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NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Joyce Engineering

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: G. Van Ness Burbach, Ph.D., P.G. Phone: (336) 323-0092

E-mail: vburbach@joyceengineering.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
John's River C&D over MSW Landfill	2500 Marsh Trail Morganton, NC	12-03	.1600	December 8-9, 2015 Resample: February 4, 2016

Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☐ Detection Monitoring ☒ Assessment Monitoring ☒ Corrective Action

Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☒ Surface water monitoring data
☐ Methane gas monitoring data
☒ Corrective action data (specify) MNA & LFG Performance/Sentinel
☐ Other(specify)

Notification attached?

☐ No. No groundwater or surface water standards were exceeded.
☒ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

G. Van Ness Burbach, Ph.D., PG — Technical Consultant — (336) 323-0092

Facility Representative Name (Print) — Title — (Area Code) Telephone Number

Signature — 3/28/16 Date

Affix NC Licensed/ Professional Geologist Seal

NORTH CAROLINA LICENSED SEAL 1349 GEOLOGIST G. VAN NESS BURBACH

2211 W. Meadowview Rd., Ste. 101 Greensboro, NC 27407

Facility Representative Address

C-0782

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

PREPARED FOR:

BOARD OF COMMISSIONERS
COUNTY OF BURKE
P.O. BOX 1486
MORGANTON, NORTH CAROLINA 28680

JOHN'S RIVER WASTE MANAGEMENT FACILITY
PERMIT NO. 12-03
C&D-OVER-MSW LANDFILL

SECOND SEMIANNUAL WATER QUALITY MONITORING REPORT OF 2015

APRIL 2016

***PREPARED BY*:**

JOYCE ENGINEERING

2211 WEST MEADOWVIEW ROAD, SUITE 101
GREENSBORO, NORTH CAROLINA 27407
NC LICENSE NUMBER C-0782
PHONE: (336) 323-0092
FAX: (336) 323-0093

JOYCE PROJECT NO. 277.1601.12

Second Semiannual Water Quality Monitoring Report of 2015
John's River Waste Management Facility – Permit No. 12-03
C&D-over-MSW Landfill
Burke County, North Carolina

TABLE OF CONTENTS

1.0 INTRODUCTION....1
1.1 Site Information....1
1.2 Site Geology....1
1.3 Regulatory Status....2
1.4 Groundwater Monitoring History....2

2.0 FACILITY MONITORING PROGRAM....3
2.1 Groundwater Monitoring Program....3
2.2 Surface Water Monitoring Program....5

3.0 SECOND SEMIANNUAL SAMPLING EVENT OF 2015....6
3.1 Field Work....6
3.2 Laboratory Analysis and JOYCE Quality Control....7

4.0 ANALYTICAL RESULTS AND STATISTICAL ANALYSIS....8
4.1 Analytical Results for Inorganic Constituents....8
4.2 Analytical Results for Organic Constituents....9
4.3 Statistical Analyses....9
4.3.1 Statistical Methods and Background....9
4.3.2 Statistical Analyses of Inorganic Constituents....10
4.4 Analytical Results for Surface Water....10

5.0 EVALUATION OF MONITORED NATURAL ATTENUATION (MNA)....10
5.1 MNA Parameters and Biodegradation Screening Matrix....10
5.2 Biochlor Modeling and Mass-Balance Assessment....12
5.3 Trend Analysis and Plume Stability....13

6.0 HYDROGEOLOGICAL CONDITIONS....13

7.0 CONCLUSIONS....14

8.0 REFERENCES....15

9.0 ACRONYMS....16

TABLE OF CONTENTS (CONTINUED)

Tables:

Table 1	Historical Groundwater Elevation Data
Table 2	Field Parameters (December 2015)
Table 3	Quantified Detections of Groundwater Constituents (December 2015)
Table 4	Exceedances of Groundwater Standards (December 2015)
Table 5	Statistical Background Analyses
Table 6	MNA Parameters (December 2015)
Table 7	Biodegradation Screening Matrix
Table 8	Hydraulic Gradients and Groundwater Flow Velocities

Charts:

Chart 1	Benzene Concentrations vs. Time
Chart 2	1,4-Dichlorobenzene Concentrations vs. Time
Chart 3	1,1-Dichloroethane Concentrations vs. Time
Chart 4	1,2-Dichloroethane Concentrations vs. Time
Chart 5	Tetrachloroethylene (PCE) Concentrations vs. Time
Chart 6	Trichloroethylene (TCE) Concentrations vs. Time
Chart 7	Vinyl Chloride Concentrations vs. Time
Chart 8	Methylene Chloride Concentrations vs. Time
Chart 9	alpha-BHC Concentrations vs. Time
Chart 10	beta-BHC Concentrations vs. Time

Figure:

Figure 1	Site Location Map

Drawing:

Drawing 1	Groundwater Potentiometric Surface Map

Appendices:

Appendix A	Field Data Logs
Appendix B	Laboratory Analytical Reports
Appendix C	Statistical Analyses Worksheets
Appendix D	Historical Detected Inorganic Groundwater Constituents
Appendix E	Historical Detected Organic Groundwater Constituents
Appendix F	Historical Detected Constituents in Performance & Sentinel Wells
Appendix G	Historical Detected Surface Water Constituents
Appendix H	Historical MNA Parameters
Appendix I	Biochlor Modeling Input & Output

1.0 INTRODUCTION

1.1 Site Information

The Johns River Waste Management Facility (JRWMF) is located in the north-central portion of Burke County, north of Morganton, North Carolina. The 318-acre landfill property is bounded by Lower Creek to the north and east, and the Catawba River to the south. The Catawba River forms Lake Rhodhiss along the southeastern property line (Figure 1). Lake Rhodhiss is a long, narrow lake formed by the Rhodhiss Hydroelectric Dam located approximately 12 miles downstream of the landfill. The John's River flows into the Catawba River near the southwest corner of the landfill property.

The site has rolling topography with elevations ranging from 975 feet to 1,150 feet above mean sea level (MSL). The central portion is generally gently sloping and contains the higher elevations; relatively steep slopes and significant drainage features are located around the perimeter. The 100-year flood boundary extends onto the landfill property. The adjacent property to the west of the Johns River Waste Management Facility consists of undeveloped, heavily wooded land. Properties within 2,000 feet of the landfill boundary are covered by surface water or are heavily wooded.

The unlined waste disposal unit consists of 28 acres in the southwest corner of the landfill property. The municipal solid waste (MSW) landfill began operation in April 1988, but was closed to comply with Rule .1627(c)(10)(A) of the NCSWMR, a regulation governing MSW Landfills units that were not designed with a base liner and leachate collection system. Burke County has operated a permitted Construction and Demolition (C&D) disposal area on top of the closed portions of the MSW landfill since 1998. A MSW transfer facility is located in the eastern half of the property. In 2014, Phase 1A of the C&D expansion was constructed northeast of the C&D over MSW landfill. Results of groundwater monitoring for Phase 1A will be presented in a separate report. A site plan showing all the pertinent features of the facility is provided in Drawing 1.

1.2 Site Geology

The John's River Waste Management Facility is in close proximity to the Brevard Shear Zone, and is underlain by highly metamorphosed rocks including gneiss, schist, as well as calc-silicate rocks, felsic rocks, and metavolcanic rocks. The dominant rock type at the facility is biotite-muscovite schist, as seen in outcrops, boulders, and rock cores located on site. The structures within limited outcrops indicate that these rocks are complexly-folded, with attitudes that vary from vertical to horizontal in most outcrops. The site regolith is typical of the inner piedmont and consists mostly of silty sand, clayey sand, and sandy silt. The regolith is up to 100 feet thick and varies in thickness with topography.

An abundance of rounded gravel, cobble, and boulder-sized alluvial deposits are exposed along the banks of the Catawba River, which borders the site. The greatest accumulation of these deposits is along the southwestern site boundary. These river deposits are 40 feet or more above the current river elevation and have been described as ancient river terrace deposits.

1.3 Regulatory Status

The following report of groundwater monitoring data from the JRWMF has been prepared in accordance with the North Carolina Solid Waste Management Rules (NCSWMR) 15A NCAC 13B §.1632 (Groundwater Sampling & Analysis Requirements) §.1633 (Detection Monitoring Program), and §.1634 (Assessment Monitoring Program). The facility has operated under these programs under the auspices the North Carolina Department of Environment and Natural Resources (NCDENR), which is now the Department of Environmental Quality (NCDEQ). To avoid confusion, NCDEQ will be used in reference to this department throughout this report even in reference to past events or documents when it was the NCDENR.

The C&D over MSW landfill has been in the Assessment Monitoring Program since August 1995. In January 2000, Burke County submitted a *Water Quality Assessment Report* (WQAR), for the landfill to the NCDEQ. The WQAR determined that the constituents-of-concern (COCs) at the landfill were several volatile organic compounds (VOCs), specifically: benzene; 1,4-dichlorobenzene; methylene chloride; tetrachloroethylene; and trichloroethylene.

The JRWMF entered the Corrective Action Program following the correspondence received from the NCDEQ Solid Waste Section (SWS) dated August 18, 2003. An Assessment of Corrective Measures (ACM) was submitted to NCDEQ in February 2005. A public meeting was held on May 16, 2006 in order to receive public comments regarding the ACM as required by NCSWMR §.1635 (d). A *Corrective Action Plan (CAP)* was submitted to NCDEQ in June 2008 and revised in November 2008. The CAP was approved by NCDEQ in a letter dated January 29, 2009. An addendum to the facility's CAP was submitted to the NCDEQ in August 2013, adding control of landfill gas as a remedy for groundwater impacts on the northeastern side of the landfill between the old landfill and the new C&D expansion area.

1.4 Groundwater Monitoring History

- **April 1988:** Facility began operations as an MSW landfill.
- **August 1995:** Assessment Monitoring began.
- **January 1998:** Facility closed as an MSW landfill, but began operating a C&D landfill on top of the former MSW landfill.
- **January 2000:** Water Quality Assessment Report (JOYCE, 2000).
- **October 2004:** Update on Water Quality Assessment Report (JOYCE, 2004).
- **February 2005:** Assessment of Corrective Measures (ACM) (JOYCE, 2005a) and Quantitative Risk Assessment (JOYCE, 2005b).
- **May 2006:** Public Meeting for ACM.
- **June 2008:** Corrective Action Plan (CAP) submitted to NCDEQ-SWS.
- **November 2008:** CAP Revised per comments from NCDEQ-SWS & resubmitted.
- **January 2009:** CAP Approved by NCDEQ-SWS.
- **June 2009:** First Monitored Natural Attenuation (MNA) baseline sampling event.
- **May 2011:** First Corrective Action Evaluation Report (CAER).

- **April 2012:** Alternate Source Demonstration (ASD) for iron and manganese approved by NCDEQ.
- **August 2013:** Addendum to the CAP to add control of landfill gas as a remedy.

2.0 FACILITY MONITORING PROGRAM

2.1 Groundwater Monitoring Program

Groundwater monitoring at the C&D over MSW landfill is performed in accordance with NCSWMR §.1634, the site's Transition Plan (JOYCE, April 1994), and the sites Corrective Action Monitoring Plan (CAMP) (Joyce, 2008) Groundwater samples are collected semiannually and analyzed for constituents according to the sampling plan submitted to the SWS on October 29, 1999. Following is a summary of the compliance monitoring wells and other wells in the immediate vicinity of the landfill.

Well ID	Date Installed	Classification	Monitoring Program	Total Depth of Well (ft)	Lithology of Screened Interval	Constituent List
MW-8	9-15-87	not used	-	39.5	Saprolite	-
MW-9	8-31-94	Abandoned/ Former Bkgnd.	-	-	-	-
MW-10	9-02-94	Compliance	Assessment	23.0	Saprolite	Comp.
MW-11	9-02-94	Compliance/ Performance	Assessment/ Cor. Act.	43.0	Saprolite	Comp., MNA*
MW-12	9-01-94	Compliance/ Performance	Assessment/ Cor. Act.	51.5	Bedrock	Comp., MNA*
MW-13	8-31-94	Compliance	Assessment	58.0	Bedrock	Comp.
MW-14	6-07-96	not used	-	21.5	Saprolite	-
MW-15S	6-04-96	not used	-	54.0	Saprolite	-
MW-15D	6-04-96	not used	-	118.5	Bedrock	-
MW-16S	3-08-99	Compliance/ Performance	Assessment/ Cor. Act.	20.0	Saprolite	Comp., MNA*
MW-16D	3-10-99	Compliance	Detection	120.0	Bedrock	Comp.
MW-17	3-08-99	Not used/ Former Bkgnd.	-	52.0	Bedrock	-
MW-18	4-07-09	Sentinel**	Corrective Action	12.0	Alluvial Soil	COCs, MNA*
MW-19	4-07-09	Sentinel**	Corrective Action	13.0	Alluvial Soil	COCs, MNA*
MW-20	5-18-95	Former Bkgnd./ Phase 1A Compliance	Assessment	67.0	Saprolite	Comp.
MW-21	5-18-95	Background	Assessment/ Cor. Act.	45.0	Saprolite	Comp., MNA*
MW-36	5-08-11	Performance***	Corrective Action	43.0	Bedrock	COCs, LFG
MW-38	5-09-11	Phase 1A Compliance/ Performance***	Corrective Action	71.0	Bedrock	COCs, LFG

Notes: **Comp. =** Compliance Parameters: NCSWMR Appendix I and/or Appendix II organics and inorganics plus C&D parameters, as required for routine assessment or detection monitoring.

COCs = Constituents of Concern.

MNA = Monitored Natural Attenuation Parameters: Temperature, pH, specific conductance, oxidation reduction potential, dissolved oxygen, nitrate, sulfate, chloride, dissolved hydrogen, sulfide, alkalinity, TOC, methane, ethane, ethene, volatile fatty acids, carbon dioxide, ferrous iron, and turbidity.

LFG = Landfill Gas Indicators: Dissolved CH_4 and dissolved CO_2.

* After the baseline period, the NCDEQ approved alternate frequencies for carbon dioxide, sulfide, volatile fatty acids, ethane, and ethylene. These parameters will be monitored during both semiannual events every third year.

** After the baseline period, sampling frequency for sentinel wells was changed to annual.

*** Performance wells (MW-36& MW-38) for the control of landfill gas remedy were added in the August 2013 CAP Addendum. MW-38 is also a compliance well for Phase 1A.

The current compliance groundwater monitoring network at the facility consists of one upgradient well (MW-21), and six downgradient wells (MW-10, MW-11, MW-12 MW-13, MW-16S, and MW-16D). In March 1999, monitoring wells MW-16S and MW-16D were installed as downgradient monitoring wells and well MW-17 was installed as a replacement for upgradient background well MW-9. These wells were incorporated into the compliance monitoring network during the second semiannual groundwater monitoring event of 2005 after receiving approval from the SWS in a letter dated August 1, 2005. The letter also gave approval to drop MW-9 from the compliance monitoring network. MW-9 was abandoned in July 2006. There are several other monitoring wells at the facility (including MW-8, MW-14, MW-15S, and MW-15D) and several piezometers that have been used in the past to collect groundwater data to supplement the data from the compliance monitoring wells. Sentinel wells MW-18 and MW-19 were installed on April 7, 2009 in accordance with the facility's Corrective Action Plan.

Due to organic detections in MW-17, a request was submitted in August 2010 to replace MW-17 with MW-20 as the facility background well. MW-20 (originally named PZ-4) was installed as a piezometer in 1995 for site characterization. The NCDEQ-SWS requested that we sample both MW-17 and MW-20 for the next 2 sampling events (November 2010 and June 2011), and then submit a revised Water Quality Monitoring Plan to incorporate MW-20 into the compliance network as the new background well. MW-20 served as the background well until August 2014 when the new Permit to Operate for Phase 1A C&D Landfill expansion was issued by the North Carolina Department of Environment and Natural Resources. MW-20 was replaced by MW-21, (formerly PZ-1). MW-21 will serve as the new background monitoring well for both Phase 1A and the old C&D over MSW landfills. The former background well for the old C&D over MSW landfill, MW-20, which is located side-gradient of and to the northeast of Phase 1A, will continue to be sampled as a compliance well for Phase 1A.

The wells in assessment monitoring (MW-10, MW-11, MW-12, MW-13, MW-16S, and MW-20) are analyzed for the NCSWMR Appendix I list of constituents plus additional detected Appendix II constituents and additional required C&D parameters during the first semiannual event, and for all constituents listed in NCSWMR Appendix II plus additional required C&D parameters during the second semiannual monitoring event. Monitoring well MW-16D is analyzed for the

NCSWMR Appendix I plus additional required C&D parameters list during both events. Monitoring wells MW-11, MW-12, MW-16S, and MW-21 are also sampled for MNA parameters during each sampling event.

In accordance with the CAP for the facility, MNA baseline sampling was initiated with the June 2009 sampling event and continued through the November 2010 sampling event. The baseline data were evaluated in a CAER dated May 2011. After reviewing the CAER, in a letter dated July 12, 2011, the NCDEQ agreed to a reduced frequency for monitoring carbon dioxide, sulfide, volatile fatty acids, ethane, and ethylene. These parameters will be sampled during both semiannual sampling events every third year. The next time these parameters will be monitored will be during the two semiannual events of 2016.

The Corrective Action Monitoring Plan (CAMP) for the facility requires samples from sentinel wells MW-18 and MW-19 to be analyzed for the facility's Constituents of Concern (COC's). The COC list included the following constituents in 2015:

- Benzene;
- 1,4-Dichlorobenzene;
- Methylene chloride;
- Tetrachloroethylene (PCE);
- Trichloroethylene (TCE);
- 1,1-Dichloroethane;
- 1,2-Dichloroethane;
- Vinyl chloride.
- Alpha-BHC

After the 2011 CAER, the NCDEQ agreed that sentinel wells MW-18 and MW-19 need only be sampled annually. MW-18 and MW-19 were last sampled during the May 2015 event. During future events, MW-18 and MW-19 will be monitored for the above COC list plus required MNA parameters annually.

An addendum to the facility's CAP was submitted to the NCDEQ in August 2013, adding control of landfill gas as a remedy for groundwater impacts on the northeastern side of the landfill between the old landfill and the new C&D expansion area. In accordance with the CAP addendum, piezometers PZ-36 and PZ-38 were converted to permanent monitoring wells MW-36 and MW-38 to act as performance wells for the control of LFG remedy. MW-36 and MW-38 are to be sampled semiannually for the current COC list, plus dissolved methane and dissolved carbon dioxide.

2.2 Surface Water Monitoring Program

The current surface water monitoring points are SMP-5, SMP-6, and SMP-7. Surface water monitoring point SMP-5 (located at the southwestern property line) and SMP-6 (located at the southeastern property line) are both located downstream from existing sediment basins. Surface water monitoring point SMP-7 is located downstream from the new Phase 1A expansion.

Surface water samples are analyzed for the NCSWMR Appendix I list of constituents plus detected Appendix II constituents during both semiannual events.

Surface Point	Classification	Monitoring Program	Location
SMP-5	Compliance	Surface Water	Creek on west side of landfill, downstream of sediment basin.
SMP-6	Compliance	Surface Water	Creek on east side of landfill, downstream of sediment basin.
SMP-7	Compliance	Surface Water	Creek southeast of Phase 1A and east of sediment basin SB-2A. Downstream of PZ-12.

3.0 SECOND SEMIANNUAL SAMPLING EVENT OF 2015

3.1 Field Work

In order to detect potential releases of leachate and/or landfill gas migration in a timely manner, a visual inspection program has been implemented at the John's River Waste Management Facility. This inspection program involves field personnel making the following observations:

- Indications of stress on the biological community (e.g., dead or dying vegetation);
- Indications of leachate impact (e.g., seeps, impacted surface water);
- Observations of erosion;
- Condition of monitoring wells; and
- Negative changes around the waste facility.

On December 7-9, 2015, personnel from JOYCE visited John's River Waste Management Facility to purge and sample monitoring wells MW-10, MW-11, MW-12, MW-13, MW-16S, MW-16D, MW-20, MW-21 MW-36, and MW-38. Surface monitoring points SMP-5, SMP-6, and SMP-7 were also sampled during the December 2015 event.

Depth-to-water measurements were obtained to the nearest 0.01 foot using an electronic water level indicator for all monitoring wells in the compliance network prior to purging. Current and historical groundwater elevation data are presented in Table 1. Monitoring wells were purged and sampled using disposable bailers. Measurements of temperature, pH, specific conductivity, and turbidity were recorded in the site log book as well as on field data logs prior to purging, after each purge volume, and during sampling. Field data logs for the December 2015 event are provided in Appendix A. Field parameter data are presented in Table 2.

Laboratory-supplied containers were prepared and labeled (either by the laboratory or in the field, as indicated) with the following information:

- Monitoring well number (completed by field personnel),
- Date and time of sample collection (completed by field personnel),
- Initials of sampling personnel (completed by field personnel),
- Project name and number (completed by the laboratory),

- Chemical preservative (completed by the laboratory); and
- Requested chemical analysis (completed by the laboratory).

Groundwater samples from each monitoring well were dispensed directly from the disposable bailers into the provided laboratory containers either immediately after purging or within 24 hours of the final purge volume. Immediately after collection, the samples were placed in a laboratory-provided cooler and chilled with ice.

Surface water samples were collected directly from stream flow by lowering the prepared sample containers into the stream flow. Care was taken not the overflow the sample containers (which could lead to preservative loss) and avoid sample-induced turbidity. At the time of sampling, surface water was also measured for temperature, pH, specific conductivity, and turbidity and recorded in the site log book. After sample collection, the samples were placed in a laboratory provided cooler and chilled on ice. Field data logs are provided in Appendix A.

On February 4, 2016, personnel from JOYCE visited John's River Waste Management Facility to purge and sample monitoring wells for verification of detections above groundwater standards for beta-BHC in MW-11; and Antimony and Chromium in MW-12 in accordance with the sampling procedures described above for the semiannual event.

3.2 Laboratory Analysis and JOYCE Quality Control

The December 2015 groundwater and surface water samples were submitted to Pace Analytical Services, Inc. of Huntersville, North Carolina under chain-of-custody control for analysis. The groundwater samples from the wells in assessment monitoring were analyzed for the NC Appendix I, plus previously detected Appendix II list of constituents, plus additional required C&D parameters. Groundwater from MW-16D was analyzed for the NC Appendix I list of constituents plus additional required C&D parameters. In addition, samples from corrective action wells were analyzed for the COC list plus MNA or LFG parameters as described in Section 2.1. Surface water samples were analyzed for the NC Appendix I list of constituents plus additional detected Appendix II constituents. JOYCE requested a Level II data report for the final laboratory report. The samples were received by the laboratory in good condition, properly preserved, and within required hold times.

In addition to samples collected for compliance monitoring at the John's River Waste Management Facility, a Field Blank was collected by JOYCE personnel as part of the December 2015 sampling event. Also, a Trip Blank prepared by the laboratory accompanied the volatile sampling containers from and to the laboratory. The Field Blank was analyzed for the NC Appendix I, plus previously detected Appendix II list of constituents, plus iron, manganese and tetrahydrofuran, and the Trip Blank was analyzed for Appendix I list of constituents plus additional detected Appendix II volatile organic compounds and tetrahydrofuran.

Upon receipt of the laboratory data package, JOYCE personnel reviewed the data package for quality assurance/quality control (QA/QC) purposes and for possible regulatory issues. If any QA/QC or regulatory issues were found, the laboratory would be contacted to resolve the issue,

and a resampling event might be scheduled, if needed. The laboratory analytical packages can be found in Appendix B of this report. The data package was reviewed for the following:

- General typographical errors;
- Correct analyses performed and within method specified hold times;
- Biased data results based on Surrogate Recoveries, Matrix Spike, Matrix Spike Duplicate, and Laboratory Control Samples;
- Blank-qualified data (B-flags);
- Detections exceeding the North Carolina 15A NCAC 2L .0202 Groundwater Standards (NC2L), NCDEQ-SWS Groundwater Water Protection Standards (GWPS), and North Carolina 15A NCAC 2B Surface Water Standards (NC2B); and
- Detections that are above historical levels.

4.0 ANALYTICAL RESULTS AND STATISTICAL ANALYSIS

4.1 Analytical Results for Inorganic Constituents

Eight metal constituents and three inorganic indicators were detected above the SWSL in one or more monitoring wells during the December 2015 sampling event. Of these, six inorganic metal constituents were initially detected above an NC 2L/GWPS in one or more monitoring wells. Antimony and vanadium were detected above the relevant GWPS and chromium was detected above the NC 2L standard in MW-12. The results were not consistent with historically data for MW-12, so a confirmation was requested from Pace Analytical for antimony, vanadium and chromium in MW-12. Pace reran the requested analysis and appended them to the laboratory report. The results confirmed the quantified detections of antimony and chromium, but not vanadium. These results were still suspect based on historical data and higher turbidity in the samples, so Joyce performed a verification (resample) event on February 4, 2016 for antimony and chromium in MW-12; the exceedence of the NC 2L standard for chromium and GWPS for antimony were not verified; therefore, these are not considered to be valid exceedances.

Cobalt was detected above the GWPS in all wells except MW-16D and MW-21. The cobalt detections were not above the calculated background concentrations (see Section 4.3.2); therefore, these detections do not constitute Groundwater Protection Standards (GPS) exceedances per rule .1634(g)(5) of the NCSWMR. Iron and manganese were in exceedance of the NC 2L standards in all wells with the exception of iron in monitoring well MW-16D. An ASD was approved for iron and manganese by NCDEQ on April 12, 2012; therefore, these are not considered exceedances.

Table 3 presents the constituents with quantified detections during the December 2015 sampling event, and Table 4 presents a summary of the exceedances of groundwater standards. Both tables include the results from laboratory confirmation re-analysis and the verification sampling event. In general, the inorganic detections and concentrations are consistent with historical data except for the initial exceedances in MW-12, which were later refuted. Historical data for inorganic constituents are summarized in Appendix D.

4.2 Analytical Results for Organic Constituents

Eight organic constituents were detected above the NC 2L/GWPS in one or more monitoring wells during the December 2015 sampling event, including benzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, methylene chloride, tetrachloroethene, vinyl chloride, and beta-BHC. The first time detection of beta-BHC in MW-11 was not historically consistent, so a verification sample was collected from MW-11 on February 4, 2016; the results confirmed the detection and exceedence of beta-BHC in MW-11. Acrolein was reported at an estimated concentration in MW-21, but was blank qualified from the Trip Blank. Table 3 presents the constituents with quantified detections during the December 2015 sampling event, and Table 4 presents a summary of the exceedances of groundwater standards. In general, the detections and concentrations are consistent with historical data. Historical data for organic constituents in compliance wells are summarized in Appendix E, and historical data for organic constituents in performance and sentinel wells are summarized in Appendix F.

4.3 Statistical Analyses

4.3.1 Statistical Methods and Background

MW-9 was the facility background well from 1994 until May 2005, when it was abandoned. MW-17 was the facility background well from May 1999 until June 2011. Both MW-9 and MW-17 were sampled between May 1998 and May 2005. Due to gas related impacts to MW-17, MW-20 became the facility background well in December 2010. Both MW-17 and MW-20 were sampled between December 2010 and June 2011. With the opening of Phase 1A of the C&D expansion in August 2014, MW-21 (formerly PZ-1) became the facility background well and MW-20 became a compliance well for Phase 1A.

Facility background data used to evaluate the December 2015 groundwater monitoring data include all data collected for wells MW-9, MW-17, and MW-20 from September 1994 through the May 2014 event plus the October 2014 through December 2015 data from MW-21. Alternatively, intrawell statistics may be used to evaluate the statistical background for a specific well. Data used for intrawell statistics will use all available data for that well, excluding the last eight sampling events.

The background data for inorganic constituents were evaluated using the Shapiro-Wilk Test, Parametric Prediction Limits, Parametric Tolerance Intervals, Aitchison's Adjustment, Non-Parametric Prediction Limits, and/or Poisson Prediction Limits as appropriate. Background data, tests for normality, outliers, Aitchison's adjustment, tolerance interval, or prediction limits are used, as appropriate based on the background data. The statistical test by which downgradient data are compared to facility background data is based upon the nature of the data and the number of data values that are below the laboratory limit of detection. All statistical tests are evaluated at the 0.05 level of significance, 95% confidence level, and are conducted as one-tailed tests.

4.3.2 Statistical Analyses of Inorganic Constituents

The inorganic constituents detected at quantifiable concentrations (excluding blank-qualified data) above the North Carolina SWSL in down gradient monitoring wells in the December 2015 sampling event were barium, cobalt, iron, manganese, vanadium, and zinc. Since barium, vanadium, and zinc were not detected in exceedance of NC2L/GWPS standards, there is no need to calculate statistical background for these constituents. Iron and manganese were addressed in an ASD approved by NCDEQ in April 2012.

Interwell statistics were used to determine background values of 96.6 µg/L for cobalt and 630 µg/L for vanadium. A summary of the statistical analyses is presented in Table 5, and the detailed statistical analyses worksheets are included in Appendix C.

Since the background concentrations of cobalt, thallium, and vanadium are greater than their respective GWPS, the background values will be considered the applicable GPS for these constituents per rule .1634(g)(5) of the NCSWMR; therefore, there were no GPS exceedances for any inorganic constituents.

4.4 Analytical Results for Surface Water

Surface monitoring points SMP-5, SMP-6, and SMP-7 were sampled during the December 2015 event. There were no constituents detected above the NC 2B Surface Water Standards (NC2B) in any of the samples during the December 2015 event. Barium, and vanadium, were detected in one or more surface water samples at estimated concentrations below their respective SWSL. No organic constituents were detected in any of the surface water samples. The December 2015 surface water results are consistent with the historical data. Current and historical surface water data can be found in Appendix G.

5.0 EVALUATION OF MONITORED NATURAL ATTENUATION (MNA)

5.1 MNA Parameters and Biodegradation Screening Matrix

In accordance with the CAP for the facility, MNA baseline sampling was initiated with the June 2009 sampling event and continued through the November 2010 sampling event. The baseline data were evaluated in a CAER dated May 2011. The December 2015 sampling event was the tenth post-baseline event. MNA parameter data were obtained for the following wells: the site background well (MW-21); and downgradient compliance/performance wells MW-11, MW-12, and MW-16S. MNA field parameters included temperature, pH, specific conductance, oxidation-reduction potential (ORP), turbidity, dissolved oxygen, dissolved carbon dioxide and ferrous iron. MNA laboratory parameters included dissolved hydrogen, alkalinity, TOC, dissolved methane, nitrate, sulfate, and chloride. Table 6 summarizes the MNA data for the December 2015 event, and historical MNA data are presented in Appendix H. Field data logs and laboratory reports are included in Appendices A and B, respectively.

The MNA parameter data were evaluated in general accordance with the United States Environmental Protection Agency's (EPA's) *Technical Protocol Manual* (EPA, 1998) to

determine whether the conditions are conducive to, or whether there is evidence for anaerobic degradation of the chlorinated hydrocarbons. Specifically, the results were evaluated according to the weighted system presented in Table 2.3 of the *Technical Protocol Manual*, referred to hereafter as the Biodegradation Screening Matrix. According to this manual, a score less than 5 indicates that there is inadequate evidence for anaerobic natural attenuation, a score of 6 to 14 indicates that there is limited evidence for anaerobic natural attenuation, a score of 15 to 20 indicates that there is adequate evidence for anaerobic natural attenuation, and a score greater than 20 indicates that there is strong evidence that anaerobic natural attenuation is occurring.

The MNA evaluation was performed based on the results from the December 2015 sampling event for downgradient wells within the contaminant plume, compared where appropriate to the background well (MW-21). The Biodegradation Screening Matrix is presented in Table 7 of this report.

One difficulty in evaluation of the Screening Matrix is that the matrix assumes some compounds (such as, but not limited to methane and vinyl chloride) are daughter products of biodegradation within the plume; however, at a landfill we cannot eliminate the possibility that they may be contaminants released directly from the landfill. If we include the scores for these potential daughter products, our total score could be artificially high; on the other hand, if we exclude them, the score might be artificially low. Table 7 presents scoring results both with and without the questionable daughter product scores.

The fact that we are past the baseline sampling period and the sampling frequencies for some parameters have been reduced creates another difficulty. How should we score parameters that were not monitored during the December 2015 sampling event? We have historical data for these parameters indicating that some would likely contribute points and some would not. To ignore the historical data and treat all unmonitored parameters as if they were negative results would give an artificially low score; however, using data from previous events may not give an accurate result. Table 7 presents scoring results both with and without points based on historical rather than current data.

The following table summarizes the scoring results from Table 7 for all four options for interpreting the data. The scores ranged from 14 (limited evidence of natural attenuation) to 30 (strong evidence of natural attenuation). In reality, the best score is probably in the middle of this range, indicating good evidence of natural attenuation.

	Points Awarded including DP	Points Awarded excluding DP
Points Awarded excluding HD	27	14
Points Awarded including HD	28	14

DP = Points for possible daughter products.
HD = Points based on historical data.

5.2 Biochlor Modeling and Mass-Balance Assessment

Anaerobic degradation of organic constituents, specifically chlorinated ethenes and ethanes, was modeled using the EPA Biochlor System. The Biochlor model was set up to model flow, dispersion, advection, adsorption, and biotransformation along a generalized flow line running from the waste unit south toward the river. The concentration in the source area was set equal to the December 2015 sampling results from MW-13. Wells MW-11, MW-12, and MW-16S were included in the modeling based on their respective distances from the southern edge of waste as summarized below:

WELL:	MW-13	MW-11	MW-12	MW-16S	MW-18	MW-19
MODELED DISTANCE FROM THE SOURCE (feet):	0	20	60	135	210	430

Modeling was done for both ethenes (a.k.a. - ethylenes) and ethanes. The ethene degradation sequence goes from tetrachloroethylene (PCE) to trichloroethylene (TCE), to dichloroethylenes (DCE), to vinyl chloride (VC). The ethane degradation sequence goes from trichloroethane (TCA) to dichloroethanes (DCA) to chloroethane (CA). Note that DCE is the sum of detected cis-1,2-dichloroethylene, trans-1,2-dichlorotheylene, and 1,1-dichloroethylene. Similarly, DCA is the sum of 1,1-dichloroethane and 1,2-dichloroethane.

The plume was assumed to be 1600 feet wide and 500 feet long, based on the width of the plume at the southern edge of waste and the average distance from the southern edge of waste to the river. Simulation time was 17 years, based on the time between closure of the MSW landfill and the October 2014 sampling event. A seepage velocity of 144.0 feet/year was used based on groundwater flow rate calculations for the December 2015 event as presented in Section 6.0 of this report. The input and output of the Biochlor modeling are presented in Appendix D.

The results of the Biochlor modeling indicate reasonable agreement between the modeled plume degradation and the analytical results for both ethenes and ethanes. In general, the observed down-gradient concentrations were less than or equal modeled concentrations except for VC and CA, which are the final daughter products. The fact that VC and CA are higher downgradient is evidence that reductive dehalogenation is occurring. This supports the contention that biodegradation is proceeding at an acceptable rate. The mass rate calculations from the Biochlor modeling are summarized below. Cells labeled “indeterminate” in the following tables indicate that the data were insufficient for the software to calculate the values. The results indicate a large percentage of the contaminants are being removed by Biotransformation.

Ethenes	PCE	TCE	DCE	VC
Mass Removed	2.4 Kg	1.4 Kg	8.3 Kg	indeterminate
% Biotransformed	80.8%	73.0%	60.9%	indeterminate
% Change in Mass Rate	99.5%	98.2%	92.3%	indeterminate

Ethanes	DCA
Mass Removed	14.6 Kg
% Biotransformed	79.6%
% Change in Mass Rate	99.3%

5.3 Trend Analysis and Plume Stability

Charts 1-10 show the concentration of key constituents versus time for the wells MW-10, MW-11, MW-12, MW-13, and MW-16S from the earliest recorded detections through December 2015. In general, most constituents in most wells show decreasing or stable trends, especially over the last 3-5 years. The clearest long-term increasing trend is for benzene and MW-13; however, the benzene trend appears to have stabilized in the last few years. 1,4-dichlorobenzene also shows a clear upward trend in MW-13. MW-13 is located farther north (upgradient) than the other downgradient wells and is representative of the central part of the plume whereas MW-11, MW-12, and MW-16S are located nearer the southern leading edge of the plume, and MW-10 is located near the western edge of the plume. The fact that the concentrations in the central part of the plume appear to be stable or increasing while the concentrations near the leading edge seem to be stable or decreasing supports the contention that natural attenuation is adequately controlling the plume.

Alpha-BHC has had sporadic detections in MW-13 over the last several sampling events, and beta-BHC had a confirmed detection in MW-11 for the first time during the December 2016 event. There is not enough consistent data for these constituents to establish any trends.

6.0 HYDROGEOLOGICAL CONDITIONS

Based on outcrop and drilling information, the water table appears to occur within regolith everywhere across the site. This regolith consists of alluvium, residual soils, saprolite, and variably fractured and weathered layered metamorphic rock. Inspection of drill cuttings and site outcrops indicates that water in the regolith is transmitted largely through fractures. In this regard, regolith behaves similar to unweathered bedrock, except that fractures are more numerous and better connected in the regolith, and will tend to have more isotropic hydraulic properties. Along the low-lying areas of the Catawba River and its tributaries, the water table occurs within surficial alluvial deposits overlying the residual soils and weathered bedrock.

Groundwater discharges into creeks to the east and west of the landfill and to the Catawba River to the south. A groundwater potentiometric surface map, developed from static water level data obtained in December 2015, is presented as Drawing 1. The potentiometric surface map depicts groundwater flow primarily to the south.

Depth to groundwater was measured in the compliance monitoring wells at the site prior to sampling. The December 2015 and historical groundwater elevations are provided in Table 1. The groundwater elevations were calculated relative to the surveyed measuring point (top of casing) for each monitoring well. Horizontal groundwater gradients along representative flow paths were estimated from the December 2015 groundwater contours shown on Drawing 1 and calculated gradients and flow velocities are summarized in Table 8. Horizontal gradients across the site ranged from 0.039 to 0.055 ft/ft, with an average of approximately 0.048 ft/ft. This is consistent with previous estimates.

Linear groundwater flow velocities for wells screened in saprolite were computed using the modified Darcy equation: $V = Ki/n_e$, where V = average linear velocity, K = hydraulic conductivity, i = horizontal hydraulic gradient, and n_e = effective porosity. The mean of hydraulic conductivities from slug-tests conducted in 1995 and 2015 (K = 3.28 ft/day) was used in these calculations, along with an estimated effective porosity of n_e = 0.40 (40%) for saprolite based on laboratory porosities for soil samples from the site.

The estimated linear groundwater flow velocity under the facility ranged from 140-164 feet/year, with an average flow velocity of approximately 144 feet/year (Table 8). The modified Darcy equation makes the simplifying assumptions of a homogeneous and isotropic aquifer, which may yield inaccurate results when applied to heterogeneous and/or anisotropic conditions such as are believed to exist at this site.

The groundwater flow direction and rate have shown no significant seasonal variations over several years of monitoring. The groundwater flow regime on this site is well constrained and predictable. Migration of groundwater contaminants are expected to follow the general groundwater flow paths and there are no known preferred pathways or barriers to groundwater flow that could significantly affect plume migration or the effectiveness of the groundwater monitoring network to monitoring plume migration. The current groundwater monitoring network remains sufficient for monitoring the groundwater at this facility.

7.0 CONCLUSIONS

There were several organic constituents detected above the NC 2L Groundwater Standards at the John's River Landfill during the December 2015 sampling event. With the exception of the new exceedance for beta-BHC in MW-11, these results are generally consistent with previous sampling events and are being addressed by the Corrective Action Plan for the facility. Beta-BHC will be added to the Constituents of Concern list for the site.

Evaluation of MNA data, Bioplume modeling, and trends of key constituents all indicate that natural attenuation is actively occurring on the site and that it is adequately controlling the constituent plume. A complete Corrective Action Evaluation Report (CAER) will be submitted concurrently with this WQMR.

Cobalt was detected above the GWPS; however it was not detected above the calculated background concentrations; therefore, the background is the appropriate ground water protection standards for cobalt and thallium per rule .1635 (g) of the NCSWMR. An ASD was approved for iron and manganese by NCDEQ on April 12, 2012. Anomalous detections of several metals in MW-12 were refuted either by laboratory re-run of analyses or by the results of a verification sampling event. Otherwise, the inorganic results from the December 2015 are consistent with historical data.

There were no organic or inorganic detections above the NC 2B Surface Water Standards for surface water samples from the December 2015 sampling event.

The groundwater flow regime is consistent with previous events and the groundwater monitoring network remains adequate to monitor the site. Based on analytical results from the December 2015 sampling event, John's River Landfill will remain in Assessment Monitoring and Corrective Action. The next semiannual sampling event is scheduled for the second quarter of 2016.

8.0 REFERENCES

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9.0 ACRONYMS

ACM	Assessment of Corrective Measures (Report)
AMSL	Above Mean Sea Level
AOC	Area of Concern
BGS	Below Ground Surface
C&D	Construction and Demolition Waste
CAP	Corrective Action Plan (Report)
CAER	Corrective Action Evaluation Report (Report)

CAMP	Corrective Action Monitoring Plan (Report)
CAS	Chemical Abstracts Service
CFR	Code of Federal Regulations
CPVC	Chlorinated Poly Vinyl Chloride
COC	Contaminant of Concern (for corrective action)
COC	Chain of Custody (for sampling and lab reports)
DL	Detection Limit (for laboratory data)
DO	Dissolved Oxygen
EPA	United States Environmental Protection Agency (or USEPA)
GWPS	Groundwater Protection Standards (Established by NCDEQ-SWS)
JOYCE	Joyce Engineering
LFG	Landfill Gas
MNA	Monitored Natural Attenuation
MSW	Municipal Solid Waste
MW	Monitoring Well
NC2B	North Carolina Surface Water Standards found in 15A NCAC 2B
NC2L	North Carolina Groundwater Standards found in 15A NCAC 2L
NCAC	North Carolina Administrative Code
NCDENR	North Carolina Dept. of Environment and Natural Resources (now the NCDEQ)
NCDEQ	North Carolina Dept. of Environmental Quality (formerly the NCDENR)
NCGS	North Carolina Geological Survey
NCSWMR	North Carolina Solid Waste Management Regulations (15A NCAC 13B.1600)
ND	Not Detected (for laboratory data)
NES	Nature and Extent Study (Report)
O&M	Operations and Maintenance
QL	Quantitation Limit (for laboratory data)
QRA	Quantitative Risk Assessment (Report)
RL	Reporting Limit (for laboratory data)
RQD	Rock Quality Designation
SPT	Standard Penetration Test
SSI	Statistically Significant Increase (above background concentrations)
SWQS	Surface Water Quality Standards
SWS	Solid Waste Section (of NCDEQ-Division of Waste Management)
SWSL	North Carolina Solid Waste Section Reporting Limits
TOC	Top of Casing (Well)
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency (or EPA)
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WQMP	Water Quality Monitoring Plan (Report)

TABLES

Table 1	Historical Groundwater Elevation Data
Table 2	Field Parameters (May 2015)
Table 3	Quantified Detections of Groundwater Constituents (May 2015)
Table 4	Exceedances of Groundwater Standards (May 2015)
Table 5	Statistical Background Analyses
Table 6	MNA Parameters (May 2015)
Table 7	Biodegradation Screening Matrix
Table 8	Hydraulic Gradients and Groundwater Flow Velocities

TABLE 1: Historical Groundwater Elevations

Location	Background				Downgradient										Sentinel		Performance	
	MW-9	MW-17	MW-20	MW-21	MW-8	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15S	MW-15D	MW-16S	MW-16D	MW-18	MW-19	MW-36	MW-38
TOC Elevation	1145.97	1121.77	1115.04	1099.86	1072.55	1012.23	1028.58	1034.22	1059.40	1017.96	1069.04	1069.06	1007.67	1007.87	998.49	999.95	1099.52	1087.76
Well Depth	67.63	43.35	67.00	41.00	39.35	24.16	44.20	53.00	59.00	23.20	56.16	121.39	21.45	90.50	12.00	15.00	45.00	73.13
Jul-95	1089.48	NI	NM	NM	1040.88	998.40	994.13	993.65	1009.67	NI	NI	NI	NI	NI	NI	NI	NI	NI
Sep-95	1090.60	NI	NM	NM	1040.80	997.73	993.10	993.54	1008.88	NI	NI	NI	NI	NI	NI	NI	NI	NI
Oct-95	1090.32	NI	NM	NM	1041.16	998.75	994.38	994.32	1009.46	NI	NI	NI	NI	NI	NI	NI	NI	NI
Apr-96	1090.66	NI	NM	NM	1041.08	998.78	993.30	993.84	1010.40	NI	NI	NI	NI	NI	NI	NI	NI	NI
Jun-96	1089.40	NI	NM	NM	1040.78	998.41	992.80	994.50	1010.03	1007.01	1022.70	1023.38	NI	NI	NI	NI	NI	NI
Dec-96	1087.28	NI	NM	NM	NM	NM	NM	994.66	1009.17	1007.14	1021.30	1021.80	NI	NI	NI	NI	NI	NI
May-97	1087.07	NI	NM	NM	NM	998.66	993.04	993.54	1009.52	NM	NM	NM	NI	NI	NI	NI	NI	NI
Nov-97	1091.49	NI	NM	NM	NM	999.00	993.58	993.98	1010.40	NM	NM	NM	NI	NI	NI	NI	NI	NI
May-98	1090.97	NI	NM	NM	NM	999.08	993.58	994.52	1011.57	NM	NM	NM	NI	NI	NI	NI	NI	NI
Nov-98	1086.65	NI	NM	NM	NM	998.66	992.83	993.42	1010.01	NM	NM	NM	NI	NI	NI	NI	NI	NI
Apr-99	1086.35	NM	NM	NM	1039.87	998.19	992.73	993.12	1009.40	NM	1023.26	1023.40	NM	NM	NI	NI	NI	NI
May-99	1087.70	NM	NM	NM	NM	998.98	1003.35	993.78	1010.54	NM	NM	NM	NM	NM	NI	NI	NI	NI
Oct-99	1085.87	1079.43	NM	NM	NM	998.84	992.86	993.43	1009.65	NM	NM	NM	992.15	993.94	NI	NI	NI	NI
May-00	1085.09	1076.55	NM	NM	NM	999.38	993.71	994.01	1009.75	NM	NM	NM	992.59	994.09	NI	NI	NI	NI
Nov-00	1085.22	1076.60	NM	NM	NM	998.60	992.21	992.46	1008.89	NM	NM	NM	991.07	992.62	NI	NI	NI	NI
May-01	1085.76	1077.06	NM	NM	NM	997.85	992.75	993.41	1009.62	NM	NM	NM	992.07	993.59	NI	NI	NI	NI
Nov-01	1085.84	1079.07	NM	NM	NM	998.43	992.22	992.90	1008.79	NM	NM	NM	991.36	992.84	NI	NI	NI	NI
May-02	1086.29	1080.36	NM	NM	NM	998.58	992.83	993.48	1009.50	NM	1021.94	1022.30	992.02	993.47	NI	NI	NI	NI
Nov-02	1085.19	1079.71	NM	NM	NM	999.04	993.63	993.93	1009.24	NM	1021.25	1021.59	992.66	993.60	NI	NI	NI	NI
May-03	1094.25	1092.35	NM	NM	NM	999.53	994.16	994.96	1012.95	NM	NM	NM	993.03	994.22	NI	NI	NI	NI
Nov-03	1089.49	1087.02	NM	NM	1041.05	999.43	993.78	994.67	1011.60	1008.06	1027.08	1028.29	992.84	994.19	NI	NI	NI	NI
May-04	1086.81	1082.54	NM	NM	1040.28	999.22	993.25	993.85	1011.40	1007.96	1025.71	1026.59	992.18	993.87	NI	NI	NI	NI
Nov-04	1085.92	1080.38	NM	NM	NM	999.26	993.58	993.72	1010.78	NM	NM	NM	992.57	993.67	NI	NI	NI	NI
May-05	1087.82	1083.35	NM	NM	NM	999.01	993.17	993.87	1011.26	NM	NM	NM	992.30	993.72	NI	NI	NI	NI
Nov-05	AB	1082.66	NM	NM	NM	998.91	992.76	993.50	1010.59	NM	NM	NM	991.92	993.19	NI	NI	NI	NI
25-May-06	AB	1081.13	NM	NM	NM	998.79	992.89	993.52	1010.48	NM	NM	NM	991.97	993.42	NI	NI	NI	NI
01-Nov-06	AB	1081.19	NM	NM	NM	999.35	993.42	994.02	1010.58	1008.46	1023.28	NM	992.59	993.73	NI	NI	NI	NI
30-May-07	AB	1083.42	NM	NM	NM	998.89	992.65	993.42	1010.80	NM	NM	NM	991.84	993.47	NI	NI	NI	NI
02-Aug-07	AB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	993.28	NI	NI	NI	NI
28-Nov-07	AB	1077.85	NM	NM	NM	998.02	989.46	990.52	1009.01	NM	NM	NM	988.84	990.30	NI	NI	NI	NI
29-May-08	AB	1078.52	NM	NM	NM	998.64	992.50	993.22	1010.02	NM	NM	NM	991.74	993.13	NI	NI	NI	NI
06-Nov-08	AB	1078.77	NM	NM	NM	998.83	993.36	993.78	1009.10	NM	NM	NM	992.42	993.67	NI	NI	NI	NI
02-Jun-09	AB	1083.33	NM	NM	NM	1000.63	994.17	994.86	1011.20	NM	NM	NM	993.89	994.70	993.48	994.75	NI	NI
16-Nov-09	AB	1082.29	NM	NM	NM	999.60	994.43	994.98	1010.43	NM	NM	NM	993.53	1004.56	994.28	993.69	NI	NI

TABLE 1: Historical Groundwater Elevations

Location	Background				Downgradient										Sentinel		Performance	
	MW-9	MW-17	MW-20	MW-21	MW-8	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15S	MW-15D	MW-16S	MW-16D	MW-18	MW-19	MW-36	MW-38
TOC Elevation	1145.97	1121.77	1115.04	1099.86	1072.55	1012.23	1028.58	1034.22	1059.40	1017.96	1069.04	1069.06	1007.67	1007.87	998.49	999.95	1099.52	1087.76
Well Depth	67.63	43.35	67.00	41.00	39.35	24.16	44.20	53.00	59.00	23.20	56.16	121.39	21.45	90.50	12.00	15.00	45.00	73.13
15-Jun-10	AB	1084.81	NM	NM	NM	999.09	992.90	993.71	1011.32	NM	NM	NM	992.10	993.56	992.67	992.60	NI	NI
30-Nov-10	AB	1079.76	1056.10	NM	NM	999.24	993.14	993.56	1010.25	NM	NM	NM	992.25	992.90	992.14	992.13	NI	NI
01-Jun-11	AB	1080.66	1053.93	NM	NM	999.22	993.36	993.92	1010.62	NM	NM	NM	992.48	993.74	992.98	992.81	NM	NM
20-Dec-11	AB	1077.47	1052.27	NM	NM	999.27	993.66	994.00	1009.56	NM	NM	NM	992.67	993.88	NM	NM	NM	NM
30-May-12	AB	NM	1052.63	NM	NM	1000.32	993.37	993.93	1009.52	NM	NM	NM	992.46	993.76	993.09	993.15	NM	NM
11-Dec-12	AB	NM	1053.51	NM	NM	999.04	992.94	993.46	1009.52	NM	NM	NM	992.05	993.43	NM	NM	NM	NM
11-Jun-13	AB	NM	1055.80	NM	NM	1001.25	996.39	996.60	1011.00	NM	NM	NM	995.47	996.51	NM	NM	NM	NM
28-Oct-13	AB	NM	1060.44	NM	NM	999.42	993.13	993.80	1010.68	NM	NM	NM	992.55	993.72	993.63	992.95	NM	NM
06-May-14	AB	NM	1058.24	NM	NM	999.71	990.63	994.22	1010.84	NM	NM	NM	992.73	994.02	993.31	993.17	1069.17	1042.18
21-Oct-14	AB	NM	1056.42	1063.48	NM	999.49	993.93	994.27	1009.98	NM	1024.64	NM	992.97	994.40	NM	NM	1066.52	1045.18
21-May-15	AB	NM	1053.69	1062.18	NM	999.22	993.03	993.62	1010.18	NM	1025.17	NM	992.11	993.36	992.54	992.60	1066.03	1044.68
08-Dec-15	AB	NM	1051.65	1061.71	NM	999.49	992.25	993.42	1009.64	NM	1025.19	NM	994.47	995.17	NM	NM	1066.72	1046.24

Notes: All elevations are in feet above mean sea level. NI = Monitoring well not yet installed. NM = Groundwater level not measured. AB = Monitoring well abandoned.

TABLE 2: Field Parameters (December 2015)

WELL ID	PARAMETER	RESULT	UNITS	COLLECT DATE
MW-10	pH	5.88	S.U.	12/8/2015
MW-10	Temperature	15.8	ºC	12/8/2015
MW-10	Turbidity	17.5	NTU	12/8/2015
MW-10	Conductivity	20.0	µS	12/8/2015
MW-10	Static Water Level	12.74	ft	12/8/2015
MW-10	Well Depth	24.16	ft	12/8/2015
MW-11	pH	6.06	S.U.	12/8/2015
MW-11	Temperature	15.4	ºC	12/8/2015
MW-11	Turbidity	16.7	NTU	12/8/2015
MW-11	ORP	-21.4	mV	12/8/2015
MW-11	DO	4.62	mg/L	12/8/2015
MW-11	Ferrous Iron	3.5	mg/L	12/8/2015
MW-11	Conductivity	400.6	µS	12/8/2015
MW-11	Static Water Level	36.33	ft	12/8/2015
MW-11	Well Depth	44.2	ft	12/8/2015
MW-11	pH	5.91	S.U.	2/4/2016
MW-11	Temperature	16.1	ºC	2/4/2016
MW-11	Turbidity	10.5	NTU	2/4/2016
MW-11	ORP	-37.9	mV	2/4/2016
MW-11	DO	1.38	mg/L	2/4/2016
MW-11	Conductivity	451.5	µS	2/4/2016
MW-11	Static Water Level	35.8	ft	2/4/2016
MW-11	Well Depth	44.2	ft	2/4/2016
MW-12	pH	5.81	S.U.	12/8/2015
MW-12	Temperature	16.1	ºC	12/8/2015
MW-12	Conductivity	203.4	µS	12/8/2015
MW-12	ORP	-6.2	mV	12/8/2015
MW-12	DO	2.47	mg/L	12/8/2015
MW-12	Ferrous Iron	2	mg/L	12/8/2015
MW-12	Turbidity	35.4	NTU	12/8/2015
MW-12	Static Water Level	40.80	ft	12/8/2015
MW-12	Well Depth	53.00	ft	12/8/2015
MW-12	pH	5.82	S.U.	2/4/2016
MW-12	Temperature	15.6	ºC	2/4/2016
MW-12	Conductivity	225.5	µS	2/4/2016
MW-12	ORP	12.4	mV	2/4/2016
MW-12	DO	2.76	mg/L	2/4/2016
MW-12	Turbidity	7.06	NTU	2/4/2016
MW-12	Static Water Level	40.72	ft	2/4/2016
MW-12	Well Depth	53.00	ft	2/4/2016

TABLE 2: Field Parameters (December 2015)

WELL ID	PARAMETER	RESULT	UNITS	COLLECT DATE
MW-13	pH	4.48	S.U.	12/8/2015
MW-13	Temperature	15.3	ºC	12/8/2015
MW-13	Conductivity	45	µS	12/8/2015
MW-13	Turbidity	-	NTU	12/8/2015
MW-13	Static Water Level	49.76	ft	12/8/2015
MW-13	Well Depth	59.00	ft	12/8/2015
MW-15S	pH	5.11	S.U.	12/9/2015
MW-15S	Temperature	15.1	ºC	12/9/2015
MW-15S	Conductivity	51.5	µS	12/9/2015
MW-15S	Dissolved CO2	110	mg/L	12/9/2015
MW-15S	Turbidity	21.4	NTU	12/9/2015
MW-15S	Static Water Level	43.85	ft	12/9/2015
MW-15S	Well Depth	58.27	ft	12/9/2015
MW-16S	pH	5.66	S.U.	12/8/2015
MW-16S	Temperature	16.9	ºC	12/8/2015
MW-16S	Conductivity	208.5	µS	12/8/2015
MW-16S	Turbidity	30.5	NTU	12/8/2015
MW-16S	ORP	208.5	mV	12/8/2015
MW-16S	Ferrous Iron	3.2	mg/L	12/8/2015
MW-16S	DO	1.49	mg/L	12/8/2015
MW-16S	Static Water Level	13.2	ft	12/8/2015
MW-16S	Well Depth	21.45	ft	12/8/2015
MW-16D	pH	7.95	S.U.	12/8/2015
MW-16D	Temperature	16	ºC	12/8/2015
MW-16D	Turbidity	6.8	NTU	12/8/2015
MW-16D	Conductivity	125	µS	12/8/2015
MW-16D	Static Water Level	12.7	ft	12/8/2015
MW-16D	Well Depth	90.5	ft	12/8/2015
MW-21	pH	5.13	S.U.	12/8/2015
MW-21	Temperature	15.2	ºC	12/8/2015
MW-21	Turbidity	8.15	NTU	12/8/2015
MW-21	Conductivity	15.5	µS	12/8/2015
MW-21	Dissolved Oxygen	7.59	mg/L	12/8/2015
MW-21	Oxygen Reduction Potential	269.9	mV	12/8/2015
MW-21	Ferrous Iron	0	mg/L	12/8/2015
MW-21	Turbidity	25.5	NTU	12/8/2015
MW-21	Static Water Level	38.15	ft	12/8/2015
MW-21	Well Depth	46.8	ft	12/8/2015

TABLE 2: Field Parameters (December 2015)

WELL ID	PARAMETER	RESULT	UNITS	COLLECT DATE
SMP-5	pH	5.93	S.U.	12/9/2015
SMP-5	Temperature	8.0	ºC	12/9/2015
SMP-5	Conductivity	59	µS	12/9/2015
SMP-5	Turbidity	6.61	NTU	12/9/2015
SMP-6	pH	6.18	S.U.	12/9/2015
SMP-6	Temperature	6.3	ºC	12/9/2015
SMP-6	Conductivity	39	µS	12/9/2015
SMP-6	Turbidity	6.07	NTU	12/9/2015
SMP-7	pH	5.46	S.U.	12/9/2015
SMP-7	Temperature	8.5	ºC	12/9/2015
SMP-7	Conductivity	38	µS	12/9/2015
SMP-7	Turbidity	4.33	NTU	12/9/2015

Notes:
ºC= degrees Centigrade
S.U.= Standard Units
µS = microsemens
NTU = Nephelometric Turbidity Units
mg/L = milligrams per liter
mV = millivolts
ft = feet
Verification (resample) event performed 2-04-2016 parameters included.

TABLE 3: Quantified Detections of Groundwater Constituents

WELL ID	PARAMETER	RESULT	UNITS	SWSL	COLLECT DATE
1203-MW10	Benzene	1.6	µg/L	1	12/8/2015
1203-MW10	Cobalt	175	µg/L	10	12/8/2015
1203-MW10	Iron	102,000	µg/L	300	12/8/2015
1203-MW10	Manganese	15,000	µg/L	50	12/8/2015
1203-MW10	Alkalinity, Total as $CaCO_3$	98,400	µg/L	NE	12/8/2015
1203-MW10	Chloride	26,500	µg/L	NE	12/8/2015
1203-MW10	Total Dissolved Solids	182,000	µg/L	NE	12/8/2015
1203-MW11	Barium	140	µg/L	100	12/8/2015
1203-MW11	Benzene	2.2	µg/L	1	12/8/2015
1203-MW11	Cobalt	61.0	µg/L	10	12/8/2015
1203-MW11	Iron	74,200	µg/L	300	12/8/2015
1203-MW11	Manganese	18,100	µg/L	50	12/8/2015
1203-MW11	Zinc	20.0	µg/L	10	12/8/2015
1203-MW11	1,4-Dichlorobenzene	12.6	µg/L	1	12/8/2015
1203-MW11	cis-1,2-Dichloroethene	6.9	µg/L	5	12/8/2015
1203-MW11	beta-BHC	0.16	µg/L	0.05	12/8/2015
1203-MW11	beta-BHC (Resample)	0.33	µg/L	0.05	2/4/2016
1203-MW11	Alkalinity, Total as $CaCO_3$	202,000	µg/L	NE	12/8/2015
1203-MW11	Chloride	30,800	µg/L	NE	12/8/2015
1203-MW11	Total Dissolved Solids	280,000	µg/L	NE	12/8/2015
1203-MW12	Antimony	6.3	µg/L	6	12/8/2015
1203-MW12	Antimony (Rerun)	6.2	µg/L	6	12/8/2015
1203-MW12	Antimony (Resample)	ND	µg/L	6	2/4/2016
1203-MW12	Barium	132	µg/L	100	12/8/2015
1203-MW12	Benzene	2.3	µg/L	1	12/8/2015
1203-MW12	Chromium	13.8	µg/L	10	12/8/2015
1203-MW12	Chromium (Rerun)	14.7	µg/L	10	12/8/2015
1203-MW12	Chromium (Resample)	ND	µg/L	10	2/4/2016
1203-MW12	Cobalt	84.8	µg/L	10	12/8/2015
1203-MW12	Iron	50,200	µg/L	300	12/8/2015
1203-MW12	Manganese	10,800	µg/L	50	12/8/2015
1203-MW12	Vanadium	36.9	µg/L	25	12/8/2015
1203-MW12	Vanadium (Rerun)	19.8 J	µg/L	25	12/8/2015
1203-MW12	Zinc	65.1	µg/L	10	12/8/2015
1203-MW12	1,1-Dichloroethane	31.7	µg/L	5	12/8/2015
1203-MW12	1,4-Dichlorobenzene	4.8	µg/L	1	12/8/2015
1203-MW12	cis-1,2-Dichloroethene	9.9	µg/L	5	12/8/2015
1203-MW12	Ethylbenzene	1.2	µg/L	1	12/8/2015
1203-MW12	Trichloroethene	1.4	µg/L	1	12/8/2015
1203-MW12	Alkalinity, Total as $CaCO_3$	88,800	µg/L	NE	12/8/2015
1203-MW12	Chloride	9,400	µg/L	NE	12/8/2015
1203-MW12	Total Dissolved Solids	117,000	µg/L	NE	12/8/2015

TABLE 3: Quantified Detections of Groundwater Constituents

WELL ID	PARAMETER	RESULT	UNITS	SWSL	COLLECT DATE
1203-MW13	Benzene	13.8	µg/L	1	12/8/2015
1203-MW13	Cobalt	49.7	µg/L	10	12/8/2015
1203-MW13	Iron	1,460	µg/L	300	12/8/2015
1203-MW13	Manganese	1,500	µg/L	50	12/8/2015
1203-MW13	Zinc	19.0	µg/L	10	12/8/2015
1203-MW13	1,1-Dichloroethane	33.7	µg/L	5	12/8/2015
1203-MW13	1,2-Dichloroethane	1.3	µg/L	1	12/8/2015
1203-MW13	1,4-Dichlorobenzene	13.2	µg/L	1	12/8/2015
1203-MW13	cis-1,2-Dichloroethene	25.8	µg/L	5	12/8/2015
1203-MW13	Ethylbenzene	2.7	µg/L	1	12/8/2015
1203-MW13	Methylene Chloride	113	µg/L	1	12/8/2015
1203-MW13	Tetrachloroethene	5.6	µg/L	1	12/8/2015
1203-MW13	Toluene	6.0	µg/L	1	12/8/2015
1203-MW13	Trichloroethene	9.7	µg/L	1	12/8/2015
1203-MW13	Xylene (Total)	45.4	µg/L	5	12/8/2015
1203-MW13	Alkalinity, Total as $CaCO_3$	9,130	µg/L	NE	12/8/2015
1203-MW13	Chloride	1,910	µg/L	NE	12/8/2015
1203-MW16D	Manganese	124	µg/L	50	12/8/2015
1203-MW16D	Alkalinity, Total as $CaCO_3$	46,200	µg/L	NE	12/8/2015
1203-MW16D	Total Dissolved Solids	93,000	µg/L	NE	12/8/2015
1203-MW16S	Benzene	1.7	µg/L	1	12/8/2015
1203-MW16S	Cobalt	32.8	µg/L	10	12/8/2015
1203-MW16S	Iron	27,400	µg/L	300	12/8/2015
1203-MW16S	Manganese	8,440	µg/L	50	12/8/2015
1203-MW16S	Zinc	47.3	µg/L	10	12/8/2015
1203-MW16S	1,1-Dichloroethane	10.3	µg/L	5	12/8/2015
1203-MW16S	1,2-Dichloroethane	1.3	µg/L	1	12/8/2015
1203-MW16S	1,4-Dichlorobenzene	9.1	µg/L	1	12/8/2015
1203-MW16S	Vinyl chloride	1.4	µg/L	1	12/8/2015
1203-MW16S	Alkalinity, Total as $CaCO_3$	95,900	µg/L	NE	12/8/2015
1203-MW16S	Chloride	4,190	µg/L	NE	12/8/2015
1203-MW16S	Total Dissolved Solids	106,000	µg/L	NE	12/8/2015

Notes: µg/L = Micrograms per liter
ND = Not detected
J = Estimated concentration below the SWSL
B = Blank-qualified detection.
SWSL = NC Solid Waste Section Reporting Limit
NE = SWSL not established.
Laboratory Reporting limit used when SWSL has not been established
Rerun = Results from a laboratory reanalysis of the original sample.
Resample = Results from a resampling (verification) event performed on February 4, 2016.

TABLE 4: Exceedances of Groundwater Standards (December 2015)

WELL ID	PARAMETER	RESULT	UNITS	NC2L/ *GWPS	GPS	SWSL	COLLECT DATE
1203-MW10	Cobalt	175	µg/L	1*	266	10	12/8/2015
1203-MW10	Iron	102,000	µg/L	300	300	300	12/8/2015
1203-MW10	Manganese	15,000	µg/L	50	50	50	12/8/2015
1203-MW10	**Benzene**	**1.6**	**µg/L**	1	1	1	**12/8/2015**
1203-MW11	Cobalt	61	µg/L	1*	96.6	10	12/8/2015
1203-MW11	Iron	74,200	µg/L	300	300	300	12/8/2015
1203-MW11	Manganese	18,100	µg/L	50	50	50	12/8/2015
1203-MW11	**Benzene**	**2.2**	**µg/L**	1	1	1	**12/8/2015**
1203-MW11	**1,4-Dichlorobenzene**	**12.6**	**µg/L**	6	6	1	**12/8/2015**
1203-MW11	**beta-BHC**	**0.16**	**µg/L**	0.019	0.019	0.05	**12/8/2015**
1203-MW11	**beta-BHC (resample)**	**0.33**	**µg/L**	0.019	0.019	0.05	**2/4/2016**
1203-MW12	Antimony	6.3	µg/L	1	1	6	12/8/2015
1203-MW12	Antimony (Rerun)	6.2	µg/L	1	1	6	12/8/2015
1203-MW12	Antimony (Resample)	ND	µg/L	1	1	6	2/4/2016
1203-MW12	Chromium	13.8	µg/L	10	10	10	12/8/2015
1203-MW12	Chromium (Rerun)	14.7	µg/L	10	10	10	12/8/2015
1203-MW12	Chromium (Resample)	ND	µg/L	10	10	10	2/4/2016
1203-MW12	Vanadium	36.9	µg/L	0.3	630	25	12/8/2015
1203-MW12	Vanadium (Rerun)	19.8 J	µg/L	0.3	630	25	12/8/2015
1203-MW12	Cobalt	84.8	µg/L	1*	96.6	10	12/8/2015
1203-MW12	Iron	50,200	µg/L	300	300	300	12/8/2015
1203-MW12	Manganese	10,800	µg/L	50	50	50	12/8/2015
1203-MW12	**Benzene**	**2.3**	**µg/L**	1	1	1	**12/8/2015**
1203-MW12	**1,1-Dichloroethane**	**31.7**	**µg/L**	1	1	5	**12/8/2015**
1203-MW13	Cobalt	49.7	µg/L	1*	96.6	10	12/8/2015
1203-MW13	Iron	1,460	µg/L	300	300	300	12/8/2015
1203-MW13	Manganese	1,500	µg/L	50	50	50	12/8/2015
1203-MW13	**Benzene**	**13.8**	**µg/L**	1	1	1	**12/8/2015**
1203-MW13	**1,4-Dichlorobenzene**	**13.2**	**µg/L**	6	6	1	**12/8/2015**
1203-MW13	**1,1-Dichloroethane**	**33.7**	**µg/L**	1	1	5	**12/8/2015**
1203-MW13	**1,2-Dichloroethane**	**1.3**	**µg/L**	0.4	0.4	1	**12/8/2015**
1203-MW13	**Methylene Chloride**	**113**	**µg/L**	5	5	1	**12/8/2015**
1203-MW13	**Tetrachloroethene**	**5.6**	**µg/L**	0.7	0.7	1	**12/8/2015**
1203-MW16S	Cobalt	32.8	µg/L	1*	96.6	10	12/8/2015
1203-MW16S	Iron	27,400	µg/L	300	300	300	12/8/2015
1203-MW16S	Manganese	8,440	µg/L	50	50	50	12/8/2015
1203-MW16S	**Benzene**	**1.7**	**µg/L**	1	1	1	**12/8/2015**
1203-MW16S	**1,4-Dichlorobenzene**	**9.1**	**µg/L**	6	6	1	**12/8/2015**
1203-MW16S	**1,1-Dichloroethane**	**10.3**	**µg/L**	1	1	5	**12/8/2015**
1203-MW16S	**1,2-Dichloroethane**	**1.3**	**µg/L**	0.4	0.4	1	**12/8/2015**
1203-MW16S	**Vinyl chloride**	**1.4**	**µg/L**	0.03	0.03	1	**12/8/2015**

Notes: µg/L = Micrograms per liter
SWSL = NC Solid Waste Section Reporting Limit
Laboratory Reporting limit used when SWSL has not been established
B = Blank-qualified detection.
NC2L = NC Groundwater Standard from 15A NCAC 2L.0202
*GWPS = NC Solid Waste Section Groundwater Protection Standard (for constituents with no NC2L)
GPS = Groundwater Protection Standard as defined by 15A NCAC 13B.1634(g)
GPS for cobalt & vanadium are based on statistical background - see Table5.
For MW-10, the cobalt background is based on intrawell statistics.
An ASD for iron and manganese was approved by the DENR, so these are not considered GPS exceedances.
Rerun = Results from a laboratory reanalysis of the original sample.
Resample = Results from a resampling (verification) event performed on February 4, 2016.
BOLD lines indicate GPS exceedances after considering resample results and approved ASDs.

TABLE 5:
Statistical Background Analyses

Analyte	**Data Distribution**	**Statistical Method used to Establish Background**	**Background** (µg/L)	**SWSL** (µg/L)	**NC2L** or ***GWPS** (µg/L)	**GPS#** (µg/L)	**Sampling Result (Max.)** (µg/L)	**GPS Exceedances**
Cobalt	46% ND, Log-Normal	Upper Tolerance Limit: Interwell	96.6	10	1*	96.6	84.8	None#
Cobalt	0% ND, Log-Normal	Upper Tolerance Limit: Intrawell (MW-10)	266	10	1*	266	175	None
Vanadium	65% ND	Non-parametric Prediction Limit: Interwell	630	25.0	0.3*	630	36.9!	None

Notes:
SWSL = NC Solid Waste Section Limits
NC 2L = NC Groundwater Standards (15A NCAC 2L.0202)
GWPS = Solid Waste Section Groundwater Protection Standards for Constituents with no NC 2L (indicated by *)
%ND = percentage of data that were non-detect (i.e., truncated).
Only constituents with quantified detections above the SWSL in down-gradient wells are included in statistical analyses.
GPS = Groundwater Protection Standard per 15A NCAC .1634(g)
# Excluding MW-10, which is compared to its intrawell background.
! Vanadium initial result, Lab re-run was 19.8 J µg/L.

TABLE 6: MNA Parameters (Dec. 2015)

			Upgradient	Downgradient		
Analyte/Parameter	**Date**	**Units**	**MW-21**	**MW-11**	**MW-12**	**MW-16S**
Temperature (FP)	12/8/2015	^{o}C	15.20	15.40	16.10	16.90
pH (FP)	12/8/2015	S.U.	5.13	6.06	5.81	5.66
Specific Conductance (FP)	12/8/2015	µS/cm	15.5	400.6	203.4	208.5
ORP (FP)	12/8/2015	mV	269.9	-21.4	-6.2	25.7
Turbidity (FP)	12/8/2015	ntu	25.5	16.7	35.40	30.50
Dissolved Oxygen (FP)	12/8/2015	mg/L	7.59	4.62	2.47	1.49
Iron II (ferrous iron) (FP)	12/8/2015	mg/L	0.0	3.5	2.0	3.2
Nitrate	12/8/2016	mg/L	.256 J	<0.1	<0.1	<0.1
Alkalinity	12/8/2015	mg/L	1.030 J	202.000	88.800	95.900
Chloride	12/8/2015	mg/L	0.859 J	30.800	9.400	4.190
Sulfate	12/8/2015	mg/L	ND	1.530 J	2.020 J	9.260 J
Sulfide	12/8/2015	mg/L	ND	ND	ND	ND
Methane	12/8/2015	mg/L	2.0 J	0.959	0.796	7.510
Dissolved Hydrogen	12/8/2016	nM	2.0	1.6	2.3	1.9
TOC	12/8/2016	mg/L	ND	5.320	--	6.070

Notes: (FP) = Field Parameter
ND = Not Detected
J = Estimated concentration
ORP = Oxidation-Reduction Potential
TOC = Total Organic Carbon
mV = millivolts
S.U. = standard units
^{o}C = degrees Celcius
mS/cm = microsiemens per centimeter
mg/L = milligrams per liter (parts per million)
µg/L = micrograms per liter (parts per billion)
-- MW-12 TOC sample for 12/08/15 was broken in transit to the laboratory and could not be analyzed.

TABLE 7: Biodegradation Screening Matrix

Parameter	Concentration in Plume	Interpretation	Possible Points	Points Awarded with DP points	Points Awarded without DP points
Oxygen	< 0.5 mg/L	Tolerated, suppresses the reductive pathway at higher	3	0	0
		concentrations			
	> 5 mg/L	Not tolerated; however, vinyl chloride may be oxidized	-3	0	0
		aerobically			
Nitrate	< 1 mg/L	At higher concentrations may compete with reductive	2	2	2
		pathway			
Iron II (Ferrous Iron)	> 1 mg/L	Reductive pathway possible; vinyl chloride may be	3	3	3
		oxidized under Fe (III) - reducing conditions			
Sulfate	< 20 mg/L	At higher concentrations may compete with reductive	2	2	2
		pathway			
Sulfide	> 1 mg/L	Reductive pathway possible	3	NS (0)	NS (0)
Methane	< 0.5 mg/L	Vinyl chloride oxidizes	0		
	> 0.5 mg/L	Ultimate reductive daughter product, vinyl chloride	3	3	0
		accumulates			
Oxidation Reduction	< 50 mV	Reductive pathway possible	1	1	1
Potential	< -100 mV	Reductive pathway likely	2		
pH	5 < pH < 9	Optimal range for reductive pathway	0	0	0
	5 > pH > 9	Outside optimal range for reductive pathway	-2	0	0
TOC	> 20 mg/L	Carbon and energy source; drives dechlorination; can	2	0	0
		be natural or anthropogenic			
Temperature	>20° C	At T > 20°C biochemical process is accelerated	1	0	0
Carbon Dioxide	> 2x background	Ultimate oxidative daughter product	1	NS (1)	0
Alkalinity	> 2x background	Results from interaction between CO_2 and	1	1	1
		aquifer minerals			
Chloride	> 2x background	Daughter product of organic chlorine	2	2	2
Hydrogen	> 1 nM	Reductive pathway possible	3	3	3
	< 1 nM	Vinyl chloride oxidizes	0		
Volatile Fatty Acids	> 0.1 mg/L	Intermediates resulting from biodegradation of more	2	NS (0)	NS (0)
		complex compounds; carbon and energy source			
BTEX	> 0.1 mg/L	Carbon and energy source; drives dechlorination	2	0	0
Tetrachloroethene (PCE)	---	Material released	0	0	0
Trichloroethene (TCE)	---	Material released	0	0	0
	---	Daughter product of PCE	2	2	0
Dichloroethenes (DCE)	---	Material released	0	0	0
		Daughter product of TCE	2	2	0
Dichloroethene, cis-1,2,	---	Material released	0	0	0
	---	Daughter product of trichlorethene	2	2	0
Vinyl Chloride (VC)	---	Material released	0	0	0
	---	Daughter product of DCE	2	2	0
1,1,1-Trichloroethane (TCA)	---	Material released	0	0	0
1,1-Dichloroethane (DCA)	---	Material released	0	0	0
		Daughter product of TCA	2	2	0
Chloroethane	---	Daughter product of dichloroethane or vinyl chloride			
		under reducing conditions	2	0	0
Ethene/Ethane	> 0.01 mg/L	Daughter products of vinyl chloride/ethene	2	NS (0)	NS (0)
	> 0.1 mg/L		3	NS (0)	NS (0)
Chloroform	---	Material released	0	0	0
	---	Daughter product of carbon tetrachloride	2	0	0
Dichloromethane (MC)	---	Material released	0	0	0
(Methylene Chloride)	---	Daughter product of chloroform	2	0	0
Based on samples collected on December 8, 2015.			**Total Points Awarded Excluding Historical Data:**	**27**	**14**
			Total Points Awarded Including Historical Data:	**28**	**14**

mg/L = miligrams per liter
mV = millivolts
nM = Nanometer
C = Celcius
NA = Not Analyzed
BTEX = Sum of Benzene, Toluene, Ethylbenzene, and Total Xylenes
NS (0) = Not sampled for this parameter, value in parenthsis is a score based on historical data.

NOTE: Chloroethane, Methane, TCE, DCE, cis-1,2-DCE, MC, VC, DCA, and CO_2 are all present in the plume; however, it is uncertain whether these are primary leachate constituents or daughter products (DPs); therefore, we have two calculation columns. The first column assumes all of these are daughter products, and the second column assumes none of them are. The true score is probably between the two.

SCORE:	Evid. of Nat. Atten.
< 5	inadequate
6-14	limited
15-19	adequate
> 20	strong

This screening matrix is prepared in general accordance with the United Stated Environmental Protection Agency's (EPA's) Table 2.3 *Analytical Parameters and Weighted for Preliminary Screening for Anaerobic Biodegradation Process* presented in the EPA's *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater* , September 1988.

TABLE 8: Hydraulic Gradients and Groundwater Flow Velocities

December 2015							
GRADIENT CALCULATION SEGMENT	FLOW LINE LENGTH (feet)	FLOW DIRECTION	GROUNDWATER ELEVATION (feet)	HORIZONTAL GRADIENT ***i*** (ft/ft)	HYDRAULIC CONDUCTIVITY ***K*** (ft/day)	EFFECTIVE POROSITY n_e	LINEAR VELOCITY ***V*** (ft/year)
i_1	967	SSW	1070	0.0517	3.28E+00	0.40	154.8
			1020				
i_2	1,495	S	1070	0.0468	3.28E+00	0.40	140.1
			1000				
i_3	1,098	SSE	1070	0.0546	3.28E+00	0.40	163.6
			1010				
i_4	770	SE	1060	0.0390	3.28E+00	0.40	116.6
			1030				
			AVERAGE:	**0.0480**		**AVERAGE:**	**143.8**

Notes:

Hydraulic conductivity (***K***=3.28 ft/day) is based on the arithmetic means of ***K*** from individual slug tests in saprolite wells at the facility.

Effective Porosity (n_e = 0.40) is assummed to be slightly less than the average laboratory porosity for site soil samples (saprolite) = 44% (0.44).

Gradient segments are based on the December 2015 groundwater potentiometric surface map (see Drawing 1).

$V = Ki/n_e$; assumes homogeneous isotropic porous aquifer.

CHARTS

Chart 1: Benzene Concentrations vs. Time
Chart 2: 1,4-Dichlorobenzene Concentrations vs. Time
Chart 3: 1,1-Dichloroethane Concentrations vs. Time
Chart 4: 1,2-Dichloroethane Concentrations vs. Time
Chart 5: Tetrachloroethylene (PCE) Concentrations vs. Time
Chart 6: Trichloroethylene (TCE) Concentrations vs. Time
Chart 7: Vinyl Chloride Concentrations vs. Time
Chart 8: Methylene Chloride Concentrations vs. Time
Chart 9 alpha-BHC Concentrations vs. Time
Chart 10: beta-BHC Concentrations vs. Time

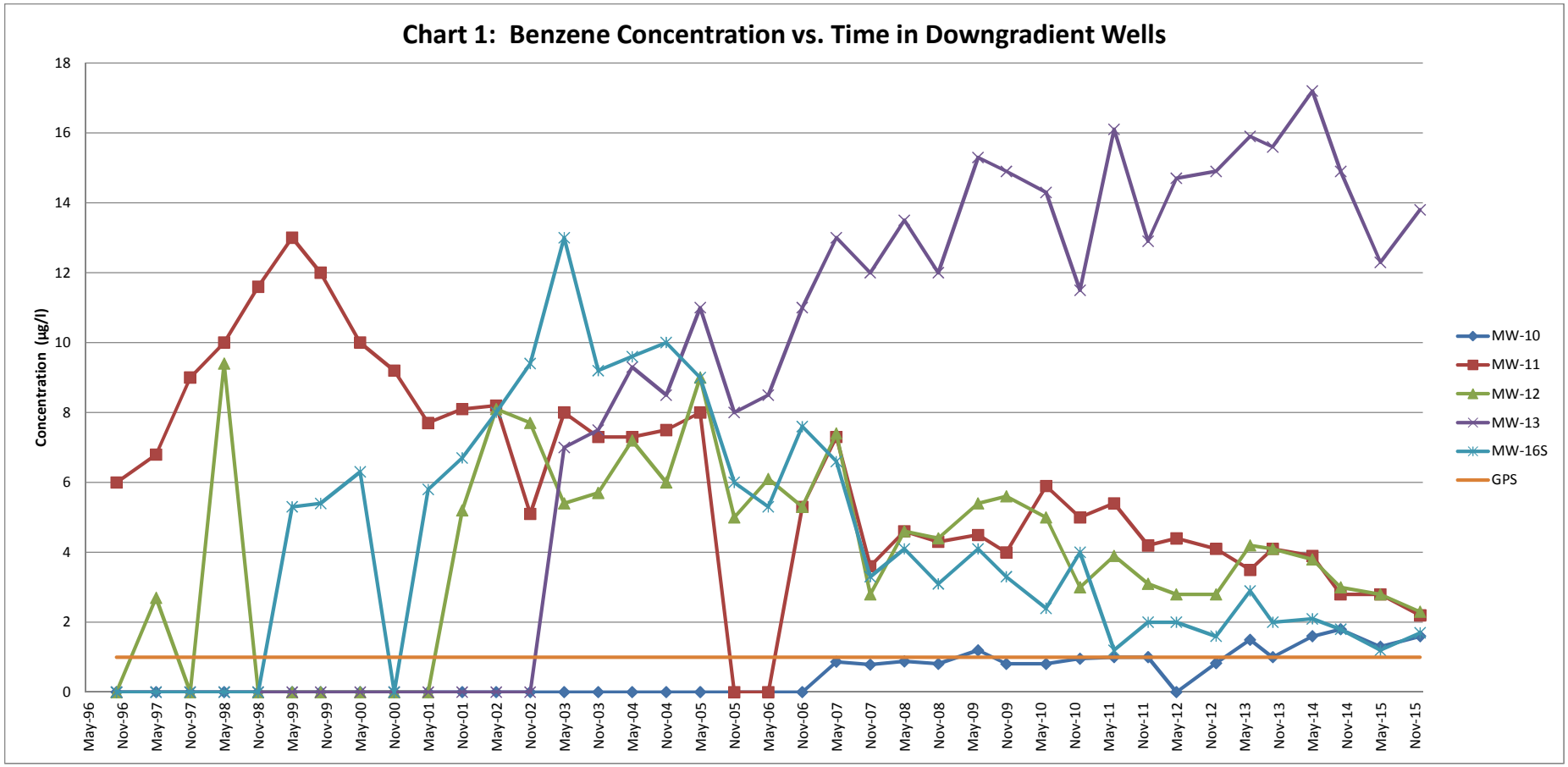
Chart 1: Benzene Concentration vs. Time in Downgradient Wells
Concentration (µg/l)
18
16
14
12
10
8
6
4
2
0
May-96
Nov-96
May-97
Nov-97
May-98
Nov-98
May-99
Nov-99
May-00
Nov-00
May-01
Nov-01
May-02
Nov-02
May-03
Nov-03
May-04
Nov-04
May-05
Nov-05
May-06
Nov-06
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
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Nov-14
May-15
Nov-15
MW-10
MW-11
MW-12
MW-13
MW-16S
GPS

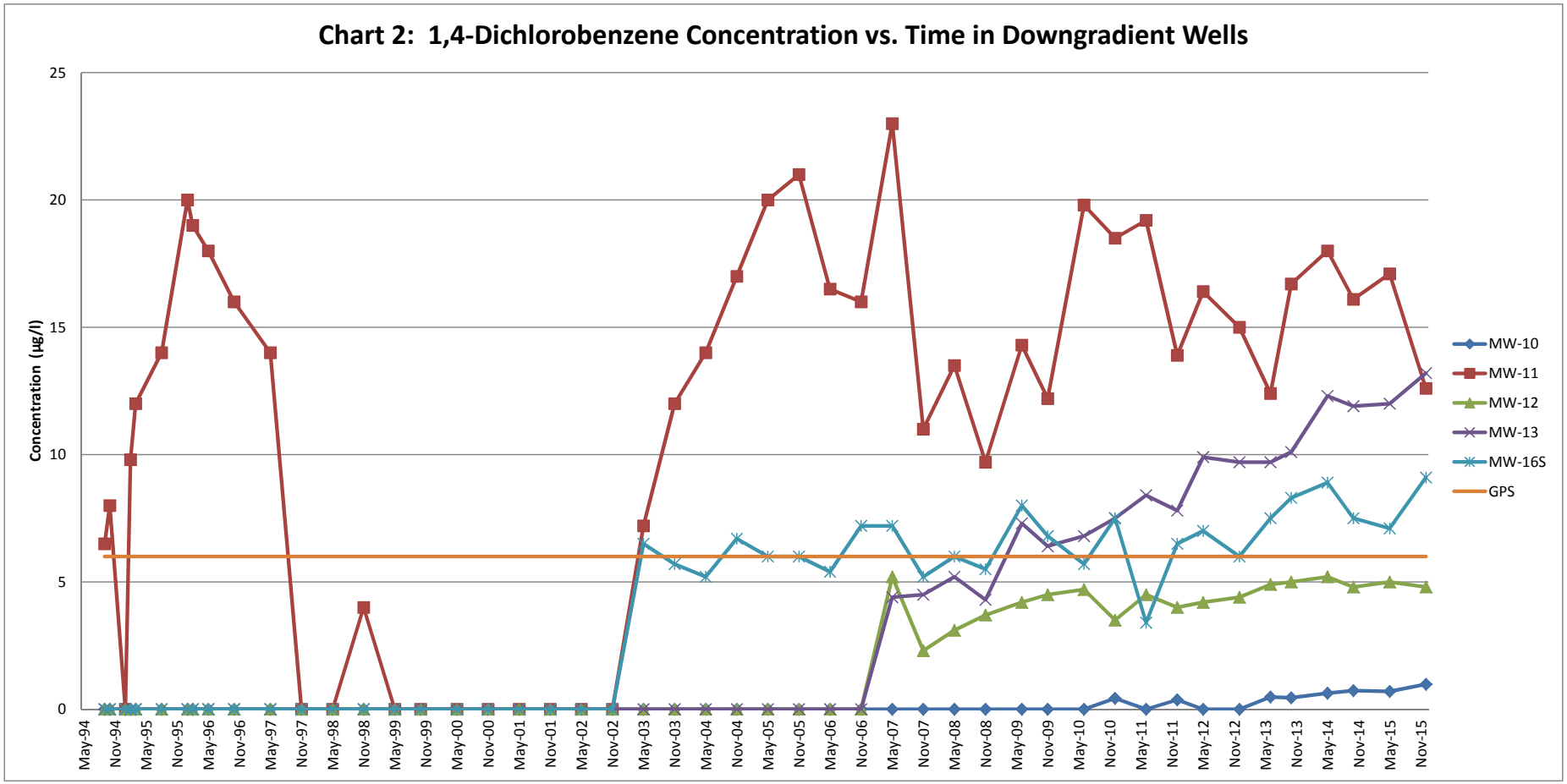
Chart 2: 1,4-Dichlorobenzene Concentration vs. Time in Downgradient Wells
Concentration (µg/l)
25
20
15
10
5
0
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
May-98
Nov-98
May-99
Nov-99
May-00
Nov-00
May-01
Nov-01
May-02
Nov-02
May-03
Nov-03
May-04
Nov-04
May-05
Nov-05
May-06
Nov-06
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
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May-15
Nov-15
MW-10
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MW-12
MW-13
MW-16S
GPS

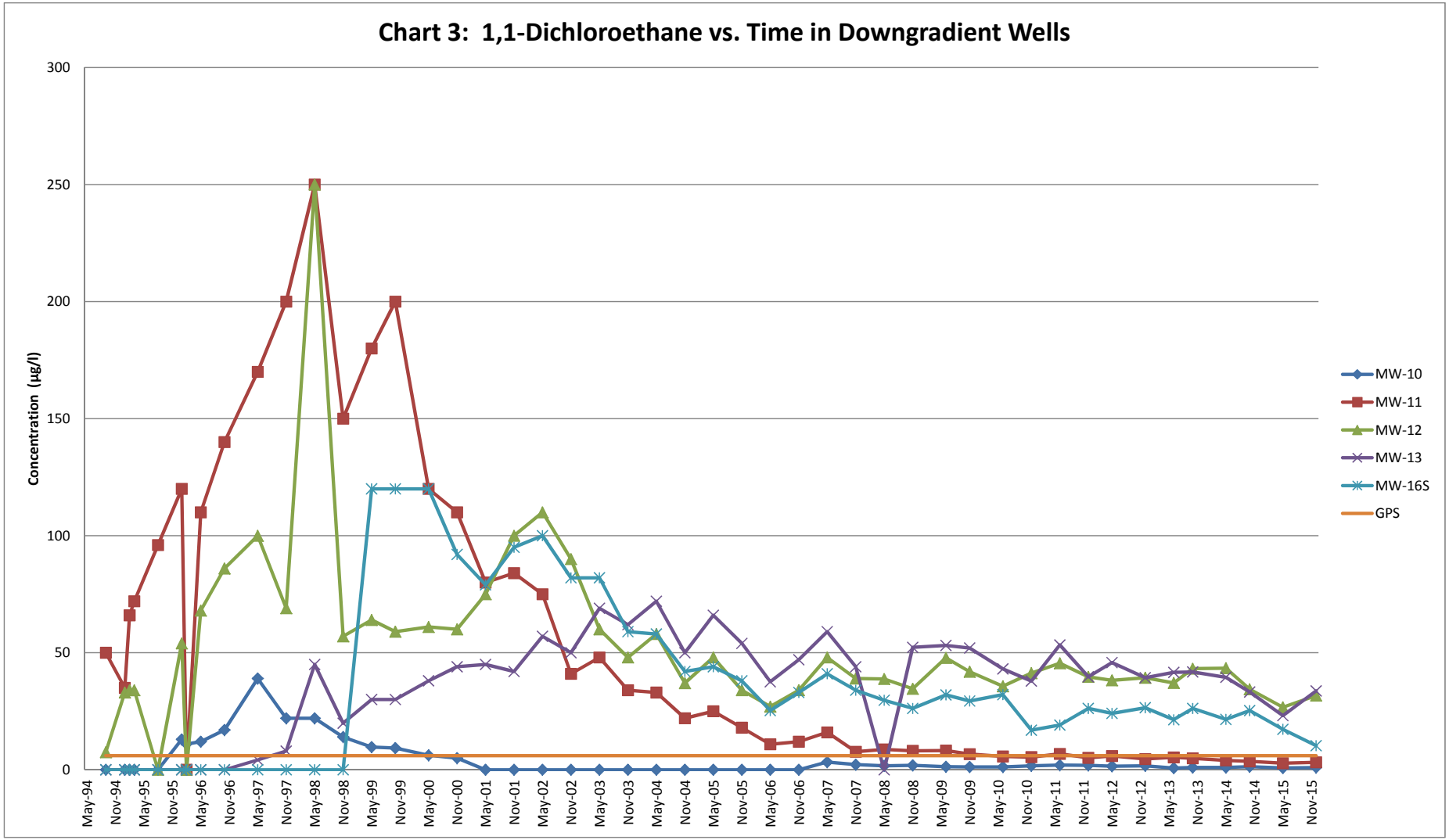
Chart 3: 1,1-Dichloroethane vs. Time in Downgradient Wells
Concentration (µg/l)
300
250
200
150
100
50
0
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
May-98
Nov-98
May-99
Nov-99
May-00
Nov-00
May-01
Nov-01
May-02
Nov-02
May-03
Nov-03
May-04
Nov-04
May-05
Nov-05
May-06
Nov-06
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
May-13
Nov-13
May-14
Nov-14
May-15
Nov-15
MW-10
MW-11
MW-12
MW-13
MW-16S
GPS

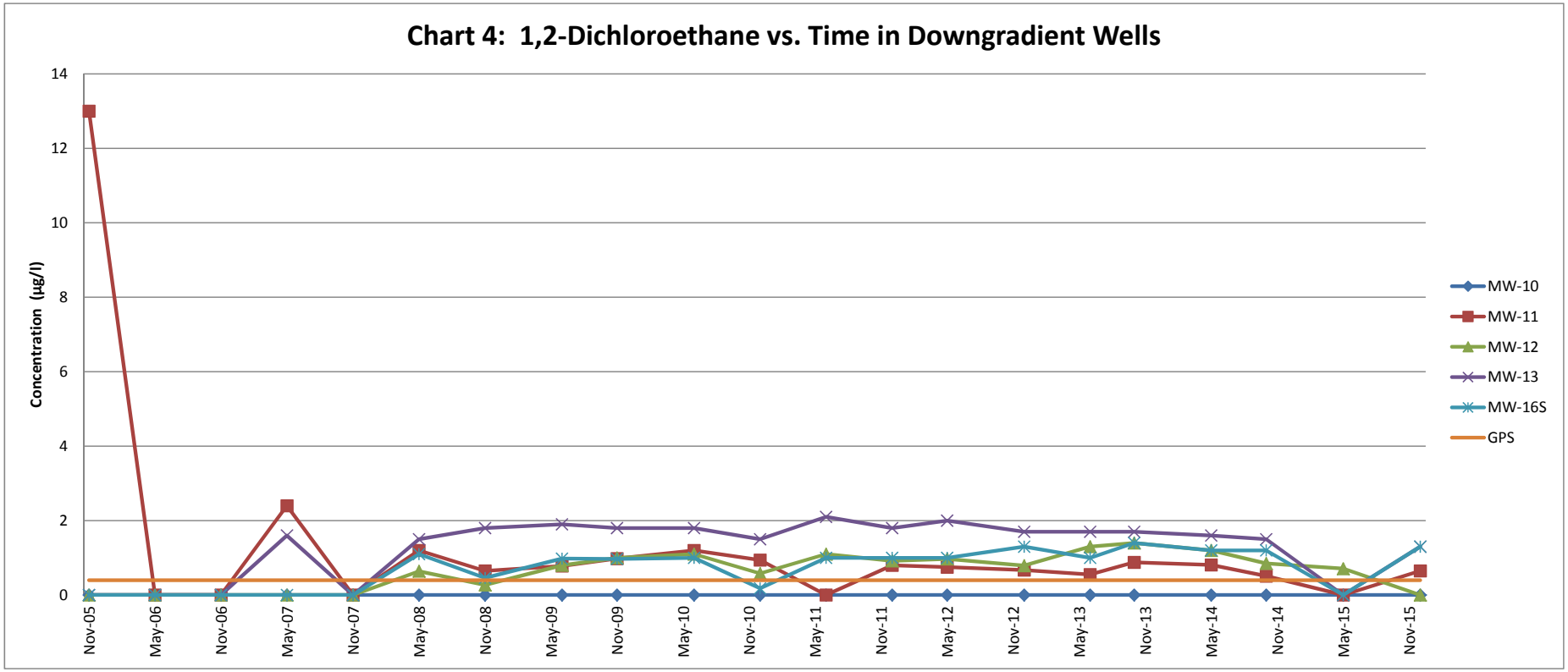
Chart 4: 1,2-Dichloroethane vs. Time in Downgradient Wells
Concentration (µg/l)
14
12
10
8
6
4
2
0
Nov-05
May-06
Nov-06
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
May-13
Nov-13
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Nov-14
May-15
Nov-15
MW-10
MW-11
MW-12
MW-13
MW-16S
GPS

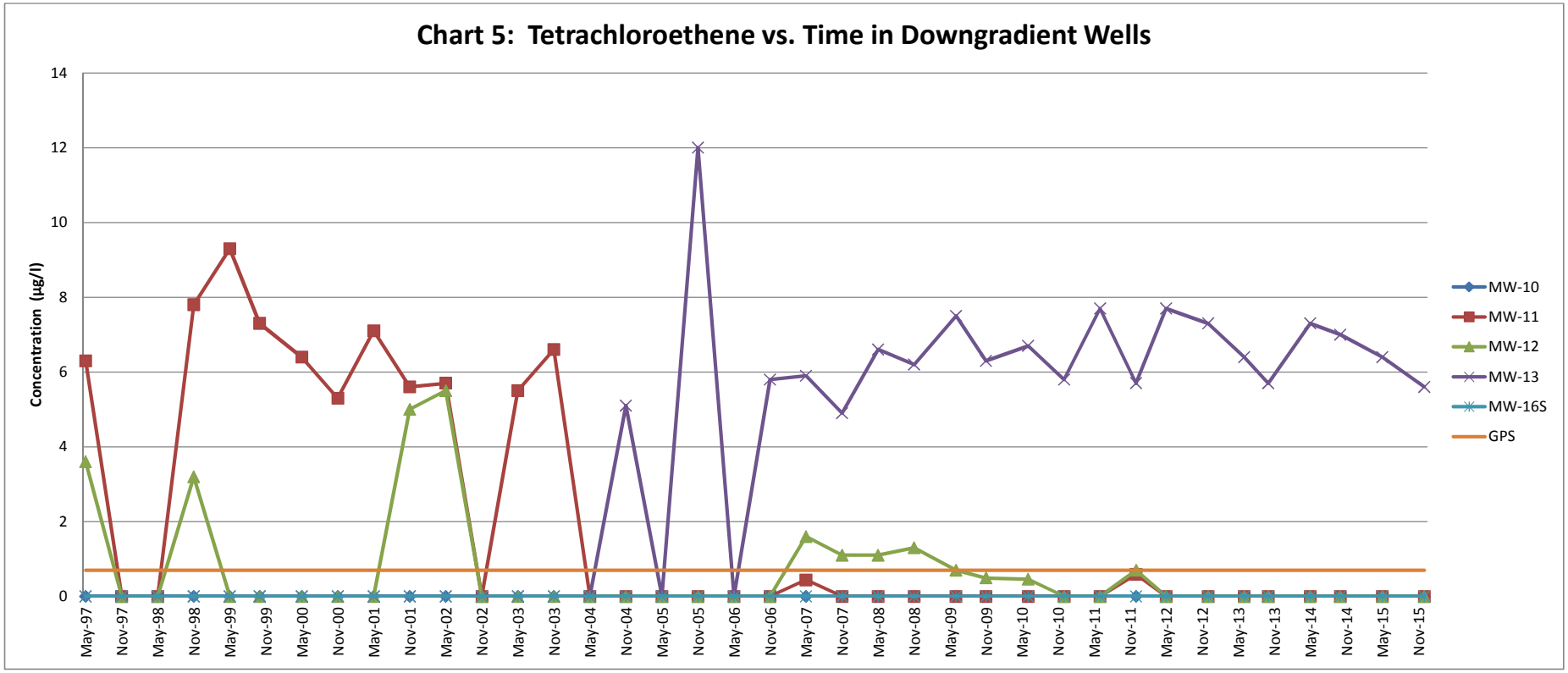
Chart 5: Tetrachloroethene vs. Time in Downgradient Wells
Concentration (µg/l)
14
12
10
8
6
4
2
0
May-97
Nov-97
May-98
Nov-98
May-99
Nov-99
May-00
Nov-00
May-01
Nov-01
May-02
Nov-02
May-03
Nov-03
May-04
Nov-04
May-05
Nov-05
May-06
Nov-06
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
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May-15
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MW-12
MW-13
MW-16S
GPS

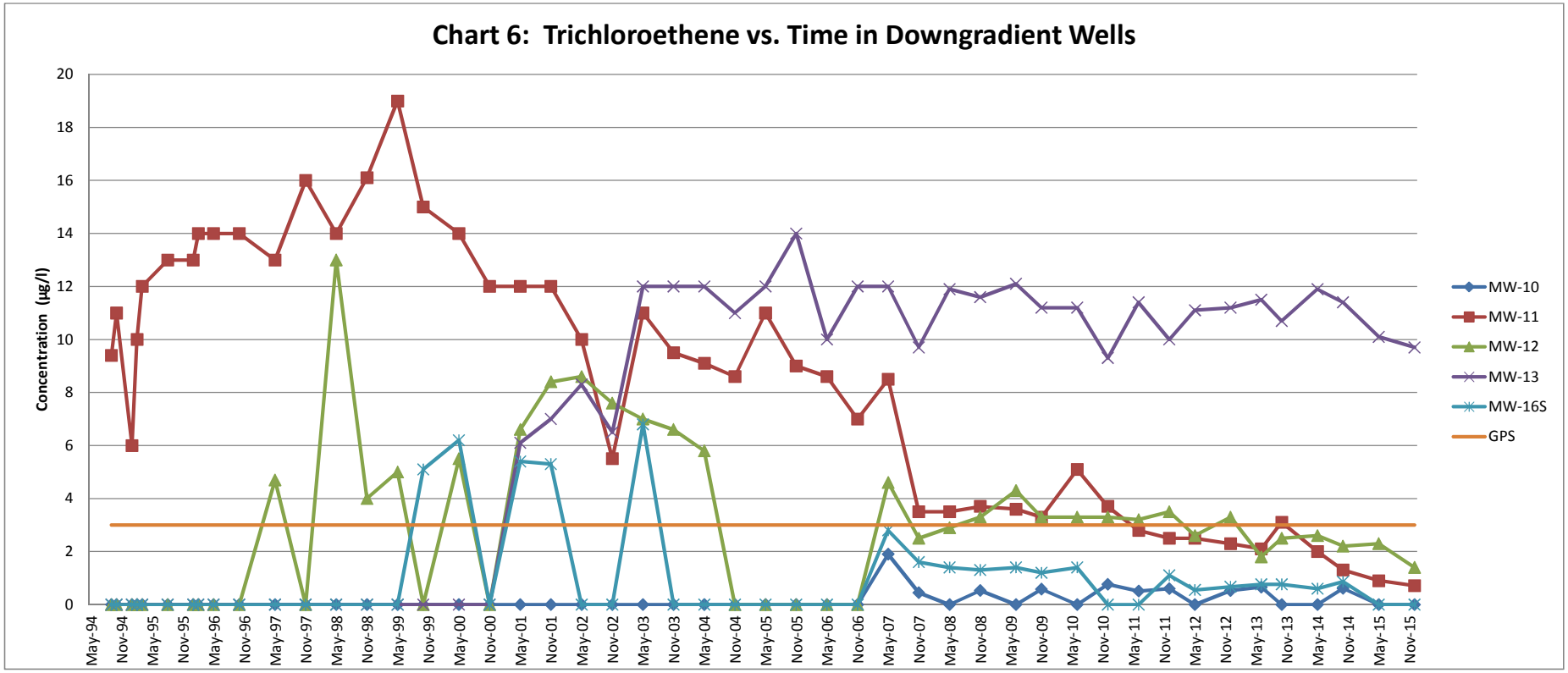


Chart 6: Trichloroethene vs. Time in Downgradient Wells
Concentration (µg/l)
20
18
16
14
12
10
8
6
4
2
0
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
May-98
Nov-98
May-99
Nov-99
May-00
Nov-00
May-01
Nov-01
May-02
Nov-02
May-03
Nov-03
May-04
Nov-04
May-05
Nov-05
May-06
Nov-06
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
May-13
Nov-13
May-14
Nov-14
May-15
Nov-15
MW-10
MW-11
MW-12
MW-13
MW-16S
GPS

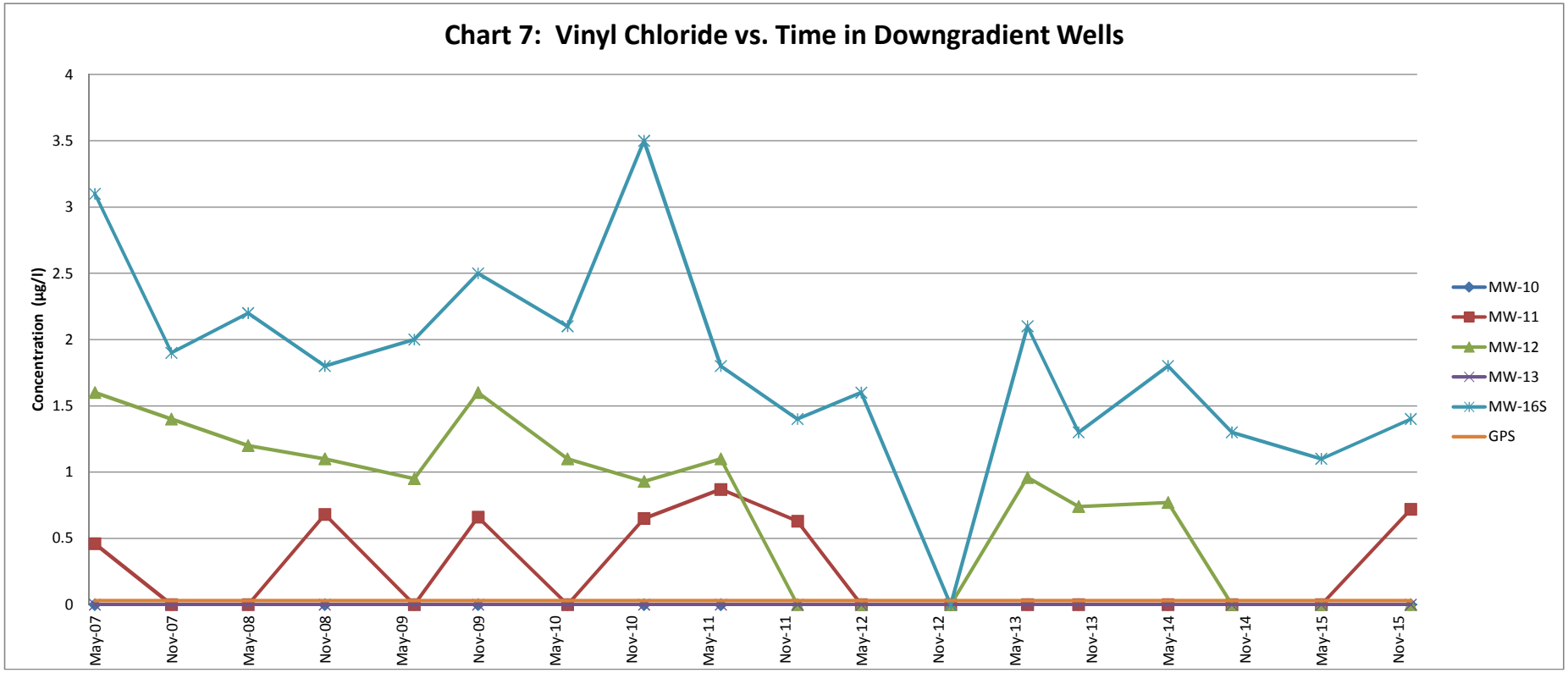


Chart 7: Vinyl Chloride vs. Time in Downgradient Wells
Concentration (µg/l)
4
3.5
3
2.5
2
1.5
1
0.5
0
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
May-13
Nov-13
May-14
Nov-14
May-15
Nov-15
MW-10
MW-11
MW-12
MW-13
MW-16S
GPS

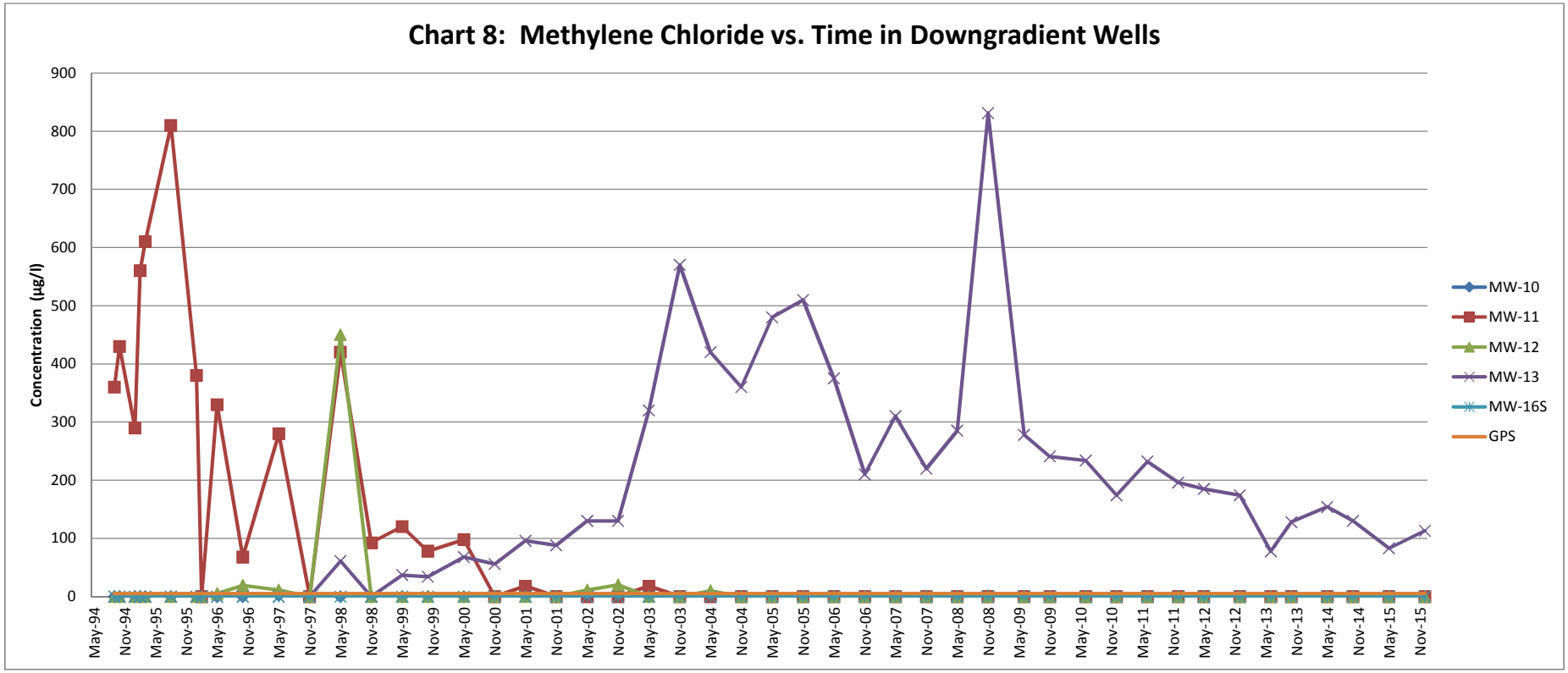


Chart 8: Methylene Chloride vs. Time in Downgradient Wells
Concentration (µg/l)
900
800
700
600
500
400
300
200
100
0
May-94
Nov-94
May-95
Nov-95
May-96
Nov-96
May-97
Nov-97
May-98
Nov-98
May-99
Nov-99
May-00
Nov-00
May-01
Nov-01
May-02
Nov-02
May-03
Nov-03
May-04
Nov-04
May-05
Nov-05
May-06
Nov-06
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
May-13
Nov-13
May-14
Nov-14
May-15
Nov-15
MW-10
MW-11
MW-12
MW-13
MW-16S
GPS

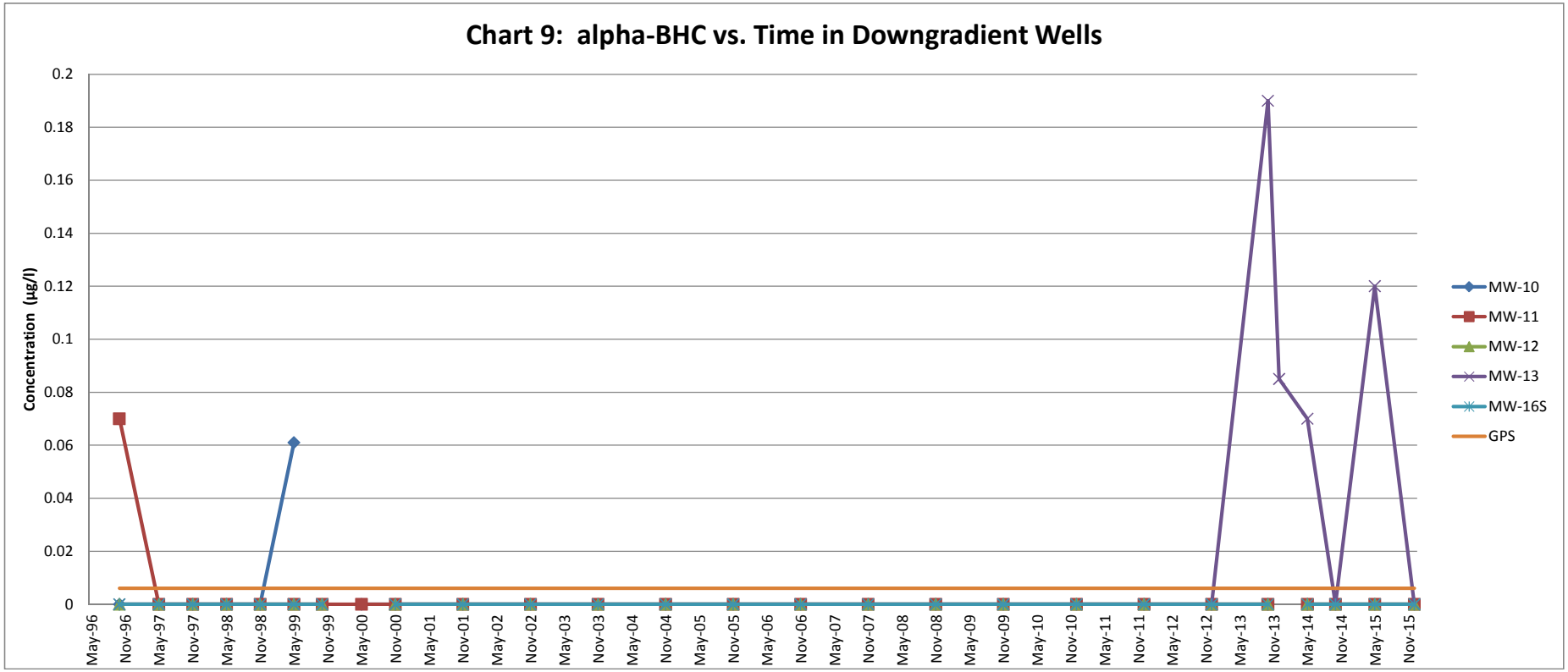


Chart 9: alpha-BHC vs. Time in Downgradient Wells
Concentration (µg/l)
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
May-96
Nov-96
May-97
Nov-97
May-98
Nov-98
May-99
Nov-99
May-00
Nov-00
May-01
Nov-01
May-02
Nov-02
May-03
Nov-03
May-04
Nov-04
May-05
Nov-05
May-06
Nov-06
May-07
Nov-07
May-08
Nov-08
May-09
Nov-09
May-10
Nov-10
May-11
Nov-11
May-12
Nov-12
May-13
Nov-13
May-14
Nov-14
May-15
Nov-15
MW-10
MW-11
MW-12
MW-13
MW-16S
GPS

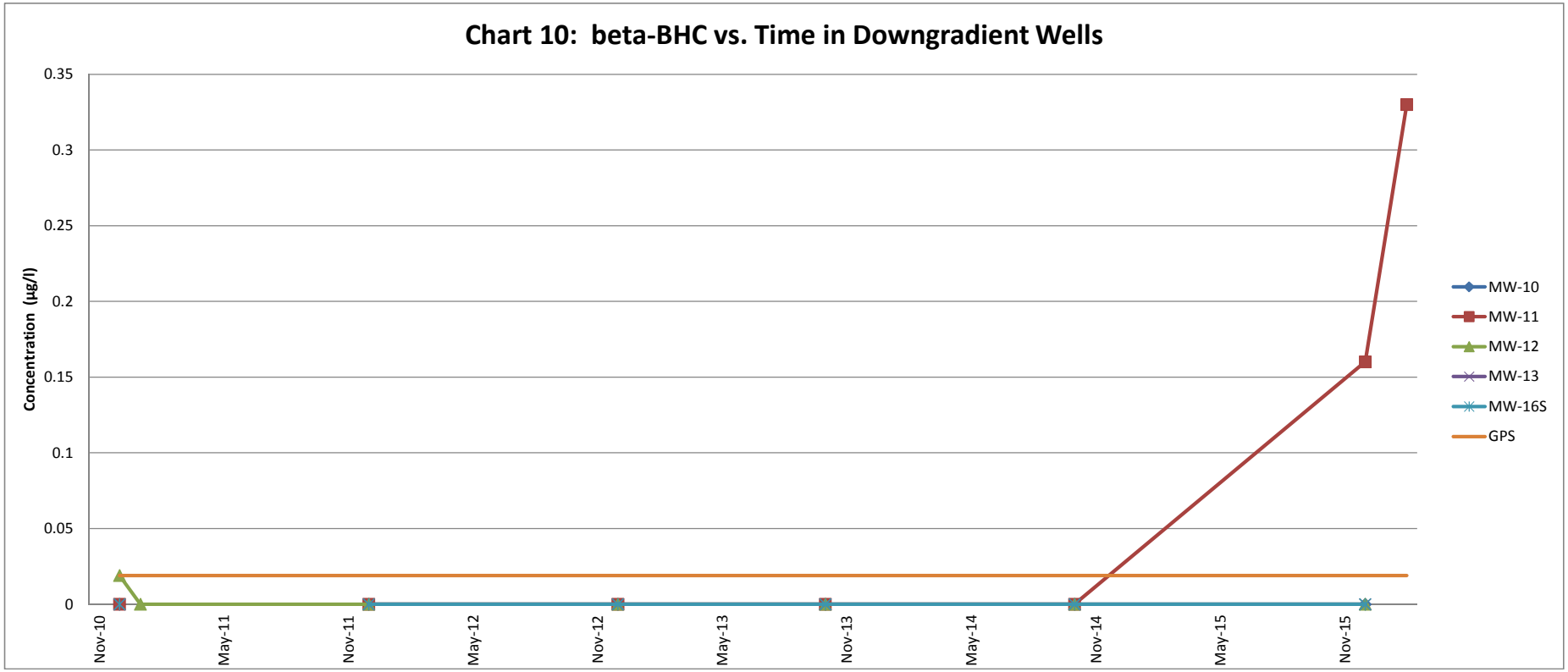
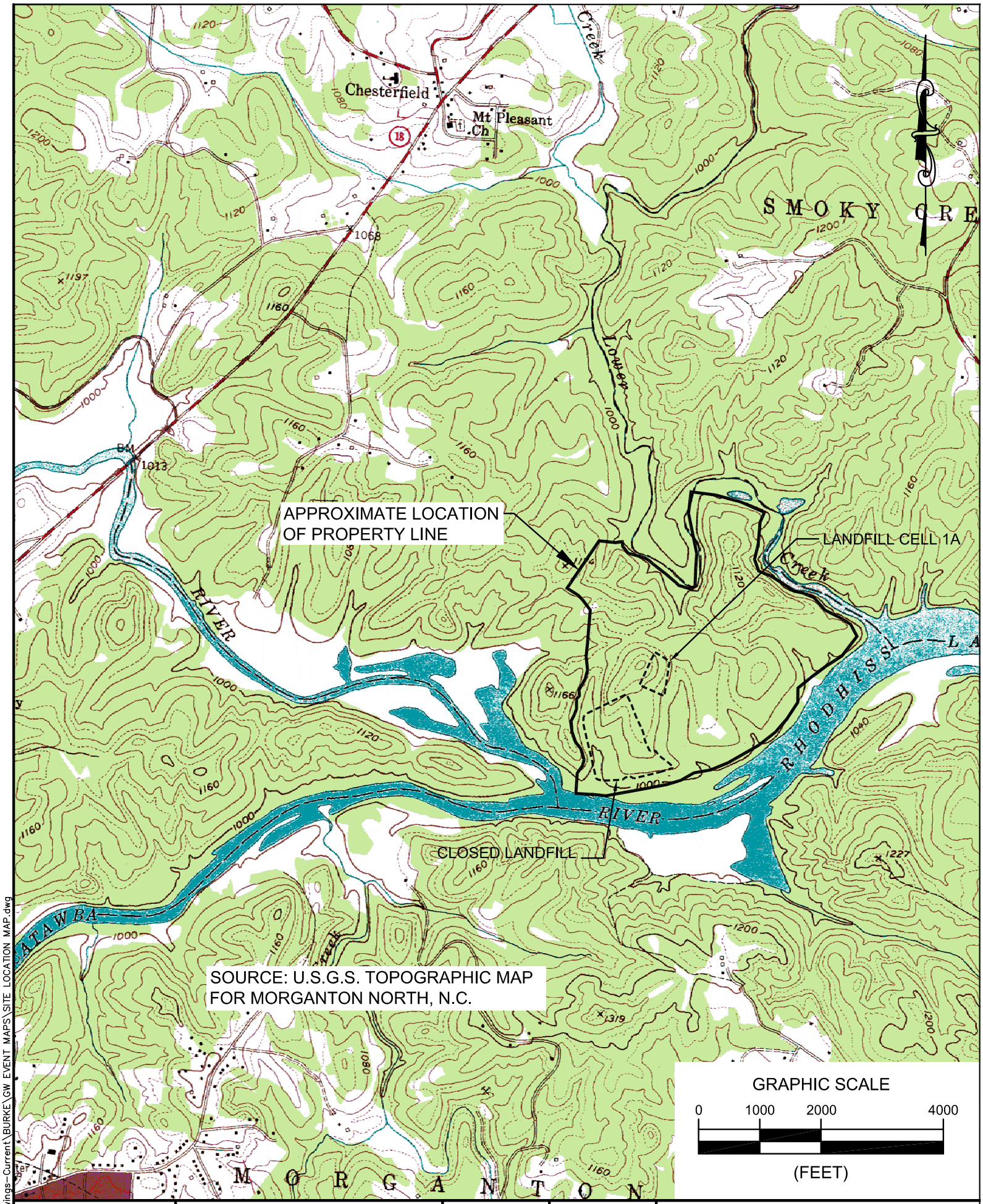


Chart 10: beta-BHC vs. Time in Downgradient Wells
Concentration (µg/l)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Nov-10
May-11
Nov-11
May-12
Nov-12
May-13
Nov-13
May-14
Nov-14
May-15
Nov-15
MW-10
MW-11
MW-12
MW-13
MW-16S
GPS

FIGURE

Figure 1: Site Location Map



N:\Dwgs\Drawings-Current\BURKE\GW EVENT MAPS\SITE LOCATION MAP.dwg

FIGURE NO. 1	JOYCE ENGINEERING 2211 WEST MEADOWVIEW ROAD GREENSBORO, N.C. 27407 PHONE: (336) 323-0092 © 2016 Joyce Engineering, Inc. All rights reserved.	SCALE 1"=2000'	PROJECT NO. 277	BURKE COUNTY LANDFILL BURKE COUNTY, NORTH CAROLINA SITE LOCATION MAP

DRAWING

Drawing 1: Groundwater Potentiometric Surface Map

LEGEND

1050	EXISTING 25' TOPOGRAPHIC CONTOUR
1080	EXISTING 10' TOPOGRAPHIC CONTOUR
	EXISTING 5' TOPOGRAPHIC CONTOUR
	EXISTING 2' TOPOGRAPHIC CONTOUR
1020	GROUNDWATER SURFACE CONTOUR [FEET ABOVE MEAN SEA LEVEL (AMSL)]
	PROPERTY LINE
	GROUNDWATER FLOW PATHWAY USED TO CALCULATE HYDRAULIC GRADIENT
	EXISTING ROAD
	APPROXIMATE LIMITS OF WASTE
	CENTERLINE OF STREAM
MW-13 1009.64	COMPLIANCE WELL LOCATION AND IDENTIFICATION WITH STATIC WATER LEVEL ELEVATION (FEET AMSL)
MW-18	SENTINEL WELL LOCATION AND IDENTIFICATION WITH STATIC WATER LEVEL ELEVATION (FEET AMSL)
MW-9	ABANDONED OR UNUSED MONITORING WELL
PZ-9D	PIEZOMETER LOCATION AND IDENTIFICATION
GMP-3	GAS PROBE LOCATION AND IDENTIFICATION
SMP-5	SURFACE MONITORING POINT LOCATION AND IDENTIFICATION
T1	TEMPORARY WELL
(NM)	NOT MEASURED
	APPROXIMATE LOCATION OF SPRING HEAD
JE-0020	CONTROL POINT LOCATION AND IDENTIFICATION
i_1	SEGMENT USED FOR GRADIENT CALCULATION

FLOW PATH LENGTH

i_1	967 LF
i_2	1,495 LF
i_3	1,098 LF
i_4	770 LF

NOTES

1. TOPOGRAPHIC CONTOUR INTERVAL = 2 AND 10 FEET.
2. GROUNDWATER SURFACE CONTOUR INTERVAL = 10 FEET.
3. STATIC WATER LEVELS WERE MEASURED ON DECEMBER 9,2015.
4. GROUNDWATER CONTOURS BASED ON LINEAR INTERPOLATION BETWEEN AND EXTRAPOLATION FROM KNOWN DATA, TOPOGRAPHIC CONTOURS, AND KNOWN FIELD CONDITIONS.
5. MW-16D GROUNDWATER ELEVATION WAS NOT USED IN CALCULATING GROUNDWATER CONTOURS.

NO	BY	CK	APP	REVISIONS AND RECORD OF ISSUE	DATE

DESIGNED GE
DRAWN RWH
CHECKED VB
APPROVED VB
DATE 01/13/16

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JOYCE ENGINEERING
2211 W. MEADOWVIEW ROAD
GREENSBORO, NC 27407
PHONE: (336) 323-0092

JOHNS RIVER, WASTE MANAGEMENT FACILITY
BURKE COUNTY, NORTH CAROLINA

GROUNDWATER POTENTIOMETRIC SURFACE MAP
DECEMBER 9, 2015
PERMIT NO. 12-03

PROJECT NO. 277

SCALE AS NOTED

DRAWING NO. 1

L:\Burke County\2016 constituents maps\1- GW-EVENT 12-15.DWG Layout=SHT 01

APPENDICES

Appendix A	Field Data Logs
Appendix B	Laboratory Analytical Reports
Appendix C	Statistical Analyses Worksheets
Appendix D	Historical Detected Inorganic Groundwater Constituents
Appendix E	Historical Detected Organic Groundwater Constituents
Appendix F	Historical Detected Constituents in Performance & Sentinel Wells
Appendix G	Historical Detected Surface Water Constituents
Appendix H	Historical MNA Parameters
Appendix I	Biochlor Modeling Input & Output

Appendix A

Field Data Logs

DATE: 12/8/15

JOYCE ENGINEERING

GROUND WATER SAMPLING LOG

Project Name: Burke County- Johns River **Project No. /Task No.:** 00277.1601.12.02

Well ID: MW-10 **Sampler(s):** G. Eller/ H. Seaton

Well Location: on road to old barn on right

Well Diameter: 2 inches

Initial Depth to Water (DTW): 12.74 feet

Depth to Bottom (DTB): 24.16 feet

Water Column Thickness (WCT): 11.42 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 1.9 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 5.7 gallons

Actual Amount Purged/Bailed: 5.7 gallons

Purged with: disposable bailer

Sampled with: disposable bailer

Depth to Water before Sampling: 12.25 feet

Gallons	Time	Temp(°C)	pH	Cond. (µS)	Turb.(ntu)	Initials
0	0839	12.1	6.04	596	6.75	HS
1.9	0842	14.5	6.14	715	30.4	HS
3.8	0844	15.5	6.03	639	-	HS
5.7	0850	15.6	5.98	573	95.5	HS
Before Sampling	1140	15.8	5.88	20.0	17.5	HS

Comments (weather conditions, odor, color, silt, etc.): The weather was sunny with temperatures in the 60s on 12/8/15.

Signature: [signature] **Date:** 12-8-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 12/8/15

JOYCE ENGINEERING

GROUND WATER SAMPLING LOG

Project Name: Burke County- Johns River **Project No. /Task No.:** 00277.1601.12.02

Well ID: MW-11 **Sampler(s):** G. Eller/ H. Seaton

Well Location: along perimeter road

Well Diameter: 2 inches

Initial Depth to Water (DTW): 36.33 feet

Depth to Bottom (DTB): 44.20 feet

Water Column Thickness (WCT): 7.87 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 1.3 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 3.9 gallons

Actual Amount Purged/Bailed: 3.9 gallons

Purged with: Disposable Bailer

Sampled with: Disposable Bailer

Depth to Water before Sampling: 33.40 feet

Gallons	Time	Temp(°C)	DO	Cond. (µS)	pH	ORP	Turb.(ntu)	Initials
0	0859	13.6	1.08	403.0	5.50	-22.9	25.6	HS
1.3	0901	14.1	1.50	429.9	5.88	-46.9	27.5	HS
2.6	0903	15.2	1.42	445.5	5.94	-50.2	35.7	HS
3.9	0906	15.8	1.13	429.6	5.97	-48.4	37.5	HS
Before Sampling	1205	15.4	4.62	400.6	6.06	-21.4	16.7	HS

Comments (weather conditions, odor, color, silt, etc.): The weather was sunny with temperatures in the 60s on 12/8/15.

Fe2+: 3.5 mg/L

Signature: [signature] **Date:** 12-8-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 12/8/15

JOYCE ENGINEERING

GROUND WATER SAMPLING LOG

Project Name: Burke County- Johns River **Project No. /Task No.:** 00277.1601.12.02

Well ID: MW-12 **Sampler(s):** G. Eller/ H. Seaton

Well Location: half-way down slope of backside of landfill, between MW-11 & MW-13

Well Diameter: 2 inches

Initial Depth to Water (DTW): 40.80 feet

Depth to Bottom (DTB): 53.00 feet

Water Column Thickness (WCT): 12.20 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 2.0 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 6.0 gallons

Actual Amount Purged/Bailed: 6.0 gallons

Purged with: Disposable Bailer

Sampled with: Disposable Bailer

Depth to Water before Sampling: - feet

Gallons	Time	Temp(°C)	DO	Cond. (µS)	pH	ORP	Turb.(ntu)	Initials
0	1242	15.8	1.12	208.9	5.84	-23.8	8.75	HS
2.0	1245	15.6	1.33	205.7	5.78	-9.99	9.50	HS
4.0	1247	15.7	1.35	204.6	5.72	-7.3	29.5	HS
6.0	1251	16.1	2.47	203.4	5.81	-6.2	35.4	HS
Before Sampling	1251	16.1	2.47	203.4	5.81	-6.2	35.4	HS

Comments (weather conditions, odor, color, silt, etc.): The weather was sunny with temperatures in the 60s on 12/8/15. **3 amber VOC bottles broken and not sampled**

Fe2+: 2.0 mg/L

Signature: [signature] **Date:** 12-8-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 12/8/15

JOYCE ENGINEERING

GROUND WATER SAMPLING LOG

Project Name: Burke County- Johns River **Project No. /Task No.:** 00277.1601.12.02

Well ID: MW-13 **Sampler(s):** G. Eller / H. Seaton

Well Location: downhill from waste along perimeter road

Well Diameter: 2 inches

Initial Depth to Water (DTW): 49.76 feet

Depth to Bottom (DTB): 59.00 feet

Water Column Thickness (WCT): 9.24 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 1.5 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 4.5 gallons

Actual Amount Purged/Bailed: 4.5 gallons

Purged with: Disposable bailer

Sampled with: Disposable bailer

Depth to Water before Sampling: 54.25 feet

Gallons	Time	Temp(°C)	pH	Cond. (µS)	Turb.(ntu)	Initials
0	1445	15.7	4.62	54	8.75	HS
1.5	1448	15.5	4.46	50	12.5	HS
3.0	1450	15.6	4.47	49	25.4	HS
4.5	1452	15.0	4.43	46	24.7	HS
Before Sampling	1550	15.3	4.48	45	-	HS

Comments (weather conditions, odor, color, silt, etc.): The weather was sunny with temperatures in the 60s on 12/8/15.

Signature: [signature] **Date:** 12-8-15

QA/QC Sign Off: [signature] **Date:** 1/4/14

DATE: 12/8/15

JOYCE ENGINEERING

GROUND WATER SAMPLING LOG

Project Name: Burke County- Johns River **Project No. /Task No.:** 00277.1601.12.02

Well ID: MW-16D **Sampler(s):** G. Eller / H. Seaton

Well Location: beside MW-16S

Well Diameter: 2 inches

Initial Depth to Water (DTW): 12.70 feet

Depth to Bottom (DTB): 90.50 feet

Water Column Thickness (WCT): 77.80 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 12.6 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 37.8 gallons

Actual Amount Purged/Bailed: 37.8 gallons

Purged with: 12-Volt Submersible Pump

Sampled with: 12-Volt Submersible Pump

Depth to Water before Sampling: - feet

Gallons	Time	Temp(°C)	pH	Cond. (µS)	Turb.(ntu)	Initials
0	1319	16.7	8.33	118	6.05	HS
12.6	1329	15.8	8.35	134	6.75	HS
25.2	1358	16.1	7.88	126	7.05	HS
37.8	1432	16.0	7.95	125	6.80	HS
Before Sampling	1432	16.0	7.95	125	6.80	HS

Comments (weather conditions, odor, color, silt, etc.): The weather was sunny with temperatures in the 60s on 12/8/15.

Signature: [signature] **Date:** 12-8-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 12/8/15

JOYCE ENGINEERING

GROUND WATER SAMPLING LOG

Project Name: Burke County- Johns River **Project No. /Task No.:** 00277.1601.12.02

Well ID: MW-16S **Sampler(s):** G. Eller / H. Seaton

Well Location: down access road along river

Well Diameter: 2 inches

Initial Depth to Water (DTW): 13.20 feet

Depth to Bottom (DTB): 21.45 feet

Water Column Thickness (WCT): 8.25 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 1.3 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 3.9 gallons

Actual Amount Purged/Bailed: 3.9 gallons

Purged with: Disposable Bailer

Sampled with: Disposable Bailer

Depth to Water before Sampling: - feet

Gallons	Time	Temp(°C)	DO	Cond. (µS)	pH	ORP	Turb.(ntu)	Initials
0	1323	16.9	0.76	167.6	5.50	20.2	12.5	HS
1.3	1326	16.8	1.74	187.1	5.62	20.3	15.25	HS
2.6	1328	16.8	1.78	202.3	6.64	22.5	12.75	HS
3.9	1330	16.9	1.49	208.5	5.66	25.7	30.5	HS
Before Sampling	1330	16.9	1.49	208.5	5.66	25.7	30.5	HS

Comments (weather conditions, odor, color, silt, etc.): The weather was sunny with temperatures in the 60s on 12/8/15.

Fe2+: 3.2 mg/L.

Signature: [signature] **Date:** 12-8-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 12/8/15

JOYCE ENGINEERING

DEVELOPMENT AND GROUND WATER SAMPLING LOG

Project Name: John's River, Burke Co **Project No./Task No.:** 277.1601.12.02

Well ID: MW-21 **Sampler(s):** G. Eller / H. Seaton

Well Location: Off the road by the western property boundary, up from GP-1

Well Diameter: 2 inches

Initial Depth to Water (DTW): 38.15 feet

Depth to Bottom (DTB): 46.80 feet

Water Column Thickness (WCT): 8.65 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 1.4 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 4.2 gallons

Actual Amount Purged/Bailed: 4.2 gallons

Purged with: Disposable Bailer

Sampled with: Disposable Bailer

Depth to Water before Sampling: 38.20 feet

Gallons	Time	Temp(°C)	DO	Cond. (µS)	pH	ORP	Turb.(ntu)	Initials
0	0825	14.0	8.27	47.2	8.09	219.6	36.2	HS
1.4	0826	11.9	8.15	13.7	7.22	264.7	650	HS
2.8	0828	11.9	6.92	12.4	5.57	291.9	774	HS
4.2	0830	11.6	7.78	9.9	4.60	330.8	>1000	HS
Before Sampling	1120	15.2	7.59	15.5	5.13	269.9	25.5	HS

Comments (weather conditions, odor, color, silt, etc.): The weather was sunny with temperatures in the 60s on 12/8/15.

Fe2+: 0 mg/L

Signature: [signature] **Date:** 12-8-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 12/9/15

JOYCE ENGINEERING

SURFACE WATER MONITORING LOG

Project Name: Burke County- Johns River **Project/Task No.:** 00277.1601.12.02

Surface Point ID: SMP-5 **Sampler(s):** G. Eller / H. Seaton

Location: down road to river, right at fork in road beside barn

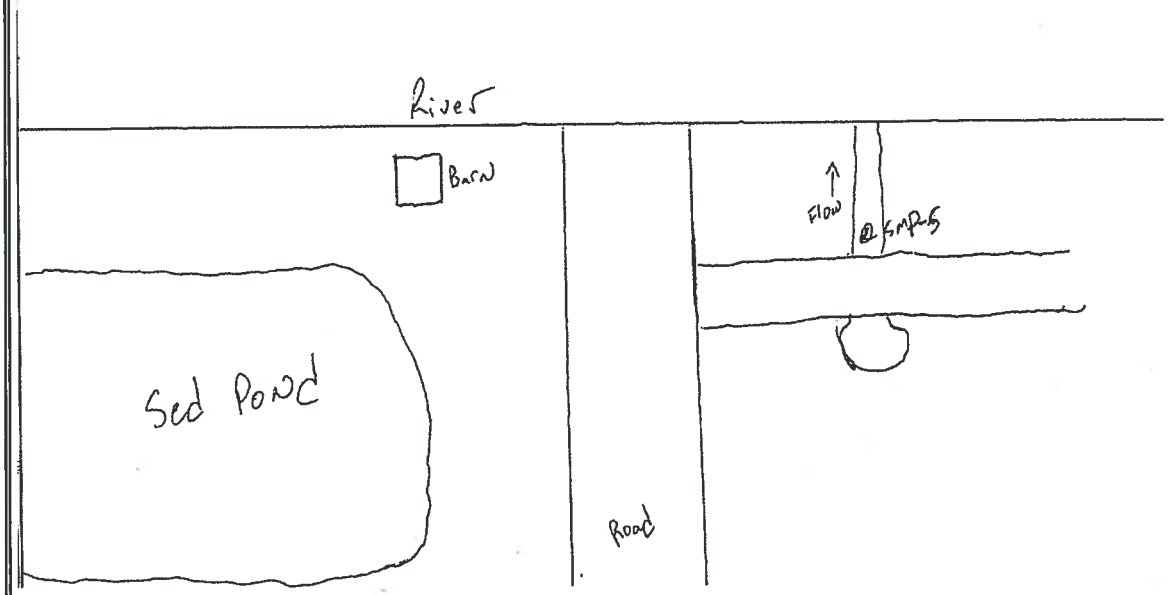
Field Parameters:

Time of Sampling:	1143	
pH:	5.93	
Temperature:	8.0	(°C)
Conductivity:	59	(µS)
Turbidity:	6.61	(ntu)

Comments/Sample Description (weather conditions, odor, color, silt, etc.):

The weather was sunny with temperatures in the 60s on 12/9/15.
FIELD BLANK @ 1530

Sketch of Sample Location (include flow direction, drainage pathways, etc.):



Signature: [signature] **Date:** 12-9-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 12/9/15

JOYCE ENGINEERING

SURFACE WATER MONITORING LOG

Project Name: Burke County- Johns River **Project/Task No.:** 00277.1601.12.02

Surface Point ID: SMP-6 **Sampler(s):** G. Eller/ H. Seaton

Location: down hill from between MW-12 & MW-13 to stream

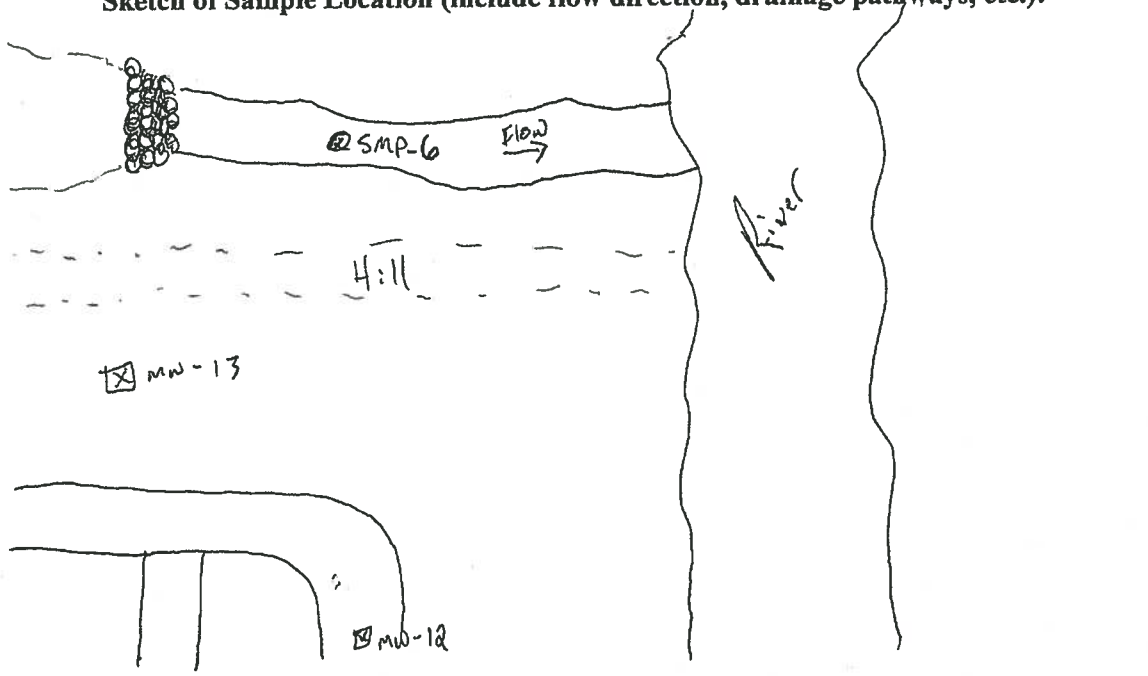
Field Parameters:

Time of Sampling:	0950	
pH:	6.18	
Temperature:	6.3	(°C)
Conductivity:	39	(µS)
Turbidity:	6.07	(ntu)

Comments/Sample Description (weather conditions, odor, color, silt, etc.):

The weather was sunny with temperatures in the 60s on 12/9/15.

Sketch of Sample Location (include flow direction, drainage pathways, etc.):



Signature: [signature] **Date:** 12-9-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 12/9/15

JOYCE ENGINEERING

SURFACE WATER MONITORING LOG

Project Name: Burke County- Johns River **Project/Task No.:** 00277.1601.12.02

Surface Point ID: SMP-7 **Sampler(s):** G. Eller/ H. Seaton

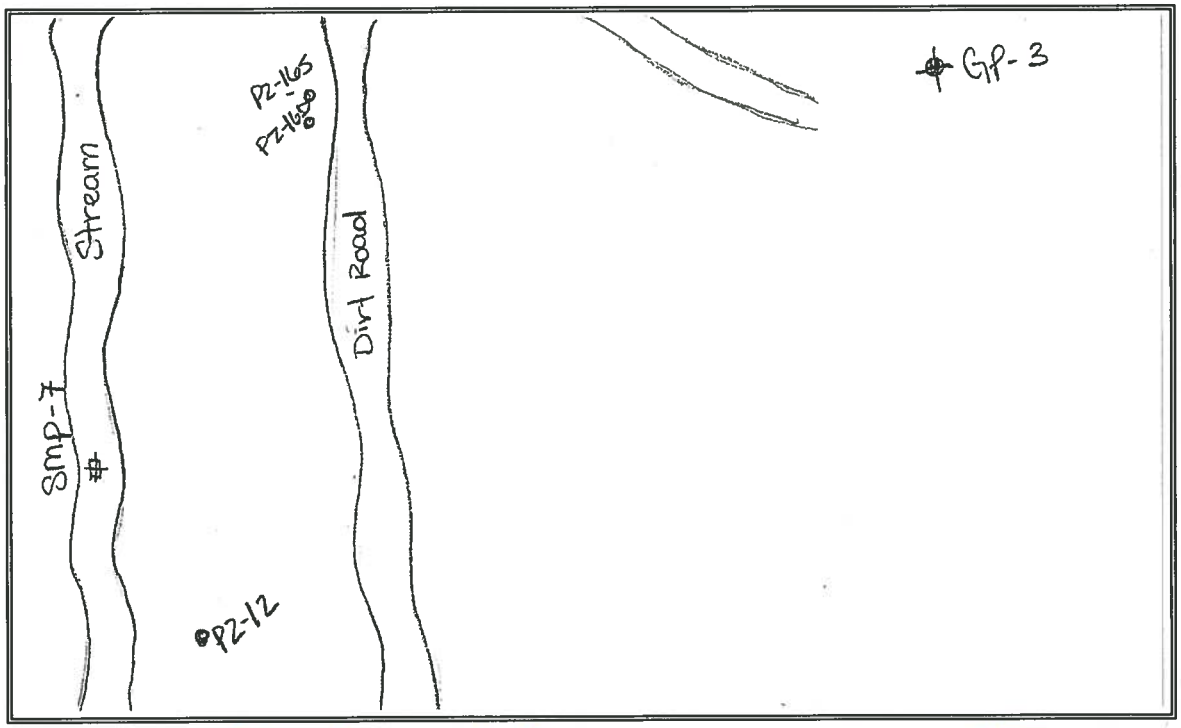
Location: Upstream from PZ-12

Field Parameters:

Time of Sampling:	1034	
pH:	5.46	
Temperature:	8.5	(°C)
Conductivity:	38	(µS)
Turbidity:	4.33	(ntu)

Comments/Sample Description (weather conditions, odor, color, silt, etc.):

The weather was sunny with temperatures in the 60s on 12/9/15.



Signature: [signature] **Date:** 12-9-15

QA/QC Sign Off: [signature] **Date:** 1/6/16

DATE: 2-4-16

JOYCE ENGINEERING

GROUND WATER SAMPLING LOG

Project Name: Burke County- Johns River **Project No. /Task No.:** 00277.1601.12.01

Well ID: MW-11 RESAMPLE **Sampler(s):** G. Eller

Well Location: along perimeter road

Well Diameter: 2 inches

Initial Depth to Water (DTW): 35.80 feet

Depth to Bottom (DTB): 44.20 feet

Water Column Thickness (WCT): 8.40 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 1.4 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 4.2 gallons

Actual Amount Purged/Bailed: 4.2 gallons

Purged with: Disposable Bailer

Sampled with: Disposable Bailer

Depth to Water before Sampling: - feet

Gallons	Time	Temp(°C)	DO	Cond. (µS)	pH	ORP	Turb.(ntu)	Initials
0	1155	15.8	4.03	402.7	5.39	28.9	8.24	GE
1.4	1158	16.2	1.52	429.9	5.74	-20.4	10.8	GE
2.8	1201	16.1	2.01	453.5	5.88	-36.1	10.3	GE
4.2	1205	16.1	1.38	451.5	5.91	-37.9	10.5	GE
Before Sampling	1205	16.1	1.38	451.5	5.91	-37.9	10.5	GE

Comments (weather conditions, odor, color, silt, etc.): The weather was partly cloudy with temperatures in the 40s on 2-4-16.

Signature: [signature] **Date:** 2-4-16

QA/QC Sign Off: [signature] **Date:** 2/5/16

DATE: 2-4-16

JOYCE ENGINEERING

GROUND WATER SAMPLING LOG

Project Name: Burke County- Johns River **Project No. /Task No.:** 00277.1601.12.01

Well ID: MW-12 **Sampler(s):** G. Eller

Well Location: half-way down slope of backside of landfill, between MW-11 & MW-13

Well Diameter: 2 inches

Initial Depth to Water (DTW): 40.72 feet

Depth to Bottom (DTB): 53.00 feet

Water Column Thickness (WCT): 12.28 feet [DTB-DTW]

Calculation for One Well Volume (WV):

For 2" Well: WCT X 0.163 = 2.0 gallons

For 4" Well: WCT X 0.653 = _____ gallons

For THREE Well Volumes: WV X 3 = 6.0 gallons

Actual Amount Purged/Bailed: 6.0 gallons

Purged with: Disposable Bailer

Sampled with: Disposable Bailer

Depth to Water before Sampling: 43.69 feet

Gallons	Time	Temp(°C)	DO	Cond. (µS)	pH	ORP	Turb.(ntu)	Initials
0	1046	15.6	6.14	246.1	7.52	-45.9	5.49	GE
2.0	1049	15.7	1.88	210.9	5.78	-20.2	23.3	GE
4.0	1053	15.7	1.92	208.9	5.50	-19.9	212	GE
6.0	1058	15.6	1.82	208.1	5.54	-13.8	247	GE
Before Sampling	1302	15.6	2.76	225.5	5.82	12.4	7.06	GE

Comments (weather conditions, odor, color, silt, etc.): The weather was partly cloudy with temperatures in the 40s on 2-4-16.

Signature: [signature] **Date:** 2-4-16

QA/QC Sign Off: [signature] **Date:** 2/5/16

Appendix B

Laboratory Analytical Reports

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

January 21, 2016

Mr. Van Burbach
Joyce Engineering-Greensboro
2211 West Meadowview Rd
Boone Bldg, Suite 101
Greensboro, NC 27407

RE: Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Dear Mr. Burbach:
Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Godwin
kevin.godwin@pacelabs.com
Project Manager

Enclosures

cc: Alex Everhart, Joyce Engineering-NC

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Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Ormond Beach Certification IDs
8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92279395001	**1203-MW10**	Water	12/08/15 11:40	12/10/15 10:48
92279395002	**1203-MW11**	Water	12/08/15 12:05	12/10/15 10:48
92279395003	**1203-MW12**	Water	12/08/15 12:51	12/10/15 10:48
92279395004	**1203-MW13**	Water	12/08/15 15:50	12/10/15 10:48
92279395005	**1203-MW16S**	Water	12/08/15 13:30	12/10/15 10:48
92279395006	**1203-MW16D**	Water	12/08/15 14:32	12/10/15 10:48
92279395007	**1203-MW12 Re-run Sb,Cr,V**	Water	12/08/15 12:51	12/10/15 10:48

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SAMPLE ANALYTE COUNT

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92279395001	**1203-MW10**	EPA 8081	SWB	21	PASI-C
		EPA 8082	SWB	8	PASI-C
		EPA 8151	LJM	5	PASI-O
		EPA 6010	CDF	18	PASI-A
		EPA 7470	HVK	1	PASI-A
		EPA 8270	BPJ	111	PASI-C
		EPA 8260	GAW	68	PASI-C
		SM 2320B	MLS	1	PASI-A
		SM 2540C	MJP	1	PASI-A
		SM 4500-S2D	MJP	1	PASI-A
		EPA 300.0	MDW	1	PASI-A
		SM 4500-Cl-E	WRC	1	PASI-A
		SM 4500-CN-E	AES2	1	PASI-A
92279395002	**1203-MW11**	EPA 8081	SWB	21	PASI-C
		EPA 8082	SWB	8	PASI-C
		EPA 8151	LJM	5	PASI-O
		EPA 6010	CDF	18	PASI-A
		EPA 7470	HVK	1	PASI-A
		EPA 8270	BPJ	111	PASI-C
		EPA 8260	GAW	68	PASI-C
		SM 2320B	MLS	1	PASI-A
		SM 2540C	MJP	1	PASI-A
		SM 4500-S2D	MJP	1	PASI-A
		EPA 300.0	MDW	1	PASI-A
		SM 4500-Cl-E	WRC	1	PASI-A
		SM 4500-CN-E	AES2	1	PASI-A
92279395003	**1203-MW12**	EPA 8081	SWB	21	PASI-C
		EPA 8082	SWB	8	PASI-C
		EPA 8151	LJM	5	PASI-O
		EPA 6010	CDF	18	PASI-A
		EPA 7470	HVK	1	PASI-A
		EPA 8270	BPJ	111	PASI-C
		EPA 8260	GAW	68	PASI-C
		SM 2320B	MLS	1	PASI-A
		SM 2540C	MJP	1	PASI-A
		SM 4500-S2D	MJP	1	PASI-A
		EPA 300.0	MDW	1	PASI-A

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Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-Cl-E	WRC	1	PASI-A
		SM 4500-CN-E	AES2	1	PASI-A
92279395004	**1203-MW13**	EPA 8081	SWB	21	PASI-C
		EPA 8082	SWB	8	PASI-C
		EPA 8151	LJM	5	PASI-O
		EPA 6010	CDF	18	PASI-A
		EPA 7470	HVK	1	PASI-A
		EPA 8270	BPJ	111	PASI-C
		EPA 8260	GAW	68	PASI-C
		SM 2320B	MLS	1	PASI-A
		SM 2540C	MJP	1	PASI-A
		SM 4500-S2D	MJP	1	PASI-A
		EPA 300.0	MDW	1	PASI-A
		SM 4500-Cl-E	WRC	1	PASI-A
		SM 4500-CN-E	AES2	1	PASI-A
92279395005	**1203-MW16S**	EPA 8081	SWB	21	PASI-C
		EPA 8082	SWB	8	PASI-C
		EPA 8151	LJM	5	PASI-O
		EPA 6010	CDF	18	PASI-A
		EPA 7470	HVK	1	PASI-A
		EPA 8270	BPJ	111	PASI-C
		EPA 8260	GAW	68	PASI-C
		SM 2320B	MLS	1	PASI-A
		SM 2540C	MJP	1	PASI-A
		SM 4500-S2D	MJP	1	PASI-A
		EPA 300.0	MDW	1	PASI-A
		SM 4500-Cl-E	WRC	1	PASI-A
		SM 4500-CN-E	AES2	1	PASI-A
92279395006	**1203-MW16D**	EPA 6010	CDF	17	PASI-A
		EPA 7470	HVK	1	PASI-A
		EPA 8260	GAW	51	PASI-C
		SM 2320B	MLS	1	PASI-A
		SM 2540C	MJP	1	PASI-A
		EPA 300.0	MDW	1	PASI-A
		SM 4500-Cl-E	WRC	1	PASI-A
92279395007	**1203-MW12 Re-run Sb,Cr,V**	EPA 6010	CDF	3	PASI-A

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SUMMARY OF DETECTION

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92279395001	**1203-MW10**					
EPA 6010	Barium	45.6J	ug/L	100	12/17/15 03:12	
EPA 6010	Cobalt	175	ug/L	10.0	12/17/15 03:12	
EPA 6010	Copper	8.1J	ug/L	10.0	12/17/15 03:12	
EPA 6010	Iron	102000	ug/L	1500	12/17/15 16:51	
EPA 6010	Lead	7.8J	ug/L	10.0	12/17/15 03:12	
EPA 6010	Manganese	15000	ug/L	250	12/17/15 16:51	
EPA 6010	Nickel	5.5J	ug/L	50.0	12/17/15 03:12	
EPA 6010	Vanadium	20.4J	ug/L	25.0	12/17/15 03:12	
EPA 6010	Zinc	9.0J	ug/L	10.0	12/17/15 03:12	
EPA 8260	Benzene	1.6	ug/L	1.0	12/19/15 14:16	
EPA 8260	Chlorobenzene	1.5J	ug/L	3.0	12/19/15 14:16	
EPA 8260	1,4-Dichlorobenzene	0.98J	ug/L	1.0	12/19/15 14:16	
EPA 8260	1,1-Dichloroethane	0.95J	ug/L	5.0	12/19/15 14:16	
EPA 8260	cis-1,2-Dichloroethene	3.9J	ug/L	5.0	12/19/15 14:16	
SM 2320B	Alkalinity, Total as CaCO3	98400	ug/L	5000	12/14/15 15:17	
SM 2540C	Total Dissolved Solids	182000	ug/L	25000	12/11/15 10:41	
EPA 300.0	Sulfate	10200J	ug/L	250000	12/11/15 14:06	
SM 4500-Cl-E	Chloride	26500	ug/L	1000	12/17/15 16:56	
92279395002	**1203-MW11**					
EPA 8081	beta-BHC	0.16	ug/L	0.050	12/14/15 21:19	
EPA 6010	Barium	140	ug/L	100	12/17/15 03:25	
EPA 6010	Cobalt	61.0	ug/L	10.0	12/17/15 03:25	
EPA 6010	Copper	6.4J	ug/L	10.0	12/17/15 03:25	
EPA 6010	Iron	74200	ug/L	300	12/17/15 03:25	
EPA 6010	Lead	6.3J	ug/L	10.0	12/17/15 03:25	
EPA 6010	Manganese	18100	ug/L	250	12/17/15 16:54	
EPA 6010	Nickel	3.4J	ug/L	50.0	12/17/15 03:25	
EPA 6010	Vanadium	23.5J	ug/L	25.0	12/17/15 03:25	
EPA 6010	Zinc	20.0	ug/L	10.0	12/17/15 03:25	
EPA 8260	Benzene	2.2	ug/L	1.0	12/19/15 14:33	
EPA 8260	Chlorobenzene	0.61J	ug/L	3.0	12/19/15 14:33	
EPA 8260	1,2-Dichlorobenzene	0.39J	ug/L	5.0	12/19/15 14:33	
EPA 8260	1,4-Dichlorobenzene	12.6	ug/L	1.0	12/19/15 14:33	
EPA 8260	1,1-Dichloroethane	3.2J	ug/L	5.0	12/19/15 14:33	
EPA 8260	1,2-Dichloroethane	0.65J	ug/L	1.0	12/19/15 14:33	
EPA 8260	cis-1,2-Dichloroethene	6.9	ug/L	5.0	12/19/15 14:33	
EPA 8260	Trichloroethene	0.71J	ug/L	1.0	12/19/15 14:33	
EPA 8260	Vinyl chloride	0.72J	ug/L	1.0	12/19/15 14:33	
SM 2320B	Alkalinity, Total as CaCO3	202000	ug/L	5000	12/14/15 15:30	
SM 2540C	Total Dissolved Solids	280000	ug/L	25000	12/11/15 10:41	
EPA 300.0	Sulfate	1530J	ug/L	250000	12/11/15 14:06	
SM 4500-Cl-E	Chloride	30800	ug/L	1000	12/17/15 16:57	
92279395003	**1203-MW12**					
EPA 6010	Antimony	6.3	ug/L	6.0	12/17/15 03:28	
EPA 6010	Barium	132	ug/L	100	12/17/15 03:28	
EPA 6010	Chromium	13.8	ug/L	10.0	12/17/15 03:28	

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Huntersville, NC 28078
(704)875-9092

SUMMARY OF DETECTION

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92279395003	**1203-MW12**					
EPA 6010	Cobalt	84.8	ug/L	10.0	12/17/15 03:28	
EPA 6010	Copper	9.7J	ug/L	10.0	12/17/15 03:28	
EPA 6010	Iron	50200	ug/L	300	12/17/15 03:28	
EPA 6010	Lead	9.8J	ug/L	10.0	12/17/15 03:28	
EPA 6010	Manganese	10800	ug/L	250	12/17/15 16:57	
EPA 6010	Nickel	17.7J	ug/L	50.0	12/17/15 03:28	
EPA 6010	Vanadium	36.9	ug/L	25.0	12/17/15 03:28	
EPA 6010	Zinc	65.1	ug/L	10.0	12/17/15 03:28	
EPA 8260	Benzene	2.3	ug/L	1.0	12/19/15 14:49	
EPA 8260	Chlorobenzene	0.73J	ug/L	3.0	12/19/15 14:49	
EPA 8260	1,4-Dichlorobenzene	4.8	ug/L	1.0	12/19/15 14:49	
EPA 8260	1,1-Dichloroethane	31.7	ug/L	5.0	12/19/15 14:49	
EPA 8260	cis-1,2-Dichloroethene	9.9	ug/L	5.0	12/19/15 14:49	
EPA 8260	Ethylbenzene	1.2	ug/L	1.0	12/19/15 14:49	
EPA 8260	Trichloroethene	1.4	ug/L	1.0	12/19/15 14:49	
SM 2320B	Alkalinity, Total as CaCO3	88800	ug/L	5000	12/14/15 16:04	
SM 2540C	Total Dissolved Solids	117000	ug/L	25000	12/11/15 10:42	
EPA 300.0	Sulfate	2020J	ug/L	250000	12/11/15 14:06	
SM 4500-Cl-E	Chloride	9400	ug/L	1000	12/17/15 16:58	
92279395004	**1203-MW13**					
EPA 6010	Barium	82.6J	ug/L	100	12/17/15 03:32	
EPA 6010	Cobalt	49.7	ug/L	10.0	12/17/15 03:32	
EPA 6010	Iron	1460	ug/L	300	12/17/15 03:32	
EPA 6010	Manganese	1500	ug/L	50.0	12/17/15 03:32	
EPA 6010	Nickel	4.2J	ug/L	50.0	12/17/15 03:32	
EPA 6010	Vanadium	3.0J	ug/L	25.0	12/17/15 03:32	
EPA 6010	Zinc	19.0	ug/L	10.0	12/17/15 03:32	
EPA 8260	Benzene	13.8	ug/L	1.0	12/19/15 15:06	
EPA 8260	Chlorobenzene	0.86J	ug/L	3.0	12/19/15 15:06	
EPA 8260	1,2-Dichlorobenzene	0.45J	ug/L	5.0	12/19/15 15:06	
EPA 8260	1,4-Dichlorobenzene	13.2	ug/L	1.0	12/19/15 15:06	
EPA 8260	1,1-Dichloroethane	33.7	ug/L	5.0	12/19/15 15:06	
EPA 8260	1,2-Dichloroethane	1.3	ug/L	1.0	12/19/15 15:06	
EPA 8260	cis-1,2-Dichloroethene	25.8	ug/L	5.0	12/19/15 15:06	
EPA 8260	Ethylbenzene	2.7	ug/L	1.0	12/19/15 15:06	
EPA 8260	Methylene Chloride	113	ug/L	1.0	12/19/15 15:06	
EPA 8260	Naphthalene	2.2J	ug/L	10.0	12/19/15 15:06	
EPA 8260	Tetrachloroethene	5.6	ug/L	1.0	12/19/15 15:06	
EPA 8260	Tetrahydrofuran	9.7J	ug/L	10.0	12/19/15 15:06	
EPA 8260	Toluene	6.0	ug/L	1.0	12/19/15 15:06	
EPA 8260	Trichloroethene	9.7	ug/L	1.0	12/19/15 15:06	
EPA 8260	Xylene (Total)	45.4	ug/L	5.0	12/19/15 15:06	
SM 2320B	Alkalinity, Total as CaCO3	9130	ug/L	5000	12/14/15 16:16	
SM 4500-Cl-E	Chloride	1910	ug/L	1000	12/17/15 16:59	
92279395005	**1203-MW16S**					
EPA 6010	Barium	50.6J	ug/L	100	12/17/15 03:35	

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Huntersville, NC 28078
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SUMMARY OF DETECTION

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92279395005	**1203-MW16S**					
EPA 6010	Cobalt	32.8	ug/L	10.0	12/17/15 03:35	
EPA 6010	Copper	5.9J	ug/L	10.0	12/17/15 03:35	
EPA 6010	Iron	27400	ug/L	300	12/17/15 03:35	
EPA 6010	Manganese	8440	ug/L	50.0	12/17/15 03:35	
EPA 6010	Vanadium	11.5J	ug/L	25.0	12/17/15 03:35	
EPA 6010	Zinc	47.3	ug/L	10.0	12/17/15 03:35	
EPA 8260	Acetone	16.5J	ug/L	100	12/20/15 19:06	
EPA 8260	Benzene	1.7	ug/L	1.0	12/20/15 19:06	
EPA 8260	Chlorobenzene	0.82J	ug/L	3.0	12/20/15 19:06	
EPA 8260	1,4-Dichlorobenzene	9.1	ug/L	1.0	12/20/15 19:06	
EPA 8260	1,1-Dichloroethane	10.3	ug/L	5.0	12/20/15 19:06	
EPA 8260	1,2-Dichloroethane	1.3	ug/L	1.0	12/20/15 19:06	
EPA 8260	cis-1,2-Dichloroethene	4.4J	ug/L	5.0	12/20/15 19:06	
EPA 8260	Toluene	0.31J	ug/L	1.0	12/20/15 19:06	
EPA 8260	Vinyl chloride	1.4	ug/L	1.0	12/20/15 19:06	
SM 2320B	Alkalinity, Total as CaCO3	95900	ug/L	5000	12/14/15 16:27	
SM 2540C	Total Dissolved Solids	106000	ug/L	25000	12/11/15 10:43	
SM 4500-Cl-E	Chloride	4190	ug/L	1000	12/17/15 17:03	
92279395006	**1203-MW16D**					
EPA 6010	Barium	8.0J	ug/L	100	12/17/15 03:38	
EPA 6010	Iron	43.7J	ug/L	300	12/17/15 03:38	
EPA 6010	Manganese	124	ug/L	50.0	12/17/15 03:38	
EPA 6010	Zinc	8.2J	ug/L	10.0	12/17/15 03:38	
SM 2320B	Alkalinity, Total as CaCO3	46200	ug/L	5000	12/14/15 16:39	
SM 2540C	Total Dissolved Solids	93000	ug/L	25000	12/11/15 10:43	
EPA 300.0	Sulfate	9260J	ug/L	250000	12/11/15 14:06	
SM 4500-Cl-E	Chloride	945J	ug/L	1000	12/17/15 17:04	
92279395007	**1203-MW12 Re-run Sb,Cr,V**					
EPA 6010	Antimony	6.2	ug/L	6.0	01/19/16 11:57	
EPA 6010	Chromium	14.7	ug/L	10.0	01/19/16 11:57	
EPA 6010	Vanadium	19.8J	ug/L	25.0	01/19/16 11:57	

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Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW10 **Lab ID: 92279395001** Collected: 12/08/15 11:40 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 20:44	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 20:44	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 20:44	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 20:44	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 20:44	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.20	1	12/11/15 16:00	12/14/15 20:44	57-74-9	
4,4'-DDD	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 20:44	72-54-8	
4,4'-DDE	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 20:44	72-55-9	
4,4'-DDT	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 20:44	50-29-3	
Dieldrin	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 20:44	60-57-1	
Endosulfan I	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 20:44	959-98-8	
Endosulfan II	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 20:44	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 20:44	1031-07-8	
Endrin	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 20:44	72-20-8	
Endrin aldehyde	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 20:44	7421-93-4	M1
Heptachlor	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 20:44	76-44-8	
Heptachlor epoxide	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 20:44	1024-57-3	
Methoxychlor	ND	ug/L	1.0	0.15	1	12/11/15 16:00	12/14/15 20:44	72-43-5	
Toxaphene	ND	ug/L	1.5	0.20	1	12/11/15 16:00	12/14/15 20:44	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	53	%	20-130		1	12/11/15 16:00	12/14/15 20:44	877-09-8	
Decachlorobiphenyl (S)	58	%	20-130		1	12/11/15 16:00	12/14/15 20:44	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:25	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:25	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:25	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:25	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:25	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:25	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:25	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	63	%	10-132		1	12/11/15 16:00	12/14/15 18:25	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151 Preparation Method: EPA 8151								
2,4-D	ND	ug/L	0.94	0.22	1	12/15/15 20:15	12/18/15 11:47	94-75-7	
Dinoseb	ND	ug/L	0.19	0.057	1	12/15/15 20:15	12/18/15 11:47	88-85-7	
2,4,5-T	ND	ug/L	0.19	0.042	1	12/15/15 20:15	12/18/15 11:47	93-76-5	
2,4,5-TP (Silvex)	ND	ug/L	0.19	0.049	1	12/15/15 20:15	12/18/15 11:47	93-72-1	
Surrogates									
2,4-DCAA (S)	90	%	36-130		1	12/15/15 20:15	12/18/15 11:47	19719-28-9	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	12/12/15 00:00	12/17/15 03:12	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-38-2	
Barium	**45.6J**	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-39-3	

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Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW10 **Lab ID: 92279395001** Collected: 12/08/15 11:40 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Beryllium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:12	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:12	7440-43-9	
Chromium	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-47-3	
Cobalt	**175**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-48-4	
Copper	**8.1J**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-50-8	
Iron	**102000**	ug/L	1500	125	5	12/12/15 00:00	12/17/15 16:51	7439-89-6	
Lead	**7.8J**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:12	7439-92-1	
Manganese	**15000**	ug/L	250	12.5	5	12/12/15 00:00	12/17/15 16:51	7439-96-5	
Nickel	**5.5J**	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:12	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	12/12/15 00:00	12/17/15 03:12	7440-28-0	
Tin	ND	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-31-5	
Vanadium	**20.4J**	ug/L	25.0	2.5	1	12/12/15 00:00	12/17/15 03:12	7440-62-2	
Zinc	**9.0J**	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:12	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.10	1	12/17/15 14:05	12/17/15 18:32	7439-97-6	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	10.0	0.25	1	12/15/15 17:28	12/22/15 19:09	83-32-9	
Acenaphthylene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 19:09	208-96-8	
Acetophenone	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 19:09	98-86-2	
2-Acetylaminofluorene	ND	ug/L	20.0	0.84	1	12/15/15 17:28	12/22/15 19:09	53-96-3	
4-Aminobiphenyl	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 19:09	92-67-1	
Anthracene	ND	ug/L	10.0	0.14	1	12/15/15 17:28	12/22/15 19:09	120-12-7	
Benzo(a)anthracene	ND	ug/L	10.0	0.33	1	12/15/15 17:28	12/22/15 19:09	56-55-3	
Benzo(a)pyrene	ND	ug/L	10.0	0.30	1	12/15/15 17:28	12/22/15 19:09	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 19:09	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	10.0	0.38	1	12/15/15 17:28	12/22/15 19:09	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	10.0	0.43	1	12/15/15 17:28	12/22/15 19:09	207-08-9	
Benzyl alcohol	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 19:09	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:09	101-55-3	
Butylbenzylphthalate	ND	ug/L	10.0	0.75	1	12/15/15 17:28	12/22/15 19:09	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	20.0	4.2	1	12/15/15 17:28	12/22/15 19:09	59-50-7	
4-Chloroaniline	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 19:09	106-47-8	
Chlorobenzilate	ND	ug/L	10.0	0.72	1	12/15/15 17:28	12/22/15 19:09	510-15-6	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:09	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 19:09	108-60-1	
2-Chloronaphthalene	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 19:09	91-58-7	
2-Chlorophenol	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:09	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 19:09	7005-72-3	
Chrysene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 19:09	218-01-9	
Diallate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:09	2303-16-4	
Dibenz(a,h)anthracene	ND	ug/L	10.0	0.55	1	12/15/15 17:28	12/22/15 19:09	53-70-3	

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(704)875-9092

ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW10 **Lab ID: 92279395001** Collected: 12/08/15 11:40 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Dibenzofuran	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:09	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/L	20.0	1.4	1	12/15/15 17:28	12/22/15 19:09	91-94-1	
2,4-Dichlorophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09	120-83-2	
2,6-Dichlorophenol	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:09	87-65-0	
Diethylphthalate	ND	ug/L	6000	1.3	1	12/15/15 17:28	12/22/15 19:09	84-66-2	
Dimethoate	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 19:09	60-51-5	
P-Dimethylaminoazobenzene	ND	ug/L	10.0	0.35	1	12/15/15 17:28	12/22/15 19:09	60-11-7	
7,12-Dimethylbenz(a)anthracene	ND	ug/L	10.0	0.77	1	12/15/15 17:28	12/22/15 19:09	57-97-6	
3,3'-Dimethylbenzidine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 19:09	119-93-7	
2,4-Dimethylphenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 19:09	105-67-9	
Dimethylphthalate	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:09	131-11-3	
Di-n-butylphthalate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:09	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	1.7	1	12/15/15 17:28	12/22/15 19:09	534-52-1	
1,3-Dinitrobenzene	ND	ug/L	20.0	1.5	1	12/15/15 17:28	12/22/15 19:09	99-65-0	
2,4-Dinitrophenol	ND	ug/L	50.0	6.5	1	12/15/15 17:28	12/22/15 19:09	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 19:09	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09	606-20-2	
Di-n-octylphthalate	ND	ug/L	10.0	0.86	1	12/15/15 17:28	12/22/15 19:09	117-84-0	
Diphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:09	122-39-4	
Disulfoton	ND	ug/L	10.0	1.4	1	12/15/15 17:28	12/22/15 19:09	298-04-4	
bis(2-Ethylhexyl)phthalate	ND	ug/L	15.0	0.85	1	12/15/15 17:28	12/22/15 19:09	117-81-7	
Ethyl methanesulfonate	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 19:09	62-50-0	
Famphur	ND	ug/L	20.0	1.7	1	12/15/15 17:28	12/22/15 19:09	52-85-7	
Fluoranthene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 19:09	206-44-0	L3
Fluorene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 19:09	86-73-7	
Hexachlorobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:09	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:09	77-47-4	
Hexachloroethane	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:09	67-72-1	
Hexachloropropene	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 19:09	1888-71-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10.0	0.29	1	12/15/15 17:28	12/22/15 19:09	193-39-5	
Isodrin	ND	ug/L	20.0	2.0	1	12/15/15 17:28	12/22/15 19:09	465-73-6	L3
Isophorone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:09	78-59-1	
Isosafrole	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:09	120-58-1	
Kepone	ND	ug/L	20.0	3.1	1	12/15/15 17:28	12/22/15 19:09	143-50-0	
Methapyrilene	ND	ug/L	100	2.7	1	12/15/15 17:28	12/22/15 19:09	91-80-5	L2
3-Methylcholanthrene	ND	ug/L	10.0	0.82	1	12/15/15 17:28	12/22/15 19:09	56-49-5	
Methyl methanesulfonate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:09	66-27-3	
2-Methylnaphthalene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 19:09	91-57-6	
Methyl parathion	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:09	298-00-0	
2-Methylphenol(o-Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09		
1-Naphthalenamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 19:09	134-32-7	
2-Naphthalenamine	ND	ug/L	10.0	0.98	1	12/15/15 17:28	12/22/15 19:09	91-59-8	
1,4-Naphthoquinone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:09	130-15-4	
2-Nitroaniline	ND	ug/L	50.0	2.8	1	12/15/15 17:28	12/22/15 19:09	88-74-4	
3-Nitroaniline	ND	ug/L	50.0	2.4	1	12/15/15 17:28	12/22/15 19:09	99-09-2	

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Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW10 **Lab ID: 92279395001** Collected: 12/08/15 11:40 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
4-Nitroaniline	ND	ug/L	20.0	2.5	1	12/15/15 17:28	12/22/15 19:09	100-01-6	
Nitrobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09	98-95-3	
2-Nitrophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	5.8	1	12/15/15 17:28	12/22/15 19:09	100-02-7	
5-Nitro-o-toluidine	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 19:09	99-55-8	
N-Nitrosodiethylamine	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 19:09	55-18-5	
N-Nitrosodimethylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:09	62-75-9	
N-Nitroso-di-n-butylamine	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 19:09	924-16-3	
N-Nitroso-di-n-propylamine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 19:09	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:09	86-30-6	
N-Nitrosomethylethylamine	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:09	10595-95-6	
N-Nitrosopiperidine	ND	ug/L	20.0	1.9	1	12/15/15 17:28	12/22/15 19:09	100-75-4	
N-Nitrosopyrrolidine	ND	ug/L	10.0	2.5	1	12/15/15 17:28	12/22/15 19:09	930-55-2	
O,O,O-Triethylphosphorothioate	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:09	126-68-1	
Parathion (Ethyl parathion)	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:09	56-38-2	
Pentachlorobenzene	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 19:09	608-93-5	
Pentachloronitrobenzene	ND	ug/L	20.0	1.0	1	12/15/15 17:28	12/22/15 19:09	82-68-8	
Pentachlorophenol	ND	ug/L	25.0	2.3	1	12/15/15 17:28	12/22/15 19:09	87-86-5	
Phenacetin	ND	ug/L	20.0	0.97	1	12/15/15 17:28	12/22/15 19:09	62-44-2	
Phenanthrene	ND	ug/L	10.0	0.22	1	12/15/15 17:28	12/22/15 19:09	85-01-8	
Phenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09	108-95-2	
p-Phenylenediamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 19:09	106-50-3	
Phorate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:09	298-02-2	L3
Pronamide	ND	ug/L	10.0	0.97	1	12/15/15 17:28	12/22/15 19:09	23950-58-5	
Pyrene	ND	ug/L	10.0	0.19	1	12/15/15 17:28	12/22/15 19:09	129-00-0	
Safrole	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:09	94-59-7	
1,2,4,5-Tetrachlorobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:09	95-94-3	
2,3,4,6-Tetrachlorophenol	ND	ug/L	10.0	2.3	1	12/15/15 17:28	12/22/15 19:09	58-90-2	
Thionazin	ND	ug/L	20.0	1.2	1	12/15/15 17:28	12/22/15 19:09	297-97-2	
O-Toluidine	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 19:09	95-53-4	
2,4,5-Trichlorophenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 19:09	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.9	1	12/15/15 17:28	12/22/15 19:09	88-06-2	
1,3,5-Trinitrobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:09	99-35-4	L3
Surrogates									
Nitrobenzene-d5 (S)	81	%	21-110		1	12/15/15 17:28	12/22/15 19:09	4165-60-0	
2-Fluorobiphenyl (S)	83	%	27-110		1	12/15/15 17:28	12/22/15 19:09	321-60-8	
Terphenyl-d14 (S)	87	%	31-107		1	12/15/15 17:28	12/22/15 19:09	1718-51-0	
Phenol-d6 (S)	32	%	10-110		1	12/15/15 17:28	12/22/15 19:09	13127-88-3	
2-Fluorophenol (S)	43	%	12-110		1	12/15/15 17:28	12/22/15 19:09	367-12-4	
2,4,6-Tribromophenol (S)	111	%	27-110		1	12/15/15 17:28	12/22/15 19:09	118-79-6	S3
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	100	10.0	1		12/19/15 14:16	67-64-1	
Acetonitrile	ND	ug/L	55.0	2.2	1		12/19/15 14:16	75-05-8	
Acrolein	ND	ug/L	53.0	1.6	1		12/19/15 14:16	107-02-8	
Acrylonitrile	ND	ug/L	200	1.9	1		12/19/15 14:16	107-13-1	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW10 **Lab ID: 92279395001** Collected: 12/08/15 11:40 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Allyl chloride	ND	ug/L	10.0	1.5	1		12/19/15 14:16	107-05-1	
Benzene	**1.6**	ug/L	1.0	0.25	1		12/19/15 14:16	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/19/15 14:16	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/19/15 14:16	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/19/15 14:16	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/19/15 14:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/19/15 14:16	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/19/15 14:16	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/19/15 14:16	56-23-5	
Chlorobenzene	**1.5J**	ug/L	3.0	0.23	1		12/19/15 14:16	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/19/15 14:16	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/19/15 14:16	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/19/15 14:16	74-87-3	
Chloroprene	ND	ug/L	20.0	0.27	1		12/19/15 14:16	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/19/15 14:16	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/19/15 14:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/19/15 14:16	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/19/15 14:16	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.30	1		12/19/15 14:16	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.24	1		12/19/15 14:16	541-73-1	
1,4-Dichlorobenzene	**0.98J**	ug/L	1.0	0.33	1		12/19/15 14:16	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/19/15 14:16	110-57-6	
Dichlorodifluoromethane	ND	ug/L	5.0	0.21	1		12/19/15 14:16	75-71-8	
1,1-Dichloroethane	**0.95J**	ug/L	5.0	0.32	1		12/19/15 14:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		12/19/15 14:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/19/15 14:16	75-35-4	
cis-1,2-Dichloroethene	**3.9J**	ug/L	5.0	0.19	1		12/19/15 14:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/19/15 14:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/19/15 14:16	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		12/19/15 14:16	142-28-9	
2,2-Dichloropropane	ND	ug/L	15.0	0.13	1		12/19/15 14:16	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.49	1		12/19/15 14:16	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/19/15 14:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/19/15 14:16	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		12/19/15 14:16	100-41-4	
Ethyl methacrylate	ND	ug/L	10.0	0.20	1		12/19/15 14:16	97-63-2	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	0.71	1		12/19/15 14:16	87-68-3	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/19/15 14:16	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/19/15 14:16	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		12/19/15 14:16	78-83-1	
Methacrylonitrile	ND	ug/L	100	0.93	1		12/19/15 14:16	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		12/19/15 14:16	75-09-2	
Methyl methacrylate	ND	ug/L	30.0	2.0	1		12/19/15 14:16	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/19/15 14:16	108-10-1	
Naphthalene	ND	ug/L	10.0	0.24	1		12/19/15 14:16	91-20-3	
Propionitrile	ND	ug/L	150	3.6	1		12/19/15 14:16	107-12-0	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW10 **Lab ID: 92279395001** Collected: 12/08/15 11:40 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Styrene	ND	ug/L	1.0	0.26	1		12/19/15 14:16	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/19/15 14:16	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/19/15 14:16	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/19/15 14:16	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	3.1	1		12/19/15 14:16	109-99-9	
Toluene	ND	ug/L	1.0	0.26	1		12/19/15 14:16	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	0.35	1		12/19/15 14:16	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/19/15 14:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/19/15 14:16	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		12/19/15 14:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/19/15 14:16	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/19/15 14:16	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/19/15 14:16	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		12/19/15 14:16	75-01-4	
Xylene (Total)	ND	ug/L	5.0	0.66	1		12/19/15 14:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-130		1		12/19/15 14:16	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		12/19/15 14:16	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		12/19/15 14:16	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**98400**	ug/L	5000	1000	1		12/14/15 15:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**182000**	ug/L	25000	25000	1		12/11/15 10:41		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D								
Sulfide	ND	ug/L	1000	100	1		12/11/15 15:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**10200J**	ug/L	250000	1000	1		12/11/15 14:06	14808-79-8	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**26500**	ug/L	1000	500	1		12/17/15 16:56	16887-00-6	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	ug/L	10.0	4.0	1		12/16/15 11:11	57-12-5	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW11 **Lab ID: 92279395002** Collected: 12/08/15 12:05 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:19	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:19	319-84-6	
beta-BHC	**0.16**	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:19	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:19	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:19	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.20	1	12/11/15 16:00	12/14/15 21:19	57-74-9	
4,4'-DDD	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:19	72-54-8	
4,4'-DDE	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:19	72-55-9	
4,4'-DDT	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:19	50-29-3	
Dieldrin	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 21:19	60-57-1	
Endosulfan I	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:19	959-98-8	
Endosulfan II	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:19	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:19	1031-07-8	
Endrin	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:19	72-20-8	
Endrin aldehyde	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:19	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:19	76-44-8	
Heptachlor epoxide	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 21:19	1024-57-3	
Methoxychlor	ND	ug/L	1.0	0.15	1	12/11/15 16:00	12/14/15 21:19	72-43-5	
Toxaphene	ND	ug/L	1.5	0.20	1	12/11/15 16:00	12/14/15 21:19	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	52	%	20-130		1	12/11/15 16:00	12/14/15 21:19	877-09-8	
Decachlorobiphenyl (S)	42	%	20-130		1	12/11/15 16:00	12/14/15 21:19	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:46	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:46	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:46	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:46	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:46	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:46	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 18:46	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	40	%	10-132		1	12/11/15 16:00	12/14/15 18:46	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151 Preparation Method: EPA 8151								
2,4-D	ND	ug/L	0.94	0.22	1	12/15/15 20:15	12/18/15 12:17	94-75-7	
Dinoseb	ND	ug/L	0.19	0.057	1	12/15/15 20:15	12/18/15 12:17	88-85-7	
2,4,5-T	ND	ug/L	0.19	0.042	1	12/15/15 20:15	12/18/15 12:17	93-76-5	
2,4,5-TP (Silvex)	ND	ug/L	0.19	0.049	1	12/15/15 20:15	12/18/15 12:17	93-72-1	
Surrogates									
2,4-DCAA (S)	109	%	36-130		1	12/15/15 20:15	12/18/15 12:17	19719-28-9	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	12/12/15 00:00	12/17/15 03:25	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-38-2	
Barium	**140**	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-39-3	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW11 **Lab ID: 92279395002** Collected: 12/08/15 12:05 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010	Preparation Method: EPA 3010A							
Beryllium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:25	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:25	7440-43-9	
Chromium	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-47-3	
Cobalt	**61.0**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-48-4	
Copper	**6.4J**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-50-8	
Iron	**74200**	ug/L	300	25.0	1	12/12/15 00:00	12/17/15 03:25	7439-89-6	
Lead	**6.3J**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:25	7439-92-1	
Manganese	**18100**	ug/L	250	12.5	5	12/12/15 00:00	12/17/15 16:54	7439-96-5	
Nickel	**3.4J**	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:25	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	12/12/15 00:00	12/17/15 03:25	7440-28-0	
Tin	ND	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-31-5	
Vanadium	**23.5J**	ug/L	25.0	2.5	1	12/12/15 00:00	12/17/15 03:25	7440-62-2	
Zinc	**20.0**	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:25	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.10	1	12/17/15 14:05	12/17/15 18:39	7439-97-6	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270	Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	10.0	0.25	1	12/15/15 17:28	12/22/15 19:37	83-32-9	
Acenaphthylene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 19:37	208-96-8	
Acetophenone	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 19:37	98-86-2	
2-Acetylaminofluorene	ND	ug/L	20.0	0.84	1	12/15/15 17:28	12/22/15 19:37	53-96-3	
4-Aminobiphenyl	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 19:37	92-67-1	
Anthracene	ND	ug/L	10.0	0.14	1	12/15/15 17:28	12/22/15 19:37	120-12-7	
Benzo(a)anthracene	ND	ug/L	10.0	0.33	1	12/15/15 17:28	12/22/15 19:37	56-55-3	
Benzo(a)pyrene	ND	ug/L	10.0	0.30	1	12/15/15 17:28	12/22/15 19:37	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 19:37	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	10.0	0.38	1	12/15/15 17:28	12/22/15 19:37	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	10.0	0.43	1	12/15/15 17:28	12/22/15 19:37	207-08-9	
Benzyl alcohol	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 19:37	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:37	101-55-3	
Butylbenzylphthalate	ND	ug/L	10.0	0.75	1	12/15/15 17:28	12/22/15 19:37	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	20.0	4.2	1	12/15/15 17:28	12/22/15 19:37	59-50-7	
4-Chloroaniline	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 19:37	106-47-8	
Chlorobenzilate	ND	ug/L	10.0	0.72	1	12/15/15 17:28	12/22/15 19:37	510-15-6	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:37	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 19:37	108-60-1	
2-Chloronaphthalene	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 19:37	91-58-7	
2-Chlorophenol	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:37	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 19:37	7005-72-3	
Chrysene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 19:37	218-01-9	
Diallate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:37	2303-16-4	
Dibenz(a,h)anthracene	ND	ug/L	10.0	0.55	1	12/15/15 17:28	12/22/15 19:37	53-70-3	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW11 **Lab ID: 92279395002** Collected: 12/08/15 12:05 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Dibenzofuran	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:37	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/L	20.0	1.4	1	12/15/15 17:28	12/22/15 19:37	91-94-1	
2,4-Dichlorophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37	120-83-2	
2,6-Dichlorophenol	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:37	87-65-0	
Diethylphthalate	ND	ug/L	6000	1.3	1	12/15/15 17:28	12/22/15 19:37	84-66-2	
Dimethoate	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 19:37	60-51-5	
P-Dimethylaminoazobenzene	ND	ug/L	10.0	0.35	1	12/15/15 17:28	12/22/15 19:37	60-11-7	
7,12-Dimethylbenz(a)anthracene	ND	ug/L	10.0	0.77	1	12/15/15 17:28	12/22/15 19:37	57-97-6	
3,3'-Dimethylbenzidine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 19:37	119-93-7	
2,4-Dimethylphenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 19:37	105-67-9	
Dimethylphthalate	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:37	131-11-3	
Di-n-butylphthalate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:37	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	1.7	1	12/15/15 17:28	12/22/15 19:37	534-52-1	
1,3-Dinitrobenzene	ND	ug/L	20.0	1.5	1	12/15/15 17:28	12/22/15 19:37	99-65-0	
2,4-Dinitrophenol	ND	ug/L	50.0	6.5	1	12/15/15 17:28	12/22/15 19:37	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 19:37	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37	606-20-2	
Di-n-octylphthalate	ND	ug/L	10.0	0.86	1	12/15/15 17:28	12/22/15 19:37	117-84-0	
Diphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:37	122-39-4	
Disulfoton	ND	ug/L	10.0	1.4	1	12/15/15 17:28	12/22/15 19:37	298-04-4	
bis(2-Ethylhexyl)phthalate	ND	ug/L	15.0	0.85	1	12/15/15 17:28	12/22/15 19:37	117-81-7	
Ethyl methanesulfonate	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 19:37	62-50-0	
Famphur	ND	ug/L	20.0	1.7	1	12/15/15 17:28	12/22/15 19:37	52-85-7	
Fluoranthene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 19:37	206-44-0	L3
Fluorene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 19:37	86-73-7	
Hexachlorobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:37	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:37	77-47-4	
Hexachloroethane	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:37	67-72-1	
Hexachloropropene	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 19:37	1888-71-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10.0	0.29	1	12/15/15 17:28	12/22/15 19:37	193-39-5	
Isodrin	ND	ug/L	20.0	2.0	1	12/15/15 17:28	12/22/15 19:37	465-73-6	L3
Isophorone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:37	78-59-1	
Isosafrole	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:37	120-58-1	
Kepone	ND	ug/L	20.0	3.1	1	12/15/15 17:28	12/22/15 19:37	143-50-0	
Methapyrilene	ND	ug/L	100	2.7	1	12/15/15 17:28	12/22/15 19:37	91-80-5	L2
3-Methylcholanthrene	ND	ug/L	10.0	0.82	1	12/15/15 17:28	12/22/15 19:37	56-49-5	
Methyl methanesulfonate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:37	66-27-3	
2-Methylnaphthalene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 19:37	91-57-6	
Methyl parathion	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:37	298-00-0	
2-Methylphenol(o-Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37		
1-Naphthalenamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 19:37	134-32-7	
2-Naphthalenamine	ND	ug/L	10.0	0.98	1	12/15/15 17:28	12/22/15 19:37	91-59-8	
1,4-Naphthoquinone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:37	130-15-4	
2-Nitroaniline	ND	ug/L	50.0	2.8	1	12/15/15 17:28	12/22/15 19:37	88-74-4	
3-Nitroaniline	ND	ug/L	50.0	2.4	1	12/15/15 17:28	12/22/15 19:37	99-09-2	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW11 **Lab ID: 92279395002** Collected: 12/08/15 12:05 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
4-Nitroaniline	ND	ug/L	20.0	2.5	1	12/15/15 17:28	12/22/15 19:37	100-01-6	
Nitrobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37	98-95-3	
2-Nitrophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	5.8	1	12/15/15 17:28	12/22/15 19:37	100-02-7	
5-Nitro-o-toluidine	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 19:37	99-55-8	
N-Nitrosodiethylamine	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 19:37	55-18-5	
N-Nitrosodimethylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:37	62-75-9	
N-Nitroso-di-n-butylamine	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 19:37	924-16-3	
N-Nitroso-di-n-propylamine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 19:37	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 19:37	86-30-6	
N-Nitrosomethylethylamine	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:37	10595-95-6	
N-Nitrosopiperidine	ND	ug/L	20.0	1.9	1	12/15/15 17:28	12/22/15 19:37	100-75-4	
N-Nitrosopyrrolidine	ND	ug/L	10.0	2.5	1	12/15/15 17:28	12/22/15 19:37	930-55-2	
O,O,O-Triethylphosphorothioate	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 19:37	126-68-1	
Parathion (Ethyl parathion)	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:37	56-38-2	
Pentachlorobenzene	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 19:37	608-93-5	
Pentachloronitrobenzene	ND	ug/L	20.0	1.0	1	12/15/15 17:28	12/22/15 19:37	82-68-8	
Pentachlorophenol	ND	ug/L	25.0	2.3	1	12/15/15 17:28	12/22/15 19:37	87-86-5	
Phenacetin	ND	ug/L	20.0	0.97	1	12/15/15 17:28	12/22/15 19:37	62-44-2	
Phenanthrene	ND	ug/L	10.0	0.22	1	12/15/15 17:28	12/22/15 19:37	85-01-8	
Phenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37	108-95-2	
p-Phenylenediamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 19:37	106-50-3	
Phorate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:37	298-02-2	L3
Pronamide	ND	ug/L	10.0	0.97	1	12/15/15 17:28	12/22/15 19:37	23950-58-5	
Pyrene	ND	ug/L	10.0	0.19	1	12/15/15 17:28	12/22/15 19:37	129-00-0	
Safrole	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 19:37	94-59-7	
1,2,4,5-Tetrachlorobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 19:37	95-94-3	
2,3,4,6-Tetrachlorophenol	ND	ug/L	10.0	2.3	1	12/15/15 17:28	12/22/15 19:37	58-90-2	
Thionazin	ND	ug/L	20.0	1.2	1	12/15/15 17:28	12/22/15 19:37	297-97-2	
O-Toluidine	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 19:37	95-53-4	
2,4,5-Trichlorophenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 19:37	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.9	1	12/15/15 17:28	12/22/15 19:37	88-06-2	
1,3,5-Trinitrobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 19:37	99-35-4	L3
Surrogates									
Nitrobenzene-d5 (S)	86	%	21-110		1	12/15/15 17:28	12/22/15 19:37	4165-60-0	
2-Fluorobiphenyl (S)	77	%	27-110		1	12/15/15 17:28	12/22/15 19:37	321-60-8	
Terphenyl-d14 (S)	94	%	31-107		1	12/15/15 17:28	12/22/15 19:37	1718-51-0	
Phenol-d6 (S)	24	%	10-110		1	12/15/15 17:28	12/22/15 19:37	13127-88-3	
2-Fluorophenol (S)	35	%	12-110		1	12/15/15 17:28	12/22/15 19:37	367-12-4	
2,4,6-Tribromophenol (S)	100	%	27-110		1	12/15/15 17:28	12/22/15 19:37	118-79-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	100	10.0	1		12/19/15 14:33	67-64-1	
Acetonitrile	ND	ug/L	55.0	2.2	1		12/19/15 14:33	75-05-8	
Acrolein	ND	ug/L	53.0	1.6	1		12/19/15 14:33	107-02-8	
Acrylonitrile	ND	ug/L	200	1.9	1		12/19/15 14:33	107-13-1	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW11 **Lab ID: 92279395002** Collected: 12/08/15 12:05 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Allyl chloride	ND	ug/L	10.0	1.5	1		12/19/15 14:33	107-05-1	
Benzene	**2.2**	ug/L	1.0	0.25	1		12/19/15 14:33	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/19/15 14:33	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/19/15 14:33	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/19/15 14:33	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/19/15 14:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/19/15 14:33	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/19/15 14:33	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/19/15 14:33	56-23-5	
Chlorobenzene	**0.61J**	ug/L	3.0	0.23	1		12/19/15 14:33	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/19/15 14:33	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/19/15 14:33	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/19/15 14:33	74-87-3	
Chloroprene	ND	ug/L	20.0	0.27	1		12/19/15 14:33	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/19/15 14:33	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/19/15 14:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/19/15 14:33	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/19/15 14:33	74-95-3	
1,2-Dichlorobenzene	**0.39J**	ug/L	5.0	0.30	1		12/19/15 14:33	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.24	1		12/19/15 14:33	541-73-1	
1,4-Dichlorobenzene	**12.6**	ug/L	1.0	0.33	1		12/19/15 14:33	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/19/15 14:33	110-57-6	
Dichlorodifluoromethane	ND	ug/L	5.0	0.21	1		12/19/15 14:33	75-71-8	
1,1-Dichloroethane	**3.2J**	ug/L	5.0	0.32	1		12/19/15 14:33	75-34-3	
1,2-Dichloroethane	**0.65J**	ug/L	1.0	0.24	1		12/19/15 14:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/19/15 14:33	75-35-4	
cis-1,2-Dichloroethene	**6.9**	ug/L	5.0	0.19	1		12/19/15 14:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/19/15 14:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/19/15 14:33	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		12/19/15 14:33	142-28-9	
2,2-Dichloropropane	ND	ug/L	15.0	0.13	1		12/19/15 14:33	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.49	1		12/19/15 14:33	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/19/15 14:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/19/15 14:33	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		12/19/15 14:33	100-41-4	
Ethyl methacrylate	ND	ug/L	10.0	0.20	1		12/19/15 14:33	97-63-2	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	0.71	1		12/19/15 14:33	87-68-3	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/19/15 14:33	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/19/15 14:33	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		12/19/15 14:33	78-83-1	
Methacrylonitrile	ND	ug/L	100	0.93	1		12/19/15 14:33	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		12/19/15 14:33	75-09-2	
Methyl methacrylate	ND	ug/L	30.0	2.0	1		12/19/15 14:33	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/19/15 14:33	108-10-1	
Naphthalene	ND	ug/L	10.0	0.24	1		12/19/15 14:33	91-20-3	
Propionitrile	ND	ug/L	150	3.6	1		12/19/15 14:33	107-12-0	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW11 **Lab ID: 92279395002** Collected: 12/08/15 12:05 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Styrene	ND	ug/L	1.0	0.26	1		12/19/15 14:33	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/19/15 14:33	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/19/15 14:33	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/19/15 14:33	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	3.1	1		12/19/15 14:33	109-99-9	
Toluene	ND	ug/L	1.0	0.26	1		12/19/15 14:33	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	0.35	1		12/19/15 14:33	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/19/15 14:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/19/15 14:33	79-00-5	
Trichloroethene	**0.71J**	ug/L	1.0	0.47	1		12/19/15 14:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/19/15 14:33	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/19/15 14:33	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/19/15 14:33	108-05-4	
Vinyl chloride	**0.72J**	ug/L	1.0	0.62	1		12/19/15 14:33	75-01-4	
Xylene (Total)	ND	ug/L	5.0	0.66	1		12/19/15 14:33	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	109	%	70-130		1		12/19/15 14:33	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		12/19/15 14:33	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		12/19/15 14:33	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**202000**	ug/L	5000	1000	1		12/14/15 15:30		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**280000**	ug/L	25000	25000	1		12/11/15 10:41		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D								
Sulfide	ND	ug/L	1000	100	1		12/11/15 15:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**1530J**	ug/L	250000	1000	1		12/11/15 14:06	14808-79-8	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**30800**	ug/L	1000	500	1		12/17/15 16:57	16887-00-6	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	ug/L	10.0	4.0	1		12/16/15 11:12	57-12-5	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW12 **Lab ID: 92279395003** Collected: 12/08/15 12:51 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:37	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:37	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:37	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:37	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:37	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.20	1	12/11/15 16:00	12/14/15 21:37	57-74-9	
4,4'-DDD	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:37	72-54-8	
4,4'-DDE	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:37	72-55-9	
4,4'-DDT	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:37	50-29-3	
Dieldrin	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 21:37	60-57-1	
Endosulfan I	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:37	959-98-8	
Endosulfan II	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:37	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:37	1031-07-8	
Endrin	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:37	72-20-8	
Endrin aldehyde	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:37	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:37	76-44-8	
Heptachlor epoxide	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 21:37	1024-57-3	
Methoxychlor	ND	ug/L	1.0	0.15	1	12/11/15 16:00	12/14/15 21:37	72-43-5	
Toxaphene	ND	ug/L	1.5	0.20	1	12/11/15 16:00	12/14/15 21:37	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	61	%	20-130		1	12/11/15 16:00	12/14/15 21:37	877-09-8	
Decachlorobiphenyl (S)	55	%	20-130		1	12/11/15 16:00	12/14/15 21:37	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:06	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:06	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:06	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:06	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:06	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:06	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:06	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	59	%	10-132		1	12/11/15 16:00	12/14/15 19:06	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151 Preparation Method: EPA 8151								
2,4-D	ND	ug/L	0.94	0.22	1	12/15/15 20:15	12/18/15 12:48	94-75-7	
Dinoseb	ND	ug/L	0.19	0.057	1	12/15/15 20:15	12/18/15 12:48	88-85-7	
2,4,5-T	ND	ug/L	0.19	0.042	1	12/15/15 20:15	12/18/15 12:48	93-76-5	
2,4,5-TP (Silvex)	ND	ug/L	0.19	0.049	1	12/15/15 20:15	12/18/15 12:48	93-72-1	
Surrogates									
2,4-DCAA (S)	99	%	36-130		1	12/15/15 20:15	12/18/15 12:48	19719-28-9	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	**6.3**	ug/L	6.0	3.8	1	12/12/15 00:00	12/17/15 03:28	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-38-2	
Barium	**132**	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-39-3	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW12 **Lab ID: 92279395003** Collected: 12/08/15 12:51 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010	Preparation Method: EPA 3010A							
Beryllium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:28	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:28	7440-43-9	
Chromium	**13.8**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-47-3	
Cobalt	**84.8**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-48-4	
Copper	**9.7J**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-50-8	
Iron	**50200**	ug/L	300	25.0	1	12/12/15 00:00	12/17/15 03:28	7439-89-6	
Lead	**9.8J**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:28	7439-92-1	
Manganese	**10800**	ug/L	250	12.5	5	12/12/15 00:00	12/17/15 16:57	7439-96-5	
Nickel	**17.7J**	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:28	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	12/12/15 00:00	12/17/15 03:28	7440-28-0	
Tin	ND	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-31-5	
Vanadium	**36.9**	ug/L	25.0	2.5	1	12/12/15 00:00	12/17/15 03:28	7440-62-2	
Zinc	**65.1**	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:28	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.10	1	12/17/15 14:05	12/17/15 18:41	7439-97-6	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270	Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	10.0	0.25	1	12/15/15 17:28	12/22/15 20:04	83-32-9	
Acenaphthylene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:04	208-96-8	
Acetophenone	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 20:04	98-86-2	
2-Acetylaminofluorene	ND	ug/L	20.0	0.84	1	12/15/15 17:28	12/22/15 20:04	53-96-3	
4-Aminobiphenyl	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 20:04	92-67-1	
Anthracene	ND	ug/L	10.0	0.14	1	12/15/15 17:28	12/22/15 20:04	120-12-7	
Benzo(a)anthracene	ND	ug/L	10.0	0.33	1	12/15/15 17:28	12/22/15 20:04	56-55-3	
Benzo(a)pyrene	ND	ug/L	10.0	0.30	1	12/15/15 17:28	12/22/15 20:04	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 20:04	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	10.0	0.38	1	12/15/15 17:28	12/22/15 20:04	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	10.0	0.43	1	12/15/15 17:28	12/22/15 20:04	207-08-9	
Benzyl alcohol	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 20:04	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:04	101-55-3	
Butylbenzylphthalate	ND	ug/L	10.0	0.75	1	12/15/15 17:28	12/22/15 20:04	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	20.0	4.2	1	12/15/15 17:28	12/22/15 20:04	59-50-7	
4-Chloroaniline	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 20:04	106-47-8	
Chlorobenzilate	ND	ug/L	10.0	0.72	1	12/15/15 17:28	12/22/15 20:04	510-15-6	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:04	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:04	108-60-1	
2-Chloronaphthalene	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:04	91-58-7	
2-Chlorophenol	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:04	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:04	7005-72-3	
Chrysene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:04	218-01-9	
Diallate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:04	2303-16-4	
Dibenz(a,h)anthracene	ND	ug/L	10.0	0.55	1	12/15/15 17:28	12/22/15 20:04	53-70-3	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW12 **Lab ID: 92279395003** Collected: 12/08/15 12:51 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Dibenzofuran	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:04	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/L	20.0	1.4	1	12/15/15 17:28	12/22/15 20:04	91-94-1	
2,4-Dichlorophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04	120-83-2	
2,6-Dichlorophenol	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:04	87-65-0	
Diethylphthalate	ND	ug/L	6000	1.3	1	12/15/15 17:28	12/22/15 20:04	84-66-2	
Dimethoate	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 20:04	60-51-5	
P-Dimethylaminoazobenzene	ND	ug/L	10.0	0.35	1	12/15/15 17:28	12/22/15 20:04	60-11-7	
7,12-Dimethylbenz(a)anthracene	ND	ug/L	10.0	0.77	1	12/15/15 17:28	12/22/15 20:04	57-97-6	
3,3'-Dimethylbenzidine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:04	119-93-7	
2,4-Dimethylphenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:04	105-67-9	
Dimethylphthalate	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:04	131-11-3	
Di-n-butylphthalate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:04	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	1.7	1	12/15/15 17:28	12/22/15 20:04	534-52-1	
1,3-Dinitrobenzene	ND	ug/L	20.0	1.5	1	12/15/15 17:28	12/22/15 20:04	99-65-0	
2,4-Dinitrophenol	ND	ug/L	50.0	6.5	1	12/15/15 17:28	12/22/15 20:04	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 20:04	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04	606-20-2	
Di-n-octylphthalate	ND	ug/L	10.0	0.86	1	12/15/15 17:28	12/22/15 20:04	117-84-0	
Diphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:04	122-39-4	
Disulfoton	ND	ug/L	10.0	1.4	1	12/15/15 17:28	12/22/15 20:04	298-04-4	
bis(2-Ethylhexyl)phthalate	ND	ug/L	15.0	0.85	1	12/15/15 17:28	12/22/15 20:04	117-81-7	
Ethyl methanesulfonate	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 20:04	62-50-0	
Famphur	ND	ug/L	20.0	1.7	1	12/15/15 17:28	12/22/15 20:04	52-85-7	
Fluoranthene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:04	206-44-0	L3
Fluorene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:04	86-73-7	
Hexachlorobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:04	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:04	77-47-4	
Hexachloroethane	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:04	67-72-1	
Hexachloropropene	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:04	1888-71-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10.0	0.29	1	12/15/15 17:28	12/22/15 20:04	193-39-5	
Isodrin	ND	ug/L	20.0	2.0	1	12/15/15 17:28	12/22/15 20:04	465-73-6	L3
Isophorone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:04	78-59-1	
Isosafrole	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:04	120-58-1	
Kepone	ND	ug/L	20.0	3.1	1	12/15/15 17:28	12/22/15 20:04	143-50-0	
Methapyrilene	ND	ug/L	100	2.7	1	12/15/15 17:28	12/22/15 20:04	91-80-5	L2
3-Methylcholanthrene	ND	ug/L	10.0	0.82	1	12/15/15 17:28	12/22/15 20:04	56-49-5	
Methyl methanesulfonate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:04	66-27-3	
2-Methylnaphthalene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 20:04	91-57-6	
Methyl parathion	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:04	298-00-0	
2-Methylphenol(o-Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04		
1-Naphthalenamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 20:04	134-32-7	
2-Naphthalenamine	ND	ug/L	10.0	0.98	1	12/15/15 17:28	12/22/15 20:04	91-59-8	
1,4-Naphthoquinone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:04	130-15-4	
2-Nitroaniline	ND	ug/L	50.0	2.8	1	12/15/15 17:28	12/22/15 20:04	88-74-4	
3-Nitroaniline	ND	ug/L	50.0	2.4	1	12/15/15 17:28	12/22/15 20:04	99-09-2	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW12 **Lab ID: 92279395003** Collected: 12/08/15 12:51 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
4-Nitroaniline	ND	ug/L	20.0	2.5	1	12/15/15 17:28	12/22/15 20:04	100-01-6	
Nitrobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04	98-95-3	
2-Nitrophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	5.8	1	12/15/15 17:28	12/22/15 20:04	100-02-7	
5-Nitro-o-toluidine	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 20:04	99-55-8	
N-Nitrosodiethylamine	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 20:04	55-18-5	
N-Nitrosodimethylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:04	62-75-9	
N-Nitroso-di-n-butylamine	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:04	924-16-3	
N-Nitroso-di-n-propylamine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:04	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:04	86-30-6	
N-Nitrosomethylethylamine	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:04	10595-95-6	
N-Nitrosopiperidine	ND	ug/L	20.0	1.9	1	12/15/15 17:28	12/22/15 20:04	100-75-4	
N-Nitrosopyrrolidine	ND	ug/L	10.0	2.5	1	12/15/15 17:28	12/22/15 20:04	930-55-2	
O,O,O-Triethylphosphorothioate	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:04	126-68-1	
Parathion (Ethyl parathion)	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:04	56-38-2	
Pentachlorobenzene	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 20:04	608-93-5	
Pentachloronitrobenzene	ND	ug/L	20.0	1.0	1	12/15/15 17:28	12/22/15 20:04	82-68-8	
Pentachlorophenol	ND	ug/L	25.0	2.3	1	12/15/15 17:28	12/22/15 20:04	87-86-5	
Phenacetin	ND	ug/L	20.0	0.97	1	12/15/15 17:28	12/22/15 20:04	62-44-2	
Phenanthrene	ND	ug/L	10.0	0.22	1	12/15/15 17:28	12/22/15 20:04	85-01-8	
Phenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04	108-95-2	
p-Phenylenediamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 20:04	106-50-3	
Phorate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:04	298-02-2	L3
Pronamide	ND	ug/L	10.0	0.97	1	12/15/15 17:28	12/22/15 20:04	23950-58-5	
Pyrene	ND	ug/L	10.0	0.19	1	12/15/15 17:28	12/22/15 20:04	129-00-0	
Safrole	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:04	94-59-7	
1,2,4,5-Tetrachlorobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:04	95-94-3	
2,3,4,6-Tetrachlorophenol	ND	ug/L	10.0	2.3	1	12/15/15 17:28	12/22/15 20:04	58-90-2	
Thionazin	ND	ug/L	20.0	1.2	1	12/15/15 17:28	12/22/15 20:04	297-97-2	
O-Toluidine	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:04	95-53-4	
2,4,5-Trichlorophenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:04	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.9	1	12/15/15 17:28	12/22/15 20:04	88-06-2	
1,3,5-Trinitrobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:04	99-35-4	L3
Surrogates									
Nitrobenzene-d5 (S)	90	%	21-110		1	12/15/15 17:28	12/22/15 20:04	4165-60-0	
2-Fluorobiphenyl (S)	77	%	27-110		1	12/15/15 17:28	12/22/15 20:04	321-60-8	
Terphenyl-d14 (S)	94	%	31-107		1	12/15/15 17:28	12/22/15 20:04	1718-51-0	
Phenol-d6 (S)	24	%	10-110		1	12/15/15 17:28	12/22/15 20:04	13127-88-3	
2-Fluorophenol (S)	34	%	12-110		1	12/15/15 17:28	12/22/15 20:04	367-12-4	
2,4,6-Tribromophenol (S)	101	%	27-110		1	12/15/15 17:28	12/22/15 20:04	118-79-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	100	10.0	1		12/19/15 14:49	67-64-1	
Acetonitrile	ND	ug/L	55.0	2.2	1		12/19/15 14:49	75-05-8	
Acrolein	ND	ug/L	53.0	1.6	1		12/19/15 14:49	107-02-8	
Acrylonitrile	ND	ug/L	200	1.9	1		12/19/15 14:49	107-13-1	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW12 **Lab ID: 92279395003** Collected: 12/08/15 12:51 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Allyl chloride	ND	ug/L	10.0	1.5	1		12/19/15 14:49	107-05-1	
Benzene	**2.3**	ug/L	1.0	0.25	1		12/19/15 14:49	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/19/15 14:49	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/19/15 14:49	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/19/15 14:49	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/19/15 14:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/19/15 14:49	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/19/15 14:49	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/19/15 14:49	56-23-5	
Chlorobenzene	**0.73J**	ug/L	3.0	0.23	1		12/19/15 14:49	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/19/15 14:49	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/19/15 14:49	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/19/15 14:49	74-87-3	
Chloroprene	ND	ug/L	20.0	0.27	1		12/19/15 14:49	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/19/15 14:49	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/19/15 14:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/19/15 14:49	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/19/15 14:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.30	1		12/19/15 14:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.24	1		12/19/15 14:49	541-73-1	
1,4-Dichlorobenzene	**4.8**	ug/L	1.0	0.33	1		12/19/15 14:49	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/19/15 14:49	110-57-6	
Dichlorodifluoromethane	ND	ug/L	5.0	0.21	1		12/19/15 14:49	75-71-8	
1,1-Dichloroethane	**31.7**	ug/L	5.0	0.32	1		12/19/15 14:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		12/19/15 14:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/19/15 14:49	75-35-4	
cis-1,2-Dichloroethene	**9.9**	ug/L	5.0	0.19	1		12/19/15 14:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/19/15 14:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/19/15 14:49	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		12/19/15 14:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	15.0	0.13	1		12/19/15 14:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.49	1		12/19/15 14:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/19/15 14:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/19/15 14:49	10061-02-6	
Ethylbenzene	**1.2**	ug/L	1.0	0.30	1		12/19/15 14:49	100-41-4	
Ethyl methacrylate	ND	ug/L	10.0	0.20	1		12/19/15 14:49	97-63-2	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	0.71	1		12/19/15 14:49	87-68-3	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/19/15 14:49	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/19/15 14:49	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		12/19/15 14:49	78-83-1	
Methacrylonitrile	ND	ug/L	100	0.93	1		12/19/15 14:49	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		12/19/15 14:49	75-09-2	
Methyl methacrylate	ND	ug/L	30.0	2.0	1		12/19/15 14:49	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/19/15 14:49	108-10-1	
Naphthalene	ND	ug/L	10.0	0.24	1		12/19/15 14:49	91-20-3	
Propionitrile	ND	ug/L	150	3.6	1		12/19/15 14:49	107-12-0	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW12 **Lab ID: 92279395003** Collected: 12/08/15 12:51 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Styrene	ND	ug/L	1.0	0.26	1		12/19/15 14:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/19/15 14:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/19/15 14:49	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/19/15 14:49	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	3.1	1		12/19/15 14:49	109-99-9	
Toluene	ND	ug/L	1.0	0.26	1		12/19/15 14:49	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	0.35	1		12/19/15 14:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/19/15 14:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/19/15 14:49	79-00-5	
Trichloroethene	**1.4**	ug/L	1.0	0.47	1		12/19/15 14:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/19/15 14:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/19/15 14:49	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/19/15 14:49	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		12/19/15 14:49	75-01-4	
Xylene (Total)	ND	ug/L	5.0	0.66	1		12/19/15 14:49	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	106	%	70-130		1		12/19/15 14:49	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		12/19/15 14:49	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		12/19/15 14:49	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**88800**	ug/L	5000	1000	1		12/14/15 16:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**117000**	ug/L	25000	25000	1		12/11/15 10:42		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D								
Sulfide	ND	ug/L	1000	100	1		12/11/15 15:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**2020J**	ug/L	250000	1000	1		12/11/15 14:06	14808-79-8	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**9400**	ug/L	1000	500	1		12/17/15 16:58	16887-00-6	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	ug/L	10.0	4.0	1		12/16/15 11:13	57-12-5	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW13 **Lab ID: 92279395004** Collected: 12/08/15 15:50 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:55	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:55	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:55	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:55	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:55	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.20	1	12/11/15 16:00	12/14/15 21:55	57-74-9	
4,4'-DDD	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:55	72-54-8	
4,4'-DDE	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:55	72-55-9	
4,4'-DDT	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:55	50-29-3	
Dieldrin	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 21:55	60-57-1	
Endosulfan I	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:55	959-98-8	
Endosulfan II	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:55	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:55	1031-07-8	
Endrin	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:55	72-20-8	
Endrin aldehyde	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 21:55	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 21:55	76-44-8	
Heptachlor epoxide	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 21:55	1024-57-3	
Methoxychlor	ND	ug/L	1.0	0.15	1	12/11/15 16:00	12/14/15 21:55	72-43-5	
Toxaphene	ND	ug/L	1.5	0.20	1	12/11/15 16:00	12/14/15 21:55	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	19	%	20-130		1	12/11/15 16:00	12/14/15 21:55	877-09-8	1g,S0
Decachlorobiphenyl (S)	36	%	20-130		1	12/11/15 16:00	12/14/15 21:55	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:48	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:48	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:48	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:48	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:48	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:48	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 19:48	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	43	%	10-132		1	12/11/15 16:00	12/14/15 19:48	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151 Preparation Method: EPA 8151								
2,4-D	ND	ug/L	0.94	0.22	1	12/15/15 20:15	12/18/15 13:18	94-75-7	
Dinoseb	ND	ug/L	0.19	0.057	1	12/15/15 20:15	12/18/15 13:18	88-85-7	
2,4,5-T	ND	ug/L	0.19	0.042	1	12/15/15 20:15	12/18/15 13:18	93-76-5	
2,4,5-TP (Silvex)	ND	ug/L	0.19	0.049	1	12/15/15 20:15	12/18/15 13:18	93-72-1	
Surrogates									
2,4-DCAA (S)	91	%	36-130		1	12/15/15 20:15	12/18/15 13:18	19719-28-9	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	12/12/15 00:00	12/17/15 03:32	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-38-2	
Barium	**82.6J**	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-39-3	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW13 **Lab ID: 92279395004** Collected: 12/08/15 15:50 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010	Preparation Method: EPA 3010A							
Beryllium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:32	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:32	7440-43-9	
Chromium	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-47-3	
Cobalt	**49.7**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-48-4	
Copper	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-50-8	
Iron	**1460**	ug/L	300	25.0	1	12/12/15 00:00	12/17/15 03:32	7439-89-6	
Lead	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7439-92-1	
Manganese	**1500**	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7439-96-5	
Nickel	**4.2J**	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:32	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	12/12/15 00:00	12/17/15 03:32	7440-28-0	
Tin	ND	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-31-5	
Vanadium	**3.0J**	ug/L	25.0	2.5	1	12/12/15 00:00	12/17/15 03:32	7440-62-2	
Zinc	**19.0**	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:32	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.10	1	12/17/15 14:05	12/17/15 18:44	7439-97-6	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270	Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	10.0	0.25	1	12/15/15 17:28	12/22/15 20:31	83-32-9	
Acenaphthylene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:31	208-96-8	
Acetophenone	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 20:31	98-86-2	
2-Acetylaminofluorene	ND	ug/L	20.0	0.84	1	12/15/15 17:28	12/22/15 20:31	53-96-3	
4-Aminobiphenyl	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 20:31	92-67-1	
Anthracene	ND	ug/L	10.0	0.14	1	12/15/15 17:28	12/22/15 20:31	120-12-7	
Benzo(a)anthracene	ND	ug/L	10.0	0.33	1	12/15/15 17:28	12/22/15 20:31	56-55-3	
Benzo(a)pyrene	ND	ug/L	10.0	0.30	1	12/15/15 17:28	12/22/15 20:31	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 20:31	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	10.0	0.38	1	12/15/15 17:28	12/22/15 20:31	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	10.0	0.43	1	12/15/15 17:28	12/22/15 20:31	207-08-9	
Benzyl alcohol	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 20:31	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:31	101-55-3	
Butylbenzylphthalate	ND	ug/L	10.0	0.75	1	12/15/15 17:28	12/22/15 20:31	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	20.0	4.2	1	12/15/15 17:28	12/22/15 20:31	59-50-7	
4-Chloroaniline	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 20:31	106-47-8	
Chlorobenzilate	ND	ug/L	10.0	0.72	1	12/15/15 17:28	12/22/15 20:31	510-15-6	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:31	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:31	108-60-1	
2-Chloronaphthalene	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:31	91-58-7	
2-Chlorophenol	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:31	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:31	7005-72-3	
Chrysene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:31	218-01-9	
Diallate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:31	2303-16-4	
Dibenz(a,h)anthracene	ND	ug/L	10.0	0.55	1	12/15/15 17:28	12/22/15 20:31	53-70-3	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW13 **Lab ID: 92279395004** Collected: 12/08/15 15:50 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Dibenzofuran	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:31	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/L	20.0	1.4	1	12/15/15 17:28	12/22/15 20:31	91-94-1	
2,4-Dichlorophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31	120-83-2	
2,6-Dichlorophenol	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:31	87-65-0	
Diethylphthalate	ND	ug/L	6000	1.3	1	12/15/15 17:28	12/22/15 20:31	84-66-2	
Dimethoate	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 20:31	60-51-5	
P-Dimethylaminoazobenzene	ND	ug/L	10.0	0.35	1	12/15/15 17:28	12/22/15 20:31	60-11-7	
7,12-Dimethylbenz(a)anthracene	ND	ug/L	10.0	0.77	1	12/15/15 17:28	12/22/15 20:31	57-97-6	
3,3'-Dimethylbenzidine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:31	119-93-7	
2,4-Dimethylphenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:31	105-67-9	
Dimethylphthalate	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:31	131-11-3	
Di-n-butylphthalate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:31	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	1.7	1	12/15/15 17:28	12/22/15 20:31	534-52-1	
1,3-Dinitrobenzene	ND	ug/L	20.0	1.5	1	12/15/15 17:28	12/22/15 20:31	99-65-0	
2,4-Dinitrophenol	ND	ug/L	50.0	6.5	1	12/15/15 17:28	12/22/15 20:31	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 20:31	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31	606-20-2	
Di-n-octylphthalate	ND	ug/L	10.0	0.86	1	12/15/15 17:28	12/22/15 20:31	117-84-0	
Diphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:31	122-39-4	
Disulfoton	ND	ug/L	10.0	1.4	1	12/15/15 17:28	12/22/15 20:31	298-04-4	
bis(2-Ethylhexyl)phthalate	ND	ug/L	15.0	0.85	1	12/15/15 17:28	12/22/15 20:31	117-81-7	
Ethyl methanesulfonate	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 20:31	62-50-0	
Famphur	ND	ug/L	20.0	1.7	1	12/15/15 17:28	12/22/15 20:31	52-85-7	
Fluoranthene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:31	206-44-0	L3
Fluorene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:31	86-73-7	
Hexachlorobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:31	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:31	77-47-4	
Hexachloroethane	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:31	67-72-1	
Hexachloropropene	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:31	1888-71-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10.0	0.29	1	12/15/15 17:28	12/22/15 20:31	193-39-5	
Isodrin	ND	ug/L	20.0	2.0	1	12/15/15 17:28	12/22/15 20:31	465-73-6	L3
Isophorone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:31	78-59-1	
Isosafrole	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:31	120-58-1	
Kepone	ND	ug/L	20.0	3.1	1	12/15/15 17:28	12/22/15 20:31	143-50-0	
Methapyrilene	ND	ug/L	100	2.7	1	12/15/15 17:28	12/22/15 20:31	91-80-5	L2
3-Methylcholanthrene	ND	ug/L	10.0	0.82	1	12/15/15 17:28	12/22/15 20:31	56-49-5	
Methyl methanesulfonate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:31	66-27-3	
2-Methylnaphthalene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 20:31	91-57-6	
Methyl parathion	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:31	298-00-0	
2-Methylphenol(o-Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31		
1-Naphthalenamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 20:31	134-32-7	
2-Naphthalenamine	ND	ug/L	10.0	0.98	1	12/15/15 17:28	12/22/15 20:31	91-59-8	
1,4-Naphthoquinone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:31	130-15-4	
2-Nitroaniline	ND	ug/L	50.0	2.8	1	12/15/15 17:28	12/22/15 20:31	88-74-4	
3-Nitroaniline	ND	ug/L	50.0	2.4	1	12/15/15 17:28	12/22/15 20:31	99-09-2	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW13 **Lab ID: 92279395004** Collected: 12/08/15 15:50 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
4-Nitroaniline	ND	ug/L	20.0	2.5	1	12/15/15 17:28	12/22/15 20:31	100-01-6	
Nitrobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31	98-95-3	
2-Nitrophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	5.8	1	12/15/15 17:28	12/22/15 20:31	100-02-7	
5-Nitro-o-toluidine	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 20:31	99-55-8	
N-Nitrosodiethylamine	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 20:31	55-18-5	
N-Nitrosodimethylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:31	62-75-9	
N-Nitroso-di-n-butylamine	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:31	924-16-3	
N-Nitroso-di-n-propylamine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:31	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:31	86-30-6	
N-Nitrosomethylethylamine	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:31	10595-95-6	
N-Nitrosopiperidine	ND	ug/L	20.0	1.9	1	12/15/15 17:28	12/22/15 20:31	100-75-4	
N-Nitrosopyrrolidine	ND	ug/L	10.0	2.5	1	12/15/15 17:28	12/22/15 20:31	930-55-2	
O,O,O-Triethylphosphorothioate	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:31	126-68-1	
Parathion (Ethyl parathion)	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:31	56-38-2	
Pentachlorobenzene	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 20:31	608-93-5	
Pentachloronitrobenzene	ND	ug/L	20.0	1.0	1	12/15/15 17:28	12/22/15 20:31	82-68-8	
Pentachlorophenol	ND	ug/L	25.0	2.3	1	12/15/15 17:28	12/22/15 20:31	87-86-5	
Phenacetin	ND	ug/L	20.0	0.97	1	12/15/15 17:28	12/22/15 20:31	62-44-2	
Phenanthrene	ND	ug/L	10.0	0.22	1	12/15/15 17:28	12/22/15 20:31	85-01-8	
Phenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31	108-95-2	
p-Phenylenediamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 20:31	106-50-3	
Phorate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:31	298-02-2	L3
Pronamide	ND	ug/L	10.0	0.97	1	12/15/15 17:28	12/22/15 20:31	23950-58-5	
Pyrene	ND	ug/L	10.0	0.19	1	12/15/15 17:28	12/22/15 20:31	129-00-0	
Safrole	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:31	94-59-7	
1,2,4,5-Tetrachlorobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:31	95-94-3	
2,3,4,6-Tetrachlorophenol	ND	ug/L	10.0	2.3	1	12/15/15 17:28	12/22/15 20:31	58-90-2	
Thionazin	ND	ug/L	20.0	1.2	1	12/15/15 17:28	12/22/15 20:31	297-97-2	
O-Toluidine	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:31	95-53-4	
2,4,5-Trichlorophenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:31	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.9	1	12/15/15 17:28	12/22/15 20:31	88-06-2	
1,3,5-Trinitrobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:31	99-35-4	L3
Surrogates									
Nitrobenzene-d5 (S)	85	%	21-110		1	12/15/15 17:28	12/22/15 20:31	4165-60-0	
2-Fluorobiphenyl (S)	76	%	27-110		1	12/15/15 17:28	12/22/15 20:31	321-60-8	
Terphenyl-d14 (S)	89	%	31-107		1	12/15/15 17:28	12/22/15 20:31	1718-51-0	
Phenol-d6 (S)	23	%	10-110		1	12/15/15 17:28	12/22/15 20:31	13127-88-3	
2-Fluorophenol (S)	33	%	12-110		1	12/15/15 17:28	12/22/15 20:31	367-12-4	
2,4,6-Tribromophenol (S)	95	%	27-110		1	12/15/15 17:28	12/22/15 20:31	118-79-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	100	10.0	1		12/19/15 15:06	67-64-1	
Acetonitrile	ND	ug/L	55.0	2.2	1		12/19/15 15:06	75-05-8	
Acrolein	ND	ug/L	53.0	1.6	1		12/19/15 15:06	107-02-8	
Acrylonitrile	ND	ug/L	200	1.9	1		12/19/15 15:06	107-13-1	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW13 **Lab ID: 92279395004** Collected: 12/08/15 15:50 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Allyl chloride	ND	ug/L	10.0	1.5	1		12/19/15 15:06	107-05-1	
Benzene	**13.8**	ug/L	1.0	0.25	1		12/19/15 15:06	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/19/15 15:06	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/19/15 15:06	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/19/15 15:06	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/19/15 15:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/19/15 15:06	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/19/15 15:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/19/15 15:06	56-23-5	
Chlorobenzene	**0.86J**	ug/L	3.0	0.23	1		12/19/15 15:06	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/19/15 15:06	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/19/15 15:06	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/19/15 15:06	74-87-3	
Chloroprene	ND	ug/L	20.0	0.27	1		12/19/15 15:06	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/19/15 15:06	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/19/15 15:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/19/15 15:06	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/19/15 15:06	74-95-3	
1,2-Dichlorobenzene	**0.45J**	ug/L	5.0	0.30	1		12/19/15 15:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.24	1		12/19/15 15:06	541-73-1	
1,4-Dichlorobenzene	**13.2**	ug/L	1.0	0.33	1		12/19/15 15:06	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/19/15 15:06	110-57-6	
Dichlorodifluoromethane	ND	ug/L	5.0	0.21	1		12/19/15 15:06	75-71-8	
1,1-Dichloroethane	**33.7**	ug/L	5.0	0.32	1		12/19/15 15:06	75-34-3	
1,2-Dichloroethane	**1.3**	ug/L	1.0	0.24	1		12/19/15 15:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/19/15 15:06	75-35-4	
cis-1,2-Dichloroethene	**25.8**	ug/L	5.0	0.19	1		12/19/15 15:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/19/15 15:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/19/15 15:06	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		12/19/15 15:06	142-28-9	
2,2-Dichloropropane	ND	ug/L	15.0	0.13	1		12/19/15 15:06	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.49	1		12/19/15 15:06	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/19/15 15:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/19/15 15:06	10061-02-6	
Ethylbenzene	**2.7**	ug/L	1.0	0.30	1		12/19/15 15:06	100-41-4	
Ethyl methacrylate	ND	ug/L	10.0	0.20	1		12/19/15 15:06	97-63-2	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	0.71	1		12/19/15 15:06	87-68-3	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/19/15 15:06	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/19/15 15:06	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		12/19/15 15:06	78-83-1	
Methacrylonitrile	ND	ug/L	100	0.93	1		12/19/15 15:06	126-98-7	
Methylene Chloride	**113**	ug/L	1.0	0.97	1		12/19/15 15:06	75-09-2	
Methyl methacrylate	ND	ug/L	30.0	2.0	1		12/19/15 15:06	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/19/15 15:06	108-10-1	
Naphthalene	**2.2J**	ug/L	10.0	0.24	1		12/19/15 15:06	91-20-3	
Propionitrile	ND	ug/L	150	3.6	1		12/19/15 15:06	107-12-0	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW13 **Lab ID: 92279395004** Collected: 12/08/15 15:50 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Styrene	ND	ug/L	1.0	0.26	1		12/19/15 15:06	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/19/15 15:06	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/19/15 15:06	79-34-5	
Tetrachloroethene	**5.6**	ug/L	1.0	0.46	1		12/19/15 15:06	127-18-4	
Tetrahydrofuran	**9.7J**	ug/L	10.0	3.1	1		12/19/15 15:06	109-99-9	
Toluene	**6.0**	ug/L	1.0	0.26	1		12/19/15 15:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	0.35	1		12/19/15 15:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/19/15 15:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/19/15 15:06	79-00-5	
Trichloroethene	**9.7**	ug/L	1.0	0.47	1		12/19/15 15:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/19/15 15:06	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/19/15 15:06	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/19/15 15:06	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		12/19/15 15:06	75-01-4	
Xylene (Total)	**45.4**	ug/L	5.0	0.66	1		12/19/15 15:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		12/19/15 15:06	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		12/19/15 15:06	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		12/19/15 15:06	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**9130**	ug/L	5000	1000	1		12/14/15 16:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	ug/L	25000	25000	1		12/11/15 10:42		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D								
Sulfide	ND	ug/L	1000	100	1		12/11/15 15:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	ND	ug/L	250000	1000	1		12/11/15 14:06	14808-79-8	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**1910**	ug/L	1000	500	1		12/17/15 16:59	16887-00-6	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	ug/L	10.0	4.0	1		12/16/15 11:14	57-12-5	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW16S **Lab ID: 92279395005** Collected: 12/08/15 13:30 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 22:13	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 22:13	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 22:13	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 22:13	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 22:13	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.20	1	12/11/15 16:00	12/14/15 22:13	57-74-9	
4,4'-DDD	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 22:13	72-54-8	
4,4'-DDE	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 22:13	72-55-9	
4,4'-DDT	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 22:13	50-29-3	
Dieldrin	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 22:13	60-57-1	
Endosulfan I	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 22:13	959-98-8	
Endosulfan II	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 22:13	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 22:13	1031-07-8	
Endrin	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 22:13	72-20-8	
Endrin aldehyde	ND	ug/L	0.10	0.050	1	12/11/15 16:00	12/14/15 22:13	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	12/11/15 16:00	12/14/15 22:13	76-44-8	
Heptachlor epoxide	ND	ug/L	0.075	0.050	1	12/11/15 16:00	12/14/15 22:13	1024-57-3	
Methoxychlor	ND	ug/L	1.0	0.15	1	12/11/15 16:00	12/14/15 22:13	72-43-5	
Toxaphene	ND	ug/L	1.5	0.20	1	12/11/15 16:00	12/14/15 22:13	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	56	%	20-130		1	12/11/15 16:00	12/14/15 22:13	877-09-8	
Decachlorobiphenyl (S)	62	%	20-130		1	12/11/15 16:00	12/14/15 22:13	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 20:08	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 20:08	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 20:08	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 20:08	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 20:08	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 20:08	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	12/11/15 16:00	12/14/15 20:08	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	74	%	10-132		1	12/11/15 16:00	12/14/15 20:08	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151 Preparation Method: EPA 8151								
2,4-D	ND	ug/L	0.94	0.22	1	12/15/15 20:15	12/18/15 13:48	94-75-7	
Dinoseb	ND	ug/L	0.19	0.057	1	12/15/15 20:15	12/18/15 13:48	88-85-7	
2,4,5-T	ND	ug/L	0.19	0.042	1	12/15/15 20:15	12/18/15 13:48	93-76-5	
2,4,5-TP (Silvex)	ND	ug/L	0.19	0.049	1	12/15/15 20:15	12/18/15 13:48	93-72-1	
Surrogates									
2,4-DCAA (S)	90	%	36-130		1	12/15/15 20:15	12/18/15 13:48	19719-28-9	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	12/12/15 00:00	12/17/15 03:35	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-38-2	
Barium	**50.6J**	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-39-3	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW16S **Lab ID: 92279395005** Collected: 12/08/15 13:30 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010	Preparation Method: EPA 3010A							
Beryllium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:35	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:35	7440-43-9	
Chromium	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-47-3	
Cobalt	**32.8**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-48-4	
Copper	**5.9J**	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-50-8	
Iron	**27400**	ug/L	300	25.0	1	12/12/15 00:00	12/17/15 03:35	7439-89-6	
Lead	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7439-92-1	
Manganese	**8440**	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7439-96-5	
Nickel	ND	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:35	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	12/12/15 00:00	12/17/15 03:35	7440-28-0	
Tin	ND	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-31-5	
Vanadium	**11.5J**	ug/L	25.0	2.5	1	12/12/15 00:00	12/17/15 03:35	7440-62-2	
Zinc	**47.3**	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:35	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.10	1	12/17/15 14:05	12/17/15 18:46	7439-97-6	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270	Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	10.0	0.25	1	12/15/15 17:28	12/22/15 20:59	83-32-9	
Acenaphthylene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:59	208-96-8	
Acetophenone	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 20:59	98-86-2	
2-Acetylaminofluorene	ND	ug/L	20.0	0.84	1	12/15/15 17:28	12/22/15 20:59	53-96-3	
4-Aminobiphenyl	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 20:59	92-67-1	
Anthracene	ND	ug/L	10.0	0.14	1	12/15/15 17:28	12/22/15 20:59	120-12-7	
Benzo(a)anthracene	ND	ug/L	10.0	0.33	1	12/15/15 17:28	12/22/15 20:59	56-55-3	
Benzo(a)pyrene	ND	ug/L	10.0	0.30	1	12/15/15 17:28	12/22/15 20:59	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 20:59	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	10.0	0.38	1	12/15/15 17:28	12/22/15 20:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	10.0	0.43	1	12/15/15 17:28	12/22/15 20:59	207-08-9	
Benzyl alcohol	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 20:59	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:59	101-55-3	
Butylbenzylphthalate	ND	ug/L	10.0	0.75	1	12/15/15 17:28	12/22/15 20:59	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	20.0	4.2	1	12/15/15 17:28	12/22/15 20:59	59-50-7	
4-Chloroaniline	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/22/15 20:59	106-47-8	
Chlorobenzilate	ND	ug/L	10.0	0.72	1	12/15/15 17:28	12/22/15 20:59	510-15-6	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:59	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:59	108-60-1	
2-Chloronaphthalene	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:59	91-58-7	
2-Chlorophenol	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:59	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:59	7005-72-3	
Chrysene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:59	218-01-9	
Diallate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:59	2303-16-4	
Dibenz(a,h)anthracene	ND	ug/L	10.0	0.55	1	12/15/15 17:28	12/22/15 20:59	53-70-3	

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9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW16S **Lab ID: 92279395005** Collected: 12/08/15 13:30 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Dibenzofuran	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:59	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/L	20.0	1.4	1	12/15/15 17:28	12/22/15 20:59	91-94-1	
2,4-Dichlorophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59	120-83-2	
2,6-Dichlorophenol	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:59	87-65-0	
Diethylphthalate	ND	ug/L	6000	1.3	1	12/15/15 17:28	12/22/15 20:59	84-66-2	
Dimethoate	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/22/15 20:59	60-51-5	
P-Dimethylaminoazobenzene	ND	ug/L	10.0	0.35	1	12/15/15 17:28	12/22/15 20:59	60-11-7	
7,12-Dimethylbenz(a)anthracene	ND	ug/L	10.0	0.77	1	12/15/15 17:28	12/22/15 20:59	57-97-6	
3,3'-Dimethylbenzidine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:59	119-93-7	
2,4-Dimethylphenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:59	105-67-9	
Dimethylphthalate	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:59	131-11-3	
Di-n-butylphthalate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:59	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	1.7	1	12/15/15 17:28	12/22/15 20:59	534-52-1	
1,3-Dinitrobenzene	ND	ug/L	20.0	1.5	1	12/15/15 17:28	12/22/15 20:59	99-65-0	
2,4-Dinitrophenol	ND	ug/L	50.0	6.5	1	12/15/15 17:28	12/22/15 20:59	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 20:59	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59	606-20-2	
Di-n-octylphthalate	ND	ug/L	10.0	0.86	1	12/15/15 17:28	12/22/15 20:59	117-84-0	
Diphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:59	122-39-4	
Disulfoton	ND	ug/L	10.0	1.4	1	12/15/15 17:28	12/22/15 20:59	298-04-4	
bis(2-Ethylhexyl)phthalate	ND	ug/L	15.0	0.85	1	12/15/15 17:28	12/22/15 20:59	117-81-7	
Ethyl methanesulfonate	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 20:59	62-50-0	
Famphur	ND	ug/L	20.0	1.7	1	12/15/15 17:28	12/22/15 20:59	52-85-7	
Fluoranthene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:59	206-44-0	L3
Fluorene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/22/15 20:59	86-73-7	
Hexachlorobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:59	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:59	77-47-4	
Hexachloroethane	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:59	67-72-1	
Hexachloropropene	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:59	1888-71-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10.0	0.29	1	12/15/15 17:28	12/22/15 20:59	193-39-5	
Isodrin	ND	ug/L	20.0	2.0	1	12/15/15 17:28	12/22/15 20:59	465-73-6	L3
Isophorone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:59	78-59-1	
Isosafrole	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:59	120-58-1	
Kepone	ND	ug/L	20.0	3.1	1	12/15/15 17:28	12/22/15 20:59	143-50-0	
Methapyrilene	ND	ug/L	100	2.7	1	12/15/15 17:28	12/22/15 20:59	91-80-5	L2
3-Methylcholanthrene	ND	ug/L	10.0	0.82	1	12/15/15 17:28	12/22/15 20:59	56-49-5	
Methyl methanesulfonate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:59	66-27-3	
2-Methylnaphthalene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/22/15 20:59	91-57-6	
Methyl parathion	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:59	298-00-0	
2-Methylphenol(o-Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59		
1-Naphthalenamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 20:59	134-32-7	
2-Naphthalenamine	ND	ug/L	10.0	0.98	1	12/15/15 17:28	12/22/15 20:59	91-59-8	
1,4-Naphthoquinone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:59	130-15-4	
2-Nitroaniline	ND	ug/L	50.0	2.8	1	12/15/15 17:28	12/22/15 20:59	88-74-4	
3-Nitroaniline	ND	ug/L	50.0	2.4	1	12/15/15 17:28	12/22/15 20:59	99-09-2	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW16S **Lab ID: 92279395005** Collected: 12/08/15 13:30 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
4-Nitroaniline	ND	ug/L	20.0	2.5	1	12/15/15 17:28	12/22/15 20:59	100-01-6	
Nitrobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59	98-95-3	
2-Nitrophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	5.8	1	12/15/15 17:28	12/22/15 20:59	100-02-7	
5-Nitro-o-toluidine	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/22/15 20:59	99-55-8	
N-Nitrosodiethylamine	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/22/15 20:59	55-18-5	
N-Nitrosodimethylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:59	62-75-9	
N-Nitroso-di-n-butylamine	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:59	924-16-3	
N-Nitroso-di-n-propylamine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/22/15 20:59	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/22/15 20:59	86-30-6	
N-Nitrosomethylethylamine	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:59	10595-95-6	
N-Nitrosopiperidine	ND	ug/L	20.0	1.9	1	12/15/15 17:28	12/22/15 20:59	100-75-4	
N-Nitrosopyrrolidine	ND	ug/L	10.0	2.5	1	12/15/15 17:28	12/22/15 20:59	930-55-2	
O,O,O-Triethylphosphorothioate	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/22/15 20:59	126-68-1	
Parathion (Ethyl parathion)	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:59	56-38-2	
Pentachlorobenzene	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/22/15 20:59	608-93-5	
Pentachloronitrobenzene	ND	ug/L	20.0	1.0	1	12/15/15 17:28	12/22/15 20:59	82-68-8	
Pentachlorophenol	ND	ug/L	25.0	2.3	1	12/15/15 17:28	12/22/15 20:59	87-86-5	
Phenacetin	ND	ug/L	20.0	0.97	1	12/15/15 17:28	12/22/15 20:59	62-44-2	
Phenanthrene	ND	ug/L	10.0	0.22	1	12/15/15 17:28	12/22/15 20:59	85-01-8	
Phenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59	108-95-2	
p-Phenylenediamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/22/15 20:59	106-50-3	
Phorate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:59	298-02-2	L3
Pronamide	ND	ug/L	10.0	0.97	1	12/15/15 17:28	12/22/15 20:59	23950-58-5	
Pyrene	ND	ug/L	10.0	0.19	1	12/15/15 17:28	12/22/15 20:59	129-00-0	
Safrole	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/22/15 20:59	94-59-7	
1,2,4,5-Tetrachlorobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/22/15 20:59	95-94-3	
2,3,4,6-Tetrachlorophenol	ND	ug/L	10.0	2.3	1	12/15/15 17:28	12/22/15 20:59	58-90-2	
Thionazin	ND	ug/L	20.0	1.2	1	12/15/15 17:28	12/22/15 20:59	297-97-2	
O-Toluidine	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/22/15 20:59	95-53-4	
2,4,5-Trichlorophenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/22/15 20:59	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.9	1	12/15/15 17:28	12/22/15 20:59	88-06-2	
1,3,5-Trinitrobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/22/15 20:59	99-35-4	L3
Surrogates									
Nitrobenzene-d5 (S)	77	%	21-110		1	12/15/15 17:28	12/22/15 20:59	4165-60-0	
2-Fluorobiphenyl (S)	67	%	27-110		1	12/15/15 17:28	12/22/15 20:59	321-60-8	
Terphenyl-d14 (S)	71	%	31-107		1	12/15/15 17:28	12/22/15 20:59	1718-51-0	
Phenol-d6 (S)	22	%	10-110		1	12/15/15 17:28	12/22/15 20:59	13127-88-3	
2-Fluorophenol (S)	32	%	12-110		1	12/15/15 17:28	12/22/15 20:59	367-12-4	
2,4,6-Tribromophenol (S)	86	%	27-110		1	12/15/15 17:28	12/22/15 20:59	118-79-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	**16.5J**	ug/L	100	10.0	1		12/20/15 19:06	67-64-1	
Acetonitrile	ND	ug/L	55.0	2.2	1		12/20/15 19:06	75-05-8	
Acrolein	ND	ug/L	53.0	1.6	1		12/20/15 19:06	107-02-8	
Acrylonitrile	ND	ug/L	200	1.9	1		12/20/15 19:06	107-13-1	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW16S **Lab ID: 92279395005** Collected: 12/08/15 13:30 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Allyl chloride	ND	ug/L	10.0	1.5	1		12/20/15 19:06	107-05-1	
Benzene	**1.7**	ug/L	1.0	0.25	1		12/20/15 19:06	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/20/15 19:06	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/20/15 19:06	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/20/15 19:06	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/20/15 19:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/20/15 19:06	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/20/15 19:06	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/20/15 19:06	56-23-5	
Chlorobenzene	**0.82J**	ug/L	3.0	0.23	1		12/20/15 19:06	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/20/15 19:06	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/20/15 19:06	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/20/15 19:06	74-87-3	
Chloroprene	ND	ug/L	20.0	0.27	1		12/20/15 19:06	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/20/15 19:06	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/20/15 19:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/20/15 19:06	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/20/15 19:06	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.30	1		12/20/15 19:06	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.24	1		12/20/15 19:06	541-73-1	
1,4-Dichlorobenzene	**9.1**	ug/L	1.0	0.33	1		12/20/15 19:06	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/20/15 19:06	110-57-6	
Dichlorodifluoromethane	ND	ug/L	5.0	0.21	1		12/20/15 19:06	75-71-8	
1,1-Dichloroethane	**10.3**	ug/L	5.0	0.32	1		12/20/15 19:06	75-34-3	
1,2-Dichloroethane	**1.3**	ug/L	1.0	0.24	1		12/20/15 19:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/20/15 19:06	75-35-4	
cis-1,2-Dichloroethene	**4.4J**	ug/L	5.0	0.19	1		12/20/15 19:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/20/15 19:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/20/15 19:06	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		12/20/15 19:06	142-28-9	
2,2-Dichloropropane	ND	ug/L	15.0	0.13	1		12/20/15 19:06	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.49	1		12/20/15 19:06	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/20/15 19:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/20/15 19:06	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		12/20/15 19:06	100-41-4	
Ethyl methacrylate	ND	ug/L	10.0	0.20	1		12/20/15 19:06	97-63-2	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	0.71	1		12/20/15 19:06	87-68-3	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/20/15 19:06	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/20/15 19:06	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		12/20/15 19:06	78-83-1	
Methacrylonitrile	ND	ug/L	100	0.93	1		12/20/15 19:06	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		12/20/15 19:06	75-09-2	
Methyl methacrylate	ND	ug/L	30.0	2.0	1		12/20/15 19:06	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/20/15 19:06	108-10-1	
Naphthalene	ND	ug/L	10.0	0.24	1		12/20/15 19:06	91-20-3	
Propionitrile	ND	ug/L	150	3.6	1		12/20/15 19:06	107-12-0	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW16S **Lab ID: 92279395005** Collected: 12/08/15 13:30 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Styrene	ND	ug/L	1.0	0.26	1		12/20/15 19:06	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/20/15 19:06	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/20/15 19:06	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/20/15 19:06	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	3.1	1		12/20/15 19:06	109-99-9	
Toluene	**0.31J**	ug/L	1.0	0.26	1		12/20/15 19:06	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	0.35	1		12/20/15 19:06	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/20/15 19:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/20/15 19:06	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		12/20/15 19:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/20/15 19:06	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/20/15 19:06	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/20/15 19:06	108-05-4	
Vinyl chloride	**1.4**	ug/L	1.0	0.62	1		12/20/15 19:06	75-01-4	
Xylene (Total)	ND	ug/L	5.0	0.66	1		12/20/15 19:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		12/20/15 19:06	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		12/20/15 19:06	17060-07-0	
Toluene-d8 (S)	108	%	70-130		1		12/20/15 19:06	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**95900**	ug/L	5000	1000	1		12/14/15 16:27		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**106000**	ug/L	25000	25000	1		12/11/15 10:43		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D								
Sulfide	ND	ug/L	1000	100	1		12/11/15 15:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	ND	ug/L	250000	1000	1		12/11/15 14:06	14808-79-8	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**4190**	ug/L	1000	500	1		12/17/15 17:03	16887-00-6	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	ug/L	10.0	4.0	1		12/16/15 11:14	57-12-5	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW16D **Lab ID: 92279395006** Collected: 12/08/15 14:32 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	12/12/15 00:00	12/17/15 03:38	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7440-38-2	
Barium	**8.0J**	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 03:38	7440-39-3	
Beryllium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:38	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 03:38	7440-43-9	
Chromium	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7440-47-3	
Cobalt	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7440-48-4	
Copper	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7440-50-8	
Iron	**43.7J**	ug/L	300	25.0	1	12/12/15 00:00	12/17/15 03:38	7439-89-6	
Lead	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7439-92-1	
Manganese	**124**	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7439-96-5	
Nickel	ND	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:38	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	12/12/15 00:00	12/17/15 03:38	7440-28-0	
Vanadium	ND	ug/L	25.0	2.5	1	12/12/15 00:00	12/17/15 03:38	7440-62-2	
Zinc	**8.2J**	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 03:38	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	0.10	1	12/17/15 16:15	12/19/15 14:36	7439-97-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	100	10.0	1		12/19/15 15:40	67-64-1	
Acrylonitrile	ND	ug/L	200	1.9	1		12/19/15 15:40	107-13-1	
Benzene	ND	ug/L	1.0	0.25	1		12/19/15 15:40	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/19/15 15:40	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/19/15 15:40	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/19/15 15:40	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/19/15 15:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/19/15 15:40	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/19/15 15:40	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/19/15 15:40	56-23-5	
Chlorobenzene	ND	ug/L	3.0	0.23	1		12/19/15 15:40	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/19/15 15:40	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/19/15 15:40	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/19/15 15:40	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/19/15 15:40	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/19/15 15:40	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/19/15 15:40	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/19/15 15:40	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.30	1		12/19/15 15:40	95-50-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		12/19/15 15:40	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/19/15 15:40	110-57-6	
1,1-Dichloroethane	ND	ug/L	5.0	0.32	1		12/19/15 15:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		12/19/15 15:40	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/19/15 15:40	75-35-4	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW16D **Lab ID: 92279395006** Collected: 12/08/15 14:32 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
cis-1,2-Dichloroethene	ND	ug/L	5.0	0.19	1		12/19/15 15:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/19/15 15:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/19/15 15:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/19/15 15:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/19/15 15:40	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		12/19/15 15:40	100-41-4	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/19/15 15:40	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/19/15 15:40	74-88-4	
Methylene Chloride	ND	ug/L	1.0	0.97	1		12/19/15 15:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/19/15 15:40	108-10-1	
Styrene	ND	ug/L	1.0	0.26	1		12/19/15 15:40	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/19/15 15:40	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/19/15 15:40	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/19/15 15:40	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	3.1	1		12/19/15 15:40	109-99-9	
Toluene	ND	ug/L	1.0	0.26	1		12/19/15 15:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/19/15 15:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/19/15 15:40	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		12/19/15 15:40	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/19/15 15:40	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/19/15 15:40	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/19/15 15:40	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		12/19/15 15:40	75-01-4	
Xylene (Total)	ND	ug/L	5.0	0.66	1		12/19/15 15:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		12/19/15 15:40	460-00-4	
1,2-Dichloroethane-d4 (S)	96	%	70-130		1		12/19/15 15:40	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		12/19/15 15:40	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**46200**	ug/L	5000	1000	1		12/14/15 16:39		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**93000**	ug/L	25000	25000	1		12/11/15 10:43		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**9260J**	ug/L	250000	1000	1		12/11/15 14:06	14808-79-8	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**945J**	ug/L	1000	500	1		12/17/15 17:04	16887-00-6	

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ANALYTICAL RESULTS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Sample: 1203-MW12 Re-run Sb,Cr,V **Lab ID: 92279395007** Collected: 12/08/15 12:51 Received: 12/10/15 10:48 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	**6.2**	ug/L	6.0	3.8	1	01/15/16 18:00	01/19/16 11:57	7440-36-0	
Chromium	**14.7**	ug/L	10.0	2.5	1	01/15/16 18:00	01/19/16 11:57	7440-47-3	
Vanadium	**19.8J**	ug/L	25.0	2.5	1	01/15/16 18:00	01/19/16 11:57	7440-62-2	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: MERP/8788 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

METHOD BLANK: 1629746 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.10	12/17/15 17:42	

LABORATORY CONTROL SAMPLE: 1629747

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1629748 1629749

Parameter	Units	92279275008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.4	2.5	96	99	75-125	3	25	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: MERP/8789 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Associated Lab Samples: 92279395006

METHOD BLANK: 1629752 | Matrix: Water
Associated Lab Samples: 92279395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.10	12/19/15 14:31	

LABORATORY CONTROL SAMPLE: 1629753

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1629754 1629755

Parameter	Units	92279395006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.5	2.4	100	96	75-125	3	25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: MPRP/20262 Analysis Method: EPA 6010
QC Batch Method: EPA 3010A Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

METHOD BLANK: 1627237 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	6.0	3.8	12/17/15 02:17	
Arsenic	ug/L	ND	10.0	2.5	12/17/15 02:17	
Barium	ug/L	ND	100	2.5	12/17/15 02:17	
Beryllium	ug/L	ND	1.0	0.50	12/17/15 02:17	
Cadmium	ug/L	ND	1.0	0.50	12/17/15 02:17	
Chromium	ug/L	ND	10.0	2.5	12/17/15 02:17	
Cobalt	ug/L	ND	10.0	2.5	12/17/15 02:17	
Copper	ug/L	ND	10.0	2.5	12/17/15 02:17	
Iron	ug/L	ND	300	25.0	12/17/15 02:17	
Lead	ug/L	ND	10.0	2.5	12/17/15 02:17	
Manganese	ug/L	ND	50.0	2.5	12/17/15 02:17	
Nickel	ug/L	ND	50.0	2.5	12/17/15 02:17	
Selenium	ug/L	ND	10.0	5.0	12/17/15 02:17	
Silver	ug/L	ND	10.0	2.5	12/17/15 02:17	
Thallium	ug/L	ND	5.5	5.0	12/17/15 02:17	
Tin	ug/L	ND	100	2.5	12/17/15 02:17	
Vanadium	ug/L	ND	25.0	2.5	12/17/15 02:17	
Zinc	ug/L	ND	10.0	5.0	12/17/15 02:17	

LABORATORY CONTROL SAMPLE: 1627238

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	587	117	80-120	
Arsenic	ug/L	500	523	105	80-120	
Barium	ug/L	500	532	106	80-120	
Beryllium	ug/L	500	525	105	80-120	
Cadmium	ug/L	500	542	108	80-120	
Chromium	ug/L	500	514	103	80-120	
Cobalt	ug/L	500	546	109	80-120	
Copper	ug/L	500	524	105	80-120	
Iron	ug/L	5000	5420	108	80-120	
Lead	ug/L	500	539	108	80-120	
Manganese	ug/L	500	562	112	80-120	
Nickel	ug/L	500	542	108	80-120	
Selenium	ug/L	500	541	108	80-120	
Silver	ug/L	250	275	110	80-120	
Thallium	ug/L	500	516	103	80-120	
Tin	ug/L	500	592	118	80-120	
Vanadium	ug/L	500	570	114	80-120	
Zinc	ug/L	500	550	110	80-120	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1627239 1627240

Parameter	Units	92279385001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	537	545	107	109	75-125	2	25	
Arsenic	ug/L	ND	500	500	479	490	95	98	75-125	2	25	
Barium	ug/L	109	500	500	605	608	99	100	75-125	0	25	
Beryllium	ug/L	ND	500	500	490	494	98	99	75-125	1	25	
Cadmium	ug/L	ND	500	500	496	504	99	101	75-125	2	25	
Chromium	ug/L	ND	500	500	471	478	94	95	75-125	1	25	
Cobalt	ug/L	52.0	500	500	555	560	101	102	75-125	1	25	
Copper	ug/L	7.9J	500	500	501	510	99	100	75-125	2	25	
Iron	ug/L	55800	5000	5000	62000	60000	124	85	75-125	3	25	
Lead	ug/L	4.6J	500	500	494	502	98	100	75-125	2	25	
Manganese	ug/L	3470	500	500	4060	3940	117	94	75-125	3	25	
Nickel	ug/L	2.6J	500	500	499	505	99	101	75-125	1	25	
Selenium	ug/L	ND	500	500	496	505	99	101	75-125	2	25	
Silver	ug/L	ND	250	250	255	258	102	103	75-125	1	25	
Thallium	ug/L	6.9	500	500	469	486	92	96	75-125	4	25	
Tin	ug/L	ND	500	500	542	551	108	110	75-125	2	25	
Vanadium	ug/L	8.3J	500	500	541	544	107	107	75-125	1	25	
Zinc	ug/L	6.5J	500	500	517	520	102	103	75-125	0	25	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: MPRP/20488
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010
Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92279395007

METHOD BLANK: 1648385
Matrix: Water
Associated Lab Samples: 92279395007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	6.0	3.8	01/19/16 11:17	
Chromium	ug/L	ND	10.0	2.5	01/19/16 11:17	
Vanadium	ug/L	ND	25.0	2.5	01/19/16 11:17	

LABORATORY CONTROL SAMPLE: 1648386

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	514	103	80-120	
Chromium	ug/L	500	502	100	80-120	
Vanadium	ug/L	500	507	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1648387 1648388

Parameter	Units	92277140008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	9.4	500	500	537	552	106	109	75-125	3	25	
Chromium	ug/L	7.9	500	500	504	515	99	101	75-125	2	25	
Vanadium	ug/L	ND	500	500	516	533	103	106	75-125	3	25	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: MSV/34799 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395006

METHOD BLANK: 1633901 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	5.0	0.33	12/19/15 13:25	
1,1,1-Trichloroethane	ug/L	ND	1.0	0.48	12/19/15 13:25	
1,1,2,2-Tetrachloroethane	ug/L	ND	3.0	0.40	12/19/15 13:25	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.29	12/19/15 13:25	
1,1-Dichloroethane	ug/L	ND	5.0	0.32	12/19/15 13:25	
1,1-Dichloroethene	ug/L	ND	5.0	0.56	12/19/15 13:25	
1,1-Dichloropropene	ug/L	ND	5.0	0.49	12/19/15 13:25	
1,2,3-Trichloropropane	ug/L	ND	1.0	0.41	12/19/15 13:25	
1,2,4-Trichlorobenzene	ug/L	ND	10.0	0.35	12/19/15 13:25	
1,2-Dibromo-3-chloropropane	ug/L	ND	13.0	2.0	12/19/15 13:25	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	0.27	12/19/15 13:25	
1,2-Dichlorobenzene	ug/L	ND	5.0	0.30	12/19/15 13:25	
1,2-Dichloroethane	ug/L	ND	1.0	0.24	12/19/15 13:25	
1,2-Dichloropropane	ug/L	ND	1.0	0.27	12/19/15 13:25	
1,3-Dichlorobenzene	ug/L	ND	5.0	0.24	12/19/15 13:25	
1,3-Dichloropropane	ug/L	ND	1.0	0.28	12/19/15 13:25	
1,4-Dichlorobenzene	ug/L	ND	1.0	0.33	12/19/15 13:25	
2,2-Dichloropropane	ug/L	ND	15.0	0.13	12/19/15 13:25	
2-Butanone (MEK)	ug/L	ND	100	0.96	12/19/15 13:25	
2-Hexanone	ug/L	ND	50.0	0.46	12/19/15 13:25	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	0.33	12/19/15 13:25	
Acetone	ug/L	ND	100	10.0	12/19/15 13:25	
Acetonitrile	ug/L	ND	55.0	2.2	12/19/15 13:25	
Acrolein	ug/L	ND	53.0	1.6	12/19/15 13:25	
Acrylonitrile	ug/L	ND	200	1.9	12/19/15 13:25	
Allyl chloride	ug/L	ND	10.0	1.5	12/19/15 13:25	
Benzene	ug/L	ND	1.0	0.25	12/19/15 13:25	
Bromochloromethane	ug/L	ND	3.0	0.17	12/19/15 13:25	
Bromodichloromethane	ug/L	ND	1.0	0.18	12/19/15 13:25	
Bromoform	ug/L	ND	3.0	0.26	12/19/15 13:25	
Bromomethane	ug/L	ND	10.0	0.29	12/19/15 13:25	
Carbon disulfide	ug/L	ND	100	1.2	12/19/15 13:25	
Carbon tetrachloride	ug/L	ND	1.0	0.25	12/19/15 13:25	
Chlorobenzene	ug/L	ND	3.0	0.23	12/19/15 13:25	
Chloroethane	ug/L	ND	10.0	0.54	12/19/15 13:25	
Chloroform	ug/L	ND	5.0	0.14	12/19/15 13:25	
Chloromethane	ug/L	ND	1.0	0.11	12/19/15 13:25	
Chloroprene	ug/L	ND	20.0	0.27	12/19/15 13:25	
cis-1,2-Dichloroethene	ug/L	ND	5.0	0.19	12/19/15 13:25	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.13	12/19/15 13:25	
Dibromochloromethane	ug/L	ND	3.0	0.21	12/19/15 13:25	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

METHOD BLANK: 1633901 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	10.0	0.21	12/19/15 13:25	
Dichlorodifluoromethane	ug/L	ND	5.0	0.21	12/19/15 13:25	
Ethyl methacrylate	ug/L	ND	10.0	0.20	12/19/15 13:25	
Ethylbenzene	ug/L	ND	1.0	0.30	12/19/15 13:25	
Hexachloro-1,3-butadiene	ug/L	ND	10.0	0.71	12/19/15 13:25	
Iodomethane	ug/L	ND	10.0	0.32	12/19/15 13:25	
Isobutanol	ug/L	ND	100	35.0	12/19/15 13:25	
Methacrylonitrile	ug/L	ND	100	0.93	12/19/15 13:25	
Methyl methacrylate	ug/L	ND	30.0	2.0	12/19/15 13:25	
Methylene Chloride	ug/L	ND	1.0	0.97	12/19/15 13:25	
Naphthalene	ug/L	ND	10.0	0.24	12/19/15 13:25	
Propionitrile	ug/L	ND	150	3.6	12/19/15 13:25	
Styrene	ug/L	ND	1.0	0.26	12/19/15 13:25	
Tetrachloroethene	ug/L	ND	1.0	0.46	12/19/15 13:25	
Tetrahydrofuran	ug/L	ND	10.0	3.1	12/19/15 13:25	
Toluene	ug/L	ND	1.0	0.26	12/19/15 13:25	
trans-1,2-Dichloroethene	ug/L	ND	5.0	0.49	12/19/15 13:25	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.26	12/19/15 13:25	
trans-1,4-Dichloro-2-butene	ug/L	ND	100	1.0	12/19/15 13:25	
Trichloroethene	ug/L	ND	1.0	0.47	12/19/15 13:25	
Trichlorofluoromethane	ug/L	ND	1.0	0.20	12/19/15 13:25	
Vinyl acetate	ug/L	ND	50.0	0.35	12/19/15 13:25	
Vinyl chloride	ug/L	ND	1.0	0.62	12/19/15 13:25	
Xylene (Total)	ug/L	ND	5.0	0.66	12/19/15 13:25	
1,2-Dichloroethane-d4 (S)	%	102	70-130		12/19/15 13:25	
4-Bromofluorobenzene (S)	%	102	70-130		12/19/15 13:25	
Toluene-d8 (S)	%	110	70-130		12/19/15 13:25	

LABORATORY CONTROL SAMPLE: 1633902

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	52.6	105	80-125	
1,1,1-Trichloroethane	ug/L	50	55.2	110	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	52.8	106	79-124	
1,1,2-Trichloroethane	ug/L	50	53.5	107	85-125	
1,1-Dichloroethane	ug/L	50	49.3	99	73-126	
1,1-Dichloroethene	ug/L	50	54.2	108	66-135	
1,1-Dichloropropene	ug/L	50	53.5	107	74-135	
1,2,3-Trichloropropane	ug/L	50	50.9	102	75-130	
1,2,4-Trichlorobenzene	ug/L	50	49.8	100	75-134	
1,2-Dibromo-3-chloropropane	ug/L	50	50.9	102	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	55.6	111	83-124	
1,2-Dichlorobenzene	ug/L	50	51.6	103	80-133	
1,2-Dichloroethane	ug/L	50	50.1	100	67-128	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

LABORATORY CONTROL SAMPLE: 1633902

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloropropane	ug/L	50	49.0	98	75-132	
1,3-Dichlorobenzene	ug/L	50	51.4	103	77-130	
1,3-Dichloropropane	ug/L	50	52.5	105	76-131	
1,4-Dichlorobenzene	ug/L	50	53.0	106	78-130	
2,2-Dichloropropane	ug/L	50	54.1	108	40-160	
2-Butanone (MEK)	ug/L	100	109	109	61-144	
2-Hexanone	ug/L	100	104	104	68-143	
4-Methyl-2-pentanone (MIBK)	ug/L	100	99.9J	100	72-135	
Acetone	ug/L	100	107	107	48-146	
Acetonitrile	ug/L	500	546	109	62-150	
Acrolein	ug/L	250	305	122	24-160	
Acrylonitrile	ug/L	250	263	105	40-160	
Allyl chloride	ug/L	50	53.7	107	66-137	
Benzene	ug/L	50	52.1	104	80-125	
Bromochloromethane	ug/L	50	59.3	119	71-125	
Bromodichloromethane	ug/L	50	54.5	109	78-124	
Bromoform	ug/L	50	44.1	88	71-128	
Bromomethane	ug/L	50	45.4	91	40-160	
Carbon disulfide	ug/L	50	55.0J	110	50-160	
Carbon tetrachloride	ug/L	50	53.3	107	69-131	
Chlorobenzene	ug/L	50	53.9	108	81-122	
Chloroethane	ug/L	50	48.3	97	39-148	
Chloroform	ug/L	50	55.3	111	73-127	
Chloromethane	ug/L	50	55.9	112	44-146	
Chloroprene	ug/L	50	59.1	118	75-145	
cis-1,2-Dichloroethene	ug/L	50	51.5	103	74-124	
cis-1,3-Dichloropropene	ug/L	50	56.5	113	72-132	
Dibromochloromethane	ug/L	50	54.5	109	78-125	
Dibromomethane	ug/L	50	53.2	106	82-120	
Dichlorodifluoromethane	ug/L	50	46.6	93	34-157	
Ethyl methacrylate	ug/L	50	47.9	96	82-121	
Ethylbenzene	ug/L	50	52.9	106	79-121	
Hexachloro-1,3-butadiene	ug/L	50	61.6	123	72-131	
Iodomethane	ug/L	100	88.7	89	39-154	
Isobutanol	ug/L	1000	992	99	34-160	
Methacrylonitrile	ug/L	500	558	112	74-134	
Methyl methacrylate	ug/L	50	47.8	96	84-124	
Methylene Chloride	ug/L	50	59.2	118	64-133	
Naphthalene	ug/L	50	49.1	98	73-133	
Propionitrile	ug/L	500	535	107	73-140	
Styrene	ug/L	50	53.2	106	84-126	
Tetrachloroethene	ug/L	50	53.6	107	78-122	
Tetrahydrofuran	ug/L	500	549	110	69-148	
Toluene	ug/L	50	49.9	100	80-121	
trans-1,2-Dichloroethene	ug/L	50	51.5	103	71-127	
trans-1,3-Dichloropropene	ug/L	50	52.1	104	69-141	
trans-1,4-Dichloro-2-butene	ug/L	50	54.8J	110	40-160	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

LABORATORY CONTROL SAMPLE: 1633902

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	50	55.3	111	78-122	
Trichlorofluoromethane	ug/L	50	50.8	102	53-137	
Vinyl acetate	ug/L	100	104	104	40-160	
Vinyl chloride	ug/L	50	55.3	111	58-137	
Xylene (Total)	ug/L	150	158	106	81-126	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			104	70-130	
Toluene-d8 (S)	%			96	70-130	

MATRIX SPIKE SAMPLE: 1633904

Parameter	Units	92279300003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	15.4	77	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	19.8	99	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	16.8	84	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	16.8	84	70-130	
1,1-Dichloroethane	ug/L	ND	20	19.4	97	70-130	
1,1-Dichloroethene	ug/L	ND	20	18.9	94	70-166	
1,1-Dichloropropene	ug/L	ND	20	18.7	94	70-130	
1,2,3-Trichloropropane	ug/L	ND	20	17.6	88	70-130	
1,2,4-Trichlorobenzene	ug/L	ND	20	15.6	78	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	15.8	79	70-130	
1,2-Dibromoethane (EDB)	ug/L	ND	20	16.5	82	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	17.6	88	70-130	
1,2-Dichloroethane	ug/L	ND	20	17.4	87	70-130	
1,2-Dichloropropane	ug/L	ND	20	17.6	88	70-130	
1,3-Dichlorobenzene	ug/L	ND	20	17.5	88	70-130	
1,3-Dichloropropane	ug/L	ND	20	16.0	80	70-130	
1,4-Dichlorobenzene	ug/L	ND	20	17.2	86	70-130	
2,2-Dichloropropane	ug/L	ND	20	17.1	86	70-130	
2-Butanone (MEK)	ug/L	ND	40	36.4J	91	70-130	
2-Hexanone	ug/L	ND	40	33.6J	84	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	36.3J	91	70-130	
Acetone	ug/L	ND	40	39.6J	99	70-130	
Acetonitrile	ug/L	ND	200	214	107	70-130	
Acrolein	ug/L	1.9J	100	97.8	96	70-130	
Acrylonitrile	ug/L	ND	100	95.0J	95	70-130	
Allyl chloride	ug/L	ND	20	19.3	97	70-130	
Benzene	ug/L	ND	20	18.6	93	70-148	
Bromochloromethane	ug/L	ND	20	22.4	112	70-130	
Bromodichloromethane	ug/L	ND	20	17.5	87	70-130	
Bromoform	ug/L	ND	20	15.4	77	70-130	
Bromomethane	ug/L	ND	20	16.9	84	70-130	
Carbon disulfide	ug/L	ND	20	19.8J	99	70-130	
Carbon tetrachloride	ug/L	ND	20	18.3	91	70-130	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

MATRIX SPIKE SAMPLE: 1633904

Parameter	Units	92279300003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chlorobenzene	ug/L	ND	20	18.1	90	70-146	
Chloroethane	ug/L	ND	20	16.2	81	70-130	
Chloroform	ug/L	ND	20	19.8	99	70-130	
Chloromethane	ug/L	ND	20	23.0	115	70-130	
Chloroprene	ug/L	ND	20	19.6J	98	70-130	
cis-1,2-Dichloroethene	ug/L	ND	20	18.7	94	70-130	
cis-1,3-Dichloropropene	ug/L	ND	20	17.4	87	70-130	
Dibromochloromethane	ug/L	ND	20	15.3	77	70-130	
Dibromomethane	ug/L	ND	20	19.7	98	70-130	
Dichlorodifluoromethane	ug/L	ND	20	17.5	88	70-130	
Ethyl methacrylate	ug/L	ND	20	16.8	84	70-130	
Ethylbenzene	ug/L	ND	20	17.5	87	70-130	
Hexachloro-1,3-butadiene	ug/L	ND	20	23.5	117	70-130	
Iodomethane	ug/L	ND	40	28.3	71	70-130	
Isobutanol	ug/L	ND	400	327	82	70-130	
Methacrylonitrile	ug/L	ND	200	186	93	70-130	
Methyl methacrylate	ug/L	ND	20	17.1J	86	70-130	
Methylene Chloride	ug/L	ND	20	20.8	104	70-130	
Naphthalene	ug/L	ND	20	15.2	76	70-130	
Propionitrile	ug/L	ND	200	187	94	70-130	
Styrene	ug/L	ND	20	17.2	86	70-130	
Tetrachloroethene	ug/L	ND	20	16.9	85	70-130	
Tetrahydrofuran	ug/L	ND	200	186	93	70-130	
Toluene	ug/L	ND	20	19.2	96	70-155	
trans-1,2-Dichloroethene	ug/L	ND	20	20.0	100	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	15.6	78	70-130	
trans-1,4-Dichloro-2-butene	ug/L	ND	20	16.1J	81	70-130	
Trichloroethene	ug/L	ND	20	18.1	91	69-151	
Trichlorofluoromethane	ug/L	ND	20	17.4	87	70-130	
Vinyl acetate	ug/L	ND	40	28.9J	72	70-130	
Vinyl chloride	ug/L	ND	20	20.3	102	70-130	
1,2-Dichloroethane-d4 (S)	%				109	70-130	
4-Bromofluorobenzene (S)	%				99	70-130	
Toluene-d8 (S)	%				107	70-130	

SAMPLE DUPLICATE: 1633903

Parameter	Units	92279300002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

SAMPLE DUPLICATE: 1633903

Parameter	Units	92279300002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2,4-Trichlorobenzene	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	ND	ND		30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	ND	ND		30	
Acetonitrile	ug/L	ND	ND		30	
Acrolein	ug/L	3.1J	1.9J		30	
Acrylonitrile	ug/L	ND	ND		30	
Allyl chloride	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon disulfide	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
Chloroprene	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Ethyl methacrylate	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
Iodomethane	ug/L	ND	ND		30	
Isobutanol	ug/L	ND	ND		30	
Methacrylonitrile	ug/L	ND	ND		30	
Methyl methacrylate	ug/L	ND	ND		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
Propionitrile	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

SAMPLE DUPLICATE: 1633903

Parameter	Units	92279300002 Result	Dup Result	RPD	Max RPD	Qualifiers
Tetrachloroethene	ug/L	ND	ND		30	
Tetrahydrofuran	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
trans-1,4-Dichloro-2-butene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	95	98	3		
4-Bromofluorobenzene (S)	%	104	106	1		
Toluene-d8 (S)	%	111	109	2		

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: MSV/34820
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 92279395005

METHOD BLANK: 1634031
Matrix: Water
Associated Lab Samples: 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	5.0	0.33	12/20/15 18:49	
1,1,1-Trichloroethane	ug/L	ND	1.0	0.48	12/20/15 18:49	
1,1,2,2-Tetrachloroethane	ug/L	ND	3.0	0.40	12/20/15 18:49	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.29	12/20/15 18:49	
1,1-Dichloroethane	ug/L	ND	5.0	0.32	12/20/15 18:49	
1,1-Dichloroethene	ug/L	ND	5.0	0.56	12/20/15 18:49	
1,1-Dichloropropene	ug/L	ND	5.0	0.49	12/20/15 18:49	
1,2,3-Trichloropropane	ug/L	ND	1.0	0.41	12/20/15 18:49	
1,2,4-Trichlorobenzene	ug/L	ND	10.0	0.35	12/20/15 18:49	
1,2-Dibromo-3-chloropropane	ug/L	ND	13.0	2.0	12/20/15 18:49	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	0.27	12/20/15 18:49	
1,2-Dichlorobenzene	ug/L	ND	5.0	0.30	12/20/15 18:49	
1,2-Dichloroethane	ug/L	ND	1.0	0.24	12/20/15 18:49	
1,2-Dichloropropane	ug/L	ND	1.0	0.27	12/20/15 18:49	
1,3-Dichlorobenzene	ug/L	ND	5.0	0.24	12/20/15 18:49	
1,3-Dichloropropane	ug/L	ND	1.0	0.28	12/20/15 18:49	
1,4-Dichlorobenzene	ug/L	ND	1.0	0.33	12/20/15 18:49	
2,2-Dichloropropane	ug/L	ND	15.0	0.13	12/20/15 18:49	
2-Butanone (MEK)	ug/L	ND	100	0.96	12/20/15 18:49	
2-Hexanone	ug/L	ND	50.0	0.46	12/20/15 18:49	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	0.33	12/20/15 18:49	
Acetone	ug/L	ND	100	10.0	12/20/15 18:49	
Acetonitrile	ug/L	ND	55.0	2.2	12/20/15 18:49	
Acrolein	ug/L	ND	53.0	1.6	12/20/15 18:49	
Acrylonitrile	ug/L	ND	200	1.9	12/20/15 18:49	
Allyl chloride	ug/L	ND	10.0	1.5	12/20/15 18:49	
Benzene	ug/L	ND	1.0	0.25	12/20/15 18:49	
Bromochloromethane	ug/L	ND	3.0	0.17	12/20/15 18:49	
Bromodichloromethane	ug/L	ND	1.0	0.18	12/20/15 18:49	
Bromoform	ug/L	ND	3.0	0.26	12/20/15 18:49	
Bromomethane	ug/L	ND	10.0	0.29	12/20/15 18:49	
Carbon disulfide	ug/L	ND	100	1.2	12/20/15 18:49	
Carbon tetrachloride	ug/L	ND	1.0	0.25	12/20/15 18:49	
Chlorobenzene	ug/L	ND	3.0	0.23	12/20/15 18:49	
Chloroethane	ug/L	ND	10.0	0.54	12/20/15 18:49	
Chloroform	ug/L	ND	5.0	0.14	12/20/15 18:49	
Chloromethane	ug/L	ND	1.0	0.11	12/20/15 18:49	
Chloroprene	ug/L	ND	20.0	0.27	12/20/15 18:49	
cis-1,2-Dichloroethene	ug/L	ND	5.0	0.19	12/20/15 18:49	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.13	12/20/15 18:49	
Dibromochloromethane	ug/L	ND	3.0	0.21	12/20/15 18:49	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

METHOD BLANK: 1634031 Matrix: Water
Associated Lab Samples: 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	10.0	0.21	12/20/15 18:49	
Dichlorodifluoromethane	ug/L	ND	5.0	0.21	12/20/15 18:49	
Ethyl methacrylate	ug/L	ND	10.0	0.20	12/20/15 18:49	
Ethylbenzene	ug/L	ND	1.0	0.30	12/20/15 18:49	
Hexachloro-1,3-butadiene	ug/L	ND	10.0	0.71	12/20/15 18:49	
Iodomethane	ug/L	ND	10.0	0.32	12/20/15 18:49	
Isobutanol	ug/L	ND	100	35.0	12/20/15 18:49	
Methacrylonitrile	ug/L	ND	100	0.93	12/20/15 18:49	
Methyl methacrylate	ug/L	ND	30.0	2.0	12/20/15 18:49	
Methylene Chloride	ug/L	ND	1.0	0.97	12/20/15 18:49	
Naphthalene	ug/L	ND	10.0	0.24	12/20/15 18:49	
Propionitrile	ug/L	ND	150	3.6	12/20/15 18:49	
Styrene	ug/L	ND	1.0	0.26	12/20/15 18:49	
Tetrachloroethene	ug/L	ND	1.0	0.46	12/20/15 18:49	
Tetrahydrofuran	ug/L	ND	10.0	3.1	12/20/15 18:49	
Toluene	ug/L	ND	1.0	0.26	12/20/15 18:49	
trans-1,2-Dichloroethene	ug/L	ND	5.0	0.49	12/20/15 18:49	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.26	12/20/15 18:49	
trans-1,4-Dichloro-2-butene	ug/L	ND	100	1.0	12/20/15 18:49	
Trichloroethene	ug/L	ND	1.0	0.47	12/20/15 18:49	
Trichlorofluoromethane	ug/L	ND	1.0	0.20	12/20/15 18:49	
Vinyl acetate	ug/L	ND	50.0	0.35	12/20/15 18:49	
Vinyl chloride	ug/L	ND	1.0	0.62	12/20/15 18:49	
Xylene (Total)	ug/L	ND	5.0	0.66	12/20/15 18:49	
1,2-Dichloroethane-d4 (S)	%	92	70-130		12/20/15 18:49	
4-Bromofluorobenzene (S)	%	102	70-130		12/20/15 18:49	
Toluene-d8 (S)	%	111	70-130		12/20/15 18:49	

LABORATORY CONTROL SAMPLE: 1634032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.0	100	80-125	
1,1,1-Trichloroethane	ug/L	50	52.5	105	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	50.0	100	79-124	
1,1,2-Trichloroethane	ug/L	50	52.3	105	85-125	
1,1-Dichloroethane	ug/L	50	47.9	96	73-126	
1,1-Dichloroethene	ug/L	50	48.1	96	66-135	
1,1-Dichloropropene	ug/L	50	50.9	102	74-135	
1,2,3-Trichloropropane	ug/L	50	51.1	102	75-130	
1,2,4-Trichlorobenzene	ug/L	50	46.2	92	75-134	
1,2-Dibromo-3-chloropropane	ug/L	50	47.9	96	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	53.9	108	83-124	
1,2-Dichlorobenzene	ug/L	50	47.1	94	80-133	
1,2-Dichloroethane	ug/L	50	45.2	90	67-128	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

LABORATORY CONTROL SAMPLE: 1634032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloropropane	ug/L	50	48.2	96	75-132	
1,3-Dichlorobenzene	ug/L	50	48.2	96	77-130	
1,3-Dichloropropane	ug/L	50	51.5	103	76-131	
1,4-Dichlorobenzene	ug/L	50	49.6	99	78-130	
2,2-Dichloropropane	ug/L	50	48.6	97	40-160	
2-Butanone (MEK)	ug/L	100	109	109	61-144	
2-Hexanone	ug/L	100	99.3	99	68-143	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	72-135	
Acetone	ug/L	100	104	104	48-146	
Acetonitrile	ug/L	500	549	110	62-150	
Acrolein	ug/L	250	305	122	24-160	
Acrylonitrile	ug/L	250	260	104	40-160	
Allyl chloride	ug/L	50	52.4	105	66-137	
Benzene	ug/L	50	53.5	107	80-125	
Bromochloromethane	ug/L	50	53.3	107	71-125	
Bromodichloromethane	ug/L	50	49.4	99	78-124	
Bromoform	ug/L	50	40.3	81	71-128	
Bromomethane	ug/L	50	40.0	80	40-160	
Carbon disulfide	ug/L	50	50.5J	101	50-160	
Carbon tetrachloride	ug/L	50	50.3	101	69-131	
Chlorobenzene	ug/L	50	49.3	99	81-122	
Chloroethane	ug/L	50	43.6	87	39-148	
Chloroform	ug/L	50	49.8	100	73-127	
Chloromethane	ug/L	50	50.0	100	44-146	
Chloroprene	ug/L	50	55.7	111	75-145	
cis-1,2-Dichloroethene	ug/L	50	48.3	97	74-124	
cis-1,3-Dichloropropene	ug/L	50	52.6	105	72-132	
Dibromochloromethane	ug/L	50	51.2	102	78-125	
Dibromomethane	ug/L	50	52.2	104	82-120	
Dichlorodifluoromethane	ug/L	50	42.4	85	34-157	
Ethyl methacrylate	ug/L	50	45.7	91	82-121	
Ethylbenzene	ug/L	50	48.9	98	79-121	
Hexachloro-1,3-butadiene	ug/L	50	54.5	109	72-131	
Iodomethane	ug/L	100	78.3	78	39-154	
Isobutanol	ug/L	1000	973	97	34-160	
Methacrylonitrile	ug/L	500	541	108	74-134	
Methyl methacrylate	ug/L	50	45.8	92	84-124	
Methylene Chloride	ug/L	50	58.3	117	64-133	
Naphthalene	ug/L	50	44.7	89	73-133	
Propionitrile	ug/L	500	525	105	73-140	
Styrene	ug/L	50	49.4	99	84-126	
Tetrachloroethene	ug/L	50	48.9	98	78-122	
Tetrahydrofuran	ug/L	500	540	108	69-148	
Toluene	ug/L	50	48.6	97	80-121	
trans-1,2-Dichloroethene	ug/L	50	50.1	100	71-127	
trans-1,3-Dichloropropene	ug/L	50	49.8	100	69-141	
trans-1,4-Dichloro-2-butene	ug/L	50	46.0J	92	40-160	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

LABORATORY CONTROL SAMPLE: 1634032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	50	52.9	106	78-122	
Trichlorofluoromethane	ug/L	50	46.3	93	53-137	
Vinyl acetate	ug/L	100	101	101	40-160	
Vinyl chloride	ug/L	50	50.0	100	58-137	
Xylene (Total)	ug/L	150	144	96	81-126	
1,2-Dichloroethane-d4 (S)	%			102	70-130	
4-Bromofluorobenzene (S)	%			105	70-130	
Toluene-d8 (S)	%			100	70-130	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: OEXT/39664 Analysis Method: EPA 8081
QC Batch Method: EPA 3510 Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

METHOD BLANK: 1627217 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.10	0.050	12/14/15 22:31	
4,4'-DDE	ug/L	ND	0.10	0.050	12/14/15 22:31	
4,4'-DDT	ug/L	ND	0.10	0.050	12/14/15 22:31	
Aldrin	ug/L	ND	0.050	0.050	12/14/15 22:31	
alpha-BHC	ug/L	ND	0.050	0.050	12/14/15 22:31	
beta-BHC	ug/L	ND	0.050	0.050	12/14/15 22:31	
Chlordane (Technical)	ug/L	ND	0.50	0.20	12/14/15 22:31	
delta-BHC	ug/L	ND	0.050	0.050	12/14/15 22:31	
Dieldrin	ug/L	ND	0.075	0.050	12/14/15 22:31	
Endosulfan I	ug/L	ND	0.10	0.050	12/14/15 22:31	
Endosulfan II	ug/L	ND	0.10	0.050	12/14/15 22:31	
Endosulfan sulfate	ug/L	ND	0.10	0.050	12/14/15 22:31	
Endrin	ug/L	ND	0.10	0.050	12/14/15 22:31	
Endrin aldehyde	ug/L	ND	0.10	0.050	12/14/15 22:31	
gamma-BHC (Lindane)	ug/L	ND	0.050	0.050	12/14/15 22:31	
Heptachlor	ug/L	ND	0.050	0.050	12/14/15 22:31	
Heptachlor epoxide	ug/L	ND	0.075	0.050	12/14/15 22:31	
Methoxychlor	ug/L	ND	1.0	0.15	12/14/15 22:31	
Toxaphene	ug/L	ND	1.5	0.20	12/14/15 22:31	
Decachlorobiphenyl (S)	%	47	20-130		12/14/15 22:31	
Tetrachloro-m-xylene (S)	%	62	20-130		12/14/15 22:31	

LABORATORY CONTROL SAMPLE: 1627218

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.20	81	20-150	
4,4'-DDE	ug/L	.25	0.19	79	20-150	
4,4'-DDT	ug/L	.25	0.21	84	20-150	
Aldrin	ug/L	.25	0.17	71	20-150	
alpha-BHC	ug/L	.25	0.18	74	20-150	
beta-BHC	ug/L	.25	0.20	79	20-150	
delta-BHC	ug/L	.25	0.20	83	20-150	
Dieldrin	ug/L	.25	0.19	75	20-150	
Endosulfan I	ug/L	.25	0.20	79	20-150	
Endosulfan II	ug/L	.25	0.20	82	20-150	
Endosulfan sulfate	ug/L	.25	0.21	84	20-150	
Endrin	ug/L	.25	0.21	85	20-150	
Endrin aldehyde	ug/L	.25	0.19	76	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.19	77	20-150	
Heptachlor	ug/L	.25	0.17	69	20-150	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

LABORATORY CONTROL SAMPLE: 1627218

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Heptachlor epoxide	ug/L	.25	0.19	76	20-150	
Methoxychlor	ug/L	.74	0.62J	84	20-150	
Decachlorobiphenyl (S)	%			47	20-130	
Tetrachloro-m-xylene (S)	%			72	20-130	

MATRIX SPIKE SAMPLE: 1627219

Parameter	Units	92279395001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	ND	.25	0.22	87	20-150	
4,4'-DDE	ug/L	ND	.25	0.20	82	20-150	
4,4'-DDT	ug/L	ND	.25	0.24	96	20-150	
Aldrin	ug/L	ND	.25	0.16	66	20-150	
alpha-BHC	ug/L	ND	.25	0.18	72	20-150	
beta-BHC	ug/L	ND	.25	0.22	88	20-150	
delta-BHC	ug/L	ND	.25	0.19	75	20-150	
Dieldrin	ug/L	ND	.25	0.20	82	20-150	
Endosulfan I	ug/L	ND	.25	0.19	78	20-150	
Endosulfan II	ug/L	ND	.25	0.23	91	20-150	
Endosulfan sulfate	ug/L	ND	.25	0.24	96	20-150	
Endrin	ug/L	ND	.25	0.23	91	20-150	
Endrin aldehyde	ug/L	ND	.25	0.70	282	20-150	M1
gamma-BHC (Lindane)	ug/L	ND	.25	0.17	67	20-150	
Heptachlor	ug/L	ND	.25	0.16	63	20-150	
Heptachlor epoxide	ug/L	ND	.25	0.23	92	20-150	
Methoxychlor	ug/L	ND	.74	0.70J	94	20-150	
Decachlorobiphenyl (S)	%				67	20-130	
Tetrachloro-m-xylene (S)	%				63	20-130	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: OEXT/39666 Analysis Method: EPA 8082
QC Batch Method: EPA 3510 Analysis Description: 8082 GCS PCB
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

METHOD BLANK: 1627232 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.50	0.50	12/14/15 21:30	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	0.50	12/14/15 21:30	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	0.50	12/14/15 21:30	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.50	0.50	12/14/15 21:30	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.50	0.50	12/14/15 21:30	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	0.50	12/14/15 21:30	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	0.50	12/14/15 21:30	
Decachlorobiphenyl (S)	%	58	10-132		12/14/15 21:30	

LABORATORY CONTROL SAMPLE: 1627233

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	3.7	75	50-150	
PCB-1260 (Aroclor 1260)	ug/L	5	3.8	76	50-150	
Decachlorobiphenyl (S)	%			59	10-132	

MATRIX SPIKE SAMPLE: 1627235

Parameter	Units	92279395003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	5	3.6	71	50-150	
PCB-1260 (Aroclor 1260)	ug/L	ND	5	3.2	63	50-150	
Decachlorobiphenyl (S)	%				64	10-132	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: OEXT/25723 Analysis Method: EPA 8151
QC Batch Method: EPA 8151 Analysis Description: 8151A GCS Herbicides
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

METHOD BLANK: 1420527 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2,4,5-T	ug/L	ND	0.19	0.042	12/17/15 17:07	
2,4,5-TP (Silvex)	ug/L	ND	0.19	0.049	12/17/15 17:07	
2,4-D	ug/L	ND	0.94	0.22	12/17/15 17:07	
Dinoseb	ug/L	ND	0.19	0.057	12/17/15 17:07	
2,4-DCAA (S)	%	53	36-130		12/17/15 17:07	

LABORATORY CONTROL SAMPLE: 1420528

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,5-T	ug/L	1.2	0.79	66	40-130	
2,4,5-TP (Silvex)	ug/L	1.2	1.1	94	58-130	
2,4-D	ug/L	6	3.7	62	42-134	
Dinoseb	ug/L	1.2	0.84	70	10-157	
2,4-DCAA (S)	%			77	36-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1424270 1424271

Parameter	Units	92279201003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4,5-T	ug/L	ND	1.2	1.2	1.1	0.74	88	62	40-130	35	40	
2,4,5-TP (Silvex)	ug/L	ND	1.2	1.2	1.2	0.83	104	69	58-130	40	40	
2,4-D	ug/L	ND	6	6	5.3	3.6	88	59	42-134	39	40	
Dinoseb	ug/L	ND	1.2	1.2	0.88	0.58	73	48	10-157	41	40	R1
2,4-DCAA (S)	%						81	58	36-130		40	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: OEXT/39746 Analysis Method: EPA 8270
QC Batch Method: EPA 3510 Analysis Description: 8270 Water MSSV
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

METHOD BLANK: 1629825 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	ND	10.0	1.7	12/21/15 16:14	
1,3,5-Trinitrobenzene	ug/L	ND	10.0	1.1	12/21/15 16:14	
1,3-Dinitrobenzene	ug/L	ND	20.0	1.5	12/21/15 16:14	
1,4-Naphthoquinone	ug/L	ND	10.0	1.8	12/21/15 16:14	
1-Naphthalenamine	ug/L	ND	10.0	0.96	12/21/15 16:14	
2,3,4,6-Tetrachlorophenol	ug/L	ND	10.0	2.3	12/21/15 16:14	
2,4,5-Trichlorophenol	ug/L	ND	10.0	2.2	12/21/15 16:14	
2,4,6-Trichlorophenol	ug/L	ND	10.0	1.9	12/21/15 16:14	
2,4-Dichlorophenol	ug/L	ND	10.0	1.7	12/21/15 16:14	
2,4-Dimethylphenol	ug/L	ND	10.0	2.2	12/21/15 16:14	
2,4-Dinitrophenol	ug/L	ND	50.0	6.5	12/21/15 16:14	
2,4-Dinitrotoluene	ug/L	ND	10.0	1.2	12/21/15 16:14	
2,6-Dichlorophenol	ug/L	ND	10.0	1.8	12/21/15 16:14	
2,6-Dinitrotoluene	ug/L	ND	10.0	1.7	12/21/15 16:14	
2-Acetylaminofluorene	ug/L	ND	20.0	0.84	12/21/15 16:14	
2-Chloronaphthalene	ug/L	ND	10.0	2.2	12/21/15 16:14	
2-Chlorophenol	ug/L	ND	10.0	1.5	12/21/15 16:14	
2-Methylnaphthalene	ug/L	ND	10.0	0.28	12/21/15 16:14	
2-Methylphenol(o-Cresol)	ug/L	ND	10.0	1.7	12/21/15 16:14	
2-Naphthalenamine	ug/L	ND	10.0	0.98	12/21/15 16:14	
2-Nitroaniline	ug/L	ND	50.0	2.8	12/21/15 16:14	
2-Nitrophenol	ug/L	ND	10.0	1.7	12/21/15 16:14	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	10.0	1.7	12/21/15 16:14	
3,3'-Dichlorobenzidine	ug/L	ND	20.0	1.4	12/21/15 16:14	
3,3'-Dimethylbenzidine	ug/L	ND	10.0	2.1	12/21/15 16:14	
3-Methylcholanthrene	ug/L	ND	10.0	0.82	12/21/15 16:14	
3-Nitroaniline	ug/L	ND	50.0	2.4	12/21/15 16:14	
4,6-Dinitro-2-methylphenol	ug/L	ND	50.0	1.7	12/21/15 16:14	
4-Aminobiphenyl	ug/L	ND	20.0	0.92	12/21/15 16:14	
4-Bromophenylphenyl ether	ug/L	ND	10.0	1.3	12/21/15 16:14	
4-Chloro-3-methylphenol	ug/L	ND	20.0	4.2	12/21/15 16:14	
4-Chloroaniline	ug/L	ND	20.0	3.4	12/21/15 16:14	
4-Chlorophenylphenyl ether	ug/L	ND	10.0	2.1	12/21/15 16:14	
4-Nitroaniline	ug/L	ND	20.0	2.5	12/21/15 16:14	
4-Nitrophenol	ug/L	ND	50.0	5.8	12/21/15 16:14	
5-Nitro-o-toluidine	ug/L	ND	10.0	1.2	12/21/15 16:14	
7,12-Dimethylbenz(a)anthracene	ug/L	ND	10.0	0.77	12/21/15 16:14	
Acenaphthene	ug/L	ND	10.0	0.25	12/21/15 16:14	
Acenaphthylene	ug/L	ND	10.0	0.21	12/21/15 16:14	
Acetophenone	ug/L	ND	10.0	2.0	12/21/15 16:14	
Anthracene	ug/L	ND	10.0	0.14	12/21/15 16:14	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

METHOD BLANK: 1629825 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzo(a)anthracene	ug/L	ND	10.0	0.33	12/21/15 16:14	
Benzo(a)pyrene	ug/L	ND	10.0	0.30	12/21/15 16:14	
Benzo(b)fluoranthene	ug/L	ND	10.0	0.28	12/21/15 16:14	
Benzo(g,h,i)perylene	ug/L	ND	10.0	0.38	12/21/15 16:14	
Benzo(k)fluoranthene	ug/L	ND	10.0	0.43	12/21/15 16:14	
Benzyl alcohol	ug/L	ND	20.0	3.4	12/21/15 16:14	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	1.7	12/21/15 16:14	
bis(2-Chloroethyl) ether	ug/L	ND	10.0	1.5	12/21/15 16:14	
bis(2-Chloroisopropyl) ether	ug/L	ND	10.0	1.6	12/21/15 16:14	
bis(2-Ethylhexyl)phthalate	ug/L	ND	15.0	0.85	12/21/15 16:14	
Butylbenzylphthalate	ug/L	ND	10.0	0.75	12/21/15 16:14	
Chlorobenzilate	ug/L	ND	10.0	0.72	12/21/15 16:14	
Chrysene	ug/L	ND	10.0	0.21	12/21/15 16:14	
Di-n-butylphthalate	ug/L	ND	10.0	1.1	12/21/15 16:14	
Di-n-octylphthalate	ug/L	ND	10.0	0.86	12/21/15 16:14	
Diallate	ug/L	ND	10.0	1.3	12/21/15 16:14	
Dibenz(a,h)anthracene	ug/L	ND	10.0	0.55	12/21/15 16:14	
Dibenzofuran	ug/L	ND	10.0	1.8	12/21/15 16:14	
Diethylphthalate	ug/L	ND	6000	1.3	12/21/15 16:14	
Dimethoate	ug/L	ND	20.0	0.92	12/21/15 16:14	
Dimethylphthalate	ug/L	ND	10.0	1.5	12/21/15 16:14	
Diphenylamine	ug/L	ND	10.0	1.3	12/21/15 16:14	
Disulfoton	ug/L	ND	10.0	1.4	12/21/15 16:14	
Ethyl methanesulfonate	ug/L	ND	20.0	1.8	12/21/15 16:14	
Famphur	ug/L	ND	20.0	1.7	12/21/15 16:14	
Fluoranthene	ug/L	ND	10.0	0.21	12/21/15 16:14	
Fluorene	ug/L	ND	10.0	0.21	12/21/15 16:14	
Hexachlorobenzene	ug/L	ND	10.0	1.1	12/21/15 16:14	
Hexachlorocyclopentadiene	ug/L	ND	10.0	1.8	12/21/15 16:14	
Hexachloroethane	ug/L	ND	10.0	1.5	12/21/15 16:14	
Hexachloropropene	ug/L	ND	10.0	1.6	12/21/15 16:14	
Indeno(1,2,3-cd)pyrene	ug/L	ND	10.0	0.29	12/21/15 16:14	
Isodrin	ug/L	ND	20.0	2.0	12/21/15 16:14	
Isophorone	ug/L	ND	10.0	1.8	12/21/15 16:14	
Isosafrole	ug/L	ND	10.0	1.8	12/21/15 16:14	
Kepone	ug/L	ND	20.0	3.1	12/21/15 16:14	
Methapyrilene	ug/L	ND	100	2.7	12/21/15 16:14	
Methyl methanesulfonate	ug/L	ND	10.0	1.3	12/21/15 16:14	
Methyl parathion	ug/L	ND	10.0	1.1	12/21/15 16:14	
N-Nitroso-di-n-butylamine	ug/L	ND	10.0	2.2	12/21/15 16:14	
N-Nitroso-di-n-propylamine	ug/L	ND	10.0	2.1	12/21/15 16:14	
N-Nitrosodiethylamine	ug/L	ND	20.0	1.8	12/21/15 16:14	
N-Nitrosodimethylamine	ug/L	ND	10.0	1.3	12/21/15 16:14	
N-Nitrosodiphenylamine	ug/L	ND	10.0	1.3	12/21/15 16:14	
N-Nitrosomethylethylamine	ug/L	ND	10.0	1.8	12/21/15 16:14	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

METHOD BLANK: 1629825 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
N-Nitrosopiperidine	ug/L	ND	20.0	1.9	12/21/15 16:14	
N-Nitrosopyrrolidine	ug/L	ND	10.0	2.5	12/21/15 16:14	
Nitrobenzene	ug/L	ND	10.0	1.7	12/21/15 16:14	
O,O,O-Triethylphosphorothioate	ug/L	ND	10.0	1.8	12/21/15 16:14	
O-Toluidine	ug/L	ND	10.0	1.6	12/21/15 16:14	
P-Dimethylaminoazobenzene	ug/L	ND	10.0	0.35	12/21/15 16:14	
p-Phenylenediamine	ug/L	ND	10.0	0.96	12/21/15 16:14	
Parathion (Ethyl parathion)	ug/L	ND	10.0	1.1	12/21/15 16:14	
Pentachlorobenzene	ug/L	ND	10.0	2.0	12/21/15 16:14	
Pentachloronitrobenzene	ug/L	ND	20.0	1.0	12/21/15 16:14	
Pentachlorophenol	ug/L	ND	25.0	2.3	12/21/15 16:14	
Phenacetin	ug/L	ND	20.0	0.97	12/21/15 16:14	
Phenanthrene	ug/L	ND	10.0	0.22	12/21/15 16:14	
Phenol	ug/L	ND	10.0	1.7	12/21/15 16:14	
Phorate	ug/L	ND	10.0	1.1	12/21/15 16:14	
Pronamide	ug/L	ND	10.0	0.97	12/21/15 16:14	
Pyrene	ug/L	ND	10.0	0.19	12/21/15 16:14	
Safrole	ug/L	ND	10.0	1.5	12/21/15 16:14	
Thionazin	ug/L	ND	20.0	1.2	12/21/15 16:14	
2,4,6-Tribromophenol (S)	%	94	27-110		12/21/15 16:14	
2-Fluorobiphenyl (S)	%	73	27-110		12/21/15 16:14	
2-Fluorophenol (S)	%	38	12-110		12/21/15 16:14	
Nitrobenzene-d5 (S)	%	84	21-110		12/21/15 16:14	
Phenol-d6 (S)	%	21	10-110		12/21/15 16:14	
Terphenyl-d14 (S)	%	97	31-107		12/21/15 16:14	

LABORATORY CONTROL SAMPLE: 1629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	50	28.6	57	16-129	
1,3,5-Trinitrobenzene	ug/L	50	64.1	128	55-125	L0
1,3-Dinitrobenzene	ug/L	50	42.8	86	30-122	
1,4-Naphthoquinone	ug/L	50	35.6	71	31-120	
1-Naphthalenamine	ug/L	50	31.1	62	37-126	
2,3,4,6-Tetrachlorophenol	ug/L	50	91.3	183	54-276	
2,4,5-Trichlorophenol	ug/L	50	34.7	69	43-113	
2,4,6-Trichlorophenol	ug/L	50	35.8	72	42-120	
2,4-Dichlorophenol	ug/L	50	51.4	103	30-120	
2,4-Dimethylphenol	ug/L	50	41.8	84	29-111	
2,4-Dinitrophenol	ug/L	250	263	105	19-132	
2,4-Dinitrotoluene	ug/L	50	51.2	102	58-128	
2,6-Dichlorophenol	ug/L	50	45.7	91	54-128	
2,6-Dinitrotoluene	ug/L	50	41.4	83	54-129	
2-Acetylaminofluorene	ug/L	50	49.0	98	81-160	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

LABORATORY CONTROL SAMPLE: 1629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Chloronaphthalene	ug/L	50	34.7	69	43-117	
2-Chlorophenol	ug/L	50	34.4	69	37-120	
2-Methylnaphthalene	ug/L	50	35.8	72	33-120	
2-Methylphenol(o-Cresol)	ug/L	50	21.8	44	31-120	
2-Naphthalenamine	ug/L	50	36.0	72	41-136	
2-Nitroaniline	ug/L	100	51.0	51	48-121	
2-Nitrophenol	ug/L	50	48.2	96	25-116	
3&4-Methylphenol(m&p Cresol)	ug/L	50	51.2	102	23-120	
3,3'-Dichlorobenzidine	ug/L	250	89.4	36	10-154	
3,3'-Dimethylbenzidine	ug/L	100	10.4	10	10-157	
3-Methylcholanthrene	ug/L	50	42.2	84	65-130	
3-Nitroaniline	ug/L	100	95.2	95	43-115	
4,6-Dinitro-2-methylphenol	ug/L	100	101	101	44-124	
4-Aminobiphenyl	ug/L	50	33.0	66	21-125	
4-Bromophenylphenyl ether	ug/L	50	46.2	92	34-113	
4-Chloro-3-methylphenol	ug/L	100	80.9	81	31-110	
4-Chloroaniline	ug/L	100	68.3	68	20-120	
4-Chlorophenylphenyl ether	ug/L	50	32.5	65	34-116	
4-Nitroaniline	ug/L	100	73.8	74	46-128	
4-Nitrophenol	ug/L	250	104	42	11-120	
5-Nitro-o-toluidine	ug/L	50	44.3	89	78-160	
7,12-Dimethylbenz(a)anthracene	ug/L	50	47.3	95	47-124	
Acenaphthene	ug/L	50	43.6	87	48-114	
Acenaphthylene	ug/L	50	40.8	82	48-112	
Acetophenone	ug/L	50	27.9	56	24-120	
Anthracene	ug/L	50	48.4	97	57-118	
Benzo(a)anthracene	ug/L	50	49.5	99	56-121	
Benzo(a)pyrene	ug/L	50	46.8	94	55-127	
Benzo(b)fluoranthene	ug/L	50	42.4	85	53-128	
Benzo(g,h,i)perylene	ug/L	50	37.1	74	54-125	
Benzo(k)fluoranthene	ug/L	50	51.9	104	51-123	
Benzyl alcohol	ug/L	100	60.9	61	27-120	
bis(2-Chloroethoxy)methane	ug/L	50	48.2	96	32-120	
bis(2-Chloroethyl) ether	ug/L	50	29.7	59	33-111	
bis(2-Chloroisopropyl) ether	ug/L	50	11.6	23	15-120	
bis(2-Ethylhexyl)phthalate	ug/L	50	58.7	117	50-145	
Butylbenzylphthalate	ug/L	50	58.2	116	54-138	
Chlorobenzilate	ug/L	50	55.9	112	65-132	
Chrysene	ug/L	50	48.9	98	58-127	
Di-n-butylphthalate	ug/L	50	59.5	119	56-125	
Di-n-octylphthalate	ug/L	50	52.2	104	50-134	
Diallate	ug/L	50	47.4	95	47-123	
Dibenz(a,h)anthracene	ug/L	50	36.9	74	53-129	
Dibenzofuran	ug/L	50	43.2	86	45-120	
Diethylphthalate	ug/L	50	41.6J	83	53-120	
Dimethoate	ug/L	50	46.2	92	57-139	
Dimethylphthalate	ug/L	50	37.0	74	55-116	

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Huntersville, NC 28078
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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

LABORATORY CONTROL SAMPLE: 1629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diphenylamine	ug/L	50	47.0	94	42-120	
Disulfoton	ug/L	50	45.5	91	49-156	
Ethyl methanesulfonate	ug/L	50	42.2	84	43-120	
Famphur	ug/L	100	73.0	73	40-160	
Fluoranthene	ug/L	50	64.6	129	57-125	L0
Fluorene	ug/L	50	36.6	73	53-118	
Hexachlorobenzene	ug/L	50	51.2	102	49-116	
Hexachlorocyclopentadiene	ug/L	50	16.9	34	26-158	
Hexachloroethane	ug/L	50	32.0	64	30-114	
Hexachloropropene	ug/L	50	30.8	62	13-137	
Indeno(1,2,3-cd)pyrene	ug/L	50	37.3	75	55-128	
Isodrin	ug/L	50	66.4	133	68-129	L0
Isophorone	ug/L	50	42.0	84	31-118	
Isosafrole	ug/L	50	34.0	68	48-107	
Kepone	ug/L	100	39.2	39	10-124	
Methapyrilene	ug/L	50	3.6J	7	40-160	L0
Methyl methanesulfonate	ug/L	50	23.6	47	25-114	
Methyl parathion	ug/L	50	52.7	105	58-137	
N-Nitroso-di-n-butylamine	ug/L	50	32.5	65	36-115	
N-Nitroso-di-n-propylamine	ug/L	50	24.8	50	32-119	
N-Nitrosodiethylamine	ug/L	50	40.3	81	47-115	
N-Nitrosodimethylamine	ug/L	50	19.2	38	13-120	
N-Nitrosodiphenylamine	ug/L	50	47.0	94	43-120	
N-Nitrosomethylethylamine	ug/L	50	31.7	63	39-120	
N-Nitrosopiperidine	ug/L	50	55.2	110	43-113	
N-Nitrosopyrrolidine	ug/L	50	32.1	64	32-110	
Nitrobenzene	ug/L	50	40.7	81	33-110	
O,O,O-Triethylphosphorothioate	ug/L	50	49.4	99	51-127	
O-Toluidine	ug/L	50	31.0	62	27-120	
P-Dimethylaminoazobenzene	ug/L	100	27.3	27	10-120	
p-Phenylenediamine	ug/L	50	50.4	101	72-143	
Parathion (Ethyl parathion)	ug/L	50	51.5	103	56-140	
Pentachlorobenzene	ug/L	50	42.6	85	30-137	
Pentachloronitrobenzene	ug/L	50	55.5	111	70-124	
Pentachlorophenol	ug/L	250	92.5	37	10-137	
Phenacetin	ug/L	50	51.3	103	60-130	
Phenanthrene	ug/L	50	46.4	93	57-117	
Phenol	ug/L	50	15.2	30	10-120	
Phorate	ug/L	50	63.4	127	55-126	L0
Pronamide	ug/L	50	60.4	121	75-124	
Pyrene	ug/L	50	56.2	112	55-122	
Safrole	ug/L	50	39.0	78	41-120	
Thionazin	ug/L	50	36.7	73	63-137	
2,4,6-Tribromophenol (S)	%			115	27-110	S0
2-Fluorobiphenyl (S)	%			62	27-110	
2-Fluorophenol (S)	%			38	12-110	
Nitrobenzene-d5 (S)	%			95	21-110	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

LABORATORY CONTROL SAMPLE: 1629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenol-d6 (S)	%			26	10-110	
Terphenyl-d14 (S)	%			104	31-107	

MATRIX SPIKE SAMPLE: 1629827

Parameter	Units	92278963015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	ND	50	28.4	57	50-150	
1,3,5-Trinitrobenzene	ug/L	ND	50	57.1	114	50-150	
1,3-Dinitrobenzene	ug/L	ND	50	45.4	91	50-150	
1,4-Naphthoquinone	ug/L	ND	50	35.9	72	50-150	
1-Naphthalenamine	ug/L	ND	50	27.5	55	50-150	
2,3,4,6-Tetrachlorophenol	ug/L	ND	50	66.0	132	50-150	
2,4,5-Trichlorophenol	ug/L	ND	50	30.1	60	19-105	
2,4,6-Trichlorophenol	ug/L	ND	50	30.7	61	13-108	
2,4-Dichlorophenol	ug/L	ND	50	32.6	65	29-111	
2,4-Dimethylphenol	ug/L	ND	50	28.0	56	21-103	
2,4-Dinitrophenol	ug/L	ND	250	126	50	10-109	
2,4-Dinitrotoluene	ug/L	ND	50	42.8	86	27-104	
2,6-Dichlorophenol	ug/L	ND	50	43.3	87	50-150	
2,6-Dinitrotoluene	ug/L	ND	50	43.8	88	28-101	
2-Acetylaminofluorene	ug/L	ND	50	45.3	91	50-150	
2-Chloronaphthalene	ug/L	ND	50	32.9	66	14-102	
2-Chlorophenol	ug/L	ND	50	37.0	74	16-110	
2-Methylnaphthalene	ug/L	ND	50	29.8	60	13-110	
2-Methylphenol(o-Cresol)	ug/L	ND	50	32.9	66	19-110	
2-Naphthalenamine	ug/L	ND	50	29.7	59	50-150	
2-Nitroaniline	ug/L	ND	100	44.5J	45	26-103	
2-Nitrophenol	ug/L	ND	50	32.2	64	20-110	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	50	67.1	134	20-110	M1
3,3'-Dichlorobenzidine	ug/L	ND	250	88.3	35	25-112	
3,3'-Dimethylbenzidine	ug/L	ND	100	58.1	58	50-150	
3-Methylcholanthrene	ug/L	5.4J	50	44.2	77	50-150	
3-Nitroaniline	ug/L	ND	100	79.0	79	29-110	
4,6-Dinitro-2-methylphenol	ug/L	ND	100	84.3	84	10-117	
4-Aminobiphenyl	ug/L	ND	50	41.8	84	50-150	
4-Bromophenylphenyl ether	ug/L	ND	50	40.6	81	20-105	
4-Chloro-3-methylphenol	ug/L	ND	100	64.6	65	22-110	
4-Chloroaniline	ug/L	ND	100	71.4	71	20-100	
4-Chlorophenylphenyl ether	ug/L	ND	50	30.8	62	19-102	
4-Nitroaniline	ug/L	ND	100	67.3	67	29-110	
4-Nitrophenol	ug/L	ND	250	62.9	25	10-110	
5-Nitro-o-toluidine	ug/L	ND	50	39.0	78	50-150	
7,12-Dimethylbenz(a)anthracene	ug/L	ND	50	49.9	100	50-150	
Acenaphthene	ug/L	ND	50	41.3	83	17-100	
Acenaphthylene	ug/L	ND	50	41.3	83	21-100	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

MATRIX SPIKE SAMPLE: 1629827

Parameter	Units	92278963015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetophenone	ug/L	ND	50	41.6	83	50-150	
Anthracene	ug/L	ND	50	44.4	89	24-109	
Benzo(a)anthracene	ug/L	ND	50	45.8	92	22-117	
Benzo(a)pyrene	ug/L	ND	50	45.0	90	23-104	
Benzo(b)fluoranthene	ug/L	ND	50	45.8	92	23-103	
Benzo(g,h,i)perylene	ug/L	ND	50	38.7	77	18-111	
Benzo(k)fluoranthene	ug/L	ND	50	53.2	106	22-113	
Benzyl alcohol	ug/L	ND	100	64.2	64	19-101	
bis(2-Chloroethoxy)methane	ug/L	ND	50	24.7	49	22-110	
bis(2-Chloroethyl) ether	ug/L	ND	50	29.8	60	16-110	
bis(2-Chloroisopropyl) ether	ug/L	ND	50	23.6	47	14-110	
bis(2-Ethylhexyl)phthalate	ug/L	ND	50	58.8	118	23-102	M1
Butylbenzylphthalate	ug/L	ND	50	60.3	121	25-110	M1
Chlorobenzilate	ug/L	ND	50	54.9	110	50-150	
Chrysene	ug/L	ND	50	44.3	89	23-115	
Di-n-butylphthalate	ug/L	ND	50	59.4	119	26-110	M1
Di-n-octylphthalate	ug/L	ND	50	42.4	85	22-110	
Diallate	ug/L	ND	50	39.1	78	50-150	
Dibenz(a,h)anthracene	ug/L	ND	50	45.7	91	21-112	
Dibenzofuran	ug/L	ND	50	37.9	76	19-102	
Diethylphthalate	ug/L	ND	50	34.5J	69	29-110	
Dimethoate	ug/L	ND	50	40.4	81	50-150	
Dimethylphthalate	ug/L	ND	50	41.6	83	27-110	
Diphenylamine	ug/L	ND	50	48.3	97	50-150	
Disulfoton	ug/L	ND	50	43.1	86	50-150	
Ethyl methanesulfonate	ug/L	ND	50	28.8	58	50-150	
Famphur	ug/L	ND	100	35.6	36	50-150	M1
Fluoranthene	ug/L	ND	50	63.2	126	23-112	M0
Fluorene	ug/L	ND	50	33.3	67	22-104	
Hexachlorobenzene	ug/L	ND	50	46.9	94	21-116	
Hexachlorocyclopentadiene	ug/L	ND	50	16.5	33	10-110	
Hexachloroethane	ug/L	ND	50	33.8	68	10-110	
Hexachloropropene	ug/L	ND	50	32.0	64	50-150	
Indeno(1,2,3-cd)pyrene	ug/L	ND	50	47.0	94	20-113	
Isodrin	ug/L	ND	50	66.0	132	50-150	
Isophorone	ug/L	ND	50	24.6	49	50-150	M1
Isosafrole	ug/L	ND	50	33.9	68	50-150	
Kepone	ug/L	ND	100	44.0	44	50-150	M1
Methapyrilene	ug/L	ND	50	42.3J	85	50-150	
Methyl methanesulfonate	ug/L	ND	50	27.4	55	50-150	
Methyl parathion	ug/L	ND	50	47.6	95	50-150	
N-Nitroso-di-n-butylamine	ug/L	ND	50	24.0	48	50-150	M1
N-Nitroso-di-n-propylamine	ug/L	ND	50	38.9	78	21-105	
N-Nitrosodiethylamine	ug/L	ND	50	30.5	61	50-150	
N-Nitrosodimethylamine	ug/L	ND	50	19.5	39	10-110	
N-Nitrosodiphenylamine	ug/L	ND	50	48.3	97	23-107	
N-Nitrosomethylethylamine	ug/L	ND	50	31.8	64	50-150	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

MATRIX SPIKE SAMPLE: 1629827

Parameter	Units	92278963015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
N-Nitrosopiperidine	ug/L	ND	50	32.1	64	50-150	
N-Nitrosopyrrolidine	ug/L	ND	50	46.7	93	50-150	
Nitrobenzene	ug/L	ND	50	22.6	45	20-110	
O,O,O-Triethylphosphorothioate	ug/L	ND	50	33.1	66	50-150	
O-Toluidine	ug/L	ND	50	41.4	83	50-150	
P-Dimethylaminoazobenzene	ug/L	ND	100	25.8	26	50-150	M1
p-Phenylenediamine	ug/L	ND	50	38.5	77	50-150	
Parathion (Ethyl parathion)	ug/L	ND	50	63.6	127	50-150	
Pentachlorobenzene	ug/L	ND	50	37.7	75	50-150	
Pentachloronitrobenzene	ug/L	ND	50	50.8	102	50-150	
Pentachlorophenol	ug/L	ND	250	80.7	32	10-118	
Phenacetin	ug/L	ND	50	47.4	95	50-150	
Phenanthrene	ug/L	ND	50	43.1	86	24-106	
Phenol	ug/L	ND	50	13.0	26	12-110	
Phorate	ug/L	ND	50	56.5	113	50-150	
Pronamide	ug/L	ND	50	55.7	111	50-150	
Pyrene	ug/L	ND	50	53.0	106	24-114	
Safrole	ug/L	ND	50	33.1	66	50-150	
Thionazin	ug/L	ND	50	34.3	69	50-150	
2,4,6-Tribromophenol (S)	%				99	27-110	
2-Fluorobiphenyl (S)	%				57	27-110	
2-Fluorophenol (S)	%				26	12-110	
Nitrobenzene-d5 (S)	%				49	21-110	
Phenol-d6 (S)	%				21	10-110	
Terphenyl-d14 (S)	%				90	31-107	

SAMPLE DUPLICATE: 1629828

Parameter	Units	92278963016 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	ND	ND		30	
1,3,5-Trinitrobenzene	ug/L	ND	ND		30	
1,3-Dinitrobenzene	ug/L	ND	ND		30	
1,4-Naphthoquinone	ug/L	ND	ND		30	
1-Naphthalenamine	ug/L	ND	ND		30	
2,3,4,6-Tetrachlorophenol	ug/L	ND	ND		30	
2,4,5-Trichlorophenol	ug/L	ND	ND		30	
2,4,6-Trichlorophenol	ug/L	ND	ND		30	
2,4-Dichlorophenol	ug/L	ND	ND		30	
2,4-Dimethylphenol	ug/L	ND	ND		30	
2,4-Dinitrophenol	ug/L	ND	ND		30	
2,4-Dinitrotoluene	ug/L	ND	ND		30	
2,6-Dichlorophenol	ug/L	ND	ND		30	
2,6-Dinitrotoluene	ug/L	ND	ND		30	
2-Acetylaminofluorene	ug/L	ND	ND		30	
2-Chloronaphthalene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

SAMPLE DUPLICATE: 1629828

Parameter	Units	92278963016 Result	Dup Result	RPD	Max RPD	Qualifiers
2-Chlorophenol	ug/L	ND	ND		30	
2-Methylnaphthalene	ug/L	ND	ND		30	
2-Methylphenol(o-Cresol)	ug/L	ND	ND		30	
2-Naphthalenamine	ug/L	ND	ND		30	
2-Nitroaniline	ug/L	ND	ND		30	
2-Nitrophenol	ug/L	ND	ND		30	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	ND		30	
3,3'-Dichlorobenzidine	ug/L	ND	ND		30	
3,3'-Dimethylbenzidine	ug/L	ND	ND		30	
3-Methylcholanthrene	ug/L	ND	ND		30	
3-Nitroaniline	ug/L	ND	ND		30	
4,6-Dinitro-2-methylphenol	ug/L	ND	ND		30	
4-Aminobiphenyl	ug/L	ND	ND		30	
4-Bromophenylphenyl ether	ug/L	ND	ND		30	
4-Chloro-3-methylphenol	ug/L	ND	ND		30	
4-Chloroaniline	ug/L	ND	ND		30	
4-Chlorophenylphenyl ether	ug/L	ND	ND		30	
4-Nitroaniline	ug/L	ND	ND		30	
4-Nitrophenol	ug/L	ND	ND		30	
5-Nitro-o-toluidine	ug/L	ND	ND			
7,12-Dimethylbenz(a)anthracene	ug/L	ND	ND		30	
Acenaphthene	ug/L	ND	ND		30	
Acenaphthylene	ug/L	ND	ND		30	
Acetophenone	ug/L	ND	ND		30	
Anthracene	ug/L	ND	ND		30	
Benzo(a)anthracene	ug/L	ND	ND		30	
Benzo(a)pyrene	ug/L	ND	ND		30	
Benzo(b)fluoranthene	ug/L	ND	ND		30	
Benzo(g,h,i)perylene	ug/L	ND	ND		30	
Benzo(k)fluoranthene	ug/L	ND	ND		30	
Benzyl alcohol	ug/L	ND	ND		30	
bis(2-Chloroethoxy)methane	ug/L	ND	ND		30	
bis(2-Chloroethyl) ether	ug/L	ND	ND		30	
bis(2-Chloroisopropyl) ether	ug/L	ND	ND		30	
bis(2-Ethylhexyl)phthalate	ug/L	ND	ND		30	
Butylbenzylphthalate	ug/L	ND	ND		30	
Chlorobenzilate	ug/L	ND	ND		30	
Chrysene	ug/L	ND	ND		30	
Di-n-butylphthalate	ug/L	ND	ND		30	
Di-n-octylphthalate	ug/L	ND	ND		30	
Diallate	ug/L	ND	ND		30	
Dibenz(a,h)anthracene	ug/L	ND	ND		30	
Dibenzofuran	ug/L	ND	ND		30	
Diethylphthalate	ug/L	ND	ND		30	
Dimethoate	ug/L	ND	ND		30	
Dimethylphthalate	ug/L	ND	ND		30	
Diphenylamine	ug/L	ND	ND		30	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

SAMPLE DUPLICATE: 1629828

Parameter	Units	92278963016 Result	Dup Result	RPD	Max RPD	Qualifiers
Disulfoton	ug/L	ND	ND		30	
Ethyl methanesulfonate	ug/L	ND	ND		30	
Famphur	ug/L	ND	ND		30	
Fluoranthene	ug/L	ND	ND		30	
Fluorene	ug/L	ND	ND		30	
Hexachlorobenzene	ug/L	ND	ND		30	
Hexachlorocyclopentadiene	ug/L	ND	ND		30	
Hexachloroethane	ug/L	ND	ND		30	
Hexachloropropene	ug/L	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND		30	
Isodrin	ug/L	ND	ND		30	
Isophorone	ug/L	ND	ND		30	
Isosafrole	ug/L	ND	ND		30	
Kepone	ug/L	ND	ND		30	
Methapyrilene	ug/L	ND	ND		30	
Methyl methanesulfonate	ug/L	ND	ND		30	
Methyl parathion	ug/L	ND	ND		30	
N-Nitroso-di-n-butylamine	ug/L	ND	ND		30	
N-Nitroso-di-n-propylamine	ug/L	ND	ND		30	
N-Nitrosodiethylamine	ug/L	ND	ND		30	
N-Nitrosodimethylamine	ug/L	ND	ND		30	
N-Nitrosodiphenylamine	ug/L	ND	ND		30	
N-Nitrosomethylethylamine	ug/L	ND	ND		30	
N-Nitrosopiperidine	ug/L	ND	ND		30	
N-Nitrosopyrrolidine	ug/L	ND	ND		30	
Nitrobenzene	ug/L	ND	ND		30	
O,O,O-Triethylphosphorothioate	ug/L	ND	ND		30	
O-Toluidine	ug/L	ND	ND		30	
P-Dimethylaminoazobenzene	ug/L	ND	ND		30	
p-Phenylenediamine	ug/L	ND	ND		30	
Parathion (Ethyl parathion)	ug/L	ND	ND		30	
Pentachlorobenzene	ug/L	ND	ND		30	
Pentachloronitrobenzene	ug/L	ND	ND		30	
Pentachlorophenol	ug/L	ND	ND		30	
Phenacetin	ug/L	ND	ND		30	
Phenanthrene	ug/L	ND	ND		30	
Phenol	ug/L	ND	ND		30	
Phorate	ug/L	ND	ND		30	
Pronamide	ug/L	ND	ND		30	
Pyrene	ug/L	ND	ND		30	
Safrole	ug/L	ND	ND		30	
Thionazin	ug/L	ND	ND		30	
2,4,6-Tribromophenol (S)	%	70	64	10		
2-Fluorobiphenyl (S)	%	71	65	9		
2-Fluorophenol (S)	%	35	31	12		
Nitrobenzene-d5 (S)	%	77	68	12		
Phenol-d6 (S)	%	22	18	17		

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

SAMPLE DUPLICATE: 1629828

Parameter	Units	92278963016 Result	Dup Result	RPD	Max RPD	Qualifiers
Terphenyl-d14 (S)	%	78	83	7		

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: WET/41955 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

METHOD BLANK: 1628049 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	ug/L	ND	5000	1000	12/14/15 13:29	

LABORATORY CONTROL SAMPLE: 1628050

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	ug/L	50000	48500	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628051 1628052

Parameter	Units	92278963003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	ug/L	150 mg/L	50000	50000	200000	156000	99	12	80-120	25	25	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628053 1628054

Parameter	Units	92278963011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	ug/L	596 mg/L	50000	50000	633000	662000	74	131	80-120	4	25	M1

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: WET/41916 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

METHOD BLANK: 1626642 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	ug/L	ND	25000	25000	12/11/15 10:39	

LABORATORY CONTROL SAMPLE: 1626643

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	ug/L	250000	246000	98	90-110	

SAMPLE DUPLICATE: 1626644

Parameter	Units	92279178001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	ug/L	330 mg/L	316000	4	5	

SAMPLE DUPLICATE: 1626645

Parameter	Units	92278979001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	ug/L	299 mg/L	320000	7	5	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: WET/41914 Analysis Method: SM 4500-S2D
QC Batch Method: SM 4500-S2D Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

METHOD BLANK: 1626491 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	ug/L	ND	1000	100	12/11/15 15:00	

LABORATORY CONTROL SAMPLE: 1626492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	ug/L	500	504J	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1626493 1626494

Parameter	Units	92279262001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	ug/L	ND	500	500	457J	457J	91	91	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1626495 1626496

Parameter	Units	92279262011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	ug/L	ND	500	500	470J	470J	94	94	90-110	0	10	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: WETA/25748 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

METHOD BLANK: 1626618 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	ug/L	ND	250000	1000	12/11/15 14:06	

LABORATORY CONTROL SAMPLE: 1626619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	ug/L	20000	21000J	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1626620 1626621

Parameter	Units	92278963003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	ug/L	10.1 mg/L	20000	20000	30600J	30800J	103	103	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1626622 1626623

Parameter	Units	92279395006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	ug/L	9260J	20000	20000	29800J	30100J	102	104	90-110	1	10	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: WETA/25837 Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E Analysis Description: 4500 Chloride
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

METHOD BLANK: 1631601 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005, 92279395006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	ug/L	ND	1000	500	12/17/15 16:33	

LABORATORY CONTROL SAMPLE: 1631602

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	ug/L	20000	20600	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1631603 1631604

Parameter	Units	92279294028 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	ug/L	10.4 mg/L	20000	20000	30900	30700	103	102	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1631605 1631606

Parameter	Units	92279294038 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	ug/L	4.1 mg/L	20000	20000	25000	24900	104	104	90-110	0	10	

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QUALITY CONTROL DATA

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

QC Batch: WETA/25788 Analysis Method: SM 4500-CN-E
QC Batch Method: SM 4500-CN-E Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

METHOD BLANK: 1628959 Matrix: Water
Associated Lab Samples: 92279395001, 92279395002, 92279395003, 92279395004, 92279395005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	ug/L	ND	10.0	4.0	12/16/15 10:52	

LABORATORY CONTROL SAMPLE: 1628960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	ug/L	100	90.6	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628961 1628962

Parameter	Units	92279059001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	ug/L	ND	100	100	120	121	115	116	75-125	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628963 1628964

Parameter	Units	92278760008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	ug/L	0.0096 mg/L	100	100	112	108	102	98	75-125	3	10	

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QUALIFIERS

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

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TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

1g	Sample re-extracted outside method hold time. Results of re-analysis confirmed original analysis performed within hold time.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92279395001	**1203-MW10**	EPA 3510	OEXT/39664	EPA 8081	GCSV/23541
92279395002	**1203-MW11**	EPA 3510	OEXT/39664	EPA 8081	GCSV/23541
92279395003	**1203-MW12**	EPA 3510	OEXT/39664	EPA 8081	GCSV/23541
92279395004	**1203-MW13**	EPA 3510	OEXT/39664	EPA 8081	GCSV/23541
92279395005	**1203-MW16S**	EPA 3510	OEXT/39664	EPA 8081	GCSV/23541
92279395001	**1203-MW10**	EPA 3510	OEXT/39666	EPA 8082	GCSV/23542
92279395002	**1203-MW11**	EPA 3510	OEXT/39666	EPA 8082	GCSV/23542
92279395003	**1203-MW12**	EPA 3510	OEXT/39666	EPA 8082	GCSV/23542
92279395004	**1203-MW13**	EPA 3510	OEXT/39666	EPA 8082	GCSV/23542
92279395005	**1203-MW16S**	EPA 3510	OEXT/39666	EPA 8082	GCSV/23542
92279395001	**1203-MW10**	EPA 8151	OEXT/25723	EPA 8151	GCSV/16765
92279395002	**1203-MW11**	EPA 8151	OEXT/25723	EPA 8151	GCSV/16765
92279395003	**1203-MW12**	EPA 8151	OEXT/25723	EPA 8151	GCSV/16765
92279395004	**1203-MW13**	EPA 8151	OEXT/25723	EPA 8151	GCSV/16765
92279395005	**1203-MW16S**	EPA 8151	OEXT/25723	EPA 8151	GCSV/16765
92279395001	**1203-MW10**	EPA 3010A	MPRP/20262	EPA 6010	ICP/18292
92279395002	**1203-MW11**	EPA 3010A	MPRP/20262	EPA 6010	ICP/18292
92279395003	**1203-MW12**	EPA 3010A	MPRP/20262	EPA 6010	ICP/18292
92279395004	**1203-MW13**	EPA 3010A	MPRP/20262	EPA 6010	ICP/18292
92279395005	**1203-MW16S**	EPA 3010A	MPRP/20262	EPA 6010	ICP/18292
92279395006	**1203-MW16D**	EPA 3010A	MPRP/20262	EPA 6010	ICP/18292
92279395007	**1203-MW12 Re-run Sb,Cr,V**	EPA 3010A	MPRP/20488	EPA 6010	ICP/18487
92279395001	**1203-MW10**	EPA 7470	MERP/8788	EPA 7470	MERC/8442
92279395002	**1203-MW11**	EPA 7470	MERP/8788	EPA 7470	MERC/8442
92279395003	**1203-MW12**	EPA 7470	MERP/8788	EPA 7470	MERC/8442
92279395004	**1203-MW13**	EPA 7470	MERP/8788	EPA 7470	MERC/8442
92279395005	**1203-MW16S**	EPA 7470	MERP/8788	EPA 7470	MERC/8442
92279395006	**1203-MW16D**	EPA 7470	MERP/8789	EPA 7470	MERC/8444
92279395001	**1203-MW10**	EPA 3510	OEXT/39746	EPA 8270	MSSV/11670
92279395002	**1203-MW11**	EPA 3510	OEXT/39746	EPA 8270	MSSV/11670
92279395003	**1203-MW12**	EPA 3510	OEXT/39746	EPA 8270	MSSV/11670
92279395004	**1203-MW13**	EPA 3510	OEXT/39746	EPA 8270	MSSV/11670
92279395005	**1203-MW16S**	EPA 3510	OEXT/39746	EPA 8270	MSSV/11670
92279395001	**1203-MW10**	EPA 8260	MSV/34799		
92279395002	**1203-MW11**	EPA 8260	MSV/34799		
92279395003	**1203-MW12**	EPA 8260	MSV/34799		
92279395004	**1203-MW13**	EPA 8260	MSV/34799		
92279395005	**1203-MW16S**	EPA 8260	MSV/34820		
92279395006	**1203-MW16D**	EPA 8260	MSV/34799		
92279395001	**1203-MW10**	SM 2320B	WET/41955		
92279395002	**1203-MW11**	SM 2320B	WET/41955		
92279395003	**1203-MW12**	SM 2320B	WET/41955		
92279395004	**1203-MW13**	SM 2320B	WET/41955		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BURKE-JOHN'S R. C&D/MSWLF-COMP
Pace Project No.: 92279395

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92279395005	**1203-MW16S**	SM 2320B	WET/41955		
92279395006	**1203-MW16D**	SM 2320B	WET/41955		
92279395001	**1203-MW10**	SM 2540C	WET/41916		
92279395002	**1203-MW11**	SM 2540C	WET/41916		
92279395003	**1203-MW12**	SM 2540C	WET/41916		
92279395004	**1203-MW13**	SM 2540C	WET/41916		
92279395005	**1203-MW16S**	SM 2540C	WET/41916		
92279395006	**1203-MW16D**	SM 2540C	WET/41916		
92279395001	**1203-MW10**	SM 4500-S2D	WET/41914		
92279395002	**1203-MW11**	SM 4500-S2D	WET/41914		
92279395003	**1203-MW12**	SM 4500-S2D	WET/41914		
92279395004	**1203-MW13**	SM 4500-S2D	WET/41914		
92279395005	**1203-MW16S**	SM 4500-S2D	WET/41914		
92279395001	**1203-MW10**	EPA 300.0	WETA/25748		
92279395002	**1203-MW11**	EPA 300.0	WETA/25748		
92279395003	**1203-MW12**	EPA 300.0	WETA/25748		
92279395004	**1203-MW13**	EPA 300.0	WETA/25748		
92279395005	**1203-MW16S**	EPA 300.0	WETA/25748		
92279395006	**1203-MW16D**	EPA 300.0	WETA/25748		
92279395001	**1203-MW10**	SM 4500-Cl-E	WETA/25837		
92279395002	**1203-MW11**	SM 4500-Cl-E	WETA/25837		
92279395003	**1203-MW12**	SM 4500-Cl-E	WETA/25837		
92279395004	**1203-MW13**	SM 4500-Cl-E	WETA/25837		
92279395005	**1203-MW16S**	SM 4500-Cl-E	WETA/25837		
92279395006	**1203-MW16D**	SM 4500-Cl-E	WETA/25837		
92279395001	**1203-MW10**	SM 4500-CN-E	WETA/25788		
92279395002	**1203-MW11**	SM 4500-CN-E	WETA/25788		
92279395003	**1203-MW12**	SM 4500-CN-E	WETA/25788		
92279395004	**1203-MW13**	SM 4500-CN-E	WETA/25788		
92279395005	**1203-MW16S**	SM 4500-CN-E	WETA/25788		

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Pace Analytical	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: November 17, 2015 Page 1 of 2*
	Document Number: **F-CHR-CS-003-rev.16.1**	Issuing Authority: Pace Huntersville Quality Office

Client Name: Joyce

* Page 2 of 2 is for Internal Use Only

Courier: ☐ Fed Ex ☐ UPS ☐ USP ☐ Client ☐ Commercial ☐ Pace Other_____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1505 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Temp Correction Factor No Correction

Corrected Cooler Temp.: 1.9 °C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: TH 12/10/15

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☑No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	
Samples checked for dechlorination:	☑Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review: [signature] **Date:** 12/10/15

SRF Review: [signature] **Date:** 12/11/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92279395

92279395

Customer project number:
(if no label available)

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	Joyce Engineering
Address:	2211 West Meadowview Rd Greensboro, NC 27407
Email To:	dgirdner@joyceengineering.com
Phone:	(336) 323-0092 Fax
Requested Due Date/TAT:	10 Day (Default)

Section B
Required Project Information:

Report To:	Van Burbach
Copy To:	Dan Girdner
Purchase Order No.	277.1601.12.02
Client Project ID:	Burke-John's R. C&D/MSWLF- Comp
Container Order Number:	

Section C
Invoice Information:

Attention:	Lecia Jones
Company Name:	Joyce Engineering
Address:	1604 Ownby Lane, Richmond, VA 23220
Pace Quote Reference:	
Pace Project Manager:	Godwin, Kevin
Pace Profile #:	

Regulatory Agency
State / Location
North Carolina

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N)	NC App. I Total Metals	NC App. I VOCs + THF	NC App II Total METALS	NC AppII VOCs +THF	NC App II 8270 Semi-Voa	NC APP II 8081 Pest.	NC APP II 8082 PCBs.	NC APP II 8151 Herb.	NC App. II - Cyanide	NC App. II - Sulfide	NC Add. C&DLF - Sulfate	NC Add. - Alk.; Chloride; TDS	NC Add. Metals Fe, Mn, Hg	Residual Chlorine (Y/N)	92279395
1	1203-MW-10 17	WT	G			12-8-15	1140		17	X		X	X	X			X				X	X	X	X	X	X	X	X	X	X	X		001
2	1203-MW-11 17	WT	G				1205		17	X		X	X	X			X				X	X	X	X	X	X	X	X	X	X	X		002
3	1203-MW-12 17	WT	G				1251		17	X		X	X	X			X				X	X	X	X	X	X	X	X	X	X	X		003
4	1203-MW-13 17	WT	G				1550		17	X		X	X	X			X				X	X	X	X	X	X	X	X	X	X	X		004
5	1203-MW-16S 17	WT	G				1336		17	X		X	X	X			X				X	X	X	X	X	X	X	X	X	X	X		005
6	1203-MW-16D 7	WT	G				1432		7	X		X	X						X	X									X	X	X		006
7																																	
8																																	
9																																	
10																																	
11																																	
12																																	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
NCSWMR APPENDIX II LIST plus Additional C&DLF Parameters Event	[illegible] / Joyce	12-10-15	1045	[illegible] TPAC	12-10-15	1045				
	[illegible]	12-10-15	1420	[illegible] pace Hul	12/10/15	1420	1.9	Y	N	Y

SAMPLER NAME AND SIGNATURE		
PRINT Name of SAMPLER:	Gretta Oliver Haley Seaton	
SIGNATURE of SAMPLER:	[illegible]	DATE Signed: 12/10/15

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical Services, Inc.
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(704)875-9092

December 29, 2015

Mr. Van Burbach
Joyce Engineering-Greensboro
2211 West Meadowview Rd
Boone Bldg, Suite 101
Greensboro, NC 27407

RE: Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Dear Mr. Burbach:
Enclosed are the analytical results for sample(s) received by the laboratory on December 10, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Godwin
kevin.godwin@pacelabs.com
Project Manager

Enclosures

cc: Alex Everhart, Joyce Engineering-NC

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CERTIFICATIONS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Ormond Beach Certification IDs
8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Kentucky Certification #: 90050
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New Hampshire Certification #: 2958
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

Asheville Certification IDs
2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
West Virginia Certification #: 356
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92279347001	**1203-MW21**	Water	12/08/15 11:20	12/10/15 10:45
92279347002	**1203-FIELD BLANK**	Water	12/09/15 15:30	12/10/15 10:45
92279347003	**1203-TRIP BLANK**	Water	12/08/15 00:00	12/10/15 10:45

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SAMPLE ANALYTE COUNT

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92279347001	**1203-MW21**	EPA 8081	SWB	21	PASI-C
		EPA 8082	SWB	8	PASI-C
		EPA 8151	LJM	5	PASI-O
		EPA 6010	CDF	18	PASI-A
		EPA 7470	HVK	1	PASI-A
		EPA 8270	BPJ	111	PASI-C
		EPA 8260	GAW	68	PASI-C
		SM 2320B	MLS	1	PASI-A
		SM 2540C	MJP	1	PASI-A
		SM 4500-S2D	MJP	1	PASI-A
		EPA 300.0	MDW	1	PASI-A
		SM 4500-Cl-E	WRC	1	PASI-A
		SM 4500-CN-E	AES2	1	PASI-A
92279347002	**1203-FIELD BLANK**	EPA 8081	SWB	21	PASI-C
		EPA 8082	SWB	8	PASI-C
		EPA 8151	LJM	5	PASI-O
		EPA 6010	CDF	18	PASI-A
		EPA 7470	HVK	1	PASI-A
		EPA 8270	BPJ	111	PASI-C
		EPA 8260	GAW	68	PASI-C
		SM 4500-S2D	SAM	1	PASI-A
		SM 4500-CN-E	AES2	1	PASI-A
92279347003	**1203-TRIP BLANK**	EPA 8260	GAW	68	PASI-C

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SUMMARY OF DETECTION

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92279347001	**1203-MW21**					
EPA 6010	Barium	17.6J	ug/L	100	12/17/15 02:08	
EPA 6010	Iron	1380	ug/L	300	12/17/15 02:08	
EPA 6010	Manganese	50.0J	ug/L	50.0	12/17/15 02:08	
EPA 6010	Vanadium	6.6J	ug/L	25.0	12/17/15 02:08	
EPA 8260	Acrolein	1.6J	ug/L	53.0	12/19/15 09:45	
SM 2320B	Alkalinity, Total as CaCO3	1030J	ug/L	5000	12/14/15 15:09	
SM 4500-Cl-E	Chloride	859J	ug/L	1000	12/18/15 17:56	
92279347002	**1203-FIELD BLANK**					
EPA 8260	Methylene Chloride	2.0	ug/L	1.0	12/20/15 21:21	C9
92279347003	**1203-TRIP BLANK**					
EPA 8260	Acrolein	2.8J	ug/L	53.0	12/19/15 10:02	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-MW21 **Lab ID: 92279347001** Collected: 12/08/15 11:20 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 15:49	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 15:49	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 15:49	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 15:49	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 15:49	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.20	1	12/15/15 12:15	12/17/15 15:49	57-74-9	
4,4'-DDD	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 15:49	72-54-8	
4,4'-DDE	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 15:49	72-55-9	
4,4'-DDT	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 15:49	50-29-3	
Dieldrin	ND	ug/L	0.075	0.050	1	12/15/15 12:15	12/17/15 15:49	60-57-1	
Endosulfan I	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 15:49	959-98-8	
Endosulfan II	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 15:49	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 15:49	1031-07-8	
Endrin	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 15:49	72-20-8	
Endrin aldehyde	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 15:49	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 15:49	76-44-8	
Heptachlor epoxide	ND	ug/L	0.075	0.050	1	12/15/15 12:15	12/17/15 15:49	1024-57-3	
Methoxychlor	ND	ug/L	1.0	0.15	1	12/15/15 12:15	12/17/15 15:49	72-43-5	
Toxaphene	ND	ug/L	1.5	0.20	1	12/15/15 12:15	12/17/15 15:49	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	74	%	20-130		1	12/15/15 12:15	12/17/15 15:49	877-09-8	
Decachlorobiphenyl (S)	62	%	20-130		1	12/15/15 12:15	12/17/15 15:49	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 03:41	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 03:41	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 03:41	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 03:41	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 03:41	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 03:41	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 03:41	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	73	%	10-132		1	12/13/15 12:53	12/15/15 03:41	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151 Preparation Method: EPA 8151								
2,4-D	ND	ug/L	0.94	0.22	1	12/15/15 20:15	12/18/15 10:47	94-75-7	
Dinoseb	ND	ug/L	0.19	0.057	1	12/15/15 20:15	12/18/15 10:47	88-85-7	
2,4,5-T	ND	ug/L	0.19	0.042	1	12/15/15 20:15	12/18/15 10:47	93-76-5	
2,4,5-TP (Silvex)	ND	ug/L	0.19	0.049	1	12/15/15 20:15	12/18/15 10:47	93-72-1	
Surrogates									
2,4-DCAA (S)	87	%	36-130		1	12/15/15 20:15	12/18/15 10:47	19719-28-9	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	12/12/15 00:00	12/17/15 02:08	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-38-2	
Barium	**17.6J**	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-39-3	

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Huntersville, NC 28078
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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-MW21 **Lab ID: 92279347001** Collected: 12/08/15 11:20 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010	Preparation Method: EPA 3010A							
Beryllium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 02:08	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 02:08	7440-43-9	
Chromium	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-47-3	
Cobalt	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-48-4	
Copper	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-50-8	
Iron	**1380**	ug/L	300	25.0	1	12/12/15 00:00	12/17/15 02:08	7439-89-6	
Lead	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7439-92-1	
Manganese	**50.0J**	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7439-96-5	
Nickel	ND	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 02:08	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	12/12/15 00:00	12/17/15 02:08	7440-28-0	
Tin	ND	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-31-5	
Vanadium	**6.6J**	ug/L	25.0	2.5	1	12/12/15 00:00	12/17/15 02:08	7440-62-2	
Zinc	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 02:08	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.10	1	12/17/15 14:05	12/17/15 18:27	7439-97-6	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270	Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	10.0	0.25	1	12/15/15 17:28	12/21/15 20:51	83-32-9	
Acenaphthylene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/21/15 20:51	208-96-8	
Acetophenone	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/21/15 20:51	98-86-2	
2-Acetylaminofluorene	ND	ug/L	20.0	0.84	1	12/15/15 17:28	12/21/15 20:51	53-96-3	
4-Aminobiphenyl	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/21/15 20:51	92-67-1	
Anthracene	ND	ug/L	10.0	0.14	1	12/15/15 17:28	12/21/15 20:51	120-12-7	
Benzo(a)anthracene	ND	ug/L	10.0	0.33	1	12/15/15 17:28	12/21/15 20:51	56-55-3	
Benzo(a)pyrene	ND	ug/L	10.0	0.30	1	12/15/15 17:28	12/21/15 20:51	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/21/15 20:51	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	10.0	0.38	1	12/15/15 17:28	12/21/15 20:51	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	10.0	0.43	1	12/15/15 17:28	12/21/15 20:51	207-08-9	
Benzyl alcohol	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/21/15 20:51	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/21/15 20:51	101-55-3	
Butylbenzylphthalate	ND	ug/L	10.0	0.75	1	12/15/15 17:28	12/21/15 20:51	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	20.0	4.2	1	12/15/15 17:28	12/21/15 20:51	59-50-7	
4-Chloroaniline	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/21/15 20:51	106-47-8	
Chlorobenzilate	ND	ug/L	10.0	0.72	1	12/15/15 17:28	12/21/15 20:51	510-15-6	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/21/15 20:51	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/21/15 20:51	108-60-1	
2-Chloronaphthalene	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/21/15 20:51	91-58-7	
2-Chlorophenol	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/21/15 20:51	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/21/15 20:51	7005-72-3	
Chrysene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/21/15 20:51	218-01-9	
Diallate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/21/15 20:51	2303-16-4	
Dibenz(a,h)anthracene	ND	ug/L	10.0	0.55	1	12/15/15 17:28	12/21/15 20:51	53-70-3	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-MW21 **Lab ID: 92279347001** Collected: 12/08/15 11:20 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Dibenzofuran	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/21/15 20:51	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/L	20.0	1.4	1	12/15/15 17:28	12/21/15 20:51	91-94-1	
2,4-Dichlorophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51	120-83-2	
2,6-Dichlorophenol	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/21/15 20:51	87-65-0	
Diethylphthalate	ND	ug/L	6000	1.3	1	12/15/15 17:28	12/21/15 20:51	84-66-2	
Dimethoate	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/21/15 20:51	60-51-5	
P-Dimethylaminoazobenzene	ND	ug/L	10.0	0.35	1	12/15/15 17:28	12/21/15 20:51	60-11-7	
7,12-Dimethylbenz(a)anthracene	ND	ug/L	10.0	0.77	1	12/15/15 17:28	12/21/15 20:51	57-97-6	
3,3'-Dimethylbenzidine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/21/15 20:51	119-93-7	
2,4-Dimethylphenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/21/15 20:51	105-67-9	
Dimethylphthalate	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/21/15 20:51	131-11-3	
Di-n-butylphthalate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/21/15 20:51	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	1.7	1	12/15/15 17:28	12/21/15 20:51	534-52-1	
1,3-Dinitrobenzene	ND	ug/L	20.0	1.5	1	12/15/15 17:28	12/21/15 20:51	99-65-0	
2,4-Dinitrophenol	ND	ug/L	50.0	6.5	1	12/15/15 17:28	12/21/15 20:51	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/21/15 20:51	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51	606-20-2	
Di-n-octylphthalate	ND	ug/L	10.0	0.86	1	12/15/15 17:28	12/21/15 20:51	117-84-0	
Diphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/21/15 20:51	122-39-4	
Disulfoton	ND	ug/L	10.0	1.4	1	12/15/15 17:28	12/21/15 20:51	298-04-4	
bis(2-Ethylhexyl)phthalate	ND	ug/L	15.0	0.85	1	12/15/15 17:28	12/21/15 20:51	117-81-7	
Ethyl methanesulfonate	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/21/15 20:51	62-50-0	
Famphur	ND	ug/L	20.0	1.7	1	12/15/15 17:28	12/21/15 20:51	52-85-7	
Fluoranthene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/21/15 20:51	206-44-0	L3
Fluorene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/21/15 20:51	86-73-7	
Hexachlorobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/21/15 20:51	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/21/15 20:51	77-47-4	
Hexachloroethane	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/21/15 20:51	67-72-1	
Hexachloropropene	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/21/15 20:51	1888-71-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10.0	0.29	1	12/15/15 17:28	12/21/15 20:51	193-39-5	
Isodrin	ND	ug/L	20.0	2.0	1	12/15/15 17:28	12/21/15 20:51	465-73-6	L3
Isophorone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/21/15 20:51	78-59-1	
Isosafrole	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/21/15 20:51	120-58-1	
Kepone	ND	ug/L	20.0	3.1	1	12/15/15 17:28	12/21/15 20:51	143-50-0	
Methapyrilene	ND	ug/L	100	2.7	1	12/15/15 17:28	12/21/15 20:51	91-80-5	L2
3-Methylcholanthrene	ND	ug/L	10.0	0.82	1	12/15/15 17:28	12/21/15 20:51	56-49-5	
Methyl methanesulfonate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/21/15 20:51	66-27-3	
2-Methylnaphthalene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/21/15 20:51	91-57-6	
Methyl parathion	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/21/15 20:51	298-00-0	
2-Methylphenol(o-Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51		
1-Naphthalenamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/21/15 20:51	134-32-7	
2-Naphthalenamine	ND	ug/L	10.0	0.98	1	12/15/15 17:28	12/21/15 20:51	91-59-8	
1,4-Naphthoquinone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/21/15 20:51	130-15-4	
2-Nitroaniline	ND	ug/L	50.0	2.8	1	12/15/15 17:28	12/21/15 20:51	88-74-4	
3-Nitroaniline	ND	ug/L	50.0	2.4	1	12/15/15 17:28	12/21/15 20:51	99-09-2	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-MW21 **Lab ID: 92279347001** Collected: 12/08/15 11:20 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
4-Nitroaniline	ND	ug/L	20.0	2.5	1	12/15/15 17:28	12/21/15 20:51	100-01-6	
Nitrobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51	98-95-3	
2-Nitrophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	5.8	1	12/15/15 17:28	12/21/15 20:51	100-02-7	
5-Nitro-o-toluidine	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/21/15 20:51	99-55-8	
N-Nitrosodiethylamine	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/21/15 20:51	55-18-5	
N-Nitrosodimethylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/21/15 20:51	62-75-9	
N-Nitroso-di-n-butylamine	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/21/15 20:51	924-16-3	
N-Nitroso-di-n-propylamine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/21/15 20:51	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/21/15 20:51	86-30-6	
N-Nitrosomethylethylamine	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/21/15 20:51	10595-95-6	
N-Nitrosopiperidine	ND	ug/L	20.0	1.9	1	12/15/15 17:28	12/21/15 20:51	100-75-4	
N-Nitrosopyrrolidine	ND	ug/L	10.0	2.5	1	12/15/15 17:28	12/21/15 20:51	930-55-2	
O,O,O-Triethylphosphorothioate	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/21/15 20:51	126-68-1	
Parathion (Ethyl parathion)	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/21/15 20:51	56-38-2	
Pentachlorobenzene	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/21/15 20:51	608-93-5	
Pentachloronitrobenzene	ND	ug/L	20.0	1.0	1	12/15/15 17:28	12/21/15 20:51	82-68-8	
Pentachlorophenol	ND	ug/L	25.0	2.3	1	12/15/15 17:28	12/21/15 20:51	87-86-5	
Phenacetin	ND	ug/L	20.0	0.97	1	12/15/15 17:28	12/21/15 20:51	62-44-2	
Phenanthrene	ND	ug/L	10.0	0.22	1	12/15/15 17:28	12/21/15 20:51	85-01-8	
Phenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51	108-95-2	
p-Phenylenediamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/21/15 20:51	106-50-3	
Phorate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/21/15 20:51	298-02-2	L3
Pronamide	ND	ug/L	10.0	0.97	1	12/15/15 17:28	12/21/15 20:51	23950-58-5	
Pyrene	ND	ug/L	10.0	0.19	1	12/15/15 17:28	12/21/15 20:51	129-00-0	
Safrole	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/21/15 20:51	94-59-7	
1,2,4,5-Tetrachlorobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/21/15 20:51	95-94-3	
2,3,4,6-Tetrachlorophenol	ND	ug/L	10.0	2.3	1	12/15/15 17:28	12/21/15 20:51	58-90-2	
Thionazin	ND	ug/L	20.0	1.2	1	12/15/15 17:28	12/21/15 20:51	297-97-2	
O-Toluidine	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/21/15 20:51	95-53-4	
2,4,5-Trichlorophenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/21/15 20:51	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.9	1	12/15/15 17:28	12/21/15 20:51	88-06-2	
1,3,5-Trinitrobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/21/15 20:51	99-35-4	L3
Surrogates									
Nitrobenzene-d5 (S)	79	%	21-110		1	12/15/15 17:28	12/21/15 20:51	4165-60-0	
2-Fluorobiphenyl (S)	76	%	27-110		1	12/15/15 17:28	12/21/15 20:51	321-60-8	
Terphenyl-d14 (S)	97	%	31-107		1	12/15/15 17:28	12/21/15 20:51	1718-51-0	
Phenol-d6 (S)	22	%	10-110		1	12/15/15 17:28	12/21/15 20:51	13127-88-3	
2-Fluorophenol (S)	34	%	12-110		1	12/15/15 17:28	12/21/15 20:51	367-12-4	
2,4,6-Tribromophenol (S)	98	%	27-110		1	12/15/15 17:28	12/21/15 20:51	118-79-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	100	10.0	1		12/19/15 09:45	67-64-1	
Acetonitrile	ND	ug/L	55.0	2.2	1		12/19/15 09:45	75-05-8	
Acrolein	**1.6J**	ug/L	53.0	1.6	1		12/19/15 09:45	107-02-8	
Acrylonitrile	ND	ug/L	200	1.9	1		12/19/15 09:45	107-13-1	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-MW21 **Lab ID: 92279347001** Collected: 12/08/15 11:20 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Allyl chloride	ND	ug/L	10.0	1.5	1		12/19/15 09:45	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		12/19/15 09:45	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/19/15 09:45	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/19/15 09:45	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/19/15 09:45	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/19/15 09:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/19/15 09:45	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/19/15 09:45	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/19/15 09:45	56-23-5	
Chlorobenzene	ND	ug/L	3.0	0.23	1		12/19/15 09:45	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/19/15 09:45	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/19/15 09:45	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/19/15 09:45	74-87-3	
Chloroprene	ND	ug/L	20.0	0.27	1		12/19/15 09:45	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/19/15 09:45	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/19/15 09:45	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/19/15 09:45	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/19/15 09:45	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.30	1		12/19/15 09:45	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.24	1		12/19/15 09:45	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		12/19/15 09:45	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/19/15 09:45	110-57-6	
Dichlorodifluoromethane	ND	ug/L	5.0	0.21	1		12/19/15 09:45	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	0.32	1		12/19/15 09:45	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		12/19/15 09:45	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/19/15 09:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	0.19	1		12/19/15 09:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/19/15 09:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/19/15 09:45	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		12/19/15 09:45	142-28-9	
2,2-Dichloropropane	ND	ug/L	15.0	0.13	1		12/19/15 09:45	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.49	1		12/19/15 09:45	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/19/15 09:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/19/15 09:45	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		12/19/15 09:45	100-41-4	
Ethyl methacrylate	ND	ug/L	10.0	0.20	1		12/19/15 09:45	97-63-2	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	0.71	1		12/19/15 09:45	87-68-3	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/19/15 09:45	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/19/15 09:45	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		12/19/15 09:45	78-83-1	
Methacrylonitrile	ND	ug/L	100	0.93	1		12/19/15 09:45	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		12/19/15 09:45	75-09-2	
Methyl methacrylate	ND	ug/L	30.0	2.0	1		12/19/15 09:45	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/19/15 09:45	108-10-1	
Naphthalene	ND	ug/L	10.0	0.24	1		12/19/15 09:45	91-20-3	
Propionitrile	ND	ug/L	150	3.6	1		12/19/15 09:45	107-12-0	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-MW21 **Lab ID: 92279347001** Collected: 12/08/15 11:20 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Styrene	ND	ug/L	1.0	0.26	1		12/19/15 09:45	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/19/15 09:45	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/19/15 09:45	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/19/15 09:45	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	3.1	1		12/19/15 09:45	109-99-9	
Toluene	ND	ug/L	1.0	0.26	1		12/19/15 09:45	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	0.35	1		12/19/15 09:45	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/19/15 09:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/19/15 09:45	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		12/19/15 09:45	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/19/15 09:45	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/19/15 09:45	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/19/15 09:45	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		12/19/15 09:45	75-01-4	
Xylene (Total)	ND	ug/L	5.0	0.66	1		12/19/15 09:45	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	105	%	70-130		1		12/19/15 09:45	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		12/19/15 09:45	17060-07-0	
Toluene-d8 (S)	111	%	70-130		1		12/19/15 09:45	2037-26-5	
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**1030J**	ug/L	5000	1000	1		12/14/15 15:09		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	ND	ug/L	25000	25000	1		12/11/15 10:41		
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D								
Sulfide	ND	ug/L	1000	100	1		12/11/15 15:00	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	ND	ug/L	250000	1000	1		12/11/15 14:06	14808-79-8	
4500 Chloride	Analytical Method: SM 4500-Cl-E								
Chloride	**859J**	ug/L	1000	500	1		12/18/15 17:56	16887-00-6	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	ug/L	10.0	4.0	1		12/16/15 11:10	57-12-5	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-FIELD BLANK **Lab ID: 92279347002** Collected: 12/09/15 15:30 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
Aldrin	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 18:48	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 18:48	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 18:48	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 18:48	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 18:48	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.20	1	12/15/15 12:15	12/17/15 18:48	57-74-9	
4,4'-DDD	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 18:48	72-54-8	
4,4'-DDE	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 18:48	72-55-9	
4,4'-DDT	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 18:48	50-29-3	
Dieldrin	ND	ug/L	0.075	0.050	1	12/15/15 12:15	12/17/15 18:48	60-57-1	
Endosulfan I	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 18:48	959-98-8	
Endosulfan II	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 18:48	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 18:48	1031-07-8	
Endrin	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 18:48	72-20-8	
Endrin aldehyde	ND	ug/L	0.10	0.050	1	12/15/15 12:15	12/17/15 18:48	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	12/15/15 12:15	12/17/15 18:48	76-44-8	
Heptachlor epoxide	ND	ug/L	0.075	0.050	1	12/15/15 12:15	12/17/15 18:48	1024-57-3	
Methoxychlor	ND	ug/L	1.0	0.15	1	12/15/15 12:15	12/17/15 18:48	72-43-5	
Toxaphene	ND	ug/L	1.5	0.20	1	12/15/15 12:15	12/17/15 18:48	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	74	%	20-130		1	12/15/15 12:15	12/17/15 18:48	877-09-8	
Decachlorobiphenyl (S)	64	%	20-130		1	12/15/15 12:15	12/17/15 18:48	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510								
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 04:23	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 04:23	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 04:23	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 04:23	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 04:23	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 04:23	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	12/13/15 12:53	12/15/15 04:23	11096-82-5	
Surrogates									
Decachlorobiphenyl (S)	57	%	10-132		1	12/13/15 12:53	12/15/15 04:23	2051-24-3	
8151 Chlorinated Herbicides	Analytical Method: EPA 8151 Preparation Method: EPA 8151								
2,4-D	ND	ug/L	0.94	0.22	1	12/15/15 20:15	12/18/15 11:17	94-75-7	
Dinoseb	ND	ug/L	0.19	0.057	1	12/15/15 20:15	12/18/15 11:17	88-85-7	
2,4,5-T	ND	ug/L	0.19	0.042	1	12/15/15 20:15	12/18/15 11:17	93-76-5	
2,4,5-TP (Silvex)	ND	ug/L	0.19	0.049	1	12/15/15 20:15	12/18/15 11:17	93-72-1	
Surrogates									
2,4-DCAA (S)	85	%	36-130		1	12/15/15 20:15	12/18/15 11:17	19719-28-9	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	12/12/15 00:00	12/17/15 02:11	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-38-2	
Barium	ND	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-39-3	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-FIELD BLANK **Lab ID: 92279347002** Collected: 12/09/15 15:30 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010	Preparation Method: EPA 3010A							
Beryllium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 02:11	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	12/12/15 00:00	12/17/15 02:11	7440-43-9	
Chromium	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-47-3	
Cobalt	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-48-4	
Copper	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-50-8	
Iron	ND	ug/L	300	25.0	1	12/12/15 00:00	12/17/15 02:11	7439-89-6	
Lead	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7439-92-1	
Manganese	ND	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7439-96-5	
Nickel	ND	ug/L	50.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 02:11	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	12/12/15 00:00	12/17/15 02:11	7440-28-0	
Tin	ND	ug/L	100	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-31-5	
Vanadium	ND	ug/L	25.0	2.5	1	12/12/15 00:00	12/17/15 02:11	7440-62-2	
Zinc	ND	ug/L	10.0	5.0	1	12/12/15 00:00	12/17/15 02:11	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470	Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	0.10	1	12/17/15 14:05	12/17/15 18:29	7439-97-6	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270	Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	10.0	0.25	1	12/15/15 17:28	12/29/15 11:19	83-32-9	
Acenaphthylene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/29/15 11:19	208-96-8	
Acetophenone	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/29/15 11:19	98-86-2	
2-Acetylaminofluorene	ND	ug/L	20.0	0.84	1	12/15/15 17:28	12/29/15 11:19	53-96-3	
4-Aminobiphenyl	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/29/15 11:19	92-67-1	
Anthracene	ND	ug/L	10.0	0.14	1	12/15/15 17:28	12/29/15 11:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	10.0	0.33	1	12/15/15 17:28	12/29/15 11:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	10.0	0.30	1	12/15/15 17:28	12/29/15 11:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/29/15 11:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	10.0	0.38	1	12/15/15 17:28	12/29/15 11:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	10.0	0.43	1	12/15/15 17:28	12/29/15 11:19	207-08-9	
Benzyl alcohol	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/29/15 11:19	100-51-6	
4-Bromophenylphenyl ether	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/29/15 11:19	101-55-3	
Butylbenzylphthalate	ND	ug/L	10.0	0.75	1	12/15/15 17:28	12/29/15 11:19	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	20.0	4.2	1	12/15/15 17:28	12/29/15 11:19	59-50-7	
4-Chloroaniline	ND	ug/L	20.0	3.4	1	12/15/15 17:28	12/29/15 11:19	106-47-8	
Chlorobenzilate	ND	ug/L	10.0	0.72	1	12/15/15 17:28	12/29/15 11:19	510-15-6	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/29/15 11:19	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/29/15 11:19	108-60-1	
2-Chloronaphthalene	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/29/15 11:19	91-58-7	
2-Chlorophenol	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/29/15 11:19	95-57-8	
4-Chlorophenylphenyl ether	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/29/15 11:19	7005-72-3	
Chrysene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/29/15 11:19	218-01-9	
Diallate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/29/15 11:19	2303-16-4	
Dibenz(a,h)anthracene	ND	ug/L	10.0	0.55	1	12/15/15 17:28	12/29/15 11:19	53-70-3	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-FIELD BLANK **Lab ID: 92279347002** Collected: 12/09/15 15:30 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
Dibenzofuran	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/29/15 11:19	132-64-9	
3,3'-Dichlorobenzidine	ND	ug/L	20.0	1.4	1	12/15/15 17:28	12/29/15 11:19	91-94-1	
2,4-Dichlorophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19	120-83-2	
2,6-Dichlorophenol	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/29/15 11:19	87-65-0	
Diethylphthalate	ND	ug/L	6000	1.3	1	12/15/15 17:28	12/29/15 11:19	84-66-2	
Dimethoate	ND	ug/L	20.0	0.92	1	12/15/15 17:28	12/29/15 11:19	60-51-5	
P-Dimethylaminoazobenzene	ND	ug/L	10.0	0.35	1	12/15/15 17:28	12/29/15 11:19	60-11-7	
7,12-Dimethylbenz(a)anthracene	ND	ug/L	10.0	0.77	1	12/15/15 17:28	12/29/15 11:19	57-97-6	
3,3'-Dimethylbenzidine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/29/15 11:19	119-93-7	
2,4-Dimethylphenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/29/15 11:19	105-67-9	
Dimethylphthalate	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/29/15 11:19	131-11-3	
Di-n-butylphthalate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/29/15 11:19	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	1.7	1	12/15/15 17:28	12/29/15 11:19	534-52-1	
1,3-Dinitrobenzene	ND	ug/L	20.0	1.5	1	12/15/15 17:28	12/29/15 11:19	99-65-0	
2,4-Dinitrophenol	ND	ug/L	50.0	6.5	1	12/15/15 17:28	12/29/15 11:19	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/29/15 11:19	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19	606-20-2	
Di-n-octylphthalate	ND	ug/L	10.0	0.86	1	12/15/15 17:28	12/29/15 11:19	117-84-0	
Diphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/29/15 11:19	122-39-4	
Disulfoton	ND	ug/L	10.0	1.4	1	12/15/15 17:28	12/29/15 11:19	298-04-4	
bis(2-Ethylhexyl)phthalate	ND	ug/L	15.0	0.85	1	12/15/15 17:28	12/29/15 11:19	117-81-7	
Ethyl methanesulfonate	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/29/15 11:19	62-50-0	
Famphur	ND	ug/L	20.0	1.7	1	12/15/15 17:28	12/29/15 11:19	52-85-7	
Fluoranthene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/29/15 11:19	206-44-0	L3
Fluorene	ND	ug/L	10.0	0.21	1	12/15/15 17:28	12/29/15 11:19	86-73-7	
Hexachlorobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/29/15 11:19	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/29/15 11:19	77-47-4	
Hexachloroethane	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/29/15 11:19	67-72-1	
Hexachloropropene	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/29/15 11:19	1888-71-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	10.0	0.29	1	12/15/15 17:28	12/29/15 11:19	193-39-5	
Isodrin	ND	ug/L	20.0	2.0	1	12/15/15 17:28	12/29/15 11:19	465-73-6	L3
Isophorone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/29/15 11:19	78-59-1	
Isosafrole	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/29/15 11:19	120-58-1	
Kepone	ND	ug/L	20.0	3.1	1	12/15/15 17:28	12/29/15 11:19	143-50-0	
Methapyrilene	ND	ug/L	100	2.7	1	12/15/15 17:28	12/29/15 11:19	91-80-5	L2
3-Methylcholanthrene	ND	ug/L	10.0	0.82	1	12/15/15 17:28	12/29/15 11:19	56-49-5	
Methyl methanesulfonate	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/29/15 11:19	66-27-3	
2-Methylnaphthalene	ND	ug/L	10.0	0.28	1	12/15/15 17:28	12/29/15 11:19	91-57-6	
Methyl parathion	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/29/15 11:19	298-00-0	
2-Methylphenol(o-Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19		
1-Naphthalenamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/29/15 11:19	134-32-7	
2-Naphthalenamine	ND	ug/L	10.0	0.98	1	12/15/15 17:28	12/29/15 11:19	91-59-8	
1,4-Naphthoquinone	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/29/15 11:19	130-15-4	
2-Nitroaniline	ND	ug/L	50.0	2.8	1	12/15/15 17:28	12/29/15 11:19	88-74-4	
3-Nitroaniline	ND	ug/L	50.0	2.4	1	12/15/15 17:28	12/29/15 11:19	99-09-2	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-FIELD BLANK **Lab ID: 92279347002** Collected: 12/09/15 15:30 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510								
4-Nitroaniline	ND	ug/L	20.0	2.5	1	12/15/15 17:28	12/29/15 11:19	100-01-6	
Nitrobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19	98-95-3	
2-Nitrophenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	5.8	1	12/15/15 17:28	12/29/15 11:19	100-02-7	
5-Nitro-o-toluidine	ND	ug/L	10.0	1.2	1	12/15/15 17:28	12/29/15 11:19	99-55-8	
N-Nitrosodiethylamine	ND	ug/L	20.0	1.8	1	12/15/15 17:28	12/29/15 11:19	55-18-5	
N-Nitrosodimethylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/29/15 11:19	62-75-9	
N-Nitroso-di-n-butylamine	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/29/15 11:19	924-16-3	
N-Nitroso-di-n-propylamine	ND	ug/L	10.0	2.1	1	12/15/15 17:28	12/29/15 11:19	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.3	1	12/15/15 17:28	12/29/15 11:19	86-30-6	
N-Nitrosomethylethylamine	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/29/15 11:19	10595-95-6	
N-Nitrosopiperidine	ND	ug/L	20.0	1.9	1	12/15/15 17:28	12/29/15 11:19	100-75-4	
N-Nitrosopyrrolidine	ND	ug/L	10.0	2.5	1	12/15/15 17:28	12/29/15 11:19	930-55-2	
O,O,O-Triethylphosphorothioate	ND	ug/L	10.0	1.8	1	12/15/15 17:28	12/29/15 11:19	126-68-1	
Parathion (Ethyl parathion)	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/29/15 11:19	56-38-2	
Pentachlorobenzene	ND	ug/L	10.0	2.0	1	12/15/15 17:28	12/29/15 11:19	608-93-5	
Pentachloronitrobenzene	ND	ug/L	20.0	1.0	1	12/15/15 17:28	12/29/15 11:19	82-68-8	
Pentachlorophenol	ND	ug/L	25.0	2.3	1	12/15/15 17:28	12/29/15 11:19	87-86-5	
Phenacetin	ND	ug/L	20.0	0.97	1	12/15/15 17:28	12/29/15 11:19	62-44-2	
Phenanthrene	ND	ug/L	10.0	0.22	1	12/15/15 17:28	12/29/15 11:19	85-01-8	
Phenol	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19	108-95-2	
p-Phenylenediamine	ND	ug/L	10.0	0.96	1	12/15/15 17:28	12/29/15 11:19	106-50-3	
Phorate	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/29/15 11:19	298-02-2	L3
Pronamide	ND	ug/L	10.0	0.97	1	12/15/15 17:28	12/29/15 11:19	23950-58-5	
Pyrene	ND	ug/L	10.0	0.19	1	12/15/15 17:28	12/29/15 11:19	129-00-0	
Safrole	ND	ug/L	10.0	1.5	1	12/15/15 17:28	12/29/15 11:19	94-59-7	
1,2,4,5-Tetrachlorobenzene	ND	ug/L	10.0	1.7	1	12/15/15 17:28	12/29/15 11:19	95-94-3	
2,3,4,6-Tetrachlorophenol	ND	ug/L	10.0	2.3	1	12/15/15 17:28	12/29/15 11:19	58-90-2	
Thionazin	ND	ug/L	20.0	1.2	1	12/15/15 17:28	12/29/15 11:19	297-97-2	
O-Toluidine	ND	ug/L	10.0	1.6	1	12/15/15 17:28	12/29/15 11:19	95-53-4	
2,4,5-Trichlorophenol	ND	ug/L	10.0	2.2	1	12/15/15 17:28	12/29/15 11:19	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.9	1	12/15/15 17:28	12/29/15 11:19	88-06-2	
1,3,5-Trinitrobenzene	ND	ug/L	10.0	1.1	1	12/15/15 17:28	12/29/15 11:19	99-35-4	L3
Surrogates									
Nitrobenzene-d5 (S)	65	%	21-110		1	12/15/15 17:28	12/29/15 11:19	4165-60-0	
2-Fluorobiphenyl (S)	65	%	27-110		1	12/15/15 17:28	12/29/15 11:19	321-60-8	
Terphenyl-d14 (S)	82	%	31-107		1	12/15/15 17:28	12/29/15 11:19	1718-51-0	
Phenol-d6 (S)	21	%	10-110		1	12/15/15 17:28	12/29/15 11:19	13127-88-3	
2-Fluorophenol (S)	33	%	12-110		1	12/15/15 17:28	12/29/15 11:19	367-12-4	
2,4,6-Tribromophenol (S)	64	%	27-110		1	12/15/15 17:28	12/29/15 11:19	118-79-6	
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	100	10.0	1		12/20/15 21:21	67-64-1	
Acetonitrile	ND	ug/L	55.0	2.2	1		12/20/15 21:21	75-05-8	
Acrolein	ND	ug/L	53.0	1.6	1		12/20/15 21:21	107-02-8	
Acrylonitrile	ND	ug/L	200	1.9	1		12/20/15 21:21	107-13-1	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-FIELD BLANK **Lab ID: 92279347002** Collected: 12/09/15 15:30 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Allyl chloride	ND	ug/L	10.0	1.5	1		12/20/15 21:21	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		12/20/15 21:21	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/20/15 21:21	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/20/15 21:21	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/20/15 21:21	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/20/15 21:21	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/20/15 21:21	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/20/15 21:21	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/20/15 21:21	56-23-5	
Chlorobenzene	ND	ug/L	3.0	0.23	1		12/20/15 21:21	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/20/15 21:21	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/20/15 21:21	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/20/15 21:21	74-87-3	
Chloroprene	ND	ug/L	20.0	0.27	1		12/20/15 21:21	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/20/15 21:21	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/20/15 21:21	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/20/15 21:21	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/20/15 21:21	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.30	1		12/20/15 21:21	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.24	1		12/20/15 21:21	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		12/20/15 21:21	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/20/15 21:21	110-57-6	
Dichlorodifluoromethane	ND	ug/L	5.0	0.21	1		12/20/15 21:21	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	0.32	1		12/20/15 21:21	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		12/20/15 21:21	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/20/15 21:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	0.19	1		12/20/15 21:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/20/15 21:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/20/15 21:21	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		12/20/15 21:21	142-28-9	
2,2-Dichloropropane	ND	ug/L	15.0	0.13	1		12/20/15 21:21	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.49	1		12/20/15 21:21	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/20/15 21:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/20/15 21:21	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		12/20/15 21:21	100-41-4	
Ethyl methacrylate	ND	ug/L	10.0	0.20	1		12/20/15 21:21	97-63-2	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	0.71	1		12/20/15 21:21	87-68-3	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/20/15 21:21	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/20/15 21:21	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		12/20/15 21:21	78-83-1	
Methacrylonitrile	ND	ug/L	100	0.93	1		12/20/15 21:21	126-98-7	
Methylene Chloride	**2.0**	ug/L	1.0	0.97	1		12/20/15 21:21	75-09-2	C9
Methyl methacrylate	ND	ug/L	30.0	2.0	1		12/20/15 21:21	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/20/15 21:21	108-10-1	
Naphthalene	ND	ug/L	10.0	0.24	1		12/20/15 21:21	91-20-3	
Propionitrile	ND	ug/L	150	3.6	1		12/20/15 21:21	107-12-0	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-FIELD BLANK **Lab ID: 92279347002** Collected: 12/09/15 15:30 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Styrene	ND	ug/L	1.0	0.26	1		12/20/15 21:21	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/20/15 21:21	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/20/15 21:21	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/20/15 21:21	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	3.1	1		12/20/15 21:21	109-99-9	
Toluene	ND	ug/L	1.0	0.26	1		12/20/15 21:21	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	0.35	1		12/20/15 21:21	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/20/15 21:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/20/15 21:21	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		12/20/15 21:21	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/20/15 21:21	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/20/15 21:21	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/20/15 21:21	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		12/20/15 21:21	75-01-4	
Xylene (Total)	ND	ug/L	5.0	0.66	1		12/20/15 21:21	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		12/20/15 21:21	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		1		12/20/15 21:21	17060-07-0	
Toluene-d8 (S)	108	%	70-130		1		12/20/15 21:21	2037-26-5	
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D								
Sulfide	ND	ug/L	1000	100	1		12/14/15 12:30	18496-25-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	ND	ug/L	10.0	4.0	1		12/16/15 11:30	57-12-5	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-TRIP BLANK **Lab ID: 92279347003** Collected: 12/08/15 00:00 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Acetone	ND	ug/L	100	10.0	1		12/19/15 10:02	67-64-1	
Acetonitrile	ND	ug/L	55.0	2.2	1		12/19/15 10:02	75-05-8	
Acrolein	**2.8J**	ug/L	53.0	1.6	1		12/19/15 10:02	107-02-8	
Acrylonitrile	ND	ug/L	200	1.9	1		12/19/15 10:02	107-13-1	
Allyl chloride	ND	ug/L	10.0	1.5	1		12/19/15 10:02	107-05-1	
Benzene	ND	ug/L	1.0	0.25	1		12/19/15 10:02	71-43-2	
Bromochloromethane	ND	ug/L	3.0	0.17	1		12/19/15 10:02	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.18	1		12/19/15 10:02	75-27-4	
Bromoform	ND	ug/L	3.0	0.26	1		12/19/15 10:02	75-25-2	
Bromomethane	ND	ug/L	10.0	0.29	1		12/19/15 10:02	74-83-9	
2-Butanone (MEK)	ND	ug/L	100	0.96	1		12/19/15 10:02	78-93-3	
Carbon disulfide	ND	ug/L	100	1.2	1		12/19/15 10:02	75-15-0	
Carbon tetrachloride	ND	ug/L	1.0	0.25	1		12/19/15 10:02	56-23-5	
Chlorobenzene	ND	ug/L	3.0	0.23	1		12/19/15 10:02	108-90-7	
Chloroethane	ND	ug/L	10.0	0.54	1		12/19/15 10:02	75-00-3	
Chloroform	ND	ug/L	5.0	0.14	1		12/19/15 10:02	67-66-3	
Chloromethane	ND	ug/L	1.0	0.11	1		12/19/15 10:02	74-87-3	
Chloroprene	ND	ug/L	20.0	0.27	1		12/19/15 10:02	126-99-8	
1,2-Dibromo-3-chloropropane	ND	ug/L	13.0	2.0	1		12/19/15 10:02	96-12-8	
Dibromochloromethane	ND	ug/L	3.0	0.21	1		12/19/15 10:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	0.27	1		12/19/15 10:02	106-93-4	
Dibromomethane	ND	ug/L	10.0	0.21	1		12/19/15 10:02	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	0.30	1		12/19/15 10:02	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	0.24	1		12/19/15 10:02	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.33	1		12/19/15 10:02	106-46-7	
trans-1,4-Dichloro-2-butene	ND	ug/L	100	1.0	1		12/19/15 10:02	110-57-6	
Dichlorodifluoromethane	ND	ug/L	5.0	0.21	1		12/19/15 10:02	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	0.32	1		12/19/15 10:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.24	1		12/19/15 10:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	0.56	1		12/19/15 10:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	0.19	1		12/19/15 10:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	0.49	1		12/19/15 10:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.27	1		12/19/15 10:02	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.28	1		12/19/15 10:02	142-28-9	
2,2-Dichloropropane	ND	ug/L	15.0	0.13	1		12/19/15 10:02	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	0.49	1		12/19/15 10:02	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.13	1		12/19/15 10:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.26	1		12/19/15 10:02	10061-02-6	
Ethylbenzene	ND	ug/L	1.0	0.30	1		12/19/15 10:02	100-41-4	
Ethyl methacrylate	ND	ug/L	10.0	0.20	1		12/19/15 10:02	97-63-2	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	0.71	1		12/19/15 10:02	87-68-3	
2-Hexanone	ND	ug/L	50.0	0.46	1		12/19/15 10:02	591-78-6	
Iodomethane	ND	ug/L	10.0	0.32	1		12/19/15 10:02	74-88-4	
Isobutanol	ND	ug/L	100	35.0	1		12/19/15 10:02	78-83-1	
Methacrylonitrile	ND	ug/L	100	0.93	1		12/19/15 10:02	126-98-7	
Methylene Chloride	ND	ug/L	1.0	0.97	1		12/19/15 10:02	75-09-2	

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ANALYTICAL RESULTS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Sample: 1203-TRIP BLANK **Lab ID: 92279347003** Collected: 12/08/15 00:00 Received: 12/10/15 10:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Landfill	Analytical Method: EPA 8260								
Methyl methacrylate	ND	ug/L	30.0	2.0	1		12/19/15 10:02	80-62-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	0.33	1		12/19/15 10:02	108-10-1	
Naphthalene	ND	ug/L	10.0	0.24	1		12/19/15 10:02	91-20-3	
Propionitrile	ND	ug/L	150	3.6	1		12/19/15 10:02	107-12-0	
Styrene	ND	ug/L	1.0	0.26	1		12/19/15 10:02	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	0.33	1		12/19/15 10:02	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	3.0	0.40	1		12/19/15 10:02	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.46	1		12/19/15 10:02	127-18-4	
Tetrahydrofuran	ND	ug/L	10.0	3.1	1		12/19/15 10:02	109-99-9	
Toluene	ND	ug/L	1.0	0.26	1		12/19/15 10:02	108-88-3	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	0.35	1		12/19/15 10:02	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.48	1		12/19/15 10:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.29	1		12/19/15 10:02	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.47	1		12/19/15 10:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.20	1		12/19/15 10:02	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.41	1		12/19/15 10:02	96-18-4	
Vinyl acetate	ND	ug/L	50.0	0.35	1		12/19/15 10:02	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.62	1		12/19/15 10:02	75-01-4	
Xylene (Total)	ND	ug/L	5.0	0.66	1		12/19/15 10:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	110	%	70-130		1		12/19/15 10:02	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		12/19/15 10:02	17060-07-0	
Toluene-d8 (S)	114	%	70-130		1		12/19/15 10:02	2037-26-5	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: MERP/8788 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Associated Lab Samples: 92279347001, 92279347002

METHOD BLANK: 1629746 | Matrix: Water
Associated Lab Samples: 92279347001, 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	0.10	12/17/15 17:42	

LABORATORY CONTROL SAMPLE: 1629747

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1629748 1629749

Parameter	Units	92279275008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.4	2.5	96	99	75-125	3	25	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: MPRP/20260
Analysis Method: EPA 6010
QC Batch Method: EPA 3010A
Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92279347001, 92279347002

METHOD BLANK: 1627221
Matrix: Water
Associated Lab Samples: 92279347001, 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	6.0	3.8	12/17/15 00:32	
Arsenic	ug/L	ND	10.0	2.5	12/17/15 00:32	
Barium	ug/L	ND	100	2.5	12/17/15 00:32	
Beryllium	ug/L	ND	1.0	0.50	12/17/15 00:32	
Cadmium	ug/L	ND	1.0	0.50	12/17/15 00:32	
Chromium	ug/L	ND	10.0	2.5	12/17/15 00:32	
Cobalt	ug/L	ND	10.0	2.5	12/17/15 00:32	
Copper	ug/L	ND	10.0	2.5	12/17/15 00:32	
Iron	ug/L	ND	300	25.0	12/17/15 00:32	
Lead	ug/L	ND	10.0	2.5	12/17/15 00:32	
Manganese	ug/L	ND	50.0	2.5	12/17/15 00:32	
Nickel	ug/L	ND	50.0	2.5	12/17/15 00:32	
Selenium	ug/L	ND	10.0	5.0	12/17/15 00:32	
Silver	ug/L	ND	10.0	2.5	12/17/15 00:32	
Thallium	ug/L	ND	5.5	5.0	12/17/15 00:32	
Tin	ug/L	ND	100	2.5	12/17/15 00:32	
Vanadium	ug/L	ND	25.0	2.5	12/17/15 00:32	
Zinc	ug/L	ND	10.0	5.0	12/17/15 00:32	

LABORATORY CONTROL SAMPLE: 1627222

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	547	109	80-120	
Arsenic	ug/L	500	489	98	80-120	
Barium	ug/L	500	479	96	80-120	
Beryllium	ug/L	500	472	94	80-120	
Cadmium	ug/L	500	497	99	80-120	
Chromium	ug/L	500	464	93	80-120	
Cobalt	ug/L	500	507	101	80-120	
Copper	ug/L	500	490	98	80-120	
Iron	ug/L	5000	4850	97	80-120	
Lead	ug/L	500	500	100	80-120	
Manganese	ug/L	500	511	102	80-120	
Nickel	ug/L	500	500	100	80-120	
Selenium	ug/L	500	506	101	80-120	
Silver	ug/L	250	254	102	80-120	
Thallium	ug/L	500	476	95	80-120	
Tin	ug/L	500	550	110	80-120	
Vanadium	ug/L	500	520	104	80-120	
Zinc	ug/L	500	515	103	80-120	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1627223 1627224

Parameter	Units	92279296001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	395	379	79	75	75-125	4	25	
Arsenic	ug/L	ND	500	500	464	454	92	91	75-125	2	25	
Barium	ug/L	151	500	500	621	624	94	95	75-125	0	25	
Beryllium	ug/L	2.8	500	500	462	461	92	92	75-125	0	25	
Cadmium	ug/L	ND	500	500	475	467	95	93	75-125	2	25	
Chromium	ug/L	6.9	500	500	464	458	91	90	75-125	1	25	
Cobalt	ug/L	12.0	500	500	493	484	96	95	75-125	2	25	
Copper	ug/L	14.9	500	500	496	492	96	95	75-125	1	25	
Iron	ug/L	10100	5000	5000	21800	23400	235	267	75-125	7	25	M1
Lead	ug/L	8.6	500	500	476	469	94	92	75-125	2	25	
Manganese	ug/L	133	500	500	648	642	103	102	75-125	1	25	
Nickel	ug/L	15.6	500	500	491	484	95	94	75-125	1	25	
Selenium	ug/L	ND	500	500	472	465	94	93	75-125	2	25	
Silver	ug/L	ND	250	250	245	242	98	97	75-125	1	25	
Thallium	ug/L	5.1J	500	500	443	440	88	87	75-125	1	25	
Tin	ug/L	ND	500	500	515	503	103	100	75-125	2	25	
Vanadium	ug/L	16.8	500	500	532	525	103	102	75-125	1	25	
Zinc	ug/L	35.2	500	500	542	538	101	101	75-125	1	25	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: MSV/34786 | Analysis Method: EPA 8260
QC Batch Method: EPA 8260 | Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 92279347001, 92279347003

METHOD BLANK: 1633238 | Matrix: Water
Associated Lab Samples: 92279347001, 92279347003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	5.0	0.33	12/19/15 01:26	
1,1,1-Trichloroethane	ug/L	ND	1.0	0.48	12/19/15 01:26	
1,1,2,2-Tetrachloroethane	ug/L	ND	3.0	0.40	12/19/15 01:26	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.29	12/19/15 01:26	
1,1-Dichloroethane	ug/L	ND	5.0	0.32	12/19/15 01:26	
1,1-Dichloroethene	ug/L	ND	5.0	0.56	12/19/15 01:26	
1,1-Dichloropropene	ug/L	ND	5.0	0.49	12/19/15 01:26	
1,2,3-Trichloropropane	ug/L	ND	1.0	0.41	12/19/15 01:26	
1,2,4-Trichlorobenzene	ug/L	ND	10.0	0.35	12/19/15 01:26	
1,2-Dibromo-3-chloropropane	ug/L	ND	13.0	2.0	12/19/15 01:26	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	0.27	12/19/15 01:26	
1,2-Dichlorobenzene	ug/L	ND	5.0	0.30	12/19/15 01:26	
1,2-Dichloroethane	ug/L	ND	1.0	0.24	12/19/15 01:26	
1,2-Dichloropropane	ug/L	ND	1.0	0.27	12/19/15 01:26	
1,3-Dichlorobenzene	ug/L	ND	5.0	0.24	12/19/15 01:26	
1,3-Dichloropropane	ug/L	ND	1.0	0.28	12/19/15 01:26	
1,4-Dichlorobenzene	ug/L	ND	1.0	0.33	12/19/15 01:26	
2,2-Dichloropropane	ug/L	ND	15.0	0.13	12/19/15 01:26	
2-Butanone (MEK)	ug/L	ND	100	0.96	12/19/15 01:26	
2-Hexanone	ug/L	ND	50.0	0.46	12/19/15 01:26	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	0.33	12/19/15 01:26	
Acetone	ug/L	ND	100	10.0	12/19/15 01:26	
Acetonitrile	ug/L	ND	55.0	2.2	12/19/15 01:26	
Acrolein	ug/L	ND	53.0	1.6	12/19/15 01:26	
Acrylonitrile	ug/L	ND	200	1.9	12/19/15 01:26	
Allyl chloride	ug/L	ND	10.0	1.5	12/19/15 01:26	
Benzene	ug/L	ND	1.0	0.25	12/19/15 01:26	
Bromochloromethane	ug/L	ND	3.0	0.17	12/19/15 01:26	
Bromodichloromethane	ug/L	ND	1.0	0.18	12/19/15 01:26	
Bromoform	ug/L	ND	3.0	0.26	12/19/15 01:26	
Bromomethane	ug/L	ND	10.0	0.29	12/19/15 01:26	
Carbon disulfide	ug/L	ND	100	1.2	12/19/15 01:26	
Carbon tetrachloride	ug/L	ND	1.0	0.25	12/19/15 01:26	
Chlorobenzene	ug/L	ND	3.0	0.23	12/19/15 01:26	
Chloroethane	ug/L	ND	10.0	0.54	12/19/15 01:26	
Chloroform	ug/L	ND	5.0	0.14	12/19/15 01:26	
Chloromethane	ug/L	ND	1.0	0.11	12/19/15 01:26	
Chloroprene	ug/L	ND	20.0	0.27	12/19/15 01:26	
cis-1,2-Dichloroethene	ug/L	ND	5.0	0.19	12/19/15 01:26	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.13	12/19/15 01:26	
Dibromochloromethane	ug/L	ND	3.0	0.21	12/19/15 01:26	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

METHOD BLANK: 1633238 Matrix: Water
Associated Lab Samples: 92279347001, 92279347003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	10.0	0.21	12/19/15 01:26	
Dichlorodifluoromethane	ug/L	ND	5.0	0.21	12/19/15 01:26	
Ethyl methacrylate	ug/L	ND	10.0	0.20	12/19/15 01:26	
Ethylbenzene	ug/L	ND	1.0	0.30	12/19/15 01:26	
Hexachloro-1,3-butadiene	ug/L	ND	10.0	0.71	12/19/15 01:26	
Iodomethane	ug/L	ND	10.0	0.32	12/19/15 01:26	
Isobutanol	ug/L	ND	100	35.0	12/19/15 01:26	
Methacrylonitrile	ug/L	ND	100	0.93	12/19/15 01:26	
Methyl methacrylate	ug/L	ND	30.0	2.0	12/19/15 01:26	
Methylene Chloride	ug/L	ND	1.0	0.97	12/19/15 01:26	
Naphthalene	ug/L	ND	10.0	0.24	12/19/15 01:26	
Propionitrile	ug/L	ND	150	3.6	12/19/15 01:26	
Styrene	ug/L	ND	1.0	0.26	12/19/15 01:26	
Tetrachloroethene	ug/L	1.2	1.0	0.46	12/19/15 01:26	
Tetrahydrofuran	ug/L	ND	10.0	3.1	12/19/15 01:26	
Toluene	ug/L	ND	1.0	0.26	12/19/15 01:26	
trans-1,2-Dichloroethene	ug/L	ND	5.0	0.49	12/19/15 01:26	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.26	12/19/15 01:26	
trans-1,4-Dichloro-2-butene	ug/L	ND	100	1.0	12/19/15 01:26	
Trichloroethene	ug/L	ND	1.0	0.47	12/19/15 01:26	
Trichlorofluoromethane	ug/L	ND	1.0	0.20	12/19/15 01:26	
Vinyl acetate	ug/L	ND	50.0	0.35	12/19/15 01:26	
Vinyl chloride	ug/L	ND	1.0	0.62	12/19/15 01:26	
Xylene (Total)	ug/L	ND	5.0	0.66	12/19/15 01:26	
1,2-Dichloroethane-d4 (S)	%	94	70-130		12/19/15 01:26	
4-Bromofluorobenzene (S)	%	101	70-130		12/19/15 01:26	
Toluene-d8 (S)	%	105	70-130		12/19/15 01:26	

LABORATORY CONTROL SAMPLE: 1633239

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	49.4	99	80-125	
1,1,1-Trichloroethane	ug/L	50	49.3	99	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	48.9	98	79-124	
1,1,2-Trichloroethane	ug/L	50	48.9	98	85-125	
1,1-Dichloroethane	ug/L	50	47.4	95	73-126	
1,1-Dichloroethene	ug/L	50	45.8	92	66-135	
1,1-Dichloropropene	ug/L	50	48.0	96	74-135	
1,2,3-Trichloropropane	ug/L	50	48.8	98	75-130	
1,2,4-Trichlorobenzene	ug/L	50	45.0	90	75-134	
1,2-Dibromo-3-chloropropane	ug/L	50	47.4	95	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	52.2	104	83-124	
1,2-Dichlorobenzene	ug/L	50	47.5	95	80-133	
1,2-Dichloroethane	ug/L	50	45.3	91	67-128	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

LABORATORY CONTROL SAMPLE: 1633239

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloropropane	ug/L	50	48.9	98	75-132	
1,3-Dichlorobenzene	ug/L	50	47.7	95	77-130	
1,3-Dichloropropane	ug/L	50	50.1	100	76-131	
1,4-Dichlorobenzene	ug/L	50	48.4	97	78-130	
2,2-Dichloropropane	ug/L	50	42.1	84	40-160	
2-Butanone (MEK)	ug/L	100	112	112	61-144	
2-Hexanone	ug/L	100	105	105	68-143	
4-Methyl-2-pentanone (MIBK)	ug/L	100	102	102	72-135	
Acetone	ug/L	100	107	107	48-146	
Acetonitrile	ug/L	500	529	106	62-150	
Acrolein	ug/L	250	298	119	24-160	
Acrylonitrile	ug/L	250	254	101	40-160	
Allyl chloride	ug/L	50	49.1	98	66-137	
Benzene	ug/L	50	50.1	100	80-125	
Bromochloromethane	ug/L	50	50.7	101	71-125	
Bromodichloromethane	ug/L	50	46.0	92	78-124	
Bromoform	ug/L	50	39.5	79	71-128	
Bromomethane	ug/L	50	35.2	70	40-160	
Carbon disulfide	ug/L	50	46.7J	93	50-160	
Carbon tetrachloride	ug/L	50	47.3	95	69-131	
Chlorobenzene	ug/L	50	48.4	97	81-122	
Chloroethane	ug/L	50	36.6	73	39-148	
Chloroform	ug/L	50	49.9	100	73-127	
Chloromethane	ug/L	50	48.1	96	44-146	
Chloroprene	ug/L	50	55.2	110	75-145	
cis-1,2-Dichloroethene	ug/L	50	47.1	94	74-124	
cis-1,3-Dichloropropene	ug/L	50	49.8	100	72-132	
Dibromochloromethane	ug/L	50	50.0	100	78-125	
Dibromomethane	ug/L	50	49.5	99	82-120	
Dichlorodifluoromethane	ug/L	50	42.2	84	34-157	
Ethyl methacrylate	ug/L	50	47.3	95	82-121	
Ethylbenzene	ug/L	50	47.1	94	79-121	
Hexachloro-1,3-butadiene	ug/L	50	53.6	107	72-131	
Iodomethane	ug/L	100	56.4	56	39-154	
Isobutanol	ug/L	1000	1110	111	34-160	
Methacrylonitrile	ug/L	500	560	112	74-134	
Methyl methacrylate	ug/L	50	48.2	96	84-124	
Methylene Chloride	ug/L	50	55.3	111	64-133	
Naphthalene	ug/L	50	45.6	91	73-133	
Propionitrile	ug/L	500	524	105	73-140	
Styrene	ug/L	50	46.6	93	84-126	
Tetrachloroethene	ug/L	50	48.8	98	78-122	
Tetrahydrofuran	ug/L	500	546	109	69-148	
Toluene	ug/L	50	47.3	95	80-121	
trans-1,2-Dichloroethene	ug/L	50	48.5	97	71-127	
trans-1,3-Dichloropropene	ug/L	50	47.2	94	69-141	
trans-1,4-Dichloro-2-butene	ug/L	50	48.6J	97	40-160	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

LABORATORY CONTROL SAMPLE: 1633239

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	50	50.6	101	78-122	
Trichlorofluoromethane	ug/L	50	42.8	86	53-137	
Vinyl acetate	ug/L	100	100	100	40-160	
Vinyl chloride	ug/L	50	49.4	99	58-137	
Xylene (Total)	ug/L	150	138	92	81-126	
1,2-Dichloroethane-d4 (S)	%			92	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			97	70-130	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: MSV/34820
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV Low Level Landfill
Associated Lab Samples: 92279347002

METHOD BLANK: 1634031
Matrix: Water
Associated Lab Samples: 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	5.0	0.33	12/20/15 18:49	
1,1,1-Trichloroethane	ug/L	ND	1.0	0.48	12/20/15 18:49	
1,1,2,2-Tetrachloroethane	ug/L	ND	3.0	0.40	12/20/15 18:49	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.29	12/20/15 18:49	
1,1-Dichloroethane	ug/L	ND	5.0	0.32	12/20/15 18:49	
1,1-Dichloroethene	ug/L	ND	5.0	0.56	12/20/15 18:49	
1,1-Dichloropropene	ug/L	ND	5.0	0.49	12/20/15 18:49	
1,2,3-Trichloropropane	ug/L	ND	1.0	0.41	12/20/15 18:49	
1,2,4-Trichlorobenzene	ug/L	ND	10.0	0.35	12/20/15 18:49	
1,2-Dibromo-3-chloropropane	ug/L	ND	13.0	2.0	12/20/15 18:49	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	0.27	12/20/15 18:49	
1,2-Dichlorobenzene	ug/L	ND	5.0	0.30	12/20/15 18:49	
1,2-Dichloroethane	ug/L	ND	1.0	0.24	12/20/15 18:49	
1,2-Dichloropropane	ug/L	ND	1.0	0.27	12/20/15 18:49	
1,3-Dichlorobenzene	ug/L	ND	5.0	0.24	12/20/15 18:49	
1,3-Dichloropropane	ug/L	ND	1.0	0.28	12/20/15 18:49	
1,4-Dichlorobenzene	ug/L	ND	1.0	0.33	12/20/15 18:49	
2,2-Dichloropropane	ug/L	ND	15.0	0.13	12/20/15 18:49	
2-Butanone (MEK)	ug/L	ND	100	0.96	12/20/15 18:49	
2-Hexanone	ug/L	ND	50.0	0.46	12/20/15 18:49	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	100	0.33	12/20/15 18:49	
Acetone	ug/L	ND	100	10.0	12/20/15 18:49	
Acetonitrile	ug/L	ND	55.0	2.2	12/20/15 18:49	
Acrolein	ug/L	ND	53.0	1.6	12/20/15 18:49	
Acrylonitrile	ug/L	ND	200	1.9	12/20/15 18:49	
Allyl chloride	ug/L	ND	10.0	1.5	12/20/15 18:49	
Benzene	ug/L	ND	1.0	0.25	12/20/15 18:49	
Bromochloromethane	ug/L	ND	3.0	0.17	12/20/15 18:49	
Bromodichloromethane	ug/L	ND	1.0	0.18	12/20/15 18:49	
Bromoform	ug/L	ND	3.0	0.26	12/20/15 18:49	
Bromomethane	ug/L	ND	10.0	0.29	12/20/15 18:49	
Carbon disulfide	ug/L	ND	100	1.2	12/20/15 18:49	
Carbon tetrachloride	ug/L	ND	1.0	0.25	12/20/15 18:49	
Chlorobenzene	ug/L	ND	3.0	0.23	12/20/15 18:49	
Chloroethane	ug/L	ND	10.0	0.54	12/20/15 18:49	
Chloroform	ug/L	ND	5.0	0.14	12/20/15 18:49	
Chloromethane	ug/L	ND	1.0	0.11	12/20/15 18:49	
Chloroprene	ug/L	ND	20.0	0.27	12/20/15 18:49	
cis-1,2-Dichloroethene	ug/L	ND	5.0	0.19	12/20/15 18:49	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.13	12/20/15 18:49	
Dibromochloromethane	ug/L	ND	3.0	0.21	12/20/15 18:49	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

METHOD BLANK: 1634031 Matrix: Water
Associated Lab Samples: 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	10.0	0.21	12/20/15 18:49	
Dichlorodifluoromethane	ug/L	ND	5.0	0.21	12/20/15 18:49	
Ethyl methacrylate	ug/L	ND	10.0	0.20	12/20/15 18:49	
Ethylbenzene	ug/L	ND	1.0	0.30	12/20/15 18:49	
Hexachloro-1,3-butadiene	ug/L	ND	10.0	0.71	12/20/15 18:49	
Iodomethane	ug/L	ND	10.0	0.32	12/20/15 18:49	
Isobutanol	ug/L	ND	100	35.0	12/20/15 18:49	
Methacrylonitrile	ug/L	ND	100	0.93	12/20/15 18:49	
Methyl methacrylate	ug/L	ND	30.0	2.0	12/20/15 18:49	
Methylene Chloride	ug/L	ND	1.0	0.97	12/20/15 18:49	
Naphthalene	ug/L	ND	10.0	0.24	12/20/15 18:49	
Propionitrile	ug/L	ND	150	3.6	12/20/15 18:49	
Styrene	ug/L	ND	1.0	0.26	12/20/15 18:49	
Tetrachloroethene	ug/L	ND	1.0	0.46	12/20/15 18:49	
Tetrahydrofuran	ug/L	ND	10.0	3.1	12/20/15 18:49	
Toluene	ug/L	ND	1.0	0.26	12/20/15 18:49	
trans-1,2-Dichloroethene	ug/L	ND	5.0	0.49	12/20/15 18:49	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.26	12/20/15 18:49	
trans-1,4-Dichloro-2-butene	ug/L	ND	100	1.0	12/20/15 18:49	
Trichloroethene	ug/L	ND	1.0	0.47	12/20/15 18:49	
Trichlorofluoromethane	ug/L	ND	1.0	0.20	12/20/15 18:49	
Vinyl acetate	ug/L	ND	50.0	0.35	12/20/15 18:49	
Vinyl chloride	ug/L	ND	1.0	0.62	12/20/15 18:49	
Xylene (Total)	ug/L	ND	5.0	0.66	12/20/15 18:49	
1,2-Dichloroethane-d4 (S)	%	92	70-130		12/20/15 18:49	
4-Bromofluorobenzene (S)	%	102	70-130		12/20/15 18:49	
Toluene-d8 (S)	%	111	70-130		12/20/15 18:49	

LABORATORY CONTROL SAMPLE: 1634032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	50.0	100	80-125	
1,1,1-Trichloroethane	ug/L	50	52.5	105	71-129	
1,1,2,2-Tetrachloroethane	ug/L	50	50.0	100	79-124	
1,1,2-Trichloroethane	ug/L	50	52.3	105	85-125	
1,1-Dichloroethane	ug/L	50	47.9	96	73-126	
1,1-Dichloroethene	ug/L	50	48.1	96	66-135	
1,1-Dichloropropene	ug/L	50	50.9	102	74-135	
1,2,3-Trichloropropane	ug/L	50	51.1	102	75-130	
1,2,4-Trichlorobenzene	ug/L	50	46.2	92	75-134	
1,2-Dibromo-3-chloropropane	ug/L	50	47.9	96	71-133	
1,2-Dibromoethane (EDB)	ug/L	50	53.9	108	83-124	
1,2-Dichlorobenzene	ug/L	50	47.1	94	80-133	
1,2-Dichloroethane	ug/L	50	45.2	90	67-128	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

LABORATORY CONTROL SAMPLE: 1634032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloropropane	ug/L	50	48.2	96	75-132	
1,3-Dichlorobenzene	ug/L	50	48.2	96	77-130	
1,3-Dichloropropane	ug/L	50	51.5	103	76-131	
1,4-Dichlorobenzene	ug/L	50	49.6	99	78-130	
2,2-Dichloropropane	ug/L	50	48.6	97	40-160	
2-Butanone (MEK)	ug/L	100	109	109	61-144	
2-Hexanone	ug/L	100	99.3	99	68-143	
4-Methyl-2-pentanone (MIBK)	ug/L	100	101	101	72-135	
Acetone	ug/L	100	104	104	48-146	
Acetonitrile	ug/L	500	549	110	62-150	
Acrolein	ug/L	250	305	122	24-160	
Acrylonitrile	ug/L	250	260	104	40-160	
Allyl chloride	ug/L	50	52.4	105	66-137	
Benzene	ug/L	50	53.5	107	80-125	
Bromochloromethane	ug/L	50	53.3	107	71-125	
Bromodichloromethane	ug/L	50	49.4	99	78-124	
Bromoform	ug/L	50	40.3	81	71-128	
Bromomethane	ug/L	50	40.0	80	40-160	
Carbon disulfide	ug/L	50	50.5J	101	50-160	
Carbon tetrachloride	ug/L	50	50.3	101	69-131	
Chlorobenzene	ug/L	50	49.3	99	81-122	
Chloroethane	ug/L	50	43.6	87	39-148	
Chloroform	ug/L	50	49.8	100	73-127	
Chloromethane	ug/L	50	50.0	100	44-146	
Chloroprene	ug/L	50	55.7	111	75-145	
cis-1,2-Dichloroethene	ug/L	50	48.3	97	74-124	
cis-1,3-Dichloropropene	ug/L	50	52.6	105	72-132	
Dibromochloromethane	ug/L	50	51.2	102	78-125	
Dibromomethane	ug/L	50	52.2	104	82-120	
Dichlorodifluoromethane	ug/L	50	42.4	85	34-157	
Ethyl methacrylate	ug/L	50	45.7	91	82-121	
Ethylbenzene	ug/L	50	48.9	98	79-121	
Hexachloro-1,3-butadiene	ug/L	50	54.5	109	72-131	
Iodomethane	ug/L	100	78.3	78	39-154	
Isobutanol	ug/L	1000	973	97	34-160	
Methacrylonitrile	ug/L	500	541	108	74-134	
Methyl methacrylate	ug/L	50	45.8	92	84-124	
Methylene Chloride	ug/L	50	58.3	117	64-133	
Naphthalene	ug/L	50	44.7	89	73-133	
Propionitrile	ug/L	500	525	105	73-140	
Styrene	ug/L	50	49.4	99	84-126	
Tetrachloroethene	ug/L	50	48.9	98	78-122	
Tetrahydrofuran	ug/L	500	540	108	69-148	
Toluene	ug/L	50	48.6	97	80-121	
trans-1,2-Dichloroethene	ug/L	50	50.1	100	71-127	
trans-1,3-Dichloropropene	ug/L	50	49.8	100	69-141	
trans-1,4-Dichloro-2-butene	ug/L	50	46.0J	92	40-160	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

LABORATORY CONTROL SAMPLE: 1634032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Trichloroethene	ug/L	50	52.9	106	78-122	
Trichlorofluoromethane	ug/L	50	46.3	93	53-137	
Vinyl acetate	ug/L	100	101	101	40-160	
Vinyl chloride	ug/L	50	50.0	100	58-137	
Xylene (Total)	ug/L	150	144	96	81-126	
1,2-Dichloroethane-d4 (S)	%			102	70-130	
4-Bromofluorobenzene (S)	%			105	70-130	
Toluene-d8 (S)	%			100	70-130	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: OEXT/39722 | Analysis Method: EPA 8081
QC Batch Method: EPA 3510 | Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92279347001, 92279347002

METHOD BLANK: 1628876 | Matrix: Water
Associated Lab Samples: 92279347001, 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	ug/L	ND	0.10	0.050	12/15/15 13:32	
4,4'-DDE	ug/L	ND	0.10	0.050	12/15/15 13:32	
4,4'-DDT	ug/L	ND	0.10	0.050	12/15/15 13:32	
Aldrin	ug/L	ND	0.050	0.050	12/15/15 13:32	
alpha-BHC	ug/L	ND	0.050	0.050	12/15/15 13:32	
beta-BHC	ug/L	ND	0.050	0.050	12/15/15 13:32	
Chlordane (Technical)	ug/L	ND	0.50	0.20	12/15/15 13:32	
delta-BHC	ug/L	ND	0.050	0.050	12/15/15 13:32	
Dieldrin	ug/L	ND	0.075	0.050	12/15/15 13:32	
Endosulfan I	ug/L	ND	0.10	0.050	12/15/15 13:32	
Endosulfan II	ug/L	ND	0.10	0.050	12/15/15 13:32	
Endosulfan sulfate	ug/L	ND	0.10	0.050	12/15/15 13:32	
Endrin	ug/L	ND	0.10	0.050	12/15/15 13:32	
Endrin aldehyde	ug/L	ND	0.10	0.050	12/15/15 13:32	
gamma-BHC (Lindane)	ug/L	ND	0.050	0.050	12/15/15 13:32	
Heptachlor	ug/L	ND	0.050	0.050	12/15/15 13:32	
Heptachlor epoxide	ug/L	ND	0.075	0.050	12/15/15 13:32	
Methoxychlor	ug/L	ND	1.0	0.15	12/15/15 13:32	
Toxaphene	ug/L	ND	1.5	0.20	12/15/15 13:32	
Decachlorobiphenyl (S)	%	67	20-130		12/15/15 13:32	
Tetrachloro-m-xylene (S)	%	83	20-130		12/15/15 13:32	

LABORATORY CONTROL SAMPLE: 1628877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	.25	0.24	98	20-150	
4,4'-DDE	ug/L	.25	0.24	95	20-150	
4,4'-DDT	ug/L	.25	0.26	104	20-150	
Aldrin	ug/L	.25	0.22	88	20-150	
alpha-BHC	ug/L	.25	0.23	92	20-150	
beta-BHC	ug/L	.25	0.24	95	20-150	
delta-BHC	ug/L	.25	0.25	99	20-150	
Dieldrin	ug/L	.25	0.24	98	20-150	
Endosulfan I	ug/L	.25	0.24	96	20-150	
Endosulfan II	ug/L	.25	0.25	99	20-150	
Endosulfan sulfate	ug/L	.25	0.25	101	20-150	
Endrin	ug/L	.25	0.25	102	20-150	
Endrin aldehyde	ug/L	.25	0.23	94	20-150	
gamma-BHC (Lindane)	ug/L	.25	0.23	94	20-150	
Heptachlor	ug/L	.25	0.22	88	20-150	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

LABORATORY CONTROL SAMPLE: 1628877

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Heptachlor epoxide	ug/L	.25	0.23	95	20-150	
Methoxychlor	ug/L	.74	0.75J	101	20-150	
Decachlorobiphenyl (S)	%			78	20-130	
Tetrachloro-m-xylene (S)	%			90	20-130	

MATRIX SPIKE SAMPLE: 1628878

Parameter	Units	92279302002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/L	ND	.25	0.20	81	20-150	
4,4'-DDE	ug/L	ND	.25	0.20	80	20-150	
4,4'-DDT	ug/L	ND	.25	0.21	83	20-150	
Aldrin	ug/L	ND	.25	0.18	71	20-150	
alpha-BHC	ug/L	ND	.25	0.20	79	20-150	
beta-BHC	ug/L	ND	.25	0.21	84	20-150	
delta-BHC	ug/L	ND	.25	0.21	86	20-150	
Dieldrin	ug/L	ND	.25	0.20	81	20-150	
Endosulfan I	ug/L	ND	.25	0.20	79	20-150	
Endosulfan II	ug/L	ND	.25	0.21	84	20-150	
Endosulfan sulfate	ug/L	ND	.25	0.21	83	20-150	
Endrin	ug/L	ND	.25	0.20	81	20-150	
Endrin aldehyde	ug/L	ND	.25	0.19	79	20-150	
gamma-BHC (Lindane)	ug/L	ND	.25	0.20	81	20-150	
Heptachlor	ug/L	ND	.25	0.18	71	20-150	
Heptachlor epoxide	ug/L	ND	.25	0.19	78	20-150	
Methoxychlor	ug/L	ND	.74	0.61J	82	20-150	
Decachlorobiphenyl (S)	%				77	20-130	
Tetrachloro-m-xylene (S)	%				72	20-130	

SAMPLE DUPLICATE: 1628879

Parameter	Units	92279304003 Result	Dup Result	RPD	Max RPD	Qualifiers
4,4'-DDD	ug/L	ND	ND		30	
4,4'-DDE	ug/L	ND	ND		30	
4,4'-DDT	ug/L	ND	ND		30	
Aldrin	ug/L	ND	ND		30	
alpha-BHC	ug/L	ND	ND		30	
beta-BHC	ug/L	ND	ND		30	
Chlordane (Technical)	ug/L	ND	ND		30	
delta-BHC	ug/L	ND	ND		30	
Dieldrin	ug/L	ND	ND		30	
Endosulfan I	ug/L	ND	ND		30	
Endosulfan II	ug/L	ND	ND		30	
Endosulfan sulfate	ug/L	ND	ND		30	
Endrin	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

SAMPLE DUPLICATE: 1628879

Parameter	Units	92279304003 Result	Dup Result	RPD	Max RPD	Qualifiers
Endrin aldehyde	ug/L	ND	ND		30	
gamma-BHC (Lindane)	ug/L	ND	ND		30	
Heptachlor	ug/L	ND	ND		30	
Heptachlor epoxide	ug/L	ND	ND		30	
Methoxychlor	ug/L	ND	ND		30	
Toxaphene	ug/L	ND	ND		30	
Decachlorobiphenyl (S)	%	71	84	16		
Tetrachloro-m-xylene (S)	%	52	50	5		

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: OEXT/39678 | Analysis Method: EPA 8082
QC Batch Method: EPA 3510 | Analysis Description: 8082 GCS PCB
Associated Lab Samples: 92279347001, 92279347002

METHOD BLANK: 1627957 | Matrix: Water
Associated Lab Samples: 92279347001, 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	0.50	0.50	12/15/15 05:04	
PCB-1221 (Aroclor 1221)	ug/L	ND	0.50	0.50	12/15/15 05:04	
PCB-1232 (Aroclor 1232)	ug/L	ND	0.50	0.50	12/15/15 05:04	
PCB-1242 (Aroclor 1242)	ug/L	ND	0.50	0.50	12/15/15 05:04	
PCB-1248 (Aroclor 1248)	ug/L	ND	0.50	0.50	12/15/15 05:04	
PCB-1254 (Aroclor 1254)	ug/L	ND	0.50	0.50	12/15/15 05:04	
PCB-1260 (Aroclor 1260)	ug/L	ND	0.50	0.50	12/15/15 05:04	
Decachlorobiphenyl (S)	%	85	10-132		12/15/15 05:04	

LABORATORY CONTROL SAMPLE: 1627958

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	4.2	83	50-150	
PCB-1260 (Aroclor 1260)	ug/L	5	4.5	90	50-150	
Decachlorobiphenyl (S)	%			90	10-132	

MATRIX SPIKE SAMPLE: 1627959

Parameter	Units	92279347001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	5	3.4	67	50-150	
PCB-1260 (Aroclor 1260)	ug/L	ND	5	3.6	72	50-150	
Decachlorobiphenyl (S)	%				79	10-132	

SAMPLE DUPLICATE: 1627960

Parameter	Units	92279347002 Result	Dup Result	RPD	Max RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	ND	ND		30	
PCB-1221 (Aroclor 1221)	ug/L	ND	ND		30	
PCB-1232 (Aroclor 1232)	ug/L	ND	ND		30	
PCB-1242 (Aroclor 1242)	ug/L	ND	ND		30	
PCB-1248 (Aroclor 1248)	ug/L	ND	ND		30	
PCB-1254 (Aroclor 1254)	ug/L	ND	ND		30	
PCB-1260 (Aroclor 1260)	ug/L	ND	ND		30	
Decachlorobiphenyl (S)	%	57	66	14		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: OEXT/25723 | Analysis Method: EPA 8151
QC Batch Method: EPA 8151 | Analysis Description: 8151A GCS Herbicides
Associated Lab Samples: 92279347001, 92279347002

METHOD BLANK: 1420527 | Matrix: Water
Associated Lab Samples: 92279347001, 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
2,4,5-T	ug/L	ND	0.19	0.042	12/17/15 17:07	
2,4,5-TP (Silvex)	ug/L	ND	0.19	0.049	12/17/15 17:07	
2,4-D	ug/L	ND	0.94	0.22	12/17/15 17:07	
Dinoseb	ug/L	ND	0.19	0.057	12/17/15 17:07	
2,4-DCAA (S)	%	53	36-130		12/17/15 17:07	

LABORATORY CONTROL SAMPLE: 1420528

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,5-T	ug/L	1.2	0.79	66	40-130	
2,4,5-TP (Silvex)	ug/L	1.2	1.1	94	58-130	
2,4-D	ug/L	6	3.7	62	42-134	
Dinoseb	ug/L	1.2	0.84	70	10-157	
2,4-DCAA (S)	%			77	36-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1424270 1424271

Parameter	Units	92279201003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4,5-T	ug/L	ND	1.2	1.2	1.1	0.74	88	62	40-130	35	40	
2,4,5-TP (Silvex)	ug/L	ND	1.2	1.2	1.2	0.83	104	69	58-130	40	40	
2,4-D	ug/L	ND	6	6	5.3	3.6	88	59	42-134	39	40	
Dinoseb	ug/L	ND	1.2	1.2	0.88	0.58	73	48	10-157	41	40	R1
2,4-DCAA (S)	%						81	58	36-130		40	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: OEXT/39746 | Analysis Method: EPA 8270
QC Batch Method: EPA 3510 | Analysis Description: 8270 Water MSSV
Associated Lab Samples: 92279347001, 92279347002

METHOD BLANK: 1629825 | Matrix: Water
Associated Lab Samples: 92279347001, 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	ND	10.0	1.7	12/21/15 16:14	
1,3,5-Trinitrobenzene	ug/L	ND	10.0	1.1	12/21/15 16:14	
1,3-Dinitrobenzene	ug/L	ND	20.0	1.5	12/21/15 16:14	
1,4-Naphthoquinone	ug/L	ND	10.0	1.8	12/21/15 16:14	
1-Naphthalenamine	ug/L	ND	10.0	0.96	12/21/15 16:14	
2,3,4,6-Tetrachlorophenol	ug/L	ND	10.0	2.3	12/21/15 16:14	
2,4,5-Trichlorophenol	ug/L	ND	10.0	2.2	12/21/15 16:14	
2,4,6-Trichlorophenol	ug/L	ND	10.0	1.9	12/21/15 16:14	
2,4-Dichlorophenol	ug/L	ND	10.0	1.7	12/21/15 16:14	
2,4-Dimethylphenol	ug/L	ND	10.0	2.2	12/21/15 16:14	
2,4-Dinitrophenol	ug/L	ND	50.0	6.5	12/21/15 16:14	
2,4-Dinitrotoluene	ug/L	ND	10.0	1.2	12/21/15 16:14	
2,6-Dichlorophenol	ug/L	ND	10.0	1.8	12/21/15 16:14	
2,6-Dinitrotoluene	ug/L	ND	10.0	1.7	12/21/15 16:14	
2-Acetylaminofluorene	ug/L	ND	20.0	0.84	12/21/15 16:14	
2-Chloronaphthalene	ug/L	ND	10.0	2.2	12/21/15 16:14	
2-Chlorophenol	ug/L	ND	10.0	1.5	12/21/15 16:14	
2-Methylnaphthalene	ug/L	ND	10.0	0.28	12/21/15 16:14	
2-Methylphenol(o-Cresol)	ug/L	ND	10.0	1.7	12/21/15 16:14	
2-Naphthalenamine	ug/L	ND	10.0	0.98	12/21/15 16:14	
2-Nitroaniline	ug/L	ND	50.0	2.8	12/21/15 16:14	
2-Nitrophenol	ug/L	ND	10.0	1.7	12/21/15 16:14	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	10.0	1.7	12/21/15 16:14	
3,3'-Dichlorobenzidine	ug/L	ND	20.0	1.4	12/21/15 16:14	
3,3'-Dimethylbenzidine	ug/L	ND	10.0	2.1	12/21/15 16:14	
3-Methylcholanthrene	ug/L	ND	10.0	0.82	12/21/15 16:14	
3-Nitroaniline	ug/L	ND	50.0	2.4	12/21/15 16:14	
4,6-Dinitro-2-methylphenol	ug/L	ND	50.0	1.7	12/21/15 16:14	
4-Aminobiphenyl	ug/L	ND	20.0	0.92	12/21/15 16:14	
4-Bromophenylphenyl ether	ug/L	ND	10.0	1.3	12/21/15 16:14	
4-Chloro-3-methylphenol	ug/L	ND	20.0	4.2	12/21/15 16:14	
4-Chloroaniline	ug/L	ND	20.0	3.4	12/21/15 16:14	
4-Chlorophenylphenyl ether	ug/L	ND	10.0	2.1	12/21/15 16:14	
4-Nitroaniline	ug/L	ND	20.0	2.5	12/21/15 16:14	
4-Nitrophenol	ug/L	ND	50.0	5.8	12/21/15 16:14	
5-Nitro-o-toluidine	ug/L	ND	10.0	1.2	12/21/15 16:14	
7,12-Dimethylbenz(a)anthracene	ug/L	ND	10.0	0.77	12/21/15 16:14	
Acenaphthene	ug/L	ND	10.0	0.25	12/21/15 16:14	
Acenaphthylene	ug/L	ND	10.0	0.21	12/21/15 16:14	
Acetophenone	ug/L	ND	10.0	2.0	12/21/15 16:14	
Anthracene	ug/L	ND	10.0	0.14	12/21/15 16:14	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

METHOD BLANK: 1629825 Matrix: Water
Associated Lab Samples: 92279347001, 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Benzo(a)anthracene	ug/L	ND	10.0	0.33	12/21/15 16:14	
Benzo(a)pyrene	ug/L	ND	10.0	0.30	12/21/15 16:14	
Benzo(b)fluoranthene	ug/L	ND	10.0	0.28	12/21/15 16:14	
Benzo(g,h,i)perylene	ug/L	ND	10.0	0.38	12/21/15 16:14	
Benzo(k)fluoranthene	ug/L	ND	10.0	0.43	12/21/15 16:14	
Benzyl alcohol	ug/L	ND	20.0	3.4	12/21/15 16:14	
bis(2-Chloroethoxy)methane	ug/L	ND	10.0	1.7	12/21/15 16:14	
bis(2-Chloroethyl) ether	ug/L	ND	10.0	1.5	12/21/15 16:14	
bis(2-Chloroisopropyl) ether	ug/L	ND	10.0	1.6	12/21/15 16:14	
bis(2-Ethylhexyl)phthalate	ug/L	ND	15.0	0.85	12/21/15 16:14	
Butylbenzylphthalate	ug/L	ND	10.0	0.75	12/21/15 16:14	
Chlorobenzilate	ug/L	ND	10.0	0.72	12/21/15 16:14	
Chrysene	ug/L	ND	10.0	0.21	12/21/15 16:14	
Di-n-butylphthalate	ug/L	ND	10.0	1.1	12/21/15 16:14	
Di-n-octylphthalate	ug/L	ND	10.0	0.86	12/21/15 16:14	
Diallate	ug/L	ND	10.0	1.3	12/21/15 16:14	
Dibenz(a,h)anthracene	ug/L	ND	10.0	0.55	12/21/15 16:14	
Dibenzofuran	ug/L	ND	10.0	1.8	12/21/15 16:14	
Diethylphthalate	ug/L	ND	6000	1.3	12/21/15 16:14	
Dimethoate	ug/L	ND	20.0	0.92	12/21/15 16:14	
Dimethylphthalate	ug/L	ND	10.0	1.5	12/21/15 16:14	
Diphenylamine	ug/L	ND	10.0	1.3	12/21/15 16:14	
Disulfoton	ug/L	ND	10.0	1.4	12/21/15 16:14	
Ethyl methanesulfonate	ug/L	ND	20.0	1.8	12/21/15 16:14	
Famphur	ug/L	ND	20.0	1.7	12/21/15 16:14	
Fluoranthene	ug/L	ND	10.0	0.21	12/21/15 16:14	
Fluorene	ug/L	ND	10.0	0.21	12/21/15 16:14	
Hexachlorobenzene	ug/L	ND	10.0	1.1	12/21/15 16:14	
Hexachlorocyclopentadiene	ug/L	ND	10.0	1.8	12/21/15 16:14	
Hexachloroethane	ug/L	ND	10.0	1.5	12/21/15 16:14	
Hexachloropropene	ug/L	ND	10.0	1.6	12/21/15 16:14	
Indeno(1,2,3-cd)pyrene	ug/L	ND	10.0	0.29	12/21/15 16:14	
Isodrin	ug/L	ND	20.0	2.0	12/21/15 16:14	
Isophorone	ug/L	ND	10.0	1.8	12/21/15 16:14	
Isosafrole	ug/L	ND	10.0	1.8	12/21/15 16:14	
Kepone	ug/L	ND	20.0	3.1	12/21/15 16:14	
Methapyrilene	ug/L	ND	100	2.7	12/21/15 16:14	
Methyl methanesulfonate	ug/L	ND	10.0	1.3	12/21/15 16:14	
Methyl parathion	ug/L	ND	10.0	1.1	12/21/15 16:14	
N-Nitroso-di-n-butylamine	ug/L	ND	10.0	2.2	12/21/15 16:14	
N-Nitroso-di-n-propylamine	ug/L	ND	10.0	2.1	12/21/15 16:14	
N-Nitrosodiethylamine	ug/L	ND	20.0	1.8	12/21/15 16:14	
N-Nitrosodimethylamine	ug/L	ND	10.0	1.3	12/21/15 16:14	
N-Nitrosodiphenylamine	ug/L	ND	10.0	1.3	12/21/15 16:14	
N-Nitrosomethylethylamine	ug/L	ND	10.0	1.8	12/21/15 16:14	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

METHOD BLANK: 1629825 Matrix: Water
Associated Lab Samples: 92279347001, 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
N-Nitrosopiperidine	ug/L	ND	20.0	1.9	12/21/15 16:14	
N-Nitrosopyrrolidine	ug/L	ND	10.0	2.5	12/21/15 16:14	
Nitrobenzene	ug/L	ND	10.0	1.7	12/21/15 16:14	
O,O,O-Triethylphosphorothioate	ug/L	ND	10.0	1.8	12/21/15 16:14	
O-Toluidine	ug/L	ND	10.0	1.6	12/21/15 16:14	
P-Dimethylaminoazobenzene	ug/L	ND	10.0	0.35	12/21/15 16:14	
p-Phenylenediamine	ug/L	ND	10.0	0.96	12/21/15 16:14	
Parathion (Ethyl parathion)	ug/L	ND	10.0	1.1	12/21/15 16:14	
Pentachlorobenzene	ug/L	ND	10.0	2.0	12/21/15 16:14	
Pentachloronitrobenzene	ug/L	ND	20.0	1.0	12/21/15 16:14	
Pentachlorophenol	ug/L	ND	25.0	2.3	12/21/15 16:14	
Phenacetin	ug/L	ND	20.0	0.97	12/21/15 16:14	
Phenanthrene	ug/L	ND	10.0	0.22	12/21/15 16:14	
Phenol	ug/L	ND	10.0	1.7	12/21/15 16:14	
Phorate	ug/L	ND	10.0	1.1	12/21/15 16:14	
Pronamide	ug/L	ND	10.0	0.97	12/21/15 16:14	
Pyrene	ug/L	ND	10.0	0.19	12/21/15 16:14	
Safrole	ug/L	ND	10.0	1.5	12/21/15 16:14	
Thionazin	ug/L	ND	20.0	1.2	12/21/15 16:14	
2,4,6-Tribromophenol (S)	%	94	27-110		12/21/15 16:14	
2-Fluorobiphenyl (S)	%	73	27-110		12/21/15 16:14	
2-Fluorophenol (S)	%	38	12-110		12/21/15 16:14	
Nitrobenzene-d5 (S)	%	84	21-110		12/21/15 16:14	
Phenol-d6 (S)	%	21	10-110		12/21/15 16:14	
Terphenyl-d14 (S)	%	97	31-107		12/21/15 16:14	

LABORATORY CONTROL SAMPLE: 1629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	50	28.6	57	16-129	
1,3,5-Trinitrobenzene	ug/L	50	64.1	128	55-125	L0
1,3-Dinitrobenzene	ug/L	50	42.8	86	30-122	
1,4-Naphthoquinone	ug/L	50	35.6	71	31-120	
1-Naphthalenamine	ug/L	50	31.1	62	37-126	
2,3,4,6-Tetrachlorophenol	ug/L	50	91.3	183	54-276	
2,4,5-Trichlorophenol	ug/L	50	34.7	69	43-113	
2,4,6-Trichlorophenol	ug/L	50	35.8	72	42-120	
2,4-Dichlorophenol	ug/L	50	51.4	103	30-120	
2,4-Dimethylphenol	ug/L	50	41.8	84	29-111	
2,4-Dinitrophenol	ug/L	250	263	105	19-132	
2,4-Dinitrotoluene	ug/L	50	51.2	102	58-128	
2,6-Dichlorophenol	ug/L	50	45.7	91	54-128	
2,6-Dinitrotoluene	ug/L	50	41.4	83	54-129	
2-Acetylaminofluorene	ug/L	50	49.0	98	81-160	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

LABORATORY CONTROL SAMPLE: 1629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Chloronaphthalene	ug/L	50	34.7	69	43-117	
2-Chlorophenol	ug/L	50	34.4	69	37-120	
2-Methylnaphthalene	ug/L	50	35.8	72	33-120	
2-Methylphenol(o-Cresol)	ug/L	50	21.8	44	31-120	
2-Naphthalenamine	ug/L	50	36.0	72	41-136	
2-Nitroaniline	ug/L	100	51.0	51	48-121	
2-Nitrophenol	ug/L	50	48.2	96	25-116	
3&4-Methylphenol(m&p Cresol)	ug/L	50	51.2	102	23-120	
3,3'-Dichlorobenzidine	ug/L	250	89.4	36	10-154	
3,3'-Dimethylbenzidine	ug/L	100	10.4	10	10-157	
3-Methylcholanthrene	ug/L	50	42.2	84	65-130	
3-Nitroaniline	ug/L	100	95.2	95	43-115	
4,6-Dinitro-2-methylphenol	ug/L	100	101	101	44-124	
4-Aminobiphenyl	ug/L	50	33.0	66	21-125	
4-Bromophenylphenyl ether	ug/L	50	46.2	92	34-113	
4-Chloro-3-methylphenol	ug/L	100	80.9	81	31-110	
4-Chloroaniline	ug/L	100	68.3	68	20-120	
4-Chlorophenylphenyl ether	ug/L	50	32.5	65	34-116	
4-Nitroaniline	ug/L	100	73.8	74	46-128	
4-Nitrophenol	ug/L	250	104	42	11-120	
5-Nitro-o-toluidine	ug/L	50	44.3	89	78-160	
7,12-Dimethylbenz(a)anthracene	ug/L	50	47.3	95	47-124	
Acenaphthene	ug/L	50	43.6	87	48-114	
Acenaphthylene	ug/L	50	40.8	82	48-112	
Acetophenone	ug/L	50	27.9	56	24-120	
Anthracene	ug/L	50	48.4	97	57-118	
Benzo(a)anthracene	ug/L	50	49.5	99	56-121	
Benzo(a)pyrene	ug/L	50	46.8	94	55-127	
Benzo(b)fluoranthene	ug/L	50	42.4	85	53-128	
Benzo(g,h,i)perylene	ug/L	50	37.1	74	54-125	
Benzo(k)fluoranthene	ug/L	50	51.9	104	51-123	
Benzyl alcohol	ug/L	100	60.9	61	27-120	
bis(2-Chloroethoxy)methane	ug/L	50	48.2	96	32-120	
bis(2-Chloroethyl) ether	ug/L	50	29.7	59	33-111	
bis(2-Chloroisopropyl) ether	ug/L	50	11.6	23	15-120	
bis(2-Ethylhexyl)phthalate	ug/L	50	58.7	117	50-145	
Butylbenzylphthalate	ug/L	50	58.2	116	54-138	
Chlorobenzilate	ug/L	50	55.9	112	65-132	
Chrysene	ug/L	50	48.9	98	58-127	
Di-n-butylphthalate	ug/L	50	59.5	119	56-125	
Di-n-octylphthalate	ug/L	50	52.2	104	50-134	
Diallate	ug/L	50	47.4	95	47-123	
Dibenz(a,h)anthracene	ug/L	50	36.9	74	53-129	
Dibenzofuran	ug/L	50	43.2	86	45-120	
Diethylphthalate	ug/L	50	41.6J	83	53-120	
Dimethoate	ug/L	50	46.2	92	57-139	
Dimethylphthalate	ug/L	50	37.0	74	55-116	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

LABORATORY CONTROL SAMPLE: 1629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diphenylamine	ug/L	50	47.0	94	42-120	
Disulfoton	ug/L	50	45.5	91	49-156	
Ethyl methanesulfonate	ug/L	50	42.2	84	43-120	
Famphur	ug/L	100	73.0	73	40-160	
Fluoranthene	ug/L	50	64.6	129	57-125	L0
Fluorene	ug/L	50	36.6	73	53-118	
Hexachlorobenzene	ug/L	50	51.2	102	49-116	
Hexachlorocyclopentadiene	ug/L	50	16.9	34	26-158	
Hexachloroethane	ug/L	50	32.0	64	30-114	
Hexachloropropene	ug/L	50	30.8	62	13-137	
Indeno(1,2,3-cd)pyrene	ug/L	50	37.3	75	55-128	
Isodrin	ug/L	50	66.4	133	68-129	L0
Isophorone	ug/L	50	42.0	84	31-118	
Isosafrole	ug/L	50	34.0	68	48-107	
Kepone	ug/L	100	39.2	39	10-124	
Methapyrilene	ug/L	50	3.6J	7	40-160	L0
Methyl methanesulfonate	ug/L	50	23.6	47	25-114	
Methyl parathion	ug/L	50	52.7	105	58-137	
N-Nitroso-di-n-butylamine	ug/L	50	32.5	65	36-115	
N-Nitroso-di-n-propylamine	ug/L	50	24.8	50	32-119	
N-Nitrosodiethylamine	ug/L	50	40.3	81	47-115	
N-Nitrosodimethylamine	ug/L	50	19.2	38	13-120	
N-Nitrosodiphenylamine	ug/L	50	47.0	94	43-120	
N-Nitrosomethylethylamine	ug/L	50	31.7	63	39-120	
N-Nitrosopiperidine	ug/L	50	55.2	110	43-113	
N-Nitrosopyrrolidine	ug/L	50	32.1	64	32-110	
Nitrobenzene	ug/L	50	40.7	81	33-110	
O,O,O-Triethylphosphorothioate	ug/L	50	49.4	99	51-127	
O-Toluidine	ug/L	50	31.0	62	27-120	
P-Dimethylaminoazobenzene	ug/L	100	27.3	27	10-120	
p-Phenylenediamine	ug/L	50	50.4	101	72-143	
Parathion (Ethyl parathion)	ug/L	50	51.5	103	56-140	
Pentachlorobenzene	ug/L	50	42.6	85	30-137	
Pentachloronitrobenzene	ug/L	50	55.5	111	70-124	
Pentachlorophenol	ug/L	250	92.5	37	10-137	
Phenacetin	ug/L	50	51.3	103	60-130	
Phenanthrene	ug/L	50	46.4	93	57-117	
Phenol	ug/L	50	15.2	30	10-120	
Phorate	ug/L	50	63.4	127	55-126	L0
Pronamide	ug/L	50	60.4	121	75-124	
Pyrene	ug/L	50	56.2	112	55-122	
Safrole	ug/L	50	39.0	78	41-120	
Thionazin	ug/L	50	36.7	73	63-137	
2,4,6-Tribromophenol (S)	%			115	27-110	S0
2-Fluorobiphenyl (S)	%			62	27-110	
2-Fluorophenol (S)	%			38	12-110	
Nitrobenzene-d5 (S)	%			95	21-110	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

LABORATORY CONTROL SAMPLE: 1629826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenol-d6 (S)	%			26	10-110	
Terphenyl-d14 (S)	%			104	31-107	

MATRIX SPIKE SAMPLE: 1629827

Parameter	Units	92278963015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	ND	50	28.4	57	50-150	
1,3,5-Trinitrobenzene	ug/L	ND	50	57.1	114	50-150	
1,3-Dinitrobenzene	ug/L	ND	50	45.4	91	50-150	
1,4-Naphthoquinone	ug/L	ND	50	35.9	72	50-150	
1-Naphthalenamine	ug/L	ND	50	27.5	55	50-150	
2,3,4,6-Tetrachlorophenol	ug/L	ND	50	66.0	132	50-150	
2,4,5-Trichlorophenol	ug/L	ND	50	30.1	60	19-105	
2,4,6-Trichlorophenol	ug/L	ND	50	30.7	61	13-108	
2,4-Dichlorophenol	ug/L	ND	50	32.6	65	29-111	
2,4-Dimethylphenol	ug/L	ND	50	28.0	56	21-103	
2,4-Dinitrophenol	ug/L	ND	250	126	50	10-109	
2,4-Dinitrotoluene	ug/L	ND	50	42.8	86	27-104	
2,6-Dichlorophenol	ug/L	ND	50	43.3	87	50-150	
2,6-Dinitrotoluene	ug/L	ND	50	43.8	88	28-101	
2-Acetylaminofluorene	ug/L	ND	50	45.3	91	50-150	
2-Chloronaphthalene	ug/L	ND	50	32.9	66	14-102	
2-Chlorophenol	ug/L	ND	50	37.0	74	16-110	
2-Methylnaphthalene	ug/L	ND	50	29.8	60	13-110	
2-Methylphenol(o-Cresol)	ug/L	ND	50	32.9	66	19-110	
2-Naphthalenamine	ug/L	ND	50	29.7	59	50-150	
2-Nitroaniline	ug/L	ND	100	44.5J	45	26-103	
2-Nitrophenol	ug/L	ND	50	32.2	64	20-110	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	50	67.1	134	20-110	M1
3,3'-Dichlorobenzidine	ug/L	ND	250	88.3	35	25-112	
3,3'-Dimethylbenzidine	ug/L	ND	100	58.1	58	50-150	
3-Methylcholanthrene	ug/L	5.4J	50	44.2	77	50-150	
3-Nitroaniline	ug/L	ND	100	79.0	79	29-110	
4,6-Dinitro-2-methylphenol	ug/L	ND	100	84.3	84	10-117	
4-Aminobiphenyl	ug/L	ND	50	41.8	84	50-150	
4-Bromophenylphenyl ether	ug/L	ND	50	40.6	81	20-105	
4-Chloro-3-methylphenol	ug/L	ND	100	64.6	65	22-110	
4-Chloroaniline	ug/L	ND	100	71.4	71	20-100	
4-Chlorophenylphenyl ether	ug/L	ND	50	30.8	62	19-102	
4-Nitroaniline	ug/L	ND	100	67.3	67	29-110	
4-Nitrophenol	ug/L	ND	250	62.9	25	10-110	
5-Nitro-o-toluidine	ug/L	ND	50	39.0	78	50-150	
7,12-Dimethylbenz(a)anthracene	ug/L	ND	50	49.9	100	50-150	
Acenaphthene	ug/L	ND	50	41.3	83	17-100	
Acenaphthylene	ug/L	ND	50	41.3	83	21-100	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

MATRIX SPIKE SAMPLE: 1629827

Parameter	Units	92278963015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Acetophenone	ug/L	ND	50	41.6	83	50-150	
Anthracene	ug/L	ND	50	44.4	89	24-109	
Benzo(a)anthracene	ug/L	ND	50	45.8	92	22-117	
Benzo(a)pyrene	ug/L	ND	50	45.0	90	23-104	
Benzo(b)fluoranthene	ug/L	ND	50	45.8	92	23-103	
Benzo(g,h,i)perylene	ug/L	ND	50	38.7	77	18-111	
Benzo(k)fluoranthene	ug/L	ND	50	53.2	106	22-113	
Benzyl alcohol	ug/L	ND	100	64.2	64	19-101	
bis(2-Chloroethoxy)methane	ug/L	ND	50	24.7	49	22-110	
bis(2-Chloroethyl) ether	ug/L	ND	50	29.8	60	16-110	
bis(2-Chloroisopropyl) ether	ug/L	ND	50	23.6	47	14-110	
bis(2-Ethylhexyl)phthalate	ug/L	ND	50	58.8	118	23-102	M1
Butylbenzylphthalate	ug/L	ND	50	60.3	121	25-110	M1
Chlorobenzilate	ug/L	ND	50	54.9	110	50-150	
Chrysene	ug/L	ND	50	44.3	89	23-115	
Di-n-butylphthalate	ug/L	ND	50	59.4	119	26-110	M1
Di-n-octylphthalate	ug/L	ND	50	42.4	85	22-110	
Diallate	ug/L	ND	50	39.1	78	50-150	
Dibenz(a,h)anthracene	ug/L	ND	50	45.7	91	21-112	
Dibenzofuran	ug/L	ND	50	37.9	76	19-102	
Diethylphthalate	ug/L	ND	50	34.5J	69	29-110	
Dimethoate	ug/L	ND	50	40.4	81	50-150	
Dimethylphthalate	ug/L	ND	50	41.6	83	27-110	
Diphenylamine	ug/L	ND	50	48.3	97	50-150	
Disulfoton	ug/L	ND	50	43.1	86	50-150	
Ethyl methanesulfonate	ug/L	ND	50	28.8	58	50-150	
Famphur	ug/L	ND	100	35.6	36	50-150	M1
Fluoranthene	ug/L	ND	50	63.2	126	23-112	M0
Fluorene	ug/L	ND	50	33.3	67	22-104	
Hexachlorobenzene	ug/L	ND	50	46.9	94	21-116	
Hexachlorocyclopentadiene	ug/L	ND	50	16.5	33	10-110	
Hexachloroethane	ug/L	ND	50	33.8	68	10-110	
Hexachloropropene	ug/L	ND	50	32.0	64	50-150	
Indeno(1,2,3-cd)pyrene	ug/L	ND	50	47.0	94	20-113	
Isodrin	ug/L	ND	50	66.0	132	50-150	
Isophorone	ug/L	ND	50	24.6	49	50-150	M1
Isosafrole	ug/L	ND	50	33.9	68	50-150	
Kepone	ug/L	ND	100	44.0	44	50-150	M1
Methapyrilene	ug/L	ND	50	42.3J	85	50-150	
Methyl methanesulfonate	ug/L	ND	50	27.4	55	50-150	
Methyl parathion	ug/L	ND	50	47.6	95	50-150	
N-Nitroso-di-n-butylamine	ug/L	ND	50	24.0	48	50-150	M1
N-Nitroso-di-n-propylamine	ug/L	ND	50	38.9	78	21-105	
N-Nitrosodiethylamine	ug/L	ND	50	30.5	61	50-150	
N-Nitrosodimethylamine	ug/L	ND	50	19.5	39	10-110	
N-Nitrosodiphenylamine	ug/L	ND	50	48.3	97	23-107	
N-Nitrosomethylethylamine	ug/L	ND	50	31.8	64	50-150	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

MATRIX SPIKE SAMPLE: 1629827

Parameter	Units	92278963015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
N-Nitrosopiperidine	ug/L	ND	50	32.1	64	50-150	
N-Nitrosopyrrolidine	ug/L	ND	50	46.7	93	50-150	
Nitrobenzene	ug/L	ND	50	22.6	45	20-110	
O,O,O-Triethylphosphorothioate	ug/L	ND	50	33.1	66	50-150	
O-Toluidine	ug/L	ND	50	41.4	83	50-150	
P-Dimethylaminoazobenzene	ug/L	ND	100	25.8	26	50-150	M1
p-Phenylenediamine	ug/L	ND	50	38.5	77	50-150	
Parathion (Ethyl parathion)	ug/L	ND	50	63.6	127	50-150	
Pentachlorobenzene	ug/L	ND	50	37.7	75	50-150	
Pentachloronitrobenzene	ug/L	ND	50	50.8	102	50-150	
Pentachlorophenol	ug/L	ND	250	80.7	32	10-118	
Phenacetin	ug/L	ND	50	47.4	95	50-150	
Phenanthrene	ug/L	ND	50	43.1	86	24-106	
Phenol	ug/L	ND	50	13.0	26	12-110	
Phorate	ug/L	ND	50	56.5	113	50-150	
Pronamide	ug/L	ND	50	55.7	111	50-150	
Pyrene	ug/L	ND	50	53.0	106	24-114	
Safrole	ug/L	ND	50	33.1	66	50-150	
Thionazin	ug/L	ND	50	34.3	69	50-150	
2,4,6-Tribromophenol (S)	%				99	27-110	
2-Fluorobiphenyl (S)	%				57	27-110	
2-Fluorophenol (S)	%				26	12-110	
Nitrobenzene-d5 (S)	%				49	21-110	
Phenol-d6 (S)	%				21	10-110	
Terphenyl-d14 (S)	%				90	31-107	

SAMPLE DUPLICATE: 1629828

Parameter	Units	92278963016 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	ND	ND		30	
1,3,5-Trinitrobenzene	ug/L	ND	ND		30	
1,3-Dinitrobenzene	ug/L	ND	ND		30	
1,4-Naphthoquinone	ug/L	ND	ND		30	
1-Naphthalenamine	ug/L	ND	ND		30	
2,3,4,6-Tetrachlorophenol	ug/L	ND	ND		30	
2,4,5-Trichlorophenol	ug/L	ND	ND		30	
2,4,6-Trichlorophenol	ug/L	ND	ND		30	
2,4-Dichlorophenol	ug/L	ND	ND		30	
2,4-Dimethylphenol	ug/L	ND	ND		30	
2,4-Dinitrophenol	ug/L	ND	ND		30	
2,4-Dinitrotoluene	ug/L	ND	ND		30	
2,6-Dichlorophenol	ug/L	ND	ND		30	
2,6-Dinitrotoluene	ug/L	ND	ND		30	
2-Acetylaminofluorene	ug/L	ND	ND		30	
2-Chloronaphthalene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

SAMPLE DUPLICATE: 1629828

Parameter	Units	92278963016 Result	Dup Result	RPD	Max RPD	Qualifiers
2-Chlorophenol	ug/L	ND	ND		30	
2-Methylnaphthalene	ug/L	ND	ND		30	
2-Methylphenol(o-Cresol)	ug/L	ND	ND		30	
2-Naphthalenamine	ug/L	ND	ND		30	
2-Nitroaniline	ug/L	ND	ND		30	
2-Nitrophenol	ug/L	ND	ND		30	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	ND		30	
3,3'-Dichlorobenzidine	ug/L	ND	ND		30	
3,3'-Dimethylbenzidine	ug/L	ND	ND		30	
3-Methylcholanthrene	ug/L	ND	ND		30	
3-Nitroaniline	ug/L	ND	ND		30	
4,6-Dinitro-2-methylphenol	ug/L	ND	ND		30	
4-Aminobiphenyl	ug/L	ND	ND		30	
4-Bromophenylphenyl ether	ug/L	ND	ND		30	
4-Chloro-3-methylphenol	ug/L	ND	ND		30	
4-Chloroaniline	ug/L	ND	ND		30	
4-Chlorophenylphenyl ether	ug/L	ND	ND		30	
4-Nitroaniline	ug/L	ND	ND		30	
4-Nitrophenol	ug/L	ND	ND		30	
5-Nitro-o-toluidine	ug/L	ND	ND			
7,12-Dimethylbenz(a)anthracene	ug/L	ND	ND		30	
Acenaphthene	ug/L	ND	ND		30	
Acenaphthylene	ug/L	ND	ND		30	
Acetophenone	ug/L	ND	ND		30	
Anthracene	ug/L	ND	ND		30	
Benzo(a)anthracene	ug/L	ND	ND		30	
Benzo(a)pyrene	ug/L	ND	ND		30	
Benzo(b)fluoranthene	ug/L	ND	ND		30	
Benzo(g,h,i)perylene	ug/L	ND	ND		30	
Benzo(k)fluoranthene	ug/L	ND	ND		30	
Benzyl alcohol	ug/L	ND	ND		30	
bis(2-Chloroethoxy)methane	ug/L	ND	ND		30	
bis(2-Chloroethyl) ether	ug/L	ND	ND		30	
bis(2-Chloroisopropyl) ether	ug/L	ND	ND		30	
bis(2-Ethylhexyl)phthalate	ug/L	ND	ND		30	
Butylbenzylphthalate	ug/L	ND	ND		30	
Chlorobenzilate	ug/L	ND	ND		30	
Chrysene	ug/L	ND	ND		30	
Di-n-butylphthalate	ug/L	ND	ND		30	
Di-n-octylphthalate	ug/L	ND	ND		30	
Diallate	ug/L	ND	ND		30	
Dibenz(a,h)anthracene	ug/L	ND	ND		30	
Dibenzofuran	ug/L	ND	ND		30	
Diethylphthalate	ug/L	ND	ND		30	
Dimethoate	ug/L	ND	ND		30	
Dimethylphthalate	ug/L	ND	ND		30	
Diphenylamine	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

SAMPLE DUPLICATE: 1629828

Parameter	Units	92278963016 Result	Dup Result	RPD	Max RPD	Qualifiers
Disulfoton	ug/L	ND	ND		30	
Ethyl methanesulfonate	ug/L	ND	ND		30	
Famphur	ug/L	ND	ND		30	
Fluoranthene	ug/L	ND	ND		30	
Fluorene	ug/L	ND	ND		30	
Hexachlorobenzene	ug/L	ND	ND		30	
Hexachlorocyclopentadiene	ug/L	ND	ND		30	
Hexachloroethane	ug/L	ND	ND		30	
Hexachloropropene	ug/L	ND	ND		30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	ND		30	
Isodrin	ug/L	ND	ND		30	
Isophorone	ug/L	ND	ND		30	
Isosafrole	ug/L	ND	ND		30	
Kepone	ug/L	ND	ND		30	
Methapyrilene	ug/L	ND	ND		30	
Methyl methanesulfonate	ug/L	ND	ND		30	
Methyl parathion	ug/L	ND	ND		30	
N-Nitroso-di-n-butylamine	ug/L	ND	ND		30	
N-Nitroso-di-n-propylamine	ug/L	ND	ND		30	
N-Nitrosodiethylamine	ug/L	ND	ND		30	
N-Nitrosodimethylamine	ug/L	ND	ND		30	
N-Nitrosodiphenylamine	ug/L	ND	ND		30	
N-Nitrosomethylethylamine	ug/L	ND	ND		30	
N-Nitrosopiperidine	ug/L	ND	ND		30	
N-Nitrosopyrrolidine	ug/L	ND	ND		30	
Nitrobenzene	ug/L	ND	ND		30	
O,O,O-Triethylphosphorothioate	ug/L	ND	ND		30	
O-Toluidine	ug/L	ND	ND		30	
P-Dimethylaminoazobenzene	ug/L	ND	ND		30	
p-Phenylenediamine	ug/L	ND	ND		30	
Parathion (Ethyl parathion)	ug/L	ND	ND		30	
Pentachlorobenzene	ug/L	ND	ND		30	
Pentachloronitrobenzene	ug/L	ND	ND		30	
Pentachlorophenol	ug/L	ND	ND		30	
Phenacetin	ug/L	ND	ND		30	
Phenanthrene	ug/L	ND	ND		30	
Phenol	ug/L	ND	ND		30	
Phorate	ug/L	ND	ND		30	
Pronamide	ug/L	ND	ND		30	
Pyrene	ug/L	ND	ND		30	
Safrole	ug/L	ND	ND		30	
Thionazin	ug/L	ND	ND		30	
2,4,6-Tribromophenol (S)	%	70	64	10		
2-Fluorobiphenyl (S)	%	71	65	9		
2-Fluorophenol (S)	%	35	31	12		
Nitrobenzene-d5 (S)	%	77	68	12		
Phenol-d6 (S)	%	22	18	17		

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

SAMPLE DUPLICATE: 1629828

Parameter	Units	92278963016 Result	Dup Result	RPD	Max RPD	Qualifiers
Terphenyl-d14 (S)	%	78	83	7		

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: WET/41955 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Associated Lab Samples: 92279347001

METHOD BLANK: 1628049 | Matrix: Water
Associated Lab Samples: 92279347001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	ug/L	ND	5000	1000	12/14/15 13:29	

LABORATORY CONTROL SAMPLE: 1628050

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	ug/L	50000	48500	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628051 1628052

Parameter	Units	92278963003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	ug/L	150 mg/L	50000	50000	200000	156000	99	12	80-120	25	25	M1,R1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628053 1628054

Parameter	Units	92278963011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Alkalinity, Total as CaCO3	ug/L	596 mg/L	50000	50000	633000	662000	74	131	80-120	4	25	M1

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: WET/41916 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 92279347001

METHOD BLANK: 1626642 | Matrix: Water
Associated Lab Samples: 92279347001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	ug/L	ND	25000	25000	12/11/15 10:39	

LABORATORY CONTROL SAMPLE: 1626643

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	ug/L	250000	246000	98	90-110	

SAMPLE DUPLICATE: 1626644

Parameter	Units	92279178001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	ug/L	330 mg/L	316000	4	5	

SAMPLE DUPLICATE: 1626645

Parameter	Units	92278979001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	ug/L	299 mg/L	320000	7	5	D6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: WET/41914
QC Batch Method: SM 4500-S2D
Analysis Method: SM 4500-S2D
Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 92279347001

METHOD BLANK: 1626491
Matrix: Water
Associated Lab Samples: 92279347001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	ug/L	ND	1000	100	12/11/15 15:00	

LABORATORY CONTROL SAMPLE: 1626492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	ug/L	500	504J	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1626493 1626494

Parameter	Units	92279262001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	ug/L	ND	500	500	457J	457J	91	91	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1626495 1626496

Parameter	Units	92279262011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	ug/L	ND	500	500	470J	470J	94	94	90-110	0	10	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: WET/41938 | Analysis Method: SM 4500-S2D
QC Batch Method: SM 4500-S2D | Analysis Description: 4500S2D Sulfide Water
Associated Lab Samples: 92279347002

METHOD BLANK: 1627829 | Matrix: Water
Associated Lab Samples: 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	ug/L	ND	1000	100	12/14/15 12:30	

LABORATORY CONTROL SAMPLE: 1627830

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	ug/L	500	506J	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1627831 1627832

Parameter	Units	92279347002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	ug/L	ND	500	500	462J	462J	92	92	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1627833 1627834

Parameter	Units	92279409003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide	ug/L	ND	500	500	444J	444J	89	89	90-110	0	10	M1

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: WETA/25748 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 92279347001

METHOD BLANK: 1626618 | Matrix: Water
Associated Lab Samples: 92279347001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	ug/L	ND	250000	1000	12/11/15 14:06	

LABORATORY CONTROL SAMPLE: 1626619

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	ug/L	20000	21000J	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1626620 1626621

Parameter	Units	92278963003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	ug/L	10.1 mg/L	20000	20000	30600J	30800J	103	103	90-110	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1626622 1626623

Parameter	Units	92279395006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	ug/L	9260J	20000	20000	29800J	30100J	102	104	90-110	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: WETA/25851 | Analysis Method: SM 4500-Cl-E
QC Batch Method: SM 4500-Cl-E | Analysis Description: 4500 Chloride
Associated Lab Samples: 92279347001

METHOD BLANK: 1633380 | Matrix: Water
Associated Lab Samples: 92279347001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	ug/L	ND	1000	500	12/18/15 17:52	

LABORATORY CONTROL SAMPLE: 1633381

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	ug/L	20000	19900	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1633382 1633383

Parameter	Units	92280333001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	ug/L	3.0 mg/L	20000	20000	23300	23200	101	101	90-110	0	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1633384 1633385

Parameter	Units	92279763005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	ug/L	63.2 mg/L	100000	100000	132000	131000	68	68	90-110	0	10	M1

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: WETA/25788
QC Batch Method: SM 4500-CN-E
Analysis Method: SM 4500-CN-E
Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92279347001

METHOD BLANK: 1628959
Matrix: Water
Associated Lab Samples: 92279347001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	ug/L	ND	10.0	4.0	12/16/15 10:52	

LABORATORY CONTROL SAMPLE: 1628960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	ug/L	100	90.6	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628961 1628962

Parameter	Units	92279059001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	ug/L	ND	100	100	120	121	115	116	75-125	1	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628963 1628964

Parameter	Units	92278760008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	ug/L	0.0096 mg/L	100	100	112	108	102	98	75-125	3	10	

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QUALITY CONTROL DATA

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

QC Batch: WETA/25789
QC Batch Method: SM 4500-CN-E
Analysis Method: SM 4500-CN-E
Analysis Description: 4500CNE Cyanide, Total
Associated Lab Samples: 92279347002

METHOD BLANK: 1628965
Matrix: Water
Associated Lab Samples: 92279347002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Cyanide	ug/L	ND	10.0	4.0	12/16/15 11:20	

LABORATORY CONTROL SAMPLE: 1628966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	ug/L	100	95.2	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628967 1628968

Parameter	Units	92279219001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	ug/L	ND	100	100	112	116	109	113	75-125	4	10	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1628969 1628970

Parameter	Units	92279489002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	ug/L	ND	100	100	102	109	99	106	75-125	7	10	

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QUALIFIERS

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

C9	Common Laboratory Contaminant.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
L0	Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BURKE CO. JOHN'S R-BG & BLANKS
Pace Project No.: 92279347

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92279347001	**1203-MW21**	EPA 3510	OEXT/39722	EPA 8081	GCSV/23555
92279347002	**1203-FIELD BLANK**	EPA 3510	OEXT/39722	EPA 8081	GCSV/23555
92279347001	**1203-MW21**	EPA 3510	OEXT/39678	EPA 8082	GCSV/23523
92279347002	**1203-FIELD BLANK**	EPA 3510	OEXT/39678	EPA 8082	GCSV/23523
92279347001	**1203-MW21**	EPA 8151	OEXT/25723	EPA 8151	GCSV/16765
92279347002	**1203-FIELD BLANK**	EPA 8151	OEXT/25723	EPA 8151	GCSV/16765
92279347001	**1203-MW21**	EPA 3010A	MPRP/20260	EPA 6010	ICP/18284
92279347002	**1203-FIELD BLANK**	EPA 3010A	MPRP/20260	EPA 6010	ICP/18284
92279347001	**1203-MW21**	EPA 7470	MERP/8788	EPA 7470	MERC/8442
92279347002	**1203-FIELD BLANK**	EPA 7470	MERP/8788	EPA 7470	MERC/8442
92279347001	**1203-MW21**	EPA 3510	OEXT/39746	EPA 8270	MSSV/11670
92279347002	**1203-FIELD BLANK**	EPA 3510	OEXT/39746	EPA 8270	MSSV/11670
92279347001	**1203-MW21**	EPA 8260	MSV/34786		
92279347002	**1203-FIELD BLANK**	EPA 8260	MSV/34820		
92279347003	**1203-TRIP BLANK**	EPA 8260	MSV/34786		
92279347001	**1203-MW21**	SM 2320B	WET/41955		
92279347001	**1203-MW21**	SM 2540C	WET/41916		
92279347001	**1203-MW21**	SM 4500-S2D	WET/41914		
92279347002	**1203-FIELD BLANK**	SM 4500-S2D	WET/41938		
92279347001	**1203-MW21**	EPA 300.0	WETA/25748		
92279347001	**1203-MW21**	SM 4500-Cl-E	WETA/25851		
92279347001	**1203-MW21**	SM 4500-CN-E	WETA/25788		
92279347002	**1203-FIELD BLANK**	SM 4500-CN-E	WETA/25789		

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Pace Analytical	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: November 17, 2015 Page 1 of 2*
	Document Number: **F-CHR-CS-003-rev.16.1**	Issuing Authority: Pace Huntersville Quality Office

Client Name: Joeye

* Page 2 of 2 is for Internal Use Only

Courier: ☐ Fed Ex ☐ UPS ☐ USP ☐ Client ☐ Commercial ☐ Pace Other_____

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other_____

Thermometer Used: IR Gun T1505 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Temp Correction Factor No Correction

Corrected Cooler Temp.: 3.8 °C **Biological Tissue is Frozen:** Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: inlo

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☑Yes ☐No	
Samples checked for dechlorination:	☑Yes ☐No ☐N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☑Yes ☐No ☐N/A	16.
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review:	DR	Date:	12/10/15
SRF Review:	DR	Date:	12/10/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

WO# : 92279347

92279347

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A
Required Client Information:

Company:	Joyce Engineering
Address:	2211 West Meadowview Rd
	Greensboro, NC 27407
Email To:	dgirdner@joyceengineering.com
Phone:	(336) 323-0092 Fax
Requested Due Date/TAT:	10 Day (Default)

Section B
Required Project Information:

Report To:	Van Burbach
Copy To:	Dan Girdner
Purchase Order No.	277.1601.12.02
Client Project ID:	Burke Co. John's R. -BG & BLANKS
Container Order Number:	

Section C
Invoice Information:

Attention:	Lecia Jones
Company Name:	Joyce Engineering
Address:	1604 Ownby Lane, Richmond, VA 23
Pace Quote Reference:	
Pace Project Manager:	Godwin, Kevin
Pace Profile #:	

Regulatory Agency
State / Location
North Carolina

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test (Y/N): NC Appendix II Metals	NC C&D Metals Fe, Mn, Hg	NC App. II VOC's +THF	NC App II 8270	NC Appll 8081	NC Appll 8082	NC Appll 8151	Sulfide	Cyanide	Alkalinity, Chloride, TDS	Sulfate	Residual Chlorine (Y/N)	92279347
1	1203-MW21 17	WT	G			12-8-15	11:20		17	X		X	X	X			X	X	X	X	X	X	X	X	X	X	X	X		001
2	1203-Trip Blank	WT	G										X							X										003
3	1203-Field Blank 17	WT	G			12-9-15	15:30		17	X		X	X	X			X	X	X	X	X	X	X	X	X					002
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
NC Appendix II and Additional C&DLF List Event	[signature] Joyce	12-10-15	1045	[signature]	12-10-15	1045				
Please provide sufficient Lab D.I. water for field blanks	[signature]	12-10-15	1420	[signature]	12-10-15	1420	38	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Gretha Eller Hailey Seaton

SIGNATURE of SAMPLER: [signature] Haley Seaton

DATE Signed: 12-10-15

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

February 12, 2016

Mr. Van Burbach
Joyce Engineering-Greensboro
2211 West Meadowview Rd
Boone Bldg, Suite 101
Greensboro, NC 27407

RE: Project: Burke-John's R. Resample
Pace Project No.: 92285610

Dear Mr. Burbach:
Enclosed are the analytical results for sample(s) received by the laboratory on February 05, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kevin Godwin
kevin.godwin@pacelabs.com
Project Manager

Enclosures

cc: Alex Everhart, Joyce Engineering-NC

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CERTIFICATIONS

Project:	Burke-John's R. Resample
Pace Project No.:	92285610

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

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SAMPLE SUMMARY

Project: Burke-John's R. Resample
Pace Project No.: 92285610

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92285610001	**1203-MW11**	Water	02/04/16 12:05	02/05/16 13:35
92285610002	**1203-MW12**	Water	02/04/16 13:02	02/05/16 13:35
92285610003	**1203-FIELD BLANK**	Water	02/04/16 13:55	02/05/16 13:35

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SAMPLE ANALYTE COUNT

Project: Burke-John's R. Resample
Pace Project No.: 92285610

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92285610001	**1203-MW11**	EPA 8081	SWB	3	PASI-C
92285610002	**1203-MW12**	EPA 6010	CDF	2	PASI-A
92285610003	**1203-FIELD BLANK**	EPA 8081	SWB	3	PASI-C
		EPA 6010	CDF	17	PASI-A

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SUMMARY OF DETECTION

Project: Burke-John's R. Resample
Pace Project No.: 92285610

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92285610001	**1203-MW11**					
EPA 8081	beta-BHC	0.33	ug/L	0.050	02/09/16 00:47	

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ANALYTICAL RESULTS

Project: Burke-John's R. Resample
Pace Project No.: 92285610

Sample: 1203-MW11 **Lab ID: 92285610001** Collected: 02/04/16 12:05 Received: 02/05/16 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
beta-BHC	**0.33**	ug/L	0.050	0.050	1	02/08/16 11:10	02/09/16 00:47	319-85-7	
Surrogates									
Tetrachloro-m-xylene (S)	80	%	20-130		1	02/08/16 11:10	02/09/16 00:47	877-09-8	
Decachlorobiphenyl (S)	62	%	20-130		1	02/08/16 11:10	02/09/16 00:47	2051-24-3	

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ANALYTICAL RESULTS

Project: Burke-John's R. Resample
Pace Project No.: 92285610

Sample: 1203-MW12 **Lab ID: 92285610002** Collected: 02/04/16 13:02 Received: 02/05/16 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	02/09/16 16:00	02/10/16 22:15	7440-36-0	
Chromium	ND	ug/L	10.0	2.5	1	02/09/16 16:00	02/10/16 22:15	7440-47-3	

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ANALYTICAL RESULTS

Project: Burke-John's R. Resample
Pace Project No.: 92285610

Sample: 1203-FIELD BLANK **Lab ID: 92285610003** Collected: 02/04/16 13:55 Received: 02/05/16 13:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510								
beta-BHC	ND	ug/L	0.050	0.050	1	02/08/16 11:10	02/09/16 01:04	319-85-7	
Surrogates									
Tetrachloro-m-xylene (S)	94	%	20-130		1	02/08/16 11:10	02/09/16 01:04	877-09-8	
Decachlorobiphenyl (S)	80	%	20-130		1	02/08/16 11:10	02/09/16 01:04	2051-24-3	
6010 ICP Groundwater	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Antimony	ND	ug/L	6.0	3.8	1	02/09/16 16:00	02/10/16 22:18	7440-36-0	
Arsenic	ND	ug/L	10.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7440-38-2	
Barium	ND	ug/L	100	2.5	1	02/09/16 16:00	02/10/16 22:18	7440-39-3	
Beryllium	ND	ug/L	1.0	0.50	1	02/09/16 16:00	02/10/16 22:18	7440-41-7	
Cadmium	ND	ug/L	1.0	0.50	1	02/09/16 16:00	02/10/16 22:18	7440-43-9	
Chromium	ND	ug/L	10.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7440-47-3	
Cobalt	ND	ug/L	10.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7440-48-4	
Copper	ND	ug/L	10.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7440-50-8	
Iron	ND	ug/L	300	25.0	1	02/09/16 16:00	02/10/16 22:18	7439-89-6	
Lead	ND	ug/L	10.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7439-92-1	
Manganese	ND	ug/L	50.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7439-96-5	
Nickel	ND	ug/L	50.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7440-02-0	
Selenium	ND	ug/L	10.0	5.0	1	02/09/16 16:00	02/10/16 22:18	7782-49-2	
Silver	ND	ug/L	10.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7440-22-4	
Thallium	ND	ug/L	5.5	5.0	1	02/09/16 16:00	02/11/16 17:27	7440-28-0	
Vanadium	ND	ug/L	25.0	2.5	1	02/09/16 16:00	02/10/16 22:18	7440-62-2	
Zinc	ND	ug/L	10.0	5.0	1	02/09/16 16:00	02/10/16 22:18	7440-66-6	

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QUALITY CONTROL DATA

Project: Burke-John's R. Resample
Pace Project No.: 92285610

QC Batch: MPRP/20650
Analysis Method: EPA 6010
QC Batch Method: EPA 3010A
Analysis Description: 6010 MET NC Groundwater
Associated Lab Samples: 92285610002, 92285610003

METHOD BLANK: 1662251
Matrix: Water
Associated Lab Samples: 92285610002, 92285610003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	ND	6.0	3.8	02/10/16 21:38	
Arsenic	ug/L	ND	10.0	2.5	02/10/16 21:38	
Barium	ug/L	ND	100	2.5	02/10/16 21:38	
Beryllium	ug/L	ND	1.0	0.50	02/10/16 21:38	
Cadmium	ug/L	ND	1.0	0.50	02/10/16 21:38	
Chromium	ug/L	ND	10.0	2.5	02/10/16 21:38	
Cobalt	ug/L	ND	10.0	2.5	02/10/16 21:38	
Copper	ug/L	ND	10.0	2.5	02/10/16 21:38	
Iron	ug/L	ND	300	25.0	02/10/16 21:38	
Lead	ug/L	ND	10.0	2.5	02/11/16 17:09	
Manganese	ug/L	ND	50.0	2.5	02/10/16 21:38	
Nickel	ug/L	ND	50.0	2.5	02/10/16 21:38	
Selenium	ug/L	ND	10.0	5.0	02/10/16 21:38	
Silver	ug/L	ND	10.0	2.5	02/10/16 21:38	
Thallium	ug/L	ND	5.5	5.0	02/10/16 21:38	
Vanadium	ug/L	ND	25.0	2.5	02/10/16 21:38	
Zinc	ug/L	ND	10.0	5.0	02/10/16 21:38	

LABORATORY CONTROL SAMPLE: 1662252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	514	103	80-120	
Arsenic	ug/L	500	496	99	80-120	
Barium	ug/L	500	497	99	80-120	
Beryllium	ug/L	500	488	98	80-120	
Cadmium	ug/L	500	504	101	80-120	
Chromium	ug/L	500	494	99	80-120	
Cobalt	ug/L	500	506	101	80-120	
Copper	ug/L	500	508	102	80-120	
Iron	ug/L	5000	4900	98	80-120	
Lead	ug/L	500	500	100	80-120	
Manganese	ug/L	500	492	98	80-120	
Nickel	ug/L	500	502	100	80-120	
Selenium	ug/L	500	501	100	80-120	
Silver	ug/L	250	248	99	80-120	
Thallium	ug/L	500	508	102	80-120	
Vanadium	ug/L	500	501	100	80-120	
Zinc	ug/L	500	498	100	80-120	

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QUALITY CONTROL DATA

Project: Burke-John's R. Resample
Pace Project No.: 92285610

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1662253 1662254

Parameter	Units	92285299001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	ND	500	500	497	494	99	98	75-125	1	25	
Arsenic	ug/L	7.3J	500	500	466	464	92	91	75-125	1	25	
Barium	ug/L	38.0	500	500	505	508	93	94	75-125	1	25	
Beryllium	ug/L	ND	500	500	466	469	93	94	75-125	1	25	
Cadmium	ug/L	ND	500	500	479	476	96	95	75-125	1	25	
Chromium	ug/L	ND	500	500	450	446	90	89	75-125	1	25	
Cobalt	ug/L	ND	500	500	469	467	94	93	75-125	0	25	
Copper	ug/L	ND	500	500	478	474	96	95	75-125	1	25	
Iron	ug/L	70000	5000	5000	72800	73600	56	72	75-125	1	25	M1
Lead	ug/L	8.1	500	500	467	462	92	91	75-125	1	25	
Manganese	ug/L	207	500	500	664	663	91	91	75-125	0	25	
Nickel	ug/L	ND	500	500	462	459	92	92	75-125	1	25	
Selenium	ug/L	ND	500	500	482	477	96	95	75-125	1	25	
Silver	ug/L	ND	250	250	228	225	91	90	75-125	1	25	
Thallium	ug/L	10.9	500	500	512	521	100	102	75-125	2	25	
Vanadium	ug/L	ND	500	500	481	480	96	95	75-125	0	25	
Zinc	ug/L	6.8J	500	500	473	472	93	93	75-125	0	25	

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QUALITY CONTROL DATA

Project: Burke-John's R. Resample
Pace Project No.: 92285610

QC Batch: OEXT/40641 | Analysis Method: EPA 8081
QC Batch Method: EPA 3510 | Analysis Description: 8081A GCS Pesticides
Associated Lab Samples: 92285610001, 92285610003

METHOD BLANK: 1661659 | Matrix: Water
Associated Lab Samples: 92285610001, 92285610003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
beta-BHC	ug/L	ND	0.050	0.050	02/09/16 01:22	
Decachlorobiphenyl (S)	%	95	20-130		02/09/16 01:22	
Tetrachloro-m-xylene (S)	%	84	20-130		02/09/16 01:22	

LABORATORY CONTROL SAMPLE: 1661660

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
beta-BHC	ug/L	.25	0.26	106	20-150	
Decachlorobiphenyl (S)	%			96	20-130	
Tetrachloro-m-xylene (S)	%			98	20-130	

MATRIX SPIKE SAMPLE: 1661661

Parameter	Units	92285559001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
beta-BHC	ug/L	ND	.25	0.21	86	20-150	
Decachlorobiphenyl (S)	%				92	20-130	
Tetrachloro-m-xylene (S)	%				75	20-130	

SAMPLE DUPLICATE: 1661662

Parameter	Units	92285559002 Result	Dup Result	RPD	Max RPD	Qualifiers
beta-BHC	ug/L	ND	ND		30	
Decachlorobiphenyl (S)	%	155	69	77		
Tetrachloro-m-xylene (S)	%	132	64	70		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Burke-John's R. Resample
Pace Project No.: 92285610

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Burke-John's R. Resample
Pace Project No.: 92285610

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92285610001	**1203-MW11**	EPA 3510	OEXT/40641	EPA 8081	GCSV/24049
92285610003	**1203-FIELD BLANK**	EPA 3510	OEXT/40641	EPA 8081	GCSV/24049
92285610002	**1203-MW12**	EPA 3010A	MPRP/20650	EPA 6010	ICP/18621
92285610003	**1203-FIELD BLANK**	EPA 3010A	MPRP/20650	EPA 6010	ICP/18621

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Pace Analytical®	Document Name: **Sample Condition Upon Receipt(SCUR)**	Document Revised: 26OCT2015 Page 1 of 2
	Document No.: **F-CHR-CS-003-rev.17**	Issuing Authority: Pace Huntersville Quality Office

Sample Condition Upon Receipt

Client Name: Joyce Eng

Project #: WO#: 92285610

92285610

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:_____

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other:_____

Thermometer Used: ☑ T1505

Type of Ice: ☑ Wet ☐ Blue ☐ None ☑ Samples on ice, cooling process has begun

Cooler Temp Corrected (°C): 1.2

Biological Tissue Frozen? ☐ Yes ☐ No ☐ N/A

Temp should be above freezing to 6°C **Correction Factor:** 0.0 °C **Date and Initials of Person Examining Contents:** AP 2-5-16

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked?	☑ Yes	☐ No	☐ N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☑ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC,LLHg	☐ Yes	☐ No	☑ N/A	
Samples checked for dechlorization	☑ Yes	☐ No	☐ N/A	14.
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	16.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):_____				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager SCURF Review: _____ **Date:** 2-5-16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Company:	Joyce Engineering
Address:	2211 West Meadowview Rd
	Greensboro, NC 27407
Email To:	dgirdner@joyceengineering.com
Phone:	(336) 323-0092 Fax:
Requested Due Date/TAT:	10 Day (Default)

Section B
Required Project Information:

Report To:	Van Burbach
Copy To:	Dan Girdner
Purchase Order No.	277.1601.12.
Client Project ID:	Burke-John's R. Resample
Container Order Number:	

Section C
Invoice Information:

Attention:	Lecia Jones
Company Name:	Joyce Engineering
Address:	1604 Ownby Lane, Richmond, VA 23220
Pace Quote Reference:	
Pace Project Manager:	Godwin, Kevin
Pace Profile #:	

Regulatory Agency

State / Location
North Carolina

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	NC App I Metals: Sb, Cr only	NC App. I VOCs + THF	NC App I Total METALS	NC AppII VOCs +THF	NC App II 8270 Semi-Voa	NC APP II 8081: beta-BHC o	NC APP II 8082 PCBs.	NC APP II 8151 Herb.	NC App. II - Cyanide	NC App. II - Sulfide	NC Add. C&DLF - Sulfate	NC Add.- Alk.; Chloride; TDS	NC Add. Metals Fe, Mn,	Residual Chlorine (Y/N)	92285610
1	1203-MW-11	WT	G			2-4-16	1205		1	X														X									001
2	1203-MW-12	WT	G			↓	1302		1			X							X															002
3	1203-FIELD BLANK	WT	G			↓	1355		2	X		X									X			X							X			003
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		
11																																		
12																																		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Report only as indicated by Item above: Antimony, Chromium, beta-BHC	Gretta Eller / JOYCE	2/5/16	1335	[illegible]	2/5/16	1335				
Except Field Blank report all NC App I plus Fe, Mn	[illegible]	2/5/16	1600	[illegible]	2-5-16	1600	1.2	✓	✓	✓

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Gretta Eller

SIGNATURE of SAMPLER: [signature] DATE Signed: 2-4-16

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Appendix C

Statistical Analyses Worksheets

JOYCE Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.03
Date: 01-Dec-15

Analyte: **Cobalt**

Sample No.	Sample Date	Location	Concentration		RL	Sorted Concentration	
1	Sep-94	MW-9	52			2.6	120
2	Jan-95	MW-9	35			4.1	52
3	Feb-95	MW-9	16			5.4	37
4	Mar-95	MW-9	28			7.3	37
5	Aug-95	MW-9	ND			7.8	35
6	Jan-96	MW-9	17			9.2	33
7	Feb-96	MW-9	37			9.8	29
8	May-96	MW-9	11			10	28
9	Oct-96	MW-9	16			10	28
10	May-97	MW-9	33			10	26
11	Nov-97	MW-9	29			11	26
12	May-98	MW-9	28			12	22.1
13	Nov-98	MW-9	10			14.9	20
14	May-99	MW-9	20			16	20
15	Oct-99	MW-9	120			16	19.1
16	May-00	MW-9	ND			17	19
17	Nov-00	MW-9	ND			19	17
18	May-01	MW-9	ND			19.1	16
19	Nov-01	MW-9	ND			20	16
20	Nov-02	MW-9	ND			20	14.9
21	May-03	MW-9	19			22.1	12
22	Nov-03	MW-9	26			26	11
23	May-04	MW-9	ND			26	10
24	Nov-04	MW-9	10			28	10
25	May-05	MW-9	12			28	10
26	May-99	MW-17	26			29	9.8
27	Oct-99	MW-17	37			33	9.2
28	May-00	MW-17	ND			35	7.8
29	Nov-00	MW-17	20			37	7.3
30	May-01	MW-17	ND			37	5.4
31	Nov-01	MW-17	ND			52	4.1
32	Nov-02	MW-17	ND			120	2.6
33	May-03	MW-17	ND				
34	Nov-03	MW-17	10	J			
35	May-04	MW-17	ND				
36	Nov-04	MW-17	ND				
37	May-05	MW-17	ND				
38	Nov-05	MW-17	ND				
39	25-May-06	MW-17	ND				
40	02-Nov-06	MW-17	ND				
41	31-May-07	MW-17	4.1	J			
42	29-Nov-07	MW-17	7.3	J			
43	29-May-08	MW-17	5.4	J			
44	06-Nov-08	MW-17	9.2	J			
45	18-Nov-09	MW-17	14.9				
46	16-Jun-10	MW-17	19.1				
47	01-Dec-10	MW-17	9.8	J	10.00		
48	01-Dec-10	MW-20	22.1		10.00		
49	13-Jan-11	MW-20	ND		10.00		
50	01-Jun-11	MW-17	7.8	J	10.00		
51	01-Jun-11	MW-20	2.6	J	10.00		
52	20-Dec-11	MW-20	ND		10.00		
53	30-May-12	MW-20	ND		10.00		
54	05-Dec-12	MW-20	ND		10.00		
55	12-Jun-13	MW-20	ND		10.00		
56	28-Oct-13	MW-20	ND		10.00		
57	06-May-14	MW-20	ND		10.00		
58	23-Oct-14	MW-21	ND		10.00		
59	21-May-15	MW-21	ND		10.00		
60	08-Dec-15	MW-21	ND		10.0		

Number of Data: 60
Number of Truncated Data: 28
Percentage of Truncated Data: 47%

Upper Tolerance Limit: 96.6 µg/L

Notes: All concentrations in micrograms per liter (µg/L).
J = Estimated Data (used in statistical analyses)
ND = Not detected (truncated).

Joyce Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.03
Date: 01-Dec-15

Shapiro Wilk Test Statistic (W) for normality of total **Cobalt**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	2.6	120	117.40	0.4188	49.1671
2	4.1	52	47.90	0.2898	13.8814
3	5.4	37	31.60	0.2463	7.7831
4	7.3	37	29.70	0.2141	6.3588
5	7.8	35	27.20	0.1878	5.1082
6	9.2	33	23.80	0.1651	3.9294
7	9.8	29	19.20	0.1449	2.7821
8	10.0	28	18.00	0.1265	2.2770
9	10.0	28	18.00	0.1093	1.9674
10	10.0	26	16.00	0.0931	1.4896
11	11.0	26	15.00	0.0777	1.1655
12	12.0	22	10.10	0.0629	0.6353
13	14.9	20	5.10	0.0485	0.2474
14	16.0	20	4.00	0.0344	0.1376
15	16.0	19	3.10	0.0206	0.06
16	17.0	19	2.00	0.0068	0.01
17	19.0	17	-2.00		
18	19.1	16	-3.10		
19	20.0	16	-4.00		
20	20.0	15	-5.10		
21	22.1	12	-10.10		
22	26.0	11	-15.00		
23	26.0	10	-16.00		
24	28.0	10	-18.00		
25	28.0	10	-18.00		
26	29.0	10	-19.20		
27	33.0	9	-23.80		
28	35.0	8	-27.20		
29	37.0	7	-29.70		
30	37.0	5	-31.60		
31	52.0	4	-47.90		
32	120.0	3	-117.40		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:
B = summation of (X(n-i+1)-X(i))A(n-i+1) = 97.01
SD = standard deviation of the data group = 21.19
n = number of samples = 32

W = 0.676

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.930
and the calculated W = 0.676

Therefore the data is Non-Normal.

Joyce Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.03
Date: 01-Dec-15

Shapiro Wilk Test Statistic (W) for log normality of **Cobalt**

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	0.96	4.79	3.8320	0.4188	1.6048
2	1.41	3.95	2.5403	0.2898	0.7362
3	1.69	3.61	1.9245	0.2463	0.4740
4	1.99	3.61	1.6230	0.2141	0.3475
5	2.05	3.56	1.5012	0.1878	0.2819
6	2.22	3.50	1.2773	0.1651	0.2109
7	2.28	3.37	1.0849	0.1449	0.1572
8	2.30	3.33	1.0296	0.1265	0.1302
9	2.30	3.33	1.0296	0.1093	0.1125
10	2.30	3.26	0.9555	0.0931	0.0890
11	2.40	3.26	0.8602	0.0777	0.0668
12	2.48	3.10	0.6107	0.0629	0.0384
13	2.70	3.00	0.2944	0.0485	0.0143
14	2.77	3.00	0.2231	0.0344	0.0077
15	2.77	2.95	0.1771	0.0206	0.0036
16	2.83	2.94	0.1112	0.0068	0.0008
17	2.94	2.83	-0.1112		
18	2.95	2.77	-0.1771		
19	3.00	2.77	-0.2231		
20	3.00	2.70	-0.2944		
21	3.10	2.48	-0.6107		
22	3.26	2.40	-0.8602		
23	3.26	2.30	-0.9555		
24	3.33	2.30	-1.0296		
25	3.33	2.30	-1.0296		
26	3.37	2.28	-1.0849		
27	3.50	2.22	-1.2773		
28	3.56	2.05	-1.5012		
29	3.61	1.99	-1.6230		
30	3.61	1.69	-1.9245		
31	3.95	1.41	-2.5403		
32	4.79	0.96	-3.8320		

The test statistic W can be found using:

W = SQR((B/SD x SQRT(n-1))

where:

B = summation of (X(n-i+1)-X(i))A(n-i+1) = 4.2759
SD = standard deviation of the data group = 0.7739
n = number of samples = 32

W = 0.9848

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.930
and the calculated W = 0.985

Therefore the data set is Log-Normal.

Joyce Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.03
Date: 01-Dec-15

Probability Plots to determine the distribution of **Cobalt**

Complete the following table where

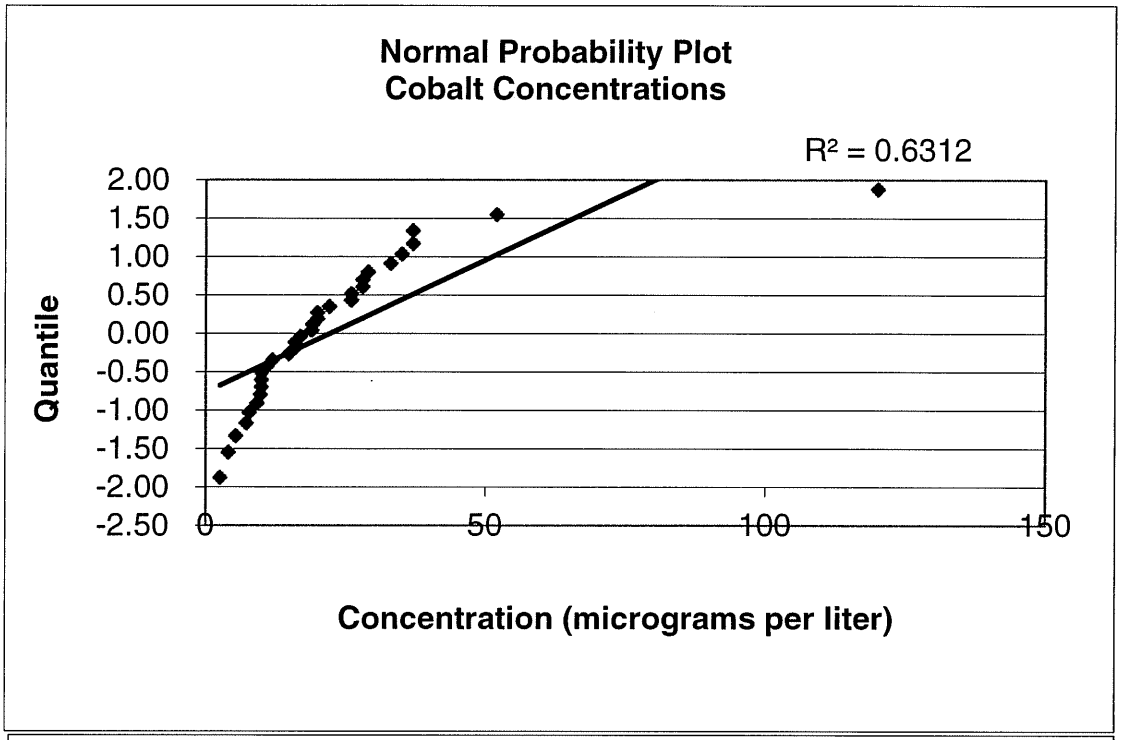
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 32

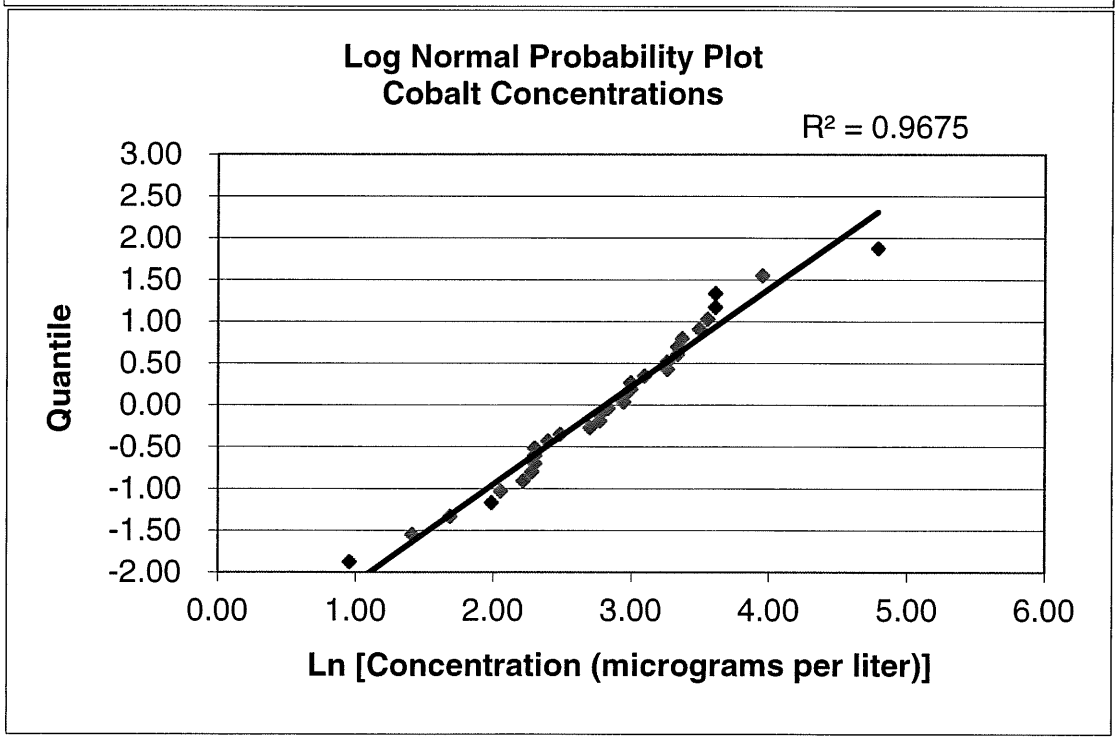
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
2.6	0.96	1	1	0.030	-1.88
4.1	1.41	2	2	0.061	-1.55
5.4	1.69	3	3	0.091	-1.34
7.3	1.99	4	4	0.121	-1.17
7.8	2.05	5	5	0.152	-1.03
9.2	2.22	6	6	0.182	-0.91
9.8	2.28	7	7	0.212	-0.80
10	2.30	8	8	0.242	-0.70
10	2.30	9	9	0.273	-0.60
10	2.30	10	10	0.303	-0.52
11	2.40	11	11	0.333	-0.43
12	2.48	12	12	0.364	-0.35
14.9	2.70	13	13	0.394	-0.27
16	2.77	14	14	0.424	-0.19
16	2.77	15	15	0.455	-0.11
17	2.83	16	16	0.485	-0.04
19	2.94	17	17	0.515	0.04
19.1	2.95	18	18	0.545	0.11
20	3.00	19	19	0.576	0.19
20	3.00	20	20	0.606	0.27
22.1	3.10	21	21	0.636	0.35
26	3.26	22	22	0.667	0.43
26	3.26	23	23	0.697	0.52
28	3.33	24	24	0.727	0.60
28	3.33	25	25	0.758	0.70
29	3.37	26	26	0.788	0.80
33	3.50	27	27	0.818	0.91
35	3.56	28	28	0.848	1.03
37	3.61	29	29	0.879	1.17
37	3.61	30	30	0.909	1.34
52	3.95	31	31	0.939	1.55
120	4.79	32	32	0.970	1.88

Plot analysis indicates that the data more closely follow a normal distribution in the log-transformed format.

Joyce Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.03
Date: 01-Dec-15

Probability Plots to determine the distribution of Cobalt





Joyce Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.03
Date: 01-Dec-15

Determination of reported background value as an outlier

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	ln(Concentration)	
1	Sep-94	MW-9	3.951	
2	Jan-95	MW-9	3.555	
3	Feb-95	MW-9	2.773	
4	Mar-95	MW-9	3.332	
5	Jan-96	MW-9	2.833	
6	Feb-96	MW-9	3.611	
7	May-96	MW-9	2.398	
8	Oct-96	MW-9	2.773	
9	May-97	MW-9	3.497	
10	Nov-97	MW-9	3.367	
11	May-98	MW-9	3.332	
12	Nov-98	MW-9	2.303	
13	May-99	MW-9	2.996	
14	Oct-99	MW-9	4.787	
15	May-03	MW-9	2.944	
16	Nov-03	MW-9	3.258	J
17	Nov-04	MW-9	2.303	J
18	May-05	MW-9	2.485	J
19	May-99	MW-17	3.258	J
20	Oct-99	MW-17	3.611	
21	Nov-00	MW-17	2.996	J
22	Nov-03	MW-17	2.303	
23	May-07	MW-17	1.411	
24	Nov-07	MW-17	1.988	
25	May-08	MW-17	1.686	
26	Nov-08	MW-17	2.219	
27	Nov-09	MW-17	2.701	
28	Jun-10	MW-17	2.950	
29	Dec-10	MW-17	2.282	
30	Dec-10	MW-20	3.096	
31	Jun-11	MW-17	2.054	
32	Jun-11	MW-20	0.956	
		mean =	2.813	
		STD =	0.774	

Note: All concentrations are micrograms per liter (µg/L)

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where:
Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For
Xn = 4.787
mean = 2.813
STD = 0.774

Tn = 2.552

From Table 8 included in the Staistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 32
Tc = 2.773

Since Tc>Tn, the sample result is not considered to be an outlier

Joyce Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.03
Date: 01-Dec-15

Aitchison's Adjustment for **Cobalt**

Background Values (positive detects only)

Sample No.	Sample Date	Location	Concentration (µg/l)	ln(conc)
1	Sep-94	MW-9	52	3.951
2	Jan-95	MW-9	35	3.555
3	Feb-95	MW-9	16	2.773
4	Mar-95	MW-9	28	3.332
5	Aug-95	MW-9	ND	-
6	Jan-96	MW-9	17	2.833
7	Feb-96	MW-9	37	3.611
8	May-96	MW-9	11	2.398
9	Oct-96	MW-9	16	2.773
10	May-97	MW-9	33	3.497
11	Nov-97	MW-9	29	3.367
12	May-98	MW-9	28	3.332
13	Nov-98	MW-9	10	2.303
14	May-99	MW-9	20	2.996
15	Oct-99	MW-9	120	4.787
16	May-00	MW-9	ND	-
17	Nov-00	MW-9	ND	-
18	May-01	MW-9	ND	-
19	Nov-01	MW-9	ND	-
20	Nov-02	MW-9	ND	-
21	May-03	MW-9	19	2.944
22	Nov-03	MW-9	26	3.258
23	May-04	MW-9	ND	-
24	Nov-04	MW-9	10	2.303
25	May-05	MW-9	12	2.485
26	May-99	MW-17	26	3.258
27	Oct-99	MW-17	37	3.611
28	May-00	MW-17	ND	-
29	Nov-00	MW-17	20	2.996
30	May-01	MW-17	ND	-
31	Nov-01	MW-17	ND	-
32	Nov-02	MW-17	ND	-
33	May-03	MW-17	ND	-
34	Nov-03	MW-17	10	2.303
35	May-04	MW-17	ND	-
36	Nov-04	MW-17	ND	-
37	May-05	MW-17	ND	-
38	Nov-05	MW-17	ND	-
39	May-06	MW-17	ND	-
40	Nov-06	MW-17	ND	-
41	May-07	MW-17	4.1	1.411
42	Nov-07	MW-17	7.3	1.988
43	May-08	MW-17	5.4	1.686
44	Nov-08	MW-17	9.2	2.219
45	Nov-09	MW-17	14.9	2.701
46	Jun-10	MW-17	19.1	2.950
47	Dec-10	MW-17	9.8	2.282
48	Dec-10	MW-20	22.1	3.096
49	Jan-11	MW-20	ND	-
50	Jun-11	MW-17	7.8	2.054
51	Jun-11	MW-20	2.6	0.956
52	Dec-11	MW-20	ND	-
53	May-12	MW-20	ND	-
54	Dec-12	MW-20	ND	-
55	Jun-13	MW-20	ND	-
56	Oct-13	MW-20	ND	-
57	May-14	MW-20	ND	-
58	Oct-14	MW-21	ND	-
59	May-15	MW-21	ND	-
60	Dec-15	MW-21	ND	-

Mean of detected values = 2.81
Standard Deviation of detected values = 0.77

The adjusted mean can be found using

$$M(a) = (1-d/n) \times M$$

where:	d =	number non- detected values	=	28
	n =	total number samples	=	60
	M =	mean detected values	=	2.81
		M(a)	**=**	**1.50**

The adjusted standard deviation squared may be found using

$$STD(a) = [(n-(d+1))/(n-1)]\ S + d/n((n-d)/(n-1))MM$$

where:	n =	total number samples	=	60
	d =	number non-detected values	=	28
	S =	std deviation of detected values squared	=	0.60
	MM =	mean of detected values squared	=	7.91
		STD(a)	=	2.32

and the adjusted standard deviation is then

S(a) = SQRT(STD(a)) = 1.52

Joyce Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.03
Date: 01-Dec-15

Parametric Tolerance Interval for Aitchison's adjusted data

Analyte: **Cobalt**

Background Data

Sample No.	Sample Date	Location	Concentration	ln(Concentration)
1	Sep-94	MW-9	52	3.951
2	Jan-95	MW-9	35	3.555
3	Feb-95	MW-9	16	2.773
4	Mar-95	MW-9	28	3.332
5	Aug-95	MW-9	ND	-
6	Jan-96	MW-9	17	2.833
7	Feb-96	MW-9	37	3.611
8	May-96	MW-9	11	2.398
9	Oct-96	MW-9	16	2.773
10	May-97	MW-9	33	3.497
11	Nov-97	MW-9	29	3.367
12	May-98	MW-9	28	3.332
13	Nov-98	MW-9	10	2.303
14	May-99	MW-9	20	2.996
15	Oct-99	MW-9	120	4.787
16	May-00	MW-9	ND	-
17	Nov-00	MW-9	ND	-
18	May-01	MW-9	ND	-
19	Nov-01	MW-9	ND	-
20	Nov-02	MW-9	ND	-
21	May-03	MW-9	19	2.944
22	Nov-03	MW-9	26	3.258
23	May-04	MW-9	ND	-
24	Nov-04	MW-9	10	2.303
25	May-05	MW-9	12	2.485
26	May-99	MW-17	26	3.258
27	Oct-99	MW-17	37	3.611
28	May-00	MW-17	ND	-
29	Nov-00	MW-17	20	2.996
30	May-01	MW-17	ND	-
31	Nov-01	MW-17	ND	-
32	Nov-02	MW-17	ND	-
33	May-03	MW-17	ND	-
34	Nov-03	MW-17	10	2.303
35	May-04	MW-17	ND	-
36	Nov-04	MW-17	ND	-
37	May-05	MW-17	ND	-
38	Nov-05	MW-17	ND	-
39	May-06	MW-17	ND	-
40	Nov-06	MW-17	ND	-
41	May-07	MW-17	4	1.411
42	Nov-07	MW-17	7	1.988
43	May-08	MW-17	5	1.686
44	Nov-08	MW-17	9	2.219
45	Nov-09	MW-17	15	2.701
46	Jun-10	MW-17	19	2.950
47	Dec-10	MW-17	10	2.282
48	Dec-10	MW-20	22	3.096
49	Jan-11	MW-20	ND	-
50	Jun-11	MW-17	8	2.054
51	Jun-11	MW-20	3	0.956
52	Dec-11	MW-20	ND	-
53	May-12	MW-20	ND	-
54	Dec-12	MW-20	ND	-
55	Jun-13	MW-20	ND	-
56	Oct-13	MW-20	ND	-
57	May-14	MW-20	ND	-
58	Oct-14	MW-21	ND	-
59	May-15	MW-21	ND	-
60	Dec-15	MW-21	ND	-

Note: All sample concentrations are micrograms per liter (µg/L)

The background mean and standard deviation were modified using Aitchison's Adjustment.
The adjusted mean and standard deviation are as follows:

The ln(adjusted mean) and ln(standard deviation) are

ln(adjusted mean) = 1.50
ln(adjusted standard deviation) = 1.52

Using the background data, the upper Tolerance Limit can be determined using

Upper Tolerance Limit = (Mean Concentration) + K x (Standard Deviation Samples)

where: K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwater Monitoring, Gibbons, 1994
n = number of background samples

For: K = 2.017
n = 60

UTL = 96.6 µg/L

JOYCE Project: **Burke County - John's River Landfill**
Project No: 277.1601.12
Task No: 03
Date: December 2015

Analyte: **Cobalt (Intrawell MW-10)**

Sample No.	Sample Date	Location	Concentration	RL	Sorted Concentration	
1	18-Jan-95	MW-10	35.0	10	26.0	340
2	6-Feb-95	MW-10	43.0	10	29.0	280
3	Mar-95	MW-10	57.0	10	35.0	170
4	Aug-95	MW-10	58.0	10	37.0	140
5	Jan-96	MW-10	37.0	10	40.0	140
6	Feb-96	MW-10	41.0	10	41.0	139
7	May-96	MW-10	26.0	10	43.0	131
8	Oct-96	MW-10	52.0	10	48.0	130
9	May-97	MW-10	120	6	52.0	126
10	Nov-97	MW-10	99.0	5	53.0	120
11	May-98	MW-10	120	1	54.0	120
12	Nov-98	MW-10	140	1	57.0	99.0
13	11-May-99	MW-10	48.0	5	58.0	96
14	18-Oct-99	MW-10	85.0	10	60.0	90.0
15	3-May-00	MW-10	54.0	10	66.0	87.2
16	7-Nov-00	MW-10	40.0	10	67.2	85.0
17	31-May-01	MW-10	53.0	10	68.0	80.3
18	7-Nov-01	MW-10	29.0	10.0	71.9	76.4
19	22-May-02	MW-10	68.0	10	71.9	72.7
20	14-Nov-02	MW-10	90.0	10	72.7	71.9
21	14-May-03	MW-10	280	10	76.4	71.9
22	20-Nov-03	MW-10	340	10	80.3	68.0
23	6-May-04	MW-10	140	10	85.0	67.2
24	10-Nov-04	MW-10	170	10	87.2	66.0
25	5-May-05	MW-10	130	10	90.0	60.0
26	3-Nov-05	MW-10	66.0	10	96	58.0
27	25-May-06	MW-10	80.3	10	99.0	57.0
28	2-Nov-06	MW-10	131	10	120	54.0
29	30-May-07	MW-10	87.2	10	120	53.0
30	29-Nov-07	MW-10	67.2	10	126	52.0
31	29-May-08	MW-10	71.9	10	130	48.0
32	6-Nov-08	MW-10	71.9	10.0	131	43.0
33	3-Jun-09	MW-10	139	10.0	139	41.0
34	27-Aug-09	MW-10	60.0	10.0	140	40.0
35	18-Nov-09	MW-10	126	10.0	140	37.0
36	16-Jun-10	MW-10	96	10.0	170	35.0
37	1-Dec-10	MW-10	72.7	10.0	280	29.0
38	1-Jun-11	MW-10	76.4	10.0	340	26.0

Number of Data: 38
Number of Truncated Data: 0
Percentage of Truncated Data: 0%

Upper Tolerance Limit: 266 µg/L

Notes: All concentrations in micrograms per liter (µg/L).

JEI Project: **Burke County - John's River Landfill**
Project No: 277.1601.12
Date: December 2015

Shapiro Wilk Test Statistic (W) for normality of total Cobalt (Intrawell MW-10)

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	26.0	340	314.00	0.4015	126.0710
2	29.0	280	251.00	0.2774	69.6274
3	35.0	170	135.00	0.2391	32.2785
4	37.0	140	103.00	0.2110	21.7330
5	40.0	140	100.00	0.1881	18.8100
6	41.0	139	98.00	0.1686	16.5228
7	43.0	131	88.00	0.1513	13.3144
8	48.0	130	82.00	0.1356	11.1192
9	52.0	126	74.00	0.1211	8.9614
10	53.0	120	67.00	0.1075	7.2025
11	54.0	120	66.00	0.0947	6.2502
12	57.0	99	42.00	0.0824	3.4608
13	58.0	96	38.10	0.0706	2.6899
14	60.0	90	30.00	0.0592	1.7760
15	66.0	87	21.20	0.0481	1.0197
16	67.2	85	17.80	0.0372	0.6622
17	68.0	80	12.30	0.0264	0.3247
18	71.9	76	4.50	0.0158	0.0711
19	71.9	73	0.80	0.0053	0.0042
20	72.7	72	-0.80		
21	76.4	72	-4.50		
22	80.3	68	-12.30		
23	85.0	67	-17.80		
24	87.2	66	-21.20		
25	90.0	60	-30.00		
26	96.1	58	-38.10		
27	99.0	57	-42.00		
28	120.0	54	-66.00		
29	120.0	53	-67.00		
30	126.0	52	-74.00		
31	130.0	48	-82.00		
32	131.0	43	-88.00		
33	139.0	41	-98.00		
34	140.0	40	-100.00		
35	140.0	37	-103.00		
36	170.0	35	-135.00		
37	280.0	29	-251.00		
38	340.0	26	-314.00		

The test statistic W can be found using:

W = SQR[B/(SD x SQRT(n-1))]

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	341.90
SD =	standard deviation of the data group	=	63.93
n =	number of samples	=	38
		W =	**0.773**

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.938
and the calculated W = 0.773

Therefore the data is Non-Normal

JOYCE Project: **Burke County - John's River Landfill**
Project No: 277.1601.12
Task No: 03
Date: December 2015

Shapiro Wilk Test Statistic (W) for log normality of Cobalt (Intrawell MW-10)

Complete the following table where

i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
X(n-i+1) = sample values arranged from largest to smallest
A(n-i+1) = coefficient from table A-1, Statistical Analysis of Ground-Water Data at RCRA Facilities
B(i) = summation of (X(n-i+1)-X(i))A(n-i+1)

i	X(i)	X(n-i+1)	X(n-i+1) - X(i)	A(n-i+1)	B(i)
1	3.26	5.83	2.5708	0.4015	1.0322
2	3.37	5.63	2.2675	0.2774	0.6290
3	3.56	5.14	1.5805	0.2391	0.3779
4	3.61	4.94	1.3307	0.2110	0.2808
5	3.69	4.94	1.2528	0.1881	0.2356
6	3.71	4.93	1.2209	0.1686	0.2058
7	3.76	4.88	1.1140	0.1513	0.1685
8	3.87	4.87	0.9963	0.1356	0.1351
9	3.95	4.84	0.8850	0.1211	0.1072
10	3.97	4.79	0.8172	0.1075	0.0878
11	3.99	4.79	0.7985	0.0947	0.0756
12	4.04	4.60	0.5521	0.0824	0.0455
13	4.06	4.57	0.5049	0.0706	0.0356
14	4.09	4.50	0.4055	0.0592	0.0240
15	4.19	4.47	0.2785	0.0481	0.0134
16	4.21	4.44	0.2350	0.0372	0.0087
17	4.22	4.39	0.1663	0.0264	0.0044
18	4.28	4.34	0.0607	0.0158	0.0010
19	4.28	4.29	0.0111	0.0053	0.0001
20	4.29	4.28	-0.0111		
21	4.34	4.28	-0.0607		
22	4.39	4.22	-0.1663		
23	4.44	4.21	-0.2350		
24	4.47	4.19	-0.2785		
25	4.50	4.09	-0.4055		
26	4.57	4.06	-0.5049		
27	4.60	4.04	-0.5521		
28	4.79	3.99	-0.7985		
29	4.79	3.97	-0.8172		
30	4.84	3.95	-0.8850		
31	4.87	3.87	-0.9963		
32	4.88	3.76	-1.1140		
33	4.93	3.71	-1.2209		
34	4.94	3.69	-1.2528		
35	4.94	3.61	-1.3307		
36	5.14	3.56	-1.5805		
37	5.63	3.37	-2.2675		
38	5.83	3.26	-2.5708		

The test statistic W can be found using:

W = SQR((B/SD x SQRT(n-1))

where:

B =	summation of (X(n-i+1)-X(i))A(n-i+1)	=	3.4683
SD =	standard deviation of the data group	=	0.5771
n =	number of samples	=	38
		W =	**0.9763**

Compare this value to the critical value in Table A-2 of Statistical Analysisof Ground-Water Monitoring Data at RCRA Facilities, Addendum to Interim Final Guidance (Draft) July, 1992, to determine if the data is normally distributed.

From Table A-2 with (n) samples and a 95% confidence level, the critical value is

W(crit) = 0.938
and the calculated W = 0.976

Therefore the data set is Log-Normal.

JOYCE Project: **Burke County - John's River Landfill**
Project No: 277.1601.12
Task No: 03
Date: December 2015

Probability Plots to determine the distribution of **Cobalt (Intrawell MW-10)**

Complete the following table where

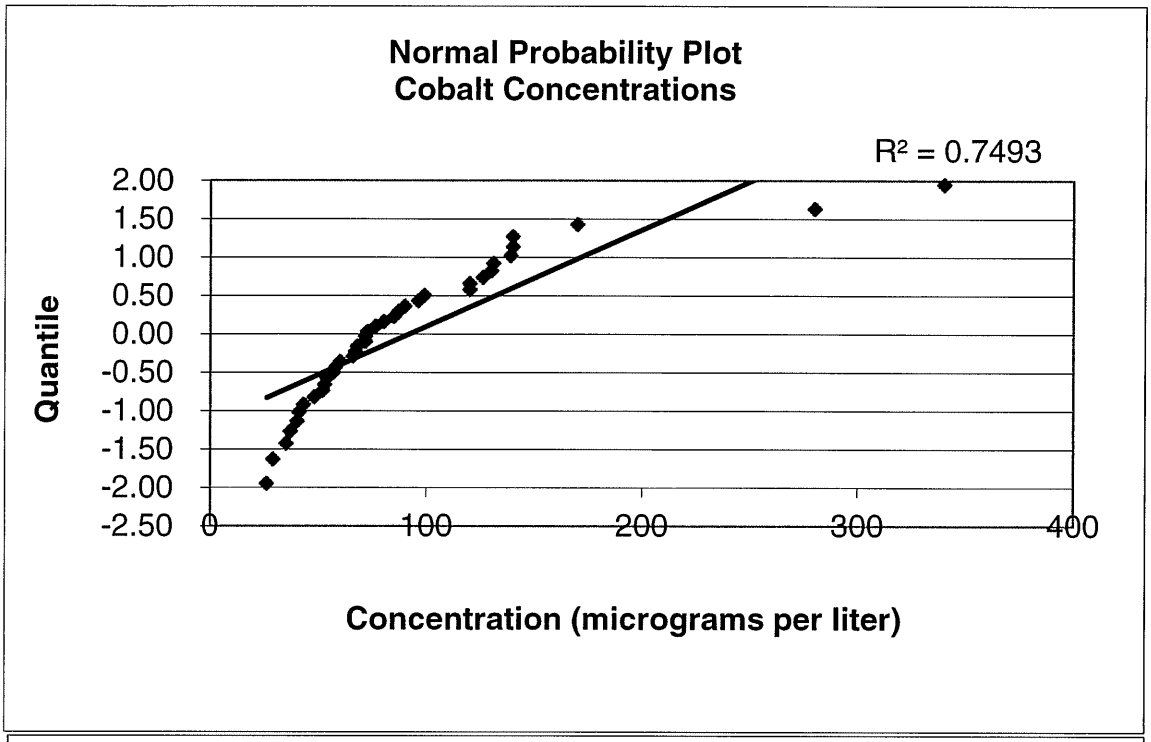
i = ordered value of sample, arranged from smallest to largest
X(i) = sample values arranged from smallest to largest
LN[X(i)] = Natural Log Value of sample concentrations arranged from smallest to largest
[i/(n+1)] = Cumulative probability
n = number of samples = 38

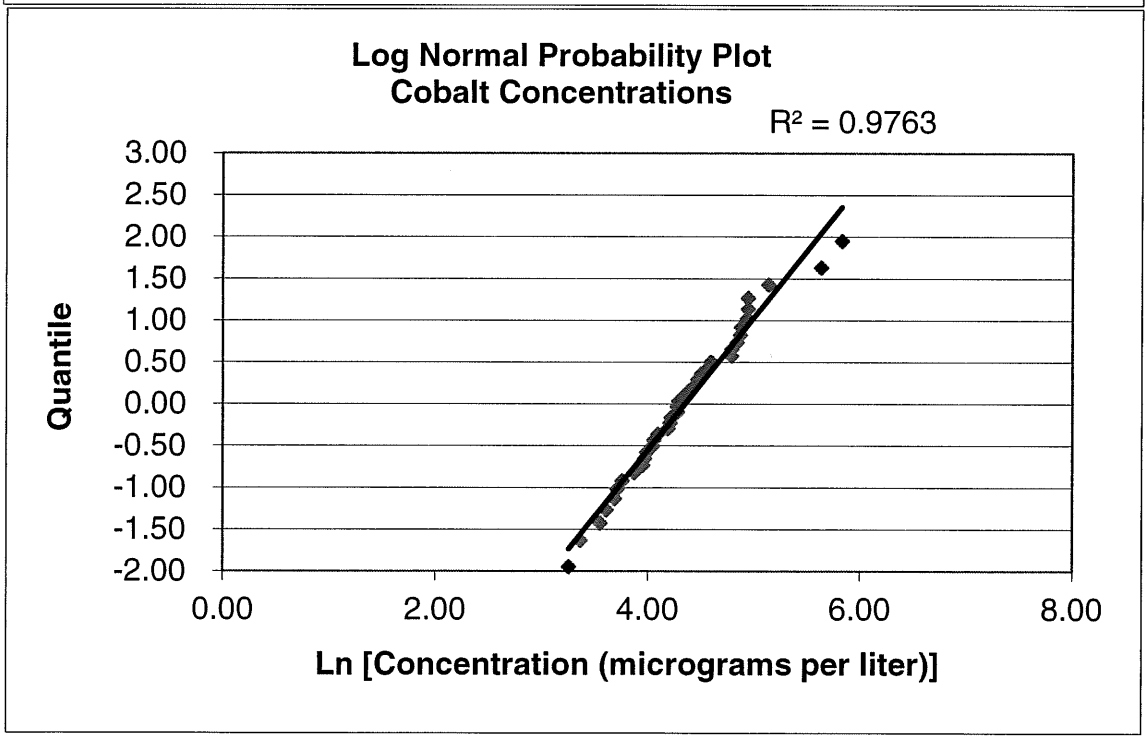
X(i)	LN[X(i)]	i	Rank	[Rank/(n+1)]	Quantiles
26	3.26	1	1	0.026	-1.95
29	3.37	2	2	0.051	-1.63
35	3.56	3	3	0.077	-1.43
37	3.61	4	4	0.103	-1.27
40	3.69	5	5	0.128	-1.13
41	3.71	6	6	0.154	-1.02
43	3.76	7	7	0.179	-0.92
48	3.87	8	8	0.205	-0.82
52	3.95	9	9	0.231	-0.74
53	3.97	10	10	0.256	-0.65
54	3.99	11	11	0.282	-0.58
57	4.04	12	12	0.308	-0.50
58	4.06	13	13	0.333	-0.43
60	4.09	14	14	0.359	-0.36
66	4.19	15	15	0.385	-0.29
67.2	4.21	16	16	0.410	-0.23
68	4.22	17	17	0.436	-0.16
71.9	4.28	18	18	0.462	-0.10
71.9	4.28	19	19	0.487	-0.03
72.7	4.29	20	20	0.513	0.03
76.4	4.34	21	21	0.538	0.10
80.3	4.39	22	22	0.564	0.16
85	4.44	23	23	0.590	0.23
87.2	4.47	24	24	0.615	0.29
90	4.50	25	25	0.641	0.36
96.1	4.57	26	26	0.667	0.43
99	4.60	27	27	0.692	0.50
120	4.79	28	28	0.718	0.58
120	4.79	29	29	0.744	0.65
126	4.84	30	30	0.769	0.74
130	4.87	31	31	0.795	0.82
131	4.88	32	32	0.821	0.92
139	4.93	33	33	0.846	1.02
140	4.94	34	34	0.872	1.13
140	4.94	35	35	0.897	1.27
170	5.14	36	36	0.923	1.43
280	5.63	37	37	0.949	1.63
340	5.83	38	38	0.974	1.95

Plot analysis indicates that the data more closely follow a normal distribution in the log-transformed format.

JOYCE Project: **Burke County - John's River Landfill**
Project No: 277.1601.12
Task No: 03
Date: December 2015

Probability Plots to determine the distribution of Cobalt (Intrawell MW-10)





JOYCE Project: **Burke County - John's River Landfill**
Project No: 277.1601.12
Task No: 03
Date: December 2015

Determination of reported background value as an outlier

Analyte: **Cobalt (Intrawell MW-10)**

Background Data

Sample No.	Sample Date	Location	ln(Concentration)
1	Jan-95	MW-10	3.555
2	Feb-95	MW-10	3.761
3	Mar-95	MW-10	4.043
4	Aug-95	MW-10	4.060
5	Jan-96	MW-10	3.611
6	Feb-96	MW-10	3.714
7	May-96	MW-10	3.258
8	Oct-96	MW-10	3.951
9	May-97	MW-10	4.787
10	Nov-97	MW-10	4.595
11	May-98	MW-10	4.787
12	Nov-98	MW-10	4.942
13	May-99	MW-10	3.871
14	Oct-99	MW-10	4.443
15	May-00	MW-10	3.989
16	Nov-00	MW-10	3.689
17	May-01	MW-10	3.970
18	Nov-01	MW-10	3.367
19	May-02	MW-10	4.220
20	Nov-02	MW-10	4.500
21	May-03	MW-10	5.635
22	Nov-03	MW-10	5.829
23	May-04	MW-10	4.942
24	Nov-04	MW-10	5.136
25	May-05	MW-10	4.868
26	Nov-05	MW-10	4.190
27	May-06	MW-10	4.386
28	Nov-06	MW-10	4.875
29	May-07	MW-10	4.468
30	Nov-07	MW-10	4.208
31	May-08	MW-10	4.275
32	Nov-08	MW-10	4.275
33	Jun-09	MW-10	4.934
34	Aug-09	MW-10	4.094
35	Nov-09	MW-10	4.836
36	Jun-10	MW-10	4.565
37	Dec-10	MW-10	4.286
38	Jun-11	MW-10	4.336
		mean =	4.349
		STD =	0.577

Note: All concentrations are micrograms per liter (µg/L)

Using the data listed above, form the statisitc Tn:

Tn = (Xn - mean) / STD

where:
Xn = largest observed sample value
mean = mean of the background values
STD = standard deviation of the background values

For
Xn = 5.829
mean = 4.349
STD = 0.577

Tn = 2.565

From Table 8 included in the Staistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance, the critical value for the given sample group is

Number of samples = 38
Tc = 2.864

Since Tc>Tn, the sample result is not considered to be an outlier

JOYCE Project: **Burke County - John's River Landfill**
Project No: 277.1601.12
Task No: 03
Date: December 2015

Parametric Tolerance Interval for log normally distributed data

Analyte: **Cobalt (Intrawell MW-10)**

Background Data: Note use of log(concentration)

Background Data

Sample No.	Sample Date	Location	Concentration (µg/L)	Notes	Quantitation Limit (µg/L)	Natural Log Concentration
1	18-Jan-95	MW-10	35		10	3.555
2	06-Feb-95	MW-10	43		10	3.761
3	01-Mar-95	MW-10	57		10	4.043
4	01-Aug-95	MW-10	58		10	4.060
5	01-Jan-96	MW-10	37		10	3.611
6	01-Feb-96	MW-10	41		10	3.714
7	01-May-96	MW-10	26		10	3.258
8	01-Oct-96	MW-10	52		10	3.951
9	01-May-97	MW-10	120		6	4.787
10	01-Nov-97	MW-10	99		5	4.595
11	01-May-98	MW-10	120		1	4.787
12	01-Nov-98	MW-10	140		1	4.942
13	11-May-99	MW-10	48		5	3.871
14	18-Oct-99	MW-10	85		10	4.443
15	03-May-00	MW-10	54		10	3.989
16	07-Nov-00	MW-10	40		10	3.689
17	31-May-01	MW-10	53		10	3.970
18	07-Nov-01	MW-10	29		10	3.367
19	22-May-02	MW-10	68		10	4.220
20	14-Nov-02	MW-10	90		10	4.500
21	14-May-03	MW-10	280		10	5.635
22	20-Nov-03	MW-10	340		10	5.829
23	06-May-04	MW-10	140		10	4.942
24	10-Nov-04	MW-10	170		10	5.136
25	05-May-05	MW-10	130		10	4.868
26	03-Nov-05	MW-10	66		10	4.190
27	25-May-06	MW-10	80		10	4.386
28	02-Nov-06	MW-10	131		10	4.875
29	30-May-07	MW-10	87		10	4.468
30	29-Nov-07	MW-10	67		10	4.208
31	29-May-08	MW-10	72		10	4.275
32	06-Nov-08	MW-10	72		10	4.275
33	03-Jun-09	MW-10	139		10	4.934
34	27-Aug-09	MW-10	60		10	4.094
35	18-Nov-09	MW-10	126		10	4.836
36	16-Jun-10	MW-10	96		10	4.565
37	01-Dec-10	MW-10	72.7		10	4.286
38	01-Jun-11	MW-10	76.4		10	4.336

Note: All sample concentrations are micrograms per liter

Using the background data, the upper Tolerance Limit can be determined using:

Upper Tolerance Limit = antilog((Mean Concentration)+K x (Standard Deviation Samples))

where: Mean Conc = mean concentration background samples
K = factor for constructing one sided normal tolerance limit taken from table 4-2, page 87, Statistical Methods for Groundwat Monitoring, Gibbons, 1994
STDS = Standard Deviation Samples
n = number of background samples

For:
n = 38
K = 2.141
Mean Conc = 4.349
STDS = 0.577

UTL = 266 µg/L

Joyce Project: **Burke County - John's River Landfill**
Project No: 277.1601.12.
Date: December 2015

Analyte: **Vanadium**

Sample No.	Sample Date	Location	Concentration		Quantitation Limit
1	Sep-94	MW-9	ND		40
2	Jan-95	MW-9	ND		40
3	Feb-95	MW-9	ND		40
4	Mar-95	MW-9	ND		40
5	Aug-95	MW-9	ND		40
6	Oct-96	MW-9	ND		40
7	May-97	MW-9	12.0		5
8	Nov-97	MW-9	ND		40
9	May-98	MW-9	14.0		5
10	Nov-98	MW-9	15.0		5
11	May-99	MW-9	55.0		5
12	Oct-99	MW-9	630		40
13	May-00	MW-9	ND		40
14	Nov-00	MW-9	ND		40
15	May-01	MW-9	ND		40
16	Nov-01	MW-9	ND		40
17	May-02	MW-9	ND		40
18	Nov-02	MW-9	ND		40
19	May-03	MW-9	ND		40
20	Nov-03	MW-9	ND		40
21	May-04	MW-9	ND		40
22	Nov-04	MW-9	ND		40
23	May-05	MW-9	ND		40
24	May-99	MW-17	58.0		5
25	Oct-99	MW-17	150		40
26	May-00	MW-17	ND		40
27	Nov-00	MW-17	66.0		40
28	May-01	MW-17	ND		40
29	Nov-01	MW-17	ND		40
30	May-02	MW-17	ND		40
31	Nov-02	MW-17	ND		40
32	May-03	MW-17	ND		40
33	Nov-03	MW-17	ND		40
34	May-04	MW-17	ND		40
35	Nov-04	MW-17	ND		40
36	May-05	MW-17	ND		40
37	Nov-05	MW-17	ND		40
38	25-May-06	MW-17	ND		40
39	02-Nov-06	MW-17	ND		40
40	30-May-07	MW-17	ND		25
41	29-Nov-07	MW-17	7.30	J	25
42	29-May-08	MW-17	0.43	J	25
43	06-Nov-08	MW-17	3.00	B	25
44	03-Jun-09	MW-17	0.94	B	25
45	18-Nov-09	MW-17	0.82	B	25
46	16-Jun-10	MW-17	1.10	B	25
47	01-Dec-10	MW-17	0.48	J	25
48	01-Jun-11	MW-17	0.69	J	25
49	01-Dec-10	MW-20	55.20		25
50	13-Jan-11	MW-20	0.55	B	25
51	01-Jun-11	MW-20	17.20	J	25
52	20-Dec-11	MW-20	10.70	J	25
53	30-May-12	MW-20	9.20	J	25
54	05-Dec-12	MW-20	ND		25
55	12-Jun-13	MW-20	ND		25
56	28-Oct-13	MW-20	ND		25
57	06-May-14	MW-20	6.7	J	25
58	22-Oct-14	MW-21	9.6	J	25
59	20-May-15	MW-21	ND		25
60	08-Dec-15	MW-21	6.6	J	25

Number of Data: 55
Number of Truncated Data: 36
Percentage of Truncated Data: 65%

Non-Parametric Prediction Limit: 630.0 µg/L

Notes: All concentrations in micrograms per liter (µg/L).
ND = Not detected (truncated).
J = Estimated Data (used in statistical analyses).
B = Blank-qualified Data (not used in statistical analyses).

Appendix D

Historical Detected Inorganic Groundwater Constituents

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	Background MW-9	MW-17	MW-20	MW-21	Downgradient MW-10	MW-11	MW-12	MW-13	MW-16S	MW-16D	Blanks
Inorganic Compounds														
Antimony	30-May-07	---	6	---	ND	---	---	ND	ND	1.09 J	ND	ND	ND	ND
GWPS = 1.4 µg/L (10/23/07)	29-Nov-07	---	6	---	ND	---	---	ND	ND	1.94 J	ND	ND	ND	ND
	29-May-08	2.6	6.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08	2.6	6.0	---	ND	---	---	ND	ND	2.7 J	ND	5.9 J	ND	ND
	3-Jun-09	2.6	6.0	---	ND	---	---	ND	ND	ND	ND	ND	3.2 J	ND
	18-Nov-09	2.6	6.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	16-Jun-10	2.6	6.0	---	ND	---	---	ND	ND	2.8 J	ND	ND	ND	ND
GWPS = 1 µg/L (8/1/10)	1-Dec-10	2.6	6.0	---	ND	ND	---	ND	3.5 J	2.9 J	ND	ND	ND	ND
	1-Jun-11	2.6	6.0	---	ND	ND	---	ND	ND	ND	ND	ND	2.9 J	ND
	20-Dec-11	5.0	6.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	6.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12	5.0	6.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13	5.0	6.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	5.0	6.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	5.0	6.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	5.0	6.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	3.8	6.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	3.8	6.0	---	---	---	ND	ND	ND	**6.3**	ND	ND	ND	ND
Lab Re-run Analyses>	8-Dec-15	3.8	6.0	---	---	---	---	---	---	**6.2**	---	---	---	---
Resample>	4-Feb-16	3.8	6.0	---	---	---	---	---	---	ND	---	---	---	ND
Arsenic	30-May-07	---	10	---	ND	---	---	ND	2.2 B	ND	3.6 B	ND	2.1 B	2.6 J
NC 2L = 50 µg/L (10/23/07)	29-Nov-07	---	10	---	2.5 J	---	---	ND	ND	ND	ND	2.1 J	ND	ND
	29-May-08	2.7	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08	2.7	10.0	---	ND	---	---	ND	3.1 B	ND	3.2 B	3 B	ND	4.1 J
	3-Jun-09	2.7	10.0	---	ND	---	---	ND	ND	ND	ND	ND	3.2 J	ND
	18-Nov-09	2.7	10.0	---	ND	---	---	3.0 J	ND	ND	ND	ND	ND	ND
NC 2L = 10 µg/L (01/01/10)	16-Jun-10	2.7	10.0	---	ND	---	---	ND	4.6 J	ND	ND	3.0 J	ND	ND
	1-Dec-10	2.7	10.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11	2.7	10.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	5.0	10.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	2.5	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	2.5	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Barium	15-Sep-94	---	100	1320	NI	NI	NI	194	5580	ND	584	NI	NI	ND
	1-Oct-94	---	100	---	NI	NI	NI	---	1030	---	---	NI	NI	ND
	18-Jan-95	---	100	981	NI	NI	NI	122	1490	ND	355	NI	NI	ND
	6-Feb-95	---	100	435	NI	NI	NI	124	350	ND	311	NI	NI	ND
	1-Mar-95	---	100	556	NI	NI	NI	260	732	196	528	NI	NI	ND
	1-Aug-95	---	100	199	NI	---	---	250	688	ND	408	NI	NI	ND
	1-Jan-96	---	100	455	NI	---	---	228	734	196	ND	NI	NI	ND
	1-Feb-96	---	100	306	NI	---	---	211	321	288	ND	NI	NI	ND
	1-May-96	---	100	170	NI	---	---	ND	453	319	ND	NI	NI	ND
	1-Oct-96	---	100	302	NI	---	---	234	447	102	ND	NI	NI	ND
	1-May-97	---	100	330	NI	---	---	170	360	400	ND	NI	NI	ND
	1-Nov-97	---	100	800	NI	---	---	200	600	800	100	NI	NI	ND
	1-May-98	---	100	400	NI	---	---	200	400	1200	200	NI	NI	ND
	1-Nov-98	---	100	140	NI	---	---	270	310	880	ND	NI	NI	ND
	11-May-99	---	5	240	200	---	---	70	130	200	60	220	16	ND
	18-Oct-99	---	500	1900	ND	---	---	ND	ND	1400	ND	ND	ND	ND
	3-May-00	---	500	ND	ND	---	---	ND	ND	ND	ND	730	ND	ND
	7-Nov-00	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	500	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	500	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	500	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	500	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	100	---	52.0 J	---	---	48.1 J	132	88.4 J	66.9 J	50.9 J	8.0 J	0.20 J
NC 2L = 2,000 µg/L (10/23/07)	29-Nov-07	---	100	---	214	---	---	54.8 J	232	97.0 J	75.3 J	57.9 J	8.6 J	0.50 J
	29-May-08	0.20	100	---	67.9 J	---	---	41.5 J	148	71.0 J	77.0 J	43.7 J	7.9 J	ND
	6-Nov-08	0.20	100	---	82.3 J	---	---	45.5 B	118	81.2 J	90.6 J	66.7 J	7.1 B	9.6 J
	3-Jun-09	0.20	100	---	34.2 B	---	---	26.9 B	119	67.6 B	66.9 B	49.5 B	9.8 B	15.9 J
	18-Nov-09	0.20	100	---	78.9 B	---	---	36.3 B	116	88.6 B	81.0 B	46.6 B	7.8 B	20.1 J
NC 2L = 700 µg/L (01/01/10)	16-Jun-10	0.20	100	---	58.1 J	---	---	50.5 J	296	103	73.4 J	47.0 J	8.6 J	0.77 J
	1-Dec-10	0.20	100	---	60.1 J	376	---	59.6 J	134	94.1 J	78.7 J	37.5 J	16.3 J	ND
	1-Jun-11	0.20	100	---	55.6 J	164	---	43.3 J	154	74.3 J	74.4 J	44.7 J	12.3 J	ND
	20-Dec-11	5.0	100	---	---	119	---	50.9 J	138	76.6 J	78.3 J	46.7 J	10.5 J	ND
	30-May-12	5.0	100	---	---	96.7 J	---	40.6 J	137	77.7 J	74.5 J	67.8 J	9.1 J	ND
	5-Dec-12	5.0	100	---	---	63.0 J	---	53.3 J	148	89.8 J	81.4 J	43.6 J	10.5 J	ND
	12-Jun-13	5.0	100	---	---	59.6 B	---	28.3 B	167	82.3 J	83.6 J	48.1 B	13.2 B	13.6 J
	28-Oct-13	5.0	100	---	---	47.9 J	---	47.4 J	194	93.8 J	70.7 J	49.4 J	9.6 J	ND
	6-May-14	5.0	100	---	---	73.6 J	---	37.3 J	129	89.9 J	73.9 J	45.5 J	8.2 J	ND
	23-Oct-14	5.0	100	---	---	*	20.3 J	53.4 J	127	74.6 J	76.0 J	46.3 J	13.3 J	ND
	20-May-15	2.5	100	---	---	---	17.9	47.5 J	145	75.5 J	76.9 J	44.6 J	8.4 J	ND
	8-Dec-15	2.5	100	---	---	---	17.6 J	45.6 J	140	132	82.6 J	50.6 J	8.0 J	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	Background MW-9	MW-17	MW-20	MW-21	Downgradient MW-10	MW-11	MW-12	MW-13	MW-16S	MW-16D	Blanks
Beryllium	1-May-97	---	1	ND	NI	---	---	ND	ND	1.0	ND	NI	NI	ND
	1-Nov-97	---	1	1.0	NI	---	---	ND	3.0	ND	ND	NI	NI	ND
	1-May-98	---	1	ND	NI	---	---	ND	ND	3.0	ND	NI	NI	ND
	1-Nov-98	---	1	ND	NI	---	---	ND	ND	1	ND	NI	NI	ND
	11-May-99	---	2	ND	ND	---	---	ND	ND	ND	ND	4.3	ND	ND
	18-Oct-99	---	2	8.0	3.0 J	---	---	2.0 J	2.0 J	13.0	ND	ND	ND	ND
	3-May-00	---	2	ND	ND	---	---	ND	ND	ND	ND	8.0	ND	ND
	7-Nov-00	---	2	ND	2.0	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	2.1
	14-May-03	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	2	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	2	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	2	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	1	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
GWPS = 4 µg/L (10/23/07)	29-Nov-07	---	1	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08	0.10	1.0	---	ND	---	---	0.18 J	ND	ND	ND	ND	ND	ND
	6-Nov-08	0.10	1.0	---	0.49 B	---	---	0.65 B	0.32 B	0.42 B	0.61 B	0.53 B	0.27 B	0.29 J
	3-Jun-09	0.10	1.0	---	ND	---	---	ND	ND	ND	0.25 J	0.23 J	2.2	ND
	18-Nov-09	0.10	1.0	---	ND	---	---	ND	ND	ND	0.25 J	ND	ND	ND
	16-Jun-10	0.10	1.0	---	ND	---	---	0.24 J	0.94 J	ND	0.11 J	ND	ND	ND
	1-Dec-10	0.10	1.0	---	ND	1.7	---	0.14 J	ND	ND	ND	ND	ND	ND
	1-Jun-11	0.10	1.0	---	ND	0.44 J	--- J	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	1.0	1.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	0.5	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	0.5	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	1-May-97	---	1	ND	NI	---	---	ND	ND	1.0	ND	NI	NI	ND
	1-Nov-97	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-98	---	1	ND	NI	---	---	ND	ND	1.0	ND	NI	NI	ND
	1-Nov-98	---	1	ND	NI	---	---	ND	ND	2.0	ND	NI	NI	ND
	11-May-99	---	1	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99	---	1	24.0	6.0	---	---	6.0	3.0 J	30.0	2.0 J	2.0 J	ND	ND
	3-May-00	---	1	ND	ND	---	---	ND	1.0 J	1.0 J	ND	5.0	ND	ND
	7-Nov-00	---	1	2.0	5.0	---	---	ND	ND	1.0	ND	1.0	ND	ND
	31-May-01	---	1	ND	ND	---	---	ND	ND	1.0 J	ND	1.0 J	ND	ND
	7-Nov-01	---	1	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	1	ND	ND	---	---	ND	ND	ND	2.0 B	ND	ND	1.3
	14-Nov-02	---	1	ND	ND	---	---	ND	ND	1.2	ND	3.7	ND	ND
	14-May-03	---	1	ND	ND	---	---	1.1	ND	ND	ND	2.5	ND	ND
	20-Nov-03	---	1	2.0	1.3	---	---	ND	ND	1.2	ND	ND	ND	ND
	6-May-04	---	1	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	1	ND	ND	---	---	1.5	ND	ND	ND	2.2	ND	ND
	5-May-05	---	1	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	1	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	1	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	1	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	1	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 1.75 µg/L (10/23/07)	29-Nov-07	---	1	---	ND	---	---	ND	ND	0.60 J	ND	ND	ND	ND
	29-May-08	0.50	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08	0.50	1.0	---	ND	---	---	ND	ND	ND	ND	0.94 J	ND	ND
	3-Jun-09	0.50	1.0	---	ND	---	---	ND	ND	ND	ND	ND	**1.9**	ND
	18-Nov-09	0.50	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 2 µg/L (01/01/10)	16-Jun-10	0.50	1.0	---	ND	---	---	ND	**6.0**	ND	ND	ND	ND	ND
Resample>	5-Aug-10	0.50	1.0	---	---	---	---	---	1.2	---	---	---	---	ND
	1-Dec-10	0.50	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11	0.50	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	1.0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	1.0	1.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	0.5	1.0	---	---	---	ND	ND	0.85 J	ND	ND	ND	ND	ND
	8-Dec-15	0.5	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

				Background				Downgradient						
Analyte	**Sample Collection Date**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Chromium	1-Mar-95	---	5	ND	NI	NI	NI	ND	ND	11.0	ND	NI	NI	ND
	1-Aug-95	---	5	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Jan-96	---	5	ND	NI	---	---	ND	ND	7.0	ND	NI	NI	ND
	1-Feb-96	---	5	ND	NI	---	---	ND	ND	6.0	ND	NI	NI	ND
	1-May-96	---	5	ND	NI	---	---	ND	ND	16.0	ND	NI	NI	ND
	1-Oct-96	---	5	ND	NI	---	---	ND	ND	6.0	ND	NI	NI	ND
	1-May-97	---	1	4.0	NI	---	---	2.0	3.0	18.0	3.0	NI	NI	ND
	1-Nov-97	---	1	6.0	NI	---	---	1.0	1.0	108	2.0	NI	NI	ND
	1-May-98	---	1	8.0	NI	---	---	4.0	6.0	66.0	6.0	NI	NI	ND
	1-Nov-98	---	1	3.0	NI	---	---	1.0	3.0	180	3.0	NI	NI	ND
	11-May-99	---	5	26.0	24.0	---	---	8.4	6.5	44.0	11.0	46.0	ND	ND
	18-Oct-99	---	10	290	58.0	---	---	44.0	36.0	410	21.0	ND	ND	ND
	3-May-00	---	10	ND	ND	---	---	ND	ND	12.0	ND	92.0	ND	ND
	7-Nov-00	---	10	11.0	30.0	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	10	ND	ND	---	---	ND	ND	ND	ND	10.0	ND	ND
	14-Nov-02	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	10	12.0	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 50 µg/L (10/23/07)	29-Nov-07	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08	0.40	10.0	---	ND	---	---	ND	1.9 B	1 B	1.4 B	ND	ND	0.85 J
	6-Nov-08	0.40	10.0	---	0.59 J	---	---	1 J	0.83 J	2.8 J	3.4 J	2.5 J	ND	ND
	3-Jun-09	0.40	10.0	---	ND	---	---	ND	2.1 J	ND	1.1 J	0.66 J	2.1 J	ND
	18-Nov-09	0.40	10.0	---	ND	---	---	ND	ND	2.2 J	2.2 J	ND	ND	ND
NC 2L = 10 µg/L (01/01/10)	16-Jun-10	0.40	10.0	---	0.43 B	---	---	1.0 B	**13.9**	4.7 J	1.0 B	ND	ND	0.74 J
Resample>	5-Aug-10	0.40	10.0	---	---	---	---	---	0.88 B	---	---	---	---	0.51 J
	1-Dec-10	0.40	10.0	---	0.60 B	**39.6**	---	1.8 B	1.3 B	5.5 J	1.2 B	ND	ND	0.51 J
Resample>	13-Jan-11	0.40	10.0	---	---	ND	---	---	---	---	---	---	---	ND
	1-Jun-11	0.40	10.0	---	ND	**11.2**	---	ND	1.2 B	0.72 B	ND	ND	ND	0.73 J
Resample>	7-Jul-11	0.40	10.0	---	---	7.8 J	---	---	---	---	---	---	---	ND
	20-Dec-11	5.0	10.0	---	---	8.2 J	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	10.0	---	---	5.3 J	---	ND	ND	ND	ND	5.4 J	ND	ND
	5-Dec-12	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	5.0	10.0	---	---	6.1 J	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	5.0	10.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	2.5	10.0	---	---	---	ND	ND	3.9 J	ND	ND	ND	4.7 J	ND
	8-Dec-15	2.5	10.0	---	---	---	ND	ND	ND	**13.8**	ND	ND	ND	ND
Lab Re-run Analyses>	8-Dec-15	2.5	10.0	---	---	---	---	---	---	**14.7**	---	---	---	---
Resample>	4-Feb-16	2.5	10.0	---	---	---	---	---	---	ND	---	---	---	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

				Background				Downgradient						
Analyte	**Sample Collection Date**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Cobalt	18-Jan-95	---	10	35.0	NI	NI	NI	35.0	14.0	52.0	14.0	NI	NI	ND
	6-Feb-95	---	10	16.0	NI	NI	NI	43.0	ND	66.0	ND	NI	NI	ND
	Mar-95	---	10	28.0	NI	NI	NI	57.0	ND	78.0	20.0	NI	NI	ND
	Aug-95	---	10	ND	NI	---	---	58.0	ND	30.0	32.0	NI	NI	ND
	Jan-96	---	10	17.0	NI	---	---	37.0	ND	23.0	ND	NI	NI	ND
	Feb-96	---	10	37.0	NI	---	---	41.0	ND	24.0	ND	NI	NI	ND
	May-96	---	10	11.0	NI	---	---	26.0	ND	24.0	ND	NI	NI	ND
	Oct-96	---	10	16.0	NI	---	---	52.0	ND	16.0	ND	NI	NI	ND
	May-97	---	6	33.0	NI	---	---	120	5.0 J	32.0	6.0	NI	NI	ND
	Nov-97	---	5	29.0	NI	---	---	99.0	11.0	48.0	14.0	NI	NI	ND
	May-98	---	1	28.0	NI	---	---	120	8.0	76.0	32.0	NI	NI	ND
	Nov-98	---	1	10.0	NI	---	---	140	6.0	47.0	1.0	NI	NI	ND
	11-May-99	---	5	20.0	26.0	---	---	48.0	13.0	34.0	17.0	59.0	ND	ND
	18-Oct-99	---	10	120	37.0	---	---	85.0	20.0	220	16.0	40.0	ND	ND
	3-May-00	---	10	ND	ND	---	---	54.0	ND	31.0	13.0	89.0	ND	ND
	7-Nov-00	---	10	ND	20.0	---	---	40.0	ND	18.0	ND	32.0	ND	ND
	31-May-01	---	10	ND	ND	---	---	53.0	ND	30.0	11.0	32.0	ND	ND
	7-Nov-01	---	10	ND	ND	---	---	29.0	ND	23.0	ND	26.0	ND	ND
	22-May-02	---	10	14.0 B	14.0 B	---	---	68.0	16.0 B	51.0 B	17.0 B	39.0 B	12.0 B	11.0
	14-Nov-02	---	10	ND	ND	---	---	90.0	ND	41.0	11.0	34.0	ND	ND
	14-May-03	---	10	19.0	ND	---	---	280	ND	46.0	53.0	24.0	ND	ND
	20-Nov-03	---	10	26.0	10.0 J	---	---	340	18.0	56.0	58.0	30.0	ND	ND
	6-May-04	---	10	ND	ND	---	---	140	ND	46.0	47.0	29.0	ND	ND
	10-Nov-04	---	10	10.0	ND	---	---	170	21.0	50.0	46.0	29.0	ND	ND
	5-May-05	---	10	12.0	ND	---	---	130	16.0	46.0	60.0	26.0	ND	ND
	3-Nov-05	---	10	---	ND	---	---	66.0	15.0	42.0	45.0	25.0	ND	ND
	25-May-06	---	10	---	ND	---	---	80.3	21.7	42.7	43.2	24.9	ND	ND
	2-Nov-06	---	10	---	ND	---	---	131	30.8	37.0	28.3	26.6	ND	ND
	30-May-07	---	10	---	4.1 J	---	---	87.2	20.7	44.0	36.9	26.6	ND	ND
GWPS = 70 µg/L (10/23/07)	29-Nov-07	---	10	---	7.3 J	---	---	**67.2**	55.5	47.9 J	23.4	30.7	ND	ND
	29-May-08	0.60	10.0	---	5.4 J	---	---	**71.9**	54.6	34.8	35.3	ND	ND	ND
	6-Nov-08	0.60	10.0	---	9.2 J	---	---	**71.9**	60.0	47.9	44.1	24.3	2.2 B	1.6 J
	3-Jun-09	0.60	10.0	---	22.8 B	---	---	**139**	**78.6**	53.5	49.3	54.7	7.6 B	7.6 J
Resample>	27-Aug-09	0.60	10.0	---	---	---	---	60.0	---	---	---	---	---	---
	18-Nov-09	0.60	10.0	---	14.9	---	---	**126**	**84.5**	50.3	44.1	31.8	ND	ND
	16-Jun-10	0.60	10.0	---	19.1	---	---	**96.1**	**103**	**70.9**	38.0	48.6	ND	ND
Resample>	5-Aug-10	0.60	10.0	---	---	---	---	---	**85.5**	---	---	---	---	ND
GWPS = 1 µg/L (10/1/10)	1-Dec-10	0.60	10.0	---	9.8 J	**22.1**	---	**72.7**	**151**	**111**	**43.1**	**33.3**	ND	ND
Resample>	13-Jan-11	0.60	10.0	---	---	ND	---	---	**84.2**	---	---	---	---	ND
	1-Jun-11	0.60	10.0	---	7.8 J	2.6 J	--- J	**76.4**	**99.3**	**72.9**	**41.7**	**38.6**	ND	ND
	20-Dec-11	5.0	10.0	---	---	ND	---	**92.8**	**75.6**	**62.7**	**36.5**	**25.5**	ND	ND
	30-May-12	5.0	10.0	---	---	ND	---	**90.2**	**108**	**78.8**	**42.3**	**46.2**	ND	ND
	5-Dec-12	5.0	10.0	---	---	ND	---	**46.6**	**27.9**	**101**	**45.8**	**51.4**	ND	ND
	12-Jun-13	5.0	10.0	---	---	ND	---	**243**	**150**	**118**	**92.2**	**66.0**	ND	ND
	28-Oct-13	5.0	10.0	---	---	ND	---	**200**	**128**	**124**	**117**	**75.7**	ND	ND
Resample>	10-Dec-13	5.0	10.0	---	---	---	---	---	---	---	**40.4**	---	---	ND
	6-May-14	5.0	10.0	---	---	ND	---	**138**	**33.4**	**68.9**	**65.9**	**26.6**	ND	ND
	22-Oct-14	5.0	10.0	---	---	*	ND	**126**	**37.1**	**82.0**	**74.9**	**32.1**	ND	ND
	20-May-15	2.5	10.0	---	---	---	ND	**116**	**34.8**	**77.8**	**90.0**	**34.0**	ND	ND
	8-Dec-15	2.5	10.0	---	---	---	ND	**175**	**61.0**	**84.8**	**49.7**	**32.8**	ND	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

				Background				Downgradient						
Analyte	**Sample Collection Date**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Copper	18-Jan-95	---	10	16.0	NI	NI	NI	ND	ND	ND	14.0	NI	NI	ND
	6-Feb-95	---	10	ND	NI	NI	NI	ND	ND	ND	ND	NI	NI	ND
	1-Mar-95	---	10	ND	NI	NI	NI	ND	ND	ND	20.0	NI	NI	ND
	1-Aug-95	---	10	ND	NI	---	---	ND	ND	ND	18.0	NI	NI	ND
	1-Jan-96	---	10	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Feb-96	---	10	21.0	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-96	---	10	14.0	NI	---	---	13.0	11.0	ND	11.0	NI	NI	ND
	1-Oct-96	---	10	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-97	---	10	ND	NI	---	---	30.0	ND	ND	ND	NI	NI	ND
	1-Nov-97	---	10	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-98	---	10	20.0	NI	---	---	ND	10.0	70.0	20.0	NI	NI	ND
	1-Nov-98	---	10	ND	NI	---	---	13.0	ND	28.0	ND	NI	NI	ND
	11-May-99	---	5	28.0	49.0	---	---	14.0	ND	9.3	28.0	37.0	ND	ND
	18-Oct-99	---	200	380	ND	---	---	ND	ND	240	ND	ND	ND	ND
	3-May-00	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-00	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	200	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	200	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	200	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	200	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	10	---	0.7 B	---	---	ND	ND	ND	3.2 B	ND	ND	1.3 J
NC 2L = 1,000 µg/L (10/23/07)	29-Nov-07	---	10	---	8.30 J	---	---	ND	ND	ND	6.10 J	ND	ND	ND
	29-May-08	0.30	10.0	---	0.42 B	---	---	0.99 B	1.5 B	1.0 B	14.9	0.89 B	ND	0.37 J
	6-Nov-08	0.30	10.0	---	2.0 B	---	---	1.8 B	0.7 B	2.4 B	16.6	4.2 J	0.46 B	0.65 J
	3-Jun-09	0.30	10.0	---	0.83 J	---	---	ND	1 J	ND	6.7 J	0.61 J	3.5 J	ND
	18-Nov-09	0.30	10.0	---	0.34 J	---	---	ND	ND	1.2 J	10.7	0.38 J	ND	ND
	16-Jun-10	0.30	10.0	---	0.37 B	---	---	2.6 B	9.0 J	3.2 B	3.4 B	ND	ND	0.77 J
	1-Dec-10	0.30	10.0	---	1.3 J	36.1	---	3.8 J	1.2 J	1.8 J	3.9 J	2.1 J	ND	ND
	1-Jun-11	0.30	10.0	---	0.54 J	12.9	---	0.94 J	2.3 J	0.79 J	4.8 J	0.66 J	ND	ND
	20-Dec-11	5.0	10.0	---	---	9.0 J	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	10.0	---	---	7.0 J	---	ND	ND	ND	ND	5.6 J	ND	ND
	5-Dec-12	5.0	10.0	---	---	ND	---	ND	ND	ND	5.6 J	ND	ND	ND
	12-Jun-13	5.0	10.0	---	---	34.0 B	---	ND	ND	ND	11.1 B	ND	ND	9.8 J
	28-Oct-13	5.0	10.0	---	---	ND	---	ND	6.1 J	ND	ND	ND	ND	ND
	6-May-14	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	5.0	10.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	2.5	10.0	---	---	---	ND	ND	ND	ND	4.6 J	ND	ND	ND
	8-Dec-15	2.5	10.0	---	---	---	ND	8.1 J	6.4 J	9.7 J	ND	5.9 J	ND	ND
Cyanide	1-Nov-98	---	2	6.0	NI	---	---	2.0	ND	7.0	ND	NI	NI	ND
	11-May-99	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99	---	50	ND	ND	---	---	---	ND	ND	ND	ND	ND	ND
	7-Nov-00	---	50	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	31-May-01	---	50	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	7-Nov-01	---	50	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-Nov-02	---	50	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03	---	50	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	10-Nov-04	---	10	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	3-Nov-05	---	---	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	2-Nov-06	---	50	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
NC 2L = 70 µg/L (10/23/07)	29-Nov-07	---	10	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	6-Nov-08	5.0	10.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	18-Nov-09	5.0	10.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	1-Dec-10	5.0	10.0	---	ND	5.9 J	---	ND	ND	5.2 J	5.8 J	6.5 J	---	ND
Resample>	13-Jan-11	5.0	10.0	---	---	ND	---	---	---	5.0 J	ND	5.8 J	---	ND
	5-Dec-12	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	7.0 J	---	ND
	28-Oct-13	5.0	10.0	---	---	ND	---	12.4	5.6 J	10.0	ND	6.5 J	ND	ND
Resample>	10-Dec-13	5.0	10.0	---	---	---	---	10.8	---	9.0 J	---	---	---	ND
	6-May-14	0.0	0.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	23-Oct-14	2.5	10.0	---	---	*	ND	3.6 J	4.7 J	4.2 J	ND	5.2 J	---	ND
	20-May-15	0.0	10.0	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15	4.0	10.0	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
Iron	1-Jun-11	14.0	300	---	**308**	**11,000**	---	**20,500**	**29,200**	**16,300**	**886**	**22,200**	**413**	ND
NC 2L = 300 µg/L (01/01/10) Resample>	7-Jul-11	50.0	300	---	---	**7,150**	---	---	---	---	---	---	---	ND
	20-Dec-11	50.0	300	---	---	**8,010**	---	**26,300**	**36,700**	**22,900**	**1,160**	**22,200**	93.5 J	ND
	30-May-12	50.0	300	---	---	**5,940**	---	**24,500**	**45,700**	**21,700**	**1,300**	**24,500**	ND	ND
	5-Dec-12	50.0	300	---	---	**2,970**	---	**7,010**	**8,730**	**28,200**	**393**	**21,700**	159 J	ND
	12-Jun-13	50.0	300	---	---	**2,460**	---	**55,300**	**55,300**	**34,800**	**4,650**	**26,700**	**522**	81.2 J
	28-Oct-13	50.0	300	---	---	**883**	---	**28,700**	**49,700**	**29,800**	**1,730**	**24,300**	ND	ND
	6-May-14	50.0	300	---	---	**4,240**	---	**47,300**	**46,800**	**29,700**	**1,200**	**24,600**	ND	ND
	23-Oct-14	50.0	300	---	---	*	**2,340**	**33,600**	**29,200**	**31,200**	**528**	**27,700**	171 J	ND
	20-May-15	25.0	300	---	---	---	**350**	**22,400**	**22,600**	**33,800**	**672**	**25,800**	63.5 J	ND
	8-Dec-15	25.0	300	---	---	---	**1,380**	**102,000**	**74,200**	**50,200**	**1,460**	**27,400**	43.7 J	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	Background MW-9	MW-17	MW-20	MW-21	Downgradient MW-10	MW-11	MW-12	MW-13	MW-16S	MW-16D	Blanks
Lead	15-Sep-94	---	5	41.0	NI	NI	NI	12.0	49.0	7.0	43.0	NI	NI	ND
	1-Oct-94	---	5	---	NI	NI	NI	---	9.0	---	---	NI	NI	ND
	18-Jan-95	---	5	35.0	NI	NI	NI	9.0	17.0	10.0	30.0	NI	NI	ND
	6-Feb-95	---	5	15.0	NI	NI	NI	7.0	ND	ND	26.0	NI	NI	ND
	1-Mar-95	---	5	26.0	NI	NI	NI	16.0	12.0	9.0	43.0	NI	NI	ND
	1-Aug-95	---	5	11.0	NI	---	---	25.0	16.0	6.0	48.0	NI	NI	ND
	1-Jan-96	---	5	22.0	NI	---	---	18.0	12.0	10.0	7.0	NI	NI	ND
	1-Feb-96	---	5	16.0	NI	---	---	15.0	6.0	9.0	10.0	NI	NI	ND
	1-May-96	---	5	7.0	NI	---	---	8.0	9.0	15.0	ND	NI	NI	ND
	1-Oct-96	---	5	15.0	NI	---	---	24.0	10.0	7.0	6.0	NI	NI	ND
	1-May-97	---	5	16.0	NI	---	---	23.0	10.0	22.0	16.0	NI	NI	ND
	1-Nov-97	---	5	40.0	NI	---	---	27.0	14.0	30.0	24.0	NI	NI	ND
	1-May-98	---	5	18.0	NI	---	---	9.0	ND	10.0	6.0	NI	NI	ND
	1-Nov-98	---	5	7.0	NI	---	---	39.0	9.0	47.0	14.0	NI	NI	ND
	11-May-99	---	10	14.0	18.0	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99	---	10	160	54.0	---	---	56.0	27.0	140	23.0	ND	ND	ND
	3-May-00	---	10	ND	ND	---	---	ND	ND	ND	ND	11.0 J	ND	ND
	7-Nov-00	---	10	ND	20.0	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	10	ND	19.0	---	---	ND	ND	ND	20.0	ND	ND	ND
	6-May-04	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	10	---	2.5 J	---	---	ND	ND	ND	2.3 J	ND	ND	ND
NC 2L = 15 µg/L (10/23/07)	29-Nov-07	---	10	---	7.5 J	---	---	ND	6.1 J	ND	5.1 J	ND	ND	ND
	29-May-08	4.0	10.0	---	ND	---	---	ND	ND	ND	6.8	ND	ND	ND
	6-Nov-08	4.0	10.0	---	ND	---	---	ND	ND	ND	8.8 J	ND	ND	ND
	3-Jun-09	4.0	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Nov-09	4.0	10.0	---	ND	---	---	ND	ND	ND	5.5 J	ND	ND	ND
	16-Jun-10	4.0	10.0	---	ND	---	---	4.4 J	13.9	ND	ND	ND	ND	ND
	1-Dec-10	4.0	10.0	---	ND	**16.8**	---	ND	ND	ND	ND	ND	ND	ND
Resample>	13-Jan-11	4.0	10.0	---	ND	ND	---	---	---	---	---	---	---	ND
	1-Jun-11	4.0	10.0	---	ND	5.9 J	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13	5.0	10.0	---	---	ND	---	ND	5.5 J	ND	5.6 J	ND	ND	ND
	28-Oct-13	5.0	10.0	---	---	ND	---	ND	5.2 J	ND	ND	ND	ND	ND
	6-May-14	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	5.0	10.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	2.5	10.0	---	---	---	ND	4.9 J	4.3 J	ND	ND	2.7 J	ND	ND
	8-Dec-15	2.5	10.0	---	---	---	ND	7.8 J	6.3 J	9.8 J	ND	ND	ND	ND
Manganese	1-Jun-11	0.30	50.0	---	**385**	**209**	---	**5,770**	**14,500**	**9,330**	**1,160**	**8,460**	**123**	0.36 J
NC 2L = 50 µg/L (01/01/10) Resample>	7-Jul-11	5.0	50.0	---	---	143	---	---	---	---	---	---	---	ND
	20-Dec-11	5.0	50.0	---	---	**136**	---	**6,670**	**15,500 D**	**9,480**	**1,030**	**8,540**	**119**	ND
	30-May-12	5.0	50.0	---	---	**104**	---	**6,700**	**14,300**	**9,370**	**1,170**	**8,790**	**119**	ND
	5-Dec-12	5.0	50.0	---	---	**54.5**	---	**2,650**	**8,930**	**9,150**	**1,230**	**9,180**	**122**	ND
	12-Jun-13	5.0	50.0	---	---	49.3 J	---	**16,800**	**15,400**	**11,700**	**2,060**	**8,150**	**130**	ND
	28-Oct-13	5.0	50.0	---	---	**80.0**	---	**8,420**	**15,000**	**9,910**	**2,500**	**9,680**	**124**	ND
	6-May-14	50.0	500.0	---	---	**83.5**	---	**12,300**	**18,300**	**9,950**	**1,600**	**9,720**	**119**	ND
	23-Oct-14	50.0	500.0	---	---	*	**73.6**	**9,400**	**23,200**	**11,000**	**1,740**	**11,500**	**115**	ND
	20-May-15	2.5	50.0	---	---	---	27.4	**9,070**	**29,800**	**10,800**	**2,010**	**12,400**	**121**	ND
	8-Dec-15	12.5	50.0	---	---	---	50.0 J	**15,000**	**18,100**	**10,800**	**1,500**	**8,440**	**124**	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

				Background				Downgradient						
Analyte	**Sample Collection Date**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Mercury	16-Aug-95	---	0.2	0.30 B	NI	---	---	0.30 B	0.30 B	0.20 B	0.30 B	NI	NI	0.2
	25-Jan-96	---	0.2	1.6	NI	---	---	0.40	0.70	ND	1.3	NI	NI	ND
	28-Feb-96	---	0.2	ND	NI	---	---	2.4	ND	ND	0.20	NI	NI	ND
	1-May-96	---	0.2	1.4	NI	---	---	1.7	1.5	2.1	2.3	NI	NI	ND
	1-Oct-96	---	0.5	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-97	---	---	---	NI	---	---	NS	NS	NS	NS	NI	NI	NS
	1-Nov-97	---	0.2	ND	NI	---	---	0.80	ND	ND	ND	NI	NI	ND
	1-May-98	---	0.2	ND	NI	---	---	0.80	ND	ND	0.40	NI	NI	ND
	1-Nov-98	---	0.2	ND	NI	---	---	1.3	ND	ND	0.49	NI	NI	ND
	11-May-99	---	0.2	---	ND	---	---	---	---	---	---	ND	ND	---
	18-Oct-99	---	0.5	ND	ND	---	---	---	ND	ND	0.55	ND	ND	ND
	3-May-00	---	0.5	---	---	---	---	---	---	---	---	---	---	---
	7-Nov-00	---	0.5	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	31-May-01	---	0.5	ND	---	---	---	0.70	ND	ND	0.90	ND	---	ND
	7-Nov-01	---	0.5	ND	---	---	---	ND	ND	ND	1.0	ND	---	ND
	22-May-02	---	0.5	ND	---	---	---	0.62	ND	ND	ND	ND	---	ND
	14-Nov-02	---	0.5	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-May-03	---	0.5	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03	---	0.5	ND	---	---	---	0.80	ND	ND	0.73	ND	---	ND
	6-May-04	---	0.5	ND	---	---	---	0.71	ND	ND	0.52	ND	---	ND
	10-Nov-04	---	0.5	ND	---	---	---	ND	ND	ND	0.74	ND	---	ND
	5-May-05	---	0.5	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	3-Nov-05	---	0.5	---	ND	---	---	1.0	ND	ND	ND	ND	---	ND
	25-May-06	---	2	---	---	---	---	ND	ND	ND	ND	ND	---	ND
	2-Nov-06	---	0.5	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	0.2	---	---	---	---	0.12 J	ND	ND	0.13 J	ND	---	---
NC 2L = 1.05 µg/L (10/23/07)	29-Nov-07	---	0.2	---	ND	---	---	0.88	ND	ND	0.50	ND	ND	ND
	29-May-08	0.090	0.20	---	---	---	---	0.12 B	ND	0.13 B	0.66	0.12 B	---	0.1 J
	6-Nov-08	0.090	0.20	---	ND	---	---	ND	ND	ND	0.41	ND	ND	ND
	3-Jun-09	0.070	0.20	---	ND	---	---	ND	ND	ND	0.14 J	ND	---	ND
	18-Nov-09	0.070	0.20	---	ND	---	---	ND	ND	ND	0.43	ND	ND	ND
NC 2L = 1 µg/L (01/01/10)	16-Jun-10	0.070	0.20	---	ND	---	---	0.17 J	ND	ND	0.077 J	---	---	ND
	1-Dec-10	0.070	0.20	---	0.089 J	ND	---	0.62	ND	ND	0.21	ND	ND	ND
	1-Jun-11	0.10	0.20	---	ND	ND	---	0.19 J	ND	ND	0.19 J	ND	---	ND
	20-Dec-11	0.10	0.20	---	---	ND	---	0.14 J	ND	ND	0.15 J	ND	ND	ND
	30-May-12	0.10	0.10	---	---	ND	---	0.13 J	ND	ND	0.10 J	ND	ND	ND
	5-Dec-12	0.10	0.20	---	---	ND	---	0.11 J	ND	ND	0.27	ND	---	ND
	12-Jun-13	0.10	0.20	---	---	ND	---	ND	ND	ND	0.56	ND	ND	ND
	28-Oct-13	0.10	0.20	---	---	ND	---	0.15 J	ND	ND	0.11 J	ND	ND	ND
	6-May-14	0.10	0.20	---	---	ND	---	0.15 J	ND	ND	ND	ND	ND	ND
	23-Oct-14	0.10	0.20	---	---	*	ND	ND	ND	ND	0.38	ND	ND	ND
	20-May-15	0.10	0.20	---	---	---	ND	0.13 J	ND	ND	0.45	ND	ND	ND
	8-Dec-15	0.10	0.20	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	15-Sep-94	---	50	ND	NI	NI	NI	ND	ND	100	ND	NI	NI	ND
	1-Oct-94	---	50	---	NI	NI	NI	---	ND	---	---	NI	NI	ND
	18-Jan-95	---	50	ND	NI	NI	NI	ND	ND	ND	ND	NI	NI	ND
	6-Feb-95	---	50	ND	NI	NI	NI	ND	ND	71.0	ND	NI	NI	ND
	1-Mar-95	---	50	ND	NI	NI	NI	ND	ND	ND	ND	NI	NI	ND
	1-Aug-95	---	50	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Jan-96	---	50	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Feb-96	---	50	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-96	---	50	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Oct-96	---	50	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-97	---	50	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Nov-97	---	50	ND	NI	---	---	ND	ND	80.0	ND	NI	NI	ND
	1-May-98	---	50	ND	NI	---	---	ND	ND	90.0	ND	NI	NI	ND
	1-Nov-98	---	50	ND	NI	---	---	ND	ND	74.0	ND	NI	NI	ND
	11-May-99	---	5	21.0	33.0	---	---	16.0	11.0	63.0	14.0	53.0	ND	ND
	18-Oct-99	---	50	180	67.0	---	---	55.0	ND	570	ND	ND	ND	ND
	3-May-00	---	50	ND	ND	---	---	ND	ND	ND	ND	71.0	ND	ND
	7-Nov-00	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	50	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	50	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	50	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	50	---	2.2 J	---	---	2.1 J	2.2 J	3.7 J	4.1 J	ND	ND	ND
NC 2L = 100 µg/L (10/23/07)	29-Nov-07	---	50	---	3.9 J	---	---	ND	7.3 J	8.0 J	2.2 J	ND	ND	ND
	29-May-08	1.7	50.0	---	3.6 J	---	---	3.1 J	5.6 J	3.0 J	4.3 J	2.5 J	ND	ND
	6-Nov-08	1.7	50.0	---	2.2 J	---	---	2.9 J	5.6 J	6.8 J	5.1 J	5.6 J	ND	ND
	3-Jun-09	1.7	50.0	---	3.1 B	---	---	2.6 B	8.5 B	ND	4.1 B	2.8 B	2.2 B	1.7 J
	18-Nov-09	1.7	50.0	---	2.4 J	---	---	3.2 J	5.9 J	4.9 J	4.9 J	1.8 J	ND	ND
	16-Jun-10	1.7	50.0	---	1.7 J	---	---	4.5 J	13.1 J	8.2 J	3.4 J	1.7 J	ND	ND
	1-Dec-10	1.7	50.0	---	ND	19.0 J	---	3.1 J	4.1 J	7.8 J	3.7 J	ND	ND	ND
	1-Jun-11	1.7	50.0	---	ND	4.7 B	---	2.2 B	3.5 B	2.2 B	3.0 B	ND	ND	2.3 J
	20-Dec-11	5.0	50.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	50.0	---	---	ND	---	ND	ND	ND	ND	5.2 J	ND	ND
	5-Dec-12	5.0	50.0	---	---	ND	---	ND	ND	6.7 J	ND	ND	ND	ND
	12-Jun-13	5.0	50.0	---	---	ND	---	ND	ND	5.2 J	5.4 J	ND	ND	ND
	28-Oct-13	5.0	50.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	5.0	50.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	5.0	50.0	---	---	*	ND	6.0 J	ND	ND	ND	ND	ND	ND
	20-May-15	2.5	50.0	---	---	---	ND	5.3 J	4.6 J	3.1 J	4.4 J	ND	ND	ND
	8-Dec-15	2.5	50.0	---	---	---	ND	5.5 J	3.4 J	17.7 J	4.2 J	ND	ND	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

				Background				Downgradient						
Analyte	**Sample Collection Date**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Selenium	29-May-08	3.8	10.0	---	ND	---	---	ND	6.1 J	ND	ND	5.8 J	ND	ND
	6-Nov-08	3.8	10.0	---	ND	---	---	13.2	6.4 J	6.7 J	ND	5.8 J	ND	ND
	3-Jun-09	3.8	10.0	---	ND	---	---	ND	5.4 J	ND	ND	ND	ND	ND
	18-Nov-09	3.8	10.0	---	ND	---	---	ND	4.3 J	4.7 J	4.4 J	5.0 J	ND	ND
NC 2L = 20 µg/L (01/01/10)	16-Jun-10	3.8	10.0	---	ND	---	---	3.8 J	ND	6.9 J	ND	ND	ND	ND
	1-Dec-10	3.8	10.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11	3.8	10.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11	10.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	10.0	10.0	---	---	ND	---	11.7	11.3	ND	ND	ND	ND	ND
	5-Dec-12	10.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13	10.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	10.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	10.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	10.0	10.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	5.0	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	5.0	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Silver	6-Feb-95	---	10	ND	NI	NI	NI	11.0	ND	11.0	ND	NI	NI	ND
	1-Mar-95	---	10	ND	NI	NI	NI	ND	ND	ND	ND	NI	NI	ND
	1-Aug-95	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Jan-96	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Feb-96	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-96	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Oct-96	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-97	---	5	ND	NI	---	---	6.0	ND	ND	ND	NI	NI	ND
	1-Nov-97	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-98	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Nov-98	---	1	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	11-May-99	---	2	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-May-00	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-00	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	10	15.0 B	15.0 B	---	---	14.0 B	15.0 B	14.0 B	12.0 B	16.0 B	16.0 B	15.0
	14-Nov-02	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 17.5 µg/L (10/23/07)	29-Nov-07	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08	0.10	10.0	---	0.14 J	---	---	0.59 J	1.1 J	0.45 J	ND	0.57 J	ND	ND
	6-Nov-08	0.10	10.0	---	0.25 B	---	---	1.1 B	2.1 J	1.3 J	0.26 B	1.1 B	0.22 B	0.23 J
	3-Jun-09	0.10	10.0	---	0.68 B	---	---	1.0 B	1.4 B	0.73 B	0.13 B	0.76 B	1.0 B	0.31 J
	18-Nov-09	0.10	10.0	---	0.28 B	---	---	0.72 B	1.0 B	0.61 B	0.19 B	0.57 B	0.19 B	0.23 J
NC 2L = 20 µg/L (01/01/10)	16-Jun-10	0.10	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	1-Dec-10	0.10	10.0	---	ND	ND	---	ND	0.24 J	ND	ND	ND	ND	ND
	1-Jun-11	0.10	10.0	---	0.39 B	0.16 B	---	0.22 B	0.60 B	0.32 B	0.29 B	0.22 B	0.23 B	0.17 J
	20-Dec-11	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	5.0	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	5.0	10.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	2.5	10.0	---	---	---	ND	ND	3.6 J	ND	ND	ND	ND	ND
	8-Dec-15	2.5	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	Background MW-9	MW-17	MW-20	MW-21	Downgradient MW-10	MW-11	MW-12	MW-13	MW-16S	MW-16D	Blanks
Sulfide	1-Aug-95	---	100	900	NI	---	---	ND	600	ND	100	NI	NI	ND
	1-Jan-96	---	100	ND	NI	---	---	ND	300	ND	ND	NI	NI	ND
	1-Feb-96	---	100	ND	NI	---	---	ND	100	ND	ND	NI	NI	ND
	1-May-96	---	100	200	NI	---	---	ND	900	700	300	NI	NI	ND
	1-Oct-96	---	100	2800	NI	---	---	ND	200	3000	7500	NI	NI	ND
	1-May-97	---	50	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Nov-97	---	50	ND	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-May-98	---	50	50	NI	---	---	ND	ND	ND	ND	NI	NI	ND
	1-Nov-98	---	50	ND	NI	---	---	130	ND	80.0	110	NI	NI	ND
	11-May-99	---	50	ND	ND	---	---	ND	ND	ND	ND	---	ND	ND
	18-Oct-99	---	1000	ND	ND	---	---	---	ND	ND	ND	ND	ND	ND
	7-Nov-00	---	1000	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	31-May-01	---	1000	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	7-Nov-01	---	1000	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-Nov-02	---	1000	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03	---	1000	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	10-Nov-04	---	1000	ND	---	---	---	ND	ND	ND	ND	ND	---	6
	3-Nov-05	---	---	---	ND	---	---	ND	ND	1800	ND	ND	---	ND
	2-Nov-06	---	1000	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
NC 2L = NE (10/23/07)	29-Nov-07	---	1000	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	6-Nov-08	100	1000	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	3-Jun-09	100	1000	---	ND	---	---	---	ND	ND	---	ND	---	ND
	18-Nov-09	100	1000	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	16-Jun-10	100	1000	---	ND	---	---	---	ND	ND	---	ND	---	ND
	1-Dec-10	100	1000	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12	100	1000	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	12-Jun-13	100	1000	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13	100	1000	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	100	1000	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15	100	1000	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
Thallium	1-Nov-97	---	1	2.0 B	NI	---	---	2.0 B	2.0 B	3.0 B	1.0 B	NI	NI	2.0
	1-May-98	---	1	ND	NI	---	---	ND	ND	ND	1.0	NI	NI	ND
	1-Nov-98	---	1	ND	NI	---	---	ND	ND	ND	1.0	NI	NI	ND
	11-May-99	---	2	2.0	3.0	---	---	4.0	3.0	4.0	ND	3	2.0	ND
	18-Oct-99	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-May-00	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-00	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	10	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	10	16.0	ND	---	---	41.0	23.0	25.0	14.0	26.0	ND	ND
	3-Nov-05	---	10	---	ND	---	---	19.0	17.0	15.0	ND	13.0	ND	ND
	25-May-06	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	10	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	5.5	---	ND	---	---	0.169 J	0.29 J	0.221 J	0.131 J	0.078 J	ND	ND
GWPS = 0.28 µg/L (10/23/07)	29-Nov-07	---	5.5	---	0.042 J	---	---	0.118 J	0.321 J	0.199 J	0.150 J	0.065 J	ND	ND
	29-May-08	3.0	5.5	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08	3.0	5.5	---	ND	---	---	**8.9**	ND	ND	ND	ND	ND	ND
	3-Jun-09	3.0	5.5	---	ND	---	---	ND	ND	ND	ND	ND	**14.8**	ND
	18-Nov-09	3.0	5.5	---	ND	---	---	ND	ND	ND	ND	ND	ND	4.2 J
	16-Jun-10	3.0	5.5	---	ND	---	---	5.3 J	**7.7**	4.1 J	ND	4.0 J	ND	ND
Resample>	5-Aug-10	3.0	5.5	---	---	---	---	---	**20.4**	---	---	---	---	3.2 J
GWPS = 0.2 µg/L (10/1/1)	1-Dec-10	3.0	5.5	---	3.3 B	ND	---	3.3 B	9.1 B	5.1 B	ND	7.8 B	ND	3.1 J
	1-Jun-11	3.0	5.5	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11	5.4	5.5	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.4	5.5	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12	5.4	5.5	---	---	ND	---	ND	ND	ND	ND	ND	ND	6.8
	12-Jun-13	5.4	5.5	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	5.4	5.5	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	5.4	5.5	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	23-Oct-14	5.4	5.5	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	20-May-15	5.0	5.5	---	---	---	ND	ND	**6.4**	ND	ND	ND	ND	ND
	8-Dec-15	5.0	5.5	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Tin	6-Nov-08	1.8	100	---	ND	---	---	2.3 J	3.8 J	2.1 J	ND	2.9 J	---	ND
GWPS = 0.28 µg/L (10/23/07)	3-Jun-09	---	---	---	---	---	---	---	---	---	---	---	---	---
	18-Nov-09	1.8	100	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
GWPS =2,100 µg/L (01/01/10)	16-Jun-10	1.8	100	---	ND	---	---	ND	ND	ND	ND	---	---	ND
GWPS =2,000 µg/L (10/1/10)	1-Dec-10	1.8	100	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	1-Jun-11	1.8	100	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11	5.0	100	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	100	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12	5.0	100	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	12-Jun-13	5.0	100	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13	5.0	100	---	---	ND	---	ND	5.1 J	ND	ND	ND	---	ND
	6-May-14	5.0	100	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	23-Oct-14	5.0	100	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	20-May-15	2.5	100	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15	2.5	100	---	---	---	ND	ND	ND	ND	ND	ND	---	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	Background MW-9	MW-17	MW-20	MW-21	Downgradient MW-10	MW-11	MW-12	MW-13	MW-16S	MW-16D	Blanks
Vanadium	1-May-97	---	5	12.0	NI	---	---	5.0	ND	66.0	9.0	NI	NI	ND
	1-Nov-97	---	40	ND	NI	---	---	ND	ND	180	ND	NI	NI	ND
	1-May-98	---	5	14.0	NI	---	---	6.0	7.0	159	22.0	NI	NI	ND
	1-Nov-98	---	5	15.0	NI	---	---	12.0	8.0	110	14.0	NI	NI	ND
	11-May-99	---	5	55.0	58.0	---	---	25.0	16.0	72.0	31.0	71.0	100	ND
	18-Oct-99	---	40	630	150	---	---	150	79.0	690	62.0	ND	ND	ND
	3-May-00	---	40	ND	ND	---	---	ND	ND	ND	ND	140	ND	ND
	7-Nov-00	---	40	ND	66.0	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	40	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	40	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	40	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	40	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	25	---	ND	---	---	ND	ND	ND	ND	ND	ND	1.3 J
GWPS = 3.5 µg/L (10/23/07)	29-Nov-07	---	25	---	7.3 J	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08	0.2	25.0	---	0.43 J	---	---	ND	2.4 J	1.3 J	3.7 J	ND	ND	ND
	6-Nov-08	0.2	25.0	---	3.0 B	---	---	2.2 B	0.53 B	5.5 B	11.1 J	6.2 B	1.4 B	2.1 J
	3-Jun-09	0.2	25.0	---	0.94 B	---	---	0.47 B	0.91 B	0.66 B	5.2 J	1.8 B	2.7 B	1.0 J
	18-Nov-09	0.20	25.0	---	0.82 B	---	---	0.43 B	0.66 B	4.1 J	5.4 J	1.3 B	0.29 B	0.56 J
	16-Jun-10	0.20	25.0	---	1.1 B	---	---	4.5 B	**28.5**	8.3 J	2.0 B	1.3 B	0.66 B	0.98 J
Resample>	5-Aug-10	0.20	25.0	---	---	---	---	---	1.5 B	---	---	---	---	0.62 J
GWPS = 0.3 µg/L (10/1/10)	1-Dec-10	0.20	25.0	---	0.48 J	**55.2**	---	3.2 J	0.63 J	5.7 J	0.33 J	2.9 J	2.4 J	ND
Resample>	13-Jan-11	0.20	25.0	---	---	0.55 B	---	---	---	---	---	---	---	0.33 J
	1-Jun-11	0.20	25.0	---	0.69 J	17.2 J	---	0.34 J	1.5 J	0.32 J	0.37 J	ND	5.5 J	ND
	20-Dec-11	5.0	25.0	---	---	10.7 J	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12	5.0	25.0	---	---	9.2 J	---	ND	ND	ND	ND	7.9 J	ND	ND
	5-Dec-12	5.0	25.0	---	---	ND	---	ND	ND	6.1 J	ND	ND	ND	ND
	12-Jun-13	5.0	25.0	---	---	ND	---	ND	ND	ND	5.6 J	ND	ND	ND
	28-Oct-13	5.0	25.0	---	---	ND	---	ND	8.3 J	ND	ND	ND	ND	ND
	6-May-14	5.0	25.0	---	---	6.7 J	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	5.0	25.0	---	---	*	9.6 J	ND	ND	ND	ND	ND	ND	ND
	20-May-15	2.5	25.0	---	---	---	ND	9.1 J	20.1 J	10.7 J	2.6 J	11.3 J	ND	ND
	8-Dec-15	2.5	25.0	---	---	---	6.6 J	20.4 J	23.5 J	**36.9**	3.0 J	11.5 J	ND	ND
Lab Re-run analyses>	8-Dec-15	2.5	25.0	---	---	---	---	---	---	19.8 J	---	---	---	---
Zinc	15-Sep-94	---	10	36.0	NI	NI	NI	ND	27.0	ND	ND	NI	NI	ND
	1-Oct-94	---	10	---	NI	NI	NI	---	52.0	---	---	NI	NI	ND
	18-Jan-95	---	10	21.0	NI	NI	NI	ND	27.0	21.0	ND	NI	NI	ND
	6-Feb-95	---	10	21.0	NI	NI	NI	ND	18.0	37.0	14.0	NI	NI	ND
	1-Mar-95	---	10	27.0	NI	NI	NI	14.0	24.0	29.0	29.0	NI	NI	ND
	1-Aug-95	---	10	ND	NI	---	---	ND	29.0	23.0	27.0	NI	NI	ND
	1-Jan-96	---	10	28.0	NI	---	---	22.0	37.0	49.0	21.0	NI	NI	ND
	1-Feb-96	---	10	48.0	NI	---	---	27.0	24.0	31.0	26.0	NI	NI	ND
	1-May-96	---	10	46.0	NI	---	---	46.0	48.0	56.0	55.0	NI	NI	ND
	1-Oct-96	---	10	23.0	NI	---	---	16.0	30.0	20.0	16.0	NI	NI	ND
	1-May-97	---	10	50.0	NI	---	---	50.0	50.0	80.0	50.0	NI	NI	ND
	1-Nov-97	---	10	60.0	NI	---	---	20.0	30.0	80.0	ND	NI	NI	ND
	1-May-98	---	10	40.0	NI	---	---	30.0	40.0	110	30.0	NI	NI	ND
	1-Nov-98	---	10	29.0	NI	---	---	24.0	23.0	150	ND	NI	NI	ND
	11-May-99	---	20	64.0	43.0	---	---	150	28.0	68.0	61.0	69.0	210	ND
	18-Oct-99	---	50	570	89.0	---	---	160	140	700	75.0 J	ND	99.0	ND
	3-May-00	---	50	ND	ND	---	---	ND	ND	ND	62.0 J	160	63.0 J	ND
	7-Nov-00	---	50	130	150	---	---	ND	110	60.0	70.0	ND	ND	ND
	31-May-01	---	50	ND	ND	---	---	ND	ND	79.0	ND	ND	ND	ND
	7-Nov-01	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03	---	50	ND	100	---	---	50.0	ND	ND	ND	ND	ND	ND
	6-May-04	---	50	ND	ND	---	---	78.0	ND	ND	ND	ND	ND	ND
	10-Nov-04	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	5-May-05	---	50	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05	---	50	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06	---	50	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06	---	50	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07	---	10	---	5.9 B	---	---	7.6 B	11.4	19.3	14.0	46.5	1.3	1.6 J
NC 2L = 1,050 µg/L (10/23/07)	29-Nov-07	---	10	---	20.4	---	---	10.9 B	62.0	30.2	16.4	44.5	35.6	3.1 J
	29-May-08	0.40	10.0	---	2.9 B	---	---	20.4	44.3	27.9	25.7	35.2	25.0	3.0 J
	6-Nov-08	0.40	10.0	---	12.1 B	---	---	10.2 B	16.6	18.6	27.1	76.7	30.9	2.7 J
	3-Jun-09	0.40	10.0	---	3.9 B	---	---	4.6 B	40.5 B	7.0 B	20.0 B	19.2 B	6.6 B	82.0
	18-Nov-09	0.40	10.0	---	4.2 B	---	---	7.2 B	21.4	18.6	22.1	13.6 B	2.5 B	3.1 J
NC 2L = 1,000 µg/L (01/01/10)	16-Jun-10	0.40	10.0	---	ND	---	---	6.0 J	56.2	20.5	10.1	24.0	ND	ND
	1-Dec-10	0.40	10.0	---	6.5 J	76.5	---	14.1	33.4	25.6	16.2	119	5.4 J	0.62 J
	1-Jun-11	0.40	10.0	---	8.3 B	31.6 B	---	14.3 B	40.8 B	27.2 B	20.1 B	24.9 B	44.7 B	13.7
	20-Dec-11	10.0	10.0	---	---	19.6	---	13.3	40.8	20.2	17.6	30.5	15.8	ND
	30-May-12	10.0	10.0	---	---	11.5	---	ND	39.2	16.6	13.3	48.8	ND	ND
	5-Dec-12	10.0	10.0	---	---	ND	---	12.1	17.8	24.4	17.8	ND	11.2	ND
	12-Jun-13	10.0	10.0	---	---	31.4	---	ND	38.9 B	ND	23.7 B	ND	32.2 B	76.5
	28-Oct-13	10.0	10.0	---	---	15.9	---	ND	68.9	14.3	22.0	18.2	ND	ND
	6-May-14	10.0	10.0	---	---	13.7	---	ND	23.4	12.2	17.2	11.7	ND	ND
	23-Oct-14	10.0	10.0	---	---	*	ND	ND	17.8	11.2	18.5	32.2	13.9	ND
	20-May-15	5.0	10.0	---	---	---	26.4	9.6 J	24.2	15.6	19.8	20.4	ND	ND
	8-Dec-15	5.0	10.0	---	---	---	ND	9.0 J	20.0	65.1	19.0	47.3	8.2 J	ND

APPENDIX D:
HISTORICAL DETECTED INORGANIC GROUNDWATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	Background MW-9	MW-17	MW-20	MW-21	Downgradient MW-10	MW-11	MW-12	MW-13	MW-16S	MW-16D	Blanks
Alkalinity, Total as CaCO3	1-Jun-11	5,000	5,000	---	45,100	---	---	---	177,000	70,700	---	109,000	---	ND
NC 2L = NE (01/01/10)	20-Dec-11	5,000	5,000	---	---	8,580	---	53,600	189,000	70,800	ND	77,200	47,200	ND
	30-May-12	1,000	1,000	---	---	8,140	---	64,700	200,000	76,700	8,360	104,000	44,400	ND
	5-Dec-12	1,000	5,000	---	---	7,690	---	22,600	178,000	76,600	ND	106,000	46,500	ND
	12-Jun-13	1,000	5,000	---	---	7,950	---	138,000	202,000	111,000	7,020	99,700	51,700	ND
	28-Oct-13	1,000	5,000	---	---	8,140	---	69,900	197,000	91,300	9,520	116,000	45,000	ND
	6-May-14	1,000	5,000	---	---	8,060	---	85,900	208,000	90,600	5,520	119,000	45,700	ND
	23-Oct-14	1,000	5,000	---	---	*	1,360 J	88,100	215,000	96,100	7,500	122,000	52,000	---
	20-May-15	1,000	5,000	---	---	---	ND	67,300	153,000	67,500	8,780	92,100	41,600	---
	8-Dec-15	1,000	NE	---	---	---	1,030 J	98,400	202,000	88,800	9,130	95,900	46,200	---
Chloride	1-Jun-11	5,000	5,000	---	ND	---	---	---	17,000	6,330	---	7,870	---	ND
NC 2L = 250,000 µg/L (01/01/10)	20-Dec-11	5,000	5,000	---	---	ND	---	6,320	20,200	6,400	ND	6,530	ND	ND
	30-May-12	1,000	1,000	---	---	1,480	---	6,190	20,000	ND	2,100	5,840	ND	ND
	5-Dec-12	1,000	1,000	---	---	2,130	---	5,970	19,500	7,290	2,060	7,430	1,130	ND
	12-Jun-13	1,000	1,000	---	---	1,380	---	13,300	19,500	7,500	2,260	5,100	ND	ND
	28-Oct-13	1,000	1,000	---	---	1,120	---	11,400	18,100	7,750	2,210	8,490	ND	ND
	6-May-14	1,000	1,000	---	---	ND	---	17,300	18,200	8,140	1,890	8,920	ND	ND
	23-Oct-14	500	1,000	---	---	*	ND	19,200	20,800	9,050	1,570	8,120	642 J	ND
	20-May-15	500	1,000	---	---	---	---	14,000	25,300	9,680	1,720	10,400	572 J	---
	8-Dec-15	500	NE	---	---	---	859 J	26,500	30,800	9,400	1,910	4,190	945 J	---
Sulfate	1-Jun-11	5,000	5,000	---	ND	---	---	---	ND	ND	---	ND	---	ND
NC 2L = 250,000 µg/L (01/01/10)	20-Dec-11	5,000	5,000	---	---	ND	---	5,150	ND	ND	ND	ND	8,630	ND
	30-May-12	2,000	250,000	---	---	ND	---	5,380 J	ND	ND	ND	ND	8,860 J	ND
	5-Dec-12	2,000	250,000	---	---	ND	---	2,880 J	2,920 J	4,400 J	ND	2,320 J	8,910 J	ND
	12-Jun-13	2,000	250,000	---	---	ND	---	11,200 J	3,080 J	2,910 J	6,940 J	ND	9,310 J	ND
	28-Oct-13	2,000	250,000	---	---	ND	---	4,420 J	ND	2,940 J	ND	ND	8,150 J	ND
	6-May-14	2,000	250,000	---	---	ND	---	10,500 J	2,300 J	3,720 J	ND	2,070 J	8,780 J	ND
	23-Oct-14	1,000	250,000	---	---	*	ND	7,270 J	2,280 J	3,740 J	1,240 J	1,940 J	9,710 J	ND
	20-May-15	1,000	250,000	---	---	---	ND	5,620 J	2,310 J	3,440 J	ND	2,150 J	8,780 J	---
	8-Dec-15	1,000	250,000	---	---	---	ND	10,200 J	1,530 J	2,020 J	ND	ND	9,260 J	---
Total Dissolved Solids, Dissolved	1-Jun-11	25,000	25,000	---	62,000	---	---	---	200,000	93,000	---	127,000	---	ND
NC 2L = 500,000 µg/L (01/01/10)	20-Dec-11	25,000	25,000	---	---	ND	---	59,000	196,000	82,000	ND	103,000	78,000	ND
	30-May-12	25,000	25,000	---	---	37,000	---	85,000	12,500 J	109,000	ND	136,000	90,000	ND
	5-Dec-12	25,000	25,000	---	---	35,000	---	50,000	219,000	109,000	28,000	134,000	97,000	ND
	12-Jun-13	25,000	25,000	---	---	34,000	---	177,000	225,000	136,000	ND	111,000	107,000	ND
	28-Oct-13	25,000	25,000	---	---	49,000	---	109,000	227,000	134,000	ND	138,000	112,000	ND
	6-May-14	25,000	25,000	---	---	34,000	---	136,000	234,000	115,000	32,000	126,000	102,000	ND
	23-Oct-14	25,000	25,000	---	---	*	ND	126,000	238,000	119,000	ND	129,000	98,000	ND
	20-May-15	25,000	25,000	---	---	---	ND	112,000	252,000	122,000	30,000	135,000	88,000	---
	8-Dec-15	25,000	NE	---	---	---	ND	182,000	280,000	117,000	ND	106,000	93,000	---

Notes:

(Abbreviations and Referrences)

All concentrations in micrograms per liter (µg/L) = parts per billion.
--- = Not sampled for this parameter or not reported.
AB = Monitoring well abandoned.
B = Blank-Qualified (Concentration suspected to reflect laboratory or field contamination based on similar concentrations detected in field, trip, or method blanks).
D = Sample was diluted when analyzed.
DL = Laboratory Detection Limit.
GWPS = Groundwater Protection Standard set by NC-DENR-SWS for constituents with no listed NC 2L standard.
When the NC 2L Groundwater Standard has not been established, the GWPS will be used.
J = Estimated value - concentration is less than the RL but greater than the DL.
NC 2L = Groundwater Standard from 15A NCAC 2L.
ND = Not Detected at or above the RL (prior to Dec. 2006) or the DL (after Dec. 2006).
NE = No NC 2L or GWPS established.
NI = Not Installed; monitoring was not yet installed.
RL = Reporting Limit (Lab. Reporting Limit for September 1994 - May 1999; NC PQL for October 1999 - December 2006; and SWSL for December 2006 - present).
Values above the NC2L Standard or GWPS are **bold**.

Notes: (Event Narratives)

Volatile organics (8260) for MW-9 for November 10, 2004 sampling event were unable to be analyzed and were resampled on December 1, 2004.
There was a resamplinging event on August 2, 2007 for MW-16D because the prevoius samples from the May 2007 were analyzed out of hold time. There were no detects in the resample.
* MW-21 replaced MW-20 as the background well starting with the Fall 2014 sampling event; however MW-20 continues to be sampled as a compliance well for the C&D Expansion (Phase 1A).
See the Water Quality Monitrong Report for the C&D Expansion Area for current results for MW-20.
The dates on the table above reflect the last samples were collected during the semiannual monitoring event. Individual collection dates are preserved in the Lab Reports (Appendix B).
Pace Analytical Re-ran the analysis for Antimony, Chromium, and Vanadium in MW-12 on January 19, 2016 from the samples collected in December 2016, and the results are included in the table.
A Verification Sampling Event was performed for beta-BHC in MW-11 and Antimony and Chromium in MW-12 on February 4, 2016, for the December 2015 event and results are included.

Appendix E

Historical Detected Organic Groundwater Constituents

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	Collection Date	Method	DL	RL	MW-9	MW-17	MW-20	MW-21	MW-10	MW-11	MW-12	MW-13	MW-16S	MW-16D	Blanks
Organic Compounds															
Acetone	30-May-07		---	100.0	---	2.7 B	---	---	ND	ND	ND	ND	ND	ND	2.1 J
NC 2L = 700 µg/L (10/23/07)	29-Nov-07		---	100.0	---	8.1 B	---	---	3 B	ND	2.8 B	8.1 B	13 B	2.6 B	5.1 J
	29-May-08		20.0	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08		20.0	100.0	---	26.8 J	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Jun-09		2.2	100.0	---	48.3 J	---	---	6.5 J	ND	ND	ND	18.5 J	ND	ND
	18-Nov-09		2.2	100.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 6,000 µg/L (01/01/10)	16-Jun-10		2.2	100.0	---	5.3 B	---	---	ND	3.1 B	ND	ND	ND	ND	7.2 J
	1-Dec-10		2.2	100.0	---	ND	ND	---	8.4 B	ND	ND	ND	56.6 J	ND	3.7 J
	1-Jun-11		2.2	100.0	---	3.5 B	ND	---	3.4 B	8.1 B	7.7 B	ND	80 J	ND	3.9 J
	20-Dec-11		2.2	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		2.2	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		10.0	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		10.0	100.0	---	---	ND	---	33 J	ND	ND	ND	20.5 J	ND	ND
	28-Oct-13		10.0	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	10.0	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	10.0	100.0	---	---	*	ND	ND	ND	10.4 J	ND	ND	ND	ND
	21-May-15	EPA 8260	10.0	100.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	10.0	100.0	---	---	---	ND	ND	ND	ND	ND	16.5 J	ND	ND
Acrolein	8-Dec-15	EPA 8260	1.6	53.0	---	---	---	1.6 B	ND	ND	ND	ND	ND	---	2.8 J
NC 2L = 6,000 µg/L (01/01/10)															
Benzene	1-Oct-96		---	5.0	---	NI	---	---	ND	**6**	ND	ND	NI	NI	---
	1-May-97		---	5.0	ND	NI	---	---	ND	**6.8**	2.7 J	ND	NI	NI	---
	1-Nov-97		---	1.0	ND	NI	---	---	ND	**9**	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	**10**	**9.4**	ND	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	**11.6**	ND	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	**13**	ND	ND	**5.3**	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	**12**	ND	ND	**5.4**	ND	ND
	3-May-00		---	5.0	ND	ND	---	---	ND	**10**	ND	ND	**6.3**	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	**9.2**	ND	ND	ND	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	**7.7**	ND	ND	**5.8**	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	**8.1**	**5.2**	ND	**6.7**	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	**8.2**	**8.1**	ND	**8.0**	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	**5.1**	**7.7**	ND	**9.4**	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	**8**	**5.4**	**7**	**13**	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	**7.3**	**5.7**	**7.5**	**9.2**	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	**7.3**	**7.2**	**9.3**	**9.6**	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	**7.5**	**6**	**8.5**	**10**	ND	ND
	27-May-05		---	5.0	ND	ND	---	---	ND	**8**	**9**	**11**	**9**	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	**5**	**8**	**6**	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	**6.1**	**8.5**	**5.3**	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	**5.3**	**5.3**	**11**	**7.6**	ND	ND
	30-May-07		---	1.0	---	0.22 J	---	---	0.87 J	**7.3**	**7.4**	**13**	**6.6**	ND	ND
NC 2L = 1 µg/L (10/23/07)	29-Nov-07		---	1.0	---	0.6 J	---	---	0.79 J	**3.6**	**2.8**	**12**	**3.3**	ND	ND
	29-May-08		0.3	1.0	---	0.49 J	---	---	0.88 J	**4.6**	**4.6**	**13.5**	**4.1**	ND	ND
	6-Nov-08		0.3	1.0	---	0.53 J	---	---	0.81 J	**4.3**	**4.4**	**12**	**3.1**	ND	ND
	3-Jun-09		0.3	1.0	---	0.67 J	---	---	**1.2**	**4.5**	**5.4**	**15.3**	**4.1**	ND	ND
	18-Nov-09		0.3	1.0	---	1.3	---	---	0.81 J	**4**	**5.6**	**14.9**	**3.3**	ND	ND
	16-Jun-10		0.3	1.0	---	0.59 J	---	---	0.81 J	**5.9**	**5**	**14.3**	**2.4**	ND	ND
	1-Dec-10		0.3	1.0	---	ND	ND	---	0.96 J	**5**	**3**	**11.5**	**4**	ND	ND
	1-Jun-11		0.3	1.0	---	0.99 J	ND	---	1	**5.4**	**3.9**	**16.1**	**1.2**	ND	ND
	20-Dec-11		0.3	1.0	---	---	ND	---	1 J	**4.2**	**3.1**	**12.9**	**D 2**	ND	ND
	30-May-12		0.3	1.0	---	---	ND	---	ND	**4.4**	**2.8**	**14.7**	**2**	ND	ND
	5-Dec-12		0.3	1.0	---	---	ND	---	0.83 J	**4.1**	**2.8**	**14.9**	**1.6**	ND	ND
	12-Jun-13		0.3	1.0	---	---	ND	---	**1.5**	**3.5**	**4.2**	**15.9**	**2.9**	ND	ND
	28-Oct-13		0.3	1.0	---	---	ND	---	1	**4.1**	**4.1**	**15.6**	**2**	ND	ND
	6-May-14	EPA 8260	0.3	1.0	---	---	ND	---	**1.6**	**3.9**	**3.8**	**17.2**	**2.1**	ND	ND
	22-Oct-14	EPA 8260	0.3	1.0	---	---	*	ND	**1.8**	**2.8**	**3.0**	**14.9**	**1.8**	ND	ND
	21-May-15	EPA 8260	0.3	1.0	---	---	ND	ND	**1.3**	**2.8**	**2.8**	**12.3**	**1.2**	ND	ND
	8-Dec-15	EPA 8260	0.3	1.0	---	---	*	ND	**1.6**	**2.2**	**2.3**	**13.8**	**1.7**	ND	ND
Bromodichloromethane	30-May-07		---	1.0	---	ND	---	---	0.54 J	ND	0.63 J	ND	ND	ND	ND
NC 2L = 0.56 µg/L (10/23/07)	29-Nov-07		---	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08		0.2	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08		0.2	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Jun-09		0.2	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Nov-09		0.2	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 0.6 µg/L (01/01/10)	16-Jun-10		0.2	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	1-Dec-10		0.2	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11		0.2	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11		0.2	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		0.2	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.2	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		0.2	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	18.60
	28-Oct-13		0.18	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.18	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.18	1.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.18	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.18	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	12-Jun-13		0.29	10.0	---	---	ND	---	1.4 J	ND	ND	ND	ND	ND	ND
NC 2L = NE (10/23/07)	28-Oct-13		0.29	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.29	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.29	10.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.29	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.29	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	20-Dec-11		1.0	100.0	---	---	ND	---	ND	ND	ND	5.6 J	ND	ND	ND
NC 2L = 4000 µg/L (10/23/07)	30-May-12		1.0	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		1.0	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		1.0	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13		1.0	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	1.0	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	1.0	100.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	1.0	100.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	1.0	100.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Carbon Disulfide	1-Nov-97		---	1.0	8	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	24-Nov-98		---	2.0	6.2	NI	---	---	ND	ND	8.9	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	ND	6.7	9	ND	100	ND
	18-Oct-99		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-May-00		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-00		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	27-May-05		---	100.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05		---	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06		---	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06		---	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07		---	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 700 µg/L (10/23/07)	29-Nov-07		---	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08		1.2	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08		1.2	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Jun-09		1.20	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Nov-09		1.20	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	16-Jun-10		1.20	100.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	1-Dec-10		1.20	100.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11		1.20	100.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11		1.20	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		1.20	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		1.2	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		1.2	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13		1.2	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	1.2	100.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	1.2	100.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	1.4 J
	21-May-15	EPA 8260	1.2	100.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	1.2	100.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	30-May-07		---	3.0	---	ND	---	---	ND	0.63 J	1.1 J	0.3 J	0.61 J	ND	ND
NC 2L = 50 µg/L (10/23/07)	29-Nov-07		---	3.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08		0.2	3.0	---	ND	---	---	ND	0.48 J	0.7 J	0.32 J	0.59 J	ND	ND
	6-Nov-08		0.2	3.0	---	ND	---	---	ND	0.53 J	0.8 J	0.3 J	0.59 J	ND	ND
	3-Jun-09		0.2	3.0	---	ND	---	---	0.26 J	0.47 J	0.73 J	0.39 J	0.76 J	ND	ND
	18-Nov-09		0.2	3.0	---	ND	---	---	ND	0.51 J	1.0 J	0.39 J	0.71 J	ND	ND
	16-Jun-10		0.2	3.0	---	ND	---	---	ND	0.9 J	1.2 J	0.41 J	0.79 J	ND	ND
	1-Dec-10		0.2	3.0	---	ND	ND	---	ND	0.74 J	0.63 J	ND	0.72 J	ND	ND
	1-Jun-11		0.2	3.0	---	ND	ND	---	ND	0.8 J	1.0 J	0.5 J	0.4 J	ND	ND
	20-Dec-11		0.2	3.0	---	---	ND	---	ND	0.7 J	0.7 J	ND	0.7 J	ND	ND
	30-May-12		0.2	3.0	---	---	ND	---	0.24 J	0.73 J	0.7 J	0.47 J	0.7 J	ND	ND
	5-Dec-12		0.2	3.0	---	---	ND	---	ND	0.7 J	0.6 J	0.54 J	0.7 J	ND	ND
	12-Jun-13		0.2	3.0	---	---	ND	---	0.88 J	0.57 J	0.86 J	0.57 J	0.65 J	ND	ND
	28-Oct-13		0.2	3.0	---	---	ND	---	0.35 J	0.93 J	0.94 J	0.6 J	0.91 J	ND	ND
	6-May-14	EPA 8260	0.2	3.0	---	---	ND	---	0.7 J	0.93 J	0.9 J	0.79 J	0.91 J	ND	ND
	22-Oct-14	EPA 8260	0.2	3.0	---	---	*	ND	0.84 J	0.77 J	0.79 J	0.80 J	0.78 J	ND	ND
	21-May-15	EPA 8260	0.2	3.0	---	---	---	ND	0.67 J	0.84 J	0.74 J	0.72 J	0.58 J	ND	ND
	8-Dec-15	EPA 8260	0.2	3.0	---	---	---	ND	1.5 J	0.61 J	0.73 J	0.86 J	0.82 J	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	Collection Date	Method	DL	RL	MW-9	MW-17	MW-20	MW-21	MW-10	MW-11	MW-12	MW-13	MW-16S	MW-16D	Blanks
Chloroethane	1-Sep-94		---	10.0	ND	NI	NI	NI	ND	29	ND	ND	NI	NI	---
	1-Jan-95		---	10.0	---	NI	NI	NI	ND	16	ND	ND	NI	NI	---
	1-Feb-95		---	10.0	---	NI	NI	NI	ND	32	ND	ND	NI	NI	---
	1-Mar-95		---	10.0	ND	NI	NI	NI	ND	34	11	ND	NI	NI	---
	1-Aug-95		---	10.0	ND	NI	---	---	ND	47	ND	ND	NI	NI	---
	1-Jan-96		---	10.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Feb-96		---	10.0	---	NI	---	---	ND	28	ND	ND	NI	NI	---
	1-May-96		---	10.0	---	NI	---	---	ND	34	11	ND	NI	NI	---
	1-Oct-96		---	10.0	---	NI	---	---	ND	23	11.00	ND	NI	NI	---
	1-May-97		---	5.0	3.8 J	NI	---	---	15	33	11	ND	NI	NI	---
	1-Nov-97		---	1.0	3	NI	---	---	10	ND	7	ND	NI	NI	---
	1-May-98		---	10.0	ND	NI	---	---	ND	30	28	10	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	10-May-99		---	10.0	ND	ND	---	---	ND	10.0	ND	ND	17	ND	ND
	18-Oct-99		---	10.0	ND	ND	---	---	ND	12	ND	ND	21	ND	ND
	3-May-00		---	10.0	ND	ND	---	---	ND	ND	6.1	6.7	19	ND	ND
	7-Nov-00		---	10.0	ND	ND	---	---	ND	ND	ND	ND	13	ND	ND
	31-May-01		---	10.0	ND	ND	---	---	ND	ND	ND	ND	12	ND	ND
	7-Nov-01		---	10.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02		---	10.0	12	ND	---	---	ND	ND	ND	ND	12	ND	ND
	14-Nov-02		---	10.0	10	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03		---	10.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03		---	10.0	ND	ND	---	---	ND	ND	10	ND	ND	ND	ND
	6-May-04		---	10.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04		---	10.0	ND	ND	---	---	ND	ND	10	ND	ND	ND	ND
	27-May-05		---	10.0	ND	ND	---	---	ND	ND	10.0	ND	ND	ND	ND
	3-Nov-05		---	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06		---	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06		---	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07		---	10.0	---	ND	---	---	ND	ND	9.8 J	8.9 J	ND	ND	ND
NC 2L = 2,800 µg/L (10/23/07)	29-Nov-07		---	10.0	---	1.4 J	---	---	ND	ND	4.3 J	5.7 JD	4.3 J	ND	ND
	29-May-08		0.5	10.0	---	1.2 J	---	---	1.1 J	ND	1.5 J	6.0 J	2.6 J	ND	ND
	6-Nov-08		0.5	10.0	---	2 J	---	---	ND	0.9 J	3.5 J	5.6 J	4.3 J	ND	ND
	3-Jun-09		0.5	10.0	---	1.1 J	---	---	ND	ND	ND	4.0 J	4.4 J	ND	ND
	18-Nov-09		0.5	10.0	---	3.1 J	---	---	0.8 J	0.6 J	5.5 J	5.1 J	3.5 J	ND	ND
NC 2L = 3,000 µg/L (01/01/10)	16-Jun-10		0.5	10.0	---	1.7 J	---	---	0.72 J	0.88 J	3.1 J	4.5 J	2.2 J	ND	ND
	1-Dec-10		0.5	10.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11		0.5	10.0	---	1.5 J	ND	---	0.71 J	ND	2.7 J	3.8 J	ND	ND	ND
	20-Dec-11		0.5	10.0	---	---	ND	---	0.64 J	ND	2.1 J	ND	2.9 J	ND	ND
	30-May-12		0.5	10.0	---	---	ND	---	ND	ND	1.5 J	2.4 J	ND	ND	ND
	5-Dec-12		0.5	10.0	---	---	ND	---	ND	ND	1.8 J	2.7 J	1.9 J	ND	ND
	12-Jun-13		0.5	10.0	---	---	ND	---	ND	ND	0.63 J	0.84 J	1.5 J	ND	ND
	28-Oct-13		0.5	10.0	---	---	ND	---	ND	ND	1.9 J	2.3 J	ND	ND	ND
	6-May-14	EPA 8260	0.5	10.0	---	---	ND	---	ND	ND	1.6 J	1.7 J	1.3 J	ND	ND
	22-Oct-14	EPA 8260	0.5	10.0	---	---	*	ND	0.75 J	ND	ND	2.1 J	1.6 J	ND	ND
	21-May-15	EPA 8260	0.5	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.5	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	18-Nov-09		0.1	1.0	---	ND	---	---	ND	ND	ND	0.45 J	ND	ND	ND
NC 2L = 3 µg/L (01/01/10)	16-Jun-10		0.1	1.0	---	ND	---	---	0.14 J	ND	ND	0.48 J	ND	ND	ND
	1-Dec-10		0.1	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11		0.1	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11		0.1	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		0.1	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.1	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		0.1	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13		0.11	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.11	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.11	1.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.11	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.11	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	30-May-07		---	5.0	---	ND	---	---	0.92 B	1.2 B	0.99 B	1.4 B	1 B	ND	0.98 J
NC 2L = 70 µg/L (10/23/07)	29-Nov-07		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08		0.14	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08		0.14	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Jun-09		0.14	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Nov-09		0.14	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	16-Jun-10		0.14	5.0	---	ND	---	---	ND	ND	ND	0.2 B	ND	ND	0.29 J
	1-Dec-10		0.1	5.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11		0.1	5.0	---	ND	ND	---	ND	ND	ND	0.36 B	ND	ND	0.63 J
	20-Dec-11		0.1	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		0.1	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.1	5.0	---	---	ND	---	ND	ND	ND	0.14 J	ND	ND	ND
	12-Jun-13		0.1	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	46
	28-Oct-13		0.1	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.1	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.1	5.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.1	5.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.1	5.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	30-May-07		---	1.0	---	ND	---	---	1.7	ND	ND	ND	1.7	ND	ND
GWPS = 0.41 µg/L (10/23/07)	Nov-07		---	3.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	May-08		0.2	3.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	Nov-08		0.2	3.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	Jun-09		0.2	3.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	Nov-09		0.2	3.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 0.4 µg/L (01/01/10)	Jun-10		0.2	3.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	Dec-10		0.2	3.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	Jun-11		0.2	3.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	Dec-11		0.2	3.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	May-12		0.2	3.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.2	3.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		0.2	3.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	9.2
	28-Oct-13		0.2	3.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.2	3.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.2	3.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.2	3.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.2	3.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
1,2-Dichlorobenzene	3-Jun-09		0.3	5.0	---	ND	---	---	ND	ND	ND	0.4 J	ND	ND	ND
NC 2L = 24 µg/L (10/23/07)	18-Nov-09		0.3	5.0	---	ND	---	---	ND	ND	ND	0.4 J	ND	ND	ND
NC 2L = 20 µg/L (01/01/10)	16-Jun-10		0.3	5.0	---	ND	---	---	ND	0.39 J	ND	0.4 J	ND	ND	ND
	1-Dec-10		0.3	5.0	---	ND	ND	---	ND	0.49 J	ND	0.5 J	ND	ND	ND
	1-Jun-11		0.3	5.0	---	ND	ND	---	ND	0.5 J	ND	0.5 J	ND	ND	ND
	20-Dec-11		0.3	5.0	---	---	ND	---	ND	0.4 J	ND	ND	ND	ND	ND
	30-May-12		0.3	5.0	---	---	ND	---	ND	0.4 J	ND	0.6 J	ND	ND	ND
	5-Dec-12		0.3	5.0	---	---	ND	---	ND	0.4 J	ND	0.6 J	ND	ND	ND
	12-Jun-13		0.3	5.0	---	---	ND	---	ND	0.4 J	ND	0.6 J	ND	ND	ND
	28-Oct-13		0.3	5.0	---	---	ND	---	ND	0.39 J	ND	0.54 J	ND	ND	ND
	6-May-14	EPA 8260	0.3	5.0	---	---	ND	---	ND	0.46 J	ND	0.55 J	ND	ND	ND
	22-Oct-14	EPA 8260	0.3	5.0	---	---	*	ND	ND	0.45 J	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.3	5.0	---	---	---	ND	ND	0.45 J	ND	0.58 J	ND	ND	ND
	8-Dec-15	EPA 8260	0.3	5.0	---	---	---	ND	ND	0.39 J	ND	0.45 J	ND	ND	ND
1,4-Dichlorobenzene	1-Sep-94		---	5.0	ND	NI	NI	NI	ND	**6.5**	ND	ND	NI	NI	---
	1-Oct-94		---	5.0	---	NI	NI	NI	---	**8**	---	---	NI	NI	---
	1-Jan-95		---	5.0	---	NI	NI	NI	ND	ND	ND	ND	NI	NI	---
	1-Feb-95		---	5.0	---	NI	NI	NI	ND	**9.8**	ND	ND	NI	NI	---
	1-Mar-95		---	5.0	ND	NI	NI	NI	ND	**12.0**	ND	ND	NI	NI	---
	1-Aug-95		---	5.0	ND	NI	---	---	ND	**14.0**	ND	ND	NI	NI	---
	1-Jan-96		---	5.0	---	NI	---	---	ND	**20**	ND	ND	NI	NI	---
	1-Feb-96		---	5.0	---	NI	---	---	ND	**19.0**	ND	ND	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	ND	**18**	ND	ND	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	ND	**16.0**	ND	ND	NI	NI	---
	1-May-97		---	5.0	ND	NI	---	---	ND	**14.0**	ND	ND	NI	NI	---
	1-Nov-97		---	1.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	**4**	ND	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-May-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	**7.2**	ND	ND	**6.5**	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	**12**	ND	ND	**5.7**	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	**14**	ND	ND	**5.2**	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	**17**	ND	ND	**6.7**	ND	ND
	27-May-05		---	5.0	ND	ND	---	---	ND	**20.0**	ND	ND	**6.0**	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	**21**	ND	ND	**6.0**	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	**16.5**	ND	ND	**5.4**	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	**16**	ND	ND	**7.2**	ND	ND
	30-May-07		---	1.0	---	ND	---	---	ND	**23.0**	**5.2**	**4.4**	**7.2**	ND	ND
NC 2L = 1.4 µg/L (10/23/07)	29-Nov-07		---	1.0	---	ND	---	---	ND	**11**	**2.3**	**4.5**	**5.2**	ND	ND
	29-May-08		0.3	1.0	---	ND	---	---	ND	**13.5**	**3.1**	**5.2**	**6.0**	ND	ND
	6-Nov-08		0.3	1.0	---	ND	---	---	ND	**9.7** Q	**3.7**	**4.3**	**5.5**	ND	ND
	3-Jun-09		0.3	1.0	---	ND	---	---	ND	**14.3**	**4.2**	**7.3**	**8.0**	ND	ND
	18-Nov-09		0.3	1.0	---	ND	---	---	ND	**12.2**	**4.5**	**6.4**	**6.8**	ND	0.55 J
NC 2L = 6 µg/L (01/01/10)	16-Jun-10		0.3	1.0	---	ND	---	---	ND	**19.8**	**4.7**	**6.8**	**5.7**	ND	ND
	1-Dec-10		0.3	1.0	---	ND	ND	---	0.43 J	**18.5**	3.5	**7.5**	**7.5**	ND	ND
	1-Jun-11		0.3	1.0	---	ND	ND	---	ND	**19.2**	4.5	**8.4**	3.4	ND	ND
	20-Dec-11		0.3	1.0	---	---	ND	---	0.37 J	**13.9**	4	**7.8** D	**6.5**	ND	ND
	30-May-12		0.3	1.0	---	---	ND	---	ND	**16.4**	4.2	**9.9**	**7.0**	ND	ND
	5-Dec-12		0.3	1.0	---	---	ND	---	ND	**15**	4.4	**9.7**	6.0	ND	ND
	12-Jun-13		0.3	1.0	---	---	ND	---	0.48 J	**12.4**	4.9	**9.7**	**7.5**	ND	ND
	28-Oct-13		0.3	1.0	---	---	0.63 J	---	0.45 J	**16.7**	5	**10.1**	**8.3**	ND	ND
	6-May-14	EPA 8260	0.3	1.0	---	---	ND	---	0.63 J	**18**	5.2	**12.3**	**8.9**	ND	ND
	22-Oct-14	EPA 8260	0.3	1.0	---	---	*	ND	0.73 J	**16.1**	4.8	**11.9**	**7.5**	ND	ND
	21-May-15	EPA 8260	0.3	1.0	---	---	---	ND	0.7 J	**17.1**	5.0	**12.0**	**7.1**	ND	ND
	8-Dec-15	EPA 8260	0.3	1.0	---	---	---	ND	0.98 J	**12.6**	4.8	**13.2**	**9.1**	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Dichlorodifluoromethane	1-Aug-95		---	5.0	ND	NI	---	---	ND	26	ND	22	NI	NI	---
#	1-Jan-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Feb-96		---	10.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-96		---	10.0	---	NI	---	---	ND	35	25	ND	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-97		---	5.0	6.4	NI	---	---	ND	16	20.0	42.0	NI	NI	---
	1-Nov-97		---	5.0	14	NI	---	---	ND	ND	31.0	90.0	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	10-May-99		---	10.0	ND	ND	---	---	ND	ND	19.0	27.0	ND	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	---	14.0	50.0	130.0	25	ND	ND
	3-May-00		---	5.0	---	---	---	---	---	ND	16.00	36.0	8.9	---	ND
	7-Nov-00		---	5.0	ND	---	---	---	ND	ND	9.40	30.0	7.9	---	ND
	31-May-01		---	5.0	ND	---	---	---	ND	ND	13	25	6.2	---	ND
	7-Nov-01		---	5.0	ND	---	---	---	ND	5.5	ND	34	12	---	ND
	22-May-02		---	5.0	ND	---	---	---	ND	5	15	24	11	---	ND
	14-Nov-02		---	5.0	ND	---	---	---	ND	ND	ND	20	ND	---	ND
	14-May-03		---	5.0	ND	---	---	---	ND	ND	8.7	12	ND	---	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	ND	6.3	10	ND	ND	ND
	6-May-04		---	5.0	ND	---	---	---	ND	ND	ND	9.2	ND	---	ND
	10-Nov-04		---	5.0	ND	---	---	---	ND	ND	7.6	10	ND	ND	ND
	27-May-05		---	5.0	ND	---	---	---	ND	ND	14	22	ND	---	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	9	12	ND	ND	ND
	25-May-06		---	5.0	---	---	---	---	ND	ND	ND	5.4	ND	---	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	ND	8.2	6.6	ND	ND	ND
	30-May-07		---	5.0	---	---	---	---	ND	ND	7.1	7.6	ND	---	---
NC 2L = 1,400 µg/L (10/23/07)	29-Nov-07		---	5.0	---	ND	---	---	ND	ND	1.1 J	1.8 JD	ND	ND	ND
	29-May-08		0.2	1.0	---	---	---	---	ND	0.35 J	2.9	3.6	ND	---	ND
	6-Nov-08		0.2	5.0	---	0.62 J	---	---	ND	0.33 J	1.9 J	2.2 J	0.69 J	ND	ND
	3-Jun-09		0.2	5.0	---	0.45 J	---	---	0.96 J	ND	2.5 J	1.9 J	0.72 J	ND	ND
	18-Nov-09		0.2	5.0	---	ND	---	---	ND	ND	1.2 J	1.9 J	0.47 J	ND	ND
NC 2L = 1,000 µg/L (01/01/10)	16-Jun-10		0.2	5.0	---	ND	---	---	ND	ND	0.81 J	1.4 J	ND	ND	ND
	1-Dec-10		0.2	5.0	---	0.26 J	ND	---	ND	ND	0.69 J	1.1 J	0.55 J	ND	ND
	1-Jun-11		0.2	5.0	---	0.42 J	ND	---	ND	ND	ND	1.2 J	ND	ND	ND
	20-Dec-11		0.2	5.0	---	---	ND	---	ND	ND	ND	0.76 J	ND	ND	ND
	30-May-12		0.2	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.2	5.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	12-Jun-13		0.2	5.0	---	---	ND	---	0.34 J	ND	ND	ND	ND	ND	ND
	28-Oct-13		0.2	5.0	---	---	ND	---	ND	ND	ND	1.1 J	ND	ND	ND
	6-May-14	EPA 8260	0.2	5.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14	EPA 8260	0.2	5.0	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	21-May-15	EPA 8260	0.2	5.0	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15	EPA 8260	0.2	5.0	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
1,1-Dichloroethane	1-Sep-94		---	5.0	ND	NI	NI	NI	ND	50	7.5	ND	NI	NI	---
	1-Jan-95		---	5.0	---	**NI**	NI	NI	ND	35	33	ND	NI	NI	---
	1-Feb-95		---	5.0	---	NI	NI	NI	ND	66	34	ND	NI	NI	---
	1-Mar-95		---	5.0	ND	NI	NI	NI	ND	**72**	34	ND	NI	NI	---
	1-Aug-95		---	5.0	ND	NI	---	---	ND	**96**	**ND**	ND	NI	NI	---
	1-Jan-96		---	5.0	---	NI	---	---	13	**120**	54	ND	NI	NI	---
	1-Feb-96		---	5.0	---	NI	---	---	11	ND	ND	ND	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	12	**110**	68	ND	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	17	**140**	**86**	ND	NI	NI	---
	1-May-97		---	5.0	ND	NI	---	---	39	**170**	**100**	4 J	NI	NI	---
	1-Nov-97		---	1.0	2	NI	---	---	22	**200**	69.0	8	NI	NI	---
	1-May-98		---	5.0	5.5	NI	---	---	22.0	**250.0**	**250.0**	45.0	NI	NI	---
	24-Nov-98		---	2.0	3.8	NI	---	---	14	**150.0**	57	19.9	NI	NI	---
	10-May-99		---	5.0	7.7	ND	---	---	9.7	**180.0**	64.0	30.0	**120**	ND	ND
	18-Oct-99		---	5.0	11.0 J	ND	---	---	9.3 J	**200**	59	30.0	**120**	ND	ND
	3-May-00		---	5.0	9.3 J	ND	---	---	6.2 J	**120.0**	61.0	38.0	**120**	ND	ND
	7-Nov-00		---	5.0	9.5	ND	---	---	5.0	**110.0**	60.0	44.0	**92**	ND	ND
	31-May-01		---	5.0	7.9	6	---	---	ND	**80.0**	**75.0**	45.0	**79**	ND	ND
	7-Nov-01		---	5.0	14.0	5.3	---	---	ND	**84.0**	**100.0**	42.0	**95**	ND	ND
	22-May-02		---	5.0	19.0	ND	---	---	ND	**75.0**	**110.0**	57	**100**	ND	ND
	14-Nov-02		---	5.0	21.0	ND	---	---	ND	41.0	**90.0**	50.0	**82**	ND	ND
	14-May-03		---	5.0	27.0	ND	---	---	ND	48.0	60.0	69.0	**82**	ND	ND
	20-Nov-03		---	5.0	25.0	ND	---	---	ND	34.0	48.0	62.0	59	ND	ND
	6-May-04		---	5.0	33.0	ND	---	---	ND	33	58.0	**72.0**	58	ND	ND
	10-Nov-04		---	5.0	38.0	ND	---	---	ND	22.0	37.0	50.0	42	ND	ND
	27-May-05		---	5.0	68.0	ND	---	---	ND	25	48	66	44.0	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	18.0	34	54.0	38	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	10.9	27	37.6	25.3	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	12	34	47	33	ND	ND
	30-May-07		---	5.0	---	5.3	---	---	3.3 J	16	48	59	41	ND	ND
NC 2L = 70 µg/L (10/23/07)	29-Nov-07		---	5.0	---	6.1	---	---	2.2 J	7.7	39	44	34	ND	ND
	29-May-08		0.3	5.0	---	1.7 J	---	---	1.7 J	8.7	38.8	ND	29.7	ND	ND
	6-Nov-08		0.3	5.0	---	5.7	---	---	1.9 J	8.1	34.6	52.3	26.2	ND	ND
	3-Jun-09		0.3	5.0	---	6.3	---	---	1.3 J	8.2	47.8	53.1	32	ND	ND
	18-Nov-09		0.3	5.0	---	10.8	---	---	1.2 J	6.7	41.9	52.0	29.4	ND	ND
NC 2L = 6 µg/L (01/01/10)	16-Jun-10		0.3	5.0	---	3.9 J	---	---	1.2 J	5.7	**35.7**	**43.1**	**32.1**	ND	ND
	1-Dec-10		0.3	5.0	---	**6.8**	ND	---	1.7 J	5.4	**41.3**	**37.9**	**16.9**	ND	ND
	1-Jun-11		0.3	5.0	---	**9.3**	ND	---	2 J	**6.8**	**45.5**	**53.3**	**19.1**	ND	ND
	20-Dec-11		0.3	5.0	---	---	ND	---	1.9 J	5.1	**39.7**	39.7 D	**26.2**	ND	ND
	30-May-12		0.3	5.0	---	---	ND	---	1.5 J	5.9	**38.2**	**45.8**	**24.1**	ND	ND
	5-Dec-12		0.3	5.0	---	---	ND	---	1.7 J	4.6 J	**39.3**	**39.3**	**26.5**	ND	ND
	12-Jun-13		0.3	5.0	---	---	ND	---	0.73 J	5.3	**37.1**	**41.6**	**21.4**	ND	ND
	28-Oct-13		0.3	5.0	---	---	ND	---	1 J	4.9 J	**43.2**	**41.8**	**26.2**	ND	ND
	6-May-14	EPA 8260	0.3	5.0	---	---	ND	---	1 J	4 J	**43.4**	**39.5**	**21.5**	ND	ND
	22-Oct-14	EPA 8260	0.3	5.0	---	---	*	ND	1.3 J	3.6 J	**34.4**	**33.2**	**25.3**	ND	ND
	21-May-15	EPA 8260	0.3	5.0	---	---	---	ND	0.75 J	2.8 J	**26.7**	**23.1**	**17.3**	ND	ND
	8-Dec-15	EPA 8260	0.3	5.0	---	---	---	ND	0.95 J	3.2 J	**31.7**	**33.7**	**10.3**	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
1,2-Dichloroethane	3-Nov-05		---	5.0	---	ND	---	---	ND	**13**	ND	ND	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07		---	1.0	---	ND	---	---	ND	**2.4**	ND	**1.6**	ND	ND	ND
NC 2L = 0.38 µg/L (10/23/07)	29-Nov-07		---	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08		0.1	1.0	---	ND	---	---	ND	**1.2**	0.64 J	**1.5**	**1.1**	ND	ND
	6-Nov-08		0.1	1.0	---	ND	---	---	ND	0.65 B	0.27 B	1.8 B	0.46 B	ND	1 J
	3-Jun-09		0.1	1.0	---	ND	---	---	ND	0.78 J	0.8 J	**1.9**	0.98 J	ND	ND
	18-Nov-09		0.1	1.0	---	ND	---	---	ND	0.98 J	**1.0**	**1.8**	0.97 J	ND	ND
NC 2L = 0.4 µg/L (01/01/10)	16-Jun-10		0.1	1.0	---	ND	---	---	ND	**1.2**	**1.1**	**1.8**	**1.0**	ND	ND
	1-Dec-10		0.1	1.0	---	ND	ND	---	ND	0.94 J	0.58 J	**1.5**	0.18 J	ND	ND
	1-Jun-11		0.1	1.0	---	ND	ND	---	ND	ND	**1.1**	**2.1**	**1.0**	ND	ND
	20-Dec-11		0.1	1.0	---	---	ND	---	ND	0.8 J	0.92 J	1.8 J	**1.0**	ND	ND
	30-May-12		0.1	1.0	---	---	ND	---	ND	0.75 J	0.97 J	2	**1**	ND	ND
	5-Dec-12		0.12	1.0	---	---	ND	---	ND	0.7 J	0.8 J	**1.7**	**1.3**	ND	ND
	12-Jun-13		0.1	1.0	---	---	ND	---	ND	0.6 J	**1.3**	**1.7**	**1.0**	ND	ND
	28-Oct-13		0.1	1.0	---	---	ND	---	ND	0.9 J	**1.4**	**1.7**	**1.4**	ND	ND
	6-May-14	EPA 8260	0.1	1.0	---	---	ND	---	ND	0.8 J	**1.2**	**1.6**	**1.2**	ND	ND
	22-Oct-14	EPA 8260	0.1	1.0	---	---	*	ND	ND	0.51 J	0.85 J	**1.5**	**1.2**	ND	ND
	21-May-15	EPA 8260	0.1	1.0	---	---	---	ND	ND	ND	0.71 J	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.2	1.0	---	---	---	ND	ND	0.65 J	ND	**1.3**	**1.3**	ND	ND
1,1-Dichloroethene	1-May-97		---	5.0	ND	NI	---	---	**ND**	**3 J**	**ND**	**4 J**	**NI**	**NI**	---
	1-Nov-97		---	1.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-May-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	27-May-05		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07		---	5.0	---	ND	---	---	ND	ND	0.93 J	1.8 J	0.42 J	ND	ND
NC 2L = 7 µg/L (10/23/07)	29-Nov-07		---	5.0	---	ND	---	---	ND	ND	0.8 J	1.2 JD	0.59 J	ND	ND
	29-May-08		0.6	1.0	---	ND	---	---	ND	ND	0.75 J	1.3	ND	ND	ND
	6-Nov-08		0.6	5.0	---	ND	---	---	ND	ND	0.64 J	1.1 J	ND	ND	ND
	3-Jun-09		0.6	5.0	---	ND	---	---	ND	ND	0.95 J	1.1 J	ND	ND	ND
	18-Nov-09		0.6	5.0	---	ND	---	---	ND	ND	0.78 J	1.1 J	ND	ND	ND
	16-Jun-10		0.6	5.0	---	ND	---	---	0.98 J	ND	0.68 J	1.2 J	ND	ND	ND
	1-Dec-10		0.6	5.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11		0.6	5.0	---	ND	ND	---	ND	ND	0.68 J	0.82 J	ND	ND	ND
	20-Dec-11		0.6	5.0	---	---	ND	---	ND	ND	0.59 J	ND	ND	ND	ND
	30-May-12		0.6	5.0	---	---	ND	---	ND	ND	0.62 J	0.58 J	ND	ND	ND
	5-Dec-12		0.6	5.0	---	---	ND	---	ND	ND	0.66 J	0.58 J	ND	ND	ND
NC 2L = 350 µg/L (04/01/2013)	12-Jun-13		0.560	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13		0.560	5.0	---	---	ND	---	ND	ND	0.6 J	ND	ND	ND	ND
	6-May-14	EPA 8260	0.560	5.0	---	---	ND	---	ND	ND	0.59 J	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.560	5.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.560	5.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.560	5.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
cis-1,2-Dichloroethene	1-Feb-96		---	5.0	---	NI	---	---	11	**89**	35	ND	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-97		---	5.0	ND	NI	---	---	ND	2.1 J	ND	ND	NI	NI	---
	1-Nov-97		---	1.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	2.8	ND	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	ND	ND	ND	7	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	6.3	ND	ND	14	ND	ND
	3-May-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	13	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	13	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	ND	ND	ND	14	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	5.9	6.5	ND	18	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	8	11	ND	24	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	5	7	13.0	ND	28	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	7	11	8	5	36	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	5	14	13	6	27	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	16	17	7.2	32	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	14	13	5.8	29	ND	ND
	27-May-05		---	5.0	ND	ND	---	---	ND	16	23	8	23	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	5	6	ND	9	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	8.2	9.3	5.2	7.7	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	16	12.0	12	17	ND	ND
	30-May-07		---	5.0	---	ND	---	---	4.9 J	20	21.0	17	15	ND	ND
NC 2L = 70 µg/L (10/23/07)	29-Nov-07		---	5.0	---	ND	---	---	2.9 J	8.6	7.2	13	9.1	ND	ND
	29-May-08		0.2	5.0	---	ND	---	---	2.8 J	13.4	10.9	18.4	10.4	ND	ND
	6-Nov-08		0.2	5.0	---	0.5 J	---	---	2.8 J	12.7	10	20.4	7.6	ND	ND
	3-Jun-09		0.2	5.0	---	0.71 J	---	---	2.5 J	13.1	11.9	25.3	10.4	ND	ND
	18-Nov-09		0.2	5.0	---	2.8 B	---	---	2.5 B	12.2 B	20	25.9	10.8 B	ND	2.6 J
	16-Jun-10		0.2	5.0	---	1.7 J	---	---	2.3 J	14.8	15.6	22.2	9.7	ND	ND
	1-Dec-10		0.2	5.0	---	0.66 J	ND	---	3.1 J	11.3	9.2	19.7	7.1	ND	ND
	1-Jun-11		0.2	5.0	---	0.89 J	ND	---	3.7 J	14.5	13.8	28.8	5.7	ND	ND
	20-Dec-11		0.2	5.0	---	---	ND	---	3.7 J	9.5	9.7	21.4 D	6.5	ND	ND
	30-May-12		0.2	5.0	---	---	ND	---	3.1 J	11.8	11.2	26.5	6.8	ND	ND
	5-Dec-12		0.2	5.0	---	---	ND	---	3.3 J	9.1	9.4	25.4	6.6	ND	ND
	12-Jun-13		0.2	5.0	---	---	ND	---	2.5 J	9	12.8	26.2	6.2	ND	ND
	28-Oct-13		0.2	5.0	---	---	ND	---	3 J	11.2	14	29.1	7.7	ND	ND
	6-May-14	EPA 8260	0.2	5.0	---	---	ND	---	3.4 J	9.5	13	27.1	7.7	ND	ND
	22-Oct-14	EPA 8260	0.2	5.0	---	---	*	ND	4.3 J	8.0	10.1	25	7.1	ND	ND
	21-May-15	EPA 8260	0.2	5.0	---	---	---	ND	2.8 J	6.7	7.6	17.0	4.2 J	ND	ND
	8-Dec-15	EPA 8260	0.2	5.0	---	---	---	ND	3.9 J	6.9	9.9	25.8	4.4 J	ND	ND
trans-1,2-Dichloroethene	5-Dec-13		0.5	5.0	---	---	ND	---	ND	ND	0.67 J	0.59 J	ND	ND	ND
NC 2L = 100 µg/L (10/23/07)	12-Jun-13		0.5	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13		0.5	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.5	5.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.5	5.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.5	5.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.5	5.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	30-May-07		---	1.0	---	ND	---	---	ND	ND	ND	**2.2**	**2.5**	ND	ND
NC 2L = 0.51 µg/L (10/23/07)	29-Nov-07		---	1.0	---	ND	---	---	ND	ND	ND	ND	0.7 J	ND	ND
	29-May-08		0.3	1.0	---	ND	---	---	ND	ND	0.4 J	0.72 J	0.85 J	ND	ND
	6-Nov-08		0.3	1.0	---	ND	---	---	ND	0.32 J	0.5 J	0.68 J	0.67 J	ND	ND
	3-Jun-09		0.3	1.0	---	ND	---	---	ND	ND	ND	0.88 J	0.9 J	ND	ND
	18-Nov-09		0.3	1.0	---	ND	---	---	ND	ND	0.5 J	0.7 J	0.84 J	ND	ND
NC 2L = 0.6 µg/L (01/01/10)	16-Jun-10		0.3	1.0	---	ND	---	---	ND	ND	0.5 J	0.7 J	0.67 J	ND	ND
	1-Dec-10		0.3	1.0	---	ND	ND	---	ND	0.33 J	0.29 J	0.55 J	0.72 J	ND	ND
	1-Jun-11		0.3	1.0	---	ND	ND	---	ND	ND	ND	0.88 J	ND	ND	ND
	20-Dec-11		0.3	1.0	---	---	ND	---	ND	ND	0.35 J	0.57 JD	0.48 J	ND	ND
	30-May-12		0.3	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.3	1.0	---	---	ND	---	ND	ND	0.37 J	0.65 J	0.59 J	ND	ND
	12-Jun-13		0.3	1.0	---	---	ND	---	ND	ND	0.35 J	0.6 J	0.59 J	ND	ND
	28-Oct-13		0.3	1.0	---	---	ND	---	ND	ND	ND	ND	0.47 J	ND	ND
	6-May-14	EPA 8260	0.3	1.0	---	---	ND	---	ND	ND	0.33 J	0.54 J	0.58 J	ND	ND
	22-Oct-14	EPA 8260	0.3	1.0	---	---	*	ND	ND	ND	ND	ND	0.49 J	ND	ND
	21-May-15	EPA 8260	0.3	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.3	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Ethylbenzene	1-May-98		---	5.0	ND	NI	---	---	ND	ND	6.4	ND	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-May-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	ND	6.4	ND	ND	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	ND	5	ND	ND	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	ND	14	ND	ND	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	ND	14	ND	ND	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	ND	11	8.8	ND	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	ND	15	8.3	ND	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	ND	21	7.6	ND	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	ND	11.0	ND	ND	ND	ND
	27-May-05		---	5.0	ND	ND	---	---	ND	ND	23	8	ND	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	14	9	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	17	5.8	ND	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	ND	8.4	ND	ND	ND	ND
	30-May-07		---	1.0	---	ND	---	---	ND	ND	18	4.1	ND	ND	ND
NC 2L = 550 µg/L (10/23/07)	29-Nov-07		---	1.0	---	ND	---	---	ND	ND	0.54 J	2	ND	ND	ND
	29-May-08		0.3	1.0	---	ND	---	---	ND	ND	2.6	2.6	ND	ND	ND
	6-Nov-08		0.3	1.0	---	ND	---	---	ND	ND	2	3.5	ND	ND	ND
	3-Jun-09		0.3	1.0	---	ND	---	---	ND	ND	6	8	ND	ND	ND
	18-Nov-09		0.3	1.0	---	ND	---	---	ND	ND	3.3	4.1	ND	ND	ND
NC 2L = 600 µg/L (01/01/10)	16-Jun-10		0.3	1.0	---	ND	---	---	ND	ND	6.5	5	ND	ND	ND
	1-Dec-10		0.3	1.0	---	ND	ND	---	ND	ND	2.9	3	ND	ND	ND
	1-Jun-11		0.3	1.0	---	ND	ND	---	ND	ND	1.3	3	ND	ND	ND
	20-Dec-11		0.3	1.0	---	---	ND	---	ND	ND	0.59 J	1.2 JD	ND	ND	ND
	30-May-12		0.3	1.0	---	---	ND	---	ND	0.38 J	0.77 J	7	ND	ND	ND
	5-Dec-12		0.3	1.0	---	---	ND	---	ND	0.32 J	1.1	2.1	ND	ND	ND
	12-Jun-13		0.3	1.0	---	---	ND	---	ND	0.4 J	2.3	5.1	ND	ND	ND
	28-Oct-13		0.3	1.0	---	---	ND	---	ND	0.35 J	1	5.9	ND	ND	ND
	6-May-14	EPA 8260	0.3	1.0	---	---	ND	---	ND	ND	ND	1.6	ND	ND	ND
	22-Oct-14	EPA 8260	0.3	1.0	---	---	*	ND	ND	ND	0.32 J	1.5	ND	ND	ND
	21-May-15	EPA 8260	0.3	1.0	---	---	---	ND	ND	ND	0.86 J	1.3	ND	ND	ND
	8-Dec-15	EPA 8260	0.3	1.0	---	---	---	ND	ND	ND	1.2	2.7	ND	ND	ND
Methylene Chloride	1-Sep-94		---	5.0	ND	NI	NI	NI	ND	**360**	ND	ND	NI	NI	---
	1-Oct-94		---	5.0	---	NI	NI	NI	---	**430**	---	---	NI	NI	---
	1-Jan-95		---	5.0	---	NI	NI	NI	ND	**290**	ND	ND	NI	NI	---
	1-Feb-95		---	5.0	---	NI	NI	NI	ND	**560**	ND	ND	NI	NI	---
	1-Mar-95		---	5.0	ND	NI	NI	NI	ND	**610**	ND	ND	NI	NI	---
	1-Aug-95		---	5.0	ND	NI	---	---	ND	**810**	ND	ND	NI	NI	---
	1-Jan-96		---	5.0	---	NI	---	---	ND	**380**	ND	ND	NI	NI	---
	1-Feb-96		---	5.0	---	NI	---	---	ND	**ND**	ND	ND	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	ND	**330**	**5.3**	ND	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	---	**68**	**19**	ND	NI	NI	---
	1-May-97		---	5.0	ND	NI	---	---	2.4 J	**280**	**11**	ND	NI	NI	---
	1-Nov-97		---	5.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	**420**	**450**	**61**	NI	NI	---
	24-Nov-98		---	10.0	ND	NI	---	---	ND	92.5 B	ND	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	**120.00**	ND	**37**	ND	ND	ND
	18-Oct-99		---	10.0	ND	ND	---	---	ND	78.00 B	ND	34 B	ND	ND	21
	3-May-00		---	10.0	ND	ND	---	---	ND	**98**	ND	**68**	ND	ND	ND
	7-Nov-00		---	10.0	ND	ND	---	---	ND	ND	ND	**56**	ND	ND	ND
	31-May-01		---	10.0	ND	ND	---	---	ND	**18**	ND	**96**	ND	ND	ND
	7-Nov-01		---	10.0	ND	ND	---	---	ND	ND	ND	**88**	ND	ND	ND
	22-May-02		---	10.0	ND	ND	---	---	ND	ND	**11**	**130**	ND	ND	ND
	14-Nov-02		---	10.0	ND	ND	---	---	ND	ND	**20**	**130**	ND	ND	ND
	14-May-03		---	10.0	ND	ND	---	---	ND	**18**	ND	**320**	ND	ND	ND
	20-Nov-03		---	10.0	ND	ND	---	---	ND	ND	ND	**570**	ND	ND	ND
	6-May-04		---	10.0	**12**	ND	---	---	ND	ND	**10**	**420**	ND	ND	ND
	10-Nov-04		---	10.0	**12**	ND	---	---	ND	ND	ND	**360**	ND	ND	ND
	27-May-05		---	10.0	**40**	ND	---	---	ND	ND	ND	**480**	ND	ND	ND
	3-Nov-05		---	10.0	---	ND	---	---	ND	ND	ND	**510**	ND	ND	ND
	25-May-06		---	10.0	---	ND	---	---	ND	ND	ND	**375**	ND	ND	ND
	2-Nov-06		---	10.0	---	ND	---	---	ND	ND	ND	**210**	ND	ND	ND
	30-May-07		---	1.0	---	2.3 B	---	---	ND	ND	ND	**310**	ND	ND	3.2
NC 2L = 4.6 µg/L (10/23/07)	29-Nov-07		---	1.0	---	**4.8**	---	---	0.89 J	ND	ND	**220**	ND	ND	ND
	29-May-08		1.0	2.0	---	2.2 B	---	---	ND	ND	ND	**285**	ND	ND	1.5 J
	6-Nov-08		1.0	2.0	---	2.6 B	---	---	1.1 B	ND	ND	**831**	ND	ND	3.2 J
	3-Jun-09		1.0	2.0	---	ND	---	---	ND	ND	ND	**278**	ND	ND	19.1
	18-Nov-09		1.0	2.0	---	**11.1**	---	---	ND	ND	ND	**241**	ND	ND	ND
NC 2L = 5 µg/L (01/01/10)	16-Jun-10		1.0	2.0	---	ND	---	---	ND	ND	ND	**234**	ND	ND	ND
	1-Dec-10		1.0	1.0	---	2.2	ND	---	ND	ND	ND	**174**	ND	ND	ND
	1-Jun-11		1.0	1.0	---	2.3	ND	---	ND	ND	ND	**232**	ND	ND	ND
	20-Dec-11		1.0	1.0	---	---	ND	---	ND	ND	ND	196 D	ND	ND	1.9
	30-May-12		1.0	1.0	---	---	ND	---	ND	ND	ND	**185**	ND	ND	ND
	5-Dec-12		1.0	1.0	---	---	ND	---	ND	ND	ND	**174**	ND	ND	ND
	12-Jun-13		1.0	1.0	---	---	ND	---	ND	ND	ND	**77.9**	ND	ND	ND
	28-Oct-13		1	1.0	---	---	ND	---	ND	ND	ND	**128**	ND	ND	ND
	6-May-14	EPA 8260	1	1.0	---	---	ND	---	ND	ND	ND	**154**	ND	ND	2.2
	22-Oct-14	EPA 8260	1	1.0	---	---	*	ND	ND	ND	ND	**130**	ND	ND	ND
	21-May-15	EPA 8260	1	1.0	---	---	---	ND	ND	ND	ND	**82.8**	ND	ND	1.7
	8-Dec-15	EPA 8260	1	1.0	---	---	---	ND	ND	ND	ND	**113**	ND	ND	2.0

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Iodomethane	29-May-08		0	10.0	---	0.35 J	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = NE (10/23/07)	6-Nov-08		0	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Jun-09		0	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Nov-09		0	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	16-Jun-10		0	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	1-Dec-10		0	10.0	---	ND	ND	---	5 J	ND	ND	ND	ND	ND	ND
	1-Jun-11		0.3	10.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11		0.3	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		0.3	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.3	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		0.3	10.0	---	---	ND	---	8.6 J	ND	ND	ND	ND	ND	ND
	28-Oct-13		0.3	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.3	10.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.3	10.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.3	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.3	10.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	3-Jun-09		0.3	1.0	---	ND	---	---	ND	2	ND	ND	ND	ND	ND
NC 2L = 100 µg/L (10/23/07)	18-Nov-09		0.3	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
NC 2L = 70 µg/L (01/01/10)	16-Jun-10		0.3	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	1-Dec-10		0.3	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11		0.3	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11		0.3	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		0.3	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.3	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		0.3	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13		0.3	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.3	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0.3	1.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.3	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.3	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1-May-97		---	5.0	**5.6**	NI	---	---	ND	**6.3**	3.6 J	ND	NI	NI	---
	1-Nov-97		---	1.0	**2**	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	24-Nov-98		---	2.0	**6.7**	NI	---	---	ND	**7.8**	**3.2**	ND	NI	NI	---
	10-May-99		---	5.0	**8.5**	ND	---	---	ND	**9.3**	ND	ND	ND	**ND**	ND
	18-Oct-99		---	5.0	**5.3**	ND	---	---	ND	**7.3**	ND	ND	ND	ND	ND
	3-May-00		---	5.0	**7**	ND	---	---	ND	**6.4**	ND	ND	ND	ND	ND
	7-Nov-00		---	5.0	**6.6**	ND	---	---	ND	**5.3**	ND	ND	ND	ND	ND
	31-May-01		---	5.0	**9.6**	ND	---	---	ND	**7.1**	ND	ND	ND	ND	ND
	7-Nov-01		---	5.0	**9.5**	ND	---	---	ND	**5.6**	**5**	ND	ND	ND	ND
	22-May-02		---	5.0	**10**	ND	---	---	ND	**5.7**	**5.5**	ND	ND	ND	ND
	14-Nov-02		---	5.0	**8**	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03		---	5.0	**10**	ND	---	---	ND	**5.5**	ND	ND	ND	ND	ND
	20-Nov-03		---	5.0	**8.8**	ND	---	---	ND	**6.6**	ND	ND	ND	ND	ND
	6-May-04		---	5.0	**8.9**	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04		---	5.0	**12**	ND	---	---	ND	ND	ND	**5.1**	ND	ND	ND
	27-May-05		---	5.0	**10**	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	ND	**12**	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	ND	ND	**5.8**	ND	ND	ND
	30-May-07		---	1.0	---	**1.6**	---	---	ND	0.44 J	**1.6**	**5.9**	ND	ND	ND
NC 2L = 0.7 µg/L (10/23/07)	29-Nov-07		---	1.0	---	**1.7**	---	---	ND	ND	**1.1**	**4.9**	ND	ND	ND
	29-May-08		0.5	1.0	---	**2.2**	---	---	ND	ND	**1.1**	**6.6**	ND	ND	ND
	6-Nov-08		0.5	1.0	---	**2.7**	---	---	ND	ND	**1.3**	**6.2**	ND	ND	ND
	3-Jun-09		0.5	1.0	---	**2.1**	---	---	ND	ND	0.7 J	**7.5**	ND	ND	ND
	18-Nov-09		0.5	1.0	---	**2.6**	---	---	ND	ND	0.49 J	**6.3**	ND	ND	ND
	16-Jun-10		0.5	1.0	---	**1.2**	---	---	ND	ND	0.46 J	**6.7**	ND	ND	ND
	1-Dec-10		0.5	1.0	---	**3**	ND	---	ND	ND	ND	**5.8**	ND	ND	ND
	1-Jun-11		0.5	1.0	---	**3.6**	ND	---	ND	ND	ND	**7.7**	ND	ND	ND
	20-Dec-11		0.5	1.0	---	---	ND	---	ND	0.59 B	0.7 B	5.7 D	ND	ND	1 J
	30-May-12		0.5	1.0	---	---	ND	---	ND	ND	ND	**7.7**	ND	ND	ND
	5-Dec-12		0.5	1.0	---	---	ND	---	ND	ND	ND	**7.3**	ND	ND	ND
	12-Jun-13		0.5	1.0	---	---	ND	---	ND	ND	ND	**6.4**	ND	ND	ND
	28-Oct-13		0.5	1.0	---	---	ND	---	ND	ND	ND	**5.7**	ND	ND	ND
	6-May-14	EPA 8260	0.5	1.0	---	---	ND	---	ND	ND	ND	**7.3**	ND	ND	ND
	22-Oct-14	EPA 8260	0.5	1.0	---	---	*	ND	ND	ND	ND	**7.0**	ND	ND	ND
	21-May-15	EPA 8260	0.5	1.0	---	---	---	ND	ND	ND	ND	**6.4**	ND	ND	ND
	8-Dec-15	EPA 8260	0.5	1.0	---	---	---	ND	ND	ND	ND	**5.6**	ND	ND	ND
Tetrahydrofuran	1-Dec-10		3.1	10.0	---	ND	ND	---	ND	ND	ND	10.1	ND	ND	ND
NC 2L = NE (01/01/10)	1-Jun-11		3.1	10.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11		3.1	10.0	---	---	ND	---	ND	ND	ND	9.3 JD	ND	ND	ND
	30-May-12		3.1	10.0	---	---	ND	---	ND	ND	ND	8.9 J	ND	ND	ND
	5-Dec-12		3.1	10.0	---	---	ND	---	ND	ND	ND	6.9 J	ND	ND	ND
	12-Jun-13		3.1	10.0	---	---	ND	---	ND	ND	ND	6.3 J	ND	ND	ND
	28-Oct-13		3.1	10.0	---	---	ND	---	ND	ND	ND	8.6 J	ND	ND	ND
	6-May-14	EPA 8260	3.1	10.0	---	---	ND	---	ND	ND	ND	10.2	ND	ND	ND
	22-Oct-14	EPA 8260	3.1	10.0	---	---	*	ND	ND	ND	ND	7.4 J	ND	ND	ND
	21-May-15	EPA 8260	3.1	NE	---	---	---	ND	ND	ND	ND	6.3 J	ND	ND	ND
	8-Dec-15	EPA 8260	3.1	NE	---	---	---	ND	ND	ND	ND	9.7 J	ND	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Toluene	1-Jan-95		---	5.0	---	NI	NI	NI	ND	ND	19	ND	NI	NI	---
	1-Feb-95		---	5.0	---	NI	NI	NI	ND	ND	ND	ND	NI	NI	---
	1-Mar-95		---	5.0	ND	NI	NI	NI	ND	ND	ND	ND	NI	NI	---
	1-Aug-95		---	5.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Jan-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Feb-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	ND	ND	5	ND	NI	NI	---
	1-May-97		---	5.0	ND	NI	---	---	ND	ND	2 J	3.4 J	NI	NI	---
	1-Nov-97		---	1.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	**ND**	ND	ND	ND	ND	ND
	3-May-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	ND	22	15.00	ND	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	ND	11	7.20	ND	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	ND	11	17.00	ND	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	ND	21	ND	ND	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	ND	8.4	86	ND	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	ND	14	77	ND	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	ND	22	54	ND	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	ND	ND	35	ND	ND	ND
	27-May-05		---	5.0	ND	ND	---	---	ND	ND	ND	100	ND	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	20	80	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	30.4	35.6	ND	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	ND	ND	22	ND	ND	ND
	30-May-07		---	1.0	---	ND	---	---	0.22 B	0.3 B	27.0	30	0.58 B	ND	0.44 J
NC 2L = 1,000 µg/L (10/23/07)	29-Nov-07		---	1.0	---	ND	---	---	ND	ND	1.5	12.0	ND	ND	ND
	29-May-08		0.3	1.0	---	ND	---	---	ND	ND	3.1	12.8	5.9	ND	ND
	6-Nov-08		0.3	1.0	---	ND	---	---	ND	ND	0.7 J	23.5	0.76 J	ND	ND
	3-Jun-09		0.3	1.0	---	ND	---	---	ND	ND	0.4 J	52.6	0.85 J	ND	ND
	18-Nov-09		0.3	1.0	---	ND	---	---	ND	ND	ND	27.2	0.55 J	ND	ND
NC 2L = 600 µg/L (01/01/10)	16-Jun-10		0.3	1.0	---	ND	---	---	ND	ND	2.5	34.8	0.38 J	ND	ND
	1-Dec-10		0.3	1.0	---	ND	ND	---	ND	ND	4.1	17.5	ND	ND	ND
	1-Jun-11		0.3	1.0	---	ND	ND	---	ND	ND	ND	24.7	1.1	ND	ND
	20-Dec-11		0.3	1.0	---	---	ND	---	ND	ND	ND	4.9 D	0.53 J	ND	ND
	30-May-12		0.3	1.0	---	---	ND	---	ND	ND	ND	46.8	0.67 J	ND	ND
	5-Dec-12		0.3	1.0	---	---	ND	---	ND	ND	0.33 J	10.7	0.45 J	ND	ND
	12-Jun-13		0.3	1.0	---	---	ND	---	ND	ND	ND	27.6	0.7 J	ND	ND
	28-Oct-13		0.3	1.0	---	---	ND	---	ND	ND	ND	14.6	0.5 J	ND	ND
	6-May-14	EPA 8260	0.3	1.0	---	---	ND	---	ND	ND	ND	3.9	0.48 J	ND	ND
	22-Oct-14	EPA 8260	0.3	1.0	---	---	*	ND	ND	ND	ND	4.3	0.28 J	ND	ND
	21-May-15	EPA 8260	0.3	1.0	---	---	---	ND	ND	ND	ND	4.1	ND	ND	ND
	8-Dec-15	EPA 8260	0.3	1.0	---	---	---	ND	ND	ND	ND	6.0	0.31 J	ND	ND
1,1,1-Trichloroethane	1-Sep-94		---	5.0	ND	NI	NI	NI	ND	26	ND	ND	NI	NI	---
	1-Oct-94		---	5.0	---	NI	NI	NI	---	ND	---	---	NI	NI	---
	1-Jan-95		---	5.0	---	NI	NI	NI	ND	23	ND	ND	NI	NI	---
	1-Feb-95		---	5.0	---	NI	NI	NI	ND	27	ND	ND	NI	NI	---
	1-Mar-95		---	5.0	ND	NI	NI	NI	ND	28	6.5	ND	NI	NI	---
	1-Aug-95		---	5.0	ND	NI	---	---	ND	42	ND	5	NI	NI	---
	1-Jan-96		---	5.0	---	NI	---	---	ND	44	6	9	NI	NI	---
	1-Feb-96		---	5.0	---	NI	---	---	ND	31	6.7	ND	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	ND	30	6.7	9.2	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	ND	22	5	9	NI	NI	---
	1-May-97		---	5.0	16	NI	---	---	2.4 J	19	5.3	17	NI	NI	---
	1-Nov-97		---	1.0	14	NI	---	---	ND	ND	ND	14	NI	NI	---
	1-May-98		---	5.0	15	NI	---	---	ND	9.3	9.3	22.0	NI	NI	---
	24-Nov-98		---	2.0	10.1	NI	---	---	ND	4.9	3	9.3	NI	NI	---
	10-May-99		---	5.0	15	ND	---	---	ND	ND	ND	8.7	ND	ND	ND
	18-Oct-99		---	5.0	11	ND	---	---	ND	ND	ND	9.2	ND	ND	ND
	3-May-00		---	5.0	12	ND	---	---	ND	ND	ND	8.5	ND	ND	ND
	7-Nov-00		---	5.0	10	ND	---	---	ND	ND	ND	7.3	ND	ND	ND
	31-May-01		---	5.0	9.8	ND	---	---	ND	ND	ND	6.0	ND	ND	ND
	7-Nov-01		---	5.0	14	ND	---	---	ND	ND	ND	7.9	ND	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	27-May-05		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	ND	5.0	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07		---	1.0	---	ND	---	---	ND	ND	ND	3	ND	ND	ND
NC 2L = 200 µg/L (10/23/07)	29-Nov-07		---	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08		0	1.0	---	ND	---	---	ND	ND	ND	1 J	ND	ND	ND
	6-Nov-08		0	1.0	---	ND	---	---	ND	ND	ND	1 J	ND	ND	ND
	3-Jun-09		0	1.0	---	ND	---	---	ND	ND	ND	1 J	ND	ND	ND
	18-Nov-09		0	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	16-Jun-10		0	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	1-Dec-10		0	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	1-Jun-11		0	1.0	---	ND	ND	---	ND	ND	ND	ND	ND	ND	ND
	20-Dec-11		0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13		0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	22-Oct-14	EPA 8260	0	1.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Trichloroethene	1-Sep-94		---	5.0	ND	NI	NI	NI	ND	**9**	ND	ND	NI	NI	---
	1-Oct-94		---	5.0	---	NI	NI	NI	---	**11**	---	---	NI	NI	---
	1-Jan-95		---	5.0	---	NI	NI	NI	ND	**6**	ND	ND	NI	NI	---
	1-Feb-95		---	5.0	---	NI	NI	NI	ND	**10**	ND	ND	NI	NI	---
	1-Mar-95		---	5.0	ND	NI	NI	NI	ND	**12**	ND	ND	NI	NI	---
	1-Aug-95		---	5.0	ND	NI	---	---	ND	**13**	ND	ND	NI	NI	---
	1-Jan-96		---	5.0	---	NI	---	---	ND	**13**	ND	ND	NI	NI	---
	1-Feb-96		---	5.0	---	NI	---	---	ND	**14**	ND	ND	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	ND	**14**	ND	ND	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	ND	**14**	ND	ND	NI	NI	---
	1-May-97		---	5.0	2 J	NI	---	---	ND	**13**	5 J	ND	NI	NI	---
	1-Nov-97		---	1.0	2	NI	---	---	ND	16 J	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	**14**	**13**	ND	NI	NI	---
	24-Nov-98		---	2.0	**4**	NI	---	---	ND	**16**	**4**	ND	NI	NI	---
	10-May-99		---	5.0	**6**	ND	---	---	ND	**19**	**5**	ND	ND	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	**15**	ND	ND	**5**	ND	ND
	3-May-00		---	5.0	**5.4**	ND	---	---	ND	**14**	**6**	ND	**6**	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	**12**	ND	ND	ND	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	**12**	**7**	**6**	**5**	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	**12**	**8**	**7**	**5**	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	**10**	**9**	**8**	ND	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	**5.5**	**7.6**	**6.5**	ND	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	**11**	**7**	**12**	**6.8**	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	**9.5**	**6.6**	**12**	ND	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	**9.1**	**5.8**	**12**	ND	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	**8.6**	ND	**11**	ND	ND	ND
	27-May-05		---	5.0	**5**	ND	---	---	ND	**11**	ND	**12**	ND	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	**9**	ND	**14**	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	**8.6**	ND	**10**	ND	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	**7**	ND	**12**	ND	ND	ND
	30-May-07		---	1.0	---	2	---	---	1.9	**8.5**	**4.6**	**12**	2.8	ND	ND
NC 2L = 2.8 µg/L (10/23/07)	29-Nov-07		---	1.0	---	1	---	---	0.45 J	**3.5**	2.5	**9.7**	1.6	ND	ND
	29-May-08		0.47	1.0	---	ND	---	---	ND	**3.5**	2.9	**11.9**	1.4	ND	ND
	6-Nov-08		0.47	1.0	---	1.3	---	---	0.53 J	**3.7**	**3.3**	**11.6**	1.3	ND	ND
	3-Jun-09		0.47	1.0	---	1.8	---	---	ND	**3.6**	**4.3**	**12.1**	1.4	ND	ND
	18-Nov-09		0.47	1.0	---	1.9	---	---	0.58 J	**3.3**	**3.3**	**11.2**	1.2	ND	ND
NC 2L = 3 µg/L (01/01/10)	16-Jun-10		0.47	1.0	---	0.6 J	---	---	ND	**5.1**	**3.3**	**11.2**	1.4	ND	ND
	1-Dec-10		0.47	1.0	---	1.9	ND	---	0.76 J	**3.7**	**3.3**	**9.3**	ND	ND	ND
	1-Jun-11		0.47	1.0	---	2	ND	---	0.51 J	2.8	**3.2**	**11.4**	ND	ND	ND
	20-Dec-11		0.47	1.0	---	---	ND	---	0.6 J	2.5	**3.5**	10 D	1.1	ND	ND
	30-May-12		0.47	1.0	---	---	ND	---	ND	2.5	2.6	**11.1**	0.55 J	ND	ND
	5-Dec-12		0.47	1.0	---	---	ND	---	0.53 J	2.3	**3.3**	**11.2**	0.67 J	ND	ND
	12-Jun-13		0.47	1.0	---	---	ND	---	0.66 J	2.1	1.8	**11.5**	0.76 J	ND	ND
	28-Oct-13		0.47	1.0	---	---	ND	---	ND	**3.1**	2.5	**10.7**	0.76 J	ND	ND
	6-May-14	EPA 8260	0.47	1.0	---	---	ND	---	ND	2	2.6	**11.9**	0.6 J	ND	ND
	22-Oct-14	EPA 8260	0.47	1.0	---	---	*	ND	0.61 J	1.3	2.2	**11.4**	0.86 J	ND	ND
	21-May-15	EPA 8260	0.47	1.0	---	---	---	ND	ND	0.9 J	2.3	**10.1**	ND	ND	ND
	8-Dec-15	EPA 8260	0.47	1.0	---	---	---	ND	ND	0.71 J	1.4	**9.7**	ND	ND	ND
Trichlorofluoromethane	1-Oct-94		---	5.0	---	NI	NI	NI	---	60	---	---	NI	NI	---
	1-Jan-95		---	5.0	---	NI	NI	NI	ND	37	ND	ND	NI	NI	---
	1-Feb-95		---	5.0	---	NI	NI	NI	ND	40	ND	ND	NI	NI	---
	1-Mar-95		---	5.0	ND	NI	NI	NI	ND	48	ND	ND	NI	NI	---
	1-Aug-95		---	5.0	ND	NI	---	---	ND	51	ND	9	NI	NI	---
	1-Jan-96		---	5.0	---	NI	---	---	ND	20	5	11	NI	NI	---
	1-Feb-96		---	5.0	---	NI	---	---	ND	11	6.2	7.9	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	ND	8.8	ND	9.1	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	ND	ND	ND	9	NI	NI	---
	1-May-97		---	5.0	4.2 J	NI	---	---	ND	2.1 J	3.4 J	11	NI	NI	---
	1-Nov-97		---	1.0	4	NI	---	---	ND	ND	ND	11	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	ND	ND	5	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	ND	ND	7.6	NI	NI	---
	10-May-99		---	10.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	ND	ND	12	ND	ND	ND
	3-May-00		---	5.0	ND	ND	---	---	ND	ND	ND	9.4	ND	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	ND	ND	10	ND	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	ND	ND	6.5	ND	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	ND	ND	6.5	ND	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	27-May-05		---	5.0	ND	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	2-Nov-06		---	5.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	30-May-07		---	1.0	---	ND	---	---	ND	ND	ND	4.2	ND	ND	ND
NC 2L = 2,100 µg/L (10/23/07)	29-Nov-07		---	1.0	---	0.74 J	---	---	ND	ND	ND	ND	ND	ND	ND
	29-May-08		0.2	1.0	---	0.42 J	---	---	ND	ND	ND	ND	ND	ND	ND
	6-Nov-08		0.2	1.0	---	0.71 J	---	---	ND	ND	0.24 J	1.1	ND	ND	ND
	3-Jun-09		0.2	1.0	---	0.38 J	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Nov-09		0.2	1.0	---	1.9	---	---	ND	ND	1.6	2.1	ND	ND	ND
NC 2L = 2,000 µg/L (01/01/10)	16-Jun-10		0.2	1.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	1-Dec-10		0.2	1.0	---	0.34 J	ND	---	ND	ND	ND	0.58 J	ND	ND	ND
	1-Jun-11		0.2	1.0	---	0.5 J	ND	---	ND	ND	ND	0.79 J	ND	ND	ND
	20-Dec-11		0.2	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	30-May-12		0.2	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	5-Dec-12		0.2	1.0	---	---	ND	---	ND	ND	ND	0.65 J	ND	ND	ND
	12-Jun-13		0.2	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	28-Oct-13		0.2	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	6-May-14	EPA 8260	0.2	1.0	---	---	ND	---	ND	ND	ND	0.3 J	ND	ND	ND
	22-Oct-14	EPA 8260	0.2	1.0	---	---	*	ND	ND	ND	ND	ND	ND	ND	ND
	21-May-15	EPA 8260	0.2	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND
	8-Dec-15	EPA 8260	0.2	1.0	---	---	---	ND	ND	ND	ND	ND	ND	ND	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
Vinyl Chloride	30-May-07		0.62	1.0	---	ND	---	---	ND	0.46 J	**1.6**	ND	**3.1**	ND	ND
NC 2L = 0.015 µg/L (10/23/07)	29-Nov-07		0.62	1.0	---	0.42 J	---	---	ND	ND	**1.4**	ND	**1.9**	ND	ND
	29-May-08		0.62	1.0	---	ND	---	---	ND	ND	**1.2**	ND	**2.2**	ND	ND
	6-Nov-08		0.62	1.0	---	0.63 J	---	---	ND	0.68 J	**1.1**	ND	**1.8**	ND	ND
	3-Jun-09		0.62	1.0	---	ND	---	---	ND	ND	0.95 J	ND	**2**	ND	ND
	18-Nov-09		0.62	1.0	---	0.69 J	---	---	ND	0.66 J	**1.6**	ND	**2.5**	ND	ND
NC 2L = 0.03 µg/L (01/01/10)	16-Jun-10		0.62	1.0	---	ND	---	---	ND	ND	**1.1**	ND	**2.1**	ND	ND
	1-Dec-10		0.62	1.0	---	ND	ND	---	ND	0.65 J	0.93 J	ND	**3.5**	ND	ND
	1-Jun-11		0.62	1.0	---	ND	ND	---	ND	0.87 J	**1.1**	ND	**1.8**	ND	ND
	20-Dec-11		0.62	1.0	---	---	ND	---	ND	0.63 J	ND	ND	**1.4**	ND	ND
	30-May-12		0.62	1.0	---	---	ND	---	ND	ND	ND	ND	**1.6**	ND	ND
	5-Dec-12		0.62	1.0	---	---	ND	---	ND	ND	ND	ND	ND	ND	ND
	12-Jun-13		0.62	1.0	---	---	ND	---	ND	ND	0.96 J	ND	**2.1**	ND	ND
	28-Oct-13		0.62	1.0	---	---	ND	---	ND	ND	0.74 J	ND	**1.3**	ND	ND
	6-May-14	EPA 8260	0.62	1.0	---	---	ND	---	ND	ND	0.77 J	ND	**1.8**	ND	ND
	22-Oct-14	EPA 8260	0.62	1.0	---	---	*	ND	ND	ND	ND	ND	**1.3**	ND	ND
	21-May-15	EPA 8260	0.62	1.0	---	---	---	ND	ND	ND	ND	ND	**1.1**	ND	ND
	8-Dec-15	EPA 8260	0.62	1.0	---	---	---	ND	ND	0.72 J	ND	ND	**1.4**	ND	ND
Xylene (Total)	1-Sep-94		---	5.0	ND	NI	NI	NI	ND	12	ND	ND	NI	NI	---
	1-Oct-94		---	5.0	---	NI	NI	NI	---	22	---	---	NI	NI	---
	1-Jan-95		---	5.0	---	NI	NI	NI	ND	7.6	ND	ND	NI	NI	---
	1-Feb-95		---	5.0	---	NI	NI	NI	ND	20	ND	ND	NI	NI	---
	1-Mar-95		---	5.0	ND	NI	NI	NI	ND	24	ND	ND	NI	NI	---
	1-Aug-95		---	5.0	ND	NI	NI	NI	ND	5	ND	ND	NI	NI	---
	1-Jan-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Feb-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-96		---	5.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Oct-96		---	5.0	---	NI	---	---	ND	6	ND	ND	NI	NI	---
	1-May-97		---	5.0	ND	NI	---	---	ND	9.2	4.3 J	ND	NI	NI	---
	1-Nov-97		---	2.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	5.0	ND	NI	---	---	ND	5.6	ND	ND	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	14.8	ND	ND	NI	NI	---
	10-May-99		---	5.0	ND	ND	---	---	ND	13	ND	ND	ND	ND	ND
	18-Oct-99		---	5.0	ND	ND	---	---	ND	14	ND	ND	ND	ND	ND
	3-May-00		---	5.0	ND	ND	---	---	ND	17.5	ND	ND	ND	ND	ND
	7-Nov-00		---	5.0	ND	ND	---	---	ND	11	ND	ND	ND	ND	ND
	31-May-01		---	5.0	ND	ND	---	---	ND	10	9	10	ND	ND	ND
	7-Nov-01		---	5.0	ND	ND	---	---	ND	7.9	5.3	7.6	ND	ND	ND
	22-May-02		---	5.0	ND	ND	---	---	ND	5.3	8.5	14	ND	ND	ND
	14-Nov-02		---	5.0	ND	ND	---	---	ND	ND	21.3	12	ND	ND	ND
	14-May-03		---	5.0	ND	ND	---	---	ND	5.4	6.6	48	ND	ND	ND
	20-Nov-03		---	5.0	ND	ND	---	---	ND	ND	7.4	50	ND	ND	ND
	6-May-04		---	5.0	ND	ND	---	---	ND	ND	18.9	58	ND	ND	ND
	10-Nov-04		---	5.0	ND	ND	---	---	ND	ND	ND	54	ND	ND	ND
	27-May-05		---	5.0	11	ND	---	---	ND	ND	7	58	ND	ND	ND
	3-Nov-05		---	5.0	---	ND	---	---	ND	ND	26	119	ND	ND	ND
	25-May-06		---	5.0	---	ND	---	---	ND	ND	17.4	38.7	ND	ND	ND
	2-Nov-06		---	10.0	---	ND	---	---	ND	ND	ND	31	ND	ND	ND
	30-May-07		---	4.0	---	1.1 J	---	---	ND	2 J	24	34	1.2 J	ND	ND
NC 2L = 530 µg/L (10/23/07)	29-Nov-07		---	5.0	---	2.7 J	---	---	ND	ND	3.9 J	24	ND	ND	ND
	29-May-08		0.89	10.0	---	1.7 J	---	---	ND	0.92 J	6.2 J	29.6	ND	ND	ND
	6-Nov-08		0.66	2.0	---	2.3	---	---	ND	0.78 J	2.8	28.7	ND	ND	ND
	3-Jun-09		0.66	2.0	---	1.6 J	---	---	ND	ND	4.7	46.5	ND	ND	ND
	18-Nov-09		0.66	2.0	---	5.7	---	---	ND	ND	3.1	40.3	ND	ND	ND
NC 2L = 500 µg/L (01/01/10)	16-Jun-10		0.66	2.0	---	1.8 J	---	---	ND	1 J	5.2	40.3	ND	ND	ND
	1-Dec-10		0.66	2.0	---	2.3	ND	---	ND	ND	5.6	42.9	ND	ND	ND
	1-Jun-11		0.66	2.0	---	3.6	ND	---	ND	ND	0.88 J	44.1	ND	ND	ND
	20-Dec-11		0.66	2.0	---	---	ND	---	ND	ND	0.94 J	26.8 D	ND	ND	ND
	30-May-12		0.66	2.0	---	---	ND	---	ND	ND	0.7 J	53.5	ND	ND	ND
	5-Dec-12		0.66	5.0	---	---	ND	---	ND	ND	2.4 J	43.6	ND	ND	ND
	12-Jun-13		0.66	5.0	---	---	ND	---	ND	ND	ND	48.3	ND	ND	ND
	28-Oct-13		0.66	5.0	---	---	ND	---	ND	ND	ND	49.3	ND	ND	ND
	6-May-14	EPA 8260	0.66	5.0	---	---	ND	---	ND	ND	ND	40.7	ND	ND	ND
	22-Oct-14	EPA 8260	0.66	5.0	---	---	*	ND	ND	ND	ND	46.6	ND	ND	ND
	21-May-15	EPA 8260	0.66	5.0	---	---	---	ND	ND	ND	ND	43.6	ND	ND	ND
	8-Dec-15	EPA 8260	0.66	5.0	---	---	---	ND	ND	ND	ND	45.4	ND	ND	ND
Diethyl phthalate	29-Nov-07		---	10.0	---	ND	---	---	1.7 J	2.3 J	2 J	ND	1.3 J	---	ND
NC 2L = 5,000 µg/L (10/23/07)	6-Nov-08		2.5	10.0	---	ND	---	---	ND	ND	ND	ND	ND	ND	ND
	18-Nov-09		4	10.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	1-Dec-10		2.7	10.0	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	20-Dec-11		0.58	10.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.58	6000	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.58	6000	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14		0.91	6000	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15		1.3	6000	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
Naphthalene	29-Nov-07		---	10.0	---	ND	---	---	ND	ND	ND	1.3 JD	ND	---	ND
NC 2L = 21 µg/L (10/23/07)	6-Nov-08		0.24	10.0	---	ND	---	---	ND	ND	ND	ND	ND	---	0.67 J
	18-Nov-09		0.24	10.0	---	ND	---	---	ND	ND	ND	0.77 JD	ND	---	ND
	1-Dec-10		4	10.0	---	ND	ND	---	ND	ND	ND	0.96 J	ND	---	ND
	20-Dec-11		0.34	10.0	---	---	ND	---	ND	ND	ND	0.84 JD	ND	---	ND
	5-Dec-12		0.34	10.0	---	---	ND	---	ND	ND	ND	1.5 B	ND	---	0.46 J
	28-Oct-13		0.24	10.0	---	---	ND	---	ND	ND	ND	1.6 J	ND	---	ND
	22-Oct-14	EPA 8260	0.24	10.0	---	---	*	ND	ND	ND	ND	1.9 J	ND	---	ND
	8-Dec-15	EPA 8260	0.24	10.0	---	---	---	ND	ND	ND	ND	2.2 J	ND	---	ND
Pentachlorophenol	29-Nov-07		---	25.0	---	ND	---	---	ND	ND	ND	0.42 JD	ND	---	ND
NC 2L = 0.29 µg/L (10/23/07)	6-Nov-08		1.7	25.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	18-Nov-09		5	50.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	1-Dec-10		18	25.0	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	20-Dec-11		4.6	25.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		4.6	25.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		4.6	25.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14	EPA 8270	1.2	25.0	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15	EPA 8270	2.3	25.0	---	---	---	ND	ND	ND	ND	ND	ND	---	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
alpha-BHC	1-Oct-96		---	0.050	---	NI	---	---	ND	**0.07**	ND	ND	NI	NI	---
	1-May-97		---	0.050	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Nov-97		---	0.100	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-98		---	0.050	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	24-Nov-98		---	0.050	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	10-May-99		---	0.050	ND	ND	---	---	**0.061**	ND	ND	ND	ND	ND	ND
	18-Oct-99		---	0.050	ND	ND	---	---	---	ND	ND	ND	ND	ND	ND
	3-May-00		---	0.050	ND	---	---	---	ND	ND	---	---	---	---	ND
	7-Nov-00		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	7-Nov-01		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-Nov-02		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	10-Nov-04		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	3-Nov-05		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	2-Nov-06		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
GWPS = 0.006 µg/L (10/23/07)	29-Nov-07		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	6-Nov-08		0.05	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	18-Nov-09		0.00031	0.010	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	1-Dec-10		0.0003	0.050	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	20-Dec-11		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.05	0.050	---	---	ND	---	ND	ND	ND	**0.19**	ND	---	ND
Resample >	10-Dec-13		0.05	0.050	---	---	---	---	---	---	---	**0.085**	---	---	ND
	6-May-14	EPA 8081	0.05	0.050	---	---	ND	---	ND	ND	ND	**0.07**	ND	---	---
	22-Oct-14	EPA 8081	0.05	0.050	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	21-May-15	EPA 8081	0.05	0.050	---	---	---	ND	ND	ND	ND	**0.12**	ND	---	ND
	8-Dec-15	EPA 8081	0.05	0.050	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
beta-BHC	1-Dec-10		0.0005	0.050	---	ND	ND	---	ND	ND	0.019 J	ND	ND	---	ND
Resample >	13-Jan-11		0.0005	0.050	---	---	---	---	---	---	ND	---	---	---	ND
GWPS = 0.019 µg/L (10/23/07)	20-Dec-11		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14	EPA 8081	0.05	0.050	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15	EPA 8081	0.05	0.050	---	---	---	ND	ND	**0.16**	ND	ND	ND	---	ND
Resample >	4-Feb-16	EPA 8081	0.05	0.050	---	---	---	---	---	**0.33**	---	---	---	---	ND
Delta-BHC	18-Oct-99		---	0.050	ND	ND	---	---	---	0.06 J	ND	ND	ND	ND	ND
	3-May-00		---	0.050	ND	---	---	---	ND	ND	---	---	---	---	ND
	7-Nov-00		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	7-Nov-01		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-Nov-02		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	10-Nov-04		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	3-Nov-05		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	2-Nov-06		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
GWPS = 0.019 µg/L (10/23/07)	29-Nov-07		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	6-Nov-08		0.05	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	18-Nov-09		0.00041	0.010	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	1-Dec-10		0.0004	0.050	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	20-Dec-11		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14	EPA 8081	0.05	0.050	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15	EPA 8081	0.05	0.050	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
Gamma-BHC	18-Oct-99		---	0.050	ND	ND	---	---	---	0.08 J	ND	ND	ND	ND	ND
(Lindane)	3-May-00		---	0.050	ND	---	---	---	ND	ND	---	---	---	---	ND
	7-Nov-00		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	7-Nov-01		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-Nov-02		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	10-Nov-04		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	3-Nov-05		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	2-Nov-06		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
NC 2L = 0.2 µg/L (10/23/07)	29-Nov-07		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	6-Nov-08		0.05	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	18-Nov-09		0.00021	0.010	---	0.032	---	---	ND	ND	ND	ND	ND	---	ND
Resample >	19-Jan-10		0.00021	0.010	---	ND	---	---	---	---	---	---	---	---	ND
	1-Dec-10		0.0002	0.050	---	ND	ND	---	ND	ND	0.034 J	ND	ND	---	ND
Resample >	13-Jan-11		0.0002	0.050	---	---	---	---	---	---	0.048 J	---	---	---	ND
	20-Dec-11		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14		0.05	0.050	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15		0.05	0.050	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
Heptachlor	18-Oct-99		---	0.050	ND	ND	---	---	---	0.11 J	ND	ND	ND	ND	ND
	3-May-00		---	0.050	ND	---	---	---	ND	ND	---	---	---	---	ND
	7-Nov-01		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-Nov-02		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	10-Nov-04		---	0.050	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	3-Nov-05		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	2-Nov-06		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
NC 2L = 0.0078 µg/L (10/23/07)	29-Nov-07		---	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	6-Nov-08		0.05	0.050	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	18-Nov-09		0.0015	0.010	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	1-Dec-10		0.0015	0.050	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	20-Dec-11		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.05	0.050	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14	EPA 8081	0.05	0.050	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15	EPA 8081	0.05	0.050	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
N-Nitroso-di-n-butylamine	22-Oct-14	EPA 8270	1.3	10.0	---	---	---	---	4.0 J	ND	ND	11.2	ND	---	ND
Resample >	22-Dec-14		1.3	10.0	---	---	---	---	---	---	---	ND	---	---	---
NC 2L = NE (01/01/10)	8-Dec-15	EPA 8270	2.2	10.0	---	---	---	ND	ND	ND	ND	ND	ND	---	ND

APPENDIX E:
HISTORICAL DETECTED ORGANIC GROUNDWATER CONSTITUENTS

	Sample	EPA			Background				Downgradient						
Analyte	**Collection Date**	**Method**	**DL**	**RL**	**MW-9**	**MW-17**	**MW-20**	**MW-21**	**MW-10**	**MW-11**	**MW-12**	**MW-13**	**MW-16S**	**MW-16D**	**Blanks**
PCB-1232	18-Oct-99		---	2.0	**4.7**	ND	---	---	---	ND	ND	ND	ND	ND	ND
	3-May-00		---	2.0	ND	---	---	---	ND	ND	---	---	---	---	ND
	7-Nov-00		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	7-Nov-00		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	31-May-01		---	2.0	ND	---	---	---	---	---	---	---	---	---	ND
	7-Nov-01		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-Nov-02		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	10-Nov-04		---	1.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	6-May-05		---	1.0	---	---	---	---	---	---	---	---	---	---	---
	3-Nov-05		---	1.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	2-Nov-06		---	1.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
GWPS = 0.5 µg/L (10/23/07)	29-Nov-07		---	2.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	6-Nov-08		1	NE	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	18-Nov-09		0.12	0.5	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
GWPS = 0.09 µg/L (10/01/10)	1-Dec-10		0.5	0.5	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	20-Dec-11		0.5	0.5	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.5	0.5	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.5	0.5	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14		0.5	0.5	---	---	*	ND	ND	ND	ND	ND	ND	---	ND
	8-Dec-15		0.5	0.5	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
2,4-D	1-Aug-95		---	0.3	ND	NI	---	---	ND	0.478	ND	ND	NI	NI	---
	1-Jan-96		---	2.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Feb-96		---	2.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-May-96		---	2.0	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Oct-96		---	0.5	---	NI	---	---	ND	ND	ND	ND	NI	NI	---
	1-Nov-97		---	0.4	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	24-Nov-98		---	2.0	ND	NI	---	---	ND	ND	ND	ND	NI	NI	---
	18-Oct-99		---	2.0	ND	ND	---	---	---	ND	ND	ND	ND	ND	ND
	7-Nov-01		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	14-Nov-02		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	20-Nov-03		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	10-Nov-04		---	2.0	ND	---	---	---	ND	ND	ND	ND	ND	---	ND
	3-Nov-05		---	2.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	2-Nov-06		---	2.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
NC 2L = 70 µg/L (10/23/07)	29-Nov-07		---	2.0	---	ND	---	---	ND	1.4 J	ND	ND	ND	---	ND
	6-Nov-08		1	2.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
	18-Nov-09		0.22	2.0	---	ND	---	---	ND	ND	ND	ND	ND	---	ND
Resample >	19-Jan-10		0.23	1.0	---	ND	---	---	---	---	---	ND	---	---	ND
	1-Dec-10		0.22	2.0	---	ND	ND	---	ND	ND	ND	ND	ND	---	ND
	20-Dec-11		0.22	2.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.22	2.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.22	2.0	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14	EPA 8151	0.23	0.96	---	---	*	ND	ND	ND	ND	ND	ND	---	---
	8-Dec-15	EPA 8151	0.22	2.00	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
4,4'-DDD	1-Dec-10		0.0019	0.10	---	ND	ND	---	ND	0.019 J	ND	ND	ND	---	ND
Resample >	13-Jan-11		0.0019	0.10	---	---	---	---	---	ND	---	---	---	---	ND
NC 2L = 0.1 µg/L (01/01/10)	20-Dec-11		0.05	0.05	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.05	0.10	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.05	0.10	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14	EPA 8081	0.05	0.10	---	---	*	ND	ND	ND	ND	ND	ND	---	---
	8-Dec-15	EPA 8081	0.05	0.10	---	---	---	ND	ND	ND	ND	ND	ND	---	ND
4,4'-DDE	1-Dec-10		0.0009	0.10	---	ND	ND	---	ND	ND	ND	0.019 J	ND	---	ND
Resample >	13-Jan-11		0.0009	0.10	---	---	---	---	---	---	---	0.027 J	---	---	ND
NC 2L = NE (01/01/10)	20-Dec-11		0.05	0.05	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	5-Dec-12		0.05	0.10	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	28-Oct-13		0.05	0.10	---	---	ND	---	ND	ND	ND	ND	ND	---	ND
	22-Oct-14	EPA 8081	0.05	0.10	---	---	*	ND	ND	ND	ND	ND	ND	---	---
	8-Dec-15	EPA 8081	0.05	0.10	---	---	---	ND	ND	ND	ND	ND	ND	---	ND

Notes: (Abbreviations and Referrences)
All concentrations in micrograms per liter (µg/L) = parts per billion.
= Constituent is included on the NC Appendix II list but not on the NC Appendix I list.
--- = Not sampled for this parameter or Not reported
AB = Monitoring well abandoned.
B = Blank-Qualified (Concentration suspected to reflect laboratory or field contamination based on similar concentrations detected in field, trip, or method blanks).
D = Sample was diluted when analyzed.
DL = Laboratory Detection Limit.
GWPS = Groundwater Protection Standard set by NC-DENR-SWS for constituents with no listed NC 2L standard.
When the NC 2L Groundwater Standard has not been established, the GWPS will be used.
J = Estimated value - concentration is less than the RL but greater than the DL.
NC 2L = Groundwater Standard from 15A NCAC 2L.0202.
ND = Not Detected at or above the RL (prior to Dec. 2006) or the DL (after Dec. 2006).
NE = No NC 2L or GWPS established.
NI = Not Installed. Monitoring well not yet installed.
RL = Reporting Limit (Lab. Reporting Limit for September 1994 - May 1999; NC PQL for October 1999 - December 2006; and SWSL for December 2006 - present).
Values above the NC2L Standard or GWPS are**bold**.

Notes: (Event Narratives)
Volatile organics (8260) for MW-9 for November 10, 2004 sampling event were unable to be analyzed and were resampled on December 1, 2004.
There was a resamplinging event on August 2, 2007 for MW-16D because the prevoius samples from the May 2007 were analyzed out of hold time. There were no detects in the resample.
* MW-21 replaced MW-20 as the background well starting with the Fall 2014 sampling event; however MW-20 continues to be sampled as a compliance well for the C&D Expansion (Phase 1A).
See the Water Quality Monitrong Report for the C&D Expansion Area for current results for MW-20.
Sample Collection Date Column displays the last day of the Respective Semiannaul Monitoring Event that samples were collected. Each individual sampling point date is preserved in the Lab Reports (Appendix A).

Appendix F

Historical Detected Constituents in Performance & Sentinel Wells

APPENDIX F:
CONSTITUENTS OF CONCERN DETECTIONS
IN PERFORMANCE AND SENTINEL WELLS

Analyte	Sample Collection Date	DL	RL	Sentinel MW-18	Sentinel MW-19	Performance MW-36	Performance MW-38	Blanks
Organic Compounds								
Benzene	18-Feb-13	0.25	1.0	---	---	**8.0**	**3.8**	ND
	18-Jul-13	0.25	1.0	---	---	---	---	ND
	28-Oct-13	0.25	1.0	ND	ND	---	---	ND
NC 2L = 1 µg/L (10/23/07)	6-May-14	0.25	1.0	ND	ND	**8.7**	**6.5**	ND
	22-Oct-14	0.25	1.0	ND	ND	**8.3**	**5.9**	ND
	21-May-15	0.25	1.0	ND	ND	**5.8**	**4.9**	ND
	18-Jul-13	0.33	1.0	---	---	---	---	ND
	28-Oct-13	0.33	1.0	ND	ND	---	---	ND
NC 2L = 6 µg/L (01/01/10)	6-May-14	0.33	1.0	ND	ND	**10.0**	**13.5**	ND
	22-Oct-14	0.33	1.0	ND	ND	**15.2**	**12.9**	ND
	21-May-15	0.33	1.0	ND	ND	**18.7**	**12.3**	ND
	8-Dec-15	0.33	1.0	---	---	5.8	4.4	ND
1,1-Dichloroethane	3-Jun-09	0.3	5.0	3.9 J	2.8 J	---	---	ND
	18-Nov-09	0.3	5.0	6.7	3.7 J	---	---	ND
	16-Jun-10	0.3	5.0	4.4 J	2.3 J	---	---	ND
	1-Dec-10	0.3	5.0	---	---	---	---	ND
	1-Jun-11	0.3	5.0	2.8 J	2.6 J	---	---	ND
	20-Dec-11	0.3	5.0	---	---	---	---	ND
	30-May-12	0.3	5.0	1.6 J	2.7 J	---	---	ND
	5-Dec-12	0.3	5.0	---	---	---	---	ND
	18-Feb-13	0.32	5.0	---	---	**7.9**	**9.1**	ND
	12-Jun-13	0.3	5.0	---	---	---	---	ND
	18-Jul-13	0.32	5.0	---	---	---	---	ND
	28-Oct-13	0.3	5.0	0.93 J	3.0 J	---	---	ND
NC 2L = 6 µg/L (01/01/10)	6-May-14	0.32	5.0	1.2 J	2.9 J	**11.6**	**8.1**	ND
	22-Oct-14	0.32	5.0	---	---	**9.0**	**6.9**	ND
	21-May-15	0.32	5.0	ND	1.7 J	4.8 J	5.5	ND
	8-Dec-15	0.32	5.0	---	---	5.9	**7.2**	ND
1,2-Dichloroethane	3-Jun-09	0.1	1.0	0.33 J	ND	---	---	ND
	18-Nov-09	0.1	1.0	0.56 J	ND	---	---	ND
	16-Jun-10	0.1	1.0	0.37 J	ND	---	---	ND
	1-Dec-10	0.1	1.0	---	---	---	---	ND
	1-Jun-11	0.1	1.0	0.34 J	ND	---	---	ND
	20-Dec-11	0.1	1.0	---	---	---	---	ND
	30-May-12	0.1	1.0	ND	ND	---	---	ND
	5-Dec-12	0.1	1.0	---	---	---	---	ND
	18-Feb-13	0.12	1.0	---	---	**1.0**	0.59 J	ND
	12-Jun-13	0.1	1.0	---	---	---	---	ND
	18-Jul-13	0.12	1.0	---	---	---	---	ND
	28-Oct-13	0.1	1.0	ND	ND	---	---	ND
NC 2L = 0.4 µg/L (01/01/10)	6-May-14	0.12	1.0	ND	ND	0.78 J	ND	ND
	22-Oct-14	0.12	1.0	---	---	0.92 J	0.63 J	ND
	21-May-15	0.12	1.0	ND	ND	ND	ND	ND
	8-Dec-15	0.12	1.0	---	---	0.66 J	0.70 J	ND
Methylene Chloride	18-Feb-13	0.97	1.0	---	---	**17.9**	ND	ND
	18-Jul-13	0.97	1.0	---	---	---	---	ND
	28-Oct-13	0.97	1.0	ND	ND	---	---	ND
NC 2L = 5 µg/L (01/01/10)	6-May-14	0.97	1.0	---	---	**24.1**	1.7	2.20
	22-Oct-14	0.97	1.0	---	---	**15.7**	ND	ND
	21-May-15	0.97	1.0	ND	ND	9.5 B	ND	1.7
	8-Dec-15	0.97	1.0	---	---	11.2 B	ND	2.0

APPENDIX F:
CONSTITUENTS OF CONCERN DETECTIONS
IN PERFORMANCE AND SENTINEL WELLS

Tetrachloroethene	18-Feb-13	0.46	1.0	---	---	**5.5**		ND		ND
	18-Jul-13	0.46	1.0	---	---	---		---		ND
	28-Oct-13	0.46	1.0	ND	ND	---		---		ND
NC 2L = 0.7 µg/L (10/23/07)	6-May-14	0.46	1.0	---	---	**7.9**		ND		ND
	22-Oct-14	0.46	1.0	---	---	**7.3**		ND		ND
	21-May-15	0.46	1.0	ND	ND	**6.0**		ND		ND
	8-Dec-15	0.46	1.0	---	---	**5.0**		ND		ND
Trichloroethene	18-Feb-13	0.47	1.0	---	---	**3.6**		2.7		ND
	18-Jul-13	0.47	1.0	---	---	---		---		ND
	28-Oct-13	0.47	1.0	ND	ND	---		---		ND
NC 2L = 3 µg/L (01/01/10)	6-May-14	0.47	1.0	---	---	**6.0**		2.1		ND
	22-Oct-14	0.47	1.0	---	---	**5.1**		1.8		ND
	21-May-15	0.47	1.0	ND	ND	**3.5**		0.9	J	ND
	8-Dec-15	0.47	1.0	---	---	2.9		2.1		ND
Vinyl chloride	18-Feb-13	0.62	1.0	---	---	**1.2**		ND		ND
	18-Jul-13	0.62	1.0	---	---	---		---		ND
	28-Oct-13	0.62	1.0	ND	ND	---		---		ND
NC 2L = 0.03 µg/L (01/01/10)	6-May-14	0.62	1.0	---	---	**1.1**		ND		ND
	22-Oct-14	0.62	1.0	---	---	0.9	J	ND		ND
	21-May-15	0.62	1.0	ND	ND	ND		ND		ND
	8-Dec-15	0.62	1.0	---	---	0.80	J	ND		ND

Notes:
All concentrations in micrograms per liter (µg/L) = parts per billion.
DL = Laboratory Detection Limit.
RL = SWSL = Solid Waste Section Reporting Limit.
NC 2L = Groundwater Standard from 15A NCAC 2L.0202.
GWPS = Groundwater Protection Standard set by NC-DENR-SWS for constituents with no listed NC 2L.
nle = No longer exists (MW-34 was accidentaly destroyed during construciton activties).
--- = Not reported or not monitored.
For MW-36 and MW-38, only COC's are reported in this Appendix. Additional constituents required for the Phase 1A area are included in the Semiannual Groundwater Monitoring Report for Phase 1A.
Italics = Constituent of Concern (COC).

Appendix G

Historical Detected Surface Water Constituents

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5		SMP-6		SMP-7		Blanks	
Inorganic Compounds											
Antimony	6-Nov-08	2.6	6.0	ND		**8.4**		---		ND	
	3-Jun-09	2.6	6.0	ND		ND		---		ND	
	18-Nov-09	2.6	6.0	ND		ND		---		ND	
NC 2B = NE (05/01/07)	15-Jun-10	2.6	6.0	ND		ND		---		ND	
	1-Dec-10	2.6	6.0	ND		ND		---		ND	
	1-Jun-11	2.6	6.0	ND		ND		---		ND	
	20-Dec-11	5.0	6.0	ND		ND		---		ND	
	30-May-12	5.0	6.0	ND		ND		---		ND	
	5-Dec-12	5.0	6.0	ND		ND		---		ND	
	12-Jun-13	5.0	6.0	ND		ND		---		ND	
	28-Oct-13	5.0	6.0	ND		ND		---		ND	
	6-May-14	5.0	6.0	ND		ND		---		ND	
	22-Oct-14	5.0	6.0	---		ND		ND		ND	
	21-May-15	3.8	6.0	ND		ND		ND		ND	
	9-Dec-15	3.8	6.0	ND		ND		ND		ND	
Arsenic	6-Nov-08	2.7	10.0	2.9	B	4.5	B	---		4.1	J
	3-Jun-09	2.7	10.0	ND		4.5	J	---		ND	
	18-Nov-09	2.7	10.0	ND		ND		---		ND	
NC 2B = 10 µg/L (05/01/07)	15-Jun-10	2.7	10.0	ND		ND		---		ND	
	1-Dec-10	2.7	10.0	ND		ND		---		ND	
	1-Jun-11	2.7	10.0	ND		ND		---		ND	
	20-Dec-11	5.0	10.0	ND		ND		---		ND	
	30-May-12	5.0	10.0	ND		ND		---		ND	
	5-Dec-12	5.0	10.0	ND		ND		---		ND	
	12-Jun-13	5.0	10.0	ND		ND		---		ND	
	28-Oct-13	5.0	10.0	ND		ND		---		ND	
	6-May-14	5.0	10.0	ND		ND		---		ND	
	22-Oct-14	5.0	10.0	---		ND		ND		ND	
	21-May-15	2.5	10.0	ND		ND		ND		ND	
	9-Dec-15	2.5	10.0	ND		ND		ND		ND	
Barium	30-May-07	---	100	81.3	J	23.8	J	---		0.2	J
	29-Nov-07	---	100	116		27.5	J	---		0.50	J
	29-May-08	0.2	100	71.9	J	19.6	J	---		ND	
	6-Nov-08	0.20	100	82.5	J	40.2	B	---		9.6	J
	3-Jun-09	0.20	100	104		36.2	B	---		15.9	J
	18-Nov-09	0.20	100	49.9	B	15.7	B	---		20.1	J
NC 2B = 1,000 µg/L (05/01/07)	15-Jun-10	0.20	100	47.6	J	20.7	J	---		0.77	J
	1-Dec-10	0.20	100	39.8	J	46.8	J	---		ND	
	1-Jun-11	0.20	100	51.6	J	19.9	J	---		ND	
	20-Dec-11	5.0	100	63.7	J	13.9	J	---		ND	
	30-May-12	5.0	100	16.9	J	22.0	J	---		ND	
	5-Dec-12	5.0	100	69.9	J	24.8	J	---		ND	
	12-Jun-13	5.0	100	54.9	B	40.0	B	---		13.6	J
	28-Oct-13	5.0	100	35.4	J	20.8	J	---		ND	
	6-May-14	5.0	100	37.0	J	17.8	J	---		ND	
	22-Oct-14	5.0	100	---		25.5	J	19.8	J	ND	
	21-May-15	2.5	100	53.0	J	14.6	J	21.6	J	ND	
	9-Dec-15	2.5	100	26.1	J	23.4	J	27.8	J	ND	

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5		SMP-6		SMP-7	Blanks	
Beryllium	14-Nov-02	---	2	2.0	B	2.2	B	---	2.1	
	14-May-03	---	2	ND		ND		---	ND	
	20-Nov-03	---	2	ND		ND		---	ND	
	6-May-04	---	2	ND		ND		---	ND	
	10-Nov-04	---	2	ND		ND		---	ND	
	5-May-05	---	2	ND		ND		---	ND	
	3-Nov-05	---	2	ND		ND		---	ND	
	25-May-06	---	2	ND		ND		---	ND	
	2-Nov-06	---	2	ND		ND		---	ND	
	30-May-07	---	1	ND		ND		---	ND	
	29-Nov-07	---	1	ND		ND		---	ND	
	29-May-08	0.10	1.0	ND		ND		---	ND	
	6-Nov-08	0.10	1.0	0.24	B	0.37	B	---	0.29	J
	3-Jun-09	0.10	1.0	0.64	J	0.21	J	---	ND	
	18-Nov-09	0.10	1.0	ND		ND		---	ND	
NC 2B = 6.5 µg/L (05/01/07)	15-Jun-10	0.10	1.0	ND		ND		---	ND	
	1-Dec-10	0.10	1.0	ND		ND		---	ND	
	1-Jun-11	0.10	1.0	ND		ND		---	ND	
	20-Dec-11	1.0	1.0	ND		ND		---	ND	
	30-May-12	1.0	1.0	ND		ND		---	ND	
	5-Dec-12	1.0	1.0	ND		ND		---	ND	
	12-Jun-13	1.0	1.0	ND		ND		---	ND	
	28-Oct-13	1.0	1.0	ND		ND		---	ND	
	6-May-14	1.0	1.0	ND		ND		---	ND	
	22-Oct-14	1.0	1.0	---		ND		ND	ND	
	21-May-15	0.5	1.0	ND		ND		ND	ND	
	9-Dec-15	0.5	1.0	ND		ND		ND	ND	

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5		SMP-6		SMP-7		Blanks	
Cadmium	7-Nov-01	---	1	ND		1.0		---		ND	
	22-May-02	---	1	ND		1.7	B	---		1.3	
	14-Nov-02	---	1	ND		ND		---		ND	
	14-May-03	---	1	ND		ND		---		ND	
	20-Nov-03	---	1	ND		ND		---		ND	
	6-May-04	---	1	ND		ND		---		ND	
	10-Nov-04	---	1	ND		ND		---		ND	
	5-May-05	---	1	ND		ND		---		ND	
	3-Nov-05	---	1	ND		ND		---		ND	
	25-May-06	---	1	ND		ND		---		ND	
	2-Nov-06	---	1	ND		ND		---		ND	
	30-May-07	---	1	ND		ND		---		ND	
	29-Nov-07	---	1	ND		ND		---		ND	
	29-May-08	0.5	1.0	ND		ND		---		ND	
	6-Nov-08	0.50	1.0	ND		ND		---		ND	
	3-Jun-09	0.50	1.0	ND		ND		---		ND	
	18-Nov-09	0.50	1.0	ND		ND		---		ND	
NC 2B = 2 µg/L (05/01/07)	15-Jun-10	0.50	1.0	ND		ND		---		ND	
	1-Dec-10	0.50	1.0	ND		ND		---		ND	
	1-Jun-11	0.50	1.0	ND		ND		---		ND	
	20-Dec-11	1.0	1.0	ND		ND		---		ND	
	30-May-12	1.0	1.0	ND		ND		---		ND	
	5-Dec-12	1.0	1.0	ND		ND		---		ND	
	12-Jun-13	1.0	1.0	ND		ND		---		ND	
	28-Oct-13	1.0	1.0	ND		ND		---		ND	
	6-May-14	1.0	1.0	ND		ND		---		ND	
	22-Oct-14	1.0	1.0	---		ND		ND		ND	
	21-May-15	0.5	1.0	ND		ND		ND		ND	
	9-Dec-15	0.5	1.0	ND		ND		ND		ND	
Chromium	6-Nov-08	0.40	10.0	ND		0.47	J	---		ND	
	3-Jun-09	0.40	10.0	7.5	J	3.2	J	---		ND	
	18-Nov-09	0.40	10.0	ND		ND		---		ND	
NC 2B = 50 µg/L (05/01/07)	15-Jun-10	0.40	10.0	1.2	B	0.48	B	---		0.74	J
	1-Dec-10	0.40	10.0	0.68	B	5.1	J	---		0.51	J
	1-Jun-11	0.40	10.0	0.59	B	0.59	B	---		0.73	J
	20-Dec-11	5.0	10.0	ND		ND		---		ND	
	30-May-12	5.0	10.0	ND		ND		---		ND	
	5-Dec-12	5.0	10.0	ND		ND		---		ND	
	12-Jun-13	5.0	10.0	ND		ND		---		ND	
	28-Oct-13	5.0	10.0	ND		ND		---		ND	
	6-May-14	5.0	10.0	ND		ND		---		ND	
	22-Oct-14	5.0	10.0	---		ND		9.7	J	ND	
	21-May-15	2.5	10.0	ND		ND		ND		ND	
	9-Dec-15	2.5	10.0	ND		ND		ND		ND	

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5		SMP-6		SMP-7	Blanks	
Cobalt	22-May-02	---	10	14.0		17.0		---	11.0	
	14-Nov-02	---	10	ND		ND		---	ND	
	14-May-03	---	10	ND		10.0		---	ND	
	20-Nov-03	---	10	14.0		ND		---	ND	
	6-May-04	---	10	ND		ND		---	ND	
	10-Nov-04	---	10	10.0		ND		---	ND	
	5-May-05	---	10	10.0		ND		---	ND	
	3-Nov-05	---	10	16.0		ND		---	ND	
	25-May-06	---	10	12		ND		---	ND	
	2-Nov-06	---	10	13.6		ND		---	ND	
	30-May-07	---	10	12.3		8.8	J	---	ND	
	29-Nov-07	---	10	19.0		2.1	J	---	ND	
	29-May-08	0.60	10.0	13.7		ND		---	ND	
	6-Nov-08	0.60	10.0	12.6		ND		---	0.65	J
	3-Jun-09	0.60	10.0	11.9	B	6.6	B	---	7.6	J
	18-Nov-09	0.60	10.0	3.6	J	4.6	J	---	ND	
NC 2B = NE (05/01/07)	15-Jun-10	0.60	10.0	6.4	J	22.3		---	ND	
	1-Dec-10	0.60	10.0	0.76	J	4.1	J	---	ND	
	1-Jun-11	0.60	10.0	2.0	J	1.7	J	---	ND	
	20-Dec-11	5.0	10.0	ND		ND		---	ND	
	30-May-12	5.0	10.0	ND		ND		---	ND	
	5-Dec-12	5.0	10.0	29.0		7.7	J	---	ND	
	12-Jun-13	5.0	10.0	ND		9.1	J	---	ND	
	28-Oct-13	5.0	10.0	11.5		12.4		---	ND	
	6-May-14	5.0	10.0	ND		ND		---	ND	
	22-Oct-14	5.0	10.0	---		ND		ND	ND	
	21-May-15	2.5	10.0	6.3	J	ND		ND	ND	
	9-Dec-15	2.5	10.0	ND		ND		ND	ND	
Copper	29-May-08	0.30	10.0	ND		1.3	B	---	0.37	J
	6-Nov-08	4.0	10.0	0.45	B	3.4	J	---	0.65	J
	3-Jun-09	0.30	10.0	6.6	J	2.1	J	---	ND	
	18-Nov-09	0.30	10.0	ND		ND		---	ND	
NC 2B = 7 µg/L (05/01/07)	15-Jun-10	0.30	10.0	0.56	B	ND		---	0.77	J
	1-Dec-10	0.30	10.0	3.6	J	5.9	J	---	ND	
	1-Jun-11	0.30	10.0	1.8	J	0.35	J	---	ND	
	20-Dec-11	5.0	10.0	ND		ND		---	ND	
	30-May-12	5.0	10.0	ND		ND		---	ND	
	5-Dec-12	5.0	10.0	ND		ND		---	ND	
	12-Jun-13	5.0	10.0	5.2	B	ND		---	9.8	J
	28-Oct-13	5.0	10.0	ND		ND		---	ND	
	6-May-14	5.0	10.0	ND		ND		---	ND	
	22-Oct-14	5.0	10.0	---		ND		ND	ND	
	21-May-15	2.5	10.0	ND		ND		ND	ND	
	9-Dec-15	2.5	10.0	ND		ND		ND	ND	

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5		SMP-6		SMP-7	Blanks	
Lead	3-Jun-09	4.0	10.0	7.3	J	ND		---	ND	
	18-Nov-09	4.0	10.0	ND		ND		---	ND	
NC 2B = 25 µg/L (05/01/07)	15-Jun-10	4.0	10.0	ND		ND		---	ND	
	1-Dec-10	4.0	10.0	ND		4.6	J	---	ND	
	1-Jun-11	4.0	10.0	ND		ND		---	ND	
	20-Dec-11	5.0	10.0	ND		ND		---	ND	
	30-May-12	5.0	10.0	ND		ND		---	ND	
	5-Dec-12	5.0	10.0	ND		ND		---	ND	
	12-Jun-13	5.0	10.0	ND		ND		---	ND	
	28-Oct-13	5.0	10.0	ND		ND		---	ND	
	6-May-14	5.0	10.0	ND		ND		---	ND	
	22-Oct-14	5.0	10.0	---		ND		ND	ND	
	21-May-15	2.5	10.0	ND		ND		ND	ND	
	9-Dec-15	2.5	10.0	ND		ND		ND	ND	
Nickel	3-Jun-09	1.7	50.0	5.5	B	ND		---	1.7	J
	18-Nov-09	1.7	50.0	ND		ND		---	ND	
NC 2B = 25 µg/L (05/01/07)	15-Jun-10	1.7	50.0	ND		ND		---	ND	
	1-Dec-10	1.7	50.0	2.8	J	2.8	J	---	ND	
	1-Jun-11	1.7	50.0	ND		ND		---	2.3	J
	20-Dec-11	5.0	50.0	ND		ND		---	ND	
	30-May-12	5.0	50.0	ND		ND		---	ND	
	5-Dec-12	5.0	50.0	ND		ND		---	ND	
	12-Jun-13	5.0	50.0	ND		ND		---	ND	
	28-Oct-13	5.0	50.0	ND		ND		---	ND	
	6-May-14	5.0	50.0	ND		ND		---	ND	
	22-Oct-14	5.0	50.0	---		ND		ND	ND	
	21-May-15	2.5	50.0	ND		ND		ND	ND	
	9-Dec-15	2.5	50.0	ND		ND		ND	ND	
Selenium	6-Nov-08	3.8	10	ND		**10.9**		---	ND	
	3-Jun-09	3.8	10.0	ND		ND		---	ND	
	18-Nov-09	3.8	10.0	ND		ND		---	ND	
NC 2B = 5 µg/L (05/01/07)	15-Jun-10	3.8	10.0	ND		ND		---	ND	
	1-Dec-10	3.8	10.0	ND		ND		---	ND	
	1-Jun-11	3.8	10.0	ND		ND		---	ND	
	20-Dec-11	10.0	10.0	ND		ND		---	ND	
	30-May-12	10.0	10.0	ND		ND		---	ND	
	5-Dec-12	10.0	10.0	ND		ND		---	ND	
	12-Jun-13	10.0	10.0	ND		ND		---	ND	
	28-Oct-13	10.0	10.0	ND		ND		---	ND	
	6-May-14	10.0	10.0	ND		ND		---	ND	
	22-Oct-14	10.0	10.0	---		ND		ND	ND	
	21-May-15	5.0	10.0	ND		ND		ND	ND	
	9-Dec-15	5.0	10.0	ND		ND		ND	ND	

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5		SMP-6		SMP-7	Blanks	
Silver	22-May-02	---	10	16.0	B	15.0	B	---	15.0	
	14-Nov-02	---	10	ND		ND		---	ND	
	14-May-03	---	10	ND		ND		---	ND	
	20-Nov-03	---	10	ND		ND		---	ND	
	6-May-04	---	10	ND		ND		---	ND	
	10-Nov-04	---	10	ND		ND		---	ND	
	5-May-05	---	10	ND		ND		---	ND	
	3-Nov-05	---	10	ND		ND		---	ND	
	25-May-06	---	10	ND		ND		---	ND	
	2-Nov-06	---	10	ND		ND		---	ND	
	30-May-07	---	10	ND		ND		---	ND	
	29-Nov-07	---	10	ND		ND		---	ND	
	29-May-08	0.10	10.0	0.29	J	0.13	J	---	ND	
	6-Nov-08	0.10	10.0	0.72	B	0.38	B	---	0.23	J
	3-Jun-09	0.10	10.0	0.18	B	ND		---	0.31	J
	18-Nov-09	0.10	10.0	0.27	B	0.23	B	---	0.23	J
NC 2B = 0.06 µg/L (05/01/07)	15-Jun-10	0.10	10.0	ND		ND		---	ND	
	1-Dec-10	0.10	10.0	ND		ND		---	ND	
	1-Jun-11	0.10	10.0	ND		0.22	J	---	ND	
	20-Dec-11	5.0	10.0	ND		ND		---	ND	
	30-May-12	5.0	10.0	ND		ND		---	ND	
	5-Dec-12	5.0	10.0	ND		ND		---	ND	
	12-Jun-13	5.0	10.0	ND		ND		---	ND	
	28-Oct-13	5.0	10.0	ND		ND		---	ND	
	6-May-14	5.0	10.0	ND		ND		---	ND	
	22-Oct-14	5.0	10.0	---		ND		ND	ND	
	21-May-15	2.5	10.0	ND		ND		ND	ND	
	9-Dec-15	2.5	10.0	ND		ND		ND	ND	
Thallium	5-May-05	---	10	22.0		11.0		---	ND	
	3-Nov-05	---	10	20.0		ND		---	ND	
	25-May-06	---	10	ND		ND		---	ND	
	2-Nov-06	---	10	ND		ND		---	ND	
	30-May-07	---	5.5	0.053	J	ND		---	ND	
	29-Nov-07	---	5.5	0.055	J	ND		---	ND	
	29-May-08	3.0	5.5	ND		ND		---	ND	
	6-Nov-08	3.0	5.5	ND		ND		---	ND	
	3-Jun-09	3.0	5.5	ND		ND		---	ND	
	18-Nov-09	3.0	5.5	ND		ND		---	4.2	J
NC 2B = NE (05/01/07)	15-Jun-10	3.0	5.5	3.2	J	ND		---	ND	
	1-Dec-10	3.0	5.5	ND		ND		---	4.0	J
	1-Jun-11	3.0	5.5	ND		ND		---	ND	
	20-Dec-11	5.4	5.5	ND		ND		---	ND	
	30-May-12	5.4	5.5	ND		ND		---	ND	
	5-Dec-12	5.4	5.5	ND		ND		---	ND	
	12-Jun-13	5.4	5.5	ND		ND		---	ND	
	28-Oct-13	5.4	5.5	ND		ND		---	ND	
	6-May-14	5.4	5.5	ND		ND		---	ND	
	22-Oct-14	5.4	5.5	---		ND		ND	ND	
	21-May-15	5.0	5.5	ND		ND		ND	ND	
	9-Dec-15	5.0	5.5	ND		ND		ND	ND	

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5		SMP-6		SMP-7		Blanks	
Vanadium	6-Nov-08	0.20	25.0	0.90	B	8.9	B	---		2.1	J
	3-Jun-09	0.20	25.0	17.4	J	7.5	J	---		1.0	J
	18-Nov-09	0.20	25.0	0.26	B	0.30	B	---		0.56	J
NC 2B = NE (05/01/07)	15-Jun-10	0.20	25.0	1.5	B	1.0	B	---		0.98	J
	1-Dec-10	0.20	25.0	1.1	J	13.7	J	---		ND	
	1-Jun-11	0.20	25.0	1.1	J	0.74	J	---		ND	
	20-Dec-11	5.0	25.0	ND		ND		---		ND	
	30-May-12	5.0	25.0	ND		ND		---		ND	
	5-Dec-12	5.0	25.0	ND		ND		---		ND	
	12-Jun-13	5.0	25.0	7.6	J	ND		---		ND	
	28-Oct-13	5.0	25.0	ND		ND		---		ND	
	6-May-14	5.0	25.0	ND		ND		---		ND	
	22-Oct-14	5.0	25.0	---		ND		ND		ND	
	21-May-15	2.5	25.0	7.5	J	ND		4.1	J	ND	
	9-Dec-15	2.5	25.0	ND		ND		3.9	J	ND	
Zinc	30-May-07	---	10	1.8	B	ND		---		1.6	J
	29-Nov-07	---	10	9.6	B	ND		---		3.1	J
	29-May-08	0.40	10.0	6.0	B	ND		---		3.0	J
	6-Nov-08	0.40	10.0	0.82	B	1.4	B	---		2.7	J
	3-Jun-09	0.40	10.0	33.7	B	9.6	B	---		82.0	
	18-Nov-09	0.40	10.0	2.2	B	2.5	B	---		3.1	J
NC 2B = 50 µg/L (05/01/07)	15-Jun-10	0.40	10.0	ND		ND		---		ND	
	1-Dec-10	0.40	10.0	8.8	J	6.6	J	---		0.62	J
	1-Jun-11	0.40	10.0	15.1	B	21.5	B	---		13.7	
	20-Dec-11	10.0	10.0	ND		ND		---		ND	
	30-May-12	10.0	10.0	ND		ND		---		ND	
	5-Dec-12	10.0	10.0	ND		ND		---		ND	
	12-Jun-13	10.0	10.0	ND		ND		---		76.5	
	28-Oct-13	10.0	10.0	ND		ND		---		ND	
	6-May-14	10.0	10.0	ND		ND		---		ND	
	22-Oct-14	10.0	10.0	---		ND		ND		ND	
	21-May-15	5.0	10.0	ND		5.8	J	ND		ND	
	9-Dec-15	5.0	10.0	ND		ND		ND		ND	

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5		SMP-6		SMP-7		Blanks	
Organic Compounds											
Acetone	29-Nov-07	---	100	3.6	B	ND		---		5.1	J
	29-May-08	20	100	ND		ND		---		ND	
	6-Nov-08	20	100	ND		ND		---		ND	
	3-Jun-09	2.2	100	5.7	J	ND		---		ND	
	18-Nov-09	2.2	100	ND		ND		---		ND	
NC 2B = NE (05/01/07)	15-Jun-10	2.2	100	2.2	B	2.3	B	---		7.2	J
	1-Dec-10	2.2	100	ND		ND		---		3.7	J
	1-Jun-11	2.2	100	5.4	B	2.9	B	---		3.9	J
	20-Dec-11	2.2	100	ND		ND		---		ND	
	30-May-12	2.2	100	ND		ND		---		ND	
	5-Dec-12	10.0	100	ND		ND		---		ND	
	12-Jun-13	10.0	100	ND		ND		---		ND	
	28-Oct-13	10.0	100	ND		ND		---		ND	
	6-May-14	10.0	100	ND		ND		---		ND	
	22-Oct-14	10.0	100	---		ND		ND		ND	
	21-May-15	10.0	100	ND		ND		ND		ND	
	9-Dec-15	10.0	100	ND		ND		ND		ND	
Chloromethane	15-Jun-10	0.11	1.0	ND		0.11	J	---		ND	
NC 2B = NE (05/01/07)	1-Dec-10	0.11	1.0	ND		ND		---		ND	
	1-Jun-11	0.11	1.0	ND		ND		---		ND	
	20-Dec-11	0.11	1.0	ND		ND		---		ND	
	30-May-12	0.11	1.0	ND		ND		---		ND	
	5-Dec-12	0.11	1.0	ND		ND		---		ND	
	12-Jun-13	0.11	1.0	ND		ND		---		ND	
	28-Oct-13	0.11	1.0	ND		ND		---		ND	
	6-May-14	0.11	1.0	ND		ND		---		ND	
	22-Oct-14	0.11	1.0	---		ND		ND		ND	
	21-May-15	0.11	1.0	ND		ND		ND		ND	
	9-Dec-15	0.11	1.0	ND		ND		ND		ND	
1,1-Dichloroethane	1-Jun-11	0.32	5.0	ND		0.41	J	---		ND	
NC 2B = NE (05/01/07)	20-Dec-11	0.32	5.0	ND		ND		---		ND	
	30-May-12	0.32	5.0	ND		ND		---		ND	
	5-Dec-12	0.32	5.0	ND		1.6	J	---		ND	
	12-Jun-13	0.32	5.0	ND		ND		---		ND	
	28-Oct-13	0.32	5.0	ND		0.96	J	---		ND	
	6-May-14	0.32	5.0	ND		ND		---		ND	
	22-Oct-14	0.32	5.0	---		1.5	J	ND		ND	
	21-May-15	0.32	5.0	ND		ND		ND		ND	
	9-Dec-15	0.32	5.0	ND		ND		ND		ND	

APPENDIX G:
HISTORICAL DETECTED SURFACE WATER CONSTITUENTS

Analyte	Sample Collection Date	DL	RL	SMP-5	SMP-6		SMP-7	Blanks
cis-1,2-Dichloroethene	22-Oct-14	0.2	5.0	---	0.20	J	ND	ND
	21-May-15	0.2	5.0	ND	ND		ND	ND
NC 2B = NE (05/15/13)	9-Dec-15	0.2	5.0	ND	ND		ND	ND

Notes:

All concentrations in micrograms per liter (µg/L) = parts per billion.

RL = Reporting Limit (Lab. Reporting Limit for September 1994 - May 1999; NC PQL for October 1999 - December 2006; and SWSL for December 2006 - present).

DL = Laboratory Detection Limit.

NI = Monitoring well not yet installed.

AB = Monitoring well abandoned.

--- = Not sampled for this parameter or Not reported

ND = Not Detected at or above the RL (prior to Dec. 2006) or the DL (after Dec. 2006).

J = Estimated value - concentration is less than the RL but greater than the DL.

B = Blank-Qualified (Concentration suspected to reflect laboratory or field contamination based on similar concentrations detected in field, trip, or method blanks).

D = Sample was diluted when analyzed.

NC 2B = Groundwater Standard from 15A NCAC 2B.

NE = No NC 2B established.

Values above the NC 2B Standard are **bold**.

Surface waters classified as WS-IV (water supply IV, highly developed), B (primary recreation, fresh water), and CA (critical area).

Appendix H

Historical MNA Parameters

APPENDIX H:
HISTORICAL MONITORED NATURAL ATTENUATION PARAMETERS

			Background			Downgradient			Sentinel	
Analyte/Parameter	Date	Units	MW-17	MW-20	MW-21	MW-11	MW-12	MW-16S	MW-18	MW-19
Temperature (FP)	11/3/2006	^{o}C	14.90	NS	NS	15.25	16.97	16.52	NI	NI
	6/3/2009	^{o}C	15.90	NS	NS	19.10	19.40	14.50	16.20	16.30
	11/17/2009	^{o}C	12.0	NS	NS	13.9	15.9	13.7	13.8	12.0
	6/16/2010	^{o}C	16.06	NS	NS	17.65	17.8	17.69	18.83	16.3
	12/1/2010	^{o}C	13.43	NU	NS	11.17	12.27	14.1	14.4	14.6
	6/1/2011	^{o}C	17.21	NU	NS	18.39	17.59	21.68	15.04	16.57
	12/20/2011	^{o}C	NS	14.30	NS	14.52	14.30	14.69	NS	NS
	5/30/2012	^{o}C	NS	18.18	NS	21.70	20.80	16.90	16.99	17.26
	12/5/2012	^{o}C	NS	15.40	NS	15.00	15.50	16.90	NS	NS
	6/12/2013	^{o}C	NS	18.10	NS	18.70	18.20	16.30	NS	NS
	10/28/2013	^{o}C	NS	17.70	NS	18.40	18.20	17.50	17.40	17.10
	5/6/2014	^{o}C	NS	16.90	NS	22.40	21.00	18.00	14.90	14.50
	10/23/2014	^{o}C	NS	*	17.20	13.00	11.50	9.80	NS	NS
	5/21/2015	^{o}C	NS	17.80	19.80	18.70	22.20	18.60	18.10	25.50
	12/8/2015	^{o}C	NS	16.20	15.20	15.40	16.10	16.90	NS	NS
pH (FP)	11/3/2006	S.U.	5.34	NS	NS	5.32	5.40	5.68	NI	NI
	6/3/2009	S.U.	5.79	NS	NS	5.74	5.62	5.96	6.20	6.28
	11/17/2009	S.U.	6.03	NS	NS	5.92	5.49	6.08	5.84	6.24
	6/16/2010	S.U.	6.23	NS	NS	6.37	6.28	5.64	6.28	6.05
	12/1/2010	S.U.	5.40	NU	NS	6.10	6.10	6.05	6.52	6.36
	6/1/2011	S.U.	5.83	NU	NS	6.01	5.96	5.87	6.25	6.24
	12/20/2011	S.U.	NS	6.12	NS	5.98	5.90	6.01	NS	NS
	5/30/2012	S.U.	NS	6.61	NS	5.74	5.57	5.61	5.84	5.76
	12/5/2012	S.U.	NS	5.41	NS	6.12	5.93	5.75	NS	NS
	6/12/2013	S.U.	NS	5.92	NS	6.00	5.32	5.57	NS	NS
	10/28/2013	S.U.	NS	6.89	NS	5.85	5.88	5.76	6.12	6.22
	5/6/2014	S.U.	NS	5.37	NS	5.46	5.69	5.74	5.41	5.74
	10/23/2014	S.U.	NS	*	5.52	5.80	5.64	5.41	NS	NS
	5/21/2015	S.U.	NS	6.18	5.29	6.03	6.25	5.88	6.09	6.19
	12/8/2015	S.U.	NS	6.09	5.13	6.06	5.81	5.66	NS	NS
Specific Conductance (FP)	11/3/2006	µS/cm	59	NS	NS	133	95	207	NI	NI
	6/3/2009	µS/cm	139.5	NS	NS	258	146.2	286	220	329
	11/17/2009	µS/cm	182.7	NS	NS	279	146.9	245	218	330
	6/16/2010	µS/cm	124	NS	NS	310	214	213	216	309
	12/1/2010	µS/cm	143	NU	NS	235	133	160	292	310
	6/1/2011	µS/cm	69	NU	NS	384	175	293	241	392
	12/20/2011	µS/cm	NS	26	NS	314	152	229	NS	NS
	5/30/2012	µS/cm	NS	26.0	NS	392.0	177.0	229.0	227.0	256.0
	12/5/2012	µS/cm	NS	19.5	NS	370.1	148.8	197.4	NS	NS
	6/12/2013	µS/cm	NS	29.8	NS	345.2	201.7	201.7	NS	NS
	10/28/2013	µS/cm	NS	24.5	NS	430.0	189.5	229.9	215.6	295.2
	5/6/2014	µS/cm	NS	30.1	NS	460.7	208.5	230.4	179.0	276.9
	10/23/2014	µS/cm	NS	*	68.1	311.0	170.2	103.8	NS	NS
	5/21/2015	µS/cm	NS	19.8	27.2	435.4	221.5	231.2	262.0	412.2
	12/8/2015	µS/cm	NS	24.1	15.5	400.6	203.4	208.5	NS	NS
ORP (FP)	11/3/2006	mV	93.8	NS	NS	143.9	90.5	43.2	NI	NI
	6/3/2009	mV	195.0	NS	NS	150.0	130.0	138.0	132.0	113.0
	11/17/2009	mV	167.0	NS	NS	133.0	162.0	132.0	158.0	128.0
	6/16/2010	mV	13.8	NS	NS	-12.5	-58.6	-73.4	-36.8	-63.5
	12/1/2010	mV	31.6	NU	NS	-49.1	-74.7	-105.9	NS	NS
	6/1/2011	mV	73.2	NU	NS	28.6	-7.2	40.1	10.3	-2.6
	12/20/2011	mV	NS	56.8	NS	18.7	30.3	3.9	NS	NS
	5/30/2012	mV	NS	7.1	NS	-14.8	38.9	21.7	26.70	20.10
	12/5/2012	mV	NS	227.2	NS	-6.9	46.0	23.4	NS	NS
	6/12/2013	mV	NS	104.7	NS	-38.0	29.6	86.4	NS	NS
	10/28/2013	mV	NS	21.7	NS	-10.5	53.2	47.3	-7.20	5.40
	5/6/2014	mV	NS	116.5	NS	21.0	29.7	228.0	94.20	33.90
	10/23/2014	mV	NS	*	104.6	-2.3	-3.8	36.6	NS	NS
	5/21/2015	mV	NS	61.80	136.8	21.9	66.0	46.9	66.00	12.50
	12/8/2015	mV	NS	148.80	269.9	-21.4	-6.2	25.7	NS	NS

APPENDIX H:
HISTORICAL MONITORED NATURAL ATTENUATION PARAMETERS

Analyte/Parameter	Date	Units	MW-17	MW-20	MW-21	MW-11	MW-12	MW-16S	MW-18	MW-19
Turbidity (FP)	11/3/2006	ntu	10.4	NS	NS	7.97	64.0	16.3	NI	NI
	6/3/2009	ntu	154	NS	NS	20.6	7.54	39.1	390	125
	11/17/2009	ntu	318	NS	NS	19.65	7.89	23.0	<100	22.2
	6/16/2010	ntu	44.8	NS	NS	165	95.9	43.2	14.9	9.29
	12/1/2010	ntu	20.2	NU	NS	31	46.4	43.1	>1000	463
	6/1/2011	ntu	7.58	NU	NS	19.06	13.14	5.74	33.4	59.6
	12/20/2011	ntu	NS	80.4	NS	46.30	36.70	24.80	NS	NS
	5/30/2012	ntu	NS	14.0	NS	19.80	33.50	15.90	20.60	27.30
	12/5/2012	ntu	NS	631	NS	19.50	23.50	7.14	NS	NS
	6/12/2013	ntu	NS	21.3	NS	10.82	15.80	8.11	NS	NS
	10/28/2013	ntu	NS	7.39	NS	8.30	6.41	4.31	4.62	14.30
	5/6/2014	ntu	NS	37.1	NS	12.95	6.05	4.29	37.00	9.20
	10/23/2014	ntu	NS	*	8.15	21.7	10.04	7.55	NS	NS
	5/21/2015	ntu	NS	27.10	8.15	12.6	17.50	7.72	9.10	11.13
	12/8/2015	ntu	NS	55.60	25.5	16.7	35.40	30.50	NS	NS
Dissolved Oxygen (FP)	11/3/2006	mg/L	4.01	NS	NS	0.95	1.21	1.10	NI	NI
	6/3/2009	mg/L	1.21	NS	NS	0.84	0.57	0.99	1.38	0.60
	11/17/2009	mg/L	NS	NS	NS	2.35	4.12	3.50	2.23	3.20
	6/16/2010	mg/L	4.61	NS	NS	2.49	2.86	2.10	3.59	4.16
	12/1/2010	mg/L	7.94	NU	NS	1.29	1.29	5.15	NS	NS
	6/1/2011	mg/L	4.76	NU	NS	2.46	1.77	1.64	3.80	3.27
	12/20/2011	mg/L	NS	8.18	NS	1.87	2.17	2.17	NS	NS
	5/30/2012	mg/L	NS	6.24	NS	3.67	6.33	1.98	8.47	8.11
	12/5/2012	mg/L	NS	7.29	NS	2.09	3.57	0.99	NS	NS
	6/12/2013	mg/L	NS	8.68	NS	1.53	1.25	1.75	NS	NS
	10/28/2013	mg/L	NS	7.14	NS	3.42	2.47	2.82	3.62	3.21
	5/6/2014	mg/L	NS	7.83	NS	1.89	1.47	1.33	2.25	1.86
	10/23/2014	mg/L	NS	*	5.74	2.78	1.36	2.75	NS	NS
	5/21/2015	mg/L	NS	0.10	5.66	1.01	1.79	0.01	1.01	0.10
	12/8/2015	mg/L	NS	7.53	7.59	4.62	2.47	1.49	NS	NS
Carbon Dioxide (FP)	11/3/2006	mg/L	NS	NS	NS	NS	NS	NS	NI	NI
	6/3/2009	mg/L	170	NS	NS	295	255	325	185	315.00
	11/17/2009	mg/L	220	NS	NS	355	335	385	NS	280
	6/16/2010	mg/L	220	NS	NS	510	395	430	185	280
	12/1/2010	mg/L	25	NU	NS	440	285	230	NS	NS
	6/1/2011	mg/L	NS	NU	NS	NS	NS	NS	NS	NS
	12/20/2011	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	5/30/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/5/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	6/12/2013	mg/L	NS	25.0	NS	80	95	90	NS	NS
	10/28/2013	mg/L	NS	25.0	NS	335	240	130	160	130
	5/6/2014	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	10/23/2014	mg/L	NS	*	NS	NS	NS	NS	NS	NS
	5/21/2015	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/2015	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
Iron II (ferrous iron) (FP)	11/3/2006	mg/L	NS	NS	NS	0.5	6.4	7.5	NI	NI
	6/3/2009	mg/L	0.0	NS	NS	5.9	9.5	9.4	7.2	9.4
	11/17/2009	mg/L	0.0	NS	NS	5.0	6.8	4.0	4.0	6.0
	6/16/2010	mg/L	6.5	NS	NS	8.0	6.5	4.0	5.0	8.8
	12/1/2010	mg/L	0.0	NU	NS	6.2	4.6	10.0	NS	NS
	6/1/2011	mg/L	NS	NU	NS	NS	NS	NS	NS	NS
	12/20/2011	mg/L	NS	0.0	NS	6.1	4.5	5.6	NS	NS
	5/30/2012	mg/L	NS	0.0	NS	5.6	3.8	5.2	3.20	3.30
	12/5/2012	mg/L	NS	0.0	NS	5.2	4.0	6.3	NS	NS
	6/12/2013	mg/L	NS	0.0	NS	6.0	4.2	3.0	NS	NS
	10/28/2013	mg/L	NS	0.0	NS	5.5	9.0	4.8	6.5	6.0
	5/6/2014	mg/L	NS	0.0	NS	7.3	4.3	5.8	5.0	5.8
	10/23/2014	mg/L	NS	*	0.0	4.5	7.0	3.75	NS	NS
	5/21/2015	mg/L	NS	NS	0.0	5.8	7.0	7.0	4.7	5.8
	12/8/2015	mg/L	NS	NS	0.0	3.5	2.0	3.2	NS	NS

APPENDIX H:
HISTORICAL MONITORED NATURAL ATTENUATION PARAMETERS

Analyte/Parameter	Date	Units	MW-17	MW-20	MW-21	MW-11	MW-12	MW-16S	MW-18	MW-19
Nitrate	11/3/2006	mg/L	NS	NS	NS	<0.5	<0.5	<0.5	NI	NI
	6/3/2009	mg/L	<0.1	NS	NS	<0.1	<0.1	<0.1	<0.1	0.26
	11/17/2009	mg/L	<0.1	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1
	6/16/2010	mg/L	<0.1	NS	NS	<0.1	<0.1	<0.1	<0.1	<0.1
	12/1/2010	mg/L	<0.1	NU	NS	<0.1	<0.1	<0.1	NS	NS
	6/1/2011	mg/L	<0.1	NU	NS	<0.1	<0.1	<0.1	<0.1	<0.1
	12/20/2011	mg/L	NS	<0.1	NS	<0.1	<0.1	<0.1	NS	NS
	5/30/2012	mg/L	NS	.207 J	NS	<0.1	<0.1	<0.1	<0.1	<0.1
	12/5/2012	mg/L	NS	.294 J	NS	<0.1	<0.1	<0.1	NS	NS
	6/12/2013	mg/L	NS	.384 J	NS	<0.1	<0.1	<0.1	NS	NS
	10/28/2013	mg/L	NS	.333 J	NS	<0.1	<0.1	<0.1	<0.1	<0.1
	5/6/2014	mg/L	NS	.282 J	NS	<0.1	<0.1	<0.1	<0.1	<0.1
	10/23/2014	mg/L	NS	*	<0.1	<0.1	<0.1	<0.1	NS	NS
	5/21/2015	mg/L	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	12/8/2016	mg/L	NS	NS	.256 J	<0.1	<0.1	<0.1	NS	NS
Alkalinity	11/3/2006	mg/L	NS	NS	NS	47	36	106	NI	NI
	6/3/2009	mg/L	163	NS	NS	112	62.5	76.6	80.8	128
	11/17/2009	mg/L	70.8	NS	NS	121	50.0	83.3	81.2	115
	6/16/2010	mg/L	61.2	NS	NS	154	59.1	111	74.7	185
	12/1/2010	mg/L	35.2	NU	NS	156	86.9	64.4	NS	NS
	6/1/2011	mg/L	45.1	NU	NS	177	70.7	109	84.6	132
	12/20/2011	mg/L	NS	8.58	NS	189	70.8	77.2	NS	NS
	5/30/2012	mg/L	NS	8.14	NS	200	76.7	104	107.0	150.0
	12/5/2012	mg/L	NS	7.69	NS	178	76.6	106	NS	NS
	6/12/2013	mg/L	NS	7.95	NS	202	111	99.7	NS	NS
	10/28/2013	mg/L	NS	8.14	NS	197	91.3	116	NS	NS
	5/6/2014	mg/L	NS	8.06	NS	208	90.6	119	68.90	113.0
	10/23/2014	mg/L	NS	*	1.36 J	215	96.1	122	NS	NS
	5/21/2015	mg/L	NS	6.54	ND	153.000	67.500	92.100	51.300	154.000
	12/8/2015	mg/L	NS	8.280	1.030 J	202.000	88.800	95.900	NS	NS
Chloride	11/3/2006	mg/L	NS	NS	NS	9.30	1.69	2.49	NI	NI
	6/3/2009	mg/L	<5.0	NS	NS	16.1	<5.0	6.7	5.9	<5.0
	11/17/2009	mg/L	<5.0	NS	NS	16.8	<5.0	<5.0	6.8	<5.0
	6/16/2010	mg/L	<5.0	NS	NS	5.45	6.29	8.55	8.23	<5.0
	12/1/2010	mg/L	<5.0	NU	NS	15.1	6.84	<5.0	NS	NS
	6/1/2011	mg/L	<5.0	NU	NS	17.0	6.33	7.87	9.45	<5.0
	12/20/2011	mg/L	NS	<5.0	NS	20.2	6.40	6.53	NS	NS
	5/30/2012	mg/L	NS	1.48	NS	20.0	6.32	5.84	133.0	2.79
	12/5/2012	mg/L	NS	2.13	NS	19.5	7.29	7.43	NS	NS
	6/12/2013	mg/L	NS	1.38	NS	19.5	7.50	5.1	NS	NS
	10/28/2013	mg/L	NS	1.12	NS	18.1	7.75	8.49	NS	NS
	5/6/2014	mg/L	NS	ND	NS	18.2	8.14	8.92	13.50	2.41
	10/23/2014	mg/L	NS	*	ND	20.8	9.05	8.12	NS	NS
	5/21/2015	mg/L	NS	1.550	ND	25.300	9.680	10.400	12.400	2.500
	12/8/2015	mg/L	NS	1.840	0.859 J	30.800	9.400	4.190	NS	NS
Sulfate	11/3/2006	mg/L	NS	NS	NS	3.72	<2	<2	NI	NI
	6/3/2009	mg/L	<5.1	NS	NS	<5.0	<5.0	<5.0	5.8	ND
	11/17/2009	mg/L	<5.0	NS	NS	<5.0	<5.0	<5.0	<5.0	<5.0
	6/16/2010	mg/L	<5.0	NS	NS	<5.0	<5.0	<5.0	<5.0	<5.0
	12/1/2010	mg/L	<2.5	NU	NS	<12.5	<12.5	<12.5	NS	NS
	6/1/2011	mg/L	<5.0	NU	NS	<5.0	<5.0	<5.0	<5.0	<5.0
	12/20/2011	mg/L	NS	<5.0	NS	<5.0	<5.0	<5.0	NS	NS
	5/30/2012	mg/L	NS	<5.0	NS	<5.0	<5.0	<5.0	<5.0	<5.0
	12/5/2012	mg/L	NS	ND	NS	ND	4.4 J	ND	NS	NS
	6/12/2013	mg/L	NS	ND	NS	3.08 J	2.91 J	ND	NS	NS
	10/28/2013	mg/L	NS	ND	NS	ND	2.94 J	ND	NS	NS
	5/6/2014	mg/L	NS	ND	NS	2.30 J	3.72 J	2.07 J	ND	2.49 J
	10/23/2014	mg/L	NS	*	ND	2.28 J	3.74 J	1.94 J	NS	NS
	5/21/2015	mg/L	NS	ND	ND	2.310 J	3.440 J	2.750 J	1.700 J	1.980 J
	12/8/2015	mg/L	NS	ND	ND	1.530 J	2.020 J	9.260 J	NS	NS

APPENDIX H:
HISTORICAL MONITORED NATURAL ATTENUATION PARAMETERS

Analyte/Parameter	Date	Units	MW-17	MW-20	MW-21	MW-11	MW-12	MW-16S	MW-18	MW-19
Sulfide	11/3/2006	mg/L	NS	NS	NS	3.72	<2	<2	NI	NI
	6/3/2009	mg/L	<0.10	NS	NS	<0.10	<0.10	<0.10	<0.10	ND
	11/17/2009	mg/L	<0.10	NS	NS	<0.10	<0.10	<0.10	NS	NS
	6/16/2010	mg/L	<0.10	NS	NS	<0.10	<0.10	<0.10	<0.10	<0.10
	12/1/2010	mg/L	<0.10	NU	NS	<0.10	<0.10	<0.10	NS	NS
	6/1/2011	mg/L	NS	NU	NS	NS	NS	NS	NS	NS
	12/20/2011	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	5/30/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/5/2012	mg/L	NS	ND	NS	ND	ND	ND	NS	NS
	6/12/2013	mg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/28/2013	mg/L	NS	ND	NS	ND	ND	ND	ND	ND
	5/6/2014	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	10/23/2014	mg/L	NS	*	ND	ND	ND	ND	NS	NS
	5/21/2015	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/2015	mg/L	NS	NS	ND	ND	ND	ND	NS	NS
Methane	11/3/2006	mg/L	NS	NS	NS	2.23	2.50	2.92	NI	NI
	6/3/2009	mg/L	0.340	NS	NS	0.111	8.61	8.26	0.494	0.814
	11/17/2009	mg/L	2.580	NS	NS	4.310	0.147	10.300	1.200	0.271
Resample	1/19/2010	mg/L	NS	NS	NS	NS	2.120	NS	NS	NS
	6/16/2010	mg/L	0.750	NS	NS	4.600	6.000	6.200	1.000	1.100
	12/1/2010	mg/L	1.35	NU	NS	3.04	6.0	6.65	NS	NS
	6/1/2011	mg/L	2.1	NU	NS	0.157	0.0128	<0.010	0.899	2.64
	12/20/2011	mg/L	NS	<0.005	NS	1.460	6.300	5.650	NS	NS
	5/30/2012	mg/L	NS	0.0061	NS	0.883	6.130	3.760	0.46	0.718
	12/5/2012	mg/L	NS	ND	NS	2.070	2.050	4.910	NS	NS
	6/12/2013	mg/L	NS	0.0063	NS	0.964	8.900	11.400	NS	NS
	10/28/2013	mg/L	NS	ND	NS	.0033 J	2.610	0.173	0.0581	0.0085
	5/6/2014	mg/L	NS	ND	NS	2.040	6.190	4.360	0.3850	1.5900
	10/23/2014	mg/L	NS	*	5.93	2.21	ND	5.61	NS	NS
	5/21/2015	mg/L	NS	0.0018 J	0.0012 J	2.270	6.700	4.940	0.136	3.060
	12/8/2015	mg/L	NS	NS	2.0 J	0.959	0.796	7.510	NS	NS
Ethane	11/3/2006	mg/L	NS	NS	NS	<0.002	<0.002	<0.002	NI	NI
	6/3/2009	mg/L	<0.005	NS	NS	<0.005	<0.005	<0.005	<0.005	<0.005
	11/17/2009	mg/L	<0.005	NS	NS	<0.005	<0.005	<0.005	<0.005	<0.005
Resample	1/19/2010	mg/L	NS	NS	NS	NS	<0.005	NS	NS	NS
	6/16/2010	mg/L	<0.013	NS	NS	<0.013	<0.011	<0.011	<0.013	<0.013
	12/1/2010	mg/L	<0.0022	NU	NS	<0.0022	<0.0022	<0.0022	NS	NS
	6/1/2011	mg/L	NS	NU	NS	NS	NS	NS	NS	NS
	12/20/2011	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	5/30/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/5/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	6/12/2013	mg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/28/2013	mg/L	NS	ND	NS	.0016 J	ND	ND	ND	ND
	5/6/2014	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	10/23/2014	mg/L	NS	*	NS	NS	NS	NS	NS	NS
	5/21/2015	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/2016	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
Ethylene (Ethene)	11/3/2006	mg/L	NS	NS	NS	<0.002	<0.002	<0.002	NI	NI
	6/3/2009	mg/L	<0.005	NS	NS	<0.005	<0.005	<0.005	<0.005	<0.005
	11/17/2009	mg/L	<0.005	NS	NS	<0.005	<0.005	<0.005	<0.005	<0.005
Resample	1/19/2010	mg/L	NS	NS	NS	NS	<0.005	NS	NS	NS
	6/16/2010	mg/L	<0.013	NS	NS	<0.013	<0.011	<0.011	<0.013	<0.013
	12/1/2010	mg/L	<0.0018	NU	NS	<0.0018	<0.0018	<0.0018	NS	NS
	6/1/2011	mg/L	NS	NU	NS	NS	NS	NS	NS	NS
	12/20/2011	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	5/30/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/5/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	6/12/2013	mg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/28/2013	mg/L	NS	ND	NS	.0017 J	ND	ND	ND	ND
	5/6/2014	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	10/23/2014	mg/L	NS	*	NS	NS	NS	NS	NS	NS
	5/21/2015	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/2015	mg/L	NS	NS	NS	NS	NS	NS	NS	NS

APPENDIX H:
HISTORICAL MONITORED NATURAL ATTENUATION PARAMETERS

Analyte/Parameter	Date	Units	MW-17	MW-20	MW-21	MW-11	MW-12	MW-16S	MW-18	MW-19
Dissolved Hydrogen	11/3/2006	nM	NS	NS	NS	NS	NS	NS	NI	NI
	6/3/2009	nM	0.480 J	NS	NS	0.720	<0.600	0.350 J	0.580 J	0.790
	11/17/2009	nM	0.780	NS	NS	0.850	0.690	1.000	1.200	0.630
	6/16/2010	nM	4.800	NS	NS	3.400	2.800	2.200	2.800	3.300
	12/1/2010	nM	1.500	NU	NS	0.850	0.740	0.950	NS	NS
	6/1/2011	nM	2.300	NU	NS	2.400	1.900	2.200	2.100	2.000
	12/20/2011	nM	NS	21	NS	19	6.3	7.0	NS	NS
	5/30/2012	nM	NS	0.74	NS	2.0	1.1	0.84	0.79	0.76
	12/5/2012	nM	NS	1.7	NS	0.5 J	0.35 J	0.57 J	NS	NS
	6/12/2013	nM	NS	1.1	NS	1.1	0.83	1.60	NS	NS
	10/28/2013	nM	NS	0.61	NS	0.61	0.55 J	0.52 J	0.56 J	0.68
	5/6/2014	nM	NS	0.61	NS	0.82	1.1 J	1.1 J	0.61	3.50
	10/23/2014	nM	NS	*	0.75	0.86	0.85	1.2	NS	NS
	5/21/2015	nM	NS	NS	1.7	1.3	1.1	1.6	1.6	1.2
	12/8/2016	nM	NS	NS	2.0	1.6	2.3	1.9	NS	NS
Volatile Fatty Acids	11/3/2006	mg/L	NS	NS	NS	NS	NS	NS	NI	NI
	6/3/2009	mg/L	10.9	NS	NS	0.5 J	ND	ND	ND	ND
	11/17/2009	mg/L	0.9 J	NS	NS	ND	0.6 J	ND	0.9 J	ND
	6/16/2010	mg/L	ND	NS	NS	32.0	ND	1.3	0.8 J	5.2
	12/1/2010	mg/L	ND	NU	NS	ND	ND	6.4 J	NS	NS
	6/1/2011	mg/L	NS	NU	NS	NS	NS	NS	NS	NS
	12/20/2011	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	5/30/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/5/2012	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	6/12/2013	mg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/28/2013	mg/L	NS	ND	NS	ND	ND	ND	ND	ND
	5/6/2014	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	10/23/2014	mg/L	NS	*	NS	NS	NS	NS	NS	NS
	5/21/2015	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/2015	mg/L	NS	NS	NS	NS	NS	NS	NS	NS
TOC	11/3/2006	mg/L	NS	NS	NS	NS	NS	NS	NI	NI
	6/3/2009	mg/L	9.4	NS	NS	11.1	10.1	17.8	8.6	14.2
	11/17/2009	mg/L	2.1	NS	NS	13.1	12.6	14.6	3.9	11.4
	6/16/2010	mg/L	24.9	NS	NS	12.9	8.66	11.1	6.4	16.8
	12/1/2010	mg/L	17.6	NU	NS	29.3	23.4	43.8	NS	NS
	6/1/2011	mg/L	NS	NU	NS	NS	NS	NS	NS	NS
	12/20/2011	mg/L	NS	6.53	NS	13.6	12.2	16.1	NS	NS
	5/30/2012	mg/L	NS	6.49	NS	12.5	12.1	14.5	6.55	10.90
	12/5/2012	mg/L	NS	ND	NS	13.1	13.1	16.0	NS	NS
	6/12/2013	mg/L	NS	ND	NS	13.3	12.9	18.3	NS	NS
	10/28/2013	mg/L	NS	ND	NS	15.3	12.9	15.2	7.5	14.7
	5/6/2014	mg/L	NS	ND	NS	17.6	12.0	19.9	9.54	11.3
	10/23/2014	mg/L	NS	*	27.0	35.7	66.4	33.2	NS	NS
	5/21/2015	mg/L	NS	ND	ND	4.410	4.580	3.880	2.530	8.580
	12/8/2016	mg/L	NS	ND	ND	5.320	--	6.070	NS	NS
Tetrachloroethene (PCE)	11/3/2006	µg/L	ND	NS	NS	ND	ND	ND	NI	NI
	6/3/2009	µg/L	2.1	NS	NS	ND	0.70 J	ND	ND	ND
	11/17/2009	µg/L	2.6	NS	NS	ND	0.49 J	ND	ND	ND
	6/16/2010	µg/L	1.2	NS	NS	ND	0.46 J	ND	ND	ND
	12/1/2010	µg/L	3.0	NU	NS	ND	ND	ND	NS	NS
	6/1/2011	µg/L	3.6	NU	NS	ND	ND	ND	ND	ND
	12/20/2011	µg/L	NS	ND	NS	0.59 J	0.70 J	ND	NS	NS
	5/30/2012	µg/L	NS	ND	NS	ND	ND	ND	ND	ND
	12/5/2012	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	6/12/2013	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/28/2013	µg/L	NS	ND	NS	ND	ND	ND	ND	ND
	5/6/2014	µg/L	NS	ND	NS	ND	ND	ND	ND	ND
	10/23/2014	µg/L	NS	*	ND	ND	ND	ND	NS	NS
	5/21/2015	µg/L	NS	ND	ND	ND	ND	ND	ND	ND
	12/8/2016	µg/L	NS	ND	ND	ND	ND	ND	NS	NS

APPENDIX H:
HISTORICAL MONITORED NATURAL ATTENUATION PARAMETERS

Analyte/Parameter	Date	Units	MW-17	MW-20	MW-21	MW-11	MW-12	MW-16S	MW-18	MW-19
Trichloroethene (TCE)	11/3/2006	µg/L	ND	NS	NS	ND	ND	ND	NI	NI
	6/3/2009	µg/L	1.8	NS	NS	3.6	4.3	1.4	ND	ND
	11/17/2009	µg/L	1.9	NS	NS	3.3	3.3	1.2	ND	ND
	6/16/2010	µg/L	0.61 J	NS	NS	5.1	3.3	1.4	ND	ND
	12/1/2010	µg/L	1.9	NU	NS	3.7	3.3	ND	NS	NS
	6/1/2011	µg/L	2.0	NU	NS	2.8	3.2	ND	ND	ND
	12/20/2011	µg/L	NS	ND	NS	2.5	3.5	1.1	NS	NS
	5/30/2012	µg/L	NS	ND	NS	2.5	2.6	0.55 J	ND	ND
	12/5/2012	µg/L	NS	ND	NS	2.3	3.3	0.67 J	NS	NS
	6/12/2013	µg/L	NS	ND	NS	2.1	1.8	0.76 J	NS	NS
	10/28/2013	µg/L	NS	ND	NS	3.1	2.5	0.76 J	ND	ND
	5/6/2014	µg/L	NS	ND	NS	2.0	2.6	0.60 J	ND	ND
	10/23/2014	µg/L	NS	*	ND	1.3	2.2	0.86 J	NS	NS
	5/21/2015	µg/L	NS	ND	ND	0.9 J	2.3	ND	ND	ND
	12/8/2016	µg/L	NS	ND	ND	0.71 J	1.4	ND	NS	NS
1,2-Dichloroethene (Total)	11/3/2006	µg/L	ND	NS	NS	16	12	17	NI	NI
	6/3/2009	µg/L	0.71 J	NS	NS	13.3	12.1	10.6	3.9 J	ND
	11/17/2009	µg/L	2.8 J	NS	NS	12.5	20.3	11.1	NS	NS
	6/16/2010	µg/L	1.7 J	NS	NS	14.9	15.6	9.9	4.5 J	ND
	12/1/2010	µg/L	0.66 J	NU	NS	11.5	9.3	7.4	NS	NS
	6/1/2011	µg/L	0.66 J	NU	NS	14.6	13.9	5.7	4.6 J	ND
	12/20/2011	µg/L	NS	ND	NS	9.7	9.8	6.6	NS	NS
	5/30/2012	µg/L	NS	ND	NS	11.8	11.2	6.8	ND	ND
	12/5/2012	µg/L	NS	ND	NS	9.1	10.07	6.6	NS	NS
	6/12/2013	µg/L	NS	ND	NS	9.0	12.8	6.2	NS	NS
	10/28/2013	µg/L	NS	ND	NS	11.2	14.0	7.7	NS	NS
	5/6/2014	µg/L	NS	ND	NS	9.5	13.0	7.7	NS	NS
	10/23/2014	µg/L	NS	*	ND	8.0	10.1	7.1	NS	NS
	5/21/2015	µg/L	NS	ND	ND	6.7	7.6	4.2	NS	NS
	12/8/2015	µg/L	NS	ND	ND	0.65 J	ND	1.3	NS	NS
cis-1,2-Dichloroethene	11/3/2006	µg/L	ND	NS	NS	16	12	17	NI	NI
	6/3/2009	µg/L	0.71 J	NS	NS	13.1	11.9	10.4	3.9 J	ND
	11/17/2009	µg/L	2.8 J	NS	NS	12.2	20.0	10.8	5.7	ND
	6/16/2010	µg/L	1.7 J	NS	NS	14.8	15.6	9.7	4.5 J	ND
	12/1/2010	µg/L	0.66 J	NU	NS	11.3	9.2	7.1	NS	NS
	6/1/2011	µg/L	0.66 J	NU	NS	14.5	13.8	5.7	4.6 J	ND
	12/20/2011	µg/L	NS	ND	NS	9.5	9.7	6.5	NS	NS
	5/30/2012	µg/L	NS	ND	NS	11.8	11.2	6.8	ND	ND
	12/5/2012	µg/L	NS	ND	NS	9.1	9.4	6.6	NS	NS
	6/12/2013	µg/L	NS	ND	NS	9.0	12.8	6.2	NS	NS
	10/28/2013	µg/L	NS	ND	NS	11.2	14.0	7.7	NS	NS
	5/6/2014	µg/L	NS	ND	NS	9.5	13.0	7.7	NS	NS
	10/23/2014	µg/L	NS	*	ND	8.0	10.1	7.1	NS	NS
	5/21/2015	µg/L	NS	ND	ND	6.7	7.6	4.2	NS	NS
	12/8/2015	µg/L	NS	ND	ND	6.9	9.9	4.4 J	NS	NS
Vinyl Chloride	11/3/2006	µg/L	ND	NS	NS	ND	ND	ND	NI	NI
	6/3/2009	µg/L	ND	NS	NS	ND	0.95 J	2.0	ND	ND
	11/17/2009	µg/L	0.69 J	NS	NS	0.66 J	1.6	2.5	ND	ND
	6/16/2010	µg/L	ND	NS	NS	ND	1.1	2.1	ND	ND
	12/1/2010	µg/L	ND	NU	NS	0.65 J	0.93 J	3.5	NS	NS
	6/1/2011	µg/L	ND	NU	NS	0.87 J	1.1	1.8	ND	ND
	12/20/2011	µg/L	NS	ND	NS	0.63 J	ND	1.4	NS	NS
	5/30/2012	µg/L	NS	ND	NS	ND	ND	1.6	ND	ND
	12/5/2012	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	6/12/2013	µg/L	NS	ND	NS	ND	0.96 J	2.10	NS	NS
	10/28/2013	µg/L	NS	ND	NS	ND	0.74 J	1.3	ND	ND
	5/6/2014	µg/L	NS	ND	NS	ND	0.77 J	1.8	ND	ND
	10/23/2014	µg/L	NS	*	ND	ND	ND	1.3	NS	NS
	5/21/2015	µg/L	NS	ND	ND	ND	ND	1.1	ND	ND
	12/8/2015	µg/L	NS	0.72 J	ND	ND	ND	1.4	NS	NS

APPENDIX H:
HISTORICAL MONITORED NATURAL ATTENUATION PARAMETERS

Analyte/Parameter	Date	Units	MW-17	MW-20	MW-21	MW-11	MW-12	MW-16S	MW-18	MW-19
1,1,1-Trichloroethane	11/3/2006	µg/L	ND	NS	NS	ND	ND	ND	NI	NI
	6/3/2009	µg/L	ND	NS	NS	ND	ND	ND	ND	ND
	11/17/2009	µg/L	ND	NS	NS	ND	ND	ND	ND	ND
	6/16/2010	µg/L	ND	NS	NS	ND	ND	ND	ND	ND
	12/1/2010	µg/L	ND	NU	NS	ND	ND	ND	NS	NS
	6/1/2011	µg/L	ND	NU	NS	ND	ND	ND	ND	ND
	12/20/2011	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	5/30/2012	µg/L	NS	ND	NS	ND	ND	ND	ND	ND
	12/5/2012	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	6/12/2013	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/28/2013	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	5/6/2014	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/23/2014	µg/L	NS	*	ND	ND	ND	ND	NS	NS
	5/21/2015	µg/L	NS	ND	ND	ND	ND	ND	NS	NS
	12/8/2015	µg/L	NS	ND	ND	ND	ND	ND	NS	NS
1,1-Dichloroethane	11/3/2006	µg/L	ND	NS	NS	12	34	33	NI	NI
	6/3/2009	µg/L	6.3	NS	NS	8.2	47.8	32.0	3.9 J	2.8 J
	11/17/2009	µg/L	10.8	NS	NS	6.7	41.9	29.4	6.7	3.7 J
	6/16/2010	µg/L	3.9 J	NS	NS	5.7	35.7	32.1	4.4 J	2.3 J
	12/1/2010	µg/L	6.8	NU	NS	5.4	41.3	16.9	NS	NS
	6/1/2011	µg/L	9.3	NU	NS	6.8	45.5	19.1	2.8 J	2.6 J
	12/20/2011	µg/L	NS	ND	NS	5.1	39.7	26.2	NS	NS
	5/30/2012	µg/L	NS	ND	NS	5.9	38.2	24.1	1.6 J	2.7 J
	12/5/2012	µg/L	NS	ND	NS	4.6 J	39.3	26.5	NS	NS
	6/12/2013	µg/L	NS	ND	NS	5.3	37.1	21.4	NS	NS
	10/28/2013	µg/L	NS	ND	NS	4.6 J	43.2	26.2	0.93 J	3.0 J
	5/6/2014	µg/L	NS	ND	NS	4.0 J	43.4	21.5	1.2 J	2.9 J
	10/23/2014	µg/L	NS	*	ND	3.6 J	34.4	25.3	NS	NS
	5/21/2015	µg/L	NS	ND	ND	2.8 J	26.7	17.3	ND	1.7 J
	12/8/2015	µg/L	NS	ND	ND	3.2 J	31.7	10.3	NS	NS
Chloroethane	11/3/2006	µg/L	ND	NS	NS	ND	ND	ND	NI	NI
	6/3/2009	µg/L	1.1 J	NS	NS	ND	ND	4.4 J	4.3 J	ND
	11/17/2009	µg/L	3.1 J	NS	NS	0.63 J	5.5 J	3.5 J	2.9 J	0.90 J
	6/16/2010	µg/L	1.7 J	NS	NS	0.88 J	3.1 J	2.2 J	2.6 J	0.80 J
	12/1/2010	µg/L	ND	NU	NS	ND	ND	ND	NS	NS
	6/1/2011	µg/L	1.5 J	NU	NS	ND	2.7 J	ND	3.6 J	0.85 J
	12/20/2011	µg/L	NS	ND	NS	ND	2.1 J	2.9 J	NS	NS
	5/30/2012	µg/L	NS	ND	NS	ND	1.5 J	ND	ND	ND
	12/5/2012	µg/L	NS	ND	NS	ND	1.8 J	1.9 J	NS	NS
	6/12/2013	µg/L	NS	ND	NS	ND	0.63 J	1.5 J	NS	NS
	10/28/2013	µg/L	NS	ND	NS	ND	1.9 J	ND	NS	NS
	5/6/2014	µg/L	NS	ND	NS	ND	1.6 J	1.3 J	NS	NS
	10/23/2014	µg/L	NS	*	ND	ND	ND	1.6 J	NS	NS
	5/21/2015	µg/L	NS	ND	ND	ND	ND	1.6 J	NS	NS
	12/8/2015	µg/L	NS	ND	ND	ND	ND	ND	NS	NS
Chloroform	11/3/2006	µg/L	ND	NS	NS	ND	ND	ND	NI	NI
	6/3/2009	µg/L	ND	NS	NS	ND	ND	ND	ND	ND
	11/17/2009	µg/L	ND	NS	NS	ND	ND	ND	ND	ND
	6/16/2010	µg/L	ND	NS	NS	ND	ND	ND	ND	ND
	12/1/2010	µg/L	ND	NU	NS	ND	ND	ND	NS	NS
	6/1/2011	µg/L	ND	NU	NS	ND	ND	ND	ND	ND
	12/20/2011	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	5/30/2012	µg/L	NS	ND	NS	ND	ND	ND	ND	ND
	12/5/2012	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	6/12/2013	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/28/2013	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	5/6/2014	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/23/2014	µg/L	NS	*	ND	ND	ND	ND	NS	NS
	5/21/2015	µg/L	NS	ND	ND	ND	ND	ND	NS	NS
	12/8/2015	µg/L	NS	ND	ND	ND	ND	ND	NS	NS

APPENDIX H:
HISTORICAL MONITORED NATURAL ATTENUATION PARAMETERS

Analyte/Parameter	Date	Units	MW-17	MW-20	MW-21	MW-11	MW-12	MW-16S	MW-18	MW-19
Methylene Chloride	11/3/2006	µg/L	ND	NS	NS	ND	ND	ND	NI	NI
	6/3/2009	µg/L	ND	NS	NS	ND	ND	ND	ND	ND
	11/17/2009	µg/L	11.1	NS	NS	ND	ND	ND	ND	ND
	6/16/2010	µg/L	ND	NS	NS	ND	ND	ND	ND	ND
	12/1/2010	µg/L	2.2	NU	NS	ND	ND	ND	NS	NS
	6/1/2011	µg/L	2.3	NU	NS	ND	ND	ND	ND	ND
	12/20/2011	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	5/30/2012	µg/L	NS	ND	NS	ND	ND	ND	ND	ND
	12/5/2012	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	6/12/2013	µg/L	NS	ND	NS	ND	ND	ND	NS	NS
	10/28/2013	µg/L	NS	ND	NS	ND	ND	ND	ND	ND
	5/6/2014	µg/L	NS	ND	NS	ND	ND	ND	ND	ND
	10/23/2014	µg/L	NS	*	ND	ND	ND	ND	NS	NS
	5/21/2015	µg/L	NS	ND	ND	ND	ND	ND	ND	ND
	12/8/2015	µg/L	NS	ND	ND	ND	ND	ND	NS	NS

Notes:

(FP) = Field Parameter

ND = Not Detected

NS = Not Sampled

mV = millivolts

S.U. = standard units

^{o}C = degrees Celcius

mS/cm = microsiemens per centimeter

mg/L = milligrams per liter (parts per million)

µg/L = micrograms per liter (parts per billion)

NU = Not Used as background data until approved

* MW-21 replaced MW-20 as the background well starting with the Fall 2014 sampling event; however MW-20 continues to be sampled as a compliance well for the C&D Expansion (Phase 1A).

May 20, 2015: Shaded dissolved oxygen results are suspect. The DO Sensor began reading very low, re-calibration attempts did not appear to correct the issue. A short in the DO probe was diagnosed after the field event.

-- MW-12 TOC sample for 12/08/15 was broken in transit to the laboratory and could not be analyzed.

Appendix I

Biochlor Modeling Input & Output

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Burke Co.
John's River
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ *or* 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	144.0	(ft/yr)
or			
Hydraulic Conductivity	K	1.2E-03	(cm/sec)
Hydraulic Gradient	i	0.05	(ft/ft)
Effective Porosity	n	0.2	(-)

2. DISPERSION

Alpha x*	50	(ft)
(Alpha y) / (Alpha x)*	0.33	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc.

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.6	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	426	(L/kg)	7.13	(-)
TCE	130	(L/kg)	2.87	(-)
DCE	125	(L/kg)	2.80	(-)
VC	30	(L/kg)		(-)
ETH	302	(L/kg)		(-)
Common R (used in model)* =			**2.87**	

4. BIOTRANSFORMATION **-1st Order Decay Coefficient***

Zone 1

	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	2.300		0.79
TCE → DCE	2.100		0.74
DCE → VC	1.200		0.64
VC → ETH	0.000		0.45

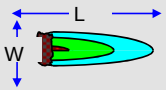
Zone 2

	λ (1/yr)	half-life (yrs)
PCE → TCE	2.300	
TCE → DCE	2.100	
DCE → VC	1.200	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	17	(yr)
Modeled Area Width*	1600	(ft)
Modeled Area Length*	500	(ft)
Zone 1 Length*	500	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

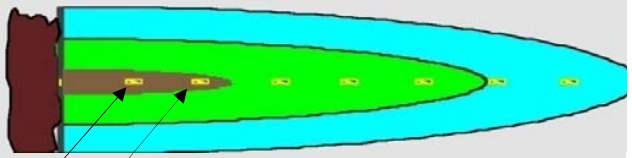
6. SOURCE DATA TYPE: Continuous, Single Planar

Source Options

Source Thickness in Sat. Zone* 40 (ft)

	Y1	k_s* (1/yr)
Width* (ft)	1600	
Conc. (mg/L)*	C1	
PCE	0.0056	0
TCE	0.0097	0
DCE	0.0258	0
VC	0.0000	0
ETH		0

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

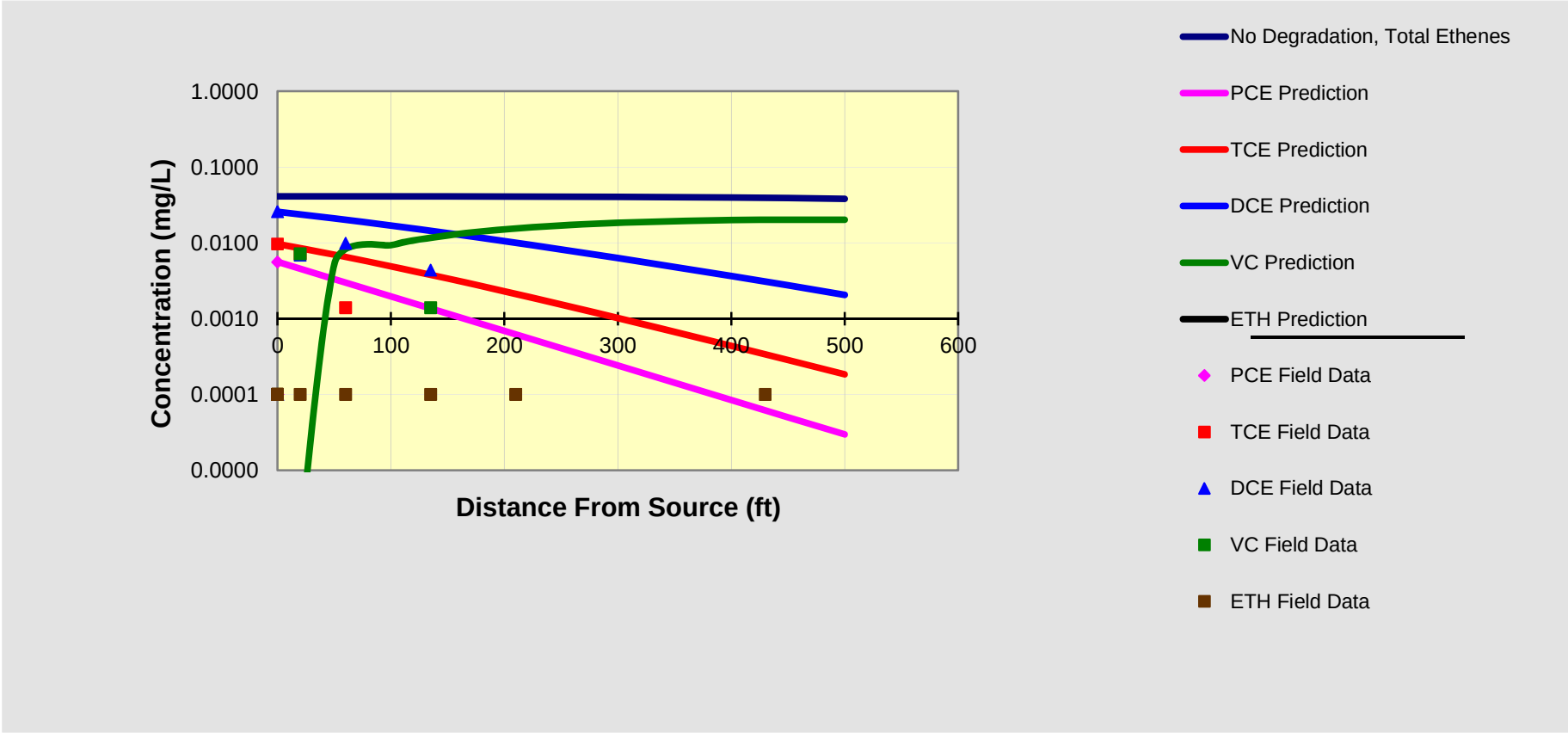
Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	0.0056	0.0000	0.0000	0.0000	0.0000	0.0000					
TCE Conc. (mg/L)	0.0097	0.0071	0.0014	0.0000	0.0000	0.0000					
DCE Conc. (mg/L)	0.0258	0.0069	0.0099	0.0044	0.0000	0.0000					
VC Conc. (mg/L)	0.0000	0.0072	0.0000	0.0014	0.0000	0.0000					
ETH Conc. (mg/L)											
Distance from Source (ft)	0	20	60	135	210	430					
Date Data Collected	2015-12										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | **RUN ARRAY** | ***Help*** | Restore | RESE | ***SEE*** | Paste


1.0000
0.1000
0.0100
0.0010
0.0001
0.0000
Concentration (mg/L)
0
100
200
300
400
500
600
Distance From Source (ft)
No Degradation, Total Ethenes
PCE Prediction
TCE Prediction
DCE Prediction
VC Prediction
ETH Prediction
PCE Field Data
TCE Field Data
DCE Field Data
VC Field Data
ETH Field Data

Start Here → ◉ PCE ○ TCE ○ DCE ○ VC ○ ETH

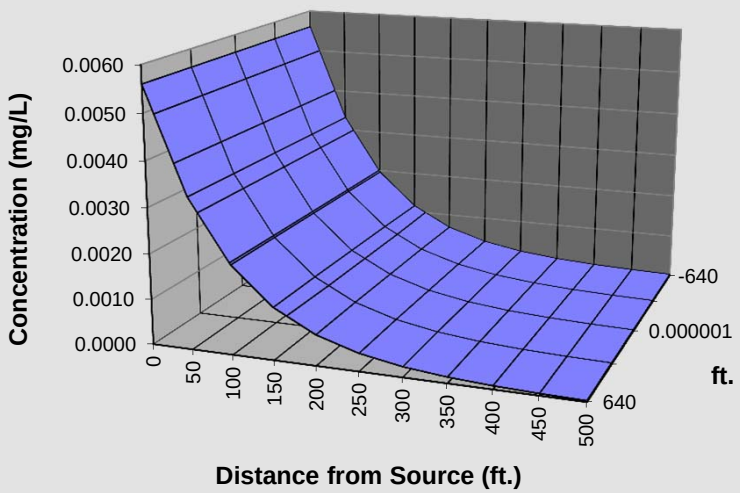
DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

Transverse Distance (ft) ↓	*Distance from Source (ft)* 0	50	100	150	200	250	300	350	400	450	500
640	0.0056	0.0033	0.0020	0.0011	0.0007	0.0004	0.0002	0.0001	0.0001	0.0000	0.0000
320	0.0056	0.0033	0.0020	0.0012	0.0007	0.0004	0.0002	0.0001	0.0001	0.0001	0.0000
0	0.0056	0.0033	0.0020	0.0012	0.0007	0.0004	0.0002	0.0001	0.0001	0.0001	0.0000
-320	0.0056	0.0033	0.0020	0.0012	0.0007	0.0004	0.0002	0.0001	0.0001	0.0001	0.0000
-640	0.0056	0.0033	0.0020	0.0011	0.0007	0.0004	0.0002	0.0001	0.0001	0.0000	0.0000
MASS RATE (mg/day)	8.0E+2	4.7E+2	2.8E+2	1.7E+2	9.7E+1	5.7E+1	3.4E+1	2.0E+1	1.2E+1	6.9E+0	4.1E+0

Show No

Show

Time: 17 yr Target Level: **0.005** mg/L Displayed Model: **Biotransformation** Displayed Compound: **PCE**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallon

Plume Mass If No Degradation	2.9	*(Kg)*
- Plume Mass If Biotransformation/Production	0.6	*(Kg)*
Mass Removed	2.4	*(Kg)*

If "Can't Calc.", make model area longer

% Biotransformed = **+80.8%**

% Change in Mass Rate = **99.5 %** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume	4.79	*MGal*
Flow Rate of Water Through Source Area	0.038	*MGD*

Compare to Pump and Treat

Pumping Rate		*(gpm)*
# Pore Volumes Removed Per Yr.	0.00	
# Pore Volumes to Clean-Up		
Clean-Up Time		*(yr)*

Plot All Data Plot Data > Target Mass HELP To Centerline Return to Input

Start Here → ○ PCE ◉ TCE ○ DCE ○ VC ○ ETH

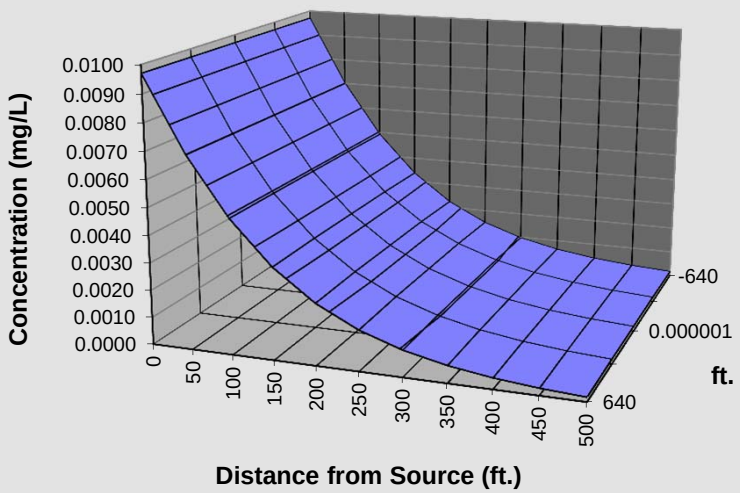
DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

Transverse Distance (ft) ↓ / Distance from Source (ft)	0	50	100	150	200	250	300	350	400	450	500
640	0.0097	0.0070	0.0049	0.0034	0.0022	0.0015	0.0010	0.0006	0.0004	0.0003	0.0002
320	0.0097	0.0070	0.0049	0.0034	0.0023	0.0015	0.0010	0.0007	0.0004	0.0003	0.0002
0	0.0097	0.0070	0.0049	0.0034	0.0023	0.0015	0.0010	0.0007	0.0004	0.0003	0.0002
-320	0.0097	0.0070	0.0049	0.0034	0.0023	0.0015	0.0010	0.0007	0.0004	0.0003	0.0002
-640	0.0097	0.0070	0.0049	0.0034	0.0022	0.0015	0.0010	0.0006	0.0004	0.0003	0.0002
MASS RATE (mg/day)	1.4E+3	1.0E+3	7.0E+2	4.8E+2	3.3E+2	2.2E+2	1.4E+2	9.3E+1	6.1E+1	3.9E+1	2.5E+1

Show No

Show

Time: 17 yr Target Level: 0.005 mg/L Displayed Model: Biotransformation Displayed Compound: TCE



Plume Mass (Order-of-Magnitude Accuracy)

See Gallon

Plume Mass If No Degradation	5.1	(Kg)
- Plume Mass If Biotransformation/Production	1.4	(Kg)
Mass Removed	3.7	(Kg)

If "Can't Calc.", make model area longer

% Biotransformed = **+73.0%**

% Change in Mass Rate = **98.2 %** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume	9.57	MGal
Flow Rate of Water Through Source Area	0.038	MGD

Compare to Pump and Treat

Pumping Rate		(gpm)
# Pore Volumes Removed Per Yr.	0.00	
# Pore Volumes to Clean-Up		
Clean-Up Time		(yr)

Plot All Data Plot Data > Target Mass HELP To Centerline Return to Input

Start Here → ○ PCE ○ TCE ◉ DCE ○ VC ○ ETH

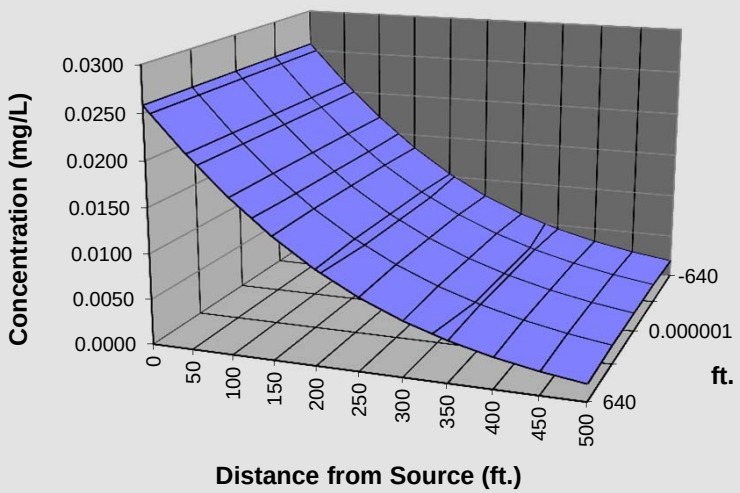
DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

Transverse Distance (ft) ↓	*Distance from Source (ft)* 0	50	100	150	200	250	300	350	400	450	500
640	0.0258	0.0211	0.0169	0.0133	0.0103	0.0079	0.0060	0.0045	0.0034	0.0025	0.0018
320	0.0258	0.0211	0.0170	0.0135	0.0106	0.0082	0.0063	0.0048	0.0037	0.0028	0.0021
0	0.0258	0.0211	0.0170	0.0135	0.0106	0.0082	0.0063	0.0048	0.0037	0.0028	0.0021
-320	0.0258	0.0211	0.0170	0.0135	0.0106	0.0082	0.0063	0.0048	0.0037	0.0028	0.0021
-640	0.0258	0.0211	0.0169	0.0133	0.0103	0.0079	0.0060	0.0045	0.0034	0.0025	0.0018
MASS RATE (mg/day)	3.7E+3	3.0E+3	2.4E+3	1.9E+3	1.5E+3	1.2E+3	8.8E+2	6.7E+2	5.0E+2	3.8E+2	2.8E+2

Show No

Show

Time: 17 yr Target Level: **0.070** mg/L Displayed Model: **Biotransformation** Displayed Compound: **DCE**



Plume Mass (Order-of-Magnitude Accuracy)

See Gallon

Plume Mass If No Degradation	13.6	*(Kg)*
- Plume Mass If Biotransformation/Production	5.3	*(Kg)*
Mass Removed	8.3	*(Kg)*

If "Can't Calc.", make model area longer

% Biotransformed = **+60.9%**

% Change in Mass Rate = **92.3 %** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume	33.51	*MGal*
Flow Rate of Water Through Source Area	0.038	*MGD*

Compare to Pump and Treat

Pumping Rate		*(gpm)*
# Pore Volumes Removed Per Yr.	0.00	
# Pore Volumes to Clean-Up		
Clean-Up Time		*(yr)*

Plot All Data Plot Data > Target Mass HELP To Centerline Return to Input

Start Here → PCE / TCE / DCE / VC / ETH

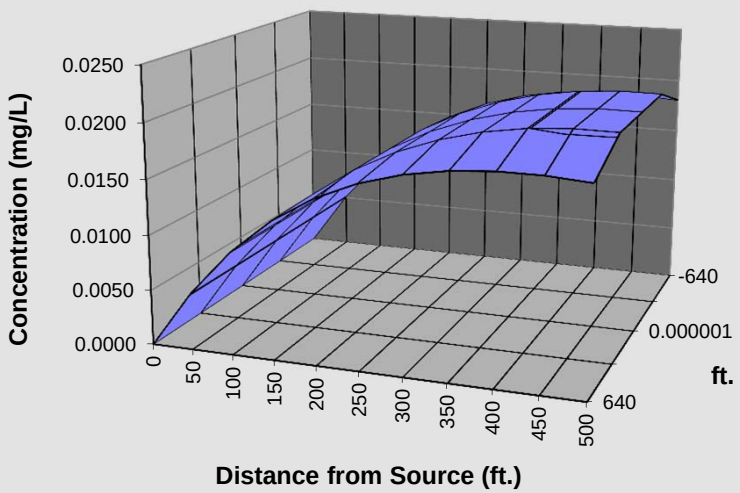
DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

Transverse Distance (ft) ↓	Distance from Source (ft) 0	50	100	150	200	250	300	350	400	450	500
640	0.0000	0.0052	0.0093	0.0124	0.0147	0.0163	0.0174	0.0181	0.0183	0.0183	0.0181
320	0.0000	0.0052	0.0093	0.0126	0.0151	0.0170	0.0184	0.0194	0.0200	0.0203	0.0202
0	0.0000	0.0052	0.0093	0.0126	0.0151	0.0170	0.0184	0.0194	0.0200	0.0203	0.0202
-320	0.0000	0.0052	0.0093	0.0126	0.0151	0.0170	0.0184	0.0194	0.0200	0.0203	0.0202
-640	0.0000	0.0052	0.0093	0.0124	0.0147	0.0163	0.0174	0.0181	0.0183	0.0183	0.0181
MASS RATE (mg/day)	1.6E-4	7.4E+2	1.3E+3	1.8E+3	2.1E+3	2.4E+3	2.6E+3	2.7E+3	2.8E+3	2.8E+3	2.8E+3

Show No

Show

Time: 17 yr Target Level: 0.002 mg/L Displayed Model: Biotransformation Displayed Compound: VC



Plume Mass (Order-of-Magnitude Accuracy)

See Gallon

Plume Mass If No Degradation	0.0	(Kg)
- Plume Mass If Biotransformation/Production	8.0	(Kg)
Mass Removed	-8.0	(Kg)

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = ########### (source to edge)

See acre-ft

Current Volume of Ground Water in Plume	Can't Calc.	MGal
Flow Rate of Water Through Source Area	0.038	MGD

Compare to Pump and Treat

Pumping Rate		(gpm)
# Pore Volumes Removed Per Yr.		
# Pore Volumes to Clean-Up		
Clean-Up Time		(yr)

Plot All Data Plot Data > Target Mass HELP To Centerline Return to Input

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Burke Co.
John's River
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
↑ *or* 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation

TYPE OF CHLORINATED SOLVENT: Ethenes ○ Ethanes ◉

1. ADVECTION

Seepage Velocity*	Vs	144.0	(ft/yr)
or			
Hydraulic Conductivity	K	1.2E-03	(cm/sec)
Hydraulic Gradient	i	0.05	(ft/ft)
Effective Porosity	n	0.2	(-)

2. DISPERSION

Alpha x*	50	(ft)
(Alpha y) / (Alpha x)*	0.33	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc.

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho		1.6	(kg/L)	
FractionOrganicCarbon, foc		1.8E-3	(-)	
Partition Coefficient	Koc			
TCA		426	(L/kg)	7.13 (-)
DCA		130	(L/kg)	2.87 (-)
CA		125	(L/kg)	2.80 (-)

Common R (used in model)* = 2.87

4. BIOTRANSFORMATION **-1st Order Decay Coefficient***

Zone 1

	λ (1/yr)	half-life (yrs)	Yield
TCA → DCA	2.300		0.74
DCA → CA	2.100		0.65
CA → Ethane	1.200		0.47
			0.00

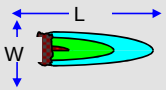
Zone 2

	λ (1/yr)	half-life (yrs)
TCA → DCA	2.300	
DCA → CA	2.100	
CA → Ethane	1.200	

λ HELP

5. GENERAL

Simulation Time*	17	(yr)
Modeled Area Width*	1600	(ft)
Modeled Area Length*	500	(ft)
Zone 1 Length*	500	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

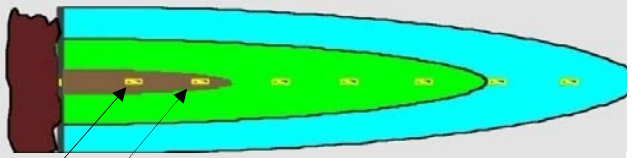
6. SOURCE DATA TYPE: Continuous, Single Planar

Source Options

Source Thickness in Sat. Zone* 40 (ft)

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations

	Y1	k_s* (1/yr)
Width* (ft)	1600	
Conc. (mg/L)*	C1	
TCA	.0	0
DCA	.035	0
CA	.0	0
		0
		0



View of Plume Looking Down

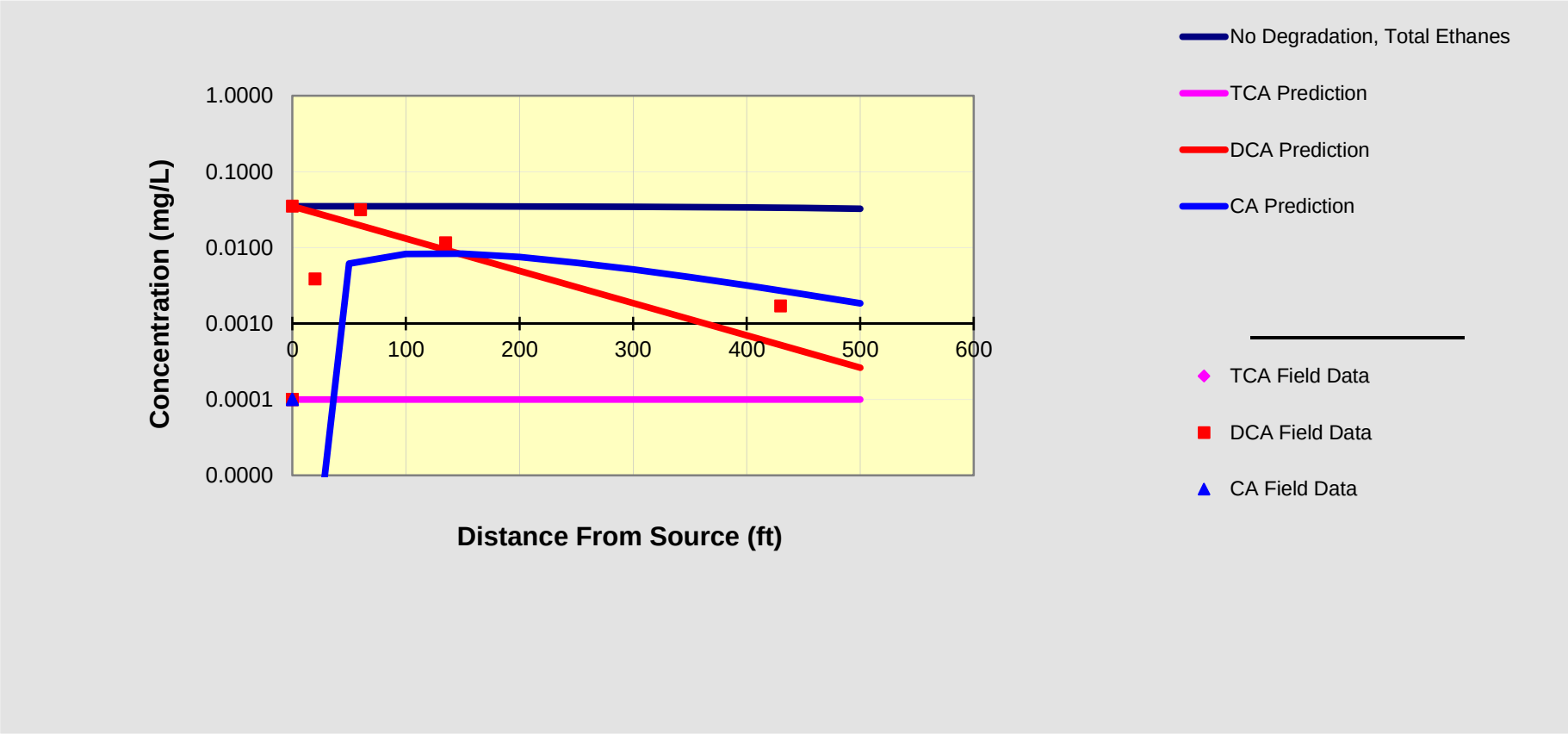
Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

TCA Conc. (mg/L)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
DCA Conc. (mg/L)	0.0350	0.0039	0.0317	0.0116	0.0000	0.0017					
CA Conc. (mg/L)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000					
Distance from Source (ft)	0	20	60	135	210	430					
Date Data Collected	2015-12										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | *Help* | Restore | RESE | *SEE* | Paste


No Degradation, Total Ethanes
TCA Prediction
DCA Prediction
CA Prediction
TCA Field Data
DCA Field Data
CA Field Data
Concentration (mg/L)
1.0000
0.1000
0.0100
0.0010
0.0001
0.0000
0
100
200
300
400
500
600
Distance From Source (ft)

Start Here → ○ TCA ◉ DCA ○ CA

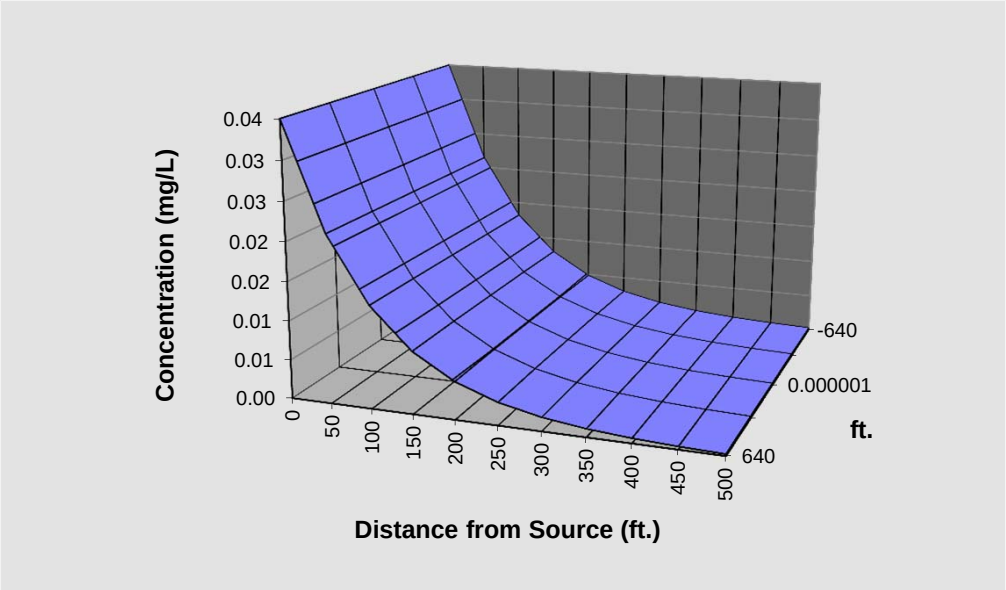
DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

Transverse Distance (ft) ↓ / Distance from Source (ft)	0	50	100	150	200	250	300	350	400	450	500
640	0.0350	0.0215	0.0131	0.0080	0.0048	0.0029	0.0018	0.0011	0.0006	0.0004	0.0002
320	0.0350	0.0215	0.0131	0.0081	0.0049	0.0030	0.0019	0.0011	0.0007	0.0004	0.0003
0	0.0350	0.0215	0.0131	0.0081	0.0049	0.0030	0.0019	0.0011	0.0007	0.0004	0.0003
-320	0.0350	0.0215	0.0131	0.0081	0.0049	0.0030	0.0019	0.0011	0.0007	0.0004	0.0003
-640	0.0350	0.0215	0.0131	0.0080	0.0048	0.0029	0.0018	0.0011	0.0006	0.0004	0.0002
MASS RATE (mg/day)	5.0E+3	3.1E+3	1.9E+3	1.1E+3	7.0E+2	4.3E+2	2.6E+2	1.6E+2	9.6E+1	5.9E+1	3.6E+1

Show No

Show

Time: 17 yr Target Level: mg/L Displayed Model: Biotransformation Displayed Compound: DCA



Plume Mass (Order-of-Magnitude Accuracy)

See Gallon

Plume Mass If No Degradation	18.4	(Kg)
- Plume Mass If Biotransformation/Production	3.8	(Kg)
Mass Removed	14.6	(Kg)

If "Can't Calc.", make model area longer

% Biotransformed = **+79.6%**

% Change in Mass Rate = **99.3 %** (source to edge)

See acre-ft

Current Volume of Ground Water in Plume	19.15	MGal
Flow Rate of Water Through Source Area	0.038	MGD

Compare to Pump and Treat

Pumping Rate		(gpm)
# Pore Volumes Removed Per Yr.	0.00	
# Pore Volumes to Clean-Up		
Clean-Up Time		(yr)

Plot All Data Plot Data > Target Mass HELP To Centerline Return to Input