FIRST QUARTER 2015 ENVIRONMENTAL MONITORING REPORT FORMER JAMESTOWN LANDFILL JAMESTOWN, RHODE ISLAND

PREPARED FOR:
Town of Jamestown
Jamestown, Rhode Island

PREPARED BY:
GZA GeoEnvironmental, Inc.
Providence, Rhode Island

June 10, 2015
File No. 32220.27

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APPENDICES

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Engineers and
Scientists

June 10, 2015
File No. 32220.27

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Re: First Quarter 2015 *Environmental Monitoring Report*
Former Jamestown Landfill
Jamestown, Rhode Island

Dear Mr. Dennen:

On behalf of our client, the Town of Jamestown, GZA GeoEnvironmental, Inc. (GZA) is pleased to submit this *Environmental Monitoring Report*. The report presents the results of the First Quarter 2015 post-closure environmental monitoring round conducted at the former Jamestown Landfill (the Site) located on North Main Road in Jamestown, Rhode Island. A summary of our findings and conclusions from this monitoring round are presented on pages 8 and 9 of the report.

Groundwater and methane monitoring were conducted in accordance with the applicable requirements of RIDEM's January 1997 *Solid Waste Regulation No. 2* (Solid Waste Landfills) and the Site's *Revised Environmental Monitoring Plan* (EMP) dated October 4, 2004, as amended through November 2005. Additionally, as requested by the Town, GZA included monitoring locations GZ-1, GZ-8 and GZ-9 in the quarterly sampling and analytical program.

We trust that this report fulfills your present needs. Please feel free to call Erik Beloff or Ed Summerly at (401) 421-4140 if you have any questions or comments.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Erik M. Beloff
Assistant Project Manager

John P. Hartley
Consultant/Reviewer

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Principal

EAS:lal

cc: Mr. Michael Gray, Town of Jamestown (1 copy and PDF)

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1.00 INTRODUCTION

This report describes the first quarterly round of post-closure groundwater and perimeter landfill gas monitoring for 2015 performed at the former Jamestown Landfill (Site) located off North Main Road in Jamestown, Rhode Island (see Figure 1 - *Locus Plan*). GZA GeoEnvironmental, Inc. (GZA) performed this monitoring on behalf of the Town of Jamestown for their submission to the Rhode Island Department of Environmental Management (RIDEM) to address applicable requirements of RIDEM's *Solid Waste Regulation No. 2* (Solid Waste Landfills) dated January 1997 and the Site's *Revised Environmental Monitoring Plan* dated October 4, 2004, as amended on November 29, 2005.

This round included the sampling of monitoring well GZ-1 as requested by the Town at a public workshop held on October 27, 2008. It also contains the laboratory results from samples collected from the two more recently installed monitoring wells; GZ-8 and GZ-9.

A summary of our findings and conclusions from this monitoring round are presented on pages 7 and 8 of this report. This report is subject to the limitations contained in Appendix A.

The purpose of this monitoring was to:

- Continue the assessment of groundwater quality at and in the vicinity of the Site including the detection and evaluation of contaminants (if any) derived from former waste disposal operations; and
- Evaluate the potential for off-Site migration of methane due to waste decomposition.

This report includes: well-specific field measurements; a summary of sampling and analytical results; methane monitoring results; a statistical evaluation of the data; and conclusions and recommendations.

2.00 GROUNDWATER SAMPLING AND LANDFILL GAS SURVEY

GZA personnel were onsite to collect groundwater samples from the 11 program wells and perform the perimeter landfill gas survey (LGS) on March 19 and 20, 2015. The following paragraphs briefly describe our field procedures.

2.10 GROUNDWATER SAMPLING

On March 19, 2015, groundwater samples were collected from 5 of the 11 groundwater monitoring wells. The wells included GZ-2, GZ-3, GZ-4, GZ-7S and GZ-7D. On March 20, 2015, samples were collected from GZ-1, GZ-5, GZ-6, GZ-8, GZ-9 and POT-1/PWSW. Groundwater well locations are shown on Figure 2, *Groundwater Contour Plan – March 2015*. Depth to groundwater was measured and recorded at all 11 program wells prior to purging and sampling; including those that were retained in the EMP for groundwater elevation contouring purposes. Table 1 summarizes the depth to groundwater, elevation data and field-screening results.

Groundwater sampling was conducted in general accordance with the United States Environmental Protection Agency's (USEPA) July 30, 1996 *Low Stress (low flow) Purging and Sampling Procedure* (Low Flow SOP), revised January 19, 2010. In previous rounds, the sample from GZ-9 was turbid, which resulted, in our opinion, in elevated inorganic concentrations in the sample. To address this, monitoring well GZ-9 was purged for an extended period of time in an effort to remove suspended solids.

The samples were screened and/or analyzed for five field-screening parameters (pH, specific conductance, temperature, dissolved oxygen and turbidity), 15 metals employing EPA Method 6020A and 47 volatile organic compounds (VOCs) by EPA Method 8260C specified for detection monitoring in Appendix A of RIDEM's *Solid Waste Regulation No. 2*. The groundwater sample from the well on Lot 47, designated POT-1/PWSW was analyzed for VOCs by EPA Method 524.2, for nitrate by Method 353.2 and total coliform bacteria by Method 9221B as required by the Site-wide EMP referenced above.

Samples were collected in preserved containers supplied by the laboratory and placed on ice for transport under chain-of-custody (attached in Appendix B) to Spectrum Analytical Inc. (formerly Mitkem) in North Kingstown, Rhode Island; a RI Department of Health certified laboratory, for testing (Certification # LAI00301).

2.20 PERIMETER LANDFILL GAS SURVEY

GZA conducted the perimeter landfill gas survey on March 20, 2015. The monitoring was conducted to evaluate the potential for migration of landfill gas (specifically methane) to off-Site receptors. The methane monitoring was conducted in general accordance with GZA's standard operating procedure (SOP) *4.5 Landfill Gas Monitoring* and the EPA's guidance document number EPA 600/R-05/123A dated September 2005 titled *Guidance for Evaluating Landfill Gas Emissions From Closed or Abandoned facilities*."

The monitoring was performed at seven of the 14 permanent landfill gas monitoring locations (see Figure 2). As previously noted in the September 2013 *Monitoring Report*, six LFG monitoring probes (SG-3, SG-6, SG-8, SG-10, SG-12 and SG-13) were removed/destroyed during landfill closure activities and installation of the engineered cap. In addition, LFG monitoring probe SG-2 was found to be destroyed during the December 2013 monitoring round. New probes will be installed to replace each of these seven destroyed locations. The seven existing probes will also be replaced at this time as part of routine maintenance activities.

Soil gas was extracted and screened using a LANDTEC GEM 2000® infra-red gas analyzer. The instrument was field-calibrated prior to its use with a mixture of methane (100 parts per million [ppm]) in air. The following table presents the results of the landfill gas screening for this quarter.

Location	% Methane (CH_4)	% LEL	% Oxygen (O_2)	% Carbon Dioxide (CO_2)
SG-1	<0.1	<0.1	21.5	0.0
SG-2	-	-	-	-
SG-3	-	-	-	-
SG-4	<0.1	<0.1	20.8	0.1
SG-6	-	-	-	-
SG-7	0.0	<0.1	20.5	0.3
SG-8	-	-	-	-
SG-9	<0.1	<0.1	20.7	0.2
SG-10	-	-	-	-
SG-11	<0.1	<0.1	21.5	0.1
SG-12	-	-	-	-
SG-13	-	-	-	-
SG-14	<0.1	<0.1	16.2	4.3
SG-15	<0.1	<0.1	21.0	0.1

Note: 1. "-"indicates" not tested.
2. SG-5 was replaced with SG-15.

Methane was not detected in any of the seven soil gas samples screened. RIDEM regulations require that all solid waste management facilities demonstrate that methane levels do not exceed 25% of the Lower Explosive Limits (LEL) at the facility's property boundaries. These monitoring results were compliant with this requirement.

3.00 GROUNDWATER SCREENING AND ANALYTICAL RESULTS

The results of field-screening and groundwater monitoring for the last four quarterly rounds are summarized in Tables 1 and 2. The laboratory Certificates of Analysis are provided in Appendix B. A discussion of these testing results follows.

3.10 FIELD SCREENING PARAMETERS

During this sampling round, dissolved oxygen (DO), specific conductance, turbidity and temperature were screened in the field prior to sample collection at each monitoring location (see Table 1). These field parameters serve as indirect measurements of water quality and are used to assess well stabilization under the low-flow purging and sampling protocol. The screening levels observed during this monitoring round are fairly typical for New England groundwaters, but suggest that the landfill has had some impact on groundwater quality.

3.20 INORGANIC ANALYTES

As shown in Table 2, eight of the 15 target inorganic analytes were detected in the groundwater samples collected during this sampling round. There were no exceedances of the *National Primary Drinking Water Regulation* Maximum Contaminant Levels (MCLs) for inorganics in samples collected during this round.

The USEPA has not established *National Primary Drinking Water Regulations* for all of the detected metals. Because of this, we have also listed USEPA's Regional Screening Levels (RSLs) for the detected parameters, from the four most recent monitoring rounds, as a point of comparison. As shown on Table 2[3], the concentrations of cobalt in samples from monitoring wells GZ-2 (220 µg/L), GZ-5 (59 µg/L) and GZ-7S (35 µg/L) exceeded the RSL (6.0 µg/L).

Inorganic elements are naturally occurring; therefore, variability in concentrations across the Site are to some degree the result of natural variations in soil and bedrock characteristics, and the amount of suspended particles within individual samples. As noted above, low-flow/low-stress sampling methods were employed during this and all prior GZA sampling rounds to reduce the potential impact of suspended particles on sample results. Care was taken during the purging and sampling of each location to minimize turbidity levels and achieve stabilized readings below 5 nephelometric turbidity units (NTUs) prior to sample collection. Turbidity in all groundwater samples collected during this round, other than the sample from GZ-9 (12 NTUs), stabilized below the recommended 5 NTU level before sampling. Additional purging of GZ-9 had a noticeable beneficial effect on reducing turbidity levels and consequently inorganic analytes.

3.30 VOLATILE ORGANIC COMPOUNDS

As stated above, VOCs were analyzed by EPA Method 8260C for samples collected from monitoring wells, and by EPA Method 524.2 for the sample collected from POT-1/PWSW. The VOC sample results for the first round of 2015 show five individual VOCs detected in samples collected from wells GZ-2, GZ-7S, GZ-8 and POT-1/PWSW. Sample concentrations were as follows:

Detected VOCs	RIDEM GA Groundwater Objective[A]/Federal MCLs[B] (µg/l)	Location	Result (µg/l)
1,1-Dichloroethane	None/None	POT-1	0.22 J
1,4-Dichlorobenzene	75/75	GZ-8	1.2 J
Chlorobenzene	100/100	GZ-2 GZ-7S GZ-8	5.4 1.4 J 4.2 J
Dichlorodifluromethane	None/None	POT-1	1.09
Tetrahrydrofuran	None/None	POT-1	0.87

Notes:

A. Groundwater classified GA are those groundwater resources which the Director (RIDEM) has designated to be suitable for public or private drinking water use without treatment.
B. MCL indicates the May 2009 National Primary Water Regulations maximum contaminant level.
C. "J" indicates that the reported concentration was below the method quantitation limits (reporting limits) and is therefore an estimated value.

The data demonstrate that there were no exceedances of state or federal groundwater quality standards for VOCs during the first quarter sampling round of 2015.

For more detailed information on specific detections and their monitoring history, refer to Table 2, the laboratory certificates of analysis in Appendix B, and/or the time series plots in Appendix C.

3.40 WATER QUALITY PARAMETERS

The samples collected from POT-1/PWSW, were analyzed by EPA Method 353.2 and Standard Method SM9221B for nitrate/nitrite as (N) and total coliform bacteria, respectively.

Neither nitrate/nitrite nor total coliform bacteria were detected above their reporting limit (RL).

3.50 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

To assess the potential for non-Site related or laboratory induced contaminants, GZA prepared and analyzed a trip blank concurrent with this round of samples. No organic analytes were detected in this blank.

Method blanks were prepared by the laboratory to provide quality assurance/quality control for the target compounds during analysis. All method blanks during this monitoring round were within the acceptable criteria. The laboratory also prepared laboratory control samples (LCS), laboratory control sample duplicates (LCSD), and evaluated surrogate recoveries during this sampling round for both organic and inorganic parameters. All LCS and LCSD recoveries were within the QC limits for all samples with the exception of 1,1-dichloroethene, hexachlorobutadiene, methylene chloride and vinyl chloride in the sample from POT-1. 1,1-dichloroethene recovery was below the criteria of 80-120%, hexachlorobutadiene was above the recovery criteria of 80-120%, methylene chloride was below the criteria of 80-120% and vinyl chloride was below the criteria of 80-120% in the results for POT-1. The test procedure allows for several compounds to be outside the QC limits for the LCS. None of these parameters were detected above the RL in any of the samples. As such, the data were all of suitable quality for the intended use.

4.00 COMPARISON OF CURRENT RESULTS WITH PREVIOUS RESULTS

Table 2 presents data for detected analytes from the four most recent monitoring rounds (June 2014 through March 2015). This table also presents the applicable regulatory groundwater quality standards and EPA's RSLs for parameters where applicable water quality standards have not been established.

As shown in Table 2, eight of the 15 target inorganic parameters were detected in groundwater samples collected during this round. All eight of the detected analytes were also found in groundwater samples collected during the three prior sampling rounds. The eight parameters detected in samples collected during this round (barium, chromium, cobalt, copper, lead, nickel, silver and zinc) are naturally-occurring and most are likely being detected frequently due to the very low detection and reporting limits provided by the analytical method now being employed; EPA Method 6020A.

All five organic parameters detected in samples collected during this round (1,1-dichloroethane, 1,4-dichlorobenzene, chlorobenzene, dichlorodifluoromethane and tetrahydrofuran) were observed in one or more of the prior three rounds. Benzene, which was detected for the first time since monitoring began in the sample from GZ-7D last quarter, was not detected during the March 2015 round. Tetrahydrofuran was detected in the sample from POT-1/PWSW for the third consecutive time since monitoring began.

Time series plots were developed for each parameter detected during any of the four most recent monitoring rounds. These plots are provided in Appendix C.

4.10 INORGANIC ANALYTES

The following key observations were noted from our review of inorganic analytes detected during the first round of 2015 as compared to historical results.

- There were no exceedances of any MCLs during this sampling round.
- Lead was detected in the samples collected from wells GZ-9 and POT-1 during this round at concentrations below the MCL.
- Silver was detected in the sample from GZ-4 for the first time onsite since the June 2014 sampling round.
- Cobalt, as described above, was detected in samples from nine of the 11 groundwater monitoring wells; all within historic concentration ranges. There were exceedances of the cobalt RSL in samples from three of the 11 monitoring wells. Note, the RSLs are not regulatory limits, but rather are provided as a point of reference for evaluation of detected parameters for which MCLs have not been established.

Although there have been fluctuations, refer to the trend analysis provided in Appendix C, inorganic constituent concentrations have remained relatively constant during the quarterly environmental monitoring program. We believe that much of the variation in metals concentrations are related to seasonal fluctuations in groundwater levels that impact the turbidity and suspended solids levels of samples as shown on Table 1.

4.20 VOLATILE ORGANIC COMPOUNDS

The following observations were noted from our review of VOCs detected in samples collected during the first round of 2015 as compared to historical results.

- There were no MCL exceedances during this round.
- Chlorobenzene has been consistently detected at low concentrations in groundwater samples collected from wells GZ-2 and G-8. The current observed chlorobenzene concentrations in the samples from these locations are within historic ranges.
- Dichlorodifluoromethane was detected at a low concentration in the sample from POT-1/PWSW during this round which is typical of most prior rounds.
- Tetrahydrofuran was detected for the third consecutive round from POT-1/PWSW. Tetrahydrofuran is a common constituent of PVC plastic glue, and since well POT-1/PWSW is located upgradient of the landfill, its detection is likely related to a nearby release.

As was the case with inorganics, VOC concentrations have remained relatively constant during the quarterly environmental monitoring program.

5.00 STATISTICAL DATA EVALUATION

As stated in Section 5.10 of the EMP, a statistical analysis is required for all detected constituents (in groundwater) that are observed at concentrations above the EPA's MCLs. A review of the first quarter 2015 results indicates that no parameters exceeded their action level (*i.e.,* TT or MCL) during the March 2015 monitoring round; therefore no statistical analysis was required.

Time series plots were generated for detected parameters from this and the three previous sampling rounds. These plots were evaluated for trends and outliers. Sen's Test for trends was performed to evaluate statistically significant trends in the data with respect to time. Seven VOCs and 11 inorganic analytes were evaluated resulting in 71 time series plots that are presented in Appendix C.

Thirteen statistically significant trends in contaminant concentrations were identified by the Sen's Tests. They all represent decreasing concentration trends. These trends were identified for:

- barium (in the sample from GZ-4, GZ-7D and GZ-9);
- cobalt (in the samples from GZ-1, GZ-6, GZ-7D and POT-1);
- nickel (in the samples from GZ-2 and GZ-5);
- lead (in the sample from GZ-9);
- zinc (in the samples from GZ-6 and GZ-7S); and
- 1, 1-dichloroethane (in the sample from GZ-2).

Time series plots were also visually evaluated for seasonality and outliers. There do not appear to be significant seasonal fluctuations in concentrations for any of the detected analytes. No outliers were observed in the samples collected during the March 2015 monitoring round.

6.00 CONCLUSIONS AND RECOMMENDATIONS

Ten groundwater monitoring wells and the Lot-47 well (POT-1/PWSW) were field-screened and sampled. The samples were analyzed for 15 inorganics and 47 VOCs listed in RIDEM's *Solid Waste Regulations*. Additionally, nitrate/nitrite (as N) and total coliform bacteria analysis was performed on the samples collected from POT-1/PWSW.

The following conclusions were developed based on the results obtained from this and previous sampling rounds.

- Five organic and eight inorganic parameters were detected in the groundwater samples collected during this round of groundwater monitoring. There were no exceedances of *National Primary Drinking Water Regulations Maximum Containment Limits* (*i.e*., MCLs or TTs) for any parameters during this sampling round.

- Lead was detected in the samples from 2 of the 11 monitoring wells this round. The detections were all well below the Action Level of 15 μg/L.

- Time series plots and trend tests identified 13 statistically significant decreasing trends and no statistically significant increasing trends in groundwater contaminant concentrations.

- Eight target parameters were detected in the sample collected from POT-1/PWSW during this sampling round. All detected parameters were below their respective MCLs/TTs and/or health-based screening criteria (*i.e.*, RSLs), where available. Note that the drinking water analytical method was used for the analysis of VOCs for the samples collected from this well.

- Seven of the 14 landfill soil gas monitoring locations were screened for methane during this round. As stated in the prior report, seven monitoring locations had been removed/destroyed during on-going construction activities. Methane was not detected above the instrument detection limit of 0.1% in any of the seven screened perimeter soil gas monitoring locations. Methane concentrations were all below RIDEM's regulatory limit *(i.e.*, <25% of the LEL at the property boundaries). Methane has never been detected above the instrument detection limit at the majority of screening locations around the perimeter of the Site.

- Based on groundwater analytical results for samples collected during this round of monitoring, it does not appear that recent construction activities performed at the Site have had any adverse effects on groundwater quality.

- Based on the findings presented herein, assessment monitoring is not required at this time.

The next round of groundwater and soil vapor monitoring will be conducted in June of 2015.

TABLES

TABLE 1

SUMMARY OF STABILIZED GROUNDWATER SCREENING RESULTS
JUNE 2014 TO MARCH 2015

Former Jamestown Landfill - Jamestown, Rhode Island

Location ID:		GZ-1 (Up-gradient)				GZ-2 (Down-gradient)			
Sampling Date:	**UNIT**	**6/25/2014**	**9/16/2014**	**12/22/2014**	**3/20/2015**	**6/23/2014**	**9/16/2014**	**12/22/2014**	**3/19/2015**
Temperature	°C	13.7	12.8	10.7	7.8	12.8	13.9	10.8	10.4
pH	SU	5.6	5.5	5.7	5.5	6.3	6.1	5.7	6.3
Conductance	mS/cm	0.068	0.075	0.081	0.084	0.602	0.378	0.091	0.517
Dissolved Oxygen	mg/l	2.8	6.1	7.6	7.1	0.4	0.3	5.4	0.3
Turbidity	NTU	5	5	4	4	5	3	4	5
Depth to Water	FT	14.5	24.1	16.1	6.5	9.2	13.3	8.7	5.7
Location ID:		**GZ-3 (Down-gradient)**				**GZ-4 (Cross-gradient)**			
Sampling Date:	**UNIT**	**6/23/2014**	**9/16/2014**	**12/22/2014**	**3/19/2015**	**6/23/2014**	**9/16/2014**	**12/22/2014**	**3/19/2015**
Temperature	°C	10.7	12.9	12.6	9.2	12.3	13.6	11	8.8
pH	SU	5.4	5.3	5.5	5.3	5.5	5.1	5.5	5.4
Conductance	mS/cm	0.136	0.083	0.129	0.170	0.097	0.06	0.094	0.104
Dissolved Oxygen	mg/l	6.8	5.8	5.2	6.3	2.3	5.9	6.3	6.0
Turbidity	NTU	5	3	2	2	5	5	4	2
Depth to Water	FT	9.8	14.2	9.6	5.9	9.7	15.6	10.3	4.2
Location ID:		**GZ-5 (Cross-gradient)**				**GZ-6 (Up-gradient)**			
Sampling Date:	**UNIT**	**6/23/2014**	**9/16/2014**	**12/22/2014**	**3/20/2015**	**6/23/2014**	**9/16/2014**	**12/22/2014**	**3/20/2015**
Temperature	°C	15.2	15.3	13	10.7	16.2	12.5	10.6	9.7
pH	SU	6.6	5.9	5.8	6.2	5.8	5.3	5.6	5.5
Conductance	mS/cm	0.131	0.099	0.089	0.190	0.075	0.080	0.072	0.075
Dissolved Oxygen	mg/l	1.3	5.9	2.5	0.3	1.5	7.5	8.2	6.6
Turbidity	NTU	3	4	5	2.0	5	5	4	2
Depth to Water	FT	22.1	32.7	30.7	15.1	18.1	27.5	23.4	12.4

Notes:

1. Temperature, pH, Conductance and Dissolved Oxygen were measured in the field using a YSI Pro multimeter. Turbidity was measured in the field using a Lamotte 2000 Turbidity Meter.
2. Turbidity below 5 NTUs could not be achieved after 2 hours of well purging at a low flow rate (<0.4 L/min).
3. Depht to water not recorded due to damaged well.

TABLE 1

SUMMARY OF STABILIZED GROUNDWATER SCREENING RESULTS
JUNE 2014 TO MARCH 2015

Former Jamestown Landfill - Jamestown, Rhode Island

Location ID:	GZ-7D (Down-gradient)					GZ-7S (Down-gradient)			
Sampling Date:	**UNIT**	**6/23/2014**	**9/16/2014**	**12/22/2014**	**3/19/2015**	**6/23/2014**	**9/16/2014**	**12/22/2014**	**3/19/2015**
Temperature	°C	14	12.2	12.4	9.9	15.4	12.4	11.8	10.6
pH	SU	6.4	6.2	6.2	6.4	6.6	6.1	6.2	6.3
Conductance	mS/cm	0.293	0.438	0.278	0.325	0.680	0.555	0.624	0.634
Dissolved oxygen	mg/l	1.2	1.6	0.8	2.2	0.6	2.5	0.9	1.8
Turbidity	NTU	4	4	3	3	4	4	3	3
Depth to water	FT	24.4	28.3	24.0	21.0	23.4	27.7	23.0	18.7
Location ID:	**POT-1 (Lot 47)**					**GZ-8 (Down-gradient)**			
Sampling Date:	**UNIT**	**6/25/2014**	**9/16/2014**	**12/22/2014**	**3/20/2015**	**6/25/2014**	**9/16/2014**	**12/22/2014**	**3/20/2015**
Temperature	°C	12.0	12.4	11.4	10.1	13.9	12.5	12.3	11.6
pH	SU	7.2	6.3	6.9	7.3	5.9	5.9	6.1	6.2
Conductance	mS/cm	0.209	0.189	0.225	0.233	0.155	0.502	0.598	0.576
Dissolved oxygen	mg/l	0.5	3.8	0.2	0.1	0.3	0.4	0.4	1.0
Turbidity	NTU	5	5	2	5	4	5	3	3
Depth to water	FT	16.7	25.4	20.6	11.5	32.6	37.8	31.4	25.6
Location ID:	**GZ-9 (Down-gradient)**								
Sampling Date:	**UNIT**	**6/25/2014**	**9/16/2014**	**12/22/2014**	**3/20/2015**				
Temperature	°C	13.6	13.5	11.1	8.7				
pH	SU	6.1	6.4	6.4	6.6				
Conductance	mS/cm	0.144	0.097	0.116	0.117				
Dissolved oxygen	mg/l	2.6	1.1	1.6	1.6				
Turbidity	NTU	21 [2]	240 [2]	10 [2]	12 [2]				
Depth to water	FT	19.5	24.6	20.2	NR				

Notes:

1. Temperature, pH, Conductance and Dissolved Oxygen were measured in the field using a YSI Pro multimeter. Turbidity was measured in the field using a Lamotte 2000 Turbidity meter
2. Turbidity below 5 NTUs could not be achieved after 2 hours of well purging at a low flow rate (<0.4 L/min).
3. EA-3 was retianed to aid in groundwater contouring. Depth to water during each of the last four quarters was 27.9, 7.5, 16.1 and 16.6 feet.

TABLE 2
SUMMARY OF DETECTED APPENDIX A
GROUNDWATER ANALYTICAL RESULTS
JUNE 2014 THROUGH MARCH 2015

Former Jamestown Landfill - Jamestown, Rhode Island

Parameters	Method Detection Limit	MCL*	USEPA [3] Regional Screening Level	GZ-1 (Up-gradient)				GZ-2 (Down-gradient)				GZ-3 (Down-gradient)				GZ-4 (Cross-gradient)			
				6/25/2014	9/16/2014	12/22/2014	3/20/2015	6/23/2014	9/16/2014	12/22/2014	3/19/2015	6/23/2014	9/16/2014	12/22/2014	3/19/2015	6/23/2014	9/16/2014	12/22/2014	3/19/2015
Volatile Organics: (µg/l)																			
Benzene	5	5	0.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	100	78	ND	ND	ND	ND	**6.7**	**7.5**	**5.7**	**5.4**	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	NONE	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	NONE	2.7	ND	ND	ND	ND	**0.62 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	75	0.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethene	5	70	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	0.5	None	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	5	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahyrdrofuran	0.64	None	3,400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Water Quality Parameters:																			
Total Coliform (cfu/100ml)	20	<5% [4]	NONE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nitrate/Nitrite as N (mg/l)	0.25	10/1 [6]	32,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Metals: (µg/l)																			
Antimony	2	6	7.8	ND	**5.0**	**9.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	1	10	0.052	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	10	2,000	3,800	ND	ND	ND	ND	**48**	**51**	**48**	**43**	**63**	**16**	**10**	**36**	ND	ND	ND	**13**
Beryllium	1	4	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	1	5	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.1**	ND	ND
Chromium	2	100	NONE	ND	ND	ND	ND	ND	ND	ND	ND	**24**	ND	ND	ND	ND	ND	ND	**2.5**
Cobalt	1	NONE	6	**5.0**	**13**	**8.5**	**2.6**	**220**	**260**	**230**	**220**	**6**	ND	ND	ND	ND	ND	ND	ND
Copper	2	1,300 [7]	800	ND	**7.5**	**6.5**	ND	ND	ND	ND	ND	**110**	ND	ND	ND	ND	ND	ND	ND
Lead	1	15 [7]	NONE	ND	ND	**2.0 B**	ND	ND	ND	ND	ND	**6.1 B**	ND	ND	ND	ND	**5.3 B**	ND	ND
Selenium	5	50	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1	NONE	94	ND	ND	ND	ND	ND	ND	ND	ND	**29**	ND	ND	ND	ND	ND	ND	**1.1**
Nickel	1	NONE	390	**18**	**34 B**	**26**	**17**	**42**	**45 B**	**39**	**39**	**17**	**3.2 B**	**3.1**	**5**	**8.3**	**9.2 B**	**9.2**	**13**
Thallium	1	2	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	5	NONE	86	ND	ND	ND	ND	ND	ND	ND	ND	**32**	ND	ND	ND	ND	ND	ND	ND
Zinc	5	NONE	6,000	**15**	**34**	**24**	**12**	**6.6**	**7.6**	**6.6**	**9**	**100**	**9.4**	**5.1**	**15**	**11**	**11**	**15**	**15**

Notes:
(1) * Results are compared to USEPA's National Primary Drinking Water Regulation maximum contaminant levels (MCLs) updated May 2009 as required by RIDEM's Solid Waste Regulations.
(2) ND indicates the parameter was non-detected.
(3) USEPA Regional Screening Levels (RSL) promulgated November 2010 and revised in April 2012, May 2014 and January 2015. Note, the RBC for cobalt was previously 11 µg/l.
(4) If detected in two consecutive rounds, must sample for fecal coliform and E Coli bacteria.
(5) NS indicates parameter not sampled.
(6) Groundwater sample from POT-1/PWSW was analyzed employing drinking water methods (524.2).
(7) Value is a Treatment Technique Action Level (TT).
(8) "J" indicates that the reported concentration is below the method quantitation limits (reporting limits) and is therefore an estimated value.
(9) Yellow highlighted values exceed either MCL, TT Action Level or RSL.
(10) "B" indicates that the parameter was detected in a blank sample.
(11) Turbidity was above 5 NTU at this location at the time of sample collection.
(12) Appendix A refers to RIDEM's Appendix A list of hazardous inorganic and organic constituents from solid waste regulation No. 2 Solid Waste Landfills.

TABLE 2
SUMMARY OF DETECTED APPENDIX A
GROUNDWATER ANALYTICAL RESULTS
JUNE 2014 THROUGH MARCH 2015

Former Jamestown Landfill - Jamestown, Rhode Island

Parameters	Method Detection Limit	MCL*	USEPA [3] Regional Screening Level	GZ-5 (Cross-gradient)				GZ-6 (Up-gradient)				GZ-7S (Down-gradient)				GZ-7D (Down-gradient)			
				6/23/2014	9/16/2014	12/22/2014	3/20/2015	6/23/2014	9/16/2014	12/22/2014	3/20/2015	6/23/2014	9/16/2014	12/22/2014	3/19/2015	6/23/2014	9/16/2014	12/22/2014	3/19/2015
Volatile Organics: (µg/l)																			
Benzene	5	5	0.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.94 J**	ND
Chlorobenzene	5	100	78	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.8 J**	**2.1 J**	**1.4 J**	ND	ND	ND	ND
Dichlorodifluoromethane	5	NONE	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5	NONE	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	5	75	0.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethene	5	70	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.81 J**	**0.98 J**	ND	ND	ND	ND	ND
Naphthalene	0.5	None	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	5	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahyrdrofuran	0.64	None	3,400	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Water Quality Parameters:																			
Total Coliform (cfu/100ml)	20	<5% [4]	NONE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nitrate/Nitrite as N (mg/l)	0.25	10/1 [6]	32,000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Total Metals: (µg/l)																			
Antimony	2	6	7.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.5**	ND	ND
Arsenic	1	10	0.052	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	10	2,000	3,800	ND	ND	ND	ND	ND	ND	ND	ND	**18**	**19**	**24**	**23**	ND	**16**	**10**	ND
Beryllium	1	4	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	1	5	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	2	100	NONE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	1	NONE	6	**26**	**22**	**34**	**59**	**5.1**	**4.1**	**3.7**	**3.2**	**4.1**	**27**	**27**	**35**	**3.2**	**4.4**	**2.8**	**2.5**
Copper	2	1,300 [7]	800	ND	ND	ND	ND	**18**	**12**	**9.9**	**15**	ND	ND	ND	ND	ND	ND	ND	ND
Lead	1	15 [7]	NONE	ND	**1.6 B**	ND	ND	ND	ND	ND	ND	**1.5 B**	ND	ND	ND	ND	**4.6 B**	ND	ND
Selenium	5	50	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1	NONE	94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	1	NONE	390	**3**	**3.8 B**	**6.5**	**4.9**	**19**	**17 B**	**17**	**16**	**90**	**61 B**	**61**	**76**	**7.1**	**26 B**	**10**	**7.7**
Thallium	1	2	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	5	NONE	86	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	5	NONE	6,000	**5.9**	ND	**6.2**	ND	**19**	**18**	**15**	**13**	**25**	**14**	**24**	**15**	ND	**14**	ND	ND

Notes:
(1) * Results are compared to USEPA's National Drinking Water Regulations maximum contaminant levels (MCLs) updated May 2009 as required by RIDEM's Solid Waste Regulations.
(2) ND indicates the parameter was non-detected.
(3) USEPA Regional Screening Levels (RSL) promulgated November 2010 and revised in April 2012. Note, the RBC for cobalt was previously 11 µg/l.
(4) If detected in two consecutive rounds, must sample for fecal coliform and E Coli bacteria.
(5) NS indicates parameter not sampled.
(6) Groundwater sample from POT-1/PWSW was analyzed employing drinking water methods (524.2).
(7) Value is a Treatment Technique Action Level (TT).
(8) "J" indicates that the reported concentration is below the method quantitation limits (reporting limits) and is therefore an estimated value.
(9) Yellow highlighted values exceed either MCL, TT Action Level or RSL.
(10) "B" indicates that the parameter was detected in a blank sample.
(11) Turbidity was above 5 NTU at this location at the time of sample collection.
(12) Appendix A refers to RIDEM's Appendix A list of hazardous inorganic and organic constituents from solid waste regulation No. 2 Solid Waste Landfills.

TABLE 2
SUMMARY OF DETECTED APPENDIX A
GROUNDWATER ANALYTICAL RESULTS
JUNE 2014 THROUGH MARCH 2015

Former Jamestown Landfill - Jamestown, Rhode Island

Parameters	Method Detection Limit	MCL*	USEPA [3] Regional Screening Level	GZ-8 (Down-gradient)				GZ-9 (Down-gradient)				POT-1 (Lot-47) [6]			
				6/25/2014	9/16/2014	12/22/2014	3/20/2015	6/25/2014	9/16/2014	12/22/2014	3/20/2015	6/25/2014	9/16/2014	12/22/2014	3/20/2015
Volatile Organics: (µg/l)															
Benzene	5	5	0.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	100	78	**10**	**12**	**11**	**4.2 J**	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	5	NONE	200	ND	ND	ND	ND	ND	ND	ND	ND	**0.99**	ND	**1.32**	**1.09**
1,1-Dichloroethane	5	NONE	2.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.22**
1,4-Dichlorobenzene	5	75	0.48	**2.1 J**	**3.6 J**	**2.2 J**	**1.2 J**	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,2-Dichloroethene	5	70	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	0.5	None	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	5	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrahyrdrofuran	0.64	None	3,400	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.85**	**1.36**	**0.87**
Water Quality Parameters:															
Total Coliform (cfu/100ml)	20	<5% [4]	NONE	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND
Nitrate/Nitrite as N (mg/l)	0.25	10/1 [6]	32,000	NS	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND
Total Metals: (µg/l)															
Antimony	2	6	7.8	ND	ND	ND	ND	ND	ND	**2.1**	ND	ND	ND	ND	ND
Arsenic	1	10	0.052	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	10	2,000	3,800	**61**	**69**	**68**	**63**	**20**	**41**	**14**	**16**	ND	ND	ND	ND
Beryllium	1	4	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	1	5	9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	2	100	NONE	ND	ND	ND	ND	ND	**5.8**	ND	ND	ND	ND	ND	ND
Cobalt	1	NONE	6	**2.5**	**3.0**	**2.7**	**2.6**	**5.7**	**8.8**	**5.1**	**5.8**	**1.0**	**2.0**	**2.3**	**1.4**
Copper	2	1,300 [7]	800	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**39**	**43**
Lead	1	15 [7]	NONE	ND	ND	ND	ND	**3.6 B**	**6.5 B**	**1.7 B**	**1.4**	ND	ND	**2.5 B**	**2**
Selenium	5	50	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1	NONE	94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	1	NONE	390	**28**	**33 B**	**31**	**29**	**10**	**16 B**	**7.7**	**9.8**	**2.5**	**8.1 B**	**5.5**	**3.4**
Thallium	1	2	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	5	NONE	86	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	5	NONE	6,000	ND	**5.6**	ND	ND	**16**	**30**	**9.5**	**10**	**5.1**	**6.1**	**28**	**27**

Notes:
(1) * Results are compared to USEPA's National Primary Drinking Water Regulations maximum contaminant levels (MCLs) updated May 2009 as required by RIDEM's Solid Waste Regulations.
(2) ND indicates the parameter was non-detected.
(3) USEPA Regional Screening Levels (RSL) promulgated November 2010 and revised in April 2012. Note, the RBC for cobalt was previously 11 µg/l.
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(10) "B" indicates that the parameter was detected in a blank sample.
(11) Turbidity was above 5 NTU at this location at the time of sample collection.
(12) Appendix A refers to RIDEM's Appendix A list of hazardous inorganic and organic constituents from solid waste regulation No. 2 Solid Waste Landfills.

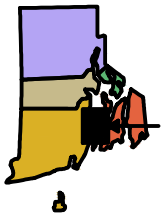
FIGURES

0 1000' 2000' 4000'

APPROXIMATE SCALE IN FEET: 1" = 2000'

N
W E
S

RHODE ISLAND



QUADRANGLE LOCATION

SOURCE:

BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
PRUDENCE ISLAND, RHODE ISLAND (1955) / PHOTO REVISED 1970 & 1975
WICKFORD, RHODE ISLAND (1995)

DIGITAL TOPOGRAPHIC MAPS PROVIDED BY MAPTECH.INC.

CONTOUR ELEVATIONS REFERENCE NGVD 29,

CONTOURS ARE SHOWN IN FEET AT 10 FEET INTERVALS

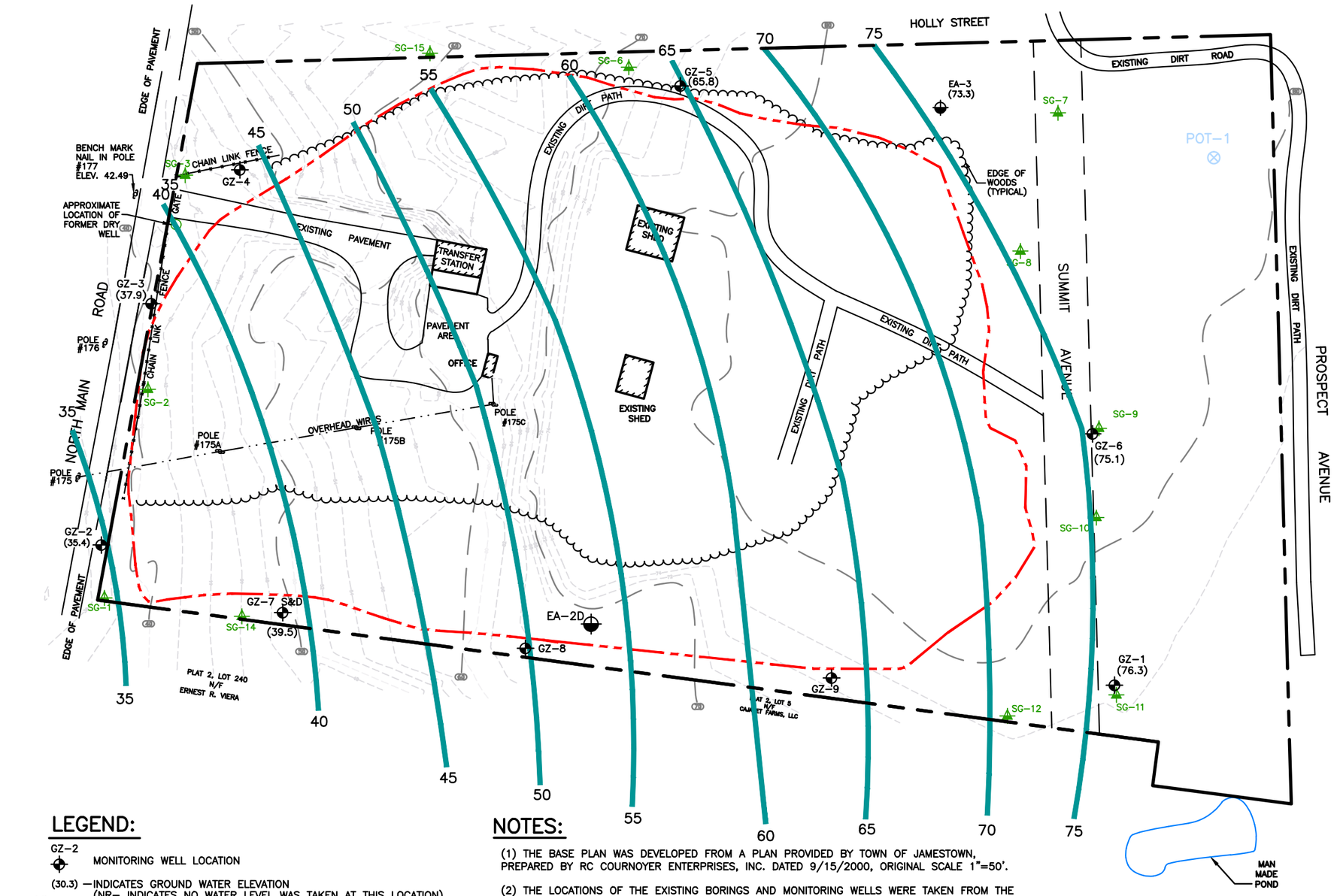
FORMER JAMESTOWN LANDFILL
MARCH 2015 ENVIRONMENTAL MONITORING REPORT
JAMESTOWN, RHODE ISLAND

1ST QUARTER 2015
LOCUS PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
TOWN OF JAMESTOWN

PROJ MGR: EMB	REVIEWED BY: EAS	CHECKED BY: MEA	FIGURE 1
DESIGNED BY: DES	DRAWN BY: GRB	SCALE: AS NOTED	
DATE: APRIL 2015	PROJECT NO. 32220.27	REVISION NO. 0	SHEET NO. 1 OF 1



LEGEND:

GZ-2 — MONITORING WELL LOCATION

(30.3) — INDICATES GROUND WATER ELEVATION (NR= INDICATES NO WATER LEVEL WAS TAKEN AT THIS LOCATION)

40 — INFERRED GROUNDWATER ELEVATION CONTOUR MARCH 19, 2015

SG-1 — SOIL GAS PROBES INSTALLED BY GZA PERSONNEL.

ESTIMATED EXTENT OF EXISTING LANDFILL

NOTES:

(1) THE BASE PLAN WAS DEVELOPED FROM A PLAN PROVIDED BY TOWN OF JAMESTOWN, PREPARED BY RC COURNOYER ENTERPRISES, INC. DATED 9/15/2000, ORIGINAL SCALE 1"=50'.

(2) THE LOCATIONS OF THE EXISTING BORINGS AND MONITORING WELLS WERE TAKEN FROM THE AFOREMENTIONED PLAN. THE LOCATION OF THE WELL COUPLET (GZ-7) WAS SURVEYED BY GZA PERSONNEL IN SEPTEMBER OF 2005. THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHODS USED.

(3) GROUNDWATER CONTOURS ARE BASED ON DATA FROM WIDELY SPACED EXPLORATIONS AND MAY NOT REFLECT ACTUAL SUBSURFACE CONDITIONS.

(4) WATER LEVEL READINGS HAVE BEEN MADE IN THE MONITORING WELLS AT THE TIMES AND UNDER THE CONDITIONS STATED ON THE SAMPLING LOGS. THESE DATA HAVE BEEN REVIEWED AND INTERPRETATIONS MADE IN THE TEXT OF THIS REPORT. HOWEVER, IT MUST BE STATED THAT FLUCTUATIONS IN THE LEVEL OF THE GROUNDWATER MAY OCCUR DUE TO VARIATIONS IN RAINFALL, TEMPERATURE AND OTHER FACTORS.

(5) MONITORING WELLS GZ-8 AND GZ-9 WERE NOT USED TO DEVELOP GROUNDWATER CONTOURS

REV. NO.	DESCRIPTION	BY	DATE

1 INCH=120 FEET (APPROX.)

0 60' 120' 240'

PROJ MGR: EMB
DESIGNED BY: EMB
REVIEWED BY: EAS

OPERATOR: LDT
CHECKER: EAS
DATE: APRIL 2015

GZA
GeoEnvironmental, Inc.
Engineers and Scientists
530 BROADWAY
PROVIDENCE, RI 02909
(401) 421-4140
(401) 751-8613

FORMER JAMESTOWN LANDFILL
JAMESTOWN, RHODE ISLAND

GROUNDWATER CONTOUR PLAN
FIRST QUARTER 2015

PROJECT NO. 32220.27

FIGURE NO. 2

APPENDIX A

LIMITATIONS

GEOHYDROLOGICAL LIMITATIONS

Use of Report

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

Standard of Care

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state or federal agency.

4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

Subsurface Conditions

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs.

6. Water level readings have been made in test holes (as described in the Report) and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the Report.

Compliance with Codes and Regulations

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.

Screening and Analytical Testing

8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future Site activities and uses may result in a requirement for additional testing.

9. Our interpretation of field screening and laboratory data is presented in the Report. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.

10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

Interpretation of Data

11. Our opinions are based on available information as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support the opinions provided in the Report.

Additional Information

12. In the event that the Client or others authorized to use this report obtain information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

Additional Services

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

APPENDIX B

LABORATORY DATA SHEETS

Report Date:
02-Apr-15 11:00

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

GZA GeoEnvironmental Inc.
530 Broadway
Providence, RI 02909

Work Order: P0342
Project : Jamestown Landfill, 3/2015
Project #:

Attn: Erik Beloff

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
P0342-01	GZ-1	Aqueous	20-Mar-15 10:45	20-Mar-15 13:00
P0342-02	GZ-2	Aqueous	19-Mar-15 10:40	20-Mar-15 13:00
P0342-03	GZ-3	Aqueous	19-Mar-15 11:15	20-Mar-15 13:00
P0342-04	GZ-4	Aqueous	19-Mar-15 12:00	20-Mar-15 13:00
P0342-05	GZ-5	Aqueous	20-Mar-15 09:00	20-Mar-15 13:00
P0342-06	GZ-6	Aqueous	20-Mar-15 09:45	20-Mar-15 13:00
P0342-07	GZ-7S	Aqueous	19-Mar-15 12:30	20-Mar-15 13:00
P0342-08	GZ-7D	Aqueous	19-Mar-15 13:00	20-Mar-15 13:00
P0342-09	GZ-8	Aqueous	20-Mar-15 11:30	20-Mar-15 13:00
P0342-10	GZ-9	Aqueous	20-Mar-15 12:15	20-Mar-15 13:00
P0342-11	POT-1	Aqueous	20-Mar-15 12:30	20-Mar-15 13:00
P0342-12	TRIP BLANK	Aqueous	19-Mar-15 09:00	20-Mar-15 13:00

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033

NELAP ACCREDITED TNI LABORATORY

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2247 Testing

Authorized by:

Yihai Ding
Laboratory Director

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : GZA GeoEnvironmental Inc.

Project: Jamestown Landfill, 3/2015

Laboratory Workorder / SDG #: P0342

SW846 8260C, VOC by GC-MS

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 8260C

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030B

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: V5
Instrument Type: GCMS-VOA

Description: HP6890 / HP6890
Manufacturer: Hewlett-Packard
Model: 6890 / 6890

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

No sample in this SDG required analysis at dilution.

G. Samples:

No other unusual occurrences were noted during sample analysis.

H. Manual Integration

No manual integrations were performed on any sample or standard.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and

for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:_____ _____

Date:_____4/2/2015_____

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : GZA GeoEnvironmental Inc.

Project: Jamestown Landfill, 3/2015

Laboratory Workorder / SDG #: P0342

SW846 6020A

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SW846 6020A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3005A

V. INSTRUMENTATION

The following instrumentation was used:

Instrument Code: X1
Instrument Type: ICPMS

Description: X1
Manufacturer: ThermoFisher
Model: X-Series 2

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for laboratory control samples were within the QC limits.

2. Matrix spike (MS):

A matrix spike was not performed on any sample in this SDG.

D. Post Digestion Spike (PDS):

A post-digestion spike was not performed on any sample in this SDG.

E. Duplicate sample:

A duplicate analysis was not performed on any sample in this SDG.

F. Serial Dilution (SD):

Serial Dilution analysis was performed on sample: POT-1 (P0342-11BSD).

Percent differences were within the QC limits.

G. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed: 

Date: 04/01/15

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-1
Lab ID: P0342-01
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 10:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 14:34	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 14:34	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 14:34	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Chlorobenzene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 14:34	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-1
Lab ID: P0342-01
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 10:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 14:34	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 14:34	81488
Surrogate: Dibromofluoromethane	98.7		85-115	%REC	1	03/31/2015 14:34	81488
Surrogate: 1,2-Dichloroethane-d4	100		70-120	%REC	1	03/31/2015 14:34	81488
Surrogate: Toluene-d8	104		85-120	%REC	1	03/31/2015 14:34	81488
Surrogate: Bromofluorobenzene	98.1		75-120	%REC	1	03/31/2015 14:34	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-2
Lab ID: P0342-02
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 15:00	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 15:00	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 15:00	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Chlorobenzene	5.4		5.0	ug/L	1	03/31/2015 15:00	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 15:00	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-2
Lab ID: P0342-02
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 15:00	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 15:00	81488
Surrogate: Dibromofluoromethane	97.1		85-115	%REC	1	03/31/2015 15:00	81488
Surrogate: 1,2-Dichloroethane-d4	99.0		70-120	%REC	1	03/31/2015 15:00	81488
Surrogate: Toluene-d8	104		85-120	%REC	1	03/31/2015 15:00	81488
Surrogate: Bromofluorobenzene	104		75-120	%REC	1	03/31/2015 15:00	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

04/02/2015

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-3
Lab ID: P0342-03
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 11:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 15:25	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 15:25	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 15:25	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Chlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 15:25	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-3
Lab ID: P0342-03
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 11:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 15:25	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 15:25	81488
Surrogate: Dibromofluoromethane	97.0		85-115	%REC	1	03/31/2015 15:25	81488
Surrogate: 1,2-Dichloroethane-d4	97.3		70-120	%REC	1	03/31/2015 15:25	81488
Surrogate: Toluene-d8	103		85-120	%REC	1	03/31/2015 15:25	81488
Surrogate: Bromofluorobenzene	94.8		75-120	%REC	1	03/31/2015 15:25	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-4
Lab ID: P0342-04
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 12:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 15:51	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 15:51	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 15:51	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Chlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 15:51	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-4
Lab ID: P0342-04
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 12:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 15:51	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 15:51	81488
Surrogate: Dibromofluoromethane	98.6		85-115	%REC	1	03/31/2015 15:51	81488
Surrogate: 1,2-Dichloroethane-d4	98.8		70-120	%REC	1	03/31/2015 15:51	81488
Surrogate: Toluene-d8	102		85-120	%REC	1	03/31/2015 15:51	81488
Surrogate: Bromofluorobenzene	94.3		75-120	%REC	1	03/31/2015 15:51	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-5
Lab ID: P0342-05
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 9:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 16:16	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 16:16	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 16:16	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Chlorobenzene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 16:16	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-5
Lab ID: P0342-05
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 9:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 16:16	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 16:16	81488
Surrogate: Dibromofluoromethane	95.6		85-115	%REC	1	03/31/2015 16:16	81488
Surrogate: 1,2-Dichloroethane-d4	92.4		70-120	%REC	1	03/31/2015 16:16	81488
Surrogate: Toluene-d8	104		85-120	%REC	1	03/31/2015 16:16	81488
Surrogate: Bromofluorobenzene	102		75-120	%REC	1	03/31/2015 16:16	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-6
Lab ID: P0342-06
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 9:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 16:42	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 16:42	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 16:42	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Chlorobenzene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 16:42	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-6
Lab ID: P0342-06
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 9:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 16:42	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 16:42	81488
Surrogate: Dibromofluoromethane	96.5		85-115	%REC	1	03/31/2015 16:42	81488
Surrogate: 1,2-Dichloroethane-d4	96.8		70-120	%REC	1	03/31/2015 16:42	81488
Surrogate: Toluene-d8	104		85-120	%REC	1	03/31/2015 16:42	81488
Surrogate: Bromofluorobenzene	100		75-120	%REC	1	03/31/2015 16:42	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-7S
Lab ID: P0342-07
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 12:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 17:07	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 17:07	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 17:07	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Chlorobenzene	1.4	J	5.0	ug/L	1	03/31/2015 17:07	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 17:07	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-7S
Lab ID: P0342-07
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 12:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 17:07	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 17:07	81488
Surrogate: Dibromofluoromethane	98.1		85-115	%REC	1	03/31/2015 17:07	81488
Surrogate: 1,2-Dichloroethane-d4	95.7		70-120	%REC	1	03/31/2015 17:07	81488
Surrogate: Toluene-d8	104		85-120	%REC	1	03/31/2015 17:07	81488
Surrogate: Bromofluorobenzene	97.5		75-120	%REC	1	03/31/2015 17:07	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

04/02/2015

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-7D
Lab ID: P0342-08
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 13:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 17:33	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 17:33	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 17:33	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Chlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 17:33	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-7D
Lab ID: P0342-08
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 13:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 17:33	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 17:33	81488
Surrogate: Dibromofluoromethane	98.1		85-115	%REC	1	03/31/2015 17:33	81488
Surrogate: 1,2-Dichloroethane-d4	102		70-120	%REC	1	03/31/2015 17:33	81488
Surrogate: Toluene-d8	106		85-120	%REC	1	03/31/2015 17:33	81488
Surrogate: Bromofluorobenzene	102		75-120	%REC	1	03/31/2015 17:33	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-8
Lab ID: P0342-09
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 11:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 17:58	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 17:58	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 17:58	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Chlorobenzene	4.2	J	5.0	ug/L	1	03/31/2015 17:58	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 17:58	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-8
Lab ID: P0342-09
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 11:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,4-Dichlorobenzene	1.2	J	5.0	ug/L	1	03/31/2015 17:58	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 17:58	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 17:58	81488
Surrogate: Dibromofluoromethane	97.7		85-115	%REC	1	03/31/2015 17:58	81488
Surrogate: 1,2-Dichloroethane-d4	95.7		70-120	%REC	1	03/31/2015 17:58	81488
Surrogate: Toluene-d8	102		85-120	%REC	1	03/31/2015 17:58	81488
Surrogate: Bromofluorobenzene	98.0		75-120	%REC	1	03/31/2015 17:58	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-9
Lab ID: P0342-10
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 12:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 18:24	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 18:24	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 18:24	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Chlorobenzene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 18:24	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-9
Lab ID: P0342-10
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 12:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 18:24	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 18:24	81488
Surrogate: Dibromofluoromethane	99.8		85-115	%REC	1	03/31/2015 18:24	81488
Surrogate: 1,2-Dichloroethane-d4	96.5		70-120	%REC	1	03/31/2015 18:24	81488
Surrogate: Toluene-d8	106		85-120	%REC	1	03/31/2015 18:24	81488
Surrogate: Bromofluorobenzene	98.4		75-120	%REC	1	03/31/2015 18:24	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

04/02/2015

Client: GZA GeoEnvironmental Inc.
Client Sample ID: TRIP BLANK
Lab ID: P0342-12
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 9:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
Chloromethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Vinyl chloride	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Bromomethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Chloroethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Trichlorofluoromethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,1-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Acetone	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Iodomethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Carbon disulfide	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Methylene chloride	ND		5.0	ug/L	1	03/31/2015 14:09	81488
trans-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,1-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Vinyl acetate	ND		5.0	ug/L	1	03/31/2015 14:09	81488
2-Butanone	ND		5.0	ug/L	1	03/31/2015 14:09	81488
cis-1,2-Dichloroethene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Bromochloromethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Chloroform	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,1,1-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Carbon tetrachloride	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,2-Dichloroethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Benzene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Trichloroethene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,2-Dichloropropane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Dibromomethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Bromodichloromethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
cis-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
4-Methyl-2-pentanone	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Toluene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
trans-1,3-Dichloropropene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,1,2-Trichloroethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Tetrachloroethene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
2-Hexanone	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Dibromochloromethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,2-Dibromoethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Chlorobenzene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,1,1,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Ethylbenzene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
m,p-Xylene	ND		5.0	ug/L	1	03/31/2015 14:09	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: TRIP BLANK
Lab ID: P0342-12
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 9:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_W**
o-Xylene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Xylene (Total)	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Styrene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Bromoform	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,2,3-Trichloropropane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,3-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,4-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,2-Dichlorobenzene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
1,2-Dibromo-3-chloropropane	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Acrylonitrile	ND		25	ug/L	1	03/31/2015 14:09	81488
trans-1,4-Dichloro-2-butene	ND		5.0	ug/L	1	03/31/2015 14:09	81488
Surrogate: Dibromofluoromethane	96.7		85-115	%REC	1	03/31/2015 14:09	81488
Surrogate: 1,2-Dichloroethane-d4	95.8		70-120	%REC	1	03/31/2015 14:09	81488
Surrogate: Toluene-d8	104		85-120	%REC	1	03/31/2015 14:09	81488
Surrogate: Bromofluorobenzene	99.8		75-120	%REC	1	03/31/2015 14:09	81488

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: GZA GeoEnvironmental Inc.
Work Order: P0342
Project: Jamestown Landfill, 3/2015

ANALYTICAL QC SUMMARY REPORT

SW8260_W

SW846 8260C -- VOC by GC-MS

Sample ID: **MB-81488** SampType: **MBLK** TestCode: **SW8260_W** Prep Date: **03/31/15 8:55** Run ID: **V5_150331A**
Client ID: **MB-81488** Batch ID: **81488** Units: **ug/L** Analysis Date: **03/31/15 11:35** SeqNo: **2245019**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	ND	0.26	5.0									
Vinyl chloride	ND	0.50	5.0									
Bromomethane	ND	0.80	5.0									
Chloroethane	ND	0.48	5.0									
Trichlorofluoromethane	ND	0.54	5.0									
1,1-Dichloroethene	ND	0.39	5.0									
Acetone	ND	2.2	5.0									
Iodomethane	ND	0.63	5.0									
Carbon disulfide	ND	0.34	5.0									
Methylene chloride	ND	0.41	5.0									
trans-1,2-Dichloroethene	ND	0.65	5.0									
1,1-Dichloroethane	ND	0.25	5.0									
Vinyl acetate	ND	0.35	5.0									
2-Butanone	ND	2.1	5.0									
cis-1,2-Dichloroethene	ND	0.48	5.0									
Bromochloromethane	ND	0.43	5.0									
Chloroform	ND	0.33	5.0									
1,1,1-Trichloroethane	ND	0.50	5.0									
Carbon tetrachloride	ND	0.54	5.0									
1,2-Dichloroethane	ND	0.41	5.0									
Benzene	ND	0.33	5.0									
Trichloroethene	ND	0.36	5.0									
1,2-Dichloropropane	ND	0.61	5.0									
Dibromomethane	ND	0.49	5.0									
Bromodichloromethane	ND	0.26	5.0									
cis-1,3-Dichloropropene	ND	0.45	5.0									
4-Methyl-2-pentanone	ND	0.82	5.0									
Toluene	ND	0.32	5.0									
trans-1,3-Dichloropropene	ND	0.48	5.0									
1,1,2-Trichloroethane	ND	0.38	5.0									
Tetrachloroethene	ND	0.65	5.0									
2-Hexanone	ND	1.7	5.0									
Dibromochloromethane	ND	0.57	5.0									
1,2-Dibromoethane	ND	0.50	5.0									
Chlorobenzene	ND	0.26	5.0									
1,1,1,2-Tetrachloroethane	ND	0.41	5.0									

Qualifiers:
ND - Not Detected at the MDL
J - Analyte detected below quanititation limits
S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
MDL - Method Detection Limit
RL - Reporting Limit
B - Analyte detected in the associated Method Blank

CLIENT: GZA GeoEnvironmental Inc.
Work Order: P0342
Project: Jamestown Landfill, 3/2015

ANALYTICAL QC SUMMARY REPORT

SW8260_W
SW846 8260C -- VOC by GC-MS

Sample ID: **MB-81488** SampType: **MBLK** TestCode: **SW8260_W** Prep Date: **03/31/15 8:55** Run ID: **V5_150331A**
Client ID: **MB-81488** Batch ID: **81488** Units: **ug/L** Analysis Date: **03/31/15 11:35** SeqNo: **2245019**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	ND	0.35	5.0									
m,p-Xylene	ND	0.77	5.0									
o-Xylene	ND	0.36	5.0									
Xylene (Total)	ND	0.36	5.0									
Styrene	ND	0.50	5.0									
Bromoform	ND	0.77	5.0									
1,1,2,2-Tetrachloroethane	ND	0.42	5.0									
1,2,3-Trichloropropane	ND	0.82	5.0									
1,3-Dichlorobenzene	ND	0.29	5.0									
1,4-Dichlorobenzene	ND	0.40	5.0									
1,2-Dichlorobenzene	ND	0.33	5.0									
1,2-Dibromo-3-chloropropane	ND	0.75	5.0									
Acrylonitrile	ND	2.1	5.0									
trans-1,4-Dichloro-2-butene	ND	1.5	5.0									
Surrogate: Dibromofluoromethane	50.49		5.0	50.00	0	101	85	115	0			
Surrogate: 1,2-Dichloroethane-d4	48.51		5.0	50.00	0	97.0	70	120	0			
Surrogate: Toluene-d8	52.09		5.0	50.00	0	104	85	120	0			
Surrogate: Bromofluorobenzene	50.85		5.0	50.00	0	102	75	120	0			

Qualifiers: ND - Not Detected at the MDL; J - Analyte detected below quanititation limits; S - Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; MDL - Method Detection Limit; RL - Reporting Limit; B - Analyte detected in the associated Method Blank

CLIENT: GZA GeoEnvironmental Inc.
Work Order: P0342
Project: Jamestown Landfill, 3/2015

ANALYTICAL QC SUMMARY REPORT

SW8260_W

SW846 8260C -- VOC by GC-MS

Sample ID: **LCS-81488** SampType: **LCS** TestCode: **SW8260_W** Prep Date: **03/31/15 8:55** Run ID: **V5_150331A**
Client ID: **LCS-81488** Batch ID: **81488** Units: **ug/L** Analysis Date: **03/31/15 9:52** SeqNo: **2245017**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	52.40	0.26	5.0	50.00	0	105	40	125	0			
Vinyl chloride	48.89	0.50	5.0	50.00	0	97.8	50	145	0			
Bromomethane	50.64	0.80	5.0	50.00	0	101	30	145	0			
Chloroethane	50.88	0.48	5.0	50.00	0	102	60	135	0			
Trichlorofluoromethane	53.10	0.54	5.0	50.00	0	106	60	145	0			
1,1-Dichloroethene	55.07	0.39	5.0	50.00	0	110	70	130	0			
Acetone	44.28	2.2	5.0	50.00	0	88.6	40	140	0			
Iodomethane	49.97	0.63	5.0	50.00	0	99.9	72	121	0			
Carbon disulfide	49.25	0.34	5.0	50.00	0	98.5	35	160	0			
Methylene chloride	51.36	0.41	5.0	50.00	0	103	55	140	0			
trans-1,2-Dichloroethene	50.56	0.65	5.0	50.00	0	101	60	140	0			
1,1-Dichloroethane	49.69	0.25	5.0	50.00	0	99.4	70	135	0			
Vinyl acetate	53.09	0.35	5.0	50.00	0	106	38	163	0			
2-Butanone	55.14	2.1	5.0	50.00	0	110	30	150	0			
cis-1,2-Dichloroethene	50.74	0.48	5.0	50.00	0	101	70	125	0			
Bromochloromethane	54.00	0.43	5.0	50.00	0	108	65	130	0			
Chloroform	52.27	0.33	5.0	50.00	0	105	65	135	0			
1,1,1-Trichloroethane	49.38	0.50	5.0	50.00	0	98.8	65	130	0			
Carbon tetrachloride	49.44	0.54	5.0	50.00	0	98.9	65	140	0			
1,2-Dichloroethane	53.89	0.41	5.0	50.00	0	108	70	130	0			
Benzene	51.21	0.33	5.0	50.00	0	102	80	120	0			
Trichloroethene	50.95	0.36	5.0	50.00	0	102	70	125	0			
1,2-Dichloropropane	52.52	0.61	5.0	50.00	0	105	75	125	0			
Dibromomethane	54.97	0.49	5.0	50.00	0	110	75	125	0			
Bromodichloromethane	53.93	0.26	5.0	50.00	0	108	75	120	0			
cis-1,3-Dichloropropene	54.47	0.45	5.0	50.00	0	109	70	130	0			
4-Methyl-2-pentanone	51.71	0.82	5.0	50.00	0	103	60	135	0			
Toluene	50.96	0.32	5.0	50.00	0	102	75	120	0			
trans-1,3-Dichloropropene	56.96	0.48	5.0	50.00	0	114	55	140	0			
1,1,2-Trichloroethane	54.90	0.38	5.0	50.00	0	110	75	125	0			
Tetrachloroethene	51.91	0.65	5.0	50.00	0	104	45	150	0			
2-Hexanone	58.38	1.7	5.0	50.00	0	117	55	130	0			
Dibromochloromethane	56.76	0.57	5.0	50.00	0	114	60	135	0			
1,2-Dibromoethane	57.03	0.50	5.0	50.00	0	114	80	120	0			
Chlorobenzene	53.75	0.26	5.0	50.00	0	108	80	120	0			
1,1,1,2-Tetrachloroethane	54.34	0.41	5.0	50.00	0	109	80	130	0			
Ethylbenzene	54.13	0.35	5.0	50.00	0	108	75	125	0			
m,p-Xylene	109.5	0.77	5.0	100.0	0	110	75	130	0			

Qualifiers: ND - Not Detected at the MDL; S - Recovery outside accepted recovery limits; MDL - Method Detection Limit; B - Analyte detected in the associated Method Blank
J - Analyte detected below quanititation limits; R - RPD outside accepted recovery limits; RL - Reporting Limit

m15.03.22.2229

CLIENT: GZA GeoEnvironmental Inc.
Work Order: P0342
Project: Jamestown Landfill, 3/2015

ANALYTICAL QC SUMMARY REPORT

SW8260_W

SW846 8260C -- VOC by GC-MS

Sample ID: **LCS-81488** SampType: **LCS** TestCode: **SW8260_W** Prep Date: **03/31/15 8:55** Run ID: **V5_150331A**
Client ID: **LCS-81488** Batch ID: **81488** Units: **ug/L** Analysis Date: **03/31/15 9:52** SeqNo: **2245017**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	54.66	0.36	5.0	50.00	0	109	80	120	0			
Xylene (Total)	164.2	0.36	5.0	150.0	0	109	81	121	0			
Styrene	57.65	0.50	5.0	50.00	0	115	65	135	0			
Bromoform	55.89	0.77	5.0	50.00	0	112	70	130	0			
1,1,2,2-Tetrachloroethane	54.19	0.42	5.0	50.00	0	108	65	130	0			
1,2,3-Trichloropropane	56.82	0.82	5.0	50.00	0	114	75	125	0			
1,3-Dichlorobenzene	52.05	0.29	5.0	50.00	0	104	75	125	0			
1,4-Dichlorobenzene	51.22	0.40	5.0	50.00	0	102	75	125	0			
1,2-Dichlorobenzene	54.59	0.33	5.0	50.00	0	109	70	120	0			
1,2-Dibromo-3-chloropropane	61.59	0.75	5.0	50.00	0	123	50	130	0			
Acrylonitrile	56.19	2.1	5.0	50.00	0	112	45	172	0			
trans-1,4-Dichloro-2-butene	58.75	1.5	5.0	50.00	0	118	0	226	0			
Surrogate: Dibromofluoromethane	48.85		5.0	50.00	0	97.7	85	115	0			
Surrogate: 1,2-Dichloroethane-d4	52.24		5.0	50.00	0	104	70	120	0			
Surrogate: Toluene-d8	51.45		5.0	50.00	0	103	85	120	0			
Surrogate: Bromofluorobenzene	52.48		5.0	50.00	0	105	75	120	0			

Qualifiers: ND - Not Detected at the MDL; J - Analyte detected below quanititation limits; S - Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; MDL - Method Detection Limit; RL - Reporting Limit; B - Analyte detected in the associated Method Blank

CLIENT: GZA GeoEnvironmental Inc.
Work Order: P0342
Project: Jamestown Landfill, 3/2015

ANALYTICAL QC SUMMARY REPORT

SW8260_W

SW846 8260C -- VOC by GC-MS

Sample ID: **LCSD-81488** SampType: **LCSD** TestCode: **SW8260_W** Prep Date: **03/31/15 8:55** Run ID: **V5_150331A**
Client ID: **LCSD-81488** Batch ID: **81488** Units: **ug/L** Analysis Date: **03/31/15 10:18** SeqNo: **2245018**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloromethane	51.65	0.26	5.0	50.00	0	103	40	125	52.40	1.44	40	
Vinyl chloride	52.49	0.50	5.0	50.00	0	105	50	145	48.89	7.08	40	
Bromomethane	52.85	0.80	5.0	50.00	0	106	30	145	50.64	4.28	40	
Chloroethane	52.20	0.48	5.0	50.00	0	104	60	135	50.88	2.56	40	
Trichlorofluoromethane	57.02	0.54	5.0	50.00	0	114	60	145	53.10	7.13	40	
1,1-Dichloroethene	56.20	0.39	5.0	50.00	0	112	70	130	55.07	2.04	40	
Acetone	53.68	2.2	5.0	50.00	0	107	40	140	44.28	19.2	40	
Iodomethane	52.00	0.63	5.0	50.00	0	104	72	121	49.97	3.97	40	
Carbon disulfide	51.35	0.34	5.0	50.00	0	103	35	160	49.25	4.18	40	
Methylene chloride	50.83	0.41	5.0	50.00	0	102	55	140	51.36	1.04	40	
trans-1,2-Dichloroethene	51.06	0.65	5.0	50.00	0	102	60	140	50.56	0.968	40	
1,1-Dichloroethane	51.01	0.25	5.0	50.00	0	102	70	135	49.69	2.63	40	
Vinyl acetate	52.81	0.35	5.0	50.00	0	106	38	163	53.09	0.53	40	
2-Butanone	53.04	2.1	5.0	50.00	0	106	30	150	55.14	3.89	40	
cis-1,2-Dichloroethene	51.95	0.48	5.0	50.00	0	104	70	125	50.74	2.37	40	
Bromochloromethane	51.89	0.43	5.0	50.00	0	104	65	130	54.00	3.97	40	
Chloroform	51.85	0.33	5.0	50.00	0	104	65	135	52.27	0.81	40	
1,1,1-Trichloroethane	49.65	0.50	5.0	50.00	0	99.3	65	130	49.38	0.547	40	
Carbon tetrachloride	52.66	0.54	5.0	50.00	0	105	65	140	49.44	6.3	40	
1,2-Dichloroethane	52.68	0.41	5.0	50.00	0	105	70	130	53.89	2.27	40	
Benzene	51.66	0.33	5.0	50.00	0	103	80	120	51.21	0.873	40	
Trichloroethene	52.44	0.36	5.0	50.00	0	105	70	125	50.95	2.89	40	
1,2-Dichloropropane	52.55	0.61	5.0	50.00	0	105	75	125	52.52	0.059	40	
Dibromomethane	56.00	0.49	5.0	50.00	0	112	75	125	54.97	1.87	40	
Bromodichloromethane	53.48	0.26	5.0	50.00	0	107	75	120	53.93	0.831	40	
cis-1,3-Dichloropropene	54.05	0.45	5.0	50.00	0	108	70	130	54.47	0.761	40	
4-Methyl-2-pentanone	52.55	0.82	5.0	50.00	0	105	60	135	51.71	1.61	40	
Toluene	52.30	0.32	5.0	50.00	0	105	75	120	50.96	2.58	40	
trans-1,3-Dichloropropene	56.89	0.48	5.0	50.00	0	114	55	140	56.96	0.122	40	
1,1,2-Trichloroethane	53.62	0.38	5.0	50.00	0	107	75	125	54.90	2.36	40	
Tetrachloroethene	52.11	0.65	5.0	50.00	0	104	45	150	51.91	0.381	40	
2-Hexanone	55.25	1.7	5.0	50.00	0	110	55	130	58.38	5.51	40	
Dibromochloromethane	54.26	0.57	5.0	50.00	0	109	60	135	56.76	4.51	40	
1,2-Dibromoethane	55.10	0.50	5.0	50.00	0	110	80	120	57.03	3.44	40	
Chlorobenzene	52.86	0.26	5.0	50.00	0	106	80	120	53.75	1.67	40	
1,1,1,2-Tetrachloroethane	53.84	0.41	5.0	50.00	0	108	80	130	54.34	0.921	40	
Ethylbenzene	55.82	0.35	5.0	50.00	0	112	75	125	54.13	3.08	40	
m,p-Xylene	109.4	0.77	5.0	100.0	0	109	75	130	109.5	0.0733	40	

Qualifiers: ND - Not Detected at the MDL; S - Recovery outside accepted recovery limits; MDL - Method Detection Limit; B - Analyte detected in the associated Method Blank
J - Analyte detected below quanititation limits; R - RPD outside accepted recovery limits; RL - Reporting Limit

m15.03.22.2229

CLIENT: GZA GeoEnvironmental Inc.
Work Order: P0342
Project: Jamestown Landfill, 3/2015

ANALYTICAL QC SUMMARY REPORT

SW8260_W

SW846 8260C -- VOC by GC-MS

Sample ID: **LCSD-81488** SampType: **LCSD** TestCode: **SW8260_W** Prep Date: **03/31/15 8:55** Run ID: **V5_150331A**
Client ID: **LCSD-81488** Batch ID: **81488** Units: **ug/L** Analysis Date: **03/31/15 10:18** SeqNo: **2245018**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	54.20	0.36	5.0	50.00	0	108	80	120	54.66	0.846	40	
Xylene (Total)	163.6	0.36	5.0	150.0	0	109	81	121	164.2	0.33	40	
Styrene	56.92	0.50	5.0	50.00	0	114	65	135	57.65	1.27	40	
Bromoform	54.24	0.77	5.0	50.00	0	108	70	130	55.89	3.01	40	
1,1,2,2-Tetrachloroethane	52.62	0.42	5.0	50.00	0	105	65	130	54.19	2.93	40	
1,2,3-Trichloropropane	53.21	0.82	5.0	50.00	0	106	75	125	56.82	6.55	40	
1,3-Dichlorobenzene	51.71	0.29	5.0	50.00	0	103	75	125	52.05	0.654	40	
1,4-Dichlorobenzene	50.77	0.40	5.0	50.00	0	102	75	125	51.22	0.887	40	
1,2-Dichlorobenzene	54.82	0.33	5.0	50.00	0	110	70	120	54.59	0.414	40	
1,2-Dibromo-3-chloropropane	57.86	0.75	5.0	50.00	0	116	50	130	61.59	6.26	40	
Acrylonitrile	57.34	2.1	5.0	50.00	0	115	45	172	56.19	2.03	40	
trans-1,4-Dichloro-2-butene	53.29	1.5	5.0	50.00	0	107	0	226	58.75	9.74	40	
Surrogate: Dibromofluoromethane	51.01		5.0	50.00	0	102	85	115	0	0	40	
Surrogate: 1,2-Dichloroethane-d4	53.66		5.0	50.00	0	107	70	120	0	0	40	
Surrogate: Toluene-d8	52.38		5.0	50.00	0	105	85	120	0	0	40	
Surrogate: Bromofluorobenzene	51.85		5.0	50.00	0	104	75	120	0	0	40	

Qualifiers: ND - Not Detected at the MDL; S - Recovery outside accepted recovery limits; MDL - Method Detection Limit; B - Analyte detected in the associated Method Blank
J - Analyte detected below quanititation limits; R - RPD outside accepted recovery limits; RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.

Client Sample ID: GZ-1 **Project:** Jamestown Landfill, 3/2015

Lab ID: P0342-01 **Collection Date:** 03/20/15 10:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 14:48	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 14:48	81388
Barium	ND		10	ug/L	1	03/25/2015 14:48	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 14:48	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 14:48	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 14:48	81388
Cobalt	2.6		1.0	ug/L	1	03/25/2015 14:48	81388
Copper	ND		5.0	ug/L	1	03/25/2015 14:48	81388
Lead	ND		1.0	ug/L	1	03/25/2015 14:48	81388
Nickel	17		1.0	ug/L	1	03/25/2015 14:48	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 14:48	81388
Silver	ND		1.0	ug/L	1	03/25/2015 14:48	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 14:48	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 14:48	81388
Zinc	12		5.0	ug/L	1	03/25/2015 14:48	81388

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-2
Lab ID: P0342-02
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 14:53	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 14:53	81388
Barium	43		10	ug/L	1	03/25/2015 14:53	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 14:53	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 14:53	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 14:53	81388
Cobalt	220		1.0	ug/L	1	03/25/2015 14:53	81388
Copper	ND		5.0	ug/L	1	03/25/2015 14:53	81388
Lead	ND		1.0	ug/L	1	03/25/2015 14:53	81388
Nickel	39		1.0	ug/L	1	03/25/2015 14:53	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 14:53	81388
Silver	ND		1.0	ug/L	1	03/25/2015 14:53	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 14:53	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 14:53	81388
Zinc	9.0		5.0	ug/L	1	03/25/2015 14:53	81388

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-3
Lab ID: P0342-03
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 11:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 14:58	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 14:58	81388
Barium	36		10	ug/L	1	03/25/2015 14:58	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 14:58	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 14:58	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 14:58	81388
Cobalt	ND		1.0	ug/L	1	03/25/2015 14:58	81388
Copper	ND		5.0	ug/L	1	03/25/2015 14:58	81388
Lead	ND		1.0	ug/L	1	03/25/2015 14:58	81388
Nickel	5.0		1.0	ug/L	1	03/25/2015 14:58	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 14:58	81388
Silver	ND		1.0	ug/L	1	03/25/2015 14:58	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 14:58	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 14:58	81388
Zinc	15		5.0	ug/L	1	03/25/2015 14:58	81388

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.

Client Sample ID: GZ-4 **Project:** Jamestown Landfill, 3/2015

Lab ID: P0342-04 **Collection Date:** 03/19/15 12:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 15:03	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 15:03	81388
Barium	13		10	ug/L	1	03/25/2015 15:03	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 15:03	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 15:03	81388
Chromium	2.5		2.0	ug/L	1	03/25/2015 15:03	81388
Cobalt	ND		1.0	ug/L	1	03/25/2015 15:03	81388
Copper	ND		5.0	ug/L	1	03/25/2015 15:03	81388
Lead	ND		1.0	ug/L	1	03/25/2015 15:03	81388
Nickel	13		1.0	ug/L	1	03/25/2015 15:03	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 15:03	81388
Silver	1.1		1.0	ug/L	1	03/25/2015 15:03	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 15:03	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 15:03	81388
Zinc	15		5.0	ug/L	1	03/25/2015 15:03	81388

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

04/01/2015

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-5
Lab ID: P0342-05
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 9:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 15:18	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 15:18	81388
Barium	ND		10	ug/L	1	03/25/2015 15:18	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 15:18	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 15:18	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 15:18	81388
Cobalt	59		1.0	ug/L	1	03/25/2015 15:18	81388
Copper	ND		5.0	ug/L	1	03/25/2015 15:18	81388
Lead	ND		1.0	ug/L	1	03/25/2015 15:18	81388
Nickel	4.9		1.0	ug/L	1	03/25/2015 15:18	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 15:18	81388
Silver	ND		1.0	ug/L	1	03/25/2015 15:18	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 15:18	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 15:18	81388
Zinc	ND		5.0	ug/L	1	03/25/2015 15:18	81388

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-6
Lab ID: P0342-06
Project: Jamestown Landfill, 3/2015
Collection Date: 03/20/15 9:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 15:23	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 15:23	81388
Barium	ND		10	ug/L	1	03/25/2015 15:23	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 15:23	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 15:23	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 15:23	81388
Cobalt	3.2		1.0	ug/L	1	03/25/2015 15:23	81388
Copper	15		5.0	ug/L	1	03/25/2015 15:23	81388
Lead	ND		1.0	ug/L	1	03/25/2015 15:23	81388
Nickel	16		1.0	ug/L	1	03/25/2015 15:23	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 15:23	81388
Silver	ND		1.0	ug/L	1	03/25/2015 15:23	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 15:23	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 15:23	81388
Zinc	13		5.0	ug/L	1	03/25/2015 15:23	81388

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-7S
Lab ID: P0342-07
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 12:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 15:28	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 15:28	81388
Barium	23		10	ug/L	1	03/25/2015 15:28	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 15:28	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 15:28	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 15:28	81388
Cobalt	35		1.0	ug/L	1	03/25/2015 15:28	81388
Copper	ND		5.0	ug/L	1	03/25/2015 15:28	81388
Lead	ND		1.0	ug/L	1	03/25/2015 15:28	81388
Nickel	76		1.0	ug/L	1	03/25/2015 15:28	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 15:28	81388
Silver	ND		1.0	ug/L	1	03/25/2015 15:28	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 15:28	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 15:28	81388
Zinc	15		5.0	ug/L	1	03/25/2015 15:28	81388

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.
Client Sample ID: GZ-7D
Lab ID: P0342-08
Project: Jamestown Landfill, 3/2015
Collection Date: 03/19/15 13:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 15:33	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 15:33	81388
Barium	ND		10	ug/L	1	03/25/2015 15:33	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 15:33	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 15:33	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 15:33	81388
Cobalt	2.5		1.0	ug/L	1	03/25/2015 15:33	81388
Copper	ND		5.0	ug/L	1	03/25/2015 15:33	81388
Lead	ND		1.0	ug/L	1	03/25/2015 15:33	81388
Nickel	7.7		1.0	ug/L	1	03/25/2015 15:33	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 15:33	81388
Silver	ND		1.0	ug/L	1	03/25/2015 15:33	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 15:33	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 15:33	81388
Zinc	ND		5.0	ug/L	1	03/25/2015 15:33	81388

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.

Client Sample ID: GZ-8 **Project:** Jamestown Landfill, 3/2015

Lab ID: P0342-09 **Collection Date:** 03/20/15 11:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 15:38	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 15:38	81388
Barium	63		10	ug/L	1	03/25/2015 15:38	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 15:38	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 15:38	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 15:38	81388
Cobalt	2.6		1.0	ug/L	1	03/25/2015 15:38	81388
Copper	ND		5.0	ug/L	1	03/25/2015 15:38	81388
Lead	ND		1.0	ug/L	1	03/25/2015 15:38	81388
Nickel	29		1.0	ug/L	1	03/25/2015 15:38	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 15:38	81388
Silver	ND		1.0	ug/L	1	03/25/2015 15:38	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 15:38	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 15:38	81388
Zinc	ND		5.0	ug/L	1	03/25/2015 15:38	81388

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.

Client Sample ID: GZ-9 **Project:** Jamestown Landfill, 3/2015

Lab ID: P0342-10 **Collection Date:** 03/20/15 12:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 15:43	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 15:43	81388
Barium	16		10	ug/L	1	03/25/2015 15:43	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 15:43	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 15:43	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 15:43	81388
Cobalt	5.8		1.0	ug/L	1	03/25/2015 15:43	81388
Copper	ND		5.0	ug/L	1	03/25/2015 15:43	81388
Lead	1.4		1.0	ug/L	1	03/25/2015 15:43	81388
Nickel	9.8		1.0	ug/L	1	03/25/2015 15:43	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 15:43	81388
Silver	ND		1.0	ug/L	1	03/25/2015 15:43	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 15:43	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 15:43	81388
Zinc	10		5.0	ug/L	1	03/25/2015 15:43	81388

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Client: GZA GeoEnvironmental Inc.

Client Sample ID: POT-1 **Project:** Jamestown Landfill, 3/2015

Lab ID: P0342-11 **Collection Date:** 03/20/15 12:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6020A -- Metals by ICP-MS							**SW6020_W**
Antimony	ND		2.0	ug/L	1	03/25/2015 15:48	81388
Arsenic	ND		2.0	ug/L	1	03/25/2015 15:48	81388
Barium	ND		10	ug/L	1	03/25/2015 15:48	81388
Beryllium	ND		1.0	ug/L	1	03/25/2015 15:48	81388
Cadmium	ND		1.0	ug/L	1	03/25/2015 15:48	81388
Chromium	ND		2.0	ug/L	1	03/25/2015 15:48	81388
Cobalt	1.4		1.0	ug/L	1	03/25/2015 15:48	81388
Copper	43		5.0	ug/L	1	03/25/2015 15:48	81388
Lead	2.0		1.0	ug/L	1	03/25/2015 15:48	81388
Nickel	3.4		1.0	ug/L	1	03/25/2015 15:48	81388
Selenium	ND		5.0	ug/L	1	03/25/2015 15:48	81388
Silver	ND		1.0	ug/L	1	03/25/2015 15:48	81388
Thallium	ND		1.0	ug/L	1	03/25/2015 15:48	81388
Vanadium	ND		5.0	ug/L	1	03/25/2015 15:48	81388
Zinc	27		5.0	ug/L	1	03/25/2015 15:48	81388

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quanititation limits

B - Analyte detected in the associated Method Blank

DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

CLIENT: GZA GeoEnvironmental Inc.
Work Order: P0342
Project: Jamestown Landfill, 3/2015

ANALYTICAL QC SUMMARY REPORT

SW6020_W

SW846 6020A -- Metals by ICP-MS

Sample ID: **MB-81388** SampType: **MBLK** TestCode: **SW6020_W** Prep Date: **03/24/15 11:00** Run ID: **X1_150325A**
Client ID: **MB-81388** Batch ID: **81388** Units: **ug/L** Analysis Date: **03/25/15 14:33** SeqNo: **2243032**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.2253	0.20	2.0									J
Arsenic	ND	0.19	2.0									
Barium	ND	1.3	10									
Beryllium	ND	0.072	1.0									
Cadmium	ND	0.084	1.0									
Chromium	ND	0.16	2.0									
Cobalt	ND	0.024	1.0									
Copper	ND	0.23	2.0									
Lead	ND	0.068	1.0									
Nickel	ND	0.17	1.0									
Selenium	ND	0.15	5.0									
Silver	ND	0.022	1.0									
Thallium	0.09890	0.048	1.0									J
Vanadium	ND	0.61	5.0									
Zinc	ND	0.73	2.0									

Sample ID: **LCS-81388** SampType: **LCS** TestCode: **SW6020_W** Prep Date: **03/24/15 11:00** Run ID: **X1_150325A**
Client ID: **LCS-81388** Batch ID: **81388** Units: **ug/L** Analysis Date: **03/25/15 14:38** SeqNo: **2243033**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	104.3	0.20	2.0	100.0	0	104	80	120	0			B
Arsenic	42.22	0.19	2.0	40.00	0	106	80	120	0			
Barium	2047	1.3	10	2000	0	102	80	120	0			
Beryllium	52.53	0.072	1.0	50.00	0	105	80	120	0			
Cadmium	51.42	0.084	1.0	50.00	0	103	80	120	0			
Chromium	209.3	0.16	2.0	200.0	0	105	80	120	0			
Cobalt	502.3	0.024	1.0	500.0	0	100	80	120	0			
Copper	265.9	0.23	2.0	250.0	0	106	80	120	0			
Lead	20.88	0.068	1.0	20.00	0	104	80	120	0			
Nickel	515.4	0.17	1.0	500.0	0	103	80	120	0			
Selenium	53.13	0.15	5.0	50.00	0	106	80	120	0			
Silver	52.84	0.022	1.0	50.00	0	106	80	120	0			
Thallium	52.61	0.048	1.0	50.00	0	105	80	120	0			B
Vanadium	504.9	0.61	5.0	500.0	0	101	80	120	0			
Zinc	531.9	0.73	2.0	500.0	0	106	80	120	0			

Qualifiers:
ND - Not Detected at the MDL
J - Analyte detected below quanititation limits
S - Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
MDL - Method Detection Limit
RL - Reporting Limit
B - Analyte detected in the associated Method Blank

CLIENT: GZA GeoEnvironmental Inc.
Work Order: P0342
Project: Jamestown Landfill, 3/2015

ANALYTICAL QC SUMMARY REPORT

SW6020_W

SW846 6020A -- Metals by ICP-MS

Sample ID: **LCSD-81388** SampType: **LCSD** TestCode: **SW6020_W** Prep Date: **03/24/15 11:00** Run ID: **X1_150325A**
Client ID: **LCSD-81388** Batch ID: **81388** Units: **ug/L** Analysis Date: **03/25/15 14:43** SeqNo: **2243034**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	103.2	0.20	2.0	100.0	0	103	80	120	104.3	1.11	20	B
Arsenic	41.83	0.19	2.0	40.00	0	105	80	120	42.22	0.926	20	
Barium	2069	1.3	10	2000	0	103	80	120	2047	1.06	20	
Beryllium	52.69	0.072	1.0	50.00	0	105	80	120	52.53	0.306	20	
Cadmium	51.12	0.084	1.0	50.00	0	102	80	120	51.42	0.583	20	
Chromium	210.0	0.16	2.0	200.0	0	105	80	120	209.3	0.352	20	
Cobalt	508.8	0.024	1.0	500.0	0	102	80	120	502.3	1.29	20	
Copper	267.2	0.23	2.0	250.0	0	107	80	120	265.9	0.489	20	
Lead	20.69	0.068	1.0	20.00	0	103	80	120	20.88	0.903	20	
Nickel	518.4	0.17	1.0	500.0	0	104	80	120	515.4	0.568	20	
Selenium	53.30	0.15	5.0	50.00	0	107	80	120	53.13	0.317	20	
Silver	51.28	0.022	1.0	50.00	0	103	80	120	52.84	3.01	20	
Thallium	52.22	0.048	1.0	50.00	0	104	80	120	52.61	0.744	20	B
Vanadium	505.3	0.61	5.0	500.0	0	101	80	120	504.9	0.0729	20	
Zinc	535.2	0.73	2.0	500.0	0	107	80	120	531.9	0.607	20	

Sample ID: **P0342-11BSD** SampType: **SD** TestCode: **SW6020_W** Prep Date: **03/24/15 11:00** Run ID: **X1_150325A**
Client ID: **POT-1** Batch ID: **81388** Units: **ug/L** Analysis Date: **03/25/15 15:54** SeqNo: **2243048**

Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	10	10	0	0	0	0	0	0	0	10	
Arsenic	ND	10	10	0	0	0	0	0	0	0	10	
Barium	ND	50	50	0	0	0	0	0	0	0	10	
Beryllium	ND	5.0	5.0	0	0	0	0	0	0	0	10	
Cadmium	ND	5.0	5.0	0	0	0	0	0	0	0	10	
Chromium	ND	10	10	0	0	0	0	0	0	0	10	
Cobalt	ND	5.0	5.0	0	0	0	0	0	1.404	0	10	
Copper	44.85	25	25	0	0	0	0	0	42.52	5.33	10	
Lead	ND	5.0	5.0	0	0	0	0	0	2.016	0	10	
Nickel	ND	5.0	5.0	0	0	0	0	0	3.392	0	10	
Selenium	ND	25	25	0	0	0	0	0	0	0	10	
Silver	ND	5.0	5.0	0	0	0	0	0	0	0	10	
Thallium	ND	5.0	5.0	0	0	0	0	0	0	0	10	
Vanadium	ND	25	25	0	0	0	0	0	0	0	10	
Zinc	28.88	25	25	0	0	0	0	0	26.91	7.09	10	

Qualifiers: ND - Not Detected at the MDL; S - Recovery outside accepted recovery limits; MDL - Method Detection Limit; B - Analyte detected in the associated Method Blank
J - Analyte detected below quanititation limits; R - RPD outside accepted recovery limits; RL - Reporting Limit

Report Date:
31-Mar-15 16:37

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Spectrum Analytical, Inc.
646 Camp Ave.
North Kingstown, RI 02852
Attn: Edward Lawler

Project: Jamestown Landfill, 3/2015
Project #: P0342

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC04721-01	POT-1	Aqueous	20-Mar-15 12:30	23-Mar-15 16:23

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 11 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, NJ-MA012, PA-68-04426 and FL-E87936).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report includes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the detection limit are reported as "<" (less than) the detection limit in this report.

The samples were received -0.8 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

EPA 353.2

Samples:

SC04721-01 *POT-1*

The Reporting Limit has been raised to account for matrix interference.

Nitrate/Nitrite as N

EPA 524.2

Calibration:

1503047

Analyte quantified by quadratic equation type calibration.

1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
4-Isopropyltoluene
Hexachlorobutadiene
Naphthalene
n-Butylbenzene
n-Propylbenzene
o-Xylene
sec-Butylbenzene
Styrene
tert-Butylbenzene

This affected the following samples:

1505317-BLK1
1505317-BS1
POT-1
S502235-ICV1
S502477-CCV1

S502235-ICV1

Analyte percent recovery is outside individual acceptance criteria (80-120).

Dichlorodifluoromethane (Freon12) (79%)
m,p-Xylene (123%)

EPA 524.2

Calibration:

S502235-ICV1

This affected the following samples:

1505317-BLK1
1505317-BS1
POT-1
S502477-CCV1

Laboratory Control Samples:

1505317 BS

1,1-Dichloroethene percent recovery 76 (80-120) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

POT-1

Hexachlorobutadiene percent recovery 123 (80-120) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

POT-1

Methylene chloride percent recovery 73 (80-120) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

POT-1

Vinyl chloride percent recovery 69 (80-120) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

POT-1

Samples:

S502477-CCV1

Analyte percent difference is outside individual acceptance criteria (30), but within overall method allowances.

Vinyl chloride (-31.0%)

This affected the following samples:

1505317-BLK1
1505317-BS1
POT-1

Sample Acceptance Check Form

Client:	Spectrum Analytical, Inc. - North Kingstown, RI
Project:	Jamestown Landfill, 3/2015 / P0342
Work Order:	SC04721
Sample(s) received on:	3/23/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☐	☑	☐
Were custody seals intact?	☐	☐	☑
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples refrigerated upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☐	☑	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
POT-1	P0342	Aqueous	20-Mar-15 12:30	23-Mar-15
SC04721-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Purgeable Organic Compounds													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.50	U	µg/l	0.50	0.35	1	EPA 524.2	25-Mar-15	25-Mar-15	GMA	1505317	
67-64-1	Acetone	< 10.0	U	µg/l	10.0	0.98	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.50	U	µg/l	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50	U	µg/l	0.50	0.17	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 0.50	U	µg/l	0.50	0.11	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 0.50	U	µg/l	0.50	0.13	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50	U	µg/l	0.50	0.18	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50	U	µg/l	0.50	0.29	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50	U	µg/l	0.50	0.36	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 10.0	U	µg/l	10.0	0.58	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 0.50	U	µg/l	0.50	0.26	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 0.50	U	µg/l	0.50	0.16	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 0.50	U	µg/l	0.50	0.21	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 0.50	U	µg/l	0.50	0.25	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50	U	µg/l	0.50	0.23	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50	U	µg/l	0.50	0.20	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50	U	µg/l	0.50	0.31	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50	U	µg/l	0.50	0.19	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50	U	µg/l	0.50	0.34	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 0.50	U	µg/l	0.50	0.17	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 0.50	U	µg/l	0.50	0.20	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 0.50	U	µg/l	0.50	0.48	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50	U	µg/l	0.50	0.24	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.50	U	µg/l	0.50	0.16	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 0.50	U	µg/l	0.50	0.19	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50	U	µg/l	0.50	0.15	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50	U	µg/l	0.50	0.22	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50	U	µg/l	0.50	0.25	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	**1.09**		µg/l	0.50	0.49	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	**0.22**	J	µg/l	0.50	0.17	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50	U	µg/l	0.50	0.15	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50	U	µg/l	0.50	0.28	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50	U	µg/l	0.50	0.20	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50	U	µg/l	0.50	0.21	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50	U	µg/l	0.50	0.15	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 0.50	U	µg/l	0.50	0.22	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 0.50	U	µg/l	0.50	0.36	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 0.50	U	µg/l	0.50	0.28	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.50	U	µg/l	0.50	0.18	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.50	U	µg/l	0.50	0.20	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50	U	µg/l	0.50	0.17	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.50	U	µg/l	0.50	0.40	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 10.0	U	µg/l	10.0	0.54	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
POT-1	P0342	Aqueous	20-Mar-15 12:30	23-Mar-15
SC04721-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Purgeable Organic Compounds													
98-82-8	Isopropylbenzene	< 0.50	U	µg/l	0.50	0.24	1	EPA 524.2	25-Mar-15	25-Mar-15	GMA	1505317	
99-87-6	4-Isopropyltoluene	< 0.50	U	µg/l	0.50	0.22	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 0.50	U	µg/l	0.50	0.13	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 10.0	U	µg/l	10.0	0.26	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50	U	µg/l	0.50	0.21	1	"	"	"	"	"	
91-20-3	Naphthalene	< 0.50	U	µg/l	0.50	0.40	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 0.50	U	µg/l	0.50	0.22	1	"	"	"	"	"	
100-42-5	Styrene	< 0.50	U	µg/l	0.50	0.18	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 0.50	U	µg/l	0.50	0.24	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.50	U	µg/l	0.50	0.32	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50	U	µg/l	0.50	0.39	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50	U	µg/l	0.50	0.33	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 0.50	U	µg/l	0.50	0.14	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 0.50	U	µg/l	0.50	0.38	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 0.50	U	µg/l	0.50	0.21	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50	U	µg/l	0.50	0.18	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50	U	µg/l	0.50	0.38	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 0.50	U	µg/l	0.50	0.49	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 0.50	U	µg/l	0.50	0.18	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 0.50	U	µg/l	0.50	0.27	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 0.50	U	µg/l	0.50	0.21	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50	U	µg/l	0.50	0.34	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 0.50	U	µg/l	0.50	0.38	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50	U	µg/l	0.50	0.21	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	**0.87**	J	µg/l	2.00	0.38	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 0.50	U	µg/l	0.50	0.24	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 0.50	U	µg/l	0.50	0.14	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 0.50	U	µg/l	0.50	0.16	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0	U	µg/l	10.0	2.29	1	"	"	"	"	"	
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*90*			*80-120 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*			*80-120 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*100*			*80-120 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*106*			*80-120 %*			"	"	"	"	"	
General Chemistry Parameters													
	Nitrate/Nitrite as N	< 0.500	R01, U, D	mg/l	0.500	0.472	50	EPA 353.2	27-Mar-15	27-Mar-15	RLT	1505511	X

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1505317 - SW846 5030 Water MS										
Blank (1505317-BLK1)						Prepared & Analyzed: 25-Mar-15				
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 0.50	U	µg/l	0.50						
Acetone	< 10.0	U	µg/l	10.0						
Acrylonitrile	< 0.50	U	µg/l	0.50						
Benzene	< 0.50	U	µg/l	0.50						
Bromobenzene	< 0.50	U	µg/l	0.50						
Bromochloromethane	< 0.50	U	µg/l	0.50						
Bromodichloromethane	< 0.50	U	µg/l	0.50						
Bromoform	< 0.50	U	µg/l	0.50						
Bromomethane	< 0.50	U	µg/l	0.50						
2-Butanone (MEK)	< 10.0	U	µg/l	10.0						
n-Butylbenzene	< 0.50	U	µg/l	0.50						
sec-Butylbenzene	< 0.50	U	µg/l	0.50						
tert-Butylbenzene	< 0.50	U	µg/l	0.50						
Carbon disulfide	< 0.50	U	µg/l	0.50						
Carbon tetrachloride	< 0.50	U	µg/l	0.50						
Chlorobenzene	< 0.50	U	µg/l	0.50						
Chloroethane	< 0.50	U	µg/l	0.50						
Chloroform	< 0.50	U	µg/l	0.50						
Chloromethane	< 0.50	U	µg/l	0.50						
2-Chlorotoluene	< 0.50	U	µg/l	0.50						
4-Chlorotoluene	< 0.50	U	µg/l	0.50						
1,2-Dibromo-3-chloropropane	< 0.50	U	µg/l	0.50						
Dibromochloromethane	< 0.50	U	µg/l	0.50						
1,2-Dibromoethane (EDB)	< 0.50	U	µg/l	0.50						
Dibromomethane	< 0.50	U	µg/l	0.50						
1,2-Dichlorobenzene	< 0.50	U	µg/l	0.50						
1,3-Dichlorobenzene	< 0.50	U	µg/l	0.50						
1,4-Dichlorobenzene	< 0.50	U	µg/l	0.50						
Dichlorodifluoromethane (Freon12)	< 0.50	U	µg/l	0.50						
1,1-Dichloroethane	< 0.50	U	µg/l	0.50						
1,2-Dichloroethane	< 0.50	U	µg/l	0.50						
1,1-Dichloroethene	< 0.50	U	µg/l	0.50						
cis-1,2-Dichloroethene	< 0.50	U	µg/l	0.50						
trans-1,2-Dichloroethene	< 0.50	U	µg/l	0.50						
1,2-Dichloropropane	< 0.50	U	µg/l	0.50						
1,3-Dichloropropane	< 0.50	U	µg/l	0.50						
2,2-Dichloropropane	< 0.50	U	µg/l	0.50						
1,1-Dichloropropene	< 0.50	U	µg/l	0.50						
cis-1,3-Dichloropropene	< 0.50	U	µg/l	0.50						
trans-1,3-Dichloropropene	< 0.50	U	µg/l	0.50						
Ethylbenzene	< 0.50	U	µg/l	0.50						
Hexachlorobutadiene	< 0.50	U	µg/l	0.50						
2-Hexanone (MBK)	< 10.0	U	µg/l	10.0						
Isopropylbenzene	< 0.50	U	µg/l	0.50						
4-Isopropyltoluene	< 0.50	U	µg/l	0.50						
Methyl tert-butyl ether	< 0.50	U	µg/l	0.50						
4-Methyl-2-pentanone (MIBK)	< 10.0	U	µg/l	10.0						
Methylene chloride	< 0.50	U	µg/l	0.50						
Naphthalene	< 0.50	U	µg/l	0.50						
n-Propylbenzene	< 0.50	U	µg/l	0.50						
Styrene	< 0.50	U	µg/l	0.50						
1,1,1,2-Tetrachloroethane	< 0.50	U	µg/l	0.50						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1505317 - SW846 5030 Water MS										
Blank (1505317-BLK1)					Prepared & Analyzed: 25-Mar-15					
1,1,2,2-Tetrachloroethane	< 0.50	U	µg/l	0.50						
Tetrachloroethene	< 0.50	U	µg/l	0.50						
Toluene	< 0.50	U	µg/l	0.50						
1,2,3-Trichlorobenzene	< 0.50	U	µg/l	0.50						
1,2,4-Trichlorobenzene	< 0.50	U	µg/l	0.50						
1,1,1-Trichloroethane	< 0.50	U	µg/l	0.50						
1,1,2-Trichloroethane	< 0.50	U	µg/l	0.50						
Trichloroethene	< 0.50	U	µg/l	0.50						
Trichlorofluoromethane (Freon 11)	< 0.50	U	µg/l	0.50						
1,2,3-Trichloropropane	< 0.50	U	µg/l	0.50						
1,2,4-Trimethylbenzene	< 0.50	U	µg/l	0.50						
1,3,5-Trimethylbenzene	< 0.50	U	µg/l	0.50						
Vinyl chloride	< 0.50	U	µg/l	0.50						
m,p-Xylene	< 0.50	U	µg/l	0.50						
o-Xylene	< 0.50	U	µg/l	0.50						
Tetrahydrofuran	< 2.00	U	µg/l	2.00						
Tert-amyl methyl ether	< 0.50	U	µg/l	0.50						
Ethyl tert-butyl ether	< 0.50	U	µg/l	0.50						
Di-isopropyl ether	< 0.50	U	µg/l	0.50						
Tert-Butanol / butyl alcohol	< 10.0	U	µg/l	10.0						
Surrogate: 4-Bromofluorobenzene	*44.0*		µg/l		*50.0*		*88*	*80-120*		
Surrogate: Toluene-d8	*50.7*		µg/l		*50.0*		*101*	*80-120*		
Surrogate: 1,2-Dichloroethane-d4	*49.8*		µg/l		*50.0*		*100*	*80-120*		
Surrogate: Dibromofluoromethane	*51.5*		µg/l		*50.0*		*103*	*80-120*		
LCS (1505317-BS1)					Prepared & Analyzed: 25-Mar-15					
1,1,2-Trichlorotrifluoroethane (Freon 113)	**17.5**		µg/l		20.0		87	80-120		
Acetone	**14.3**		µg/l		20.0		71	70-130		
Acrylonitrile	**16.4**		µg/l		20.0		82	70-130		
Benzene	**21.0**		µg/l		20.0		105	80-120		
Bromobenzene	**22.2**		µg/l		20.0		111	80-120		
Bromochloromethane	**20.6**		µg/l		20.0		103	80-120		
Bromodichloromethane	**19.3**		µg/l		20.0		97	80-120		
Bromoform	**22.3**		µg/l		20.0		112	80-120		
Bromomethane	**16.3**		µg/l		20.0		82	80-120		
2-Butanone (MEK)	**18.3**		µg/l		20.0		91	70-130		
n-Butylbenzene	**23.5**		µg/l		20.0		118	80-120		
sec-Butylbenzene	**22.6**		µg/l		20.0		113	80-120		
tert-Butylbenzene	**22.2**		µg/l		20.0		111	80-120		
Carbon disulfide	**15.2**		µg/l		20.0		76	70-130		
Carbon tetrachloride	**20.9**		µg/l		20.0		104	80-120		
Chlorobenzene	**21.2**		µg/l		20.0		106	80-120		
Chloroethane	**16.0**		µg/l		20.0		80	80-120		
Chloroform	**18.8**		µg/l		20.0		94	80-120		
Chloromethane	**16.5**		µg/l		20.0		82	80-120		
2-Chlorotoluene	**23.6**		µg/l		20.0		118	80-120		
4-Chlorotoluene	**23.8**		µg/l		20.0		119	80-120		
1,2-Dibromo-3-chloropropane	**21.0**		µg/l		20.0		105	80-120		
Dibromochloromethane	**21.0**		µg/l		20.0		105	80-120		
1,2-Dibromoethane (EDB)	**19.9**		µg/l		20.0		100	80-120		
Dibromomethane	**19.2**		µg/l		20.0		96	80-120		
1,2-Dichlorobenzene	**21.4**		µg/l		20.0		107	80-120		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1505317 - SW846 5030 Water MS										
LCS (1505317-BS1)					Prepared & Analyzed: 25-Mar-15					
1,3-Dichlorobenzene	**21.4**		µg/l		20.0		107	80-120		
1,4-Dichlorobenzene	**20.4**		µg/l		20.0		102	80-120		
Dichlorodifluoromethane (Freon12)	**18.5**		µg/l		20.0		92	80-120		
1,1-Dichloroethane	**19.0**		µg/l		20.0		95	80-120		
1,2-Dichloroethane	**17.9**		µg/l		20.0		90	80-120		
1,1-Dichloroethene	**15.1**	QC2	µg/l		20.0		76	80-120		
cis-1,2-Dichloroethene	**21.0**		µg/l		20.0		105	80-120		
trans-1,2-Dichloroethene	**20.9**		µg/l		20.0		105	80-120		
1,2-Dichloropropane	**19.1**		µg/l		20.0		96	80-120		
1,3-Dichloropropane	**19.0**		µg/l		20.0		95	80-120		
2,2-Dichloropropane	**21.9**		µg/l		20.0		109	80-120		
1,1-Dichloropropene	**21.5**		µg/l		20.0		108	80-120		
cis-1,3-Dichloropropene	**21.4**		µg/l		20.0		107	80-120		
trans-1,3-Dichloropropene	**21.1**		µg/l		20.0		106	80-120		
Ethylbenzene	**22.6**		µg/l		20.0		113	80-120		
Hexachlorobutadiene	**24.6**	QC2	µg/l		20.0		123	80-120		
2-Hexanone (MBK)	**16.9**		µg/l		20.0		84	70-130		
Isopropylbenzene	**23.3**		µg/l		20.0		116	80-120		
4-Isopropyltoluene	**22.5**		µg/l		20.0		112	80-120		
Methyl tert-butyl ether	**20.0**		µg/l		20.0		100	80-120		
4-Methyl-2-pentanone (MIBK)	**19.6**		µg/l		20.0		98	70-130		
Methylene chloride	**14.6**	QC2	µg/l		20.0		73	80-120		
Naphthalene	**19.3**		µg/l		20.0		97	80-120		
n-Propylbenzene	**22.1**		µg/l		20.0		110	80-120		
Styrene	**22.2**		µg/l		20.0		111	80-120		
1,1,1,2-Tetrachloroethane	**21.0**		µg/l		20.0		105	80-120		
1,1,2,2-Tetrachloroethane	**20.9**		µg/l		20.0		104	80-120		
Tetrachloroethene	**22.4**		µg/l		20.0		112	80-120		
Toluene	**20.1**		µg/l		20.0		101	80-120		
1,2,3-Trichlorobenzene	**21.8**		µg/l		20.0		109	80-120		
1,2,4-Trichlorobenzene	**23.1**		µg/l		20.0		116	80-120		
1,1,1-Trichloroethane	**19.7**		µg/l		20.0		98	80-120		
1,1,2-Trichloroethane	**19.8**		µg/l		20.0		99	80-120		
Trichloroethene	**18.1**		µg/l		20.0		91	80-120		
Trichlorofluoromethane (Freon 11)	**16.0**		µg/l		20.0		80	80-120		
1,2,3-Trichloropropane	**19.9**		µg/l		20.0		99	80-120		
1,2,4-Trimethylbenzene	**21.7**		µg/l		20.0		109	80-120		
1,3,5-Trimethylbenzene	**21.9**		µg/l		20.0		110	80-120		
Vinyl chloride	**13.8**	QC2	µg/l		20.0		69	80-120		
m,p-Xylene	**23.3**		µg/l		20.0		117	80-120		
o-Xylene	**21.5**		µg/l		20.0		107	80-120		
Tetrahydrofuran	**17.1**		µg/l		20.0		86	70-130		
Tert-amyl methyl ether	**20.8**		µg/l		20.0		104	70-130		
Ethyl tert-butyl ether	**20.9**		µg/l		20.0		104	70-130		
Di-isopropyl ether	**20.4**		µg/l		20.0		102	70-130		
Tert-Butanol / butyl alcohol	**172**		µg/l		200		86	70-130		
Surrogate: 4-Bromofluorobenzene	*51.9*		µg/l		*50.0*		*104*	*80-120*		
Surrogate: Toluene-d8	*49.4*		µg/l		*50.0*		*99*	*80-120*		
Surrogate: 1,2-Dichloroethane-d4	*45.6*		µg/l		*50.0*		*91*	*80-120*		
Surrogate: Dibromofluoromethane	*48.6*		µg/l		*50.0*		*97*	*80-120*		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1505511 - General Preparation										
Blank (1505511-BLK1)						Prepared & Analyzed: 27-Mar-15				
Nitrate/Nitrite as N	< 0.0100	U	mg/l	0.0100						
LCS (1505511-BS1)						Prepared & Analyzed: 27-Mar-15				
Nitrate/Nitrite as N	**0.255**		mg/l	0.0100	0.250		102	90-110		
Reference (1505511-SRM1)						Prepared & Analyzed: 27-Mar-15				
Nitrate/Nitrite as N	**0.307**		mg/l	0.0100	0.314		98	85-115		

Notes and Definitions

D	Data reported from a dilution
J	Detected above the Method Detection Limit but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
R01	The Reporting Limit has been raised to account for matrix interference.
U	Analyte included in the analysis, but not detected at or above the MDL.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Nicole Leja

SC04721 | AME

CHAIN-OF-CUSTODY RECORD

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

WorkOrder : P0342
Project: Jamestown Landfill, 3/2015
Report Type : LEVEL 2
Due Date : 4/1/2015
FAX Due Date :
Report To : Edward A Lawler
Purchase Order : P0342
EDD Types : **Please generate a Little PEL EDD**

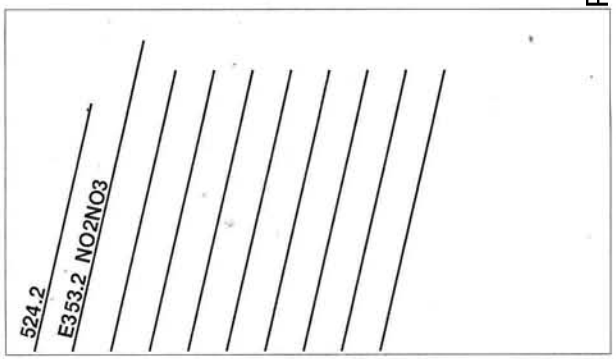
Subcontractor:
Spectrum Analytical, Inc. - Agawam, MA
11 Almgren Drive
Agawam, Massachusetts 01001

Phone: (413) 789-9018

EQuISFacilityCode: N/A

= number of containers.

Requested Test



Client Sample ID	Collection Date	#	Matrix	DUP/MS/MSD	Mitkem Sample ID										
POT-1 SC04721-01	03/20/2015 12:30	2	Aqueous		P0342-11A	X									
POT-1	03/20/2015 12:30	1	Aqueous		P0342-11C		X								

1) 524.2, VOC 524.2 BY GC-MS
2) E353.2_NO2NO3, NITROGEN (NITRATE) BY AUTOMATED CD REDUCTION

Use 'Client Sample IDs' when reporting data. If needed, truncate 'Client Sample IDs' to fit on reports. Use full 'Client Sample ID' when generating EDD.

Comments:

		Date/Time			Date/Time
Relinquished by:	Edward A Lawler		**Received by:**	[illegible]	3/23/15 11:36
Relinquished by:	[illegible]	3/23/15 11:38	**Received by:**	[illegible]	03/23/15 @ 1603

03/20/2015
Page 1 of 1

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www.spectrum-analytical.com

fridge

0.2 / -1 / 0.8 IR 02
AME 3/23

CERTIFICATE OF ANALYSIS

Spectrum Analytical, Inc.
Attn: Mr. Edward A. Lawler
646 Camp Avenue
N. Kingstown, RI 02852

Date Received: 3/20/2015
Date Reported: 3/24/2015
P.O. #: P0342
Work Order #: 1503-05555

DESCRIPTION: PROJECT #P0342 JAMESTOWN LANDFILL, 3/2015

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.
The Detection Limit is defined as the lowest level that can be reliably achieved during routine laboratory conditions.
The Certificate of Analysis shall not be reproduced except in full, without written approval of R.I. Analytical.
Results relate only to samples submitted to the laboratory for analysis.
Test results are not blank corrected.

Certification # (as applicable to the sample's origin state):
RI LAI0033, MA M-RI015, CT PH-0508, ME RI00015, NH 2537, NY 11726

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:

Sharon Baker
MIS / Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Spectrum Analytical, Inc.
Date Received: 3/20/2015
Work Order #: 1503-05555

Sample # 001
SAMPLE DESCRIPTION: POT-1 P0342-11D
SAMPLE TYPE:GRAB **SAMPLE DATE/TIME:** 3/20/2015 @ 12:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Total Coliform (MPN)	<2	2	MPN/100 ml	SM9221B 19-21 ed.	3/20/2015 16:49	DRF

P0342

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN-OF-CUSTODY RECORD

WorkOrder : P0342
Project: Jamestown Landfill, 3/2015
Report Type : LEVEL 2
Due Date : 4/1/2015
FAX Due Date :
Report To : Edward A Lawler
Purchase Order : P0342
EDD Types : EQUIIS_GZA

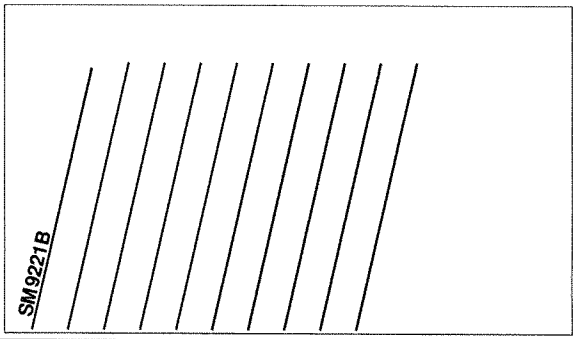
Subcontractor:
RI Analytical Laboratory
41 Illinois Ave
Warwick, RI 02886

Phone: (401) 737-8500

EQuISFacilityCode: N/A

= number of containers

Requested Test



Client Sample ID	Collection Date	#	Matrix	DUP/MS/MSD	Mitkem Sample ID	SM9221B
POT-1	03/20/2015 12:30	1	Aqueous		P0342-11D	X

1) SM9221B, TOTAL COLIFORM

Use 'Client Sample IDs' when reporting data. If needed, truncate 'Client Sample IDs' to fit on reports. Use full 'Client Sample ID' when generating EDD.

Comments: These samples are expected to contain low coliform concentrations, please analyze at appropriate dilution to report 2 or 3 CFU/100mL..

		Date/Time			Date/Time
Relinquished by:	Edward A Lawler	03/20/15 15:55	Received by:		03/20/15 15:55
Relinquished by:		03/20/15 16:42	Received by:		03/20/15 16:42

03/20/2015 Page 1 of 1

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4.8°C

1503-05555

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: P0342

Client ID: GZA_PROV
Project: Jamestown Landfill
WO Name: Jamestown Landfill, 3/2015
Location: JAMESTOWN_LF,
Comments: N/A

Case:
SDG:
PO: JAMESTOWN LF

HC Due: 04/01/15
Fax Due:
Fax Report: ☐

Report Level: LEVEL 2
Special Program:
EDD: EQUIIS_GZA

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
P0342-01A	GZ-1	03/20/2015 10:45	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-01B	GZ-1	03/20/2015 10:45	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-02A	GZ-2	03/19/2015 10:40	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-02B	GZ-2	03/19/2015 10:40	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-03A	GZ-3	03/19/2015 11:15	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-03B	GZ-3	03/19/2015 11:15	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-04A	GZ-4	03/19/2015 12:00	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-04B	GZ-4	03/19/2015 12:00	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-05A	GZ-5	03/20/2015 09:00	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-05B	GZ-5	03/20/2015 09:00	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-06A	GZ-6	03/20/2015 09:45	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-06B	GZ-6	03/20/2015 09:45	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-07A	GZ-7S	03/19/2015 12:30	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-07B	GZ-7S	03/19/2015 12:30	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-08A	GZ-7D	03/19/2015 13:00	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-08B	GZ-7D	03/19/2015 13:00	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-09A	GZ-8	03/20/2015 11:30	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-09B	GZ-8	03/20/2015 11:30	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

03/23/2015 12:45 Lab Client Rep: Edward A Lawler

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

WorkOrder: P0342

Client ID: GZA_PROV
Project: Jamestown Landfill
WO Name: Jamestown Landfill, 3/2015
Location: JAMESTOWN_LF,
Comments: N/A

Case:
SDG:

HC Due: 04/01/15
Fax Due:
Fax Report: ☐

Report Level: LEVEL 2
Special Program:
EDD: EQUIIS_GZA

PO: JAMESTOWN LF

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
P0342-10A	GZ-9	03/20/2015 12:15	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA
P0342-10B	GZ-9	03/20/2015 12:15	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-11A	POT-1	03/20/2015 12:30	03/20/2015	Aqueous	524.2	/ SPECTRUM--For POT-1 only Sub to Spectrum					SUB
P0342-11B	POT-1	03/20/2015 12:30	03/20/2015	Aqueous	SW6020_W	/ Report to PQL only				Y	M3
P0342-11C	POT-1	03/20/2015 12:30	03/20/2015	Aqueous	E353.2_NO2NO3	/ SPECTRUM--Sub to Spectrum					SUB
P0342-11D	POT-1	03/20/2015 12:30	03/20/2015	Aqueous	SM9221B	/ RIAL--Sub to RIAL, low coliform comment					SUB
P0342-12A	TRIP BLANK	03/19/2015 09:00	03/20/2015	Aqueous	SW8260_W	/ RI Landfill List				Y	VOA

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

P0342

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of 2

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive
Agawam, MA 01001
(413) 789-9018

☐ 8405 Benjamin Road, Ste A
Tampa, FL 33634
(813) 888-9507

☐ 646 Camp Avenue
N Kingstown, RI 02852
(401) 732-3400

Special Handling:

TAT- Indicate Date Needed: STANDARD
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: GZA
530 Broadway
Providence RI 02909

Telephone #: 401-421-4140
Project Mgr. Erik Beloff

Invoice To:

P.O. No.: RQN:

Project No.: 3222027
Site Name: Jamestown Landfill
Location: Jamestown State: RI
Sampler(s): Erik Beloff

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 12=

List preservative code below: 2 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	VOC	15 SW Metals
	GZ-1	3-20-15	1045	G	GW	2			1	X	X
	GZ-2	3-19-15	1040	G	GW	2			1	X	X
	GZ-3	3-19-15	1115	G	GW	2			1	X	X
	GZ-4	3-19-15	1200	G	GW	2			1	X	X
	GZ-5	3-20-15	0900	G	GW	2			1	X	X
	GZ-6	3-20-15	0945	G	GW	2			1	X	X
	GZ-7S	3-19-15	1230	G	GW	2			1	X	X
	GZ-7D	3-19-15	1300	G	GW	2			1	X	X
	GZ-8	3-20-15	1130	G	GW	2			1	X	X
	GZ-9	3-20-15	1215	G	GW	2			1	X	X

Containers: # of VOA Vials; # of Amber Glass; # of Clear Glass; # of Plastic
Analyses: VOC; 15 SW Metals

QA/QC Reporting Level

☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other

State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp°C
	Agnes Shumlas	3-20-15	1300	3.8

☒ EDD Format PDF, excel
☒ E-mail to erik.beloff@gza.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

P0342

SPECTRUM ANALYTICAL, INC.
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Page 2 of 2

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive
Agawam, MA 01001
(413) 789-9018

☐ 8405 Benjamin Road, Ste A
Tampa, FL 33634
(813) 888-9507

☐ 646 Camp Avenue
N Kingstown, RI 02852
(401) 732-3400

Special Handling:

TAT- Ind icate Date Needed: STANDARD
· All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: GZA

Telephone #:

Project Mgr.

Invoice To:

P.O. No.: RQN:

Project No.: 32220.27

Site Name: Jamestown Landfill

Location: Jamestown State: RI

Sampler(s): EMB

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= 12=

List preservative code below: 2 | 4 | 3 | –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC	15 SW Metals	Nitrate	Total Coliform
	POT-1	3-20-15	1230	G	DW	2			3	X	X	X	X
	Trip Blank	3-19-15	0900			2				X			

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other

State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp°C
	Agnes A Huntley	3-20-15	1300	3.8

☐ EDD Format
☐ E-mail to

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WSV	Page 01 of 00
Reviewed By:	Log-in Date 03/20/2015
Work Order: P0342	Client Name: GZA GeoEnvironmental, Inc.
Project Name/Event: Jamestown Landfill, 3/2015	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Courier N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	3.8 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	03/20/2015
12. Time Received	13:00

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
P0342-01	<2					H	
P0342-02	<2					H	
P0342-03	<2					H	
P0342-04	<2					H	
P0342-05	<2					H	
P0342-06	<2					H	
P0342-07	<2					H	
P0342-08	<2					H	
P0342-09	<2					H	
P0342-10	<2					H	
P0342-11	<2					H	
P0342-12						H	

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

See Sample Condition Notification/Corrective Action Form — Yes / No

Rad OK Yes / No

Last Page of Data Report

SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

Page 1 of 2

CHAIN OF CUSTODY RECORD

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☐ 646 Camp Avenue
N Kingstown, RI 02852
(401) 732-3400

Special Handling:

TAT- Indicate Date Needed: STANDARD
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Report To: GZA
530 Broadway
Providence RI 02909

Telephone #: 401-421-4140
Project Mgr. Erik Beloff

Invoice To:

P.O. No.: _____ RQN: _____

Project No.: 3222027
Site Name: Jamestown Landfill
Location: Jamestown State: RI
Sampler(s): Erik Beloff

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 4

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O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC	15 SW Metals
	GZ-1	3-20-15	1045	G	GW	2			1	X	X
	GZ-2	3-19-15	1040	G	GW	2			1	X	X
	GZ-3	3-19-15	1115	G	GW	2			1	X	X
	GZ-4	3-19-15	1200	G	GW	2			1	X	X
	GZ-5	3-20-15	0900	G	GW	2			1	X	X
	GZ-6	3-20-15	0945	G	GW	2			1	X	X
	GZ-7S	3-19-15	1230	G	GW	2			1	X	X
	GZ-7D	3-19-15	1300	G	GW	2			1	X	X
	GZ-8	3-20-15	1130	G	GW	2			1	X	X
	GZ-9	3-20-15	1215	G	GW	2			1	X	X

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____
State-specific reporting standards: _____

Relinquished by:	Received by:	Date:	Time:	Temp°C
	Agnes Shumlas	3-20-15	1300	3.8

☒ EDD Format PDF, excel
☒ E-mail to erik.beloff@gza.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SPECTRUM ANALYTICAL, INC.
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Page 2 of 2

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Special Handling:

TAT- Indicate Date Needed: STANDARD
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: GZA

Telephone #:

Project Mgr.

Invoice To:

P.O. No.: RQN:

Project No.: 32220.27

Site Name: Jamestown Landfill

Location: Jamestown State: RI

Sampler(s): EMB

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 12=

List preservative code below: 2 | 4 | 3 | –

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: VOC	15 SW Metals	Nitrate	Total Coliform
	POT-1	3-20-15	1230	G	DW	2			3	X	X	X	X
	Trip Blank	3-19-15	0900			2				X			

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other

State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp°C
	Agnes A Huntley	3-20-15	1300	3.8

☐ EDD Format
☐ E-mail to

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Spectrum Analytical Inc. - North Kingstown RI -- Rhode Island Division

Received By: WSV	Page 01 of 00
Reviewed By:	Log-in Date 03/20/2015
Work Order: P0342	Client Name: GZA GeoEnvironmental, Inc.
Project Name/Event: Jamestown Landfill, 3/2015	

Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.

1. Custody Seal(s) — Present / Absent
   Intact / Broken
2. Custody Seal Nos. N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists — Present / Absent
4. Airbill — AirBill / Sticker
   Present / Absent
5. Airbill No. Courier N/A
6. Sample Tags — Present / Absent
   Sample Tag Numbers — Listed / Not Listed on Chain-of-Custody
7. Sample Condition — Intact / Broken/ Leaking
8. Cooler Temperature Indicator Bottle — Present / Absent

9. Cooler Temperature	3.8 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	03/20/2015
12. Time Received	13:00

Sample Transfer

Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On

Lab Sample ID	Preservation (pH) HNO3	H2SO4	HCl	NaOH	H3PO4	VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
P0342-01	<2					H	
P0342-02	<2					H	
P0342-03	<2					H	
P0342-04	<2					H	
P0342-05	<2					H	
P0342-06	<2					H	
P0342-07	<2					H	
P0342-08	<2					H	
P0342-09	<2					H	
P0342-10	<2					H	
P0342-11	<2					H	
P0342-12						H	

IR Temp Gun ID:MT-74

CoolantCondition: ICE

Preservative Name/Lot No:

VOA Matrix Key:

US = Unpreserved Soil — A= Air
UA = Unpreserved Aqueous — H = HCl
M = MeOH — E = Encore
N = NaHSO4 — F = Freeze

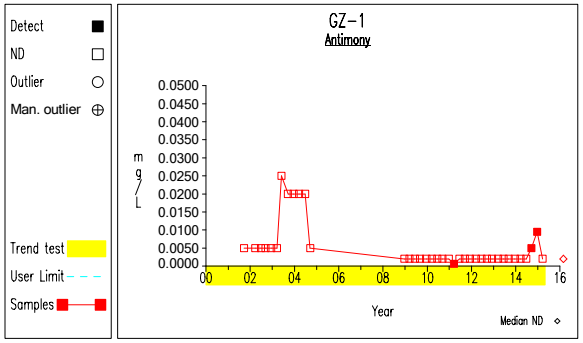
See Sample Condition Notification/Corrective Action Form — Yes / No

Rad OK Yes / No

APPENDIX C

TIMES SERIES PLOTS

Time Series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Outlier
Man. outlier
Trend test
User Limit
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0.0400
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0.0300
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0.0200
0.0150
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0.0050
0.0000
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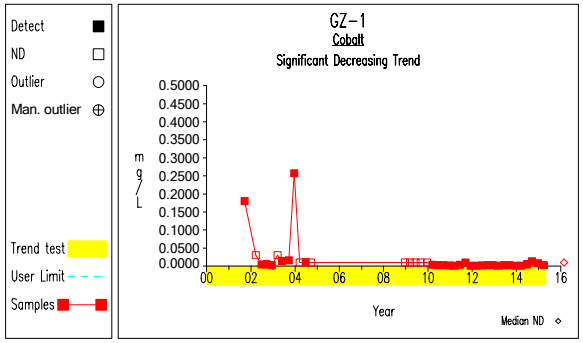
Year
Median ND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ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-1
Cobalt
Significant Decreasing Trend
mg/L
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0.4500
0.4000
0.3500
0.3000
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0.2000
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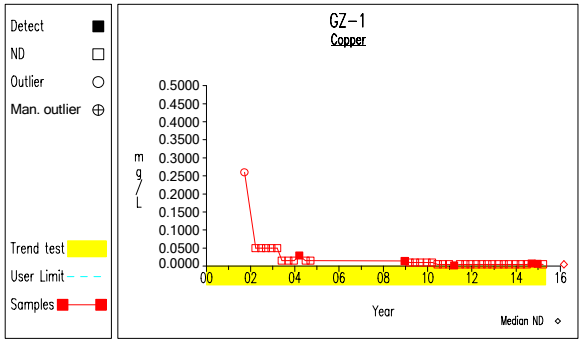
0.1000
0.0500
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND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ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-1
Copper
mg/L
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0.4500
0.4000
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0.3000
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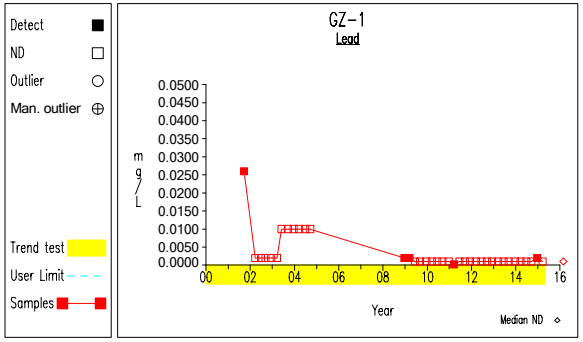
0.2000
0.1500
0.1000
0.0500
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND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ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-1
Lead
mg/L
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0.0400
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0.0150
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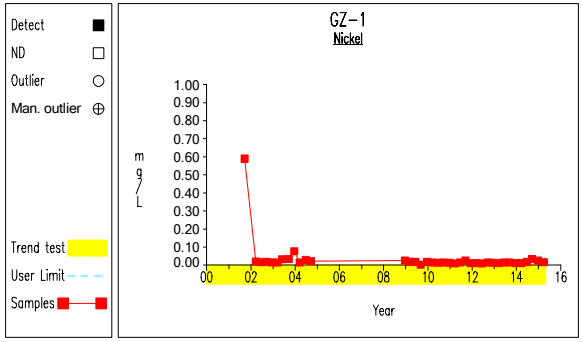
0.0050
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND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ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-1
Nickel
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0.10
0.00
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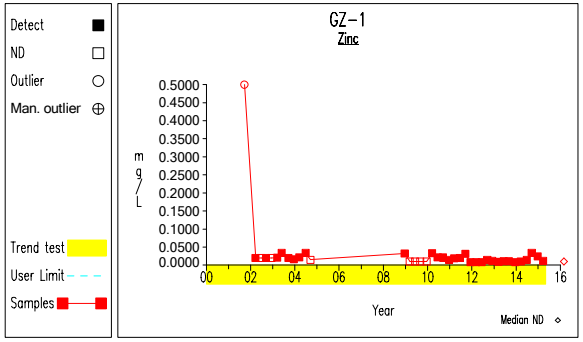
Year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ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-1
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mg/L
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0.3500
0.3000
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0.1500
0.1000
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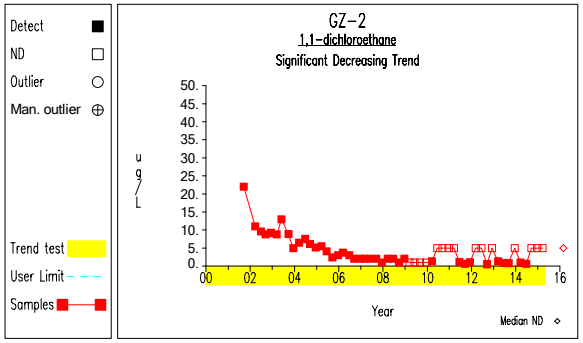
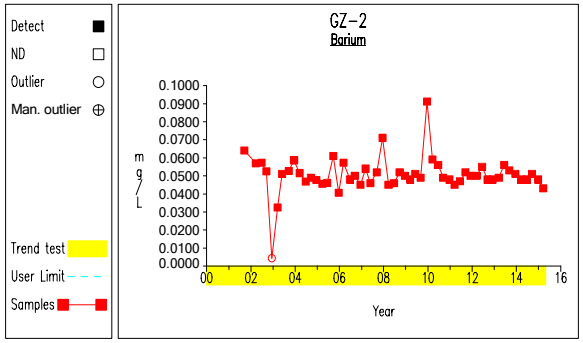
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

Time Series


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-2
1,1-dichloroethane
Significant Decreasing Trend
ug/L
Year
Median ND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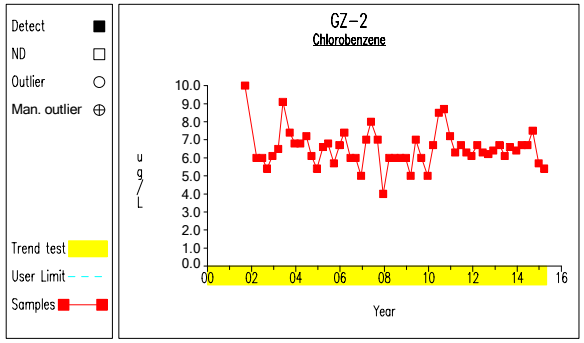
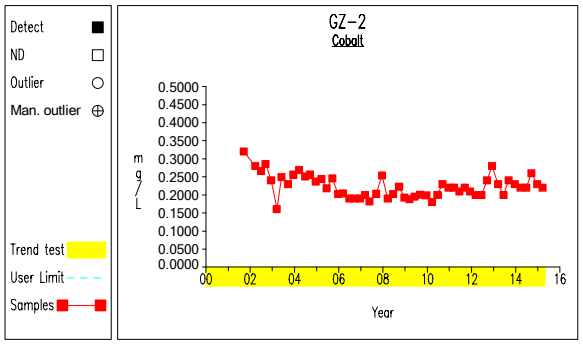
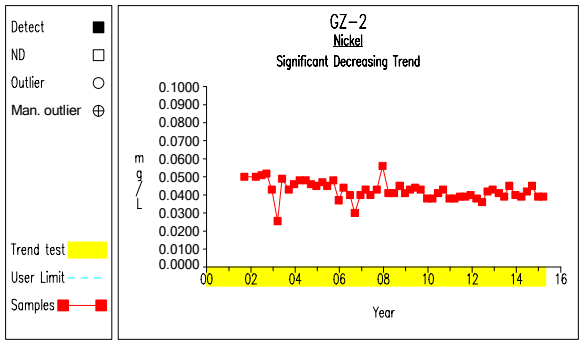
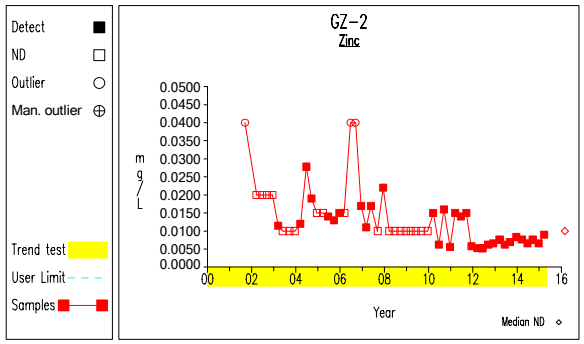
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-2
Barium
mg/L
Year

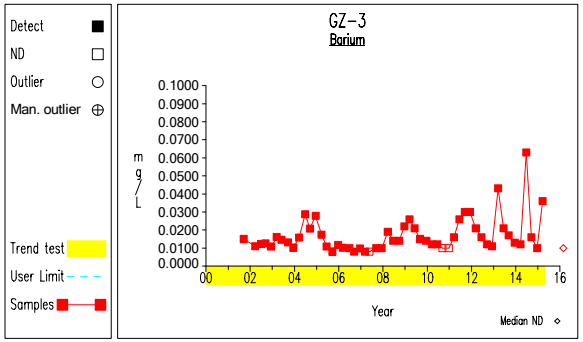

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-2
Chlorobenzene
ug/L
Year

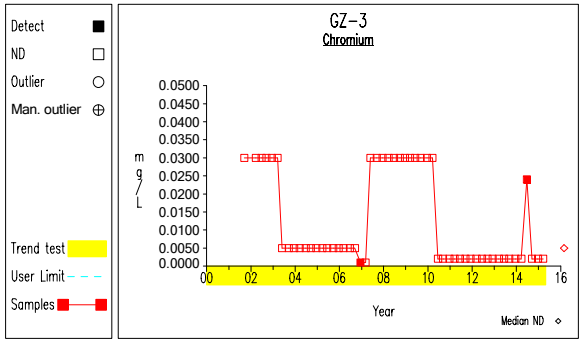

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-2
Cobalt
mg/L
Year

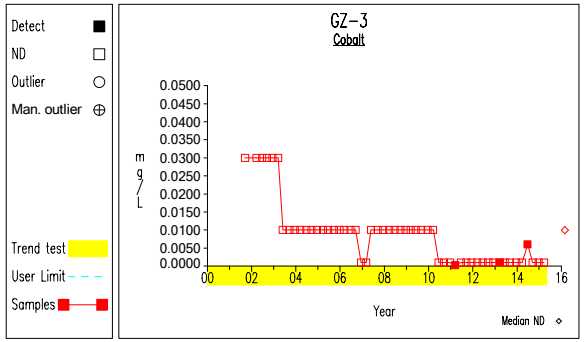

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-2
Nickel
Significant Decreasing Trend
mg/L
Year

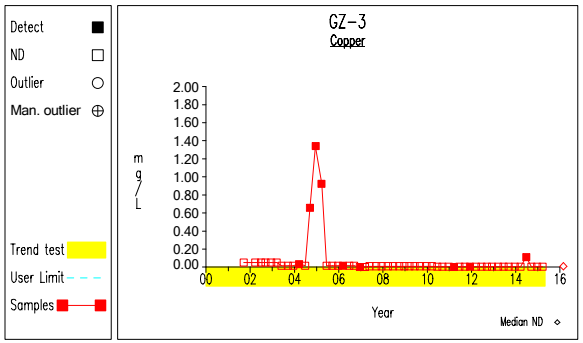

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-2
Zinc
mg/L
Year
Median ND

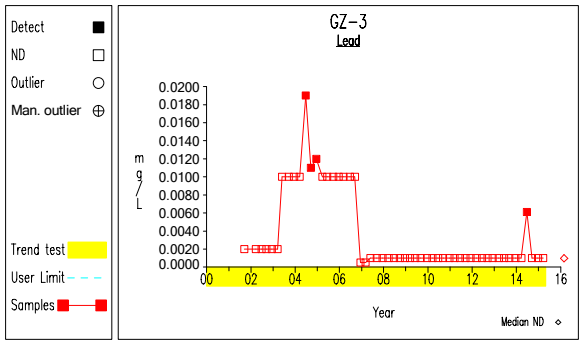
Time Series

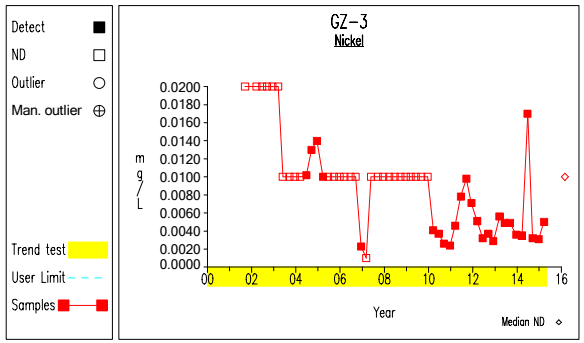

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Barium
mg/L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

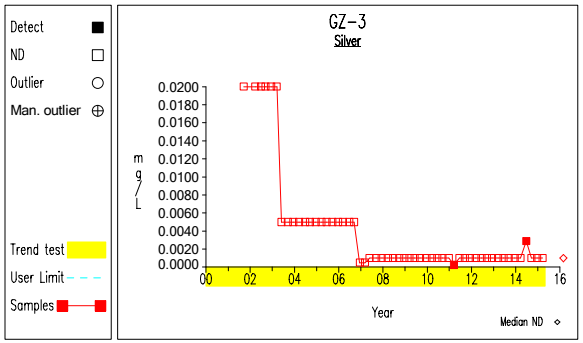

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Chromium
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

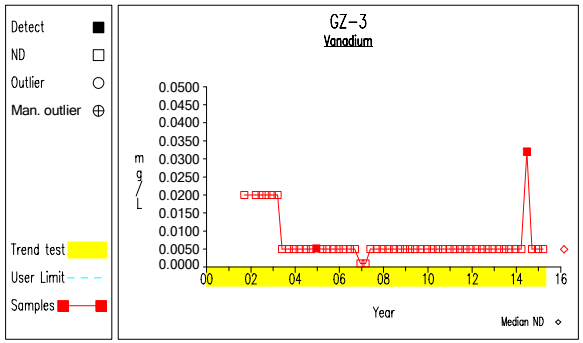

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Cobalt
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

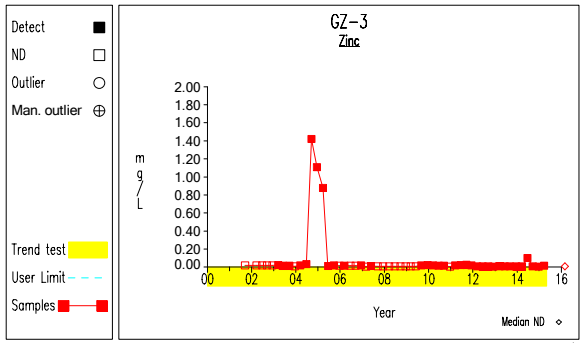

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Copper
mg/L
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
00 02 04 06 08 10 12 14 16
Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Lead
mg/L
0.0200
0.0180
0.0160
0.0140
0.0120
0.0100
0.0080
0.0060
0.0040
0.0020
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

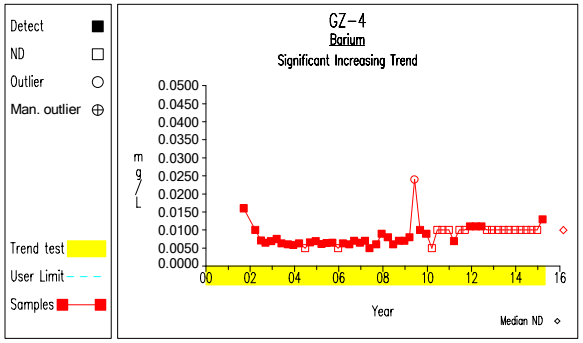

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Nickel
mg/L
0.0200
0.0180
0.0160
0.0140
0.0120
0.0100
0.0080
0.0060
0.0040
0.0020
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

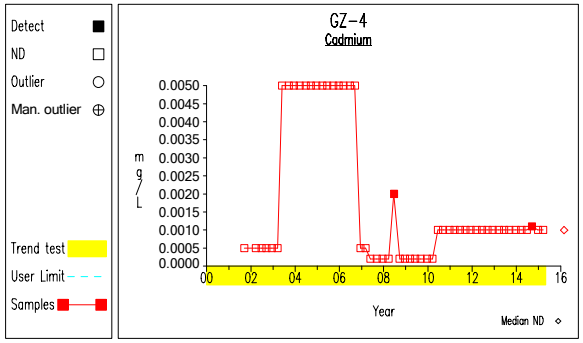

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Silver
mg/L
0.0200
0.0180
0.0160
0.0140
0.0120
0.0100
0.0080
0.0060
0.0040
0.0020
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

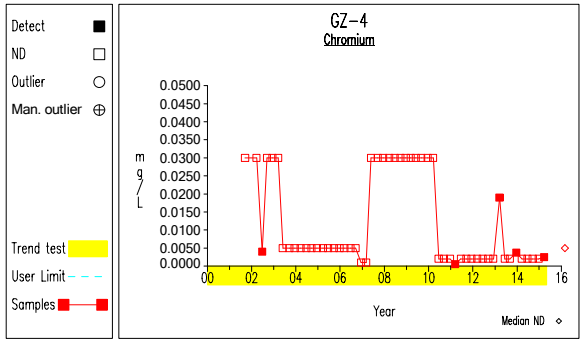

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Vanadium
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

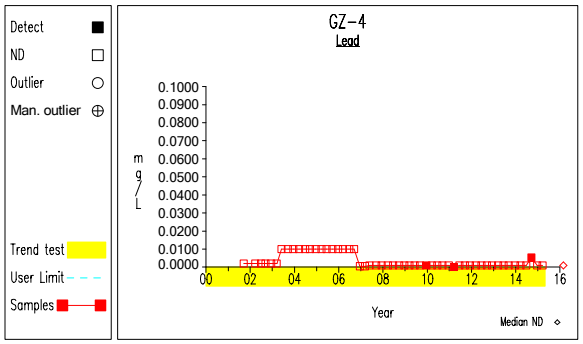

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-3
Zinc
mg/L
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
00 02 04 06 08 10 12 14 16
Year
Median ND

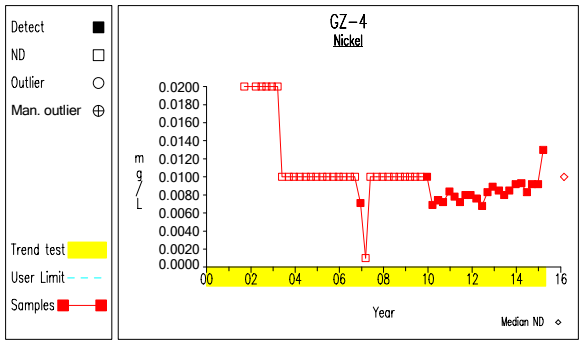
Time Series

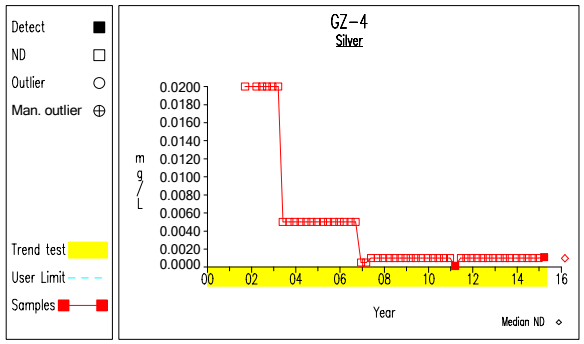

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-4
Barium
Significant Increasing Trend
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

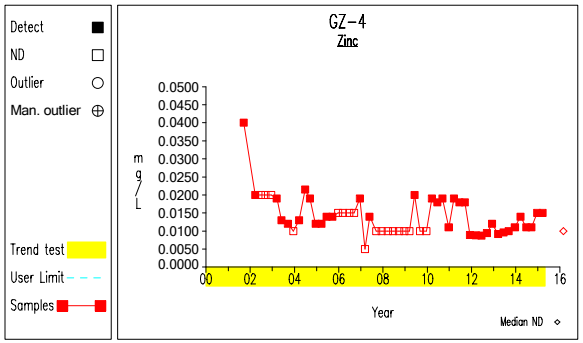

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-4
Cadmium
mg/L
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-4
Chromium
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

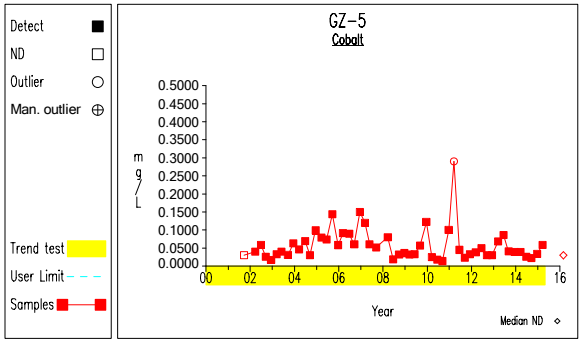

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-4
Lead
mg/L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

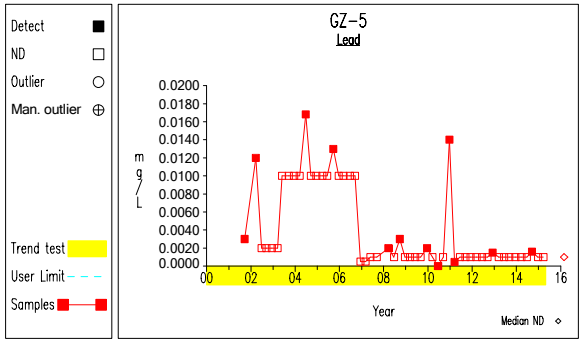

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-4
Nickel
mg/L
0.0200
0.0180
0.0160
0.0140
0.0120
0.0100
0.0080
0.0060
0.0040
0.0020
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

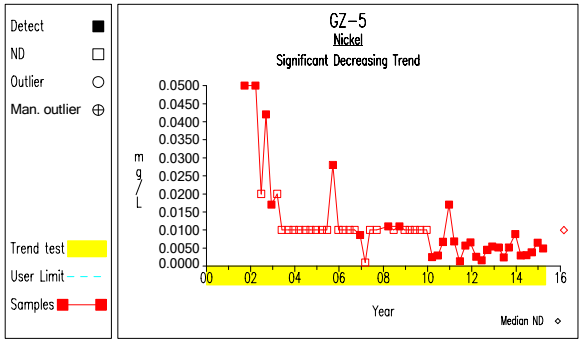

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-4
Silver
mg/L
0.0200
0.0180
0.0160
0.0140
0.0120
0.0100
0.0080
0.0060
0.0040
0.0020
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

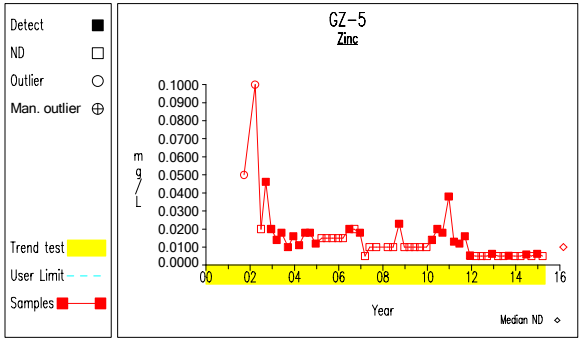

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-4
Zinc
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

Time Series

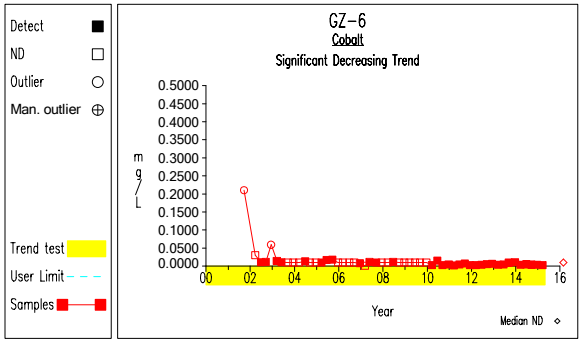

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-5
Cobalt
mg/L
0.5000
0.4500
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

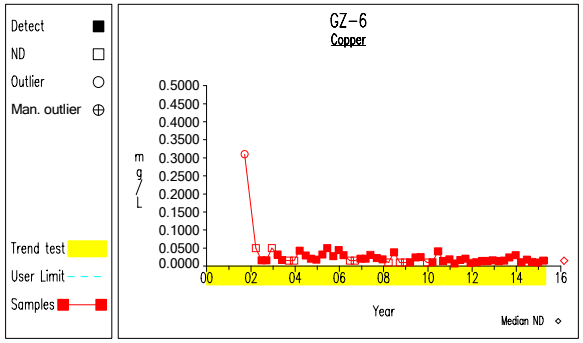

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-5
Lead
mg/L
0.0200
0.0180
0.0160
0.0140
0.0120
0.0100
0.0080
0.0060
0.0040
0.0020
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

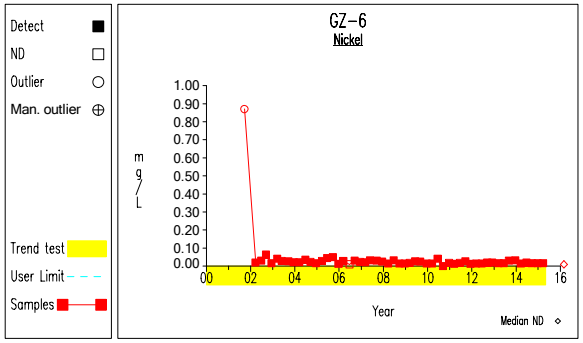

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-5
Nickel
Significant Decreasing Trend
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

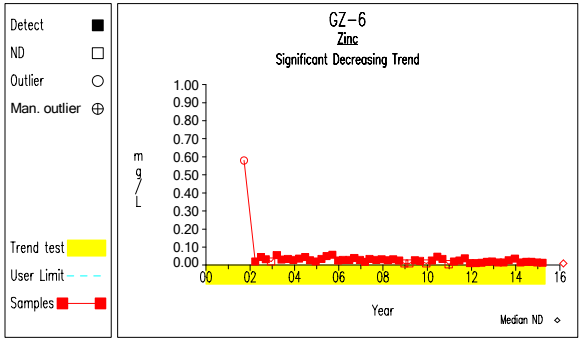

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-5
Zinc
mg/L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

Time Series

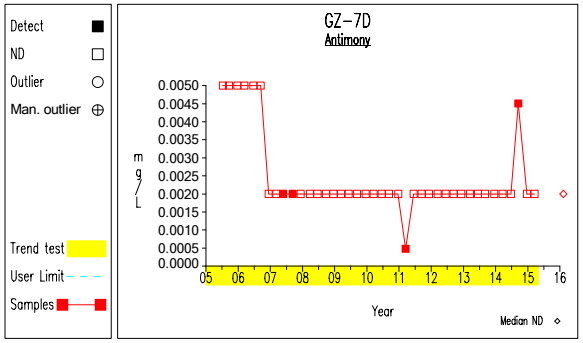

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-6
Cobalt
Significant Decreasing Trend
mg/L
0.5000
0.4500
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

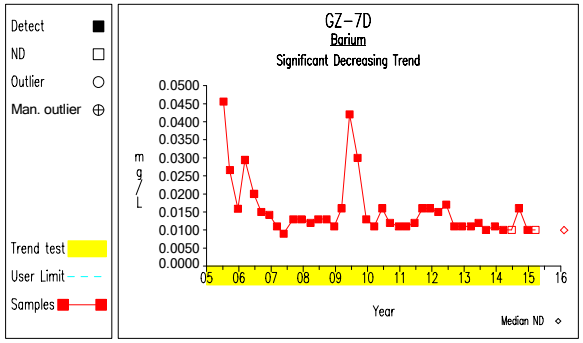

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-6
Copper
mg/L
0.5000
0.4500
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
00 02 04 06 08 10 12 14 16
Year
Median ND

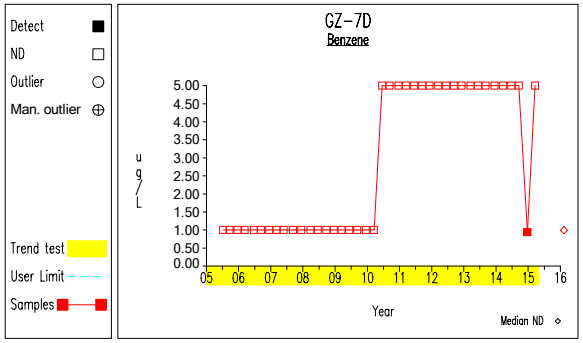

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-6
Nickel
mg/L
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
00 02 04 06 08 10 12 14 16
Year
Median ND

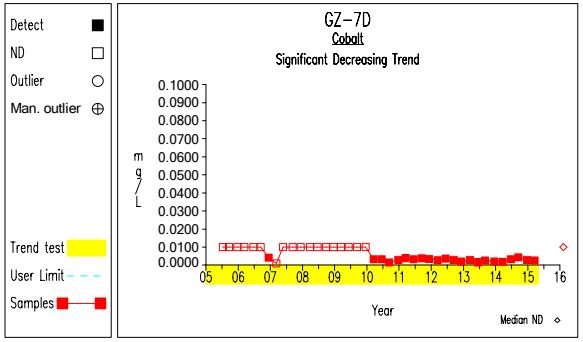

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-6
Zinc
Significant Decreasing Trend
mg/L
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
00 02 04 06 08 10 12 14 16
Year
Median ND

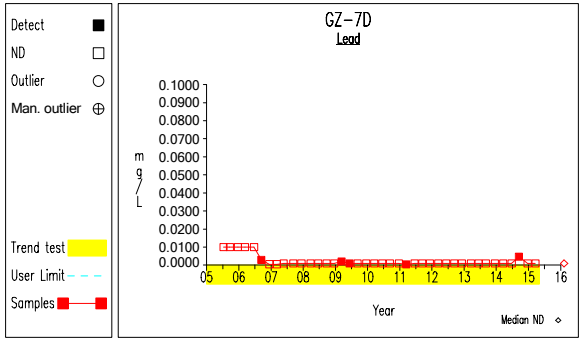
Time Series

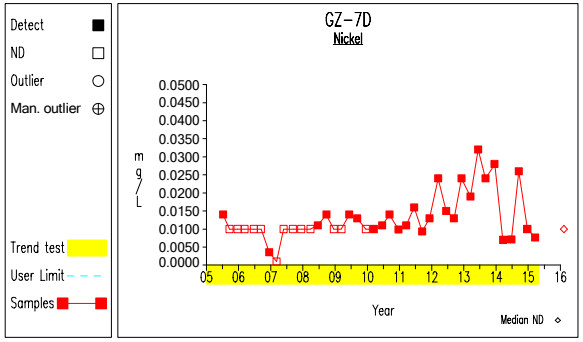

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7D
Antimony
mg/L
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

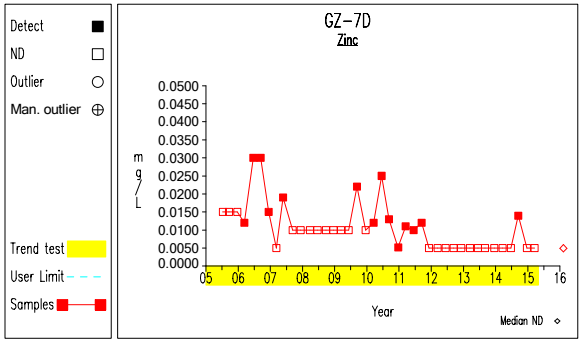

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7D
Barium
Significant Decreasing Trend
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7D
Benzene
ug/L
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

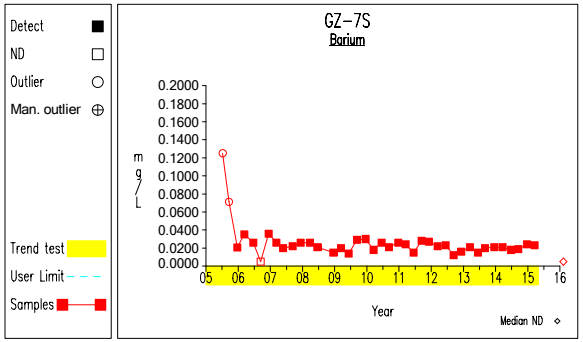

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7D
Cobalt
Significant Decreasing Trend
mg/L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

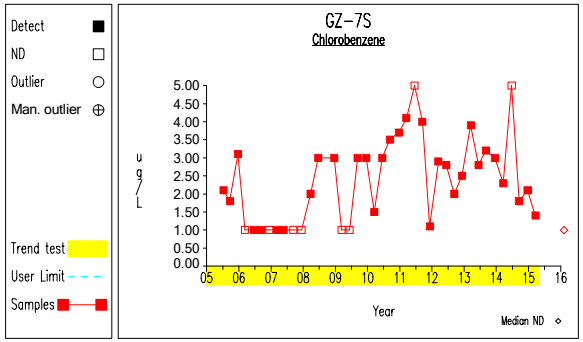

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7D
Lead
mg/L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

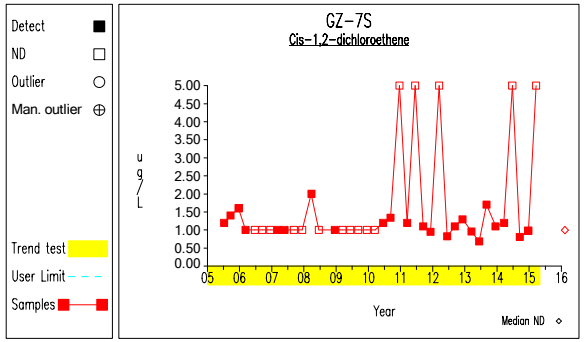

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7D
Nickel
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

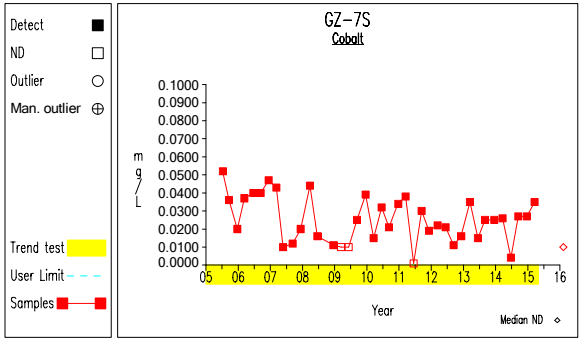

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7D
Zinc
mg/L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

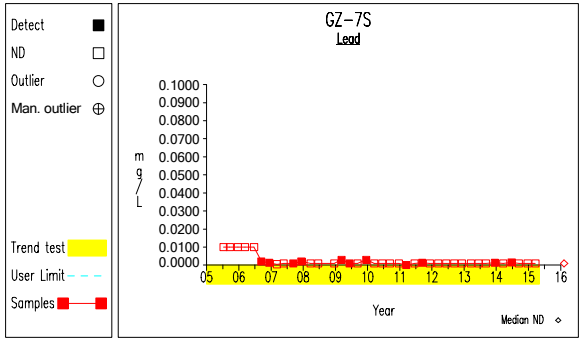
Time Series

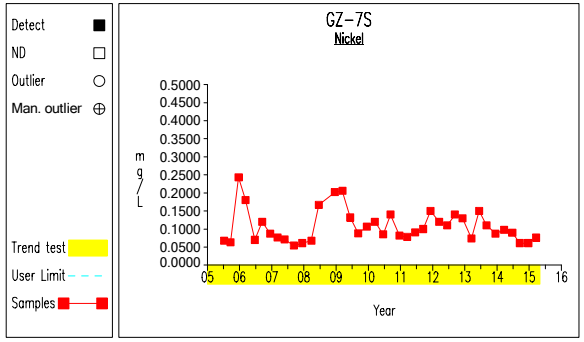

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7S
Barium
mg/L
0.2000
0.1800
0.1600
0.1400
0.1200
0.1000
0.0800
0.0600
0.0400
0.0200
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

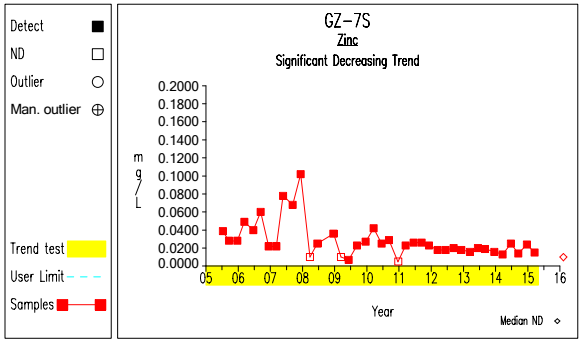

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7S
Chlorobenzene
ug/L
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7S
Cis-1,2-dichloroethene
ug/L
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

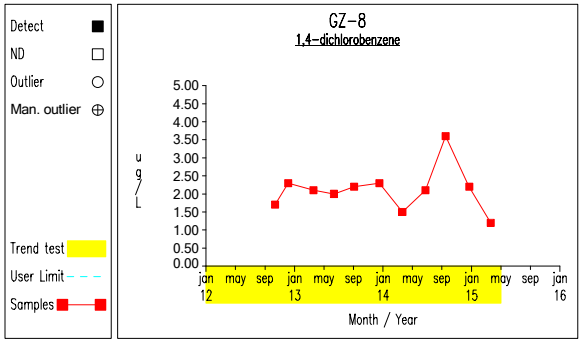

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7S
Cobalt
mg/L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

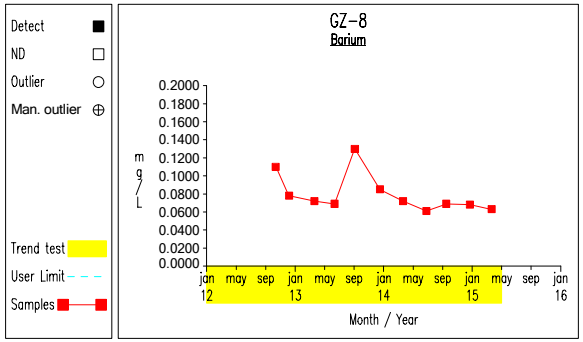

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7S
Lead
mg/L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

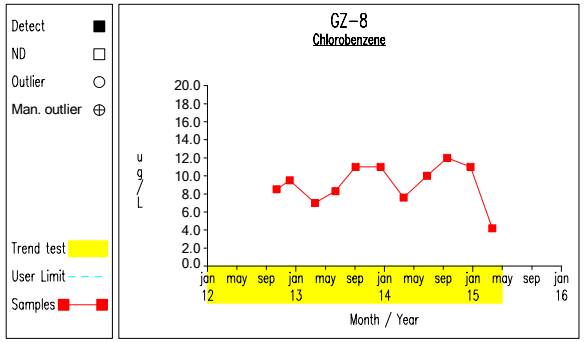

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7S
Nickel
mg/L
0.5000
0.4500
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year

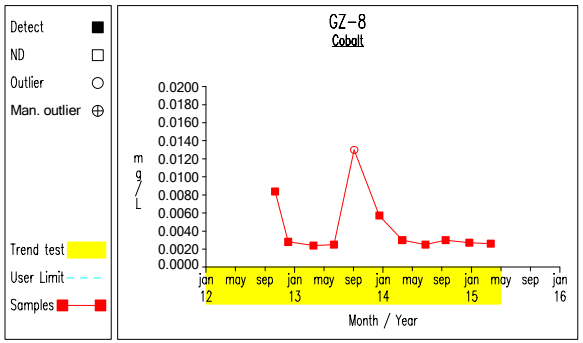

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-7S
Zinc
Significant Decreasing Trend
mg/L
0.2000
0.1800
0.1600
0.1400
0.1200
0.1000
0.0800
0.0600
0.0400
0.0200
0.0000
05 06 07 08 09 10 11 12 13 14 15 16
Year
Median ND

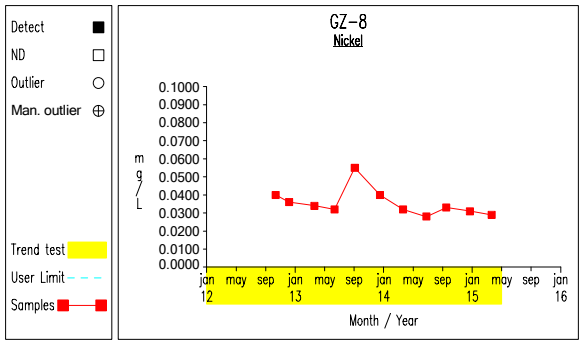
Time Series

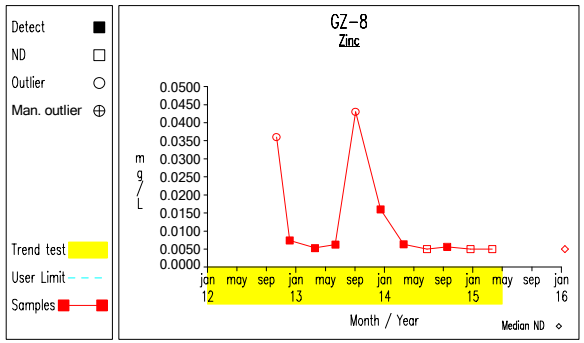

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-8
1,4-dichlorobenzene
u g / L
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-8
Barium
m g / L
0.2000
0.1800
0.1600
0.1400
0.1200
0.1000
0.0800
0.0600
0.0400
0.0200
0.0000
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year

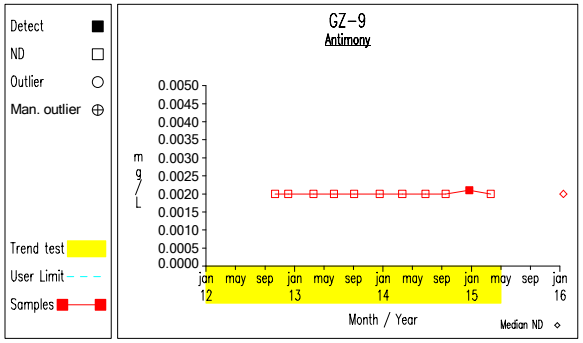

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-8
Chlorobenzene
u g / L
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year

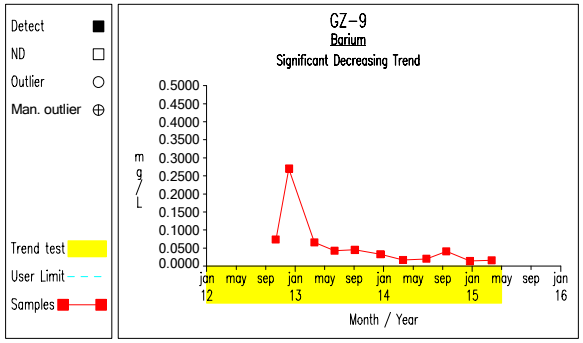

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-8
Cobalt
m g / L
0.0200
0.0180
0.0160
0.0140
0.0120
0.0100
0.0080
0.0060
0.0040
0.0020
0.0000
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year

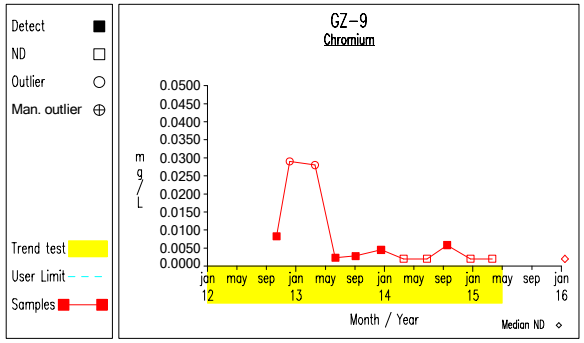

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-8
Nickel
m g / L
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year

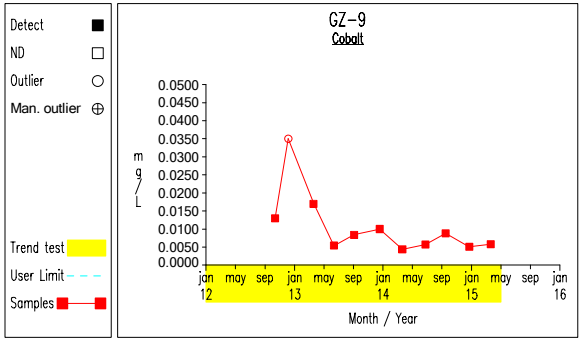

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-8
Zinc
m g / L
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year
Median ND

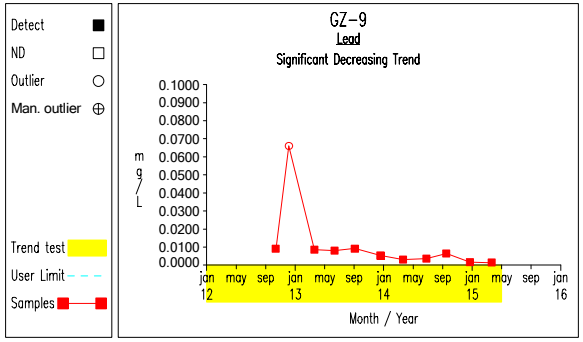
Time Series

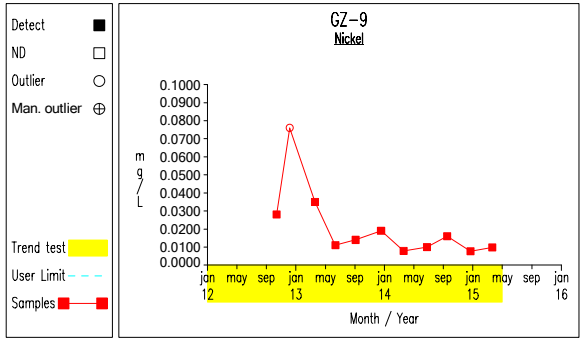

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-9
Antimony
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
mg/L
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year
Median ND

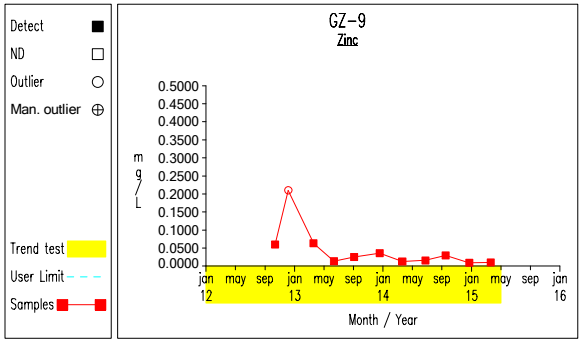

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-9
Barium
Significant Decreasing Trend
0.5000
0.4500
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
mg/L
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-9
Chromium
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
mg/L
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year
Median ND

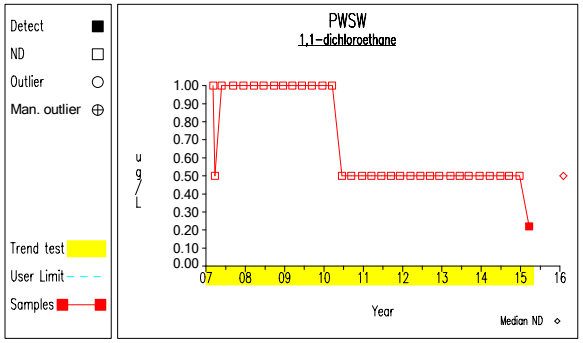

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-9
Cobalt
0.0500
0.0450
0.0400
0.0350
0.0300
0.0250
0.0200
0.0150
0.0100
0.0050
0.0000
mg/L
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year

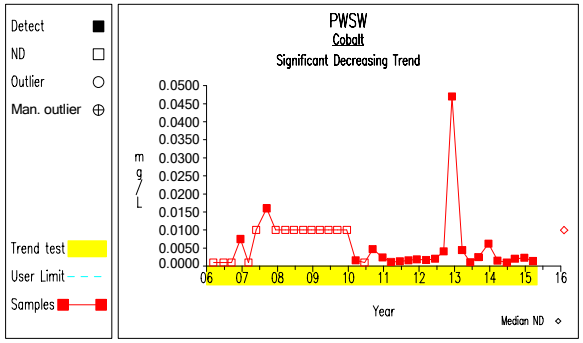

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-9
Lead
Significant Decreasing Trend
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
mg/L
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year

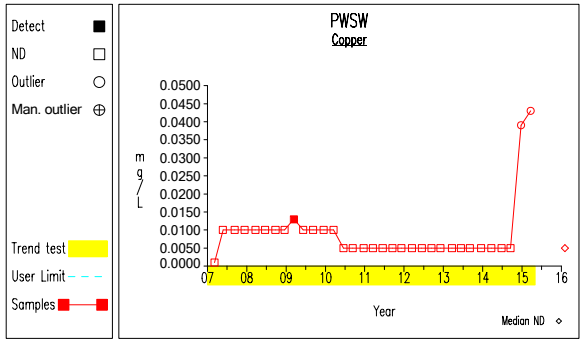

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-9
Nickel
0.1000
0.0900
0.0800
0.0700
0.0600
0.0500
0.0400
0.0300
0.0200
0.0100
0.0000
mg/L
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year

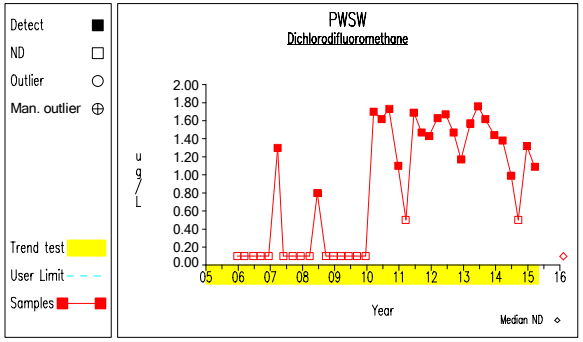

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
GZ-9
Zinc
0.5000
0.4500
0.4000
0.3500
0.3000
0.2500
0.2000
0.1500
0.1000
0.0500
0.0000
mg/L
jan may sep jan may sep jan may sep jan may sep jan
12 13 14 15 16
Month / Year

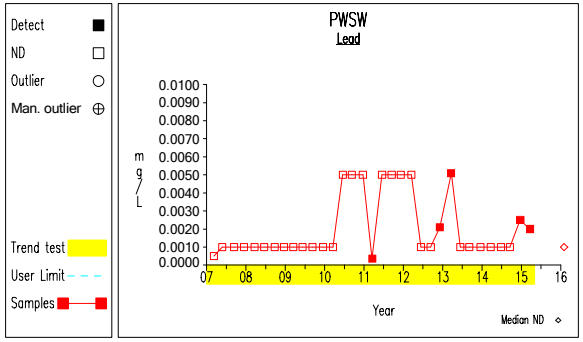
Time Series

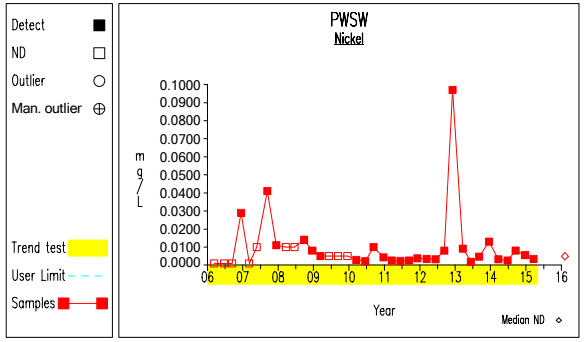

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
PWSW
1,1-dichloroethane
u g / L
Year
Median ND

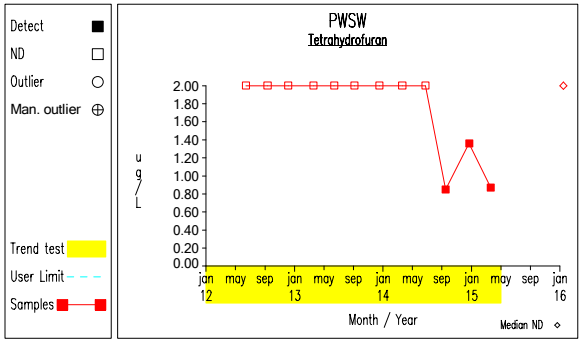

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
PWSW
Cobalt
Significant Decreasing Trend
m g / L
Year
Median ND

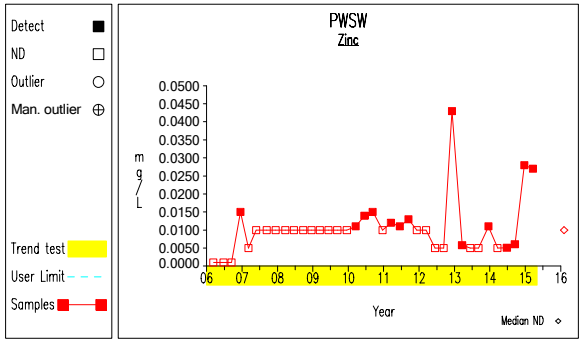

Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
PWSW
Copper
m g / L
Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
PWSW
Dichlorodifluoromethane
u g / L
Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
PWSW
Lead
m g / L
Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
PWSW
Nickel
m g / L
Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
PWSW
Tetrahydrofuran
u g / L
Month / Year
Median ND


Detect
ND
Outlier
Man. outlier
Trend test
User Limit
Samples
PWSW
Zinc
m g / L
Year
Median ND