10	-	-	-	-	ND	ND	-	-	
pH	SU	-	6.7	6.7	6.6	6.4	6.6	5.67	6.9	6.2	
Specific Conductance	umhos/cm	-	0.436 mS/cm	0.447 mS/cm	0.546 mS/cm	0.631 mS/cm	0.662 mS/cm	0.711 mS/cm	0.77 mS/cm	0.807 mS/cm	
Sulfate	mg/L	-	-	-	-	-	-	43.3	-	-	
Total Dissolved Solids	mg/L	-	-	-	-	-	-	456	-	-	
Turbidity	NTU	-	-	-	-	-	-	-	-	-	

Location ID: MW-11		Number of Sampling Dates: 32									
Parameter Name	Units	MCL	9/30/2008	3/9/2009	5/8/2009	9/29/2009	6/4/2010	11/4/2010	1/4/2011	9/2/2011	
Antimony, Total	mg/L	0.006	ND	ND	-	ND	ND	ND	ND	ND	
Arsenic, Total	mg/L	0.01	ND	0.0036	-	0.0035	0.002	0.004	0.004	0.005	
Barium, Total	mg/L	2	0.084	0.076	-	0.085	0.084	0.074	0.079	0.077	
Beryllium, Total	mg/L	0.004	0.0002	ND	-	ND	ND	ND	ND	ND	
Cadmium, Total	mg/L	0.005	0.0005	ND	-	ND	ND	0.003	0.004	0.004	
Chromium, Total	mg/L	0.1	0.003	0.0026	-	ND	ND	ND	ND	ND	
Calcium, Total	mg/L	-	9.37	100	-	100	96	86.6	93.5	95.3	
Cobalt, Total	mg/L	-	0.002	0.0025	-	0.0025	ND	ND	ND	ND	
Copper, Total	mg/L	1.3	ND	ND	-	ND	ND	ND	ND	ND	
Iron, Total	mg/L	-	66.7	67	-	68	57.5	56.4	59.7	64.3	
Lead, Total	mg/L	0.015	ND	ND	-	ND	ND	ND	ND	ND	
Nickel, Total	mg/L	-	0.02	0.02	-	0.022	0.017	0.018	0.02	0.025	
Magnesium, Total	mg/L	-	2.19	-	-	2.2	2.07	2.38	2.41	2.71	
Manganese, Total	mg/L	-	0.033	0.031	-	0.031	0.027	0.034	0.034	0.047	
Mercury, Total	mg/L	0.002	ND	ND	-	ND	ND	ND	ND	ND	
Potassium, Total	mg/L	-	6.25	-	-	7.6	7.31	6.77	7.15	7.57	
Selenium, Total	mg/L	0.05	ND	ND	-	ND	ND	ND	ND	ND	
Silver, Total	mg/L	-	ND	ND	-	ND	ND	ND	ND	ND	
Sodium, Total	mg/L	-	6.19	-	-	11	6.91	5.96	6.11	5.9	
Thallium, Total	mg/L	0.002	ND	ND	-	ND	ND	ND	ND	ND	
Vanadium, Total	mg/L	-	ND	ND	-	ND	ND	ND	ND	ND	

Location ID: MW-11		Number of Sampling Dates: 32									
Parameter Name	Units	MCL	9/30/2008	3/9/2009	5/8/2009	9/29/2009	6/4/2010	11/4/2010	1/4/2011	9/2/2011	
Zinc, Total	mg/L	-	0.072	0.047	-	0.054	0.007	0.016	0.013	0.022	
Alkalinity, Total	mg/L as CaCO3	-	5 mg/L	264 mg/L	-	300 mg/L	247	188	242	203	
Ammonia as N	mg/L	-	ND	ND	-	ND	ND	ND	ND	ND	
Chemical Oxygen Demand (COD)	mg/L	-	11	ND	-	12	11	17	12.9	16	
Chloride	mg/L	-	ND	2.2	-	1.8	2.56	2.1	2.73	2.71	
Hardness	mg/L	-	243	242	-	237	249 mg/L as CaCO3	226 mg/L as CaCO3	243 mg/L as CaCO3	249 mg/L as CaCO3	
Nitrate/Nitrite-N	mg/L	10	ND	ND	-	ND	ND	ND	ND	ND	
pH	SU	-	6.03	5.85	5.73	4.26	6.07 pH Units	6 pH Units	6.03 pH Units	6.35 pH Units	
Specific Conductance	umhos/cm	-	66.5 mS/cm	0.547 mS/cm	0.708 mS/cm	710 mS/cm	645 umhos @ 25°C	538 umhos @ 25°C	642 umhos @ 25°C	530 umhos @ 25°C	
Sulfate	mg/L	-	49.7	54	-	56	55.3	58.9	65.4	62.2	
Total Dissolved Solids	mg/L	-	471	560	550	550	425	371	423	417	
Turbidity	NTU	-	-	-	-	-	44	2.9	84	6.8	

Location ID: MW-11		Number of Sampling Dates: 32									
Parameter Name	Units	MCL	2/14/2012	7/23/2012	1/22/2013	8/7/2013	1/29/2014	7/14/2014	3/12/2015	9/23/2015	
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
Arsenic, Total	mg/L	0.01	0.003	ND	ND	ND	ND	0.0021	0.0045	0.0029	
Barium, Total	mg/L	2	0.084	0.0665	0.0554	0.0365	0.0443	0.0705	0.0862	0.0859	
Beryllium, Total	mg/L	0.004	ND	ND	ND	ND	0.0029	ND	ND	ND	
Cadmium, Total	mg/L	0.005	0.004	0.0052	0.0059	0.0092	0.0085	0.0055	0.0021	0.0022	
Chromium, Total	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND	ND	
Calcium, Total	mg/L	-	105	71.4	51.1	26.7	25.1	70.5	96.1	98.8	
Cobalt, Total	mg/L	-	ND	ND	ND	ND	ND	ND	ND	ND	
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	ND	ND	ND	
Iron, Total	mg/L	-	66.7	43.2	22.4	0.195	0.292	36.6	60.1	53.3	
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND	
Nickel, Total	mg/L	-	0.03	0.0272	0.0261	0.0245	0.0232	0.0327	0.037	0.0354	
Magnesium, Total	mg/L	-	2.88	2.46	2.57	2.37	2.3	2.98	3.26	3.3	
Manganese, Total	mg/L	-	0.04	0.0632	0.0526	0.0457	0.0578	0.0565	0.0547	0.0543	
Mercury, Total	mg/L	0.002	0.0003	ND	ND	ND	ND	ND	ND	ND	
Potassium, Total	mg/L	-	7.92	7.48	8.47	9.12	7.86	8.58	9.29	9.35	
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND	
Silver, Total	mg/L	-	ND	ND	ND	ND	ND	ND	ND	ND	
Sodium, Total	mg/L	-	5.59	6.56	7.45	8.53	6.29	3.69	3.59	3.45	
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND	
Vanadium, Total	mg/L	-	ND	ND	ND	ND	0.0057	ND	ND	ND	
Zinc, Total	mg/L	-	0.022	0.0108	0.0185	0.0244	0.0213	0.0117	0.015	0.0072	
Alkalinity, Total	mg/L as CaCO3	-	217	168 mg/l	79 mg/l	28.6 mg/l	24.9 mg/l	141 mg/l	235 mg/l	183 mg/l	
Ammonia as N	mg/L	-	ND	0.456	ND	ND	ND	ND	ND	ND	
Chemical Oxygen Demand (COD)	mg/L	-	14	21.9	ND	ND	12	ND	ND	ND	
Chloride	mg/L	-	7.96	7.05	5.74	3.07	9.2	21.6	20.4	7.68	
Hardness	mg/L	-	274 mg/L as CaCO3	188	138	76.5	72.1	188	253	260	
Nitrate/Nitrite-N	mg/L	10	ND	ND	0.229	0.388	0.115	0.132	ND	ND	
pH	SU	-	6.33 pH Units	6.03 units	5.89 units	5.65 units	5.48 units	6.08 units	5.94 units	5.9 units	
Specific Conductance	umhos/cm	-	643 umhos @ 25°C	509 umhos	443 umhos	273.5 umhos	138.6 umhos	545 umhos	547 umhos	651	
Sulfate	mg/L	-	68	68.4	73	74	78.7	73	73.9	82.2	
Total Dissolved Solids	mg/L	-	473	334	249	ND	154	433	424	432	
Turbidity	NTU	-	121	3.12	0.924	0.096	0.553	8.87	21.3	11.4	

Location ID: MW-11		Number of Sampling Dates: 32									
Parameter Name	Units	MCL	2/12/2016	9/21/2016	1/19/2017	8/18/2017	3/14/2018	8/29/2018	1/9/2019	8/1/2019	
Antimony, Total	mg/L	0.006	ND	ND	ND	ND	ND	ND	ND	ND	
Arsenic, Total	mg/L	0.01	0.0101	0.0102	ND	ND	ND	ND	0.0043	0.0014 J	
Barium, Total	mg/L	2	0.0954	0.0961	0.1	0.0782	0.0913	0.045	0.079	0.081	
Beryllium, Total	mg/L	0.004	0.0026	0.0017	ND	0.0012	ND	0.0025	0.0011	0.00049 J	
Cadmium, Total	mg/L	0.005	0.0066	0.0047	0.0066	0.0025	0.0018	0.005	0.0086	0.0033	
Chromium, Total	mg/L	0.1	ND	0.0059	ND	ND	ND	0.0016 J	0.0023	0.0012 J	
Calcium, Total	mg/L	-	98.8	95.3	117	95.5	109	25.9	90.5	83.2	
Cobalt, Total	mg/L	-	ND	0.0027	0.0031	0.003	0.0039	0.0033 J	0.0034 J	0.0023 J	

Location ID: MW-11

Number of Sampling Dates: 32

Parameter Name	Units	MCL	2/12/2016	9/21/2016	1/19/2017	8/18/2017	3/14/2018	8/29/2018	1/9/2019	8/1/2019
Copper, Total	mg/L	1.3	ND	ND	ND	ND	ND	0.0027 J	0.002 J	ND
Iron, Total	mg/L	--	64.5	68.3	66.4	49.9	61.3	1.4	54.6	42.9
Lead, Total	mg/L	0.015	ND	ND	ND	ND	ND	ND	ND	ND
Nickel, Total	mg/L	--	0.0361	0.0279	0.0331	0.0314	0.0409	0.031	0.036	0.029
Magnesium, Total	mg/L	--	3.33	3.09	3.54	3.49	3.69	3.4	3.1	2.8
Manganese, Total	mg/L	--	0.0552	0.0673	0.0559	0.0633	0.0681	0.071	0.064	0.032
Mercury, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Potassium, Total	mg/L	--	9.3	9.95	9.18	9.72	10.1	9.9	9.7	8.4
Selenium, Total	mg/L	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Silver, Total	mg/L	--	ND	ND	ND	ND	ND	ND	ND	ND
Sodium, Total	mg/L	--	3.63	3.49	4.57	3.54	4.59	2.1	4.3	4.7
Thallium, Total	mg/L	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium, Total	mg/L	--	ND	ND	ND	ND	ND	ND	0.00075 J	ND
Zinc, Total	mg/L	--	0.0092	ND	ND	ND	ND	0.015	0.019	0.0063
Alkalinity, Total	mg/L as CaCO3	--	163 mg/l	164 mg/l	194 mg/l	161 mg/l	201 mg/l	31 mg/L	254 mg/L	269 mg/L
Ammonia as N	mg/L	--	ND	1.12	ND	ND	ND	0.33	0.208	ND
Chemical Oxygen Demand (COD)	mg/L	--	15	17	18	18	ND	ND	12 J	11 J
Chloride	mg/L	--	5.26	ND	ND	2.98	4	1.8 J	3.8	3.8
Hardness	mg/L	--	260	251	308	253	288	78.5	239	219
Nitrate/Nitrite-N	mg/L	10	ND	2.21	ND	ND	ND	0.32	ND	ND
pH	SU	--	5.98 units	5.74 units	5.78 units	6.37 units	7 s.u.	5.61 pH_Units	6.55 pH_Units	6.54 pH_Units
Specific Conductance	umhos/cm	--	629	565	637	550	612	238	655	601
Sulfate	mg/L	--	89.3	93.5	109	101	116	85.2	95.8	95.7
Total Dissolved Solids	mg/L	--	456	386	483	406	496	161	474	475
Turbidity	NTU	--	36.3	25	14.8	9.54	36	6.41	31.6	25

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill Surface Water

Location ID: SW-1								
Number of Sampling Dates: 12								
Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	5/19/2016	9/22/2016
Acetone	ug/l	--	ND	ND	ND	ND	ND U	ND
Acrylonitrile	ug/l	0.51	ND	ND	ND	ND	ND U	ND
Benzene	ug/l	22	ND	ND	ND	ND	ND U	ND
Bromochloromethane	ug/l	--	ND	ND	ND	ND	ND U	ND
Bromomethane	ug/l	--	ND	ND	ND	ND	ND U	ND
2-Butanone	ug/l	--	ND	ND	ND	ND	ND U	ND
Carbon disulfide	ug/l	--	ND	ND	ND	ND ND Q	ND U	ND
Carbon tetrachloride	ug/l	2.3	ND	ND	ND	ND	ND U	ND
Chlorobenzene	ug/l	130	ND	ND	ND	ND	ND U	ND
Chloroethane	ug/l	--	ND	ND	ND	ND	ND U	ND
Chloromethane	ug/l	--	ND	ND	ND	ND	ND U	ND
1,2-Dibromo-3-chloropropane	ug/l	--	ND	ND	ND	ND	ND U	ND
1,2 – Dibromoethane (EDB)	ug/l	--	ND	ND	ND	ND	ND U	ND
Dibromomethane	ug/l	--	ND	ND	ND	ND	ND U	ND
1,2 – Dichlorobenzene	ug/l	420	ND	ND	ND	ND	ND U	ND
1,4 – Dichlorobenzene	ug/l	63	ND	ND	ND	ND	ND U	ND
trans-1,4-dichloro-2-butene	ug/l	--	ND	ND	ND	ND	ND U	ND
1,1-Dichloroethane	ug/l	--	ND	ND	ND	ND	ND U	ND
1,2-Dichloroethane	ug/l	3.8	ND	ND	ND	ND	ND U	ND
1,1-Dichloroethene	ug/l	330	ND	ND	ND	ND ND Q	ND U	ND
cis-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND U	ND
trans-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND U	ND
Methylene chloride	ug/l	46	ND	ND	ND	ND	ND U	ND
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND U	ND
1,2-Dichloropropane	ug/l	5	ND	ND	ND	ND	ND U	ND
Trans-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND U	ND
Cis-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND U	ND
Ethylbenzene	ug/L	530	ND	ND	ND	ND	ND U	ND
2-Hexanone	ug/l	--	ND	ND	ND	ND	ND U	ND
Iodomethane (Methyl Iodide)	ug/l	--	ND	ND	ND	ND	ND U	ND

Location ID: SW-1
 Number of Sampling Dates: 12

Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	5/19/2016	9/22/2016
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND U	ND
Styrene	ug/l	--	ND	ND	ND	ND	ND U	ND
1,1,1,2-Tetrachloroethane	ug/l	--	ND	ND	ND	ND	ND U	ND
1,1,2,2-Tetrachloroethane	ug/l	1.7	ND	ND	ND	ND	ND U	ND
Tetrachloroethene	ug/l	6.9	ND	ND	ND	ND	ND U	ND
Toluene	ug/l	1300	ND	ND	ND	ND	ND U	ND
1,1,1-Trichloroethane	ug/l	200	ND	ND	ND	ND	ND U	ND
1,1,2-Trichloroethane	ug/l	5.9	ND	ND	ND	ND	ND U	ND
Trichloroethene	ug/l	25	ND	ND	ND	ND	ND U	ND
Trichlorofluoromethane	ug/l	--	ND	ND	ND	ND ND Q	ND U	ND
1,2,3-Trichloropropane	ug/l	--	ND	ND	ND	ND	ND U	ND
Vinyl acetate	ug/l	--	ND	ND	ND	ND	ND U	ND
Vinyl chloride	ug/l	0.25	ND	ND	ND	ND	ND U	ND
o-Xylene	ug/l	--	ND	ND	ND	ND	ND U	ND
mp-Xylenes	ug/L	--	ND	ND	ND	ND	ND U	ND
Total Xylenes	ug/L	--	ND	ND	ND	ND	ND U	ND
Bromodichloromethane	ug/l	80	ND	ND	ND	ND	ND U	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND U	ND
Bromoform	ug/l	80	ND	ND	ND	ND	ND U	ND
Chloroform	ug/l	80	ND	ND	ND	ND	ND U	ND

Location ID: SW-1
 Number of Sampling Dates: 12

Parameter Name	Units	NCTS	1/18/2017	8/4/2017	3/13/2018	8/28/2018	1/10/2019	7/31/2019
Acetone	ug/l	--	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/l	0.51	ND	ND	ND	ND	ND	ND
Benzene	ug/l	22	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/l	--	ND	ND	ND	ND	ND	ND
Bromomethane	ug/l	--	ND	ND	ND	ND	ND	ND
2-Butanone	ug/l	--	ND	ND	ND	ND	ND	ND
Carbon disulfide	ug/l	--	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/l	2.3	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	130	ND	ND	ND	ND	ND	ND

Location ID: SW-1
 Number of Sampling Dates: 12

Parameter Name	Units	NCTS	1/18/2017	8/4/2017	3/13/2018	8/28/2018	1/10/2019	7/31/2019
Chloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2 – Dibromoethane (EDB)	ug/l	--	ND	ND	ND	ND	ND	ND
Dibromomethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2 – Dichlorobenzene	ug/l	420	ND	ND	ND	ND	ND	ND
1,4 – Dichlorobenzene	ug/l	63	ND	ND	ND	ND	ND	ND
trans-1,4-dichloro-2-butene	ug/l	--	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	3.8	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/l	330	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l	46	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l	5	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	530	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l	--	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/l	--	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND
Styrene	ug/l	--	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	1.7	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/l	6.9	ND	ND	ND	ND	ND	ND
Toluene	ug/l	1300	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l	5.9	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/l	25	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	--	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/l	--	ND	ND	ND	ND	ND	ND

Location ID: SW-1

Number of Sampling Dates: 12

Parameter Name	Units	NCTS	1/18/2017	8/4/2017	3/13/2018	8/28/2018	1/10/2019	7/31/2019
Vinyl chloride	ug/l	0.25	ND	ND	ND	ND	ND	ND
o-Xylene	ug/l	--	ND	ND	ND	ND	ND	ND
mp-Xylenes	ug/L	--	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	--	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/l	80	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND
Bromoform	ug/l	80	ND	ND	ND	ND	ND	ND
Chloroform	ug/l	80	ND	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill Surface Water

Location ID: SW-1									
Number of Sampling Dates: 12									
Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	5/19/2016	9/22/2016	
Antimony, Dissolved	mg/L	0.0056	ND	ND	ND	ND	ND U	ND	
Arsenic, Dissolved	mg/L	0.00018	ND	ND	ND	ND	0.00078 J	ND	
Barium, Dissolved	mg/L	1	0.0255	0.0318	0.0208	0.035	0.029	0.0195	
Beryllium, Dissolved	mg/L	0.004	ND	ND	ND	ND	ND U	ND	
Cadmium, Dissolved	mg/L	0.005	ND	0.0023	ND	ND	0.00092 J	ND	
Chromium, Dissolved	mg/L	0.1	ND	ND	ND	ND	0.0007 J	ND	
Calcium, Dissolved	mg/L	-	10.7	13.6	9.67	16.3	14.9	11.7	
Cobalt, Dissolved	mg/L	-	ND	ND	ND	ND	0.00014 J	ND	
Copper, Dissolved	mg/L	1.3	ND	ND	ND	ND	0.00044 J	ND	
Iron, Dissolved	mg/L	-	1.37	0.11	0.181	0.15	0.384	1.07	
Lead, Dissolved	mg/L	-	ND	ND	ND	ND	ND U	ND	
Nickel, Dissolved	mg/L	0.61	ND	ND	ND	ND	0.0038 J	ND	
Magnesium, Dissolved	mg/L	-	3.28	2.58	3.68	3.4	3.22	3.4	
Manganese, Dissolved	mg/L	-	0.125	0.0979	0.0665	0.133	0.0516	0.0301	
Mercury, Dissolved	mg/L	-	ND	ND	ND	0.002	ND U	ND	
Potassium, Dissolved	mg/L	-	2.46	1.4	2.81	1.55	1.55	4.39	
Selenium, Dissolved	mg/L	0.17	ND	ND	ND	ND	ND U	ND	
Silver, Dissolved	mg/L	-	ND	ND	ND	ND	ND U	ND	
Sodium, Dissolved	mg/L	-	9.38	12.9	8.39	12.7	13.1	9.92	
Thallium, Dissolved	mg/L	0.00024	ND	ND	ND	ND	ND U	ND	
Vanadium, Dissolved	mg/L	-	ND	ND	ND	ND	0.0003 J	ND	
Zinc, Dissolved	mg/L	7.4	0.0063	0.0138	0.0067	0.0139	ND U	ND	
Alkalinity, Total	mg/L	-	14.3	10.7	18.4	10.8	13.9	22	
Ammonia-N, Low Level	mg/L	-	ND	ND	ND	ND	ND	ND	
Chemical Oxygen Demand (COD)	mg/L	-	12	ND	ND	10	14	16	
Chloride	mg/L	-	21	29	17.6	31.4	29.1	21.5	
Hardness	mg/L	-	40.1	45.1	38.7	59.7	51.7	42.8	
Nitrate/Nitrite-N	mg/L	-	0.73	1.35	0.175	2.2	0.726	0.256	
pH	pH_Units	-	6.59 units	5.98 units	6.15 units	7.45 units	7.28 units	5.37 units	
Specific Conductance	umhos/cm	-	163.4 umhos	188.4 umhos	160	236	204	162	
Sulfate	mg/L	-	14.8	19.1	13.1	20.9	16.1	11.3	
Total Dissolved Solids	mg/L	-	116	122	92	119	145	115	
Turbidity	NTU	-	15.3	6.38	14.5	7.35	5.93	13.4	

Location ID: SW-1

Number of Sampling Dates: 12

Parameter Name	Units	NCTS	1/18/2017	8/4/2017	3/13/2018	8/28/2018	1/10/2019	7/31/2019
Antimony, Dissolved	mg/L	0.0056	ND	ND	ND	ND	ND	ND
Arsenic, Dissolved	mg/L	0.00018	ND	ND	ND	ND	ND	0.0011 J
Barium, Dissolved	mg/L	1	0.031	0.0324	0.0344	0.027	0.03	0.023
Beryllium, Dissolved	mg/L	0.004	ND	ND	ND	ND	ND	ND
Cadmium, Dissolved	mg/L	0.005	ND	ND	0.0019	0.00053 J	0.0016	ND
Chromium, Dissolved	mg/L	0.1	ND	ND	ND	0.0052	ND	0.0015 J
Calcium, Dissolved	mg/L	-	17.2	14.6	15.6	9.7	11.5	13.9
Cobalt, Dissolved	mg/L	-	ND	0.0013	ND	ND	ND	ND
Copper, Dissolved	mg/L	1.3	ND	ND	ND	ND	ND	ND
Iron, Dissolved	mg/L	-	0.437	0.431	ND	0.11	0.18	0.27
Lead, Dissolved	mg/L	-	ND	ND	ND	ND	ND	ND
Nickel, Dissolved	mg/L	0.61	ND	0.0047	0.0045	0.0032 J	0.0042 J	0.0028 J
Magnesium, Dissolved	mg/L	-	3.37	3.47	3.13	2.8	2.4	3.6
Manganese, Dissolved	mg/L	-	0.126	0.239	0.0689	0.034	0.099	0.039
Mercury, Dissolved	mg/L	-	ND	ND	ND	ND	ND	ND
Potassium, Dissolved	mg/L	-	1.91	3.3	1.51	1.9	1.2	2.6
Selenium, Dissolved	mg/L	0.17	ND	ND	ND	ND	ND	ND
Silver, Dissolved	mg/L	-	ND	ND	ND	ND	ND	ND
Sodium, Dissolved	mg/L	-	15.2	11.7	13.1	10.6	9.7	11.9
Thallium, Dissolved	mg/L	0.00024	ND	ND	ND	ND	ND	ND
Vanadium, Dissolved	mg/L	-	ND	ND	ND	ND	ND	ND
Zinc, Dissolved	mg/L	7.4	ND	ND	ND	0.0042 J	0.012	0.0036 J
Alkalinity, Total	mg/L	-	13.7	15.9	11.3	15	11	16
Ammonia-N, Low Level	mg/L	-	ND	ND	ND	ND	0.166	ND
Chemical Oxygen Demand (COD)	mg/L	-	ND	16	ND	ND	9 J	10 J
Chloride	mg/L	-	35.6	29.6	32.5	32.6	27.8	27.4
Hardness	mg/L	-	56.1	50.7	51.9	40	41.2	42.7
Nitrate/Nitrite-N	mg/L	-	0.624	0.694	1.8	1.68	2	0.84
pH	pH_Units	-	5.16 units	6.72 units	6.8 s.u.	6.68	6.97	7.05
Specific Conductance	umhos/cm	-	230	199	187	173	159	151
Sulfate	mg/L	-	18.3	18.9	21.6	21.6	22.6	16.4
Total Dissolved Solids	mg/L	-	136	136	166	94	145	208
Turbidity	NTU	-	3.67	11	3.5	8.61	5.83	8.04

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill Surface Water

Location ID: SW-2								
Number of Sampling Dates: 11								
Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	9/22/2016	1/18/2017
Acetone	ug/l	--	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/l	0.51	ND	ND	ND	ND	ND	ND
Benzene	ug/l	22	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/l	--	ND	ND	ND	ND	ND	ND
Bromomethane	ug/l	--	ND	ND	ND	ND	ND	ND
2-Butanone	ug/l	--	ND	ND	ND	ND	ND	ND
Carbon disulfide	ug/l	--	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/l	2.3	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	130	ND	ND	ND	ND	ND	ND
Chloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2 – Dibromoethane (EDB)	ug/l	--	ND	ND	ND	ND	ND	ND
Dibromomethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2 – Dichlorobenzene	ug/l	420	ND	ND	ND	ND	ND	ND
1,4 – Dichlorobenzene	ug/l	63	ND	ND	ND	ND	ND	ND
trans-1,4-dichloro-2-butene	ug/l	--	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	3.8	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/l	330	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l	46	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l	5	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	530	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l	--	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl iodide)	ug/l	--	ND	ND	ND	ND	ND	ND

Location ID: SW-2
 Number of Sampling Dates: 11

Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	9/22/2016	1/18/2017
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND
Styrene	ug/l	--	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	1.7	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/l	6.9	ND	ND	ND	ND	ND	ND
Toluene	ug/l	1300	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l	5.9	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/l	25	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	--	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/l	--	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.25	ND	ND	ND	ND	ND	ND
o-Xylene	ug/l	--	ND	ND	ND	ND	ND	ND
mp-Xylenes	ug/L	--	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	--	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/l	80	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND
Bromoform	ug/l	80	ND	ND	ND	ND	ND	ND
Chloroform	ug/l	80	ND	ND	ND	ND	ND	ND

Location ID: SW-2
 Number of Sampling Dates: 11

Parameter Name	Units	NCTS	8/4/2017	3/13/2018	8/28/2018	1/10/2019	7/31/2019
Acetone	ug/l	--	ND	ND	ND	ND	ND
Acrylonitrile	ug/l	0.51	ND	ND	ND	ND	ND
Benzene	ug/l	22	ND	ND	ND	ND	ND
Bromochloromethane	ug/l	--	ND	ND	ND	ND	ND
Bromomethane	ug/l	--	ND	ND	ND	ND	ND
2-Butanone	ug/l	--	ND	ND	ND	ND	ND
Carbon disulfide	ug/l	--	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/l	2.3	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	130	ND	ND	ND	ND	ND

Location ID: SW-2
 Number of Sampling Dates: 11

Parameter Name	Units	NCTS	8/4/2017	3/13/2018	8/28/2018	1/10/2019	7/31/2019
Chloroethane	ug/l	--	ND	ND	ND	ND	ND
Chloromethane	ug/l	--	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l	--	ND	ND	ND	ND	ND
1,2 – Dibromoethane (EDB)	ug/l	--	ND	ND	ND	ND	ND
Dibromomethane	ug/l	--	ND	ND	ND	ND	ND
1,2 – Dichlorobenzene	ug/l	420	ND	ND	ND	ND	ND
1,4 – Dichlorobenzene	ug/l	63	ND	ND	ND	ND	ND
trans-1,4-dichloro-2-butene	ug/l	--	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	--	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	3.8	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/l	330	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND
Methylene chloride	ug/l	46	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l	5	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	530	ND	ND	ND	ND	ND
2-Hexanone	ug/l	--	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/l	--	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND
Styrene	ug/l	--	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l	--	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	1.7	ND	ND	ND	ND	ND
Tetrachloroethene	ug/l	6.9	ND	ND	ND	ND	ND
Toluene	ug/l	1300	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l	200	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l	5.9	ND	ND	ND	ND	ND
Trichloroethene	ug/l	25	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/l	--	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	--	ND	ND	ND	ND	ND
Vinyl acetate	ug/l	--	ND	ND	ND	ND	ND

Location ID: SW-2

Number of Sampling Dates: 11

Parameter Name	Units	NCTS	8/4/2017	3/13/2018	8/28/2018	1/10/2019	7/31/2019
Vinyl chloride	ug/l	0.25	ND	ND	ND	ND	ND
o-Xylene	ug/l	--	ND	ND	ND	ND	ND
mp-Xylenes	ug/L	--	ND	ND	ND	ND	ND
Total Xylenes	ug/L	--	ND	ND	ND	ND	ND
Bromodichloromethane	ug/l	80	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND
Bromoform	ug/l	80	ND	ND	ND	ND	ND
Chloroform	ug/l	80	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill Surface Water

Location ID: SW-2								
Number of Sampling Dates: 11								
Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	9/22/2016	1/18/2017
Antimony, Dissolved	mg/L	0.0056	ND	ND	ND	ND	ND	ND
Arsenic, Dissolved	mg/L	0.00018	ND	ND	ND	ND	ND	ND
Barium, Dissolved	mg/L	1	0.0194	0.0321	0.0169	0.0343	0.0364	0.0271
Beryllium, Dissolved	mg/L	0.004	ND	ND	ND	ND	ND	ND
Cadmium, Dissolved	mg/L	0.005	ND	0.0022	ND	ND	ND	ND
Chromium, Dissolved	mg/L	0.1	ND	ND	ND	ND	ND	ND
Calcium, Dissolved	mg/L	--	12.1	13.3	18	18.2	122	15.1
Cobalt, Dissolved	mg/L	--	ND	ND	0.0124	ND	ND	ND
Copper, Dissolved	mg/L	1.3	ND	ND	ND	ND	ND	ND
Iron, Dissolved	mg/L	--	1.22	0.183	0.311	0.197	ND	0.555
Lead, Dissolved	mg/L	--	ND	ND	0.0093	ND	ND	ND
Nickel, Dissolved	mg/L	0.61	ND	ND	ND	ND	ND	ND
Magnesium, Dissolved	mg/L	--	3.46	2.67	4.49	3.53	25.3	3.19
Manganese, Dissolved	mg/L	--	0.132	0.109	1.17	0.132	0.769	0.127
Mercury, Dissolved	mg/L	--	ND	ND	ND	ND	ND	ND
Potassium, Dissolved	mg/L	--	2.28	1.49	1.94	1.65	6.49	1.99
Selenium, Dissolved	mg/L	0.17	ND	ND	ND	ND	ND	ND
Silver, Dissolved	mg/L	--	ND	ND	ND	ND	ND	ND
Sodium, Dissolved	mg/L	--	9.57	13.7	10.4	13.7	16	13.8
Thallium, Dissolved	mg/L	0.00024	ND	ND	ND	ND	ND	ND
Vanadium, Dissolved	mg/L	--	ND	ND	ND	ND	ND	ND
Zinc, Dissolved	mg/L	7.4	ND	0.0126	0.0249	0.0128	ND	ND
Alkalinity, Total	mg/L	--	24.2	11.4	48.4	9.6	370	14.6
Ammonia-N, Low Level	mg/L	--	0.259	ND	0.712	ND	0.77	ND
Chemical Oxygen Demand (COD)	mg/L	--	15	ND	19	10	570	ND
Chloride	mg/L	--	22	29.2	25.4	32	32	33.2
Hardness	mg/L	--	45.4	44.1	67.6	60.4	409	55.1
Nitrate/Nitrite-N	mg/L	--	0.435	1.28	ND	1.85	ND	0.516
pH	pH_Units	--	6.69 units	5.62 units	6.04 units	5.51 units	5.83 units	6.8 units
Specific Conductance	umhos/cm	--	180 umhos	183.6 umhos	230	237	630	222
Sulfate	mg/L	--	11.6	18.5	2.63	20.5	2.09	17.7
Total Dissolved Solids	mg/L	--	117	114	128	128	328	134
Turbidity	NTU	--	23.7	7.28	86	5.3	1313	6

Location ID: SW-2

Number of Sampling Dates: 11

Parameter Name	Units	NCTS	8/4/2017	3/13/2018	8/28/2018	1/10/2019	7/31/2019
Antimony, Dissolved	mg/L	0.0056	ND	ND	ND	ND	ND
Arsenic, Dissolved	mg/L	0.00018	ND	ND	ND	ND	ND
Barium, Dissolved	mg/L	1	0.0288	0.0331	0.027	0.029	0.025
Beryllium, Dissolved	mg/L	0.004	ND	ND	ND	ND	ND
Cadmium, Dissolved	mg/L	0.005	ND	0.0014	0.00048 J	0.00082 J	ND
Chromium, Dissolved	mg/L	0.1	ND	ND	0.0012 J	ND	0.0012 J
Calcium, Dissolved	mg/L	--	15.4	16.2	11.4	11.6	14.5
Cobalt, Dissolved	mg/L	--	0.0017	ND	ND	ND	ND
Copper, Dissolved	mg/L	1.3	ND	ND	ND	ND	ND
Iron, Dissolved	mg/L	--	0.721	0.413	0.12	0.24	0.54
Lead, Dissolved	mg/L	--	ND	ND	0.00087 J	ND	ND
Nickel, Dissolved	mg/L	0.61	0.0043	0.0046	0.0038 J	0.0041 J	0.0027 J
Magnesium, Dissolved	mg/L	--	3.41	3.28	3.1	2.6	3.7
Manganese, Dissolved	mg/L	--	0.255	0.118	0.055	0.12	0.14
Mercury, Dissolved	mg/L	--	ND	ND	ND	ND	ND
Potassium, Dissolved	mg/L	--	3.31	1.57	2.1	1.2	2.5
Selenium, Dissolved	mg/L	0.17	ND	ND	ND	ND	ND
Silver, Dissolved	mg/L	--	ND	ND	ND	ND	ND
Sodium, Dissolved	mg/L	--	11.4	12.4	11.4	9.4	13.9
Thallium, Dissolved	mg/L	0.00024	ND	ND	ND	ND	ND
Vanadium, Dissolved	mg/L	--	ND	ND	ND	ND	ND
Zinc, Dissolved	mg/L	7.4	ND	ND	0.0046 J	0.013	0.0037 J
Alkalinity, Total	mg/L	--	20.4	12.5	15	12	22
Ammonia-N, Low Level	mg/L	--	0.257	0.24	0.195	0.172	ND
Chemical Oxygen Demand (COD)	mg/L	--	18	ND	ND	ND	8 J
Chloride	mg/L	--	29	33.7	33.6	28	28.5
Hardness	mg/L	--	53.4	53.8	41.8	45.1	43.8
Nitrate/Nitrite-N	mg/L	--	0.394	1.6	1.5	2.1	0.76
pH	pH_Units	--	6.7 units	6.9 s.u.	6.75	6.97	6.98
Specific Conductance	umhos/cm	--	204	184	174	160	159
Sulfate	mg/L	--	20	22.7	21.9	22.3	20.4
Total Dissolved Solids	mg/L	--	152	160	168	163	189
Turbidity	NTU	--	16.4	4.9	7.95	7.58	14.2

Historical Groundwater Data Table I

Name: Sands Road Rubble Landfill Surface Water

Location ID: SW-3								
Number of Sampling Dates: 11								
Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	9/22/2016	1/18/2017
Acetone	ug/l	--	ND	ND	ND	ND	ND	ND
Acrylonitrile	ug/l	0.51	ND	ND	ND	ND	ND	ND
Benzene	ug/l	22	ND	ND	ND	ND	ND	ND
Bromochloromethane	ug/l	--	ND	ND	ND	ND	ND	ND
Bromomethane	ug/l	--	ND	ND	ND	ND	ND	ND
2-Butanone	ug/l	--	ND	ND	ND	ND	ND	ND
Carbon disulfide	ug/l	--	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/l	2.3	ND	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	130	ND	ND	ND	ND	ND	ND
Chloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
Chloromethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2 – Dibromoethane (EDB)	ug/l	--	ND	ND	ND	ND	ND	ND
Dibromomethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2 – Dichlorobenzene	ug/l	420	ND	ND	ND	ND	ND	ND
1,4 – Dichlorobenzene	ug/l	63	ND	ND	ND	ND	ND	ND
trans-1,4-dichloro-2-butene	ug/l	--	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	3.8	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/l	330	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND	ND
Methylene chloride	ug/l	46	ND	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l	5	ND	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	530	ND	ND	ND	ND	ND	ND
2-Hexanone	ug/l	--	ND	ND	ND	ND	ND	ND
Iodomethane (Methyl iodide)	ug/l	--	ND	ND	ND	ND	ND	ND

Location ID: SW-3
 Number of Sampling Dates: 11

Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	9/22/2016	1/18/2017
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND	ND
Styrene	ug/l	--	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	1.7	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ug/l	6.9	ND	ND	ND	ND	ND	ND
Toluene	ug/l	1300	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l	200	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l	5.9	ND	ND	ND	ND	ND	ND
Trichloroethene	ug/l	25	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/l	--	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	--	ND	ND	ND	ND	ND	ND
Vinyl acetate	ug/l	--	ND	ND	ND	ND	ND	ND
Vinyl chloride	ug/l	0.25	ND	ND	ND	ND	ND	ND
o-Xylene	ug/l	--	ND	ND	ND	ND	ND	ND
mp-Xylenes	ug/L	--	ND	ND	ND	ND	ND	ND
Total Xylenes	ug/L	--	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ug/l	80	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND	ND
Bromoform	ug/l	80	ND	ND	ND	ND	ND	ND
Chloroform	ug/l	80	ND	ND	ND	ND	ND	ND

Location ID: SW-3
 Number of Sampling Dates: 11

Parameter Name	Units	NCTS	8/4/2017	3/13/2018	8/28/2018	1/10/2019	8/1/2019
Acetone	ug/l	--	ND	ND	ND	ND	3.9
Acrylonitrile	ug/l	0.51	ND	ND	ND	ND	ND
Benzene	ug/l	22	ND	ND	ND	ND	ND
Bromochloromethane	ug/l	--	ND	ND	ND	ND	ND
Bromomethane	ug/l	--	ND	ND	ND	ND	ND
2-Butanone	ug/l	--	ND	ND	ND	ND	ND
Carbon disulfide	ug/l	--	ND	ND	ND	ND	ND
Carbon tetrachloride	ug/l	2.3	ND	ND	ND	ND	ND
Chlorobenzene	ug/l	130	ND	ND	ND	ND	ND

Location ID: SW-3
 Number of Sampling Dates: 11

Parameter Name	Units	NCTS	8/4/2017	3/13/2018	8/28/2018	1/10/2019	8/1/2019
Chloroethane	ug/l	--	ND	ND	ND	ND	ND
Chloromethane	ug/l	--	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	ug/l	--	ND	ND	ND	ND	ND
1,2 – Dibromoethane (EDB)	ug/l	--	ND	ND	ND	ND	ND
Dibromomethane	ug/l	--	ND	ND	ND	ND	ND
1,2 – Dichlorobenzene	ug/l	420	ND	ND	ND	ND	ND
1,4 – Dichlorobenzene	ug/l	63	ND	ND	ND	ND	ND
trans-1,4-dichloro-2-butene	ug/l	--	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	--	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	3.8	ND	ND	ND	ND	ND
1,1-Dichloroethene	ug/l	330	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ug/l	--	ND	ND	ND	ND	ND
Methylene chloride	ug/l	46	ND	ND	ND	ND	ND
Methyl t-Butyl Ether	ug/L	--	ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l	5	ND	ND	ND	ND	ND
Trans-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	ug/l	--	ND	ND	ND	ND	ND
Ethylbenzene	ug/L	530	ND	ND	ND	ND	ND
2-Hexanone	ug/l	--	ND	ND	ND	ND	ND
Iodomethane (Methyl Iodide)	ug/l	--	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ug/L	--	ND	ND	ND	ND	ND
Styrene	ug/l	--	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l	--	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	1.7	ND	ND	ND	ND	ND
Tetrachloroethene	ug/l	6.9	ND	ND	ND	ND	ND
Toluene	ug/l	1300	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l	200	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l	5.9	ND	ND	ND	ND	ND
Trichloroethene	ug/l	25	ND	ND	ND	ND	ND
Trichlorofluoromethane	ug/l	--	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l	--	ND	ND	ND	ND	ND
Vinyl acetate	ug/l	--	ND	ND	ND	ND	ND

Location ID: SW-3

Number of Sampling Dates: 11

Parameter Name	Units	NCTS	8/4/2017	3/13/2018	8/28/2018	1/10/2019	8/1/2019
Vinyl chloride	ug/l	0.25	ND	ND	ND	ND	ND
o-Xylene	ug/l	--	ND	ND	ND	ND	ND
mp-Xylenes	ug/L	--	ND	ND	ND	ND	ND
Total Xylenes	ug/L	--	ND	ND	ND	ND	ND
Bromodichloromethane	ug/l	80	ND	ND	ND	ND	ND
Dibromochloromethane	ug/L	80	ND	ND	ND	ND	ND
Bromoform	ug/l	80	ND	ND	ND	ND	ND
Chloroform	ug/l	80	ND	ND	ND	ND	ND

Historical Groundwater Data Table II

Name: Sands Road Rubble Landfill Surface Water

Location ID: SW-3								
Number of Sampling Dates: 11								
Parameter Name	Units	NCTS	7/14/2014	3/12/2015	9/23/2015	2/12/2016	9/22/2016	1/18/2017
Antimony, Dissolved	mg/L	0.0056	ND	ND	ND	ND	ND	ND
Arsenic, Dissolved	mg/L	0.00018	ND	ND	ND	ND	ND	ND
Barium, Dissolved	mg/L	1	0.0183	0.0311	0.0312	0.0342	0.0238	0.0251
Beryllium, Dissolved	mg/L	0.004	ND	ND	ND	ND	ND	ND
Cadmium, Dissolved	mg/L	0.005	ND	ND	ND	ND	ND	ND
Chromium, Dissolved	mg/L	0.1	0.0052	ND	ND	ND	ND	ND
Calcium, Dissolved	mg/L	--	12.4	13.4	26.1	17.3	15.9	15
Cobalt, Dissolved	mg/L	--	ND	ND	ND	ND	ND	ND
Copper, Dissolved	mg/L	1.3	ND	ND	ND	ND	ND	ND
Iron, Dissolved	mg/L	--	1.32	0.144	0.337	0.228	1.77	0.505
Lead, Dissolved	mg/L	--	ND	ND	ND	ND	ND	ND
Nickel, Dissolved	mg/L	0.61	ND	ND	ND	ND	ND	ND
Magnesium, Dissolved	mg/L	--	3.5	2.69	9.07	3.59	3.57	3.35
Manganese, Dissolved	mg/L	--	0.0567	0.125	0.526	0.148	0.206	0.125
Mercury, Dissolved	mg/L	--	ND	ND	ND	ND	ND	ND
Potassium, Dissolved	mg/L	--	2.42	1.5	2.53	1.64	3.9	1.99
Selenium, Dissolved	mg/L	0.17	ND	ND	ND	ND	ND	ND
Silver, Dissolved	mg/L	--	ND	ND	ND	ND	ND	ND
Sodium, Dissolved	mg/L	--	9.71	14.1	33.9	13.6	10.4	13.6
Thallium, Dissolved	mg/L	0.00024	ND	ND	ND	ND	ND	ND
Vanadium, Dissolved	mg/L	--	ND	ND	ND	ND	ND	ND
Zinc, Dissolved	mg/L	7.4	ND	0.0132	ND	0.0101	ND	ND
Alkalinity, Total	mg/L	--	26.4	13.5	73.8	11	33.6	16.8
Ammonia-N, Low Level	mg/L	--	ND	ND	0.238	ND	0.312	ND
Chemical Oxygen Demand (COD)	mg/L	--	10	ND	ND	ND	20	ND
Chloride	mg/L	--	22.2	29.3	50.3	31.6	23.3	32.9
Hardness	mg/L	--	45.4	43.6	100	60.2	54.3	57.1
Nitrate/Nitrite-N	mg/L	--	0.536	1.21	0.0784	1.8	0.207	0.51
pH	pH_Units	--	6.91 units	5.64 units	5.82 units	5.57 units	6.72 units	6.65 units
Specific Conductance	umhos/cm	--	179.5 umhos	191 umhos	393	237	197	220
Sulfate	mg/L	--	11.5	18.3	19.1	20.3	11.3	17.6
Total Dissolved Solids	mg/L	--	152	126	210	102	152	131
Turbidity	NTU	--	28.3	9.86	20.2	5.74	20.7	5.99

Location ID: SW-3

Number of Sampling Dates: 11

Parameter Name	Units	NCTS	8/4/2017	3/13/2018	8/28/2018	1/10/2019	8/1/2019
Antimony, Dissolved	mg/L	0.0056	ND	ND	ND	ND	ND
Arsenic, Dissolved	mg/L	0.00018	ND	ND	ND	ND	ND
Barium, Dissolved	mg/L	1	0.0278	0.0343	0.027	0.025	0.025
Beryllium, Dissolved	mg/L	0.004	ND	ND	ND	ND	ND
Cadmium, Dissolved	mg/L	0.005	ND	0.0013	ND	0.00059 J	ND
Chromium, Dissolved	mg/L	0.1	ND	ND	ND	ND	0.0029
Calcium, Dissolved	mg/L	--	14.4	16	11.6	9.8	16
Cobalt, Dissolved	mg/L	--	0.0012	0.0012	ND	ND	ND
Copper, Dissolved	mg/L	1.3	ND	ND	0.0021 J	ND	ND
Iron, Dissolved	mg/L	--	0.701	0.394	0.084	0.69	0.13
Lead, Dissolved	mg/L	--	ND	ND	0.0092	ND	ND
Nickel, Dissolved	mg/L	0.61	0.0048	ND	0.0029 J	ND	0.0026
Magnesium, Dissolved	mg/L	--	3.45	3.23	3.2	2.3	3.6
Manganese, Dissolved	mg/L	--	0.22	0.114	0.004 J	0.19	0.0035
Mercury, Dissolved	mg/L	--	ND	ND	ND	ND	ND
Potassium, Dissolved	mg/L	--	3.28	1.63	2.1	1.1	3.9
Selenium, Dissolved	mg/L	0.17	ND	ND	ND	ND	ND
Silver, Dissolved	mg/L	--	ND	ND	ND	ND	ND
Sodium, Dissolved	mg/L	--	11.2	12.3	12.4	8.6	12.1
Thallium, Dissolved	mg/L	0.00024	ND	ND	ND	ND	ND
Vanadium, Dissolved	mg/L	--	ND	ND	ND	ND	ND
Zinc, Dissolved	mg/L	7.4	ND	ND	0.0047 J	0.0099 J	0.005
Alkalinity, Total	mg/L	--	20.5	13.2	19	15	23
Ammonia-N, Low Level	mg/L	--	0.202	ND	0.188	0.333	ND
Chemical Oxygen Demand (COD)	mg/L	--	13	ND	8 J	8 J	10
Chloride	mg/L	--	28.9	32	33	26.8	27.1
Hardness	mg/L	--	53.3	53.2	41.5	45.8	45.7
Nitrate/Nitrite-N	mg/L	--	0.417	1.6	1.39	1.7	1.1
pH	pH_Units	--	6.85 units	6.9 s.u.	6.79	7.03	6.94
Specific Conductance	umhos/cm	--	201	187	176	159	166
Sulfate	mg/L	--	19.9	20.6	21.7	20.8	21.8
Total Dissolved Solids	mg/L	--	145	151	77	179	183
Turbidity	NTU	--	17.9	5.1	6.69	11.6	33.6

Appendix C
Statistical Analysis

Shapiro-Wilks Test of Normality

Parameter: Antimony, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.693147	1.60944	0.916291	0.3751	0.343701
2	0.693147	1.60944	0.916291	0.2574	0.235853
3	0.693147	0.788457	0.0953102	0.226	0.0215401
4	0.693147	0.788457	0.0953102	0.2032	0.019367
5	0.693147	0.788457	0.0953102	0.1847	0.0176038
6	0.693147	0.788457	0.0953102	0.1691	0.016117
7	0.693147	0.788457	0.0953102	0.1554	0.0148112
8	0.693147	0.788457	0.0953102	0.143	0.0136294
9	0.693147	0.788457	0.0953102	0.1317	0.0125524
10	0.693147	0.788457	0.0953102	0.1212	0.0115516
11	0.693147	0.788457	0.0953102	0.1113	0.010608
12	0.693147	0.788457	0.0953102	0.102	0.00972164
13	0.693147	0.788457	0.0953102	0.0932	0.00888291
14	0.693147	0.788457	0.0953102	0.0846	0.00806324
15	0.693147	0.693147	0	0.0764	0
16	0.693147	0.693147	0	0.0685	0
17	0.693147	0.693147	0	0.0608	0
18	0.693147	0.693147	0	0.0532	0
19	0.693147	0.693147	0	0.0459	0
20	0.693147	0.693147	0	0.0386	0
21	0.693147	0.693147	0	0.0314	0
22	0.693147	0.693147	0	0.0244	0
23	0.693147	0.693147	0	0.0174	0
24	0.693147	0.693147	0	0.0104	0
25	0.693147	0.693147	0	0.0035	0
26	0.693147	0.693147	0		
27	0.693147	0.693147	0		
28	0.693147	0.693147	0		
29	0.693147	0.693147	0		
30	0.693147	0.693147	0		
31	0.693147	0.693147	0		
32	0.693147	0.693147	0		
33	0.693147	0.693147	0		
34	0.693147	0.693147	0		
35	0.693147	0.693147	0		
36	0.693147	0.693147	0		
37	0.788457	0.693147	-0.0953102		
38	0.788457	0.693147	-0.0953102		
39	0.788457	0.693147	-0.0953102		
40	0.788457	0.693147	-0.0953102		
41	0.788457	0.693147	-0.0953102		
42	0.788457	0.693147	-0.0953102		
43	0.788457	0.693147	-0.0953102		
44	0.788457	0.693147	-0.0953102		
45	0.788457	0.693147	-0.0953102		
46	0.788457	0.693147	-0.0953102		
47	0.788457	0.693147	-0.0953102		

48	0.788457	0.693147	-0.0953102
49	1.60944	0.693147	-0.916291
50	1.60944	0.693147	-0.916291

Sum of b values = 0.744002

Sample Standard Deviation = 0.181323

W Statistic = 0.343596

5% Critical value of 0.947 exceeds 0.343596
Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.343596
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Antimony, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	ND<1.60944	25.5
	9/29/2008	ND<1.60944	25.5
	3/9/2009	ND<0.693147	25.5
	9/29/2009	ND<0.693147	25.5
	6/4/2010	ND<0.693147	25.5
	11/5/2010	ND<0.693147	25.5
	1/4/2011	ND<0.693147	25.5
	9/2/2011	ND<0.693147	25.5
	2/14/2012	ND<0.693147	25.5
	7/23/2012	ND<0.693147	25.5
	1/22/2013	ND<0.693147	25.5
	8/7/2013	ND<0.693147	25.5
	1/29/2014	ND<0.693147	25.5
	7/14/2014	ND<0.693147	25.5
	3/12/2015	ND<0.693147	25.5
	9/23/2015	ND<0.693147	25.5
	2/12/2016	ND<0.693147	25.5
	2/12/2016	ND<0.693147	25.5
	9/21/2016	ND<0.693147	25.5
	1/18/2017	ND<0.693147	25.5
	8/3/2017	ND<0.693147	25.5
	3/14/2018	ND<0.693147	25.5
	8/29/2018	ND<0.693147	25.5
	1/9/2019	ND<0.788457	25.5
	8/1/2019	ND<0.788457	25.5

Rank Sum = 637.5

Rank Mean = 25.5

Background Rank Sum = 637.5

Background Rank Mean = 25.5

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<0.693147	25.5
	3/14/2018	ND<0.693147	25.5
	8/29/2018	ND<0.693147	25.5
	1/9/2019	ND<0.788457	25.5
	7/31/2019	ND<0.788457	25.5

Rank Sum = 127.5

Rank Mean = 25.5

MW-7	8/3/2017	ND<0.693147	25.5
	3/14/2018	ND<0.693147	25.5
	8/28/2018	ND<0.693147	25.5
	1/10/2019	ND<0.788457	25.5

7/31/2019 ND<0.788457 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-8 8/3/2017 ND<0.693147 25.5
3/13/2018 ND<0.693147 25.5
8/28/2018 ND<0.693147 25.5
1/10/2019 ND<0.788457 25.5
8/1/2019 ND<0.788457 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-9 8/3/2017 ND<0.693147 25.5
3/13/2018 ND<0.693147 25.5
8/29/2018 ND<0.693147 25.5
1/9/2019 ND<0.788457 25.5
8/1/2019 ND<0.788457 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-11 8/18/2017 ND<0.693147 25.5
3/14/2018 ND<0.693147 25.5
8/29/2018 ND<0.693147 25.5
1/9/2019 ND<0.788457 25.5
8/1/2019 ND<0.788457 25.5
Rank Sum = 127.5
Rank Mean = 25.5

Calculation Results:

Kruskal-Wallis H Statistic = 0

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 0

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

0 < 11.0705 indicating no significant group difference at 5% significance level

0 < 11.0705 indicating no significant group difference at 5% significance level when adjusted for ties

Shapiro-Francia Test of Normality

Parameter: Arsenic, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 62

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.17009	4.70929	0
2	0	-1.86629	8.19234	0
3	0	-1.67466	10.9968	0
4	0	-1.53007	13.3379	0
5	0	-1.41183	15.3312	0
6	0	-1.31058	17.0488	0
7	0	-1.22123	18.5402	0
8	0	-1.1455	19.8524	0
9	0.182322	-1.07138	21.0002	-0.195335
10	0.336472	-1.00271	22.0057	-0.53272
11	0.693147	-0.938476	22.8864	-1.18322
12	0.693147	-0.877897	23.6571	-1.79173
13	0.693147	-0.820379	24.3301	-2.36038
14	0.693147	-0.765456	24.9161	-2.89095
15	0.693147	-0.712751	25.4241	-3.38499
16	0.693147	-0.665079	25.8664	-3.84599
17	0.693147	-0.615839	26.2457	-4.27286
18	0.693147	-0.568052	26.5683	-4.6666
19	0.693147	-0.521527	26.8403	-5.02809
20	0.693147	-0.476105	27.067	-5.35811
21	0.693147	-0.431644	27.2533	-5.6573
22	0.693147	-0.388022	27.4039	-5.92625
23	0.693147	-0.345126	27.523	-6.16548
24	0.741937	-0.305481	27.6163	-6.39213
25	1.09861	-0.263715	27.6859	-6.68185
26	1.09861	-0.222403	27.7353	-6.92618
27	1.09861	-0.181468	27.7683	-7.12554
28	1.09861	-0.140835	27.7881	-7.28027
29	1.09861	-0.100433	27.7982	-7.3906
30	1.19392	-0.0601949	27.8018	-7.46247
31	1.19392	-0.0200544	27.8022	-7.48642
32	1.19392	0.0200544	27.8026	-7.46247
33	1.19392	0.0601949	27.8062	-7.3906
34	1.19392	0.100433	27.8163	-7.2707
35	1.19392	0.140835	27.8362	-7.10255
36	1.19392	0.181468	27.8691	-6.88589
37	1.36098	0.222403	27.9185	-6.5832
38	1.38629	0.263715	27.9881	-6.21762
39	1.38629	0.305481	28.0814	-5.79413
40	1.38629	0.345126	28.2005	-5.31569
41	1.38629	0.388022	28.3511	-4.77777
42	1.38629	0.431644	28.5374	-4.17939
43	1.38629	0.476105	28.7641	-3.51937
44	1.38629	0.521527	29.0361	-2.79638
45	1.38629	0.568052	29.3588	-2.00889
46	1.38629	0.615839	29.738	-1.15515
47	1.38629	0.665079	30.1803	-0.233157

48	1.38629	0.712751	30.6884	0.754925
49	1.38629	0.765456	31.2743	1.81607
50	1.45862	0.820379	31.9473	3.01269
51	1.60944	0.877897	32.718	4.42561
52	1.60944	0.938476	33.5987	5.93603
53	1.60944	1.00271	34.6042	7.54983
54	2.02815	1.07138	35.752	9.72274
55	2.02815	1.1455	37.0642	12.046
56	2.07944	1.22123	38.5556	14.5855
57	2.30259	1.31058	40.2732	17.6032
58	3.08191	1.41183	42.2665	21.9543
59	3.31054	1.53007	44.6076	27.0197
60	3.55535	1.67466	47.4121	32.9737
61	3.97968	1.86629	50.8951	40.4009
62	4.04305	2.17009	55.6044	49.1747

Data Set Standard Deviation = 0.911007
 Numerator = 2418.15
 Denominator = 2815.02
 W Statistic = 0.859017 = 2418.15 / 2815.02

5% Critical value of 0.964 exceeds 0.859017
Evidence of non-normality at 95% level of significance

1% Critical value of 0.947 exceeds 0.859017
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Arsenic, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	ND<0	23.5
	11/15/1990	ND<0	23.5
	11/5/1991	ND<0	23.5
	11/24/1992	ND<0	23.5
	11/1/1993	ND<0	23.5
	11/2/1994	ND<0	23.5
	11/30/1995	ND<0	23.5
	11/15/1996	ND<0	23.5
	11/24/1997	ND<1.60944	23.5
	11/17/1998	ND<1.60944	23.5
	11/16/1999	2.07944	57
	6/6/2002	3.31054	59
	4/14/2008	1.09861	47
	9/29/2008	ND<2.30259	23.5
	3/9/2009	ND<1.60944	23.5
	9/29/2009	1.19392	52
	6/4/2010	1.09861	48
	11/5/2010	1.09861	49
	1/4/2011	ND<0.693147	23.5
	9/2/2011	1.09861	50
	2/14/2012	1.09861	51
	7/23/2012	ND<0.693147	23.5
	1/22/2013	ND<0.693147	23.5
	8/7/2013	ND<0.693147	23.5
	1/29/2014	ND<0.693147	23.5
	7/14/2014	ND<0.693147	23.5
	3/12/2015	ND<0.693147	23.5
	9/23/2015	ND<0.693147	23.5
	2/12/2016	ND<0.693147	23.5
	2/12/2016	ND<0.693147	23.5
	9/21/2016	ND<1.38629	23.5
	1/18/2017	ND<1.38629	23.5
	8/3/2017	ND<1.38629	23.5
	3/14/2018	ND<1.38629	23.5
	8/29/2018	ND<0.693147	23.5
	1/9/2019	ND<1.19392	23.5
	8/1/2019	ND<1.19392	23.5

Rank Sum = 1094.5

Rank Mean = 29.5811

Background Rank Sum = 1094.5

Background Rank Mean = 29.5811

Compliance Locations

Loc. ID	Date	Value	Rank
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MW-10	8/3/2017	ND<1.38629	23.5
	3/14/2018	ND<1.38629	23.5
	8/29/2018	2.02815	55
	1/9/2019	ND<1.19392	23.5
	7/31/2019	ND<1.19392	23.5

Rank Sum = 149
Rank Mean = 29.8

MW-7	8/3/2017	3.97968	61
	3/14/2018	3.08191	58
	8/28/2018	3.55535	60
	1/10/2019	2.02815	56
	7/31/2019	4.04305	62

Rank Sum = 297
Rank Mean = 59.4

MW-8	8/3/2017	ND<1.38629	23.5
	3/13/2018	ND<1.38629	23.5
	8/28/2018	ND<0.693147	23.5
	1/10/2019	ND<0.182322 J	23.5
	8/1/2019	1.36098	53

Rank Sum = 147
Rank Mean = 29.4

MW-9	8/3/2017	ND<1.38629	23.5
	3/13/2018	ND<1.38629	23.5
	8/29/2018	ND<0.741937 J	23.5
	1/9/2019	ND<1.19392	23.5
	8/1/2019	ND<1.19392	23.5

Rank Sum = 117.5
Rank Mean = 23.5

MW-11	8/18/2017	ND<1.38629	23.5
	3/14/2018	ND<1.38629	23.5
	8/29/2018	ND<0.693147	23.5
	1/9/2019	1.45862	54
	8/1/2019	ND<0.336472 J	23.5

Rank Sum = 148
Rank Mean = 29.6

Calculation Results:

Kruskal-Wallis H Statistic = 13.5264

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 22.8612

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

13.5264 > 11.0705 indicating a significant group difference at 5% significance level

22.8612 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 29.5811

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	29.8	0.218919	19.9981
MW-7	59.4	29.8189	19.9981
MW-8	29.4	-0.181081	19.9981
MW-9	23.5	-6.08108	19.9981

MW-11 29.6 0.0189189 19.9981

**Individual Well Comparisons at Groupwise 5% Significance Level
(1% Significance Level per comparison)**

1% Z score is 2.32634

Mean background rank is 29.5811

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	29.8	0.218919	19.9981
MW-7	59.4	29.8189	19.9981
MW-8	29.4	-0.181081	19.9981
MW-9	23.5	-6.08108	19.9981
MW-11	29.6	0.0189189	19.9981

Shapiro-Francia Test of Normality

Parameter: Barium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 61

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.14441	4.59848	0
2	0	-1.85218	8.02904	0
3	0	-1.66456	10.7998	0
4	0	-1.52203	13.1164	0
5	2.30259	-1.40507	15.0906	-3.2353
6	2.30259	-1.30469	16.7928	-6.23945
7	2.3979	-1.21596	18.2714	-9.1552
8	2.56495	-1.13113	19.5509	-12.0565
9	2.76632	-1.05812	20.6705	-14.9836
10	2.91235	-0.990356	21.6513	-17.8679
11	3.04452	-0.926859	22.5103	-20.6897
12	3.09104	-0.866894	23.2619	-23.3693
13	3.3322	-0.809896	23.9178	-26.068
14	3.63759	-0.755415	24.4884	-28.8159
15	3.67883	-0.703089	24.9828	-31.4025
16	3.68888	-0.649522	25.4046	-33.7985
17	3.78419	-0.60076	25.7656	-36.0719
18	3.80666	-0.553384	26.0718	-38.1784
19	3.89182	-0.507221	26.3291	-40.1524
20	3.89182	-0.462114	26.5426	-41.9509
21	3.97029	-0.417928	26.7173	-43.6102
22	3.97406	-0.374544	26.8576	-45.0987
23	4.04305	-0.331854	26.9677	-46.4404
24	4.04655	-0.287147	27.0501	-47.6023
25	4.06217	-0.24559	27.1105	-48.5999
26	4.10099	-0.204452	27.1523	-49.4384
27	4.11087	-0.163659	27.179	-50.1112
28	4.11578	-0.123135	27.1942	-50.618
29	4.14313	-0.0828129	27.2011	-50.9611
30	4.15261	-0.0426257	27.2029	-51.1381
31	4.15575	0	27.2029	-51.1381
32	4.15888	0.0426257	27.2047	-50.9608
33	4.237	0.0828129	27.2116	-50.6099
34	4.25703	0.123135	27.2267	-50.0857
35	4.2669	0.163659	27.2535	-49.3874
36	4.2669	0.204452	27.2953	-48.5151
37	4.29865	0.24559	27.3556	-47.4594
38	4.35927	0.287147	27.4381	-46.2076
39	4.36945	0.331854	27.5482	-44.7576
40	4.39445	0.374544	27.6885	-43.1117
41	4.40672	0.417928	27.8631	-41.27
42	4.44265	0.462114	28.0767	-39.217
43	4.50756	0.507221	28.334	-36.9306
44	4.51086	0.553384	28.6402	-34.4344
45	4.51415	0.60076	29.0011	-31.7225
46	4.5207	0.649522	29.423	-28.7862
47	4.54116	0.703089	29.9173	-25.5933

48	4.57471	0.755415	30.488	-22.1375
49	4.57471	0.809896	31.1439	-18.4325
50	4.60517	0.866894	31.8954	-14.4403
51	4.60517	0.926859	32.7545	-10.172
52	4.60517	0.990356	33.7353	-5.6112
53	4.60517	1.05812	34.8549	-0.738367
54	4.7185	1.13113	36.1344	4.59888
55	4.72739	1.21596	37.6129	10.3472
56	4.74493	1.30469	39.3151	16.5378
57	4.75359	1.40507	41.2894	23.217
58	4.82028	1.52203	43.606	30.5536
59	4.89784	1.66456	46.3767	38.7064
60	5.01064	1.85218	49.8073	47.987
61	5.1358	2.14441	54.4058	59.0002

Data Set Standard Deviation = 1.21256

Numerator = 3481.02

Denominator = 4799.55

W Statistic = 0.725281 = 3481.02 / 4799.55

5% Critical value of 0.963 exceeds 0.725281
Evidence of non-normality at 95% level of significance

1% Critical value of 0.947 exceeds 0.725281
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Barium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	ND<0	2.5
	11/15/1990	ND<0	2.5
	11/5/1991	ND<0	2.5
	11/24/1992	ND<0	2.5
	11/1/1993	3.68888	16
	11/2/1994	2.3979	7
	11/30/1995	2.30259	5
	11/15/1996	2.30259	6
	11/24/1997	4.60517	50
	11/17/1998	4.60517	51
	11/16/1999	4.60517	52
	4/14/2008	4.51086	44
	9/29/2008	4.89784	59
	3/9/2009	4.57471	48
	9/29/2009	5.1358	61
	6/4/2010	4.82028	58
	11/5/2010	4.72739	55
	1/4/2011	4.60517	53
	9/2/2011	4.7185	54
	2/14/2012	4.40672	41
	7/23/2012	4.11578	28
	1/22/2013	3.97406	22
	8/7/2013	4.5207	46
	1/29/2014	4.74493	56
	7/14/2014	4.50756	43
	3/12/2015	4.15261	30
	9/23/2015	4.75359	57
	2/12/2016	4.2669	35
	2/12/2016	4.2669	36
	9/21/2016	4.237	33
	1/18/2017	4.04655	24
	8/3/2017	4.06217	25
	3/14/2018	4.15575	31
	8/29/2018	4.57471	49
	1/9/2019	5.01064	60
	8/1/2019	4.44265	42

Rank Sum = 1287

Rank Mean = 35.75

Background Rank Sum = 1287

Background Rank Mean = 35.75

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	3.3322	13

	3/14/2018	4.25703	34
	8/29/2018	4.14313	29
	1/9/2019	3.89182	19
	7/31/2019	4.15888	32

Rank Sum = 127
Rank Mean = 25.4

MW-7	8/3/2017	2.91235	10
	3/14/2018	2.76632	9
	8/28/2018	3.09104	12
	1/10/2019	2.56495	8
	7/31/2019	3.04452	11

Rank Sum = 50
Rank Mean = 10

MW-8	8/3/2017	3.67883	15
	3/13/2018	4.10099	26
	8/28/2018	3.97029	21
	1/10/2019	3.78419	17
	8/1/2019	3.63759	14

Rank Sum = 93
Rank Mean = 18.6

MW-9	8/3/2017	4.54116	47
	3/13/2018	4.29865	37
	8/29/2018	4.11087	27
	1/9/2019	4.04305	23
	8/1/2019	3.89182	20

Rank Sum = 154
Rank Mean = 30.8

MW-11	8/18/2017	4.35927	38
	3/14/2018	4.51415	45
	8/29/2018	3.80666	18
	1/9/2019	4.36945	39
	8/1/2019	4.39445	40

Rank Sum = 180
Rank Mean = 36

Calculation Results:

Kruskal-Wallis H Statistic = 12.9076

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 12.911

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

12.9076 > 11.0705 indicating a significant group difference at 5% significance level

12.911 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 35.75

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	25.4	-10.35	19.7106
MW-7	10	-25.75	19.7106
MW-8	18.6	-17.15	19.7106
MW-9	30.8	-4.95	19.7106
MW-11	36	0.25	19.7106

**Individual Well Comparisons at Groupwise 5% Significance Level
(1% Significance Level per comparison)**

1% Z score is 2.32634

Mean background rank is 35.75

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	25.4	-10.35	19.7106
MW-7	10	-25.75	19.7106
MW-8	18.6	-17.15	19.7106
MW-9	30.8	-4.95	19.7106
MW-11	36	0.25	19.7106

Shapiro-Wilks Test of Normality

Parameter: Beryllium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-2.30259	0.916291	3.21888	0.3751	1.2074
2	-1.20397	0.693147	1.89712	0.2574	0.488319
3	-0.84397	0.693147	1.53712	0.226	0.347388
4	-0.71335	0.693147	1.4065	0.2032	0.2858
5	-0.400478	0.693147	1.09362	0.1847	0.201992
6	0	0.693147	0.693147	0.1691	0.117211
7	0	0.693147	0.693147	0.1554	0.107715
8	0	0.693147	0.693147	0.143	0.09912
9	0	0.693147	0.693147	0.1317	0.0912875
10	0	0.693147	0.693147	0.1212	0.0840094
11	0	0.693147	0.693147	0.1113	0.0771473
12	0	0.693147	0.693147	0.102	0.070701
13	0	0.693147	0.693147	0.0932	0.0646013
14	0	0.693147	0.693147	0.0846	0.0586403
15	0	0.693147	0.693147	0.0764	0.0529564
16	0	0.693147	0.693147	0.0685	0.0474806
17	0	0.693147	0.693147	0.0608	0.0421433
18	0	0.693147	0.693147	0.0532	0.0368754
19	0.0953102	0.693147	0.597837	0.0459	0.0274407
20	0.0953102	0.693147	0.597837	0.0386	0.0230765
21	0.0953102	0.693147	0.597837	0.0314	0.0187721
22	0.0953102	0.182322	0.0870114	0.0244	0.00212308
23	0.0953102	0.0953102	0	0.0174	0
24	0.0953102	0.0953102	0	0.0104	0
25	0.0953102	0.0953102	0	0.0035	0
26	0.0953102	0.0953102	0		
27	0.0953102	0.0953102	0		
28	0.0953102	0.0953102	0		
29	0.182322	0.0953102	-0.0870114		
30	0.693147	0.0953102	-0.597837		
31	0.693147	0.0953102	-0.597837		
32	0.693147	0.0953102	-0.597837		
33	0.693147	0	-0.693147		
34	0.693147	0	-0.693147		
35	0.693147	0	-0.693147		
36	0.693147	0	-0.693147		
37	0.693147	0	-0.693147		
38	0.693147	0	-0.693147		
39	0.693147	0	-0.693147		
40	0.693147	0	-0.693147		
41	0.693147	0	-0.693147		
42	0.693147	0	-0.693147		
43	0.693147	0	-0.693147		
44	0.693147	0	-0.693147		
45	0.693147	0	-0.693147		
46	0.693147	-0.400478	-1.09362		
47	0.693147	-0.71335	-1.4065		

48	0.693147	-0.84397	-1.53712
49	0.693147	-1.20397	-1.89712
50	0.916291	-2.30259	-3.21888

Sum of b values = 3.5522

Sample Standard Deviation = 0.580667

W Statistic = 0.763739

5% Critical value of 0.947 exceeds 0.763739
Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.763739
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Beryllium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	-2.30259	47
	9/29/2008	ND<-1.20397	23.5
	3/9/2009	ND<0.693147	23.5
	9/29/2009	ND<0.693147	23.5
	6/4/2010	ND<0.693147	23.5
	11/5/2010	ND<0.693147	23.5
	1/4/2011	ND<0.693147	23.5
	9/2/2011	ND<0.693147	23.5
	2/14/2012	ND<0.693147	23.5
	7/23/2012	ND<0.693147	23.5
	1/22/2013	ND<0.693147	23.5
	8/7/2013	ND<0.693147	23.5
	1/29/2014	ND<0.693147	23.5
	7/14/2014	ND<0.693147	23.5
	3/12/2015	ND<0.693147	23.5
	9/23/2015	ND<0.693147	23.5
	2/12/2016	ND<0.693147	23.5
	2/12/2016	ND<0.693147	23.5
	9/21/2016	ND<0	23.5
	1/18/2017	ND<0	23.5
	8/3/2017	ND<0	23.5
	3/14/2018	ND<0	23.5
	8/29/2018	ND<0.693147	23.5
	1/9/2019	ND<0.0953102	23.5
	8/1/2019	ND<0.0953102	23.5

Rank Sum = 611

Rank Mean = 24.44

Background Rank Sum = 611

Background Rank Mean = 24.44

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<0	23.5
	3/14/2018	ND<0	23.5
	8/29/2018	ND<-0.400478 J	23.5
	1/9/2019	ND<0.0953102	23.5
	7/31/2019	ND<0.0953102	23.5

Rank Sum = 117.5

Rank Mean = 23.5

MW-7	8/3/2017	ND<0	23.5
	3/14/2018	ND<0	23.5
	8/28/2018	ND<0.693147	23.5
	1/10/2019	ND<0.0953102	23.5

7/31/2019 ND<0.0953102 23.5
 Rank Sum = 117.5
 Rank Mean = 23.5

MW-8 8/3/2017 ND<0 23.5
 3/13/2018 ND<0 23.5
 8/28/2018 ND<0.693147 23.5
 1/10/2019 ND<0.0953102 23.5
 8/1/2019 ND<0.0953102 23.5
 Rank Sum = 117.5
 Rank Mean = 23.5

MW-9 8/3/2017 ND<0 23.5
 3/13/2018 ND<0 23.5
 8/29/2018 ND<0.693147 23.5
 1/9/2019 ND<0.0953102 23.5
 8/1/2019 ND<-0.84397 J 23.5
 Rank Sum = 117.5
 Rank Mean = 23.5

MW-11 8/18/2017 0.182322 49
 3/14/2018 ND<0 23.5
 8/29/2018 0.916291 50
 1/9/2019 0.0953102 48
 8/1/2019 ND<-0.71335 J 23.5
 Rank Sum = 194
 Rank Mean = 38.8

Calculation Results:

Kruskal-Wallis H Statistic = 4.67078

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 21.0995

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

4.67078 < 11.0705 indicating no significant group difference at 5% significance level

21.0995 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 24.44

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	23.5	-0.94	16.6134
MW-7	23.5	-0.94	16.6134
MW-8	23.5	-0.94	16.6134
MW-9	23.5	-0.94	16.6134
MW-11	38.8	14.36	16.6134

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 24.44

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	23.5	-0.94	16.6134
MW-7	23.5	-0.94	16.6134
MW-8	23.5	-0.94	16.6134
MW-9	23.5	-0.94	16.6134
MW-11	38.8	14.36	16.6134

Shapiro-Francia Test of Normality

Parameter: Cadmium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 63

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-0.994252	-2.17009	4.70929	2.15762
2	-0.527633	-1.86629	8.19234	3.14233
3	-0.527633	-1.68494	11.0314	4.03136
4	0	-1.5382	13.3974	4.03136
5	0	-1.41865	15.41	4.03136
6	0	-1.32251	17.159	4.03136
7	0	-1.23187	18.6765	4.03136
8	0	-1.15035	19.9998	4.03136
9	0	-1.08032	21.1669	4.03136
10	0	-1.01104	22.1891	4.03136
11	0	-0.950222	23.092	4.03136
12	0.0953102	-0.889006	23.8824	3.94663
13	0.0953102	-0.830953	24.5728	3.86743
14	0.0953102	-0.778966	25.1796	3.79319
15	0.0953102	-0.725736	25.7063	3.72402
16	0.0953102	-0.67449	26.1613	3.65973
17	0.587787	-0.628006	26.5556	3.2906
18	0.693147	-0.579873	26.8919	2.88866
19	0.693147	-0.53594	27.1791	2.51718
20	0.693147	-0.490189	27.4194	2.1774
21	0.693147	-0.445443	27.6178	1.86865
22	0.788457	-0.40429	27.7813	1.54988
23	0.832909	-0.361133	27.9117	1.24909
24	0.875469	-0.318639	28.0132	0.970132
25	0.916291	-0.279319	28.0913	0.714194
26	0.916291	-0.237847	28.1478	0.496258
27	1.02962	-0.199336	28.1876	0.291017
28	1.02962	-0.158579	28.2127	0.127741
29	1.02962	-0.118085	28.2266	0.00615779
30	1.06471	-0.0802981	28.2331	-0.0793365
31	1.09861	-0.0401167	28.2347	-0.123409
32	1.19392	0	28.2347	-0.123409
33	1.36098	0.0401167	28.2363	-0.0688113
34	1.38629	0.0802981	28.2428	0.0425055
35	1.38629	0.118085	28.2567	0.206207
36	1.38629	0.158579	28.2819	0.426045
37	1.38629	0.199336	28.3216	0.702383
38	1.38629	0.237847	28.3782	1.03211
39	1.38629	0.279319	28.4562	1.41933
40	1.38629	0.318639	28.5577	1.86106
41	1.41099	0.361133	28.6881	2.37061
42	1.41099	0.40429	28.8516	2.94106
43	1.45862	0.445443	29.05	3.59079
44	1.4816	0.490189	29.2903	4.31705
45	1.4816	0.53594	29.5775	5.1111
46	1.52606	0.579873	29.9138	5.99602
47	1.52606	0.628006	30.3082	6.9544

48	1.56862	0.67449	30.7631	8.01241
49	1.60944	0.725736	31.2898	9.18044
50	1.6864	0.778966	31.8966	10.4941
51	1.79176	0.830953	32.5871	11.983
52	1.79176	0.889006	33.3774	13.5758
53	2.10413	0.950222	34.2803	15.5752
54	2.15176	1.01104	35.3025	17.7507
55	2.15176	1.08032	36.4696	20.0753
56	2.19722	1.15035	37.7929	22.6029
57	2.3979	1.23187	39.3104	25.5568
58	2.56495	1.32251	41.0594	28.949
59	2.63189	1.41865	43.072	32.6827
60	2.63906	1.5382	45.4381	36.7421
61	3.2581	1.68494	48.2771	42.2318
62	4.20469	1.86629	51.7601	50.079
63	4.84419	2.17009	56.4694	60.5913

Data Set Standard Deviation = 1.06293

Numerator = 3671.31

Denominator = 3955.62

W Statistic = 0.928124 = 3671.31 / 3955.62

5% Critical value of 0.964 exceeds 0.928124
Evidence of non-normality at 95% level of significance

1% Critical value of 0.947 exceeds 0.928124
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Cadmium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	1.02962	31
	11/15/1990	1.38629	38
	11/5/1991	1.38629	39
	11/24/1992	1.41099	41
	11/2/1994	4.20469	62
	11/30/1995	3.2581	61
	11/15/1996	2.3979	57
	11/24/1997	1.79176	51
	11/17/1998	1.06471	34
	11/16/1999	0.875469	28
	1/4/2002	4.84419	63
	6/6/2002	2.19722	56
	4/14/2008	2.63189	59
	7/10/2008	1.02962	32
	9/29/2008	0.832909	27
	3/9/2009	2.63906	60
	9/29/2009	ND<1.38629	11.5
	6/4/2010	ND<0.693147	11.5
	11/5/2010	0.693147	25
	1/4/2011	1.79176	52
	9/2/2011	1.09861	35
	2/14/2012	ND<0.693147	11.5
	7/23/2012	ND<0.693147	11.5
	1/22/2013	2.15176	54
	8/7/2013	1.56862	48
	1/29/2014	1.36098	37
	7/14/2014	0.788457	26
	3/12/2015	1.02962	33
	9/23/2015	1.41099	42
	2/12/2016	1.4816	44
	2/12/2016	1.4816	45
	9/21/2016	1.52606	46
	1/18/2017	1.52606	47
	8/3/2017	1.6864	50
	3/14/2018	1.45862	43
	8/29/2018	1.38629	40
	1/9/2019	2.10413	53
	8/1/2019	0.916291	29

Rank Sum = 1534

Rank Mean = 40.3684

Background Rank Sum = 1534

Background Rank Mean = 40.3684

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<0	11.5
	3/14/2018	ND<0	11.5
	8/29/2018	ND<1.38629	11.5
	1/9/2019	2.56495	58
	7/31/2019	ND<0.0953102	J11.5

Rank Sum = 104
Rank Mean = 20.8

MW-7	8/3/2017	ND<0	11.5
	3/14/2018	ND<0	11.5
	8/28/2018	ND<1.38629	11.5
	1/10/2019	ND<0.0953102	11.5
	7/31/2019	ND<0.0953102	11.5

Rank Sum = 57.5
Rank Mean = 11.5

MW-8	8/3/2017	ND<0	11.5
	3/13/2018	ND<0	11.5
	8/28/2018	ND<1.38629	11.5
	1/10/2019	ND<0.0953102	11.5
	8/1/2019	ND<0.0953102	11.5

Rank Sum = 57.5
Rank Mean = 11.5

MW-9	8/3/2017	ND<0	11.5
	3/13/2018	0	23
	8/29/2018	ND<-0.527633	J11.5
	1/9/2019	ND<-0.994252	J11.5
	8/1/2019	ND<-0.527633	J11.5

Rank Sum = 69
Rank Mean = 13.8

MW-11	8/18/2017	0.916291	30
	3/14/2018	0.587787	24
	8/29/2018	1.60944	49
	1/9/2019	2.15176	55
	8/1/2019	1.19392	36

Rank Sum = 194
Rank Mean = 38.8

Calculation Results:

Kruskal-Wallis H Statistic = 27.9115

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 29.1506

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

27.9115 > 11.0705 indicating a significant group difference at 5% significance level

29.1506 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 40.3684

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	20.8	-19.5684	20.2862
MW-7	11.5	-28.8684	20.2862
MW-8	11.5	-28.8684	20.2862

MW-9	13.8	-26.5684	20.2862
MW-11	38.8	-1.56842	20.2862

**Individual Well Comparisons at Groupwise 5% Significance Level
(1% Significance Level per comparison)**

1% Z score is 2.32634

Mean background rank is 40.3684

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	20.8	-19.5684	20.2862
MW-7	11.5	-28.8684	20.2862
MW-8	11.5	-28.8684	20.2862
MW-9	13.8	-26.5684	20.2862
MW-11	38.8	-1.56842	20.2862

Shapiro-Francia Test of Normality

Parameter: Calcium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 54

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	8.83928	-2.09693	4.39712	-18.5354
2	8.88322	-1.79912	7.63394	-34.5173
3	9.65503	-1.60725	10.2172	-50.0354
4	9.68034	-1.46106	12.3519	-64.1789
5	9.70504	-1.34075	14.1495	-77.191
6	9.70504	-1.23187	15.667	-89.1463
7	9.74097	-1.14069	16.9682	-100.258
8	9.79256	-1.05812	18.0878	-110.619
9	9.84161	-0.982202	19.0525	-120.286
10	9.86267	-0.911562	19.8835	-129.276
11	9.91838	-0.841621	20.5918	-137.624
12	10.0301	-0.778966	21.1986	-145.437
13	10.0389	-0.719228	21.7159	-152.657
14	10.0941	-0.661955	22.154	-159.339
15	10.162	-0.606775	22.5222	-165.505
16	10.2146	-0.553384	22.8285	-171.158
17	10.2328	-0.498687	23.0771	-176.261
18	10.3288	-0.448213	23.278	-180.89
19	10.3288	-0.398855	23.4371	-185.01
20	10.4133	-0.350451	23.5599	-188.659
21	10.4163	-0.302855	23.6517	-191.814
22	10.4371	-0.253347	23.7158	-194.458
23	10.5662	-0.207012	23.7587	-196.645
24	10.5815	-0.161119	23.7847	-198.35
25	10.6115	-0.115562	23.798	-199.576
26	10.9169	-0.0702426	23.8029	-200.343
27	11.1004	-0.0250691	23.8036	-200.622
28	11.1563	0.0250691	23.8042	-200.342
29	11.2078	0.0702426	23.8091	-199.555
30	11.2186	0.115562	23.8225	-198.258
31	11.3071	0.161119	23.8485	-196.436
32	11.3145	0.207012	23.8913	-194.094
33	11.3206	0.253347	23.9555	-191.226
34	11.329	0.302855	24.0472	-187.795
35	11.4131	0.350451	24.17	-183.795
36	11.4669	0.398855	24.3291	-179.222
37	11.469	0.448213	24.53	-174.081
38	11.47	0.498687	24.7787	-168.361
39	11.5425	0.553384	25.0849	-161.974
40	11.5991	0.606775	25.4531	-154.936
41	11.6082	0.661955	25.8913	-147.252
42	11.6263	0.719228	26.4086	-138.89
43	11.6351	0.778966	27.0154	-129.826
44	11.6952	0.841621	27.7237	-119.983
45	11.7118	0.911562	28.5546	-109.307
46	11.7906	0.982202	29.5194	-97.7267
47	11.813	1.05812	30.639	-85.227

48	11.8277	1.14069	31.9402	-71.7353
49	11.8494	1.23187	33.4576	-57.1384
50	11.905	1.34075	35.2553	-41.1768
51	11.925	1.46106	37.39	-23.7536
52	11.964	1.60725	39.9732	-4.52447
53	12.0436	1.79912	43.21	17.1433
54	12.3283	2.09693	47.6072	42.9949

Data Set Standard Deviation = 0.878903

Numerator = 1848.56

Denominator = 1949.08

W Statistic = 0.948426 = 1848.56 / 1949.08

**5% Critical value of 0.958 exceeds 0.948426
Evidence of non-normality at 95% level of significance**

1% Critical value of 0.94 is less than 0.948426
Data is normally distributed at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Calcium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/24/1997	11.8494	49
	11/17/1998	11.6082	41
	11/16/1999	11.6952	44
	1/4/2002	10.5815	24
	4/14/2008	8.88322	2
	9/29/2008	11.813	47
	3/9/2009	11.3145	32
	9/29/2009	12.0436	53
	6/4/2010	11.925	51
	11/5/2010	11.7906	46
	1/4/2011	11.469	37
	9/2/2011	11.964	52
	2/14/2012	11.7118	45
	7/23/2012	11.5425	39
	1/22/2013	10.5662	23
	8/7/2013	11.6351	43
	1/29/2014	10.2146	16
	7/14/2014	11.6263	42
	3/12/2015	10.6115	25
	9/23/2015	11.3206	33
	2/12/2016	10.3288	18
	2/12/2016	10.3288	19
	9/21/2016	10.2328	17
	1/18/2017	10.0941	14
	8/3/2017	10.0301	12
3/14/2018	9.91838	11	
8/29/2018	10.0389	13	
1/9/2019	10.4371	22	
8/1/2019	11.1004	27	

Rank Sum = 897

Rank Mean = 30.931

Background Rank Sum = 897

Background Rank Mean = 30.931

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	11.3071	31
	3/14/2018	11.905	50
	8/29/2018	11.47	38
	1/9/2019	11.2186	30
	7/31/2019	11.8277	48

Rank Sum = 197

Rank Mean = 39.4

MW-7	8/3/2017	11.1563	28
	3/14/2018	10.9169	26
	8/28/2018	10.4133	20
	1/10/2019	9.86267	10
	7/31/2019	11.2078	29

Rank Sum = 113
Rank Mean = 22.6

MW-8	8/3/2017	9.70504	5
	3/13/2018	9.65503	3
	8/28/2018	9.74097	7
	1/10/2019	9.68034	4
	8/1/2019	8.83928	1

Rank Sum = 20
Rank Mean = 4

MW-9	8/3/2017	12.3283	54
	3/13/2018	10.4163	21
	8/29/2018	9.84161	9
	1/9/2019	9.70504	6
	8/1/2019	9.79256	8

Rank Sum = 98
Rank Mean = 19.6

MW-11	8/18/2017	11.4669	36
	3/14/2018	11.5991	40
	8/29/2018	10.162	15
	1/9/2019	11.4131	35
	8/1/2019	11.329	34

Rank Sum = 160
Rank Mean = 32

Calculation Results:

Kruskal-Wallis H Statistic = 17.5517

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 17.5517

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

17.5517 > 11.0705 indicating a significant group difference at 5% significance level

17.5517 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 30.931

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	39.4	8.46897	17.7222
MW-7	22.6	-8.33103	17.7222
MW-8	4	-26.931	17.7222
MW-9	19.6	-11.331	17.7222
MW-11	32	1.06897	17.7222

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 30.931

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	39.4	8.46897	17.7222

MW-7	22.6	-8.33103	17.7222
MW-8	4	-26.931	17.7222
MW-9	19.6	-11.331	17.7222
MW-11	32	1.06897	17.7222

Shapiro-Francia Test of Normality

Parameter: Chromium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 62

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-0.174353	-2.17009	4.70929	0.378363
2	-0.127833	-1.86629	8.19234	0.616937
3	-0.0100503	-1.67466	10.9968	0.633768
4	0	-1.53007	13.3379	0.633768
5	0	-1.41183	15.3312	0.633768
6	0	-1.31058	17.0488	0.633768
7	0	-1.22123	18.5402	0.633768
8	0	-1.1455	19.8524	0.633768
9	0.182322	-1.07138	21.0002	0.438433
10	0.470004	-1.00271	22.0057	-0.0328451
11	0.470004	-0.938476	22.8864	-0.473932
12	0.470004	-0.877897	23.6571	-0.886547
13	0.530628	-0.820379	24.3301	-1.32186
14	0.587787	-0.765456	24.9161	-1.77179
15	0.693147	-0.712751	25.4241	-2.26583
16	0.741937	-0.665079	25.8664	-2.75928
17	0.741937	-0.615839	26.2457	-3.21619
18	0.832909	-0.568052	26.5683	-3.68933
19	0.955511	-0.521527	26.8403	-4.18765
20	0.955511	-0.476105	27.067	-4.64257
21	1.02962	-0.431644	27.2533	-5.087
22	1.09861	-0.388022	27.4039	-5.51329
23	1.09861	-0.345126	27.523	-5.89245
24	1.22378	-0.305481	27.6163	-6.26629
25	1.335	-0.263715	27.6859	-6.61835
26	1.38629	-0.222403	27.7353	-6.92667
27	1.38629	-0.181468	27.7683	-7.17823
28	1.38629	-0.140835	27.7881	-7.37347
29	1.38629	-0.100433	27.7982	-7.5127
30	1.38629	-0.0601949	27.8018	-7.59615
31	1.38629	-0.0200544	27.8022	-7.62395
32	1.38629	0.0200544	27.8026	-7.59615
33	1.38629	0.0601949	27.8062	-7.5127
34	1.38629	0.100433	27.8163	-7.37347
35	1.38629	0.140835	27.8362	-7.17823
36	1.38629	0.181468	27.8691	-6.92667
37	1.38629	0.222403	27.9185	-6.61835
38	1.38629	0.263715	27.9881	-6.25276
39	1.43508	0.305481	28.0814	-5.81437
40	1.58924	0.345126	28.2005	-5.26588
41	1.60944	0.388022	28.3511	-4.64139
42	1.60944	0.431644	28.5374	-3.94668
43	1.60944	0.476105	28.7641	-3.18042
44	1.60944	0.521527	29.0361	-2.34106
45	1.60944	0.568052	29.3588	-1.42681
46	1.60944	0.615839	29.738	-0.435657
47	1.60944	0.665079	30.1803	0.634747

48	1.60944	0.712751	30.6884	1.78187
49	1.60944	0.765456	31.2743	3.01383
50	1.60944	0.820379	31.9473	4.33418
51	1.60944	0.877897	32.718	5.7471
52	1.60944	0.938476	33.5987	7.25752
53	1.60944	1.00271	34.6042	8.87132
54	1.60944	1.07138	35.752	10.5956
55	1.60944	1.1455	37.0642	12.4393
56	1.60944	1.22123	38.5556	14.4047
57	1.62924	1.31058	40.2732	16.54
58	2.07944	1.41183	42.2665	19.4758
59	2.10413	1.53007	44.6076	22.6953
60	2.30259	1.67466	47.4121	26.5513
61	2.30259	1.86629	50.8951	30.8486
62	3.62167	2.17009	55.6044	38.708

Data Set Standard Deviation = 0.703393
 Numerator = 1498.31
 Denominator = 1678.17
 W Statistic = 0.892824 = 1498.31 / 1678.17

5% Critical value of 0.964 exceeds 0.892824
Evidence of non-normality at 95% level of significance

1% Critical value of 0.947 exceeds 0.892824
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Chromium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	0.955511	50
	11/15/1990	0	47
	11/5/1991	1.22378	55
	11/24/1992	1.09861	53
	11/1/1993	ND<0	23.5
	11/2/1994	ND<0	23.5
	11/30/1995	ND<0	23.5
	11/15/1996	ND<0	23.5
	11/24/1997	1.09861	54
	11/17/1998	0.693147	48
	11/16/1999	1.02962	52
	1/4/2002	3.62167	62
	4/14/2008	ND<2.30259	23.5
	9/29/2008	ND<2.30259	23.5
	3/9/2009	ND<1.60944	23.5
	9/29/2009	ND<1.60944	23.5
	6/4/2010	ND<1.60944	23.5
	11/5/2010	ND<1.60944	23.5
	1/4/2011	ND<1.60944	23.5
	9/2/2011	ND<1.60944	23.5
	2/14/2012	ND<1.60944	23.5
	7/23/2012	ND<1.60944	23.5
	1/22/2013	ND<1.60944	23.5
	8/7/2013	ND<1.60944	23.5
	1/29/2014	ND<1.60944	23.5
	7/14/2014	ND<1.60944	23.5
	3/12/2015	ND<1.60944	23.5
	9/23/2015	ND<1.60944	23.5
	2/12/2016	ND<1.60944	23.5
	2/12/2016	ND<1.60944	23.5
	9/21/2016	ND<1.38629	23.5
	1/18/2017	ND<1.38629	23.5
	8/3/2017	ND<1.38629	23.5
	3/14/2018	ND<1.38629	23.5
	8/29/2018	ND<-0.127833 J	23.5
	1/9/2019	0.955511	51
	8/1/2019	ND<-0.0100503	23.5

Rank Sum = 1130

Rank Mean = 30.5405

Background Rank Sum = 1130

Background Rank Mean = 30.5405

Compliance Locations

Loc. ID	Date	Value	Rank
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MW-10	8/3/2017	ND<1.38629	23.5
	3/14/2018	ND<1.38629	23.5
	8/29/2018	2.10413	61
	1/9/2019	ND<0.741937 J	23.5
	7/31/2019	ND<0.470004 J	23.5

Rank Sum = 155

Rank Mean = 31

MW-7	8/3/2017	ND<1.38629	23.5
	3/14/2018	1.58924	58
	8/28/2018	2.07944	60
	1/10/2019	1.43508	57
	7/31/2019	1.335	56

Rank Sum = 254.5

Rank Mean = 50.9

MW-8	8/3/2017	ND<1.38629	23.5
	3/13/2018	ND<1.38629	23.5
	8/28/2018	ND<0.470004 J	23.5
	1/10/2019	ND<-0.174353 J	23.5
	8/1/2019	ND<0.587787 J	23.5

Rank Sum = 117.5

Rank Mean = 23.5

MW-9	8/3/2017	ND<1.38629	23.5
	3/13/2018	ND<1.38629	23.5
	8/29/2018	1.62924	59
	1/9/2019	ND<0.741937 J	23.5
	8/1/2019	ND<0.530628 J	23.5

Rank Sum = 153

Rank Mean = 30.6

MW-11	8/18/2017	ND<1.38629	23.5
	3/14/2018	ND<1.38629	23.5
	8/29/2018	ND<0.470004 J	23.5
	1/9/2019	0.832909	49
	8/1/2019	ND<0.182322 J	23.5

Rank Sum = 143

Rank Mean = 28.6

Calculation Results:

Kruskal-Wallis H Statistic = 7.01447

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 11.8553

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

7.01447 < 11.0705 indicating no significant group difference at 5% significance level

11.8553 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 30.5405

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	31	0.459459	19.9981
MW-7	50.9	20.3595	19.9981
MW-8	23.5	-7.04054	19.9981
MW-9	30.6	0.0594595	19.9981

MW-11 28.6 -1.94054 19.9981

**Individual Well Comparisons at Groupwise 5% Significance Level
(1% Significance Level per comparison)**

1% Z score is 2.32634

Mean background rank is 30.5405

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	31	0.459459	19.9981
MW-7	50.9	20.3595	19.9981
MW-8	23.5	-7.04054	19.9981
MW-9	30.6	0.0594595	19.9981
MW-11	28.6	-1.94054	19.9981

Shapiro-Wilks Test of Normality

Parameter: Cobalt, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0	4.07754	4.07754	0.3751	1.52948
2	0	4.07754	4.07754	0.2574	1.04956
3	0.336472	3.85015	3.51368	0.226	0.794091
4	0.587787	3.80666	3.21888	0.2032	0.654076
5	0.832909	3.68888	2.85597	0.1847	0.527498
6	0.875469	3.5582	2.68273	0.1691	0.45365
7	1.09861	3.55535	2.45674	0.1554	0.381777
8	1.16315	3.29584	2.13269	0.143	0.304974
9	1.16315	3.17805	2.0149	0.1317	0.265363
10	1.19392	3.13549	1.94157	0.1212	0.235318
11	1.22378	2.98568	1.76191	0.1113	0.1961
12	1.36098	2.83321	1.47224	0.102	0.150168
13	1.41099	2.57261	1.16163	0.0932	0.108263
14	1.56862	2.57261	1.004	0.0846	0.0849381
15	1.58924	2.5416	0.952367	0.0764	0.0727608
16	1.58924	2.45959	0.870354	0.0685	0.0596192
17	1.60944	2.3979	0.788457	0.0608	0.0479382
18	1.64866	2.34181	0.693147	0.0532	0.0368754
19	1.70475	2.34181	0.637058	0.0459	0.0292409
20	1.72277	2.30259	0.579818	0.0386	0.022381
21	1.72277	2.30259	0.579818	0.0314	0.0182063
22	1.72277	2.30259	0.579818	0.0244	0.0141476
23	1.72277	2.12823	0.405465	0.0174	0.00705509
24	1.72277	2.0149	0.292136	0.0104	0.00303822
25	1.82455	2.0149	0.190354	0.0035	0.000666238
26	2.0149	1.82455	-0.190354		
27	2.0149	1.72277	-0.292136		
28	2.12823	1.72277	-0.405465		
29	2.30259	1.72277	-0.579818		
30	2.30259	1.72277	-0.579818		
31	2.30259	1.72277	-0.579818		
32	2.34181	1.70475	-0.637058		
33	2.34181	1.64866	-0.693147		
34	2.3979	1.60944	-0.788457		
35	2.45959	1.58924	-0.870354		
36	2.5416	1.58924	-0.952367		
37	2.57261	1.56862	-1.004		
38	2.57261	1.41099	-1.16163		
39	2.83321	1.36098	-1.47224		
40	2.98568	1.22378	-1.76191		
41	3.13549	1.19392	-1.94157		
42	3.17805	1.16315	-2.0149		
43	3.29584	1.16315	-2.13269		
44	3.55535	1.09861	-2.45674		
45	3.5582	0.875469	-2.68273		
46	3.68888	0.832909	-2.85597		
47	3.80666	0.587787	-3.21888		

48	3.85015	0.336472	-3.51368
49	4.07754	0	-4.07754
50	4.07754	0	-4.07754

Sum of b values = 7.04719

Sample Standard Deviation = 1.02536

W Statistic = 0.964006

5% Critical value of 0.947 is less than 0.964006

Data is normally distributed at 95% level of significance

1% Critical value of 0.93 is less than 0.964006

Data is normally distributed at 99% level of significance

Levene's Test for Equal of Variance

Parameter: Cobalt, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Overall Mean = 0.561497

Overall Std Dev = 0.403126

Overall Total = 28.0748

SS Groups = 2.66956

SS Total = 7.96301

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Groups	2.66956	5	0.533912	4.43796
Error (within groups)	5.29345	44	0.120306	
Totals	7.96301	49		

95% F-Statistic = 2.36827

4.43796 exceeds 2.36827; assumption of equal variance should be rejected

Group: MW-6	Sample	Residual
	4/14/2008	0.498881
	9/29/2008	0.758392
	3/9/2009	0.381097
	9/29/2009	1.28058
	6/4/2010	1.05319
	11/5/2010	1.00971
	1/4/2011	0.338538
	9/2/2011	1.28058
	2/14/2012	0.891923
	7/23/2012	0.761245
	1/22/2013	0.782053
	8/7/2013	0.188726
	1/29/2014	1.18752
	7/14/2014	0.036257
	3/12/2015	1.09221
	9/23/2015	0.255354
	2/12/2016	0.224344
	2/12/2016	0.224344
	9/21/2016	0.337368
	1/18/2017	0.455151
	8/3/2017	0.455151
	3/14/2018	0.668725
	8/29/2018	0.494371
	1/9/2019	1.07419
	8/1/2019	1.22834

Group: MW-10	Date	Residual
	8/3/2017	1.04746
	3/14/2018	0.710986
	8/29/2018	1.25513

1/9/2019	0.17199
7/31/2019	0.675308

Group: MW-7

Date	Residual
8/3/2017	0.272962
3/14/2018	0.57879
8/28/2018	0.330954
1/10/2019	0.0191739
7/31/2019	0.655955

Group: MW-8

Date	Residual
8/3/2017	0.679394
3/13/2018	1.26718
8/28/2018	1.0354
1/10/2019	0.455586
8/1/2019	0.455586

Group: MW-9

Date	Residual
8/3/2017	0.0262694
3/13/2018	0.261583
8/29/2018	0.0262694
1/9/2019	0.399815
8/1/2019	0.0856928

Group: MW-11

Date	Residual
8/18/2017	0.0434269
3/14/2018	0.218937
8/29/2018	0.0518833
1/9/2019	0.0817363
8/1/2019	0.30913

Kruskal-Wallis Non-Parametric Test

Parameter: Cobalt, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	3.29584	43
	9/29/2008	3.55535	44
	3/9/2009	3.17805	42
	9/29/2009	4.07754	49
	6/4/2010	3.85015	48
	11/5/2010	3.80666	47
	1/4/2011	3.13549	41
	9/2/2011	4.07754	50
	2/14/2012	3.68888	46
	7/23/2012	3.5582	45
	1/22/2013	2.0149	29
	8/7/2013	2.98568	40
	1/29/2014	ND<1.60944	10.5
	7/14/2014	2.83321	39
	3/12/2015	1.70475	27
	9/23/2015	2.5416	36
	2/12/2016	2.57261	37
	2/12/2016	2.57261	38
	9/21/2016	2.45959	35
	1/18/2017	2.34181	32
8/3/2017	2.34181	33	
3/14/2018	2.12823	31	
8/29/2018	ND<2.30259	10.5	
1/9/2019	ND<1.72277	10.5	
8/1/2019	ND<1.56862 J	10.5	

Rank Sum = 874

Rank Mean = 34.96

Background Rank Sum = 874

Background Rank Mean = 34.96

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<0	10.5
	3/14/2018	0.336472	21
	8/29/2018	ND<2.30259	10.5
	1/9/2019	ND<0.875469 J	10.5
	7/31/2019	ND<1.72277	10.5

Rank Sum = 63

Rank Mean = 12.6

MW-7	8/3/2017	2.0149	30
	3/14/2018	1.16315	24
	8/28/2018	ND<1.41099 J	10.5
	1/10/2019	ND<1.72277	10.5

7/31/2019 2.3979 34
 Rank Sum = 109
 Rank Mean = 21.8

MW-8 8/3/2017 0.587787 22
 3/13/2018 ND<0 10.5
 8/28/2018 ND<2.30259 10.5
 1/10/2019 ND<1.72277 10.5
 8/1/2019 ND<1.72277 10.5
 Rank Sum = 64
 Rank Mean = 12.8

MW-9 8/3/2017 1.58924 26
 3/13/2018 1.82455 28
 8/29/2018 ND<1.58924 J 10.5
 1/9/2019 ND<1.16315 J 10.5
 8/1/2019 ND<1.64866 J 10.5
 Rank Sum = 85.5
 Rank Mean = 17.1

MW-11 8/18/2017 1.09861 23
 3/14/2018 1.36098 25
 8/29/2018 ND<1.19392 J 10.5
 1/9/2019 ND<1.22378 J 10.5
 8/1/2019 ND<0.832909 J 10.5
 Rank Sum = 79.5
 Rank Mean = 15.9

Calculation Results:

Kruskal-Wallis H Statistic = 22.3898

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 23.9173

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

22.3898 > 11.0705 indicating a significant group difference at 5% significance level

23.9173 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 34.96

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	12.6	-22.36	16.6134
MW-7	21.8	-13.16	16.6134
MW-8	12.8	-22.16	16.6134
MW-9	17.1	-17.86	16.6134
MW-11	15.9	-19.06	16.6134

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 34.96

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	12.6	-22.36	16.6134
MW-7	21.8	-13.16	16.6134
MW-8	12.8	-22.16	16.6134
MW-9	17.1	-17.86	16.6134
MW-11	15.9	-19.06	16.6134

Shapiro-Wilks Test of Normality

Parameter: Copper, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.693147	2.30259	1.60944	0.3751	0.6037
2	0.741937	2.30259	1.56065	0.2574	0.401711
3	0.741937	2.30259	1.56065	0.226	0.352706
4	0.993252	1.72277	0.729515	0.2032	0.148237
5	1.09861	1.72277	0.624154	0.1847	0.115281
6	1.16315	1.72277	0.559616	0.1691	0.094631
7	1.38629	1.72277	0.336472	0.1554	0.0522878
8	1.38629	1.72277	0.336472	0.143	0.0481155
9	1.38629	1.72277	0.336472	0.1317	0.0443134
10	1.38629	1.72277	0.336472	0.1212	0.0407804
11	1.38629	1.72277	0.336472	0.1113	0.0374494
12	1.38629	1.72277	0.336472	0.102	0.0343202
13	1.38629	1.66771	0.281412	0.0932	0.0262276
14	1.38629	1.62924	0.242946	0.0846	0.0205532
15	1.38629	1.60944	0.223144	0.0764	0.0170482
16	1.38629	1.60944	0.223144	0.0685	0.0152853
17	1.38629	1.60944	0.223144	0.0608	0.0135671
18	1.38629	1.60944	0.223144	0.0532	0.0118712
19	1.38629	1.60944	0.223144	0.0459	0.0102423
20	1.38629	1.60944	0.223144	0.0386	0.00861334
21	1.58924	1.60944	0.0202027	0.0314	0.000634365
22	1.60944	1.60944	0	0.0244	0
23	1.60944	1.60944	0	0.0174	0
24	1.60944	1.60944	0	0.0104	0
25	1.60944	1.60944	0	0.0035	0
26	1.60944	1.60944	0		
27	1.60944	1.60944	0		
28	1.60944	1.60944	0		
29	1.60944	1.60944	0		
30	1.60944	1.58924	-0.0202027		
31	1.60944	1.38629	-0.223144		
32	1.60944	1.38629	-0.223144		
33	1.60944	1.38629	-0.223144		
34	1.60944	1.38629	-0.223144		
35	1.60944	1.38629	-0.223144		
36	1.60944	1.38629	-0.223144		
37	1.62924	1.38629	-0.242946		
38	1.66771	1.38629	-0.281412		
39	1.72277	1.38629	-0.336472		
40	1.72277	1.38629	-0.336472		
41	1.72277	1.38629	-0.336472		
42	1.72277	1.38629	-0.336472		
43	1.72277	1.38629	-0.336472		
44	1.72277	1.38629	-0.336472		
45	1.72277	1.16315	-0.559616		
46	1.72277	1.09861	-0.624154		
47	1.72277	0.993252	-0.729515		

48	2.30259	0.741937	-1.56065
49	2.30259	0.741937	-1.56065
50	2.30259	0.693147	-1.60944

Sum of b values = 2.09758

Sample Standard Deviation = 0.322345

W Statistic = 0.864167

5% Critical value of 0.947 exceeds 0.864167
Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.864167
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Copper, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	ND<2.30259	24.5
	9/29/2008	1.09861	49
	3/9/2009	ND<1.60944	24.5
	9/29/2009	ND<1.60944	24.5
	6/4/2010	ND<1.60944	24.5
	11/5/2010	ND<1.60944	24.5
	1/4/2011	ND<1.60944	24.5
	9/2/2011	ND<1.60944	24.5
	2/14/2012	ND<1.60944	24.5
	7/23/2012	ND<1.60944	24.5
	1/22/2013	1.66771	50
	8/7/2013	ND<1.60944	24.5
	1/29/2014	ND<1.60944	24.5
	7/14/2014	ND<1.60944	24.5
	3/12/2015	ND<1.60944	24.5
	9/23/2015	ND<1.60944	24.5
	2/12/2016	ND<1.60944	24.5
	2/12/2016	ND<1.60944	24.5
	9/21/2016	ND<1.38629	24.5
	1/18/2017	ND<1.38629	24.5
8/3/2017	ND<1.38629	24.5	
3/14/2018	ND<1.38629	24.5	
8/29/2018	ND<2.30259	24.5	
1/9/2019	ND<1.72277	24.5	
8/1/2019	ND<1.72277	24.5	

Rank Sum = 662.5

Rank Mean = 26.5

Background Rank Sum = 662.5

Background Rank Mean = 26.5

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<1.38629	24.5
	3/14/2018	ND<1.38629	24.5
	8/29/2018	ND<2.30259	24.5
	1/9/2019	ND<1.72277	24.5
	7/31/2019	ND<1.72277	24.5

Rank Sum = 122.5

Rank Mean = 24.5

MW-7	8/3/2017	ND<1.38629	24.5
	3/14/2018	ND<1.38629	24.5
	8/28/2018	ND<1.62924 J	24.5
	1/10/2019	ND<1.16315 J	24.5

7/31/2019 ND<1.72277 24.5
Rank Sum = 122.5
Rank Mean = 24.5

MW-8 8/3/2017 ND<1.38629 24.5
3/13/2018 ND<1.38629 24.5
8/28/2018 ND<0.741937 J 24.5
1/10/2019 ND<1.58924 J 24.5
8/1/2019 ND<1.72277 24.5
Rank Sum = 122.5
Rank Mean = 24.5

MW-9 8/3/2017 ND<1.38629 24.5
3/13/2018 ND<1.38629 24.5
8/29/2018 ND<0.741937 J 24.5
1/9/2019 ND<1.72277 24.5
8/1/2019 ND<1.72277 24.5
Rank Sum = 122.5
Rank Mean = 24.5

MW-11 8/18/2017 ND<1.38629 24.5
3/14/2018 ND<1.38629 24.5
8/29/2018 ND<0.993252 J 24.5
1/9/2019 ND<0.693147 J 24.5
8/1/2019 ND<1.72277 24.5
Rank Sum = 122.5
Rank Mean = 24.5

Calculation Results:

Kruskal-Wallis H Statistic = 0.235294

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 2.04082

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

0.235294 < 11.0705 indicating no significant group difference at 5% significance level

2.04082 < 11.0705 indicating no significant group difference at 5% significance level when adjusted for ties

Shapiro-Francia Test of Normality

Parameter: Iron, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 51

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	1.60944	-2.07485	4.305	-3.33934
2	3.46574	-1.77438	7.45342	-9.48887
3	3.91202	-1.58047	9.95129	-15.6717
4	4.86753	-1.4325	12.0034	-22.6444
5	5.1299	-1.30469	13.7056	-29.3374
6	5.29832	-1.20036	15.1464	-35.6972
7	5.29832	-1.10768	16.3734	-41.5661
8	5.29832	-1.02365	17.4212	-46.9897
9	5.29832	-0.942375	18.3093	-51.9827
10	5.29832	-0.87055	19.0672	-56.5952
11	5.52146	-0.802956	19.7119	-61.0287
12	5.70711	-0.738846	20.2578	-65.2453
13	5.76832	-0.67449	20.7127	-69.136
14	5.76832	-0.615839	21.092	-72.6884
15	5.96615	-0.559237	21.4047	-76.0249
16	6.23441	-0.504372	21.6591	-79.1693
17	6.31173	-0.450985	21.8625	-82.0158
18	6.35089	-0.396142	22.0195	-84.5317
19	6.37161	-0.345126	22.1386	-86.7307
20	6.50728	-0.294992	22.2256	-88.6503
21	6.60665	-0.24559	22.2859	-90.2728
22	6.68211	-0.194225	22.3236	-91.5706
23	6.68211	-0.1459	22.3449	-92.5456
24	6.82437	-0.0979139	22.3545	-93.2138
25	7.08171	-0.0501541	22.357	-93.5689
26	7.17012	0	22.357	-93.5689
27	7.24423	0.0501541	22.3595	-93.2056
28	7.24423	0.0979139	22.3691	-92.4963
29	7.25841	0.1459	22.3904	-91.4373
30	7.35244	0.194225	22.4281	-90.0093
31	7.37776	0.24559	22.4884	-88.1974
32	7.46737	0.294992	22.5755	-85.9946
33	7.91936	0.345126	22.6946	-83.2614
34	7.92299	0.396142	22.8515	-80.1228
35	8.12267	0.450985	23.0549	-76.4595
36	8.29155	0.504372	23.3093	-72.2775
37	8.29405	0.559237	23.622	-67.6392
38	8.34284	0.615839	24.0013	-62.5013
39	8.6125	0.67449	24.4562	-56.6923
40	8.82468	0.738846	25.0021	-50.1722
41	9.17988	0.802956	25.6469	-42.8012
42	9.22029	0.87055	26.4047	-34.7744
43	9.44936	0.942375	27.2928	-25.8696
44	9.84161	1.02365	28.3406	-15.7952
45	10.1186	1.10768	29.5676	-4.58704
46	10.4458	1.20036	31.0085	7.9517
47	10.6666	1.30469	32.7107	21.8683

48	10.8178	1.4325	34.7627	37.3648
49	10.9078	1.58047	37.2606	54.6042
50	10.9331	1.77438	40.409	74.0037
51	11.0235	2.07485	44.714	96.8758

Data Set Standard Deviation = 2.07774

Numerator = 9384.93

Denominator = 9651.55

W Statistic = 0.972375 = 9384.93 / 9651.55

5% Critical value of 0.954 is less than 0.972375

Data is normally distributed at 95% level of significance

1% Critical value of 0.935 is less than 0.972375

Data is normally distributed at 99% level of significance

Levene's Test for Equal of Variance

Parameter: Iron, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Overall Mean = 1.14069

Overall Std Dev = 1.07107

Overall Total = 58.1752

SS Groups = 8.05872

SS Total = 57.3592

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Groups	8.05872	5	1.61174	1.47115
Error (within groups)	49.3005	45	1.09557	
Totals	57.3592	50		

95% F-Statistic = 2.36827

1.47115 does not exceed 2.36827 indicating equal variance

Group: MW-6

Sample	Residual
1/4/2002	4.35139
4/14/2008	0.770726
9/29/2008	1.33764
3/9/2009	0.347305
9/29/2009	2.03079
6/4/2010	2.24296
11/5/2010	1.34127
1/4/2011	0.0744377
9/2/2011	1.70983
2/14/2012	2.63858
7/23/2012	1.54095
1/22/2013	0.499993
8/7/2013	0.885656
1/29/2014	1.45182
7/14/2014	2.66969
3/12/2015	0.210104
9/23/2015	0.874605
2/12/2016	0.100393
2/12/2016	0.100393
9/21/2016	0.269981
1/18/2017	1.2834
8/3/2017	1.2834
3/14/2018	1.2834
8/29/2018	4.97228
1/9/2019	3.11598
8/1/2019	1.71418

Group: MW-10

Date	Residual
8/3/2017	0.0073486
3/14/2018	0.00683604

8/29/2018	1.92882
1/9/2019	1.28492
7/31/2019	0.644413

Group: MW-7

Date	Residual
8/3/2017	0.478955
3/14/2018	0.190287
8/28/2018	0.201968
1/10/2019	1.2968
7/31/2019	0.806168

Group: MW-8

Date	Residual
8/3/2017	0.530664
3/13/2018	1.11323
8/28/2018	0.0571762
1/10/2019	0.28857
8/1/2019	1.4125

Group: MW-9

Date	Residual
8/3/2017	0.554518
3/13/2018	0.554518
8/29/2018	1.52492
1/9/2019	0.0845141
8/1/2019	0.331374

Group: MW-11

Date	Residual
8/18/2017	0.685785
3/14/2018	0.891544
8/29/2018	2.88776
1/9/2019	0.775798
8/1/2019	0.534636

Parametric Analysis of Variance

Parameter: Iron, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	92.1317	5	18.4263	6.70217
Error (within wells)	123.719	45	2.74931	
Totals	215.851	50		

6.70217 exceeds 2.36827 indicating a significant difference in group comparisons

Individual Well Comparisons

51 total observations - 6 wells = 45 degrees of freedom

1% Individual Well Comparison Rate

Bonferroni t = 2.41212 at 5, 45 degrees of freedom

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-10	7.25106	0.669348	0.809694	1.95308
	Date	Conc.	Residual	
	8/3/2017	7.25841	0.0073486	
	3/14/2018	7.24423	-0.00683604	
	8/29/2018	9.17988	1.92882	
	1/9/2019	5.96615	-1.28492	
	7/31/2019	6.60665	-0.644413	
Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-7	9.63964	3.05793	0.809694	1.95308
	Date	Conc.	Residual	
	8/3/2017	10.1186	0.478955	
	3/14/2018	9.44936	-0.190287	
	8/28/2018	9.84161	0.201968	
	1/10/2019	8.34284	-1.2968	
	7/31/2019	10.4458	0.806168	
Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-8	6.88155	0.299834	0.809694	1.95308
	Date	Conc.	Residual	
	8/3/2017	6.35089	-0.530664	
	3/13/2018	5.76832	-1.11323	
	8/28/2018	6.82437	-0.0571762	
	1/10/2019	7.17012	0.28857	
	8/1/2019	8.29405	1.4125	
Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-9	5.85284	-0.72888	0.809694	1.95308
	Date	Conc.	Residual	
	8/3/2017	ND<5.29832	-0.554518	
	3/13/2018	ND<5.29832	-0.554518	
	8/29/2018	7.37776	1.52492	

1/9/2019	5.76832	-0.0845141
8/1/2019	5.52146	-0.331374

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-11	10.132	3.55028	0.809694	1.95308

Date	Conc.	Residual
8/18/2017	10.8178	0.685785
3/14/2018	11.0235	0.891544
8/29/2018	7.24423	-2.88776
1/9/2019	10.9078	0.775798
8/1/2019	10.6666	0.534636

Shapiro-Francia Test of Normality

Parameter: Lead, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 62

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-0.0833816	-2.17009	4.70929	0.180946
2	0	-1.86629	8.19234	0.180946
3	0	-1.67466	10.9968	0.180946
4	0	-1.53007	13.3379	0.180946
5	0	-1.41183	15.3312	0.180946
6	0	-1.31058	17.0488	0.180946
7	0	-1.22123	18.5402	0.180946
8	0	-1.1455	19.8524	0.180946
9	0	-1.07138	21.0002	0.180946
10	0	-1.00271	22.0057	0.180946
11	0.693147	-0.938476	22.8864	-0.469556
12	0.693147	-0.877897	23.6571	-1.07807
13	0.693147	-0.820379	24.3301	-1.64671
14	0.693147	-0.765456	24.9161	-2.17728
15	0.693147	-0.712751	25.4241	-2.67133
16	0.693147	-0.665079	25.8664	-3.13232
17	0.693147	-0.615839	26.2457	-3.55919
18	0.693147	-0.568052	26.5683	-3.95293
19	0.693147	-0.521527	26.8403	-4.31443
20	0.693147	-0.476105	27.067	-4.64444
21	0.693147	-0.431644	27.2533	-4.94363
22	0.693147	-0.388022	27.4039	-5.21259
23	0.693147	-0.345126	27.523	-5.45181
24	0.693147	-0.305481	27.6163	-5.66356
25	0.693147	-0.263715	27.6859	-5.84635
26	0.693147	-0.222403	27.7353	-6.00051
27	0.693147	-0.181468	27.7683	-6.12629
28	0.693147	-0.140835	27.7881	-6.22391
29	0.693147	-0.100433	27.7982	-6.29353
30	0.693147	-0.0601949	27.8018	-6.33525
31	0.693147	-0.0200544	27.8022	-6.34915
32	0.693147	0.0200544	27.8026	-6.33525
33	0.693147	0.0601949	27.8062	-6.29353
34	0.693147	0.100433	27.8163	-6.22391
35	0.693147	0.140835	27.8362	-6.12629
36	0.693147	0.181468	27.8691	-6.00051
37	0.693147	0.222403	27.9185	-5.84635
38	0.693147	0.263715	27.9881	-5.66356
39	0.693147	0.305481	28.0814	-5.45181
40	0.693147	0.345126	28.2005	-5.21259
41	0.693147	0.388022	28.3511	-4.94363
42	0.693147	0.431644	28.5374	-4.64444
43	0.693147	0.476105	28.7641	-4.31443
44	0.693147	0.521527	29.0361	-3.95293
45	0.693147	0.568052	29.3588	-3.55919
46	0.693147	0.615839	29.738	-3.13232
47	0.788457	0.665079	30.1803	-2.60794

48	0.788457	0.712751	30.6884	-2.04596
49	0.788457	0.765456	31.2743	-1.44243
50	0.788457	0.820379	31.9473	-0.7956
51	0.788457	0.877897	32.718	-0.103416
52	0.788457	0.938476	33.5987	0.636532
53	0.788457	1.00271	34.6042	1.42713
54	0.788457	1.07138	35.752	2.27186
55	0.788457	1.1455	37.0642	3.17504
56	0.788457	1.22123	38.5556	4.13793
57	0.916291	1.31058	40.2732	5.3388
58	0.955511	1.41183	42.2665	6.68782
59	1.43508	1.53007	44.6076	8.8836
60	1.60944	1.67466	47.4121	11.5789
61	1.60944	1.86629	50.8951	14.5825
62	1.60944	2.17009	55.6044	18.0752

Data Set Standard Deviation = 0.3652

Numerator = 326.712

Denominator = 452.377

W Statistic = 0.722211 = 326.712 / 452.377

5% Critical value of 0.964 exceeds 0.722211
Evidence of non-normality at 95% level of significance

1% Critical value of 0.947 exceeds 0.722211
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Lead, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	ND<0	30
	11/15/1990	ND<0	30
	11/5/1991	ND<0	30
	11/24/1992	ND<0	30
	11/1/1993	ND<0	30
	11/2/1994	ND<0	30
	11/30/1995	ND<0	30
	11/15/1996	ND<0	30
	11/24/1997	ND<1.60944	30
	11/17/1998	ND<1.60944	30
	11/16/1999	ND<1.60944	30
	1/4/2002	ND<0	30
	4/14/2008	ND<0.693147	30
	9/29/2008	ND<0.693147	30
	3/9/2009	ND<0.693147	30
	9/29/2009	ND<0.693147	30
	6/4/2010	ND<0.693147	30
	11/5/2010	ND<0.693147	30
	1/4/2011	ND<0.693147	30
	9/2/2011	ND<0.693147	30
	2/14/2012	ND<0.693147	30
	7/23/2012	ND<0.693147	30
	1/22/2013	ND<0.693147	30
	8/7/2013	ND<0.693147	30
	1/29/2014	ND<0.693147	30
	7/14/2014	ND<0.693147	30
	3/12/2015	ND<0.693147	30
	9/23/2015	ND<0.693147	30
	2/12/2016	ND<0.693147	30
	2/12/2016	ND<0.693147	30
	9/21/2016	ND<0.693147	30
	1/18/2017	ND<0.693147	30
	8/3/2017	ND<0.693147	30
	3/14/2018	ND<0.693147	30
	8/29/2018	ND<0.693147	30
	1/9/2019	ND<0.788457	30
	8/1/2019	ND<0.788457	30

Rank Sum = 1110

Rank Mean = 30

Background Rank Sum = 1110

Background Rank Mean = 30

Compliance Locations

Loc. ID	Date	Value	Rank
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MW-10	8/3/2017	ND<0.693147	30
	3/14/2018	ND<0.693147	30
	8/29/2018	1.43508	62
	1/9/2019	ND<0.788457	30
	7/31/2019	ND<0.788457	30

Rank Sum = 182
Rank Mean = 36.4

MW-7	8/3/2017	ND<0.693147	30
	3/14/2018	ND<0.693147	30
	8/28/2018	0.916291	60
	1/10/2019	ND<-0.0833816	30
	7/31/2019	ND<0.788457	30

Rank Sum = 180
Rank Mean = 36

MW-8	8/3/2017	ND<0.693147	30
	3/13/2018	ND<0.693147	30
	8/28/2018	ND<0.693147	30
	1/10/2019	ND<0.788457	30
	8/1/2019	ND<0.788457	30

Rank Sum = 150
Rank Mean = 30

MW-9	8/3/2017	ND<0.693147	30
	3/13/2018	ND<0.693147	30
	8/29/2018	ND<0.693147	30
	1/9/2019	0.955511	61
	8/1/2019	ND<0.788457	30

Rank Sum = 181
Rank Mean = 36.2

MW-11	8/18/2017	ND<0.693147	30
	3/14/2018	ND<0.693147	30
	8/29/2018	ND<0.693147	30
	1/9/2019	ND<0.788457	30
	8/1/2019	ND<0.788457	30

Rank Sum = 150
Rank Mean = 30

Calculation Results:

Kruskal-Wallis H Statistic = 1.34409

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 9.72045

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

1.34409 < 11.0705 indicating no significant group difference at 5% significance level

9.72045 < 11.0705 indicating no significant group difference at 5% significance level when adjusted for ties

Shapiro-Wilks Test of Normality

Parameter: Nickel, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.788457	3.71113	2.92267	0.3751	1.09629
2	1.28093	3.58352	2.30259	0.2574	0.592685
3	1.335	3.51155	2.17654	0.226	0.491899
4	1.36098	3.44681	2.08583	0.2032	0.423841
5	1.38629	3.43399	2.04769	0.1847	0.378209
6	1.38629	3.3673	1.981	0.1691	0.334987
7	1.38629	3.21888	1.83258	0.1554	0.284783
8	1.38629	3.21888	1.83258	0.143	0.262059
9	1.38629	3.09104	1.70475	0.1317	0.224515
10	1.45862	3.09104	1.63243	0.1212	0.19785
11	1.58924	3.06339	1.47416	0.1113	0.164074
12	1.60944	2.63906	1.02962	0.102	0.105021
13	1.60944	2.35138	0.741937	0.0932	0.0691486
14	1.62924	2.16332	0.534082	0.0846	0.0451834
15	1.6864	2.15176	0.465363	0.0764	0.0355538
16	1.70475	2.11626	0.411507	0.0685	0.0281883
17	1.75786	2.07944	0.321584	0.0608	0.0195523
18	1.79176	2.07944	0.287682	0.0532	0.0153047
19	1.79176	2.05412	0.262364	0.0459	0.0120425
20	1.79176	2.04122	0.249461	0.0386	0.00962919
21	1.80829	2.04122	0.232932	0.0314	0.00731405
22	1.82455	1.98787	0.163325	0.0244	0.00398513
23	1.84055	1.98787	0.147325	0.0174	0.00256345
24	1.84055	1.96009	0.119545	0.0104	0.00124327
25	1.91692	1.94591	0.0289875	0.0035	0.000101456
26	1.94591	1.91692	-0.0289875		
27	1.96009	1.84055	-0.119545		
28	1.98787	1.84055	-0.147325		
29	1.98787	1.82455	-0.163325		
30	2.04122	1.80829	-0.232932		
31	2.04122	1.79176	-0.249461		
32	2.05412	1.79176	-0.262364		
33	2.07944	1.79176	-0.287682		
34	2.07944	1.75786	-0.321584		
35	2.11626	1.70475	-0.411507		
36	2.15176	1.6864	-0.465363		
37	2.16332	1.62924	-0.534082		
38	2.35138	1.60944	-0.741937		
39	2.63906	1.60944	-1.02962		
40	3.06339	1.58924	-1.47416		
41	3.09104	1.45862	-1.63243		
42	3.09104	1.38629	-1.70475		
43	3.21888	1.38629	-1.83258		
44	3.21888	1.38629	-1.83258		
45	3.3673	1.38629	-1.981		
46	3.43399	1.38629	-2.04769		
47	3.44681	1.36098	-2.08583		

48	3.51155	1.335	-2.17654
49	3.58352	1.28093	-2.30259
50	3.71113	0.788457	-2.92267

Sum of b values = 4.80603

Sample Standard Deviation = 0.732863

W Statistic = 0.877669

**5% Critical value of 0.947 exceeds 0.877669
Evidence of non-normality at 95% level of significance**

**1% Critical value of 0.93 exceeds 0.877669
Evidence of non-normality at 99% level of significance**

Kruskal-Wallis Non-Parametric Test

Parameter: Nickel, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	2.07944	33
	9/29/2008	1.94591	26
	3/9/2009	2.16332	37
	9/29/2009	2.15176	36
	6/4/2010	1.79176	18
	11/5/2010	1.79176	19
	1/4/2011	2.07944	34
	9/2/2011	ND<1.60944	6.5
	2/14/2012	1.60944	13
	7/23/2012	1.96009	27
	1/22/2013	1.62924	14
	8/7/2013	2.04122	30
	1/29/2014	1.70475	16
	7/14/2014	1.98787	28
	3/12/2015	1.6864	15
	9/23/2015	2.04122	31
	2/12/2016	1.84055	23
	2/12/2016	1.84055	24
	9/21/2016	2.05412	32
	1/18/2017	1.75786	17
	8/3/2017	2.11626	35
	3/14/2018	1.91692	25
	8/29/2018	1.82455	22
	1/9/2019	3.21888	43
	8/1/2019	1.80829	21

Rank Sum = 625.5

Rank Mean = 25.02

Background Rank Sum = 625.5

Background Rank Mean = 25.02

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<1.38629	6.5
	3/14/2018	2.35138	38
	8/29/2018	1.98787	29
	1/9/2019	3.09104	41
	7/31/2019	ND<1.28093 J	6.5

Rank Sum = 121

Rank Mean = 24.2

MW-7	8/3/2017	ND<1.38629	6.5
	3/14/2018	ND<1.38629	6.5
	8/28/2018	ND<1.58924 J	6.5
	1/10/2019	ND<0.788457 J	6.5

7/31/2019 1.79176 20
 Rank Sum = 46
 Rank Mean = 9.2

MW-8 8/3/2017 ND<1.38629 6.5
 3/13/2018 ND<1.38629 6.5
 8/28/2018 ND<1.45862 J 6.5
 1/10/2019 ND<1.36098 J 6.5
 8/1/2019 ND<1.335 J 6.5
 Rank Sum = 32.5
 Rank Mean = 6.5

MW-9 8/3/2017 3.06339 40
 3/13/2018 3.51155 48
 8/29/2018 3.09104 42
 1/9/2019 2.63906 39
 8/1/2019 3.21888 44
 Rank Sum = 213
 Rank Mean = 42.6

MW-11 8/18/2017 3.44681 47
 3/14/2018 3.71113 50
 8/29/2018 3.43399 46
 1/9/2019 3.58352 49
 8/1/2019 3.3673 45
 Rank Sum = 237
 Rank Mean = 47.4

Calculation Results:

Kruskal-Wallis H Statistic = 32.9777

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 33.4369

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

32.9777 > 11.0705 indicating a significant group difference at 5% significance level

33.4369 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 25.02

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	24.2	-0.82	16.6134
MW-7	9.2	-15.82	16.6134
MW-8	6.5	-18.52	16.6134
MW-9	42.6	17.58	16.6134
MW-11	47.4	22.38	16.6134

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 25.02

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	24.2	-0.82	16.6134
MW-7	9.2	-15.82	16.6134
MW-8	6.5	-18.52	16.6134
MW-9	42.6	17.58	16.6134
MW-11	47.4	22.38	16.6134

Shapiro-Wilks Test of Normality

Parameter: Manganese, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	2.28238	7.2998	5.01741	0.3751	1.88203
2	3.13549	7.21524	4.07975	0.2574	1.05013
3	3.23475	7.17012	3.93537	0.226	0.889394
4	3.2581	7.15462	3.89652	0.2032	0.791773
5	3.3322	6.95655	3.62434	0.1847	0.669416
6	3.46574	6.89366	3.42792	0.1691	0.579661
7	3.46574	6.87523	3.4095	0.1554	0.529836
8	3.71601	6.87316	3.15716	0.143	0.451473
9	3.72086	6.86797	3.14711	0.1317	0.414475
10	4.14789	6.82437	2.67649	0.1212	0.32439
11	4.15888	6.75693	2.59805	0.1113	0.289163
12	4.22098	6.74641	2.52543	0.102	0.257594
13	4.26268	6.68461	2.42193	0.0932	0.225724
14	4.51634	6.4151	1.89876	0.0846	0.160635
15	4.70048	6.18415	1.48367	0.0764	0.113352
16	4.78749	6.10925	1.32176	0.0685	0.0905403
17	5.01064	6.07993	1.0693	0.0608	0.0650133
18	5.1299	6.07993	0.950034	0.0532	0.0505418
19	5.1358	5.97635	0.840552	0.0459	0.0385814
20	5.1358	5.93489	0.799096	0.0386	0.0308451
21	5.22036	5.9108	0.690441	0.0314	0.0216798
22	5.39363	5.63479	0.241162	0.0244	0.00588435
23	5.46383	5.57595	0.112117	0.0174	0.00195084
24	5.48064	5.56068	0.0800427	0.0104	0.000832444
25	5.52146	5.56068	0.0392207	0.0035	0.000137272
26	5.56068	5.52146	-0.0392207		
27	5.56068	5.48064	-0.0800427		
28	5.57595	5.46383	-0.112117		
29	5.63479	5.39363	-0.241162		
30	5.9108	5.22036	-0.690441		
31	5.93489	5.1358	-0.799096		
32	5.97635	5.1358	-0.840552		
33	6.07993	5.1299	-0.950034		
34	6.07993	5.01064	-1.0693		
35	6.10925	4.78749	-1.32176		
36	6.18415	4.70048	-1.48367		
37	6.4151	4.51634	-1.89876		
38	6.68461	4.26268	-2.42193		
39	6.74641	4.22098	-2.52543		
40	6.75693	4.15888	-2.59805		
41	6.82437	4.14789	-2.67649		
42	6.86797	3.72086	-3.14711		
43	6.87316	3.71601	-3.15716		
44	6.87523	3.46574	-3.4095		
45	6.89366	3.46574	-3.42792		
46	6.95655	3.3322	-3.62434		
47	7.15462	3.2581	-3.89652		

48	7.17012	3.23475	-3.93537
49	7.21524	3.13549	-4.07975
50	7.2998	2.28238	-5.01741

Sum of b values = 8.93505

Sample Standard Deviation = 1.31769

W Statistic = 0.93836

**5% Critical value of 0.947 exceeds 0.93836
Evidence of non-normality at 95% level of significance**

1% Critical value of 0.93 is less than 0.93836
Data is normally distributed at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Manganese, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	6.75693	40
	9/29/2008	6.95655	46
	3/9/2009	6.82437	41
	9/29/2009	7.17012	48
	6/4/2010	7.21524	49
	11/5/2010	7.15462	47
	1/4/2011	6.87523	44
	9/2/2011	7.2998	50
	2/14/2012	6.87316	43
	7/23/2012	6.89366	45
	1/22/2013	5.46383	23
	8/7/2013	6.86797	42
	1/29/2014	2.28238	1
	7/14/2014	6.74641	39
	3/12/2015	5.57595	28
	9/23/2015	6.4151	37
	2/12/2016	6.07993	33
	2/12/2016	6.07993	34
	9/21/2016	6.18415	36
	1/18/2017	5.97635	32
8/3/2017	5.93489	31	
3/14/2018	5.63479	29	
8/29/2018	4.70048	15	
1/9/2019	3.46574	6	
8/1/2019	6.68461	38	

Rank Sum = 877

Rank Mean = 35.08

Background Rank Sum = 877

Background Rank Mean = 35.08

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	3.72086	9
	3/14/2018	5.56068	26
	8/29/2018	5.52146	25
	1/9/2019	5.56068	27
	7/31/2019	4.78749	16

Rank Sum = 103

Rank Mean = 20.6

MW-7	8/3/2017	5.9108	30
	3/14/2018	5.22036	21
	8/28/2018	5.48064	24
	1/10/2019	5.1358	19

7/31/2019 6.10925 35
 Rank Sum = 129
 Rank Mean = 25.8

MW-8 8/3/2017 4.51634 14
 3/13/2018 3.23475 3
 8/28/2018 5.39363 22
 1/10/2019 5.01064 17
 8/1/2019 5.1358 20

Rank Sum = 76
 Rank Mean = 15.2

MW-9 8/3/2017 5.1299 18
 3/13/2018 3.71601 8
 8/29/2018 3.3322 5
 1/9/2019 3.2581 4
 8/1/2019 3.13549 2

Rank Sum = 37
 Rank Mean = 7.4

MW-11 8/18/2017 4.14789 10
 3/14/2018 4.22098 12
 8/29/2018 4.26268 13
 1/9/2019 4.15888 11
 8/1/2019 3.46574 7

Rank Sum = 53
 Rank Mean = 10.6

Calculation Results:

Kruskal-Wallis H Statistic = 26.7928

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 26.7928

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

26.7928 > 11.0705 indicating a significant group difference at 5% significance level

26.7928 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 35.08

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	20.6	-14.48	16.6134
MW-7	25.8	-9.28	16.6134
MW-8	15.2	-19.88	16.6134
MW-9	7.4	-27.68	16.6134
MW-11	10.6	-24.48	16.6134

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 35.08

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	20.6	-14.48	16.6134
MW-7	25.8	-9.28	16.6134
MW-8	15.2	-19.88	16.6134
MW-9	7.4	-27.68	16.6134
MW-11	10.6	-24.48	16.6134

Shapiro-Francia Test of Normality

Parameter: Mercury, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 62

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	-1.60944	-2.17009	4.70929	3.49263
2	-1.60944	-1.86629	8.19234	6.49631
3	-1.60944	-1.67466	10.9968	9.19157
4	-1.60944	-1.53007	13.3379	11.6541
5	-1.60944	-1.41183	15.3312	13.9264
6	-1.60944	-1.31058	17.0488	16.0357
7	-1.60944	-1.22123	18.5402	18.0012
8	-1.60944	-1.1455	19.8524	19.8448
9	-1.60944	-1.07138	21.0002	21.5691
10	-1.60944	-1.00271	22.0057	23.1829
11	-1.60944	-0.938476	22.8864	24.6933
12	-1.60944	-0.877897	23.6571	26.1062
13	-1.60944	-0.820379	24.3301	27.4266
14	-1.60944	-0.765456	24.9161	28.6585
15	-1.60944	-0.712751	25.4241	29.8057
16	-1.60944	-0.665079	25.8664	30.8761
17	-1.60944	-0.615839	26.2457	31.8672
18	-1.60944	-0.568052	26.5683	32.7815
19	-1.60944	-0.521527	26.8403	33.6208
20	-1.60944	-0.476105	27.067	34.3871
21	-1.60944	-0.431644	27.2533	35.0818
22	-1.60944	-0.388022	27.4039	35.7063
23	-1.60944	-0.345126	27.523	36.2618
24	-1.60944	-0.305481	27.6163	36.7534
25	-1.60944	-0.263715	27.6859	37.1778
26	-1.60944	-0.222403	27.7353	37.5358
27	-1.60944	-0.181468	27.7683	37.8278
28	-1.60944	-0.140835	27.7881	38.0545
29	-1.60944	-0.100433	27.7982	38.2162
30	-1.60944	-0.0601949	27.8018	38.313
31	-1.60944	-0.0200544	27.8022	38.3453
32	-1.60944	0.0200544	27.8026	38.313
33	-1.60944	0.0601949	27.8062	38.2162
34	-1.60944	0.100433	27.8163	38.0545
35	-1.60944	0.140835	27.8362	37.8278
36	-1.60944	0.181468	27.8691	37.5358
37	-1.60944	0.222403	27.9185	37.1778
38	-1.60944	0.263715	27.9881	36.7534
39	-0.693147	0.305481	28.0814	36.5417
40	-0.693147	0.345126	28.2005	36.3024
41	-0.693147	0.388022	28.3511	36.0335
42	-0.693147	0.431644	28.5374	35.7343
43	-0.693147	0.476105	28.7641	35.4043
44	-0.693147	0.521527	29.0361	35.0428
45	-0.693147	0.568052	29.3588	34.649
46	-0.693147	0.615839	29.738	34.2222
47	-0.693147	0.665079	30.1803	33.7612

48	-0.693147	0.712751	30.6884	33.2671
49	-0.693147	0.765456	31.2743	32.7366
50	-0.693147	0.820379	31.9473	32.1679
51	0	0.877897	32.718	32.1679
52	0	0.938476	33.5987	32.1679
53	0	1.00271	34.6042	32.1679
54	0	1.07138	35.752	32.1679
55	0	1.1455	37.0642	32.1679
56	0	1.22123	38.5556	32.1679
57	0	1.31058	40.2732	32.1679
58	0	1.41183	42.2665	32.1679
59	0	1.53007	44.6076	32.1679
60	0.693147	1.67466	47.4121	33.3287
61	0.693147	1.86629	50.8951	34.6223
62	0.693147	2.17009	55.6044	36.1265

Data Set Standard Deviation = 0.728507
 Numerator = 1305.13
 Denominator = 1800.14
 W Statistic = 0.725012 = 1305.13 / 1800.14

5% Critical value of 0.964 exceeds 0.725012
Evidence of non-normality at 95% level of significance

1% Critical value of 0.947 exceeds 0.725012
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Mercury, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	ND<0	31.5
	11/15/1990	ND<0	31.5
	11/5/1991	ND<0	31.5
	11/24/1992	ND<0	31.5
	11/1/1993	ND<0	31.5
	11/2/1994	ND<0	31.5
	11/30/1995	ND<0	31.5
	11/15/1996	ND<0	31.5
	11/24/1997	ND<0.693147	31.5
	11/17/1998	ND<0.693147	31.5
	11/16/1999	ND<0.693147	31.5
	6/6/2002	ND<0	31.5
	4/14/2008	ND<-1.60944	31.5
	9/29/2008	ND<-1.60944	31.5
	3/9/2009	ND<-1.60944	31.5
	9/29/2009	ND<-1.60944	31.5
	6/4/2010	ND<-1.60944	31.5
	11/5/2010	ND<-1.60944	31.5
	1/4/2011	ND<-1.60944	31.5
	9/2/2011	ND<-1.60944	31.5
	2/14/2012	ND<-1.60944	31.5
	7/23/2012	ND<-1.60944	31.5
	1/22/2013	ND<-1.60944	31.5
	8/7/2013	ND<-1.60944	31.5
	1/29/2014	ND<-1.60944	31.5
	7/14/2014	ND<-1.60944	31.5
	3/12/2015	ND<-1.60944	31.5
	9/23/2015	ND<-1.60944	31.5
	2/12/2016	ND<-1.60944	31.5
	2/12/2016	ND<-1.60944	31.5
	9/21/2016	ND<-1.60944	31.5
	1/18/2017	ND<-1.60944	31.5
	8/3/2017	ND<-1.60944	31.5
	3/14/2018	ND<-1.60944	31.5
	8/29/2018	ND<-1.60944	31.5
	1/9/2019	ND<-0.693147	31.5
	8/1/2019	ND<-0.693147	31.5

Rank Sum = 1165.5

Rank Mean = 31.5

Background Rank Sum = 1165.5

Background Rank Mean = 31.5

Compliance Locations

Loc. ID	Date	Value	Rank
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MW-11	8/18/2017	ND<-1.60944	31.5
	3/14/2018	ND<-1.60944	31.5
	8/29/2018	ND<-1.60944	31.5
	1/9/2019	ND<-0.693147	31.5
	8/1/2019	ND<-0.693147	31.5

Rank Sum = 157.5

Rank Mean = 31.5

MW-10	8/3/2017	ND<-1.60944	31.5
	3/14/2018	ND<-1.60944	31.5
	8/29/2018	ND<-1.60944	31.5
	1/9/2019	ND<-0.693147	31.5
	7/31/2019	ND<-0.693147	31.5

Rank Sum = 157.5

Rank Mean = 31.5

MW-7	8/3/2017	ND<-1.60944	31.5
	3/14/2018	ND<-1.60944	31.5
	8/28/2018	ND<-1.60944	31.5
	1/10/2019	ND<-0.693147	31.5
	7/31/2019	ND<-0.693147	31.5

Rank Sum = 157.5

Rank Mean = 31.5

MW-8	8/3/2017	ND<-1.60944	31.5
	3/13/2018	ND<-1.60944	31.5
	8/28/2018	ND<-1.60944	31.5
	1/10/2019	ND<-0.693147	31.5
	8/1/2019	ND<-0.693147	31.5

Rank Sum = 157.5

Rank Mean = 31.5

MW-9	8/3/2017	ND<-1.60944	31.5
	3/13/2018	ND<-1.60944	31.5
	8/29/2018	ND<-1.60944	31.5
	1/9/2019	ND<-0.693147	31.5
	8/1/2019	ND<-0.693147	31.5

Rank Sum = 157.5

Rank Mean = 31.5

Calculation Results:

Kruskal-Wallis H Statistic = 0

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 0

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

0 < 11.0705 indicating no significant group difference at 5% significance level

0 < 11.0705 indicating no significant group difference at 5% significance level when adjusted for ties

Shapiro-Wilks Test of Normality

Parameter: Potassium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 24 for 49 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	7.30653	9.22029	1.91376	0.377	0.721487
2	7.54961	9.20029	1.65068	0.2589	0.427361
3	7.57044	9.18194	1.6115	0.2271	0.365971
4	7.6009	9.17988	1.57898	0.2038	0.321796
5	7.69621	9.10498	1.40877	0.1851	0.260763
6	7.90101	9.03599	1.13498	0.1692	0.192039
7	7.94094	8.94115	1.00021	0.1553	0.155333
8	7.97247	8.90924	0.936769	0.1427	0.133677
9	8.06464	8.90924	0.844599	0.1312	0.110811
10	8.12267	8.84937	0.726702	0.1205	0.0875676
11	8.12267	8.83346	0.710795	0.1105	0.0785428
12	8.1374	8.82761	0.690219	0.101	0.0697121
13	8.16622	8.76717	0.600957	0.0919	0.055228
14	8.22684	8.76405	0.537212	0.0832	0.0446961
15	8.29405	8.7483	0.454255	0.0748	0.0339783
16	8.34046	8.7323	0.391849	0.0667	0.0261363
17	8.37101	8.71604	0.345033	0.0588	0.020288
18	8.38023	8.69951	0.319287	0.0511	0.0163156
19	8.38708	8.69951	0.31243	0.0436	0.013622
20	8.38936	8.68271	0.293348	0.0361	0.0105899
21	8.41848	8.66216	0.243682	0.0288	0.00701803
22	8.45532	8.63409	0.178769	0.0215	0.00384354
23	8.4659	8.63231	0.166406	0.0143	0.00237961
24	8.51719	8.62335	0.10616	0.0071	0.000753737
25	8.59415	8.59415	0		
26	8.62335	8.51719	-0.10616		
27	8.63231	8.4659	-0.166406		
28	8.63409	8.45532	-0.178769		
29	8.66216	8.41848	-0.243682		
30	8.68271	8.38936	-0.293348		
31	8.69951	8.38708	-0.31243		
32	8.69951	8.38023	-0.319287		
33	8.71604	8.37101	-0.345033		
34	8.7323	8.34046	-0.391849		
35	8.7483	8.29405	-0.454255		
36	8.76405	8.22684	-0.537212		
37	8.76717	8.16622	-0.600957		
38	8.82761	8.1374	-0.690219		
39	8.83346	8.12267	-0.710795		
40	8.84937	8.12267	-0.726702		
41	8.90924	8.06464	-0.844599		
42	8.90924	7.97247	-0.936769		
43	8.94115	7.94094	-1.00021		
44	9.03599	7.90101	-1.13498		
45	9.10498	7.69621	-1.40877		
46	9.17988	7.6009	-1.57898		
47	9.18194	7.57044	-1.6115		

48	9.20029	7.54961	-1.65068
49	9.22029	7.30653	-1.91376

Sum of b values = 3.15991

Sample Standard Deviation = 0.466931

W Statistic = 0.95412

5% Critical value of 0.947 is less than 0.95412
Data is normally distributed at 95% level of significance

1% Critical value of 0.929 is less than 0.95412
Data is normally distributed at 99% level of significance

Levene's Test for Equal of Variance

Parameter: Potassium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Overall Mean = 0.204202

Overall Std Dev = 0.158647

Overall Total = 10.0059

SS Groups = 0.228139

SS Total = 1.2081

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Groups	0.228139	5	0.0456279	2.00212
Error (within groups)	0.97996	43	0.0227898	
Totals	1.2081	48		

95% F-Statistic = 2.36827

2.00212 does not exceed 2.36827 indicating equal variance

Group: MW-6

Sample	Residual
4/14/2008	0.0692604
9/29/2008	0.213637
9/29/2009	0.306328
6/4/2010	0.439654
11/5/2010	0.423746
1/4/2011	0.224371
9/2/2011	0.417898
2/14/2012	0.357457
7/23/2012	0.0561835
1/22/2013	0.0226319
8/7/2013	0.252443
1/29/2014	0.0387057
7/14/2014	0.0294891
3/12/2015	0.272321
9/23/2015	0.115667
2/12/2016	0.287048
2/12/2016	0.287048
9/21/2016	0.468777
1/18/2017	0.182876
8/3/2017	0.2435
3/14/2018	0.34508
8/29/2018	0.713504
1/9/2019	0.0456014
8/1/2019	0.338589

Group: MW-10

Date	Residual
8/3/2017	0.29403
3/14/2018	0.228646
8/29/2018	0.118353
1/9/2019	0.196728

7/31/2019 0.0129921

Group: MW-7

Date	Residual
8/3/2017	0.275875
3/14/2018	0.144127
8/28/2018	0.0988187
1/10/2019	0.515713
7/31/2019	0.194529

Group: MW-8

Date	Residual
8/3/2017	0.279167
3/13/2018	0.0152554
8/28/2018	0.315308
1/10/2019	0.0152038
8/1/2019	0.0360895

Group: MW-9

Date	Residual
8/3/2017	0.312334
3/13/2018	0.11659
8/29/2018	0.0931308
1/9/2019	0.275452
8/1/2019	0.060341

Group: MW-11

Date	Residual
8/18/2017	0.0182629
3/14/2018	0.0566127
8/29/2018	0.0366121
1/9/2019	0.0162032
8/1/2019	0.127691

Parametric Analysis of Variance

Parameter: Potassium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	7.21386	5	1.44277	19.0813
Error (within wells)	3.25132	43	0.075612	
Totals	10.4652	48		

19.0813 exceeds 2.36827 indicating a significant difference in group comparisons

Individual Well Comparisons

49 total observations - 6 wells = 43 degrees of freedom

1% Individual Well Comparison Rate

Bonferroni t = 2.41625 at 5, 43 degrees of freedom

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-10	8.71251	0.30279	0.135177	0.326623
	Date	Conc.	Residual	
	8/3/2017	8.41848	-0.29403	
	3/14/2018	8.94115	0.228646	
	8/29/2018	8.59415	-0.118353	
	1/9/2019	8.90924	0.196728	
	7/31/2019	8.69951	-0.0129921	

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-7	8.48818	0.0784622	0.135177	0.326623
	Date	Conc.	Residual	
	8/3/2017	8.76405	0.275875	
	3/14/2018	8.63231	0.144127	
	8/28/2018	8.38936	-0.0988187	
	1/10/2019	7.97247	-0.515713	
	7/31/2019	8.68271	0.194529	

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-8	7.5857	-0.824018	0.135177	0.326623
	Date	Conc.	Residual	
	8/3/2017	7.30653	-0.279167	
	3/13/2018	7.57044	-0.0152554	
	8/28/2018	7.90101	0.315308	
	1/10/2019	7.6009	0.0152038	
	8/1/2019	7.54961	-0.0360895	

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-9	8.79265	0.382929	0.135177	0.326623
	Date	Conc.	Residual	
	8/3/2017	9.10498	0.312334	
	3/13/2018	8.90924	0.11659	
	8/29/2018	8.69951	-0.0931308	

1/9/2019	8.51719	-0.275452
8/1/2019	8.7323	-0.060341

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-11	9.16368	0.753962	0.135177	0.326623

Date	Conc.	Residual
8/18/2017	9.18194	0.0182629
3/14/2018	9.22029	0.0566127
8/29/2018	9.20029	0.0366121
1/9/2019	9.17988	0.0162032
8/1/2019	9.03599	-0.127691

Shapiro-Wilks Test of Normality

Parameter: Selenium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.693147	3.91202	3.21888	0.3751	1.2074
2	0.693147	3.91202	3.21888	0.2574	0.828539
3	0.693147	3.55535	2.8622	0.226	0.646857
4	0.693147	3.55535	2.8622	0.2032	0.581599
5	0.693147	3.55535	2.8622	0.1847	0.528649
6	0.693147	3.55535	2.8622	0.1691	0.483998
7	0.693147	3.55535	2.8622	0.1554	0.444786
8	0.693147	1.72277	1.02962	0.143	0.147236
9	0.693147	1.72277	1.02962	0.1317	0.135601
10	0.693147	1.72277	1.02962	0.1212	0.12479
11	0.693147	1.72277	1.02962	0.1113	0.114597
12	0.693147	1.72277	1.02962	0.102	0.105021
13	0.693147	1.72277	1.02962	0.0932	0.0959605
14	0.693147	1.72277	1.02962	0.0846	0.0871058
15	1.09861	1.72277	0.624154	0.0764	0.0476854
16	1.38629	1.72277	0.336472	0.0685	0.0230483
17	1.38629	1.72277	0.336472	0.0608	0.0204575
18	1.38629	1.72277	0.336472	0.0532	0.0179003
19	1.38629	1.72277	0.336472	0.0459	0.0154441
20	1.38629	1.60944	0.223144	0.0386	0.00861334
21	1.38629	1.60944	0.223144	0.0314	0.00700671
22	1.38629	1.38629	0	0.0244	0
23	1.38629	1.38629	0	0.0174	0
24	1.38629	1.38629	0	0.0104	0
25	1.38629	1.38629	0	0.0035	0
26	1.38629	1.38629	0		
27	1.38629	1.38629	0		
28	1.38629	1.38629	0		
29	1.38629	1.38629	0		
30	1.60944	1.38629	-0.223144		
31	1.60944	1.38629	-0.223144		
32	1.72277	1.38629	-0.336472		
33	1.72277	1.38629	-0.336472		
34	1.72277	1.38629	-0.336472		
35	1.72277	1.38629	-0.336472		
36	1.72277	1.09861	-0.624154		
37	1.72277	0.693147	-1.02962		
38	1.72277	0.693147	-1.02962		
39	1.72277	0.693147	-1.02962		
40	1.72277	0.693147	-1.02962		
41	1.72277	0.693147	-1.02962		
42	1.72277	0.693147	-1.02962		
43	1.72277	0.693147	-1.02962		
44	3.55535	0.693147	-2.8622		
45	3.55535	0.693147	-2.8622		
46	3.55535	0.693147	-2.8622		
47	3.55535	0.693147	-2.8622		

48	3.55535	0.693147	-2.8622
49	3.91202	0.693147	-3.21888
50	3.91202	0.693147	-3.21888

Sum of b values = 5.67229

Sample Standard Deviation = 0.930122

W Statistic = 0.759

5% Critical value of 0.947 exceeds 0.759

Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.759

Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Selenium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	ND<3.91202	25.5
	9/29/2008	ND<3.91202	25.5
	3/9/2009	ND<1.60944	25.5
	9/29/2009	ND<1.60944	25.5
	6/4/2010	ND<0.693147	25.5
	11/5/2010	ND<0.693147	25.5
	1/4/2011	ND<1.09861	25.5
	9/2/2011	ND<0.693147	25.5
	2/14/2012	ND<0.693147	25.5
	7/23/2012	ND<0.693147	25.5
	1/22/2013	ND<0.693147	25.5
	8/7/2013	ND<0.693147	25.5
	1/29/2014	ND<0.693147	25.5
	7/14/2014	ND<0.693147	25.5
	3/12/2015	ND<0.693147	25.5
	9/23/2015	ND<0.693147	25.5
	2/12/2016	ND<0.693147	25.5
	2/12/2016	ND<0.693147	25.5
	9/21/2016	ND<1.38629	25.5
	1/18/2017	ND<1.38629	25.5
8/3/2017	ND<1.38629	25.5	
3/14/2018	ND<1.38629	25.5	
8/29/2018	ND<3.55535	25.5	
1/9/2019	ND<1.72277	25.5	
8/1/2019	ND<1.72277	25.5	

Rank Sum = 637.5

Rank Mean = 25.5

Background Rank Sum = 637.5

Background Rank Mean = 25.5

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<1.38629	25.5
	3/14/2018	ND<1.38629	25.5
	8/29/2018	ND<0.693147 J	25.5
	1/9/2019	ND<1.72277	25.5
	7/31/2019	ND<1.72277	25.5

Rank Sum = 127.5

Rank Mean = 25.5

MW-7	8/3/2017	ND<1.38629	25.5
	3/14/2018	ND<1.38629	25.5
	8/28/2018	ND<3.55535	25.5
	1/10/2019	ND<1.72277	25.5

7/31/2019 ND<1.72277 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-8 8/3/2017 ND<1.38629 25.5
3/13/2018 ND<1.38629 25.5
8/28/2018 ND<3.55535 25.5
1/10/2019 ND<1.72277 25.5
8/1/2019 ND<1.72277 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-9 8/3/2017 ND<1.38629 25.5
3/13/2018 ND<1.38629 25.5
8/29/2018 ND<3.55535 25.5
1/9/2019 ND<1.72277 25.5
8/1/2019 ND<1.72277 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-11 8/18/2017 ND<1.38629 25.5
3/14/2018 ND<1.38629 25.5
8/29/2018 ND<3.55535 25.5
1/9/2019 ND<1.72277 25.5
8/1/2019 ND<1.72277 25.5
Rank Sum = 127.5
Rank Mean = 25.5

Calculation Results:

Kruskal-Wallis H Statistic = 0

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 0

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

0 < 11.0705 indicating no significant group difference at 5% significance level

0 < 11.0705 indicating no significant group difference at 5% significance level when adjusted for ties

Shapiro-Wilks Test of Normality

Parameter: Silver, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0	2.30259	2.30259	0.3751	0.8637
2	0	2.30259	2.30259	0.2574	0.592685
3	0	2.30259	2.30259	0.226	0.520384
4	0	2.30259	2.30259	0.2032	0.467885
5	0	2.30259	2.30259	0.1847	0.425287
6	0	2.30259	2.30259	0.1691	0.389367
7	0	2.30259	2.30259	0.1554	0.357822
8	0	2.30259	2.30259	0.143	0.32927
9	0	2.30259	2.30259	0.1317	0.30325
10	0	2.30259	2.30259	0.1212	0.279073
11	0	2.30259	2.30259	0.1113	0.256278
12	0	2.30259	2.30259	0.102	0.234864
13	0	2.30259	2.30259	0.0932	0.214601
14	0	2.30259	2.30259	0.0846	0.194799
15	0.788457	2.30259	1.51413	0.0764	0.115679
16	0.788457	2.30259	1.51413	0.0685	0.103718
17	0.788457	2.30259	1.51413	0.0608	0.092059
18	0.788457	2.30259	1.51413	0.0532	0.0805516
19	0.788457	2.30259	1.51413	0.0459	0.0694985
20	0.788457	2.30259	1.51413	0.0386	0.0584453
21	0.788457	2.30259	1.51413	0.0314	0.0475436
22	0.788457	2.30259	1.51413	0.0244	0.0369447
23	0.788457	1.60944	0.820981	0.0174	0.0142851
24	0.788457	1.60944	0.820981	0.0104	0.0085382
25	0.788457	0.788457	0	0.0035	0
26	0.788457	0.788457	0		
27	1.60944	0.788457	-0.820981		
28	1.60944	0.788457	-0.820981		
29	2.30259	0.788457	-1.51413		
30	2.30259	0.788457	-1.51413		
31	2.30259	0.788457	-1.51413		
32	2.30259	0.788457	-1.51413		
33	2.30259	0.788457	-1.51413		
34	2.30259	0.788457	-1.51413		
35	2.30259	0.788457	-1.51413		
36	2.30259	0.788457	-1.51413		
37	2.30259	0	-2.30259		
38	2.30259	0	-2.30259		
39	2.30259	0	-2.30259		
40	2.30259	0	-2.30259		
41	2.30259	0	-2.30259		
42	2.30259	0	-2.30259		
43	2.30259	0	-2.30259		
44	2.30259	0	-2.30259		
45	2.30259	0	-2.30259		
46	2.30259	0	-2.30259		
47	2.30259	0	-2.30259		

48	2.30259	0	-2.30259
49	2.30259	0	-2.30259
50	2.30259	0	-2.30259

Sum of b values = 6.05653

Sample Standard Deviation = 1.00051

W Statistic = 0.747836

5% Critical value of 0.947 exceeds 0.747836
Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.747836
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Silver, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	ND<2.30259	25.5
	9/29/2008	ND<2.30259	25.5
	3/9/2009	ND<1.60944	25.5
	9/29/2009	ND<1.60944	25.5
	6/4/2010	ND<2.30259	25.5
	11/5/2010	ND<2.30259	25.5
	1/4/2011	ND<2.30259	25.5
	9/2/2011	ND<2.30259	25.5
	2/14/2012	ND<2.30259	25.5
	7/23/2012	ND<2.30259	25.5
	1/22/2013	ND<2.30259	25.5
	8/7/2013	ND<2.30259	25.5
	1/29/2014	ND<2.30259	25.5
	7/14/2014	ND<2.30259	25.5
	3/12/2015	ND<2.30259	25.5
	9/23/2015	ND<2.30259	25.5
	2/12/2016	ND<2.30259	25.5
	2/12/2016	ND<2.30259	25.5
	9/21/2016	ND<0	25.5
	1/18/2017	ND<0	25.5
8/3/2017	ND<0	25.5	
3/14/2018	ND<0	25.5	
8/29/2018	ND<2.30259	25.5	
1/9/2019	ND<0.788457	25.5	
8/1/2019	ND<0.788457	25.5	

Rank Sum = 637.5

Rank Mean = 25.5

Background Rank Sum = 637.5

Background Rank Mean = 25.5

Compliance Locations

Loc. ID	Date	Value	Rank
MW-11	8/18/2017	ND<0	25.5
	3/14/2018	ND<0	25.5
	8/29/2018	ND<2.30259	25.5
	1/9/2019	ND<0.788457	25.5
	8/1/2019	ND<0.788457	25.5

Rank Sum = 127.5

Rank Mean = 25.5

MW-10	8/3/2017	ND<0	25.5
	3/14/2018	ND<0	25.5
	8/29/2018	ND<2.30259	25.5
	1/9/2019	ND<0.788457	25.5

7/31/2019 ND<0.788457 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-7 8/3/2017 ND<0 25.5
3/14/2018 ND<0 25.5
8/28/2018 ND<2.30259 25.5
1/10/2019 ND<0.788457 25.5
7/31/2019 ND<0.788457 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-8 8/3/2017 ND<0 25.5
3/13/2018 ND<0 25.5
8/28/2018 ND<2.30259 25.5
1/10/2019 ND<0.788457 25.5
8/1/2019 ND<0.788457 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-9 8/3/2017 ND<0 25.5
3/13/2018 ND<0 25.5
8/29/2018 ND<2.30259 25.5
1/9/2019 ND<0.788457 25.5
8/1/2019 ND<0.788457 25.5
Rank Sum = 127.5
Rank Mean = 25.5

Calculation Results:

Kruskal-Wallis H Statistic = 0

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 0

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

0 < 11.0705 indicating no significant group difference at 5% significance level

0 < 11.0705 indicating no significant group difference at 5% significance level when adjusted for ties

Shapiro-Wilks Test of Normality

Parameter: Sodium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 24 for 49 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	7.20786	10.9169	3.70905	0.377	1.39831
2	7.35883	10.3255	2.96665	0.2589	0.768066
3	7.52294	9.97581	2.45287	0.2271	0.557046
4	7.64969	9.83092	2.18122	0.2038	0.444533
5	7.64969	9.74097	2.09128	0.1851	0.387095
6	7.69621	9.68034	1.98413	0.1692	0.335715
7	7.97247	9.6486	1.67613	0.1553	0.260303
8	7.97247	9.53964	1.56718	0.1427	0.223636
9	8.03593	9.52515	1.48922	0.1312	0.195386
10	8.17188	9.51044	1.33856	0.1205	0.161297
11	8.32361	9.50301	1.1794	0.1105	0.130324
12	8.32361	9.4727	1.1491	0.101	0.116059
13	8.36637	9.34137	0.974998	0.0919	0.0896023
14	8.38023	9.33256	0.952331	0.0832	0.0792339
15	8.43164	9.19928	0.767644	0.0748	0.0574198
16	8.43381	9.16325	0.729437	0.0667	0.0486535
17	8.44462	9.1442	0.699578	0.0588	0.0411352
18	8.45532	9.13777	0.682452	0.0511	0.0348733
19	8.4722	9.13454	0.662343	0.0436	0.0288781
20	8.55641	9.12696	0.570545	0.0361	0.0205967
21	8.57735	9.12696	0.549612	0.0288	0.0158288
22	8.62335	9.05952	0.436164	0.0215	0.00937753
23	8.64822	8.98093	0.332706	0.0143	0.00475769
24	8.66216	8.97462	0.312459	0.0071	0.00221846
25	8.74672	8.74672	0		
26	8.97462	8.66216	-0.312459		
27	8.98093	8.64822	-0.332706		
28	9.05952	8.62335	-0.436164		
29	9.12696	8.57735	-0.549612		
30	9.12696	8.55641	-0.570545		
31	9.13454	8.4722	-0.662343		
32	9.13777	8.45532	-0.682452		
33	9.1442	8.44462	-0.699578		
34	9.16325	8.43381	-0.729437		
35	9.19928	8.43164	-0.767644		
36	9.33256	8.38023	-0.952331		
37	9.34137	8.36637	-0.974998		
38	9.4727	8.32361	-1.1491		
39	9.50301	8.32361	-1.1794		
40	9.51044	8.17188	-1.33856		
41	9.52515	8.03593	-1.48922		
42	9.53964	7.97247	-1.56718		
43	9.6486	7.97247	-1.67613		
44	9.68034	7.69621	-1.98413		
45	9.74097	7.64969	-2.09128		
46	9.83092	7.64969	-2.18122		
47	9.97581	7.52294	-2.45287		

48	10.3255	7.35883	-2.96665
49	10.9169	7.20786	-3.70905

Sum of b values = 5.41035

Sample Standard Deviation = 0.787677

W Statistic = 0.982907

5% Critical value of 0.947 is less than 0.982907

Data is normally distributed at 95% level of significance

1% Critical value of 0.929 is less than 0.982907

Data is normally distributed at 99% level of significance

Levene's Test for Equal of Variance

Parameter: Sodium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Overall Mean = 0.449078

Overall Std Dev = 0.36175

Overall Total = 22.0048

SS Groups = 0.760498

SS Total = 6.28141

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Groups	0.760498	5	0.1521	1.18464
Error (within groups)	5.52091	43	0.128393	
Totals	6.28141	48		

95% F-Statistic = 2.36827

1.18464 does not exceed 2.36827 indicating equal variance

Group: MW-6	Sample	Residual
	4/14/2008	0.295704
	9/29/2008	1.47242
	9/29/2009	0.909714
	6/4/2010	0.693896
	11/5/2010	0.67919
	1/4/2011	0.303284
	9/2/2011	0.708389
	2/14/2012	0.510114
	7/23/2012	0.331994
	1/22/2013	0.451027
	8/7/2013	0.368025
	1/29/2014	0.795328
	7/14/2014	0.295704
	3/12/2015	0.359059
	9/23/2015	0.149672
	2/12/2016	0.507646
	2/12/2016	0.507646
	9/21/2016	0.207901
	1/18/2017	0.253908
	8/3/2017	0.169096
	3/14/2018	0.0845384
	8/29/2018	0.183033
	1/9/2019	0.397443
	8/1/2019	0.143363

Group: MW-11	Date	Residual
	8/18/2017	0.0430976
	3/14/2018	0.216656
	8/29/2018	0.565287
	1/9/2019	0.151391

	8/1/2019	0.240338
Group: MW-10	Date	Residual
	8/3/2017	1.07181
	3/14/2018	0.809047
	8/29/2018	0.183877
	1/9/2019	0.314482
	7/31/2019	0.13216
Group: MW-7	Date	Residual
	8/3/2017	0.345909
	3/14/2018	0.315604
	8/28/2018	0.0193314
	1/10/2019	1.46089
	7/31/2019	0.818707
Group: MW-8	Date	Residual
	8/3/2017	0.457225
	3/13/2018	0.142144
	8/28/2018	0.307381
	1/10/2019	0.307381
	8/1/2019	0.0153925
Group: MW-9	Date	Residual
	8/3/2017	1.44543
	3/13/2018	0.327276
	8/29/2018	0.411959
	1/9/2019	0.915062
	8/1/2019	0.208868

Parametric Analysis of Variance

Parameter: Sodium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	13.6176	5	2.72352	7.24552
Error (within wells)	16.1633	43	0.37589	
Totals	29.7809	48		

7.24552 exceeds 2.36827 indicating a significant difference in group comparisons

Individual Well Comparisons

49 total observations - 6 wells = 43 degrees of freedom

1% Invidual Well Comparison Rate

Bonferroni t = 2.41625 at 5, 43 degrees of freedom

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-11	8.21498	-0.616275	0.301397	0.728252
	Date	Conc.	Residual	
	8/18/2017	8.17188	-0.0430976	
	3/14/2018	8.43164	0.216656	
	8/29/2018	7.64969	-0.565287	
	1/9/2019	8.36637	0.151391	
	8/1/2019	8.45532	0.240338	

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-10	9.51643	0.68518	0.301397	0.728252
	Date	Conc.	Residual	
	8/3/2017	8.44462	-1.07181	
	3/14/2018	10.3255	0.809047	
	8/29/2018	9.33256	-0.183877	
	1/9/2019	9.83092	0.314482	
	7/31/2019	9.6486	0.13216	

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-7	9.1571	0.325846	0.301397	0.728252
	Date	Conc.	Residual	
	8/3/2017	9.50301	0.345909	
	3/14/2018	9.4727	0.315604	
	8/28/2018	9.13777	-0.0193314	
	1/10/2019	7.69621	-1.46089	
	7/31/2019	9.97581	0.818707	

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-8	7.66509	-1.16617	0.301397	0.728252
	Date	Conc.	Residual	
	8/3/2017	7.20786	-0.457225	
	3/13/2018	7.52294	-0.142144	
	8/28/2018	7.97247	0.307381	

1/10/2019	7.97247	0.307381
8/1/2019	7.64969	-0.0153925

Well	Mean	Dif from Bkg	Std. Error	Critical Value
MW-9	9.47148	0.640221	0.301397	0.728252

Date	Conc.	Residual
8/3/2017	10.9169	1.44543
3/13/2018	9.1442	-0.327276
8/29/2018	9.05952	-0.411959
1/9/2019	8.55641	-0.915062
8/1/2019	9.68034	0.208868

Shapiro-Wilks Test of Normality

Parameter: Thallium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0	0.693147	0.693147	0.3751	0.26
2	0	0.693147	0.693147	0.2574	0.178416
3	0	0.693147	0.693147	0.226	0.156651
4	0	0.693147	0.693147	0.2032	0.140848
5	0	0.693147	0.693147	0.1847	0.128024
6	0	0.693147	0.693147	0.1691	0.117211
7	0	0.693147	0.693147	0.1554	0.107715
8	0	0.693147	0.693147	0.143	0.09912
9	0	0.693147	0.693147	0.1317	0.0912875
10	0	0.693147	0.693147	0.1212	0.0840094
11	0	0.693147	0.693147	0.1113	0.0771473
12	0	0.693147	0.693147	0.102	0.070701
13	0	0.693147	0.693147	0.0932	0.0646013
14	0	0.693147	0.693147	0.0846	0.0586403
15	0.0953102	0.693147	0.597837	0.0764	0.0456747
16	0.0953102	0.693147	0.597837	0.0685	0.0409518
17	0.0953102	0.693147	0.597837	0.0608	0.0363485
18	0.0953102	0.693147	0.597837	0.0532	0.0318049
19	0.0953102	0.693147	0.597837	0.0459	0.0274407
20	0.0953102	0.693147	0.597837	0.0386	0.0230765
21	0.0953102	0.693147	0.597837	0.0314	0.0187721
22	0.0953102	0.693147	0.597837	0.0244	0.0145872
23	0.0953102	0.693147	0.597837	0.0174	0.0104024
24	0.0953102	0.693147	0.597837	0.0104	0.0062175
25	0.0953102	0.0953102	0	0.0035	0
26	0.0953102	0.0953102	0		
27	0.693147	0.0953102	-0.597837		
28	0.693147	0.0953102	-0.597837		
29	0.693147	0.0953102	-0.597837		
30	0.693147	0.0953102	-0.597837		
31	0.693147	0.0953102	-0.597837		
32	0.693147	0.0953102	-0.597837		
33	0.693147	0.0953102	-0.597837		
34	0.693147	0.0953102	-0.597837		
35	0.693147	0.0953102	-0.597837		
36	0.693147	0.0953102	-0.597837		
37	0.693147	0	-0.693147		
38	0.693147	0	-0.693147		
39	0.693147	0	-0.693147		
40	0.693147	0	-0.693147		
41	0.693147	0	-0.693147		
42	0.693147	0	-0.693147		
43	0.693147	0	-0.693147		
44	0.693147	0	-0.693147		
45	0.693147	0	-0.693147		
46	0.693147	0	-0.693147		
47	0.693147	0	-0.693147		

48	0.693147	0	-0.693147
49	0.693147	0	-0.693147
50	0.693147	0	-0.693147

Sum of b values = 1.88965

Sample Standard Deviation = 0.329435

W Statistic = 0.67147

5% Critical value of 0.947 exceeds 0.67147
Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.67147
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Thallium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	ND<0.693147	25.5
	9/29/2008	ND<0.693147	25.5
	3/9/2009	ND<0.693147	25.5
	9/29/2009	ND<0.693147	25.5
	6/4/2010	ND<0.693147	25.5
	11/5/2010	ND<0.693147	25.5
	1/4/2011	ND<0.693147	25.5
	9/2/2011	ND<0.693147	25.5
	2/14/2012	ND<0.693147	25.5
	7/23/2012	ND<0.693147	25.5
	1/22/2013	ND<0.693147	25.5
	8/7/2013	ND<0.693147	25.5
	1/29/2014	ND<0.693147	25.5
	7/14/2014	ND<0.693147	25.5
	3/12/2015	ND<0.693147	25.5
	9/23/2015	ND<0.693147	25.5
	2/12/2016	ND<0.693147	25.5
	2/12/2016	ND<0.693147	25.5
	9/21/2016	ND<0	25.5
	1/18/2017	ND<0	25.5
8/3/2017	ND<0	25.5	
3/14/2018	ND<0	25.5	
8/29/2018	ND<0.693147	25.5	
1/9/2019	ND<0.0953102	25.5	
8/1/2019	ND<0.0953102	25.5	

Rank Sum = 637.5

Rank Mean = 25.5

Background Rank Sum = 637.5

Background Rank Mean = 25.5

Compliance Locations

Loc. ID	Date	Value	Rank
MW-11	8/18/2017	ND<0	25.5
	3/14/2018	ND<0	25.5
	8/29/2018	ND<0.693147	25.5
	1/9/2019	ND<0.0953102	25.5
	8/1/2019	ND<0.0953102	25.5

Rank Sum = 127.5

Rank Mean = 25.5

MW-10	8/3/2017	ND<0	25.5
	3/14/2018	ND<0	25.5
	8/29/2018	ND<0.693147	25.5
	1/9/2019	ND<0.0953102	25.5

7/31/2019 ND<0.0953102 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-7 8/3/2017 ND<0 25.5
3/14/2018 ND<0 25.5
8/28/2018 ND<0.693147 25.5
1/10/2019 ND<0.0953102 25.5
7/31/2019 ND<0.0953102 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-8 8/3/2017 ND<0 25.5
3/13/2018 ND<0 25.5
8/28/2018 ND<0.693147 25.5
1/10/2019 ND<0.0953102 25.5
8/1/2019 ND<0.0953102 25.5
Rank Sum = 127.5
Rank Mean = 25.5

MW-9 8/3/2017 ND<0 25.5
3/13/2018 ND<0 25.5
8/29/2018 ND<0.693147 25.5
1/9/2019 ND<0.0953102 25.5
8/1/2019 ND<0.0953102 25.5
Rank Sum = 127.5
Rank Mean = 25.5

Calculation Results:

Kruskal-Wallis H Statistic = 0

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 0

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

0 < 11.0705 indicating no significant group difference at 5% significance level

0 < 11.0705 indicating no significant group difference at 5% significance level when adjusted for ties

Shapiro-Wilks Test of Normality

Parameter: Vanadium, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	-0.287682	2.30259	2.59027	0.3751	0.971609
2	0	2.30259	2.30259	0.2574	0.592685
3	0	2.30259	2.30259	0.226	0.520384
4	0	2.30259	2.30259	0.2032	0.467885
5	0	1.93152	1.93152	0.1847	0.356752
6	0	1.82455	1.82455	0.1691	0.308531
7	0	1.60944	1.60944	0.1554	0.250107
8	0	1.60944	1.60944	0.143	0.23015
9	0	1.60944	1.60944	0.1317	0.211963
10	0	1.60944	1.60944	0.1212	0.195064
11	0	1.60944	1.60944	0.1113	0.17913
12	0	1.60944	1.60944	0.102	0.164163
13	0	1.60944	1.60944	0.0932	0.15
14	0	1.60944	1.60944	0.0846	0.136158
15	0.0953102	1.60944	1.51413	0.0764	0.115679
16	0.262364	1.60944	1.34707	0.0685	0.0922745
17	0.262364	1.60944	1.34707	0.0608	0.0819021
18	0.641854	1.60944	0.967584	0.0532	0.0514755
19	0.788457	1.60944	0.820981	0.0459	0.037683
20	0.788457	1.60944	0.820981	0.0386	0.0316898
21	0.788457	1.60944	0.820981	0.0314	0.0257788
22	0.788457	1.60944	0.820981	0.0244	0.0200319
23	0.832909	1.25276	0.419854	0.0174	0.00730546
24	0.916291	1.06471	0.14842	0.0104	0.00154357
25	0.916291	1.02962	0.113329	0.0035	0.00039665
26	1.02962	0.916291	-0.113329		
27	1.06471	0.916291	-0.14842		
28	1.25276	0.832909	-0.419854		
29	1.60944	0.788457	-0.820981		
30	1.60944	0.788457	-0.820981		
31	1.60944	0.788457	-0.820981		
32	1.60944	0.788457	-0.820981		
33	1.60944	0.641854	-0.967584		
34	1.60944	0.262364	-1.34707		
35	1.60944	0.262364	-1.34707		
36	1.60944	0.0953102	-1.51413		
37	1.60944	0	-1.60944		
38	1.60944	0	-1.60944		
39	1.60944	0	-1.60944		
40	1.60944	0	-1.60944		
41	1.60944	0	-1.60944		
42	1.60944	0	-1.60944		
43	1.60944	0	-1.60944		
44	1.60944	0	-1.60944		
45	1.82455	0	-1.82455		
46	1.93152	0	-1.93152		
47	2.30259	0	-2.30259		

48	2.30259	0	-2.30259
49	2.30259	0	-2.30259
50	2.30259	-0.287682	-2.59027

Sum of b values = 5.20034

Sample Standard Deviation = 0.798392

W Statistic = 0.865836

5% Critical value of 0.947 exceeds 0.865836
Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.865836
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Vanadium, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	ND<2.30259	21
	9/29/2008	ND<2.30259	21
	3/9/2009	ND<1.60944	21
	9/29/2009	ND<1.60944	21
	6/4/2010	ND<1.60944	21
	11/5/2010	ND<1.60944	21
	1/4/2011	ND<1.60944	21
	9/2/2011	ND<1.60944	21
	2/14/2012	ND<1.60944	21
	7/23/2012	ND<1.60944	21
	1/22/2013	ND<1.60944	21
	8/7/2013	ND<1.60944	21
	1/29/2014	ND<1.60944	21
	7/14/2014	ND<1.60944	21
	3/12/2015	ND<1.60944	21
	9/23/2015	ND<1.60944	21
	2/12/2016	ND<1.60944	21
	2/12/2016	ND<1.60944	21
	9/21/2016	0.641854	42
	1/18/2017	ND<0	21
8/3/2017	ND<0	21	
3/14/2018	ND<0	21	
8/29/2018	ND<2.30259	21	
1/9/2019	0.916291	44	
8/1/2019	ND<0.0953102 J21		

Rank Sum = 569

Rank Mean = 22.76

Background Rank Sum = 569

Background Rank Mean = 22.76

Compliance Locations

Loc. ID	Date	Value	Rank
MW-11	8/18/2017	ND<0	21
	3/14/2018	ND<0	21
	8/29/2018	ND<2.30259	21
	1/9/2019	ND<-0.287682 J21	
	8/1/2019	ND<0.788457	21

Rank Sum = 105

Rank Mean = 21

MW-10	8/3/2017	ND<0	21
	3/14/2018	ND<0	21
	8/29/2018	1.82455	49
	1/9/2019	ND<0.262364 J	21

7/31/2019 ND<0.262364 J 21
 Rank Sum = 133
 Rank Mean = 26.6

MW-7	8/3/2017	0.832909	43
	3/14/2018	1.25276	48
	8/28/2018	1.93152	50
	1/10/2019	1.02962	46
	7/31/2019	1.06471	47

Rank Sum = 234
 Rank Mean = 46.8

MW-8	8/3/2017	ND<0	21
	3/13/2018	ND<0	21
	8/28/2018	ND<0 J	21
	1/10/2019	ND<0.788457	21
	8/1/2019	0.916291	45

Rank Sum = 129
 Rank Mean = 25.8

MW-9	8/3/2017	ND<0	21
	3/13/2018	ND<0	21
	8/29/2018	ND<0 J	21
	1/9/2019	ND<0.788457	21
	8/1/2019	ND<0.788457	21

Rank Sum = 105
 Rank Mean = 21

Calculation Results:

Kruskal-Wallis H Statistic = 12.5418

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 27.949

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

12.5418 > 11.0705 indicating a significant group difference at 5% significance level

27.949 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 22.76

Well	Mean Rank	Dif from Bkg	Critical Value
MW-11	21	-1.76	16.6134
MW-10	26.6	3.84	16.6134
MW-7	46.8	24.04	16.6134
MW-8	25.8	3.04	16.6134
MW-9	21	-1.76	16.6134

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 22.76

Well	Mean Rank	Dif from Bkg	Critical Value
MW-11	21	-1.76	16.6134
MW-10	26.6	3.84	16.6134
MW-7	46.8	24.04	16.6134
MW-8	25.8	3.04	16.6134
MW-9	21	-1.76	16.6134

Shapiro-Francia Test of Normality

Parameter: Zinc, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 61

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	1.79176	-2.14441	4.59848	-3.84226
2	1.84055	-1.85218	8.02904	-7.25128
3	2.29253	-1.66456	10.7998	-11.0673
4	2.29253	-1.52203	13.1164	-14.5567
5	2.30259	-1.40507	15.0906	-17.792
6	2.30259	-1.30469	16.7928	-20.7961
7	2.3979	-1.21596	18.2714	-23.7119
8	2.43361	-1.13113	19.5509	-26.4646
9	2.48491	-1.05812	20.6705	-29.0939
10	2.56495	-0.990356	21.6513	-31.6341
11	2.63906	-0.926859	22.5103	-34.0802
12	2.63906	-0.866894	23.2619	-36.368
13	2.67415	-0.809896	23.9178	-38.5337
14	2.67415	-0.755415	24.4884	-40.5538
15	2.70805	-0.703089	24.9828	-42.4578
16	2.89037	-0.649522	25.4046	-44.3352
17	2.89037	-0.60076	25.7656	-46.0716
18	2.91235	-0.553384	26.0718	-47.6833
19	2.94444	-0.507221	26.3291	-49.1768
20	2.94444	-0.462114	26.5426	-50.5374
21	2.94444	-0.417928	26.7173	-51.768
22	2.94444	-0.374544	26.8576	-52.8708
23	2.99573	-0.331854	26.9677	-53.8649
24	3.03495	-0.287147	27.0501	-54.7364
25	3.17805	-0.24559	27.1105	-55.5169
26	3.21084	-0.204452	27.1523	-56.1734
27	3.22684	-0.163659	27.179	-56.7015
28	3.2581	-0.123135	27.1942	-57.1027
29	3.29584	-0.0828129	27.2011	-57.3756
30	3.31419	-0.0426257	27.2029	-57.5169
31	3.4012	0	27.2029	-57.5169
32	3.4012	0.0426257	27.2047	-57.3719
33	3.4012	0.0828129	27.2116	-57.0902
34	3.4012	0.123135	27.2267	-56.6714
35	3.4012	0.163659	27.2535	-56.1148
36	3.4012	0.204452	27.2953	-55.4194
37	3.4012	0.24559	27.3556	-54.5841
38	3.4012	0.287147	27.4381	-53.6075
39	3.4012	0.331854	27.5482	-52.4788
40	3.4012	0.374544	27.6885	-51.2049
41	3.4012	0.417928	27.8631	-49.7834
42	3.4012	0.462114	28.0767	-48.2117
43	3.4012	0.507221	28.334	-46.4865
44	3.4012	0.553384	28.6402	-44.6044
45	3.4012	0.60076	29.0011	-42.5611
46	3.42426	0.649522	29.423	-40.3369
47	3.46574	0.703089	29.9173	-37.9002

48	3.49651	0.755415	30.488	-35.2589
49	3.58352	0.809896	31.1439	-32.3566
50	3.68888	0.866894	31.8954	-29.1587
51	3.68888	0.926859	32.7545	-25.7397
52	3.71357	0.990356	33.7353	-22.0619
53	3.7612	1.05812	34.8549	-18.0821
54	3.91202	1.13113	36.1344	-13.6571
55	3.91202	1.21596	37.6129	-8.90022
56	3.91202	1.30469	39.3151	-3.79626
57	4.2485	1.40507	41.2894	2.17319
58	4.38203	1.52203	43.606	8.84279
59	4.78749	1.66456	46.3767	16.8119
60	5.48064	1.85218	49.8073	26.963
61	6.29157	2.14441	54.4058	40.4547

Data Set Standard Deviation = 0.757138

Numerator = 1636.58

Denominator = 1871.31

W Statistic = 0.874563 = 1636.58 / 1871.31

**5% Critical value of 0.963 exceeds 0.874563
Evidence of non-normality at 95% level of significance**

**1% Critical value of 0.947 exceeds 0.874563
Evidence of non-normality at 99% level of significance**

Kruskal-Wallis Non-Parametric Test

Parameter: Zinc, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	3.68888	50
	11/15/1990	3.91202	54
	11/5/1991	2.30259	19
	11/24/1992	3.91202	55
	11/1/1993	4.78749	59
	11/2/1994	6.29157	61
	11/30/1995	5.48064	60
	11/15/1996	4.2485	57
	11/24/1997	4.38203	58
	11/17/1998	3.91202	56
	11/16/1999	1.79176	15
	4/14/2008	3.49651	48
	9/29/2008	2.94444	33
	3/9/2009	3.4012	45
	9/29/2009	2.94444	34
	6/4/2010	3.46574	47
	11/5/2010	3.29584	43
	1/4/2011	3.17805	39
	9/2/2011	3.7612	53
	2/14/2012	3.58352	49
	7/23/2012	3.22684	41
	1/22/2013	3.03495	38
	8/7/2013	3.21084	40
	1/29/2014	3.31419	44
	7/14/2014	2.43361	22
	3/12/2015	2.91235	32
	9/23/2015	3.42426	46
	2/12/2016	2.67415	27
	2/12/2016	2.67415	28
	9/21/2016	ND<3.4012	7.5
	1/18/2017	ND<3.4012	7.5
	8/3/2017	ND<3.4012	7.5
	3/14/2018	ND<3.4012	7.5
	8/29/2018	2.3979	21
	1/9/2019	3.71357	52
	8/1/2019	2.63906	25

Rank Sum = 1381

Rank Mean = 38.3611

Background Rank Sum = 1381

Background Rank Mean = 38.3611

Compliance Locations

Loc. ID	Date	Value	Rank
MW-11	8/18/2017	ND<3.4012	7.5

	3/14/2018	ND<3.4012	7.5
	8/29/2018	2.70805	29
	1/9/2019	2.94444	35
	8/1/2019	1.84055	16

Rank Sum = 95
Rank Mean = 19

MW-10	8/3/2017	ND<3.4012	7.5
	3/14/2018	ND<3.4012	7.5
	8/29/2018	2.30259	20
	1/9/2019	2.56495	24
	7/31/2019	2.29253	17

Rank Sum = 76
Rank Mean = 15.2

MW-7	8/3/2017	ND<3.4012	7.5
	3/14/2018	ND<3.4012	7.5
	8/28/2018	2.63906	26
	1/10/2019	2.29253	18
	7/31/2019	2.48491	23

Rank Sum = 82
Rank Mean = 16.4

MW-8	8/3/2017	ND<3.4012	7.5
	3/13/2018	ND<3.4012	7.5
	8/28/2018	2.89037	30
	1/10/2019	3.2581	42
	8/1/2019	2.99573	37

Rank Sum = 124
Rank Mean = 24.8

MW-9	8/3/2017	ND<3.4012	7.5
	3/13/2018	ND<3.4012	7.5
	8/29/2018	2.89037	31
	1/9/2019	3.68888	51
	8/1/2019	2.94444	36

Rank Sum = 133
Rank Mean = 26.6

Calculation Results:

Kruskal-Wallis H Statistic = 16.733

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 16.9368

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

16.733 > 11.0705 indicating a significant group difference at 5% significance level

16.9368 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 38.3611

Well	Mean Rank	Dif from Bkg	Critical Value
MW-11	19	-19.3611	19.7106
MW-10	15.2	-23.1611	19.7106
MW-7	16.4	-21.9611	19.7106
MW-8	24.8	-13.5611	19.7106
MW-9	26.6	-11.7611	19.7106

**Individual Well Comparisons at Groupwise 5% Significance Level
(1% Significance Level per comparison)**

1% Z score is 2.32634

Mean background rank is 38.3611

Well	Mean Rank	Dif from Bkg	Critical Value
MW-11	19	-19.3611	19.7106
MW-10	15.2	-23.1611	19.7106
MW-7	16.4	-21.9611	19.7106
MW-8	24.8	-13.5611	19.7106
MW-9	26.6	-11.7611	19.7106

Shapiro-Francia Test of Normality

Parameter: Chloride

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 76

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	7.43838	-2.25713	5.09463	-16.7894
2	7.49554	-1.95996	8.93608	-31.4804
3	7.49554	-1.77438	12.0845	-44.7803
4	7.6009	-1.63524	14.7585	-57.2096
5	7.6009	-1.52203	17.0751	-68.7784
6	7.6009	-1.42554	19.1073	-79.6138
7	7.6009	-1.34075	20.9049	-89.8048
8	7.64492	-1.26464	22.5042	-99.4728
9	7.64969	-1.19522	23.9328	-108.616
10	7.99968	-1.13113	25.2122	-117.665
11	8.00637	-1.07138	26.3601	-126.242
12	8.07091	-1.01522	27.3907	-134.436
13	8.16052	-0.9621	28.3164	-142.287
14	8.21609	-0.911562	29.1473	-149.777
15	8.24276	-0.863249	29.8925	-156.892
16	8.24276	-0.816874	30.5598	-163.626
17	8.26873	-0.772193	31.1561	-170.011
18	8.29405	-0.729003	31.6875	-176.057
19	8.29405	-0.687131	32.1597	-181.756
20	8.29405	-0.646431	32.5776	-187.118
21	8.29405	-0.606775	32.9457	-192.15
22	8.29405	-0.568052	33.2684	-196.862
23	8.38023	-0.530162	33.5495	-201.305
24	8.47637	-0.493018	33.7925	-205.484
25	8.49699	-0.456542	34.001	-209.363
26	8.49699	-0.420664	34.1779	-212.937
27	8.51719	-0.385321	34.3264	-216.219
28	8.64822	-0.350451	34.4492	-219.25
29	8.69951	-0.316004	34.5491	-221.999
30	8.69951	-0.281926	34.6286	-224.452
31	8.69951	-0.248174	34.6902	-226.611
32	8.71604	-0.214702	34.7363	-228.482
33	8.7323	-0.181468	34.7692	-230.067
34	8.77493	-0.148434	34.7912	-231.369
35	8.80538	-0.115562	34.8046	-232.387
36	8.86078	-0.0828129	34.8114	-233.121
37	8.87347	-0.0501541	34.8139	-233.566
38	8.90246	-0.0175476	34.8143	-233.722
39	8.90246	0.0175476	34.8146	-233.566
40	8.98093	0.0501541	34.8171	-233.115
41	8.9872	0.0828129	34.8239	-232.371
42	9.02039	0.115562	34.8373	-231.329
43	9.0348	0.148434	34.8593	-229.987
44	9.03718	0.181468	34.8923	-228.347
45	9.0431	0.214702	34.9383	-226.406
46	9.14846	0.248174	34.9999	-224.135
47	9.16952	0.281926	35.0794	-221.55

48	9.19523	0.316004	35.1793	-218.645
49	9.3501	0.350451	35.3021	-215.368
50	9.39266	0.385321	35.4506	-211.749
51	9.42545	0.420664	35.6275	-207.784
52	9.44145	0.456542	35.836	-203.473
53	9.4727	0.493018	36.079	-198.803
54	9.54681	0.530162	36.3601	-193.742
55	9.61581	0.568052	36.6828	-188.279
56	9.70504	0.606775	37.051	-182.391
57	9.74097	0.646431	37.4688	-176.094
58	9.74097	0.687131	37.941	-169.401
59	9.80367	0.729003	38.4724	-162.254
60	10.0432	0.772193	39.0687	-154.498
61	10.0432	0.816874	39.736	-146.294
62	10.1266	0.863249	40.4812	-137.552
63	10.1773	0.911562	41.3121	-128.275
64	10.2364	0.9621	42.2378	-118.427
65	10.2751	1.01522	43.2684	-107.995
66	10.3735	1.07138	44.4163	-96.8814
67	10.3735	1.13113	45.6958	-85.1476
68	10.4688	1.19522	47.1243	-72.635
69	10.5991	1.26464	48.7236	-59.2309
70	10.8396	1.34075	50.5212	-44.6977
71	10.8874	1.42554	52.5534	-29.1772
72	10.9331	1.52203	54.87	-12.5366
73	11.0284	1.63524	57.544	5.49743
74	11.1124	1.77438	60.6924	25.2151
75	11.6082	1.95996	64.5339	47.9668
76	11.7199	2.25713	69.6285	74.4202

Data Set Standard Deviation = 1.04695
 Numerator = 5538.37
 Denominator = 5723.98
 W Statistic = $0.967573 = 5538.37 / 5723.98$

5% Critical value of 0.969 exceeds 0.967573
Evidence of non-normality at 95% level of significance

1% Critical value of 0.957 is less than 0.967573
 Data is normally distributed at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Chloride

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	8.29405	18
	2/8/1990	8.29405	19
	5/15/1990	8.26873	17
	8/1/1990	8.49699	25
	11/15/1990	8.29405	20
	2/6/1991	8.29405	21
	8/13/1991	7.6009	4
	11/5/1991	7.6009	5
	2/27/1992	8.51719	27
	5/27/1992	7.6009	6
	8/10/1992	7.6009	7
	11/24/1992	8.69951	29
	2/2/1993	8.69951	30
	5/12/1993	8.9872	41
	8/27/1993	9.4727	53
	11/1/1993	9.74097	57
	2/21/1994	9.61581	55
	6/1/1994	10.3735	66
	9/2/1994	10.0432	60
	11/2/1994	10.8396	70
	11/30/1995	11.6082	75
	11/15/1996	11.1124	74
	11/24/1997	10.2751	65
	11/17/1998	9.74097	58
	11/16/1999	10.1266	62
	1/4/2002	8.47637	24
	4/14/2008	8.7323	33
	9/29/2008	9.44145	52
	3/9/2009	8.71604	32
	9/29/2009	9.54681	54
	6/4/2010	9.0431	45
	11/5/2010	9.02039	42
	1/4/2011	8.77493	34
	9/2/2011	9.16952	47
	2/14/2012	9.19523	48
	7/23/2012	8.87347	37
	1/22/2013	8.38023	23
	8/7/2013	8.98093	40
	1/29/2014	8.21609	14
	7/14/2014	9.03718	44
	3/12/2015	8.86078	36
	9/23/2015	8.80538	35
	2/12/2016	8.90246	38
	2/12/2016	8.90246	39
	9/21/2016	9.0348	43
	1/18/2017	9.39266	50

8/3/2017	9.70504	56
3/14/2018	9.80367	59
8/29/2018	8.49699	26
1/9/2019	8.64822	28
8/1/2019	9.42545	51

Rank Sum = 1994
Rank Mean = 39.098

Background Rank Sum = 1994
Background Rank Mean = 39.098

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	10.8874	71
	3/14/2018	10.9331	72
	8/29/2018	10.4688	68
	1/9/2019	9.14846	46
	7/31/2019	11.0284	73

Rank Sum = 330
Rank Mean = 66

MW-7	8/3/2017	10.2364	64
	3/14/2018	10.0432	61
	8/28/2018	10.1773	63
	1/10/2019	7.64969	9
	7/31/2019	10.5991	69

Rank Sum = 266
Rank Mean = 53.2

MW-8	8/3/2017	7.64492	8
	3/13/2018	8.00637	11
	8/28/2018	8.16052	13
	1/10/2019	ND<7.43838 J	2
	8/1/2019	ND<7.49554 J	2

Rank Sum = 36
Rank Mean = 7.2

MW-9	8/3/2017	11.7199	76
	3/13/2018	10.3735	67
	8/29/2018	9.3501	49
	1/9/2019	8.69951	31
	8/1/2019	8.07091	12

Rank Sum = 235
Rank Mean = 47

MW-11	8/18/2017	7.99968	10
	3/14/2018	8.29405	22
	8/29/2018	ND<7.49554 J	2
	1/9/2019	8.24276	15
	8/1/2019	8.24276	16

Rank Sum = 65
Rank Mean = 13

Calculation Results:

Kruskal-Wallis H Statistic = 27.4591

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 27.4606

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

27.4591 > 11.0705 indicating a significant group difference at 5% significance level

27.4606 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 39.098

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	66	26.902	24.0746
MW-7	53.2	14.102	24.0746
MW-8	7.2	-31.898	24.0746
MW-9	47	7.90196	24.0746
MW-11	13	-26.098	24.0746

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 39.098

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	66	26.902	24.0746
MW-7	53.2	14.102	24.0746
MW-8	7.2	-31.898	24.0746
MW-9	47	7.90196	24.0746
MW-11	13	-26.098	24.0746

Shapiro-Francia Test of Normality

Parameter: Nitrate/Nitrite-N

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 52

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	0	-2.09693	4.39712	0
2	0	-1.78661	7.5891	0
3	2.30259	-1.58927	10.1149	-3.65943
4	3.91202	-1.43953	12.1871	-9.2909
5	3.91202	-1.31652	13.9204	-14.4412
6	3.91202	-1.21073	15.3862	-19.1776
7	4.60517	-1.11699	16.6339	-24.3215
8	4.60517	-1.03643	17.7081	-29.0944
9	4.60517	-0.958125	18.6261	-33.5068
10	4.60517	-0.885291	19.4098	-37.5837
11	4.60517	-0.816874	20.0771	-41.3455
12	4.70953	-0.752084	20.6427	-44.8875
13	4.94164	-0.690309	21.1192	-48.2987
14	5.01064	-0.631062	21.5175	-51.4608
15	5.01064	-0.573953	21.8469	-54.3366
16	5.01064	-0.521527	22.1189	-56.9498
17	5.29832	-0.467699	22.3376	-59.4278
18	5.29832	-0.415193	22.51	-61.6276
19	5.29832	-0.363809	22.6424	-63.5552
20	5.29832	-0.31337	22.7406	-65.2156
21	5.29832	-0.263715	22.8101	-66.6128
22	5.29832	-0.214702	22.8562	-67.7504
23	5.29832	-0.168741	22.8847	-68.6444
24	5.29832	-0.12061	22.8992	-69.2834
25	5.32301	-0.0727562	22.9045	-69.6707
26	5.37528	-0.0250691	22.9052	-69.8055
27	5.37528	0.0250691	22.9058	-69.6707
28	5.39363	0.0727562	22.9111	-69.2783
29	5.76832	0.12061	22.9256	-68.5826
30	5.85793	0.168741	22.9541	-67.5941
31	5.8861	0.214702	23.0002	-66.3303
32	5.99146	0.263715	23.0698	-64.7503
33	6.14633	0.31337	23.168	-62.8242
34	6.21461	0.363809	23.3003	-60.5633
35	6.27288	0.415193	23.4727	-57.9588
36	6.49224	0.467699	23.6914	-54.9224
37	6.50728	0.521527	23.9634	-51.5287
38	6.52209	0.573953	24.2929	-47.7853
39	6.68461	0.631062	24.6911	-43.5669
40	6.7093	0.690309	25.1676	-38.9354
41	6.77194	0.752084	25.7332	-33.8424
42	6.80239	0.816874	26.4005	-28.2857
43	7.00307	0.885291	27.1843	-22.0859
44	7.05618	0.958125	28.1023	-15.3252
45	7.37776	1.03643	29.1765	-7.67868
46	7.37776	1.11699	30.4241	0.56218
47	7.60589	1.21073	31.89	9.77085

48	7.62071	1.31652	33.6232	19.8037
49	8.11073	1.43953	35.6955	31.4793
50	8.14323	1.58927	38.2212	44.4211
51	8.284	1.78661	41.4132	59.2214
52	8.29405	2.09693	45.8103	76.6134

Data Set Standard Deviation = 1.68738

Numerator = 5869.62

Denominator = 6652.15

W Statistic = 0.882364 = 5869.62 / 6652.15

5% Critical value of 0.957 exceeds 0.882364
Evidence of non-normality at 95% level of significance

1% Critical value of 0.938 exceeds 0.882364
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Nitrate/Nitrite-N

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1990	ND<0	12
	4/14/2008	8.14323	50
	9/29/2008	ND<4.60517	12
	9/29/2008	ND<4.60517	12
	3/9/2009	5.99146	33
	9/29/2009	ND<0	12
	6/4/2010	ND<5.01064	12
	11/5/2010	6.80239	42
	1/4/2011	7.05618	44
	9/2/2011	ND<5.01064	12
	2/14/2012	ND<5.01064	12
	7/23/2012	5.37528	27
	1/22/2013	8.11073	49
	8/7/2013	4.70953	24
	1/29/2014	8.284	51
	7/14/2014	5.32301	26
	3/12/2015	7.60589	47
	9/23/2015	6.27288	35
	2/12/2016	7.37776	45
	2/12/2016	7.37776	46
	9/21/2016	6.14633	34
	1/18/2017	6.77194	41
	8/3/2017	7.00307	43
	3/14/2018	6.7093	40
	8/29/2018	7.62071	48
	1/9/2019	8.29405	52
	8/1/2019	ND<5.29832	12

Rank Sum = 873

Rank Mean = 32.3333

Background Rank Sum = 873

Background Rank Mean = 32.3333

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<3.91202	12
	3/14/2018	ND<4.60517	12
	8/29/2018	ND<2.30259 J	12
	1/9/2019	ND<5.29832	12
	7/31/2019	ND<5.29832	12

Rank Sum = 60

Rank Mean = 12

MW-7	8/3/2017	5.37528	28
	3/14/2018	6.50728	37

	8/28/2018	6.68461	39
	1/10/2019	ND<5.29832	12
	7/31/2019	ND<5.29832	12
Rank Sum = 128			
Rank Mean = 25.6			

MW-8	8/3/2017	ND<3.91202	12
	3/13/2018	5.85793	31
	8/28/2018	6.52209	38
	1/10/2019	5.39363	29
	8/1/2019	6.49224	36
Rank Sum = 146			
Rank Mean = 29.2			

MW-9	8/3/2017	ND<6.21461	12
	3/13/2018	ND<4.60517	12
	8/29/2018	4.94164	25
	1/9/2019	ND<5.29832	12
	8/1/2019	5.8861	32
Rank Sum = 93			
Rank Mean = 18.6			

MW-11	8/18/2017	ND<3.91202	12
	3/14/2018	ND<4.60517	12
	8/29/2018	5.76832	30
	1/9/2019	ND<5.29832	12
	8/1/2019	ND<5.29832	12
Rank Sum = 78			
Rank Mean = 15.6			

Calculation Results:

Kruskal-Wallis H Statistic = 12.6993

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 13.9003

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

12.6993 > 11.0705 indicating a significant group difference at 5% significance level

13.9003 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 32.3333

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	12	-20.3333	17.1645
MW-7	25.6	-6.73333	17.1645
MW-8	29.2	-3.13333	17.1645
MW-9	18.6	-13.7333	17.1645
MW-11	15.6	-16.7333	17.1645

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 32.3333

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	12	-20.3333	17.1645
MW-7	25.6	-6.73333	17.1645
MW-8	29.2	-3.13333	17.1645

MW-9	18.6	-13.7333	17.1645
MW-11	15.6	-16.7333	17.1645

Shapiro-Wilks Test of Normality

Parameter: Ammonia as N

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	4.40672	8.42288	4.01616	0.3751	1.50646
2	4.5326	8.36404	3.83144	0.2574	0.986213
3	4.60517	8.28652	3.68135	0.226	0.831985
4	4.60517	8.21338	3.60821	0.2032	0.733189
5	4.60517	8.13447	3.5293	0.1847	0.651861
6	4.60517	7.97247	3.3673	0.1691	0.56941
7	4.60517	7.94094	3.33577	0.1554	0.518379
8	4.60517	7.89357	3.2884	0.143	0.470241
9	4.60517	7.6256	3.02042	0.1317	0.39779
10	4.60517	7.47873	2.87356	0.1212	0.348276
11	4.60517	7.37776	2.77259	0.1113	0.308589
12	4.89784	7.36518	2.46734	0.102	0.251669
13	4.92725	7.25841	2.33116	0.0932	0.217264
14	5.18178	7.11477	1.93299	0.0846	0.163531
15	5.29832	6.8773	1.57898	0.0764	0.120634
16	5.29832	6.8222	1.52388	0.0685	0.104386
17	5.29832	6.41346	1.11514	0.0608	0.0678006
18	5.29832	5.79909	0.500775	0.0532	0.0266412
19	5.29832	5.6204	0.322083	0.0459	0.0147836
20	5.29832	5.3799	0.08158	0.0386	0.00314899
21	5.29832	5.35186	0.0535408	0.0314	0.00168118
22	5.29832	5.33754	0.0392207	0.0244	0.000956985
23	5.29832	5.29832	0	0.0174	0
24	5.29832	5.29832	0	0.0104	0
25	5.29832	5.29832	0	0.0035	0
26	5.29832	5.29832	0		
27	5.29832	5.29832	0		
28	5.29832	5.29832	0		
29	5.33754	5.29832	-0.0392207		
30	5.35186	5.29832	-0.0535408		
31	5.3799	5.29832	-0.08158		
32	5.6204	5.29832	-0.322083		
33	5.79909	5.29832	-0.500775		
34	6.41346	5.29832	-1.11514		
35	6.8222	5.29832	-1.52388		
36	6.8773	5.29832	-1.57898		
37	7.11477	5.18178	-1.93299		
38	7.25841	4.92725	-2.33116		
39	7.36518	4.89784	-2.46734		
40	7.37776	4.60517	-2.77259		
41	7.47873	4.60517	-2.87356		
42	7.6256	4.60517	-3.02042		
43	7.89357	4.60517	-3.2884		
44	7.94094	4.60517	-3.33577		
45	7.97247	4.60517	-3.3673		
46	8.13447	4.60517	-3.5293		
47	8.21338	4.60517	-3.60821		

48	8.28652	4.60517	-3.68135
49	8.36404	4.5326	-3.83144
50	8.42288	4.40672	-4.01616

Sum of b values = 8.29489

Sample Standard Deviation = 1.30735

W Statistic = 0.821565

5% Critical value of 0.947 exceeds 0.821565
Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.821565
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Ammonia as N

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	7.6256	42
	9/29/2008	8.42288	50
	3/9/2009	6.8773	36
	9/29/2009	8.36404	49
	6/4/2010	8.28652	48
	11/5/2010	8.21338	47
	1/4/2011	7.89357	43
	9/2/2011	8.13447	46
	2/14/2012	7.97247	45
	7/23/2012	7.36518	39
	1/22/2013	ND<5.29832	13
	8/7/2013	ND<5.29832	13
	1/29/2014	ND<5.29832	13
	7/14/2014	7.25841	38
	3/12/2015	ND<5.29832	13
	9/23/2015	ND<5.29832	13
	2/12/2016	ND<5.29832	13
	2/12/2016	ND<5.29832	13
	9/21/2016	ND<5.29832	13
	1/18/2017	ND<5.29832	13
8/3/2017	ND<5.29832	13	
3/14/2018	ND<4.60517	13	
8/29/2018	ND<4.40672 J	13	
1/9/2019	ND<4.5326 J	13	
8/1/2019	7.47873	41	

Rank Sum = 693

Rank Mean = 27.72

Background Rank Sum = 693

Background Rank Mean = 27.72

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	ND<5.29832	13
	3/14/2018	ND<4.60517	13
	8/29/2018	4.92725	27
	1/9/2019	4.89784	26
	7/31/2019	ND<4.60517	13

Rank Sum = 92

Rank Mean = 18.4

MW-7	8/3/2017	7.37776	40
	3/14/2018	6.41346	34
	8/28/2018	6.8222	35
	1/10/2019	7.94094	44

7/31/2019 7.11477 37
Rank Sum = 190
Rank Mean = 38

MW-8 8/3/2017 ND<5.29832 13
3/13/2018 ND<4.60517 13
8/28/2018 5.3799 31
1/10/2019 5.35186 30
8/1/2019 ND<4.60517 13
Rank Sum = 100
Rank Mean = 20

MW-9 8/3/2017 ND<5.29832 13
3/13/2018 ND<4.60517 13
8/29/2018 5.18178 28
1/9/2019 5.6204 32
8/1/2019 ND<4.60517 13
Rank Sum = 99
Rank Mean = 19.8

MW-11 8/18/2017 ND<5.29832 13
3/14/2018 ND<4.60517 13
8/29/2018 5.79909 33
1/9/2019 5.33754 29
8/1/2019 ND<4.60517 13
Rank Sum = 101
Rank Mean = 20.2

Calculation Results:

Kruskal-Wallis H Statistic = 7.57958

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 8.66089

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

7.57958 < 11.0705 indicating no significant group difference at 5% significance level

8.66089 < 11.0705 indicating no significant group difference at 5% significance level when adjusted for ties

Shapiro-Francia Test of Normality

Parameter: Alkalinity, Total

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Total Number of Measurements = 75

i	x(i)	m(i)	sum(m^2)	sum(mx)
1	5.71703	-2.22621	4.956	-12.7273
2	5.94017	-1.94314	8.73177	-24.2698
3	6.04025	-1.76241	11.8379	-34.9152
4	6.13123	-1.62576	14.481	-44.8832
5	6.17587	-1.5141	16.7735	-54.2341
6	8.51719	-1.41865	18.786	-66.317
7	8.51719	-1.32854	20.5511	-77.6324
8	8.51719	-1.25357	22.1225	-88.3093
9	8.51719	-1.18504	23.5268	-98.4026
10	8.51719	-1.12168	24.785	-107.956
11	8.51719	-1.06252	25.9139	-117.006
12	8.51719	-1.00687	26.9277	-125.581
13	8.51719	-0.950222	27.8306	-133.675
14	8.51719	-0.900227	28.641	-141.342
15	8.51719	-0.852385	29.3676	-148.602
16	8.537	-0.806422	30.0179	-155.486
17	8.537	-0.7621	30.5987	-161.992
18	8.537	-0.719228	31.116	-168.133
19	8.69951	-0.67449	31.5709	-174
20	8.69951	-0.634124	31.9731	-179.517
21	8.69951	-0.594766	32.3268	-184.691
22	8.69951	-0.556308	32.6363	-189.531
23	8.69951	-0.518658	32.9053	-194.043
24	8.69951	-0.481728	33.1373	-198.233
25	8.85367	-0.445443	33.3358	-202.177
26	8.85367	-0.40701	33.5014	-205.781
27	8.85367	-0.371856	33.6397	-209.073
28	8.9872	-0.337155	33.7534	-212.103
29	8.9872	-0.302855	33.8451	-214.825
30	8.9872	-0.268908	33.9174	-217.242
31	8.99962	-0.235269	33.9728	-219.359
32	9.39266	-0.199336	34.0125	-221.231
33	9.4727	-0.166199	34.0401	-222.806
34	9.58878	-0.133244	34.0579	-224.083
35	9.61581	-0.100433	34.068	-225.049
36	9.9988	-0.0677301	34.0725	-225.726
37	10.3417	-0.0350997	34.0738	-226.089
38	10.3735	0	34.0738	-226.089
39	10.3951	0.0350997	34.075	-225.724
40	10.4458	0.0677301	34.0796	-225.017
41	10.5966	0.100433	34.0897	-223.953
42	10.7077	0.133244	34.1074	-222.526
43	10.7233	0.166199	34.1351	-220.744
44	10.7364	0.199336	34.1748	-218.604
45	10.8317	0.235269	34.2301	-216.055
46	11.0445	0.268908	34.3025	-213.085
47	11.0791	0.302855	34.3942	-209.73

48	11.2118	0.337155	34.5078	-205.95
49	11.2464	0.371856	34.6461	-201.768
50	11.2464	0.40701	34.8118	-197.19
51	11.5899	0.445443	35.0102	-192.028
52	11.6351	0.481728	35.2423	-186.423
53	11.644	0.518658	35.5113	-180.384
54	11.6952	0.556308	35.8207	-173.877
55	11.7035	0.594766	36.1745	-166.917
56	11.835	0.634124	36.5766	-159.412
57	11.9117	0.67449	37.0315	-151.377
58	11.9892	0.719228	37.5488	-142.754
59	12.1859	0.7621	38.1296	-133.468
60	12.191	0.806422	38.7799	-123.637
61	12.2111	0.852385	39.5065	-113.228
62	12.409	0.900227	40.3169	-102.057
63	12.4212	0.950222	41.2198	-90.2542
64	12.4451	1.00687	42.2336	-77.7236
65	12.4646	1.06252	43.3626	-64.4798
66	12.5025	1.12168	44.6207	-50.456
67	12.5025	1.18504	46.0251	-35.6401
68	12.539	1.25357	47.5965	-19.9217
69	12.5602	1.32854	49.3615	-3.23487
70	12.5637	1.41865	51.3741	14.5887
71	12.6635	1.5141	53.6666	33.7626
72	12.832	1.62576	56.3097	54.6244
73	12.9785	1.76241	59.4158	77.4978
74	13.0815	1.94314	63.1916	102.917
75	13.4298	2.22621	68.1475	132.815

Data Set Standard Deviation = 1.9305
 Numerator = 17639.7
 Denominator = 18794
 W Statistic = 0.938582 = 17639.7 / 18794

5% Critical value of 0.969 exceeds 0.938582
Evidence of non-normality at 95% level of significance

1% Critical value of 0.956 exceeds 0.938582
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Alkalinity, Total

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	11/15/1989	8.51719	7
	2/8/1990	8.51719	8
	5/15/1990	8.51719	9
	8/1/1990	8.51719	10
	11/15/1990	8.51719	11
	2/6/1991	8.51719	12
	8/13/1991	8.51719	13
	11/5/1991	8.51719	14
	2/27/1992	8.51719	15
	5/27/1992	8.51719	16
	8/10/1992	8.537	17
	11/24/1992	8.537	18
	2/2/1993	8.537	19
	5/12/1993	8.69951	20
	8/27/1993	8.69951	21
	11/1/1993	8.69951	22
	2/21/1994	ND<8.69951	1
	6/1/1994	8.69951	23
	9/2/1994	8.69951	24
	11/2/1994	8.85367	25
	11/30/1995	8.85367	26
	11/15/1996	8.85367	27
	11/24/1997	8.9872	28
	11/17/1998	8.9872	29
	11/16/1999	8.9872	30
	4/14/2008	8.99962	31
	9/29/2008	9.4727	33
	3/9/2009	12.4212	63
	9/29/2009	13.4298	75
	6/4/2010	6.13123	5
	11/5/2010	6.04025	4
	1/4/2011	5.71703	2
	9/2/2011	6.17587	6
	2/14/2012	5.94017	3
	7/23/2012	12.6635	71
	1/22/2013	11.6351	52
	8/7/2013	12.832	72
	1/29/2014	11.0445	46
	7/14/2014	12.9785	73
	3/12/2015	11.7035	55
	9/23/2015	12.4646	65
	2/12/2016	11.2464	49
	2/12/2016	11.2464	50
	9/21/2016	11.0791	47
	1/18/2017	10.8317	45
	8/3/2017	10.7233	43

3/14/2018	10.7077	42
8/29/2018	11.5899	51
1/9/2019	11.9117	57
8/1/2019	12.5025	66

Rank Sum = 1551
Rank Mean = 31.02

Background Rank Sum = 1551
Background Rank Mean = 31.02

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	11.6952	54
	3/14/2018	12.539	68
	8/29/2018	12.409	62
	1/9/2019	11.644	53
	7/31/2019	12.5637	70

Rank Sum = 307
Rank Mean = 61.4

MW-7	8/3/2017	12.191	60
	3/14/2018	12.1859	59
	8/28/2018	11.835	56
	1/10/2019	11.2118	48
	7/31/2019	12.5602	69

Rank Sum = 292
Rank Mean = 58.4

MW-8	8/3/2017	10.3951	39
	3/13/2018	9.58878	34
	8/28/2018	10.7364	44
	1/10/2019	10.5966	41
	8/1/2019	9.61581	35

Rank Sum = 193
Rank Mean = 38.6

MW-9	8/3/2017	13.0815	74
	3/13/2018	10.4458	40
	8/29/2018	9.9988	36
	1/9/2019	9.39266	32
	8/1/2019	10.3735	38

Rank Sum = 220
Rank Mean = 44

MW-11	8/18/2017	11.9892	58
	3/14/2018	12.2111	61
	8/29/2018	10.3417	37
	1/9/2019	12.4451	64
	8/1/2019	12.5025	67

Rank Sum = 287
Rank Mean = 57.4

Calculation Results:

Kruskal-Wallis H Statistic = 19.6173

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 19.6173

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

19.6173 > 11.0705 indicating a significant group difference at 5% significance level

19.6173 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 31.02

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	61.4	30.38	23.7811
MW-7	58.4	27.38	23.7811
MW-8	38.6	7.58	23.7811
MW-9	44	12.98	23.7811
MW-11	57.4	26.38	23.7811

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 31.02

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	61.4	30.38	23.7811
MW-7	58.4	27.38	23.7811
MW-8	38.6	7.58	23.7811
MW-9	44	12.98	23.7811
MW-11	57.4	26.38	23.7811

Shapiro-Wilks Test of Normality

Parameter: Sulfate

All Locations

Normality Test of Parameter Concentrations

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

K = 25 for 50 measurements

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	9.30565	11.9767	2.67101	0.3751	1.0019
2	9.4572	11.9117	2.4545	0.2574	0.631789
3	9.60238	11.6613	2.05896	0.226	0.465326
4	9.61581	11.5229	1.90707	0.2032	0.387517
5	9.62905	11.4742	1.84513	0.1847	0.340796
6	9.74683	11.47	1.72318	0.1691	0.29139
7	9.84692	11.469	1.62206	0.1554	0.252068
8	9.86267	11.4446	1.58198	0.143	0.226223
9	9.92818	11.4164	1.48823	0.1317	0.196
10	9.93305	11.4087	1.47563	0.1212	0.178846
11	10.0033	11.3528	1.34942	0.1113	0.150191
12	10.0033	11.3504	1.34707	0.102	0.137402
13	10.0213	11.329	1.30773	0.0932	0.121881
14	10.0301	11.1287	1.09861	0.0846	0.0929426
15	10.0476	10.8762	0.828571	0.0764	0.0633028
16	10.0605	10.6942	0.633724	0.0685	0.0434101
17	10.069	10.6874	0.618387	0.0608	0.0375979
18	10.1266	10.5916	0.464991	0.0532	0.0247375
19	10.162	10.5764	0.414434	0.0459	0.0190225
20	10.1811	10.5401	0.358945	0.0386	0.0138553
21	10.1811	10.516	0.334848	0.0314	0.0105142
22	10.1849	10.4487	0.263815	0.0244	0.00643708
23	10.2612	10.4429	0.181739	0.0174	0.00316225
24	10.3353	10.4193	0.0840307	0.0104	0.00087392
25	10.3417	10.4133	0.0715702	0.0035	0.000250496
26	10.4133	10.3417	-0.0715702		
27	10.4193	10.3353	-0.0840307		
28	10.4429	10.2612	-0.181739		
29	10.4487	10.1849	-0.263815		
30	10.516	10.1811	-0.334848		
31	10.5401	10.1811	-0.358945		
32	10.5764	10.162	-0.414434		
33	10.5916	10.1266	-0.464991		
34	10.6874	10.069	-0.618387		
35	10.6942	10.0605	-0.633724		
36	10.8762	10.0476	-0.828571		
37	11.1287	10.0301	-1.09861		
38	11.329	10.0213	-1.30773		
39	11.3504	10.0033	-1.34707		
40	11.3528	10.0033	-1.34942		
41	11.4087	9.93305	-1.47563		
42	11.4164	9.92818	-1.48823		
43	11.4446	9.86267	-1.58198		
44	11.469	9.84692	-1.62206		
45	11.47	9.74683	-1.72318		
46	11.4742	9.62905	-1.84513		
47	11.5229	9.61581	-1.90707		

48	11.6613	9.60238	-2.05896
49	11.9117	9.4572	-2.4545
50	11.9767	9.30565	-2.67101

Sum of b values = 4.69743

Sample Standard Deviation = 0.697178

W Statistic = 0.926482

5% Critical value of 0.947 exceeds 0.926482
Evidence of non-normality at 95% level of significance

1% Critical value of 0.93 exceeds 0.926482
Evidence of non-normality at 99% level of significance

Kruskal-Wallis Non-Parametric Test

Parameter: Sulfate

Natural Logarithm Transformation

Non-Detects Replaced with Detection Limit

Kruskal Wallis Ranks

Background Locations

Loc. ID	Date	Value	Rank
MW-6	4/14/2008	9.60238	3
	9/29/2008	9.84692	7
	3/9/2009	9.61581	4
	9/29/2009	9.30565	1
	6/4/2010	10.4133	26
	11/5/2010	10.2612	23
	1/4/2011	9.93305	10
	9/2/2011	10.0605	16
	2/14/2012	10.6942	35
	7/23/2012	10.0301	14
	1/22/2013	9.4572	2
	8/7/2013	9.92818	9
	1/29/2014	10.8762	36
	7/14/2014	9.62905	5
	3/12/2015	10.0213	13
	9/23/2015	10.3417	25
	2/12/2016	10.1811	20
	2/12/2016	10.1811	21
	9/21/2016	10.6874	34
	1/18/2017	10.4429	28
8/3/2017	10.4193	27	
3/14/2018	10.1849	22	
8/29/2018	10.3353	24	
1/9/2019	10.0476	15	
8/1/2019	10.4487	29	

Rank Sum = 449

Rank Mean = 17.96

Background Rank Sum = 449

Background Rank Mean = 17.96

Compliance Locations

Loc. ID	Date	Value	Rank
MW-10	8/3/2017	10.069	17
	3/14/2018	11.9767	50
	8/29/2018	11.4164	42
	1/9/2019	11.9117	49
	7/31/2019	11.4446	43

Rank Sum = 201

Rank Mean = 40.2

MW-7	8/3/2017	10.1266	18
	3/14/2018	9.74683	6
	8/28/2018	10.0033	11
	1/10/2019	10.0033	12

7/31/2019 10.516 30
 Rank Sum = 77
 Rank Mean = 15.4

MW-8 8/3/2017 9.86267 8
 3/13/2018 10.5916 33
 8/28/2018 10.5401 31
 1/10/2019 10.5764 32
 8/1/2019 10.162 19
 Rank Sum = 123
 Rank Mean = 24.6

MW-9 8/3/2017 11.329 38
 3/13/2018 11.4087 41
 8/29/2018 11.3504 39
 1/9/2019 11.1287 37
 8/1/2019 11.4742 46
 Rank Sum = 201
 Rank Mean = 40.2

MW-11 8/18/2017 11.5229 47
 3/14/2018 11.6613 48
 8/29/2018 11.3528 40
 1/9/2019 11.47 45
 8/1/2019 11.469 44
 Rank Sum = 224
 Rank Mean = 44.8

Calculation Results:

Kruskal-Wallis H Statistic = 28.0411

Kruskal-Wallis H Statistic (adjusted for tied non-detects) = 28.0411

95% Confidence comparison value is 11.0705 at 5 degrees of freedom

28.0411 > 11.0705 indicating a significant group difference at 5% significance level

28.0411 > 11.0705 indicating a significant group difference at 5% significance level when adjusted for ties

Individual Well Comparisons at 1% Significance Level per Comparison

1% Z score is 2.32634

Mean background rank is 17.96

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	40.2	22.24	16.6134
MW-7	15.4	-2.56	16.6134
MW-8	24.6	6.64	16.6134
MW-9	40.2	22.24	16.6134
MW-11	44.8	26.84	16.6134

Individual Well Comparisons at Groupwise 5% Significance Level (1% Significance Level per comparison)

1% Z score is 2.32634

Mean background rank is 17.96

Well	Mean Rank	Dif from Bkg	Critical Value
MW-10	40.2	22.24	16.6134
MW-7	15.4	-2.56	16.6134
MW-8	24.6	6.64	16.6134
MW-9	40.2	22.24	16.6134
MW-11	44.8	26.84	16.6134

Appendix D

Landfill Gas Monitoring Data

Sands Road Landfill
Landfill Gas Monitoring
Third Quarter 2019

Device ID	Date/Time	CH4	CO2	O2	Balance	%LEL	Baro. Pressure	Rel. Press.
		%	%	%	%	%	inches Hg	inches H2O
Sand-GP1	08/08/19	0	0	16.9	83.1	0	29.78	0.02
Sand-GP2	08/08/19	0	0.6	16.7	82.7	0	29.77	0.01
SandGP3D	08/08/19	0	1.4	15.7	82.9	0	29.75	0.02
SandGP3S	08/08/19	0	3.4	14.4	82.2	0	29.75	0.01
SandGP4D	08/08/19	0	0.7	16.5	82.8	0	29.75	0.01
SandGP4S	08/08/19	0	0.4	16.6	83	0	29.75	0.01
SandGP5D	08/08/19	0	0.2	16.7	83.1	0	29.75	0
SandGP5S	08/08/19	0	1	16.4	82.6	0	29.74	-0.57
SandGP6D	08/08/19	0	0.3	16.6	83.1	0	29.75	-0.01
SandGP6S	08/08/19	0	1.2	16.3	82.5	0	29.75	0.04
SandGP7D	08/08/19	0	1.2	15.8	83	0	29.71	0.03
SandGP7S	08/08/19	0	1.3	15.5	83.2	0	29.72	0.03

Sands Road Landfill
Landfill Gas Monitoring
Fourth Quarter 2019

Device ID	Date/Time	CH4	CO2	O2	Balance	%LEL	Baro. Pressure	Rel. Press.
		%	%	%	%	%	inches Hg	inches H2O
Sand-GP1	10/21/19	0	0.7	19.9	79.4	0	29.99	0.01
Sand-GP2	10/21/19	0	2.5	17.2	80.3	0	29.99	0
SandGP3D	10/21/19	0	0.2	20.1	79.7	0	29.99	0.01
SandGP3S	10/21/19	0	2.5	16.8	80.7	0	29.98	0.01
SandGP4D	10/21/19	0	0.1	20.5	79.4	0	29.95	0.01
SandGP4S	10/21/19	0	0.1	20.6	79.3	0	29.95	0.03
SandGP5D	10/21/19	0	0.1	20.5	79.4	0	29.95	-0.01
SandGP5S	10/21/19	0	0.4	20.2	79.4	0	29.95	0
SandGP6D	10/21/19	0	0	20.4	79.6	0	29.91	0.02
SandGP6S	10/21/19	0	0.3	20.3	79.4	0	29.63	0.04
SandGP7D	10/21/19	0	0.8	19	80.2	0	29.92	0.01
SandGP7S	10/21/19	0	0.8	18.6	80.6	0	29.94	0.03

Appendix E

Semi-Annual Landfill Inspection Report