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2013 GROUNDWATER MONITORING REPORT

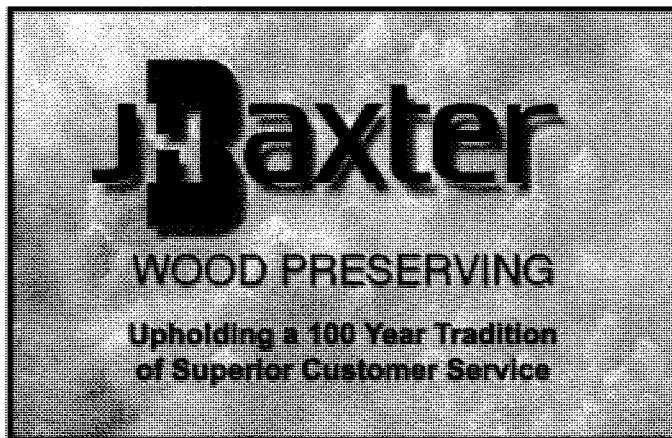
South Woodwaste Landfill

Arlington, Washington

Submitted to:

Snohomish Health District

3020 Rucker Avenue, Suite 104
Everett, Washington 98201



Prepared for:

J. H. Baxter & Company

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Project No. 4-61M-125612.02.1



July 15, 2012

Project No. 4-61M-125612.02.1

Snohomish Health District
3020 Rucker Avenue, Suite 104
Everett, Washington 98201

Attention: Mr. Peter Jorgenson, R.S., Environmental Health Specialist

**Subject: 2013 Groundwater Monitoring Report
South Woodwaste Landfill
J.H. Baxter & Co.
Arlington, Washington**

Dear Mr. Jorgenson:

On behalf of J.H. Baxter & Co. (Baxter), please find enclosed a copy of the 2013 Groundwater Monitoring Report - South Woodwaste Landfill for Baxter's closed woodwaste landfill in Arlington, Washington. This report is being submitted to you in accordance with Washington Administrative Code (WAC) 173-304-490. A copy has also been sent directly to the Washington Department of Ecology.

If you have any questions or comments regarding this report, please do not hesitate to contact me at (503) 639 3400.

Sincerely,

AMEC Environment & Infrastructure, Inc.

J. Stephen Barnett, L.H.G.
Project Manager

Attachments: 2013 Groundwater Monitoring Report, South Woodwaste Landfill

DJ/lp

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The J. H. Baxter & Co. (Baxter) Project Team (Baxter and AMEC) is submitting this Groundwater Monitoring Report for Baxter's South Woodwaste Landfill in Arlington, Washington. This report was prepared by or performed under the direction of a State of Washington Licensed Hydrogeologist. If you have any questions or comments concerning the report, please contact the individuals listed below.

AMEC Environment & Infrastructure, Inc.

Reviewed by:

Leslie Slasor
Project Chemist



J. STEPHEN BARNETT

J. Stephen Barnett, L.H.G.
Senior Geologist



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ACRONYMS AND ABBREVIATIONS

%	percent
µg/L	micrograms per liter
µmhos/cm	micromhos per centimeter
µS/cm	micro Siemens per centimeter
ALS	ALS Environmental Laboratories
AMEC	AMEC Environment & Infrastructure, Inc.
Baxter	J. H. Baxter & Company
cm/sec	centimeters per second
COC	chain of custody
COD	chemical oxygen demand
Edge	Edge Analytical Laboratory
Eh	redox potential
EPA	United States Environmental Protection Agency
MCL	maximum contaminant level
mg/L	milligrams per liter
MRL	method reporting limit
ppf	percent point function
QA	quality assurance
QC	quality control
RL	reporting limits
RPD	relative percent difference
SMCL	secondary maximum contaminant level
TDS	total dissolved solids
TOC	total organic carbon
WAC	Washington Administrative Code



2013 GROUNDWATER MONITORING REPORT

South Woodwaste Landfill
Arlington, Washington

1.0 INTRODUCTION

This report presents quarterly groundwater data collected from February to December 2013 by the J. H. Baxter & Company's (Baxter) for Baxter's closed South Woodwaste Landfill (South Landfill), located at 6520 188th Street NE in the City of Arlington, Snohomish County, Washington (Figure 1). The South Landfill is closed and covered with a vegetated soil cap.

Groundwater sampling was performed on monitoring wells BXS-1, BXS-2, BXS-3, and BXS-4 during quarterly monitoring events conducted in February, June, August, and December 2013. Field measurements were taken for pH, conductivity, temperature, redox potential (Eh), and dissolved oxygen. Methane measurements were not collected during the 2013 sampling events. Field measurement data are summarized in Table 3a.

Groundwater samples were submitted for laboratory analysis of pH, conductivity, ammonia as nitrogen, chemical oxygen demand (COD), chloride, nitrite plus nitrate as nitrogen, total dissolved solids (TDS), sulfate, tannin and lignin, total organic carbon (TOC), total coliform, and dissolved metals (arsenic, barium, , copper, iron, manganese, nickel, and zinc). Laboratory results are presented in Tables 3b and 3c.

All of the monitoring wells were installed in 1988. Monitoring wells BXS-1, BXS-2, and BXS-3 are located hydraulically downgradient of the South Landfill. Monitoring well BXS-4 is located hydraulically upgradient of the South Landfill (Figure 2). Monitoring well BXS-4 represents the background groundwater analytical data, the benchmark which to compare the analytical data from the downgradient wells. Boring logs, groundwater monitoring procedures, and a summary of site conditions encountered during the installation of the monitoring wells are included in the hydrogeologic report prepared by Sweet-Edwards/EMCON, Inc. (EMCON 1989) in 1989.

2.0 HYDROGEOLOGY

As discussed, quarterly groundwater monitoring events were performed during February, June, August, and December 2013 for the South Landfill. Monitoring activities included well purging, water level measurement, groundwater sampling, and laboratory analysis. Groundwater samples



were collected from monitoring well locations BXS-1, BXS-2, BXS-3, and BXS-4 during each quarterly sampling event.

2.1 GROUNDWATER ELEVATIONS

Groundwater levels were measured in each well prior to purging. The elevation of the groundwater surface was calculated relative to the Baxter plant datum by subtracting the depth to water from the surveyed top of casing elevation. Measured groundwater levels throughout the 2013 monitoring period are summarized in Table 1.

Groundwater elevations were highest during the February event for all wells and lowest in December for wells BXS-1, BXS-2, and BXS-3. Groundwater elevation for well BXS-4 was lowest in August. The static groundwater level in wells BXS-1, BXS-2, BXS-3, and BXS-4 fluctuated throughout the year by 8.77 feet, 8.56 feet, 10.12 feet, and 6.24 feet, respectively. Groundwater surface elevations measured in February 2013 (Figure 2) and the December 2013 (Figure 3) are provided for reference.

The groundwater flow direction throughout the year was toward the northwest and is consistent with the regional groundwater flow in the aquifer (Figure 4). The average gradient was 0.015 to 0.017 during 2013 (Table 2).

2.2 GROUNDWATER VELOCITIES

Groundwater velocities (v_x) were estimated using Darcy's Law.

$$v_x = -Ki / n_e$$

Hydraulic conductivity (K) in the fine sand unit beneath the landfill was estimated at 3×10^{-2} to 6×10^{-2} centimeters per second (cm/sec) based on slug tests performed in wells BXS-2 and BXS-4 (EMCON 1989). Porosity (n_e) was assumed to be 0.300 (i.e., 30%).

The average gradient (i) was 0.015 to 0.017, resulting in velocity estimates of 4.25 to 9.64 feet per day. Table 2 shows the calculated hydraulic gradients and groundwater velocities during the monitoring events in 2013.

3.0 GROUNDWATER QUALITY

Groundwater samples were collected February 12 for the first quarter, June 4 for the second quarter, August 25 for the third quarter, and December 2 and 3 for the fourth quarter of 2013. The



sampling procedures used were originally described in Appendix C of EMCON's Hydrogeologic Report (EMCON 1989). Field sampling records are located in Appendix A.

Samples for total coliform analyses were submitted to Edge Analytical Laboratory (Edge) in Burlington, Washington. Samples for pH, conductivity, ammonia as nitrogen, COD, chloride, nitrate plus nitrite as nitrogen, TDS, sulfate, tannin and lignin, TOC, and dissolved metals (arsenic, barium, copper, iron, manganese, nickel and zinc) were submitted to ALS Environmental Laboratories (ALS), formerly Columbia Analytical Services, Inc., located in Kelso, Washington. ALS did not perform cadmium analysis on samples collected during the 2013 quarterly events because cadmium was not specified on the chain of custodies. Additionally, ALS did not report a manganese result for sample BXS-3 from the fourth quarter sampling event. Groundwater levels were measured in each well prior to purging.

3.1 GROUNDWATER SAMPLING

Groundwater sampling was performed using dedicated submersible pumps (bladder pumps). Beginning in the second quarter 2011, field duplicates were collected from Baxter's South Landfill, and equipment rinsate blanks were collected at the North Landfill. As groundwater samples are collected from both landfills on the same day, they are considered part of the same sampling event and the field quality control (QC) is applicable to both datasets.

Prior to sample collection, field measurements were taken for pH, conductivity, temperature, redox potential, and dissolved oxygen. Well headspace was not tested for methane during the 2013 quarterly events. Field measurement data collected from February 2007 through December 2013 are summarized in Table 3a.

Quarterly groundwater samples were submitted for laboratory analysis of pH, conductivity, ammonia as nitrogen, COD, chloride, nitrite plus nitrate as nitrogen, TDS, sulfate, tannin and lignin, TOC, total coliform, and dissolved metals (arsenic, barium, copper, iron, manganese, nickel, and zinc). The analytical data for the groundwater samples are summarized in Tables 3b, and 3c. Since the statistical analysis, as described in Section 4.3, compares each quarterly sample to the previous three quarterly samples in order to provide a four sample running average, the data tables include results from previous sampling events. Laboratory analytical reports and chain-of-custody (COC) forms for the 2013 groundwater monitoring events are presented in Appendix B.



4.0 DATA REVIEW

This section describes the data review process that was performed to evaluate the adequacy and quality of the analytical data from the 2013 groundwater monitoring events. The objective of the data review is to identify estimated, unreliable, or invalid measurements. Information on the reliability of the data is critical to the interpretation of the results. The review was performed according to guidelines prepared by the United States Environmental Protection Agency ([EPA] 1994).

4.1 FIELD QUALITY ASSURANCE/QC (QA/QC)

During the quarterly groundwater sampling events, field duplicates were prepared and containerized by Baxter field personnel in accordance with standard practice. The June, August, and December sampling event field duplicate samples were collected from well BXS-1 during each quarterly event and were labeled BXS-5. The field reports do not list where the February field duplicate was collected. However, historically these have been collected from well BSX-1, and based on the time stamps listed in the February sampling event COC we can identify the BSX-5 location source as well BXS-1.

Field duplicate results aid in the assessment of sampling and analytical precision. Analytical results for the original and duplicate samples collected from each sampling event were evaluated using the relative percent difference (RPD). RPD is the difference between the two results divided by the mean and expressed as a percent. The RPD between the two results was calculated when both the natural sample and duplicate sample had positive results. For analytes with concentrations greater than or equal to 5 times their reporting limit, when the RPD is greater than 35 percent (%), the reported values are considered estimated concentrations. For analytes with concentrations less than 5 times their reporting limit (RL), the reported values are considered estimated if the absolute difference between them is greater than the value of the reporting limit. The precision of the field duplicate samples collected in 2013 is acceptable, with the exception of the coliform results from the fourth quarter sampling event. AMEC J qualified the detected coliform results from the fourth quarter BXS-1 sample and its field duplicate due to potential analytical imprecision.

In addition to the field duplicates collected from the South Landfill, a field rinsate blank was collected from the North Landfill during each quarterly sampling event. The accuracy of the field rinsate blanks collected in 2013 is acceptable. Field rinsate blank detections were below the secondary maximum contaminant levels (SMCLs) and/or laboratory results for field samples were



consistent with historical values, indicating that the contamination is minimal. Results from the field blank sample are shown in Table 3b and Table 3c.

4.2 LABORATORY QA/QC

Collected groundwater samples were received by the laboratory with the proper COC documentation, were properly preserved, and at the proper temperature. Samples for total Coliform were analyzed by Edge. The remaining analyses were performed by ALS.

With the exception of pH, all analyses were performed within the required holding time for the parameters of interest. The samples were analyzed for pH between one and three days after collection. The method used for pH analysis, Standard Methods 4500-H+ B (APHA 1998), does not list an analysis holding time. The EPA method for pH analysis of water samples, Method 150.1 (EPA 1999), specifies that pH analyses be performed "as soon as possible preferably in the field at the time of sampling". For that reason, the field analyzed pH results are utilized for trend analysis and statistical evaluation.

The method blanks are free of water quality parameters above the RL, with the following exceptions. Ammonia as nitrogen, conductivity, TOC, tannin and lignin, nitrate plus nitrite, and dissolved manganese were detected at low levels in some corresponding method blank. Ammonia as nitrogen, tannin and lignin, and TOC detections in the field samples are within historical ranges. Conductivity detections in the method blanks do not affect data quality because conductivity is a physical property of water and the field samples are within their historical ranges. Nitrate plus nitrite and dissolved manganese method blank concentrations are below the SMCLs and indicate that laboratory contamination was minimal. Field samples were not U qualified for ammonia as nitrogen, conductivity, tannin and lignin, TOC, nitrate plus nitrite, or dissolved metals method blank detections, and data usability is not adversely affected.

Laboratory duplicate RPDs were below laboratory limits or, for sample concentrations below 5 times the RL, the difference between parent and duplicate sample concentrations were below the RL, and data usability is not adversely affected.

Matrix spike recoveries were within laboratory limits, or the analyte concentration was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery. Data usability is not adversely affected.

The laboratory reports are complete and contain results for all samples and corresponding analyses requested on the COC forms.



4.3 STATISTICAL ANALYSIS OF DATA

Groundwater sample analysis results were statistically evaluated to assess if there was a significant difference between the downgradient wells and the upgradient background well. The following approach was used for performing the statistical analysis:

- **Non-Detects.** Non-detect results were replaced with a value of half of the laboratory method reporting limit (MRL).
- **Data Distribution.** A key assumption in the Student's t-test is that the data are normally distributed.
- **Parametric hypothesis testing.** Parametric hypothesis testing was performed using Student's t-test for all parameters in both the upgradient and downgradient wells. For each comparison the null hypothesis was that there was no difference between the downgradient and upgradient concentrations. The null hypothesis was tested using a two-tailed test at a significance level of 0.025. The t-test statistic (t_{stat}) was calculated from the average and variance of quarterly sampling results in a downgradient well and the upgradient well. Each quarterly sample was compared to the previous three quarterly samples to provide a four sample running average. The average concentration in the downgradient well was significantly higher than the upgradient well if t_{stat} was greater than the critical test statistic (t_c). The critical test statistic was computed using the percent point function (ppf). The ppf is the inverse of the cumulative distribution function.

Statistically significant detections above the background well (BXN-4) concentrations are shown in **bold** in the tables presented in Appendix C. Statistically significant detections below background concentrations are shown in ***bold italics*** in the tables presented in Appendix C.

5.0 DISCUSSION OF RESULTS

5.1 STATISTICAL RESULTS

Appendix C presents the results of the statistical analyses for each individual parameter tested in the groundwater samples from wells BXS-1 through BXS-4. These include average concentration, variance, standard deviation, and Student's t-test statistic. The parameters detected at statistically higher concentrations in specific downgradient wells compared to the upgradient well (Table 4) are listed below:

- Ammonia and dissolved arsenic for well BXS-3;
- Chloride, COD, field conductivity, dissolved manganese, dissolved nickel, TDS, and TOC for BSX-1, BSX-2, and BSX-3;



- Dissolved barium, dissolved iron, and Tannin and Lignin for wells BSX-2 and BSX-3;
- Nitrate plus nitrite as nitrogen for well BXS-1 and BXS-3; and
- Sulfate for well BXS-1.

5.2 CONCENTRATION TRENDS OVER TIME

Figures 5 through 18 show the concentration trends from 2007 through 2013 for each parameter discussed below.

Ammonia as Nitrogen (Figure 5) - The samples collected from well BXS-3 during all monitoring events in 2013 are higher than the concentrations in background well BXS-4, ranging from 0.71 to 1.01 milligrams per liter (mg/L). The ammonia concentrations in wells BXS-1, BXS-2, and BXS-4 have remained steady since 2007.

Arsenic (Figure 6) - Dissolved arsenic concentrations in well BXS-3 were above background levels during all four quarters of 2013, ranging from 119 to 164 micrograms per liter ($\mu\text{g/L}$). The dissolved arsenic level detected in well BXS-3 in November 2010 was the highest observed concentration (186 $\mu\text{g/L}$) since monitoring began in April 2000. Concentrations of arsenic in wells BXS-1 and BXS-2 have been stable during the last 7 years. Arsenic concentrations in 2013 have been within historical limits.

Barium (Figure 7) - Concentrations of dissolved barium in downgradient wells BXS-2 and BXS-3 were higher than the concentrations in background well BXS-4 during 2013. The concentrations of barium in the most downgradient well, BXS-1, were below the corresponding concentrations in the background well. Concentrations of barium in background well BXS-4 and upgradient wells BSX-1, BXS-2, and BXS-3 were stable during 2013 and within their historical ranges.

COD (Figure 8) - The COD concentrations in the downgradient wells were higher than the corresponding COD concentrations in background well BXS-4 during 2013. COD concentrations in all wells were within historical levels during 2013 and are relatively stable.

Chloride (Figure 9) - The concentrations of chloride in down gradient wells BXS-1, BXS-2, and BXS-3 for all 2013 monitoring events were slightly greater than the corresponding concentrations in background well BXS-4, except for well BXS-3 during the August event which was below the corresponding background concentrations. Concentrations of chloride have been relatively stable over the last 7 years.



Conductivity (Field) (Figure 10) - Field conductivity measurements of the groundwater samples from all of the downgradient wells were greater than the conductivity of the background well during all four 2013 monitoring events. Conductivity values observed in wells BXS-1, BXS-2, and BXS-3 were within historical levels in 2013, and are relatively stable.

Iron (Figure 11) - The dissolved iron concentrations in wells BXS-2 and BXS-3 were above the corresponding background concentrations in 2013. Iron concentrations in well BXS-1 were below the background concentrations in well BXS-4 during all of 2013. The dissolved iron concentrations were within their historical ranges during 2013 and are stable.

Manganese (Figure 12) - The concentrations of dissolved manganese in downgradient wells BXS-1, BXS-2 and BXS-2 during all four quarters of 2013 were higher than the corresponding levels in the background well BXS-4. Manganese concentrations were within historical levels in wells BXS-2, BXS-3, and BXS-4 during 2013 and are relatively stable.

Nickel (Figure 13) - Dissolved nickel was detected at low concentrations in wells BXS-1, BXS-2, and BXS-3 during the quarterly monitoring events of 2013. Dissolved nickel concentrations have been relatively stable for the last 7 years, with the exception of an anomalous spike in 2009.

Sulfate (Figure 14) - During all four monitoring events of 2013, the sulfate concentrations in downgradient well BXS-1 were greater than corresponding background well concentrations. The sulfate concentrations in wells BXS-2 and BXS-3 were lower than the concentrations in the background well. The concentration of sulfate in all wells has remained within historical levels.

Tannin and Lignin (Figure 15) - Concentrations of tannin and lignin detected in wells BXS-2 and BXS-3 for all four monitoring events were greater than the corresponding concentrations in the background well. Tannin and lignin concentrations in well BXS-1 were lower than the corresponding background well concentrations during 2013. Tannin and lignin levels in wells BXS-1, BXS-2, and BXS-4 have remained stable for the last 7 years.

TOC (Figure 16) - Concentrations of TOC in the groundwater samples collected from the downgradient wells were greater than the TOC detected in background well BXS-4. Concentrations of TOC in all wells have remained relatively stable over the last 7 years, with a slight downward trend.

Field pH (Figure 17) - 2013 field pH measurements in all of the downgradient wells were less than the background well value. Field pH measurements have been within historical ranges for the last



7 years, with the exception of the uncharacteristically low results from the May and August 2012 events for well BXS-1.

TDS (Figure 18) - TDS measured in the downgradient wells were higher than the TDS in the background well for all 2013 monitoring events. TDS concentrations were within historical levels during 2013.

Methane - The headspace of each well was not tested for methane during 2013.

5.3 COMPARISON TO STANDARDS

Federal MCLs are established by EPA as the primary drinking water being equivalent to the drinking water standards. SMCLs are guidelines related to criteria other than adverse health effects. In Washington State, groundwater water quality standards are provided in Washington Administrative Code (WAC) 173-200. Washington State water quality standards are similar to the Federal standards for most of the Site-related analytes where available, with the exception of arsenic, barium, cadmium, and copper. Federal MCLs and SMCLs, and Washington State standards are listed in Tables 3a, 3b, and 3c.

5.3.1 Comparison to MCLs

Of the monitored parameters, MCLs apply to arsenic, barium, cadmium, copper, nickel, and nitrate plus nitrite as nitrogen. The MCLs were not exceeded in the monitoring wells during the 2013 quarters, with the following exception:

- **Dissolved arsenic** concentrations in well BXS-3 during the all four 2013 quarterly monitoring events are greater than the MCL of 10 µg/L. The arsenic concentrations ranged from 119 to 164 µg/L in well BXS-3, which is lower than the maximum concentration observed in 2010.

5.3.2 Comparison to SMCLs

Among the monitored parameters, SMCLs apply to pH, conductivity, chloride, TDS, sulfate, iron, manganese, and zinc. The SMCLs were not exceeded in the monitoring wells during the 2012 quarters, with the following exceptions:

- **Field Conductivity** measurements were taken at the time of sample collection. Field conductivity values were below the SMCL of 700 micro Siemens per centimeter (µS/cm) for background well BXS-4 and in the most downgradient well BXS-1 during 2013. Field conductivity values were above the SMCL during all the 2013 monitoring events for well



BXS-2, with values ranging from 869 to 892 $\mu\text{S}/\text{cm}$. Conductivity was above the SMCL during the 2013 August monitoring event for well BXS-3 at 709 $\mu\text{S}/\text{cm}$.

- **Laboratory Conductivity** measurements were taken by ALS. Conductivity values for the background well BXS-4 and down gradient wells BXS-1 and BXS-3 were below the SMCL of 700 micromhos per centimeter ($\mu\text{mhos}/\text{cm}$) during 2013. Conductivity values for well BXS-2 were higher than the SMCL, ranging from 866 to 945 $\mu\text{mhos}/\text{cm}$.
- **TDS** levels in down gradient wells BXS-1 and BXS-3, and background wells BXS-4 were below the SMCL of 500 mg/L during 2013. TDS was higher than the SMCL in well BXS-2 during the year, with concentrations ranging from 530 to 574 mg/L.
- **Dissolved iron** concentrations in groundwater samples from wells BXS-1 and BXS-4 were below the SMCL of 300 $\mu\text{g}/\text{L}$ during 2013. Samples from wells BXS-2 and BXS-3 had dissolved iron concentrations that were higher than the SMCL. Dissolved iron detected in well BXS-2 ranged from 400 to 450 $\mu\text{g}/\text{L}$. Dissolved iron concentrations in well BXS-3 ranged from 91,600 to 109,000 $\mu\text{g}/\text{L}$.
- **Dissolved manganese** concentrations detected in all wells exceeded the 50 $\mu\text{g}/\text{L}$ SMCL during the 2013 monitoring period. Concentrations in well BXS-3 were the highest, ranging from 10,700 to 14,800 $\mu\text{g}/\text{L}$.
- **Field pH** measurements were taken at the time of sample collection. Field pH readings were within the SMCL range of 6.5 to 8.5 standard pH units during all 2013 quarter monitoring events for well BXS-4. Field pH readings for wells BXS-1, BXS-2, and BXS-3 were within below the SMCL range during all four quarters of 2013. Readings for these three wells ranged from 5.63 to 6.30 standard pH units during 2013.

5.3.3 Comparison to Washington State Standards

Washington State water quality standards are similar to the Federal MCL or SMCL for most of the Site-related compounds, with the exception of arsenic, barium, cadmium, and copper. Of these metals, only arsenic was detected above the Washington State standard of 0.05 $\mu\text{g}/\text{L}$ for total metals in BXS-1 and BXS-4 during all four quarters. Arsenic was also detected in BXS-2 during the last three quarters of 2013. Arsenic was also detected in the field rinsate during the June event at a concentration of 1.1 $\mu\text{g}/\text{L}$ (estimated).

6.0 SUMMARY

Quarterly groundwater monitoring samples were collected from one upgradient well and three downgradient wells during 2013 at the J.H. Baxter South Woodwaste Landfill. The samples were analyzed for 11 groundwater quality parameters and 8 dissolved metals.



Groundwater samples collected during the 2013 monitoring events did not exceed the MCLs for any of the monitored parameters, with the exception of arsenic. Dissolved arsenic concentrations in well BXS-3 exceeded the MCL during all four 2013 quarterly monitoring events.

There were no exceedances of the SMCLs for chloride, sulfate, or dissolved zinc in the groundwater samples collected during the 2013 quarterly groundwater monitoring events. However, SMCLs were exceeded at least once in one or more of the groundwater samples collected during 2013 for field and laboratory conductivity, field pH, TDS, dissolved iron, and dissolved manganese.

Arsenic was present above the Washington State standard were present in BXS-1 and BXS-4 (background well) during all four quarters, and was also detected in BXS-2 during the last three quarters of 2013.



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WAC 246-290-310, Washington Administrative Code. Maximum contaminant levels (MCLs) and maximum residual disinfectant levels (MRDLs). Olympia, Washington.



LIMITATIONS

This report was prepared exclusively for J.H. Baxter & Company by AMEC Environment & Infrastructure, Inc. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This 2013 Groundwater Monitoring Report is intended to be used by J.H. Baxter & Company for the South Woodwaste Landfill, Arlington, Washington only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES



TABLES

TABLE 1
Summary of Groundwater Elevations in 2013
South Woodwaste Landfill

	Inner Casing Diameter (inches)	Depth of Well (ft bgs)	Length of Screen (ft)	TOC Elevation (ft asd)	TOC Elevation 10/2002 ^a (ft msl)	Screened Interval (ft bgs)		Date	Depth to GW from TOC (ft)	Groundwater Elevation (ft asd)
BXS-1	2	47.90	10	99.59	142.65	37.90	47.90	2/12/13	26.75	115.90
								6/04/13	29.22	113.43
								8/25/13	32.75	109.90
								12/02/13	35.52	107.13
BXS-2	2	45.40	10	99.77	142.89	35.40	45.40	2/12/13	25.13	117.76
								6/04/13	27.25	115.64
								8/25/13	30.75	112.14
								12/02/13	33.69	109.20
BXS-3	2	44.15	10	98.99	142.07	34.15	44.15	2/12/13	19.76	122.31
								6/04/13	23.00	119.07
								8/25/13	26.65	115.42
								12/02/13	29.88	112.19
BXS-4	2	47.40	10	100.34	143.42	37.40	47.40	2/12/13	8.88	134.54
								6/04/13	11.77	131.65
								8/25/13	15.12	128.30
								12/02/13	13.60	129.82

Notes:

(a) Wells were resurveyed in October 2002. Groundwater elevations are based on the 2002 survey.

bgs = below ground surface

ft msl = feet above mean sea level.

ft asd = feet above assumed site datum

TOC = top of casing

TABLE 2
Hydraulic Gradient and Groundwater Velocity Calculations
South Woodwaste Landfill

Average Gradient		Hydraulic Conductivity		Porosity	Velocity		Velocity	
<i>i</i>		<i>K</i>		<i>n_e</i>	<i>v</i>		<i>v</i>	
Date	(cm/cm)	(cm/sec)			(cm/sec)		(ft/day)	
2/12/13	0.017	3.00E-02	to	0.300	0.002	to 0.003	4.819	to 9.638
6/04/13	NC				-	to -	-	to -
8/25/13	NC				-	to -	-	to -
12/02/13	0.015				0.002	to 0.003	4.252	to 8.504

Notes:

NC = Not calculated

cm/cm = centimeter per centimeter

cm/sec = centimeter per second

ft/day = feet per day

TABLE 3a
Field Parameters from Groundwater Sampling
South Woodwaste Landfill

	pH (standard units)				Conductivity (µS/cm)				Temperature (°C)			
MCL / SMCL ^(a)	6.5 - 8.5				700				--			
WA WQ Std. ^(b)	6.5 - 8.5				--				--			
	BXS-4	BXS-3	BXS-2	BXS-1	BXS-4	BXS-3	BXS-2	BXS-1	BXS-4	BXS-3	BXS-2	BXS-1
Feb-07	8.60	7.12	6.81	6.75	166	730	672	299	9.5	13.2	12.1	11.4
Apr-07	8.09	6.62	6.47	6.31	176	808	796	379	9.5	13.1	12.3	11.7
Jul-07	8.25	6.64	6.52	6.38	222	867	922	415	9.8	13.1	12.5	12.0
Oct-07	7.83	6.30	6.19	6.02	199	810	804	495	9.8	12.8	12.5	12.0
Jan-08	7.81	6.25	6.18	5.91	196	788	772	369	9.3	12.1	12.1	11.4
Apr-08	7.66	6.23	6.10	5.98	201	846	794	485	9.1	12.9	12.2	11.8
Jul-08	7.98	6.42	6.37	6.14	180	726	732	510	9.4	12.9	12.4	12.0
Oct-08	8.32	6.55	6.48	6.28	177	722	733	496	9.6	12.7	12.4	12.0
Feb-09	8.09	6.77	6.56	6.42	176	734	749	401	9.2	12.7	12.0	11.6
May-09	8.25	6.44	6.35	6.33	185	736	812	335	9.4	13.2	12.6	12.0
Aug-09	7.89	6.52	6.64	6.41	185	695	797	309	9.4	12.6	12.3	11.9
Nov-09	7.96	6.50	6.46	6.37	192	755	815	315	9.3	12.2	12.0	11.5
Feb-10	8.05	6.59	6.55	6.58	180	726	799	274	9.3	12.9	12.1	12.0
May-10	7.46	6.04	5.96	5.90	189	719	853	288	9.3	12.8	17.0	12.0
Aug-10	7.63	5.98	5.87	5.94	230	690	833	309	9.7	12.5	12.3	12.3
Nov-10	7.99	6.37	6.52	6.34	184	694	813	344	9.7	12.8	12.1	11.9
Feb-11	8.02	6.22	6.16	6.24	187	710	844	334	9.5	12.8	11.9	12.0
May-11	7.99	6.24	6.20	6.25	183	732	929	315	9.9	12.8	12.2	12.6
Aug-11	7.77	5.79	5.73	5.75	190	741	833	337	10.2	13.0	12.4	12.4
Nov-11	8.36	6.43	6.37	6.46	192	673	852	346	9.8	12.5	12.0	12.0
Feb-12	7.72	6.92	6.74	6.67	192	696	865	359	10.4	13.1	12.5	12.6
May-12	6.97	5.70	5.65	5.06	193	693	914	319	10.4	13.1	12.7	12.6
Aug-12	6.62	5.33	5.34	4.90	192	707	895	308	10.7	13.1	12.8	12.8
Nov-12	7.68	6.29	6.26	6.10	147	520	641	239	12.5	12.5	12.9	10.5
Feb-13	7.07	5.66	5.72	5.57	184	529	869	278	9.7	12.4	11.8	12.0
Jun-13	7.32	5.92	5.84	5.69	190	635	892	271	10.1	12.2	12.0	12.2
Aug-13	7.62	6.30	6.22	6.03	193	709	871	299	10.2	12.2	12.0	12.5
Dec-13	7.39	5.88	5.66	5.63	198	699	882	313	9.8	11.9	11.6	12.1

TABLE 3a
Field Parameters from Groundwater Sampling
South Woodwaste Landfill

	EH (mV)				Dissolved Oxygen (mg/L)				Methane (Percent)			
MCL / SMCL ^(a)	---				---				---			
WA WQ Std. ^(b)	---				---				---			
	BXS-4	BXS-3	BXS-2	BXS-1	BXS-4	BXS-3	BXS-2	BXS-1	BXS-4	BXS-3	BXS-2	BXS-1
Feb-07	-40	-103	1	241	9.80	2.40	3.00	2.30	NT	NT	NT	NT
Apr-07	-136	-113	45	187	1.20	1.80	1.20	0.80	NT	NT	NT	NT
Jul-07	-145	-113	62	219	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0
Oct-07	-148	-97	40	226	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0
Jan-08	-147	-67	54	251	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0
Apr-08	-157	-126	32	138	0.00	0.00	0.08	0.15	NT	NT	NT	NT
Jul-08	-150	-90	31	185	0.33	0.37	1.77	5.80	0.0	0.0	0.0	0.0
Oct-08	-173	-93	20	157	0.07	0.12	0.14	1.10	NT	NT	NT	NT
Feb-09	-154	-118	59	299	2.33	2.04	1.87	2.66	0.0	0.0	0.0	0.0
May-09	-192	-99	86	121	1.21	0.08	0.10	0.53	NT	NT	NT	NT
Aug-09	-172	-128	36	245	8.60	6.28	6.03	6.04	0.0	0.0	0.0	0.0
Nov-09	-167	-98	52	257	6.73	2.86	1.98	1.18	NT	NT	NT	NT
Feb-10	-183	-73	-3	74	0.11	0.17	0.31	1.23	NT	NT	NT	NT
May-10	-247	-142	59	129	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0
Aug-10	-285	-51	141	258	0.00	0.18	0.38	0.93	NT	NT	NT	NT
Nov-10	-287	-193	-42	-30	0.43	0.12	1.98	0.24	0.0	0.0	0.0	0.0
Feb-11	-164	-128	36	-167	0.10	0.11	0.26	0.28	NT	NT	NT	NT
May-11	-205	-120	32	158	0.36	0.38	0.43	0.45	0.2	0.1	0.0	0.0
Aug-11	-172	-115	45	164	0.09	0.09	0.19	0.18	NT	NT	NT	NT
Nov-11	-274	-140	39	150	1.12	1.04	1.19	1.29	0.1	0.0	0.0	0.0
Feb-12	-142	-118	74	302	3.10	4.17	4.21	5.76	NT	NT	NT	NT
May-12	-98	-49	141	396	1.37	1.86	2.23	3.94	0.0	0.0	0.0	0.0
Aug-12	-84	-47	182	330	1.53	1.97	2.39	2.28	NT	NT	NT	NT
Nov-12	-125	-82	216	439	2.39	4.73	7.79	6.45	NT	NT	NT	NT
Feb-13	-118	-92	76	337	2.16	3.68	0.82	0.91	NT	NT	NT	NT
Jun-13	-141	-99	90	313	0.83	2.62	1.52	0.44	NT	NT	NT	NT
Aug-13	-119	-104	118	315	0.36	0.80	2.96	2.22	NT	NT	NT	NT
Dec-13	-124	-112	135	328	1.02	5.46	5.74	2.36	NT	NT	NT	NT

Notes:

(a) Primary and secondary MCLs (maximum contaminant levels)

(b) Water Quality Standards for Groundwater's of the State of Washington (WAC 173=200)

NT = Not tested

µS/cm = micro Siemens per centimeter

°C = degrees Celsius

Mv = millivolts

mg/L = milligrams per liter

TABLE 3b
Conventional Parameters from Groundwater Sampling
South Woodwaste Landfill

	pH (standard units)									Conductivity (umhos/cm)								
MCL/SMCL ^(a) WA WQ Std ^(w)	6.5 - 8.5 6.5 - 8.5									700 --								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	7.81	7.9	6.38		6.36		6.36		5.79	193	192	517		743		338		4
Apr-07	7.61	7.45	6.05		6.1		5.94		5.66	195	199	565		779		377		2
Jul-07	7.69		6.34		6.96		6.28	6.23	6.04	201		518		798		410	401	2
Oct-07	7.82	7.85	6.36		6.35		6.18		5.72	200	201	638		814		482		3
Jan-08	7.75		6.41		6.46		6.23	6.25	5.10	215		681		747		375	360	5
Apr-08	7.76		6.36		6.44		6.38	6.38	6.21	188		658		797		475	472	2,630
Jul-08	7.83		6.32		6.45	6.4	6.27		5.30	206		659		853	865	592		4
Oct-08	7.83		6.33		6.41	6.4	6.49			210		700		892	877	592		
Feb-09	7.94		6.3		6.5		6.67	6.42	5.89	209		604		889		489	479	6
May-09	7.92		6.29		6.29		6.38	6.3	5.64	171		496		768		357	328	2
Aug-09	6.32		6.45	6.42	6.4		6.31		5.44	176		412	413	757		299		3
Nov-09	7.66		6.41		6.41		6.42	6.42	6.40	194		598		823		299	314	3.4
Feb-10	8.04		6.38		6.56	6.56	6.7		6.43	187		634		848	854	298		1.7 J
May-10	7.87		6.26		6.33		6.41	6.48	4.93	192		461		881		297	300	4
Aug-10	7.83		6.15		6.3		6.42	6.46	7.91	209		423		805		311	316	137
Nov-10	7.72		5.99		6.27		6.35	6.34	6.00	172		543		901		377	364	2.9
Feb-11	7.88		6.23		6.38		6.49	6.51		155		371		729		296	296	5.3
May-11	7.79		6.28		6.42		6.32	6.5	6.06	219		377		801		321	310	2.5
Aug-11	8.14		6.45		6.47		6.46	6.74	6.03	202		603		941		359	359	1.9 J
Nov-11	7.78		6.35		6.49		6.75	6.57	7.33	195		505		884		360	361	2.1
Feb-12	7.94		6.42		6.54		6.64	6.59	6.04	194		425		873		363	361	2.3
May-12	7.91		6.35		6.68		6.7	6.59	6.86	168		435		925		329	288	3.4
Aug-12	7.66		6.32		6.62		6.43	6.69	6.39	192		451		898		311	315	2.6
Nov-12	8.09		6.62		6.63		6.81	6.77	7.42	193		463		867		316	326	2,490
Feb-13	8.28		6.6		7.03		7.07	6.93	7.27	194		377		939		303	299	1.8 J
Jun-13	8.21		6.6		6.75		6.94	6.78	7.32	202		516		945		290	299	2.0 J
Aug-13	8.04		6.54		6.62		6.69	6.63	6.43	188		428		876		293	292	1.5 J
Dec-13	8.13		6.58		6.88		6.93	6.79	6.20	193		513		866		312	310	1.7 J

TABLE 3b
Conventional Parameters from Groundwater Sampling
South Woodwaste Landfill

	Ammonia as N (mg/L)									Chemical Oxygen Demand (COD) (mg/L)								
MCL/SMCL ^(a) WA WQ Std ^(b)	---									---								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	0.5	0.52	0.93		0.05 U		0.05 U		0.032 J	5 U	5 U	75		36		6		50 U
Apr-07	0.5	0.5	0.71		0.05 U		0.05 U		0.05 U	6	6	80		39		14		4 J
Jul-07	0.5		0.74		0.05 U		0.05 U	0.05 U	0.05 U	5 U		67		31		5 U	6	5 U
Oct-07	0.48	0.49	0.98		0.05 U		0.05 U		0.05 U	5 U	5 U	71		33		17		5 U
Jan-08	0.55		0.41		0.05 U		0.05 U	0.05 U	0.02 J	5 U		61		35		12	13	5 U
Apr-08	0.46		0.39		0.05 U		0.05 U	0.05 U	0.05 U	3 J		76		42		13	14	5 U
Jul-08	0.48		0.75		0.05 U	0.05 U	0.05 U		0.08	6		75		37	35	24		9
Oct-08	0.53		0.54		0.05 U	0.05 U	0.05 U			6		65		39	41	16		
Feb-09	0.51		1.44		0.05 U		0.05 U	0.05 U	0.05 U	5 U		69		42		16	16	5 U
May-09	0.61		1.08		0.05 U		0.05 U	0.05 U	0.05 U	22		70		38		13	11	5 U
Aug-09	0.49		1.24	1.14	0.05 U		0.05 U		0.009 J	3 J		106	83	43		12		3 J
Nov-09	0.542		0.557		0.026 J		0.046 J	0.181	0.016 J	5 U		65.9		42.1		13.7	13.7	5 U
Feb-10	0.529		1.23		0.05 U	0.05 U	0.05 U		0.05 U	5 U		68.1		34.8	34.8	5 U		5 U
May-10	0.556		0.969		0.032 J		0.027 J	0.021 J	0.05 U	3.3 J		73.9		41		11	10.5	5 U
Aug-10	0.529		1.22		0.05 U		0.05 U	0.05 U	0.05 U	5 U		74.1		41.1		10.9	11.8	5 U
Nov-10	0.504		1.02		0.05 U		0.05 U	0.05 U	0.05 U	5.6		67.5		42.1		14.7	12.2	7.6
Feb-11	0.513		1.21		0.05 U		0.05 U	0.05 U	0.05 U	5 U		74.9		44.4		9.1	5 U	5 U
May-11	0.544		0.703		0.05 U		0.05 U	0.05 U	0.05 U	3.4 J		70.5		45.4		8.2	9.7	5 U
Aug-11	0.551		0.663		0.05 U		0.05 U	0.05 U	0.05 U	5 U		84.4		41.5		9.8	8.8	5 U
Nov-11	0.569		0.05 U		0.036 J		0.05 U	0.05 U	0.05 U	5 U		68.9		37.8		4.7 J	7.6	5 U
Feb-12	0.537		0.814		0.05 U		0.02 J	0.05 U	0.05 U	6.1		73.8		42.5		19.7	60.2	3.5 J
May-12	0.536		0.563		0.05 U		0.05 U	0.05 U	0.05 U	5 U		62.8		41.9		8.4	5 U	5 U
Aug-12	0.535		0.577		0.05 U		0.05 U	0.05 U	0.05 U	3.6 J		69.4		43.9		6.6	6.1	5 U
Nov-12	0.512		0.934		0.05 U		0.05 U	0.05 U	0.05 U	5 U		65.3		37.8		5.9	10.3	5.0 U
Feb-13	0.52		0.742		0.05 U		0.05 U	0.05 U	0.050 U	5 U		56.9		41.2		6.3	7.3	5.0 U
Jun-13	0.528		1.01		0.05 U		0.05 U	0.05 U	0.050 U	5 U		62.6		41.4		5.9	7.4	5.0 U
Aug-13	0.539		0.71		0.05 U		0.05 U	0.05 U	0.050 U	3 J		67.9		42.2		7.5	10.1	5.0 U
Dec-13	0.548		0.822		0.05 U		0.05 U	0.05 U	0.050 U	5 U		65.2		36.7		6.7	5.2	5.0 U

TABLE 3b
Conventional Parameters from Groundwater Sampling
South Woodwaste Landfill

MCL/SMCL ^(a) WA WQ Std ^(w)	Chloride (mg/L)									Nitrate + Nitrite as N (mg/L)								
	250									10								
	250									--								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	1.6	1.6	3.1		4.9		6.4		0.2 U	0.28	0.58	0.96		0.94		0.75		0.031 J
Apr-07	1.9	1.9	2.3		4.5		5.4		0.2 U	0.23	1.21	0.2		0.63		0.85		0.01 J
Jul-07	1.7		2.8		4.1		5.1	5	0.2 U	0.05 U		0.19		0.08		0.7	0.68	0.008 J
Oct-07	1.7	1.7	2.7		4.3		5.2		0.056 J	0.05 U	0.05 U	0.17		0.05 U		0.47		0.05 U
Jan-08	2		3.1		4.5		5.8	5.8	0.2 U	0.05 U		0.07		0.05 U		0.58	0.54	0.05 U
Apr-08	1.8		2.4		4.4		5	5.1	0.019 J	0.05 U		0.05 U		0.05 U		0.74	0.73	0.05 U
Jul-08	1.8		2.8		4.2	4.4	4.5		0.2 U	0.1		0.15		0.05 U	0.05 U	1.48		0.05 U
Oct-08	1.9		3.6		4.9	4.9	5.1			0.05 U		0.1		0.026 J	0.01 J	0.51		
Feb-09	1.7		2.6		4.2		7.6	7.6	0.02 J	0.05 U		0.17		0.01 J		0.99	1.02	0.05
May-09	2.2		4.5		6.1		7.3	7.3	0.2 U	0.013 J		0.21		0.029 J		0.12	0.13	0.019 J
Aug-09	1.8		3.8	3.7	4.3		5.9		0.2 U	0.05 U		0.17	0.17	0.017 J		0.11		0.05 U
Nov-09	1.94		3.28		4.43		6.52	6.55	0.2 U	0.05 U		0.063		0.05 U		0.05 U	0.05 U	0.05 U
Feb-10	1.81		2.9		4.2	4.2	5.3		0.06 J	0.05 U		0.126		0.05 U	0.05 U	0.042 J		0.05 U
May-10	1.88		3.4		4.1		5.9	6	0.04 J	0.03 J		0.218		0.037 J		0.109	0.105	0.04 J
Aug-10	1.91		3.04		3.32		5.67	5.7	1.57	0.039 J		0.176		0.038 J		0.139	0.143	0.174
Nov-10	1.57		2.74		3.21		5.38	5.29	0.4 U	0.05 U		0.118		0.05 U		0.086	0.086	0.05 U
Feb-11	2.1		2.37		3.43		6.99	7.09	0.4 U	0.05 U		190		0.05 U		0.05 U	0.05 U	0.05 U
May-11	1.65		2.07		3.05		6.17	5.94	0.4 U	0.013 J		0.143		0.018 J		0.149	0.139	0.012 J
Aug-11	1.69		1.85		2.88		5.71	5.71	0.4 U	0.011 J		0.104		0.012 J		0.059	0.057	0.012 J
Nov-11	1.93		2.49		3.38		6.01	5.74	0.4 U	0.05 U		0.137		0.011 J		0.095	0.089	0.05 U
Feb-12	1.67		2.11		2.91		5.33	5.37	0.4 U	0.034 J		0.126		0.018 J		0.08	0.08	0.026 J
May-12	1.66		1.5		2.97		5.7	5.65	0.4 U	0.05 U		0.104		0.01 J		0.049 J	0.03 J	0.05 U
Aug-12	1.62		1.58		2.96		4.75	4.72	0.4 U	0.05 U		0.098		0.05 U		0.053	0.073	0.05 U
Nov-12	1.63		1.69		3.00		4.8	4.8	0.4 U	0.009 J		0.05 U		0.01 J		0.035 J	0.029 J	0.05 U
Feb-13	1.61		2.08		3.07		5.70	5.70	0.40 U	0.016 J		0.134		0.05 U		0.085	0.088	0.050 U
Jun-13	1.62		1.98		3.00		3.60	3.60	0.40 U	0.050 U		0.052		0.050 U		0.087	0.073	0.050 U
Aug-13	1.9		1.88		3.39		4.00	3.90	0.40 U	0.021 J		0.033 J		0.022 J		0.125	0.141	0.040 J
Dec-13	1.54		1.57		2.65		3.56	3.56	0.40 U	0.05 U		0.198		0.009 J		0.033 J	0.027 J	0.011 J

TABLE 3b
Conventional Parameters from Groundwater Sampling
South Woodwaste Landfill

	Tannin & Lignin (mg/L)									Total Organic Carbon (TOC) (mg/L)								
MCL/SMCL ^(a) WA WQ Std. ^(b)	---									---								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	0.3	0.4	4.1		1.1		0.16 J		0.09 J	1.1	1	28.2		15.6		3.6		0.08 J
Apr-07	0.3	0.3	11.9		1.3		0.2 U		0.2 U	1	1	28.4		16.7		4.8		0.25 J
Jul-07	0.3		13.4		1.3		0.12 J	0.13 J	0.2 U	0.9		28.6		15.6		5.2	5.2	0.07 J
Oct-07	0.3	0.3	4.7		1.1		0.3		0.2 U	1	0.9	26.4		15.5		7.1		0.08 J
Jan-08	0.3		8		1.2		0.3	0.3	0.06 J	0.8		23.9		15.8		6	6.1	0.14 J
Apr-08	0.3		22.5		1.2		0.2	0.2	0.2 U	0.9		27.8		17.5		5.9	5.9	0.5 U
Jul-08	0.2		11.5		1.2	1.2	0.2		0.2 U	0.9		27.9		15.9	16.2	8.3		0.5 U
Oct-08	0.3		2.5		1.1	1.1	0.2			0.9		23.8		15.5	16.3	6.6		
Feb-09	0.2		3.4		1.4		0.17 J	0.2	0.2 U	0.9		21.8		16.6		5.2	5.2	0.5 U
May-09	0.3		3.5		0.9		0.3	0.3	0.2 U	1		22		15.8		4.7	4.9	0.5 U
Aug-09	0.3		10.7	31.4	0.9		0.09 J		0.2 U	1.1		29	28.4	16.9		5.1		0.17 J
Nov-09	0.39		20.1		1.32		0.19 J	0.18 J	0.04 J	0.72		23.7		16.7		5.27	5.15	0.5 U
Feb-10	0.28		10		1.3	1.04	0.07 J		0.2 U	0.77		23.8		17.1	16.5	3.91		0.5 U
May-10	0.32		31.3		1.1		0.11 J	0.11 J	0.2 U	0.93		25.2		17.3		4.17	4.14	0.1 J
Aug-10	0.34		5.22		1.68		0.18 J	0.14 J	0.04 J	0.81		21.5		15.3		3.7	3.46	0.5 U
Nov-10	0.36		13.1		1.43		0.15 J	0.16 J	0.04 J	2.61		24.7		18.2		7.41	7.18	0.08 J
Feb-11	0.42		15.7		1.58		0.21	0.25	0.09 J	1.15		21.6		17.2		4.37	4.16	0.5 U
May-11	0.3		15		0.46		0.1 J	0.14 J	0.2 U	0.94		18.8		16.4		2.94	3.01	0.07 J
Aug-11	0.26		21.4		1.15		0.09 J	0.12 J	0.2 U	0.67		25.5		14.2		2.98	3.06	0.5 U
Nov-11	0.36		7.7		1.51		0.24	0.24	0.07 J	1		4.41		14.6		3.13	3.35	0.5 U
Feb-12	0.5		22.4		2.36		0.22	0.2	0.1 J	1.19		22.2		15.4		3.09	3.28	0.08 J
May-12	0.41		49.7		1.46		0.13 J	0.18 J	0.2 U	0.68		17.3		15.5		2.64	4.04	0.5 U
Aug-12	0.2 J		21.2		1.42		0.2 U	0.2 U	0.2 U	0.84		19.3		14.8		2.51	2.56	0.5 U
Nov-12	0.33		12.7		1.63		0.17	0.27	0.2 U	0.9		19.8		14.3		2.74	2.81	0.08 J
Feb-13	0.31		13.2		1.06		0.09 J	0.09 J	0.20 U	0.73		15.4		15.5		2.54	2.46	0.50 U
Jun-13	0.25		13.1		1.73		0.06 J	0.07 J	0.20 U	0.82		18.4		15.4		2.39	2.44	0.50 U
Aug-13	0.28		8.6		1.18		0.13 J	0.15 J	0.20 U	0.88		18.9		14.6		2.54	2.49	0.50 U
Dec-13	0.18 J		5.75		1.38		0.10 J	0.20 U	0.20 U	0.9		18.4		14.3		2.48	2.54	0.08 J

TABLE 3b
Conventional Parameters from Groundwater Sampling
South Woodwaste Landfill

	Solids, total dissolved (TDS) (mg/L)									Sulfate (mg/L)								
MCL/SMCL ^(a) WA WQ Std. ^(w)	500 500									250 250								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS- 2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	142	146	522		420		231		5 U	1.4	1.4	0.09 J		0.15 J		14.8		0.2 U
Apr-07	151	140	493		490		229		5 U	1.3	1.3	0.2 U		0.2 U		13.9		0.2 U
Jul-07	154		414		495		262	248	5 U	1.4		0.2 U		0.2 U		11.3	11.4	0.2 U
Oct-07	159	151	476		478		294		5 U	1.3	1.3	0.063 J		0.088 J		9.4		0.2 U
Jan-08	148		578		508		239	233	5 U	0.8		0.2 U		0.2 U		14	14.9	0.2 U
Apr-08	118		496		430		265	256	5 U	1.3		0.101 J		0.161 J		9.6	9.7	0.2 U
Jul-08	161		415		506	505	363		5 U	1.3		0.119 J		0.137 J	0.2	6.2		0.2 U
Oct-08	139		465		478	491	323			1.1		0.107 J		0.159 J	0.4	6.7		
Feb-09	136		461		498		261	263	5 U	1.4		0.112 J		0.12 J		6.4	6.4	0.027 J
May-09	130		460		513		223	220	7	1.7		0.4		0.2 U		6.7	6.6	0.2 U
Aug-09	119		378	425	491		178		5 U	1.1		0.09 J	0.1 J	0.12 J		13.9		0.2 U
Nov-09	121		452		496		198	201	5 U	3.32		0.2 U		0.2 U		15	14.9	0.2 U
Feb-10	152		422		518	501	186		5	1.55		0.06 J		0.09 J	0.1 J	19.6		0.01 J
May-10	129		340		508		166	178	5 U	1.45		0.76		0.17 J		15.3	13.4	0.43
Aug-10	202		381		564		250	241	134	1.55		0.8		1.12		14.1	14	1.06
Nov-10	98		330		462		153	161	5 U	1.07		0.4 U		0.4 U		12.3	11.7	0.4 U
Feb-11	165		377		512		211	216	5 U	1.53		1.04		1.3		15.2	15.4	0.4 U
May-11	129		374		559		209	194	5 U	0.93		0.18 J		0.26 J		15.9	15.1	0.4 U
Aug-11	128		399		550		188	199	5 U	0.95		0.38 J		0.58		16.2	16.7	0.4 U
Nov-11	115		350		532		217	220	5 U	1.05		0.58		0.83		15.8	15	0.4 U
Feb-12	131		344		518		214	269	5.0 U	0.89		0.28 J		0.39 J		15.7	15.6	0.4 U
May-12	129		336		547		230	222	5.5	0.76		0.27 J		0.31 J		16.4	16.3	0.4 U
Aug-12	119		376		569		189	210	5.0 U	0.78		0.4		0.45		14.7	14.6	0.2 U
Nov-12	131		331		537		188	188	5.0 U	0.87		0.39		0.47		14.5	14.5	0.2 U
Feb-13	107		288		539		160	174	5.5	0.84		0.23		0.25		14.3	14.6	0.20 U
Jun-13	141		340		553		179	168	5.0 U	0.8		0.35		0.56		13.5	13.3	0.20 U
Aug-13	141		349		574		201	189	5.0 U	0.81		0.13 J		0.2 J		12.7	12.6	0.20 U
Dec-13	132		356		530		223	197	5.5	0.82		0.14 J		0.18 J		12.3	11.9	0.20 U

TABLE 3b
Conventional Parameters from Groundwater Sampling
South Woodwaste Landfill

	Total Coliforms (MPN/100 mL)								
MCL/SMCL ^(a) WA WQ Std ^(b)	<5% ^(c) --								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	1 U	1 U	1 U		1 U		1 U		1 U
Apr-07	1 U	1 U	1 U		1 U		1 U		1 U
Jul-07	1		6		2420 >		1 U	1	1 U
Oct-07	1 U	1 U	1 U		5.1		1 U		1 U
Jan-08	1 U		1 U		1 U		1 U	1 U	3.1
Apr-08	1 U		1 U		2		1 U	1 U	1 U
Jul-08	1 U		1 U		248.9	70.8	1 U		18.7
Oct-08	1 U		1 U		1 U	1 U	1 U		24.9
Feb-09	1 U		1 U		17.5		1	1 U	1 U
May-09	1 U		1		1		1 U	1 U	4.2
Aug-09	1 U		1 U	1 U	1 U		1 U		1
Nov-09	1 U		1 U		1 U		1 U	1 U	3.1
Feb-10	1 U		1 U		1	1	1 U		1
May-10	1 U		1 U		2		165.2	165.2	47.8
Aug-10	1 U		1 U		1		9.7	3	18.9
Nov-10	1		5.2		2		1	1 U	1
Feb-11	1 U		1 U		1 U		1 U	1 U	1 U
May-11	2		1 U		1 U		1 U	1	1 U
Aug-11	1 U		1 U		18.1		1 U	1 U	1 U
Nov-11	1 U		P		P		P		1 U
Feb-12	2		1 U		5.2		1 U	1 U	1 U
May-12									
Aug-12	1 U		1 U		1 U		2	1 U	1 U
Nov-12	1 U		1 U		1		1 U		1 U
Feb-13	1 U		10 U		1 U		1 U	1 U	1 U
Jun-13									
Aug-13	1 U		1 U		1 U		1 U	1 U	1 U
Dec-13	1 U		1 U		1 U		40.8 J	24.1 J	1 U

Notes:

(a) Primary and secondary maximum contaminant levels (MCL/SMCL) per Washington Administrative Code (WAC) 246-290-310.

(b) Water Quality Standards (WA WQ Std) for Groundwater's of the State of Washington (WAC 173-200)

(c) <5% criteria indicates less than 5 percent of total coliform samples can be positive in a month

Blank fields = not tested and/or sample not taken

mg/L = milligrams per liter

mL = milliliter

MPN = most probable number

µmhos/cm = micromhos per centimeter

TABLE 3c
Metals from Groundwater Sampling, April 2000 to November 2013
South Woodwaste Landfill

MCL/SMCL WA WQ Std	Arsenic, dissolved (µg/L)									Barium, dissolved (µg/L)								
	10									2,000								
	0.05									1,000								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	6.8	5.8	145		1.1 B		5 U		5 U	28.6	28.9	101		47		19.1		5 U
Apr-07	6	6	113		0.7 B		5 U		1.5 B	25.6	25.6	73.8		39.8		24.5		3 B
Jul-07	5.4		113		5 U		5 U	5 U	5 U	33		80.6		50.1		24.6	23	5 U
Oct-07	5.4	4.8 B	67.2		5 U		5 U		5 U	29.4	29.3	83.2		48.3		26.5		5 U
Jan-08	6.7		42.6		5 U		5 U	5 U	0.7 U	26.7		65.4		42.3		18.3	19.0	0.6 U
Apr-08	4.4 J		117.0		5 U		5 U	5 U	0.7 U	27.6		111.0		41.7		22.1	22.6	0.6 U
Jul-08	5.4		111.0		0.8 J	5 U	5 U		0.6 U	29.7		122.0		49.5	50.9	31.5		0.5 U
Oct-08	7.2		46.5		5 U	5 U	1.1 J			26.7		72.2		41.9	43.3	24.8		
Feb-09	14.4		114		5 U		5 U	5 U	5 U	29.5		125.0		49.7		23.2	22.6	5 U
May-09	6.2		120		1.6 J		0.6 J	0.7 J	5 U	26.7		111.0		45.4		16.7	16.8	5 U
Aug-09	0.8 J		5 U	2.5 J	1.5 J		0.8 J		5 U	229		15.6	22.7	39.6		230.0		5 U
Nov-09	6		63.5		5 U		5 U	5 U	5 U	26.5		115.0		45.5		13.9	13.1	5 U
Feb-10	7.1		133		3.0 J	2.5 J	1.6 J		5 U	28.4		132.0		49.6	52.2	14.3		5 U
May-10	5.5		149		0.9 J		5.0 U	5.0 U	5 U	27.7		134.0		53.7		14.5	14.6	5 U
Aug-10	5.3		139		0.9 J		5.0 U	5.0 U	3 J	25.8		119.0		47.7		14.9	14.3	1.5 J
Nov-10	5.6		186		5.0 U		5.0 U	5.0 U	5 U	24.6		132.0		44.9		15.7	15.7	5 U
Feb-11	5.5		119		5.0 U		5.0 U	5.0 U	5 U	28.6		142.0		53.6		16.9	16.6	5 U
May-11	6.2		139		1.1 J		5.0 U	5.0 U	5 U	25.4		123.0		53		15.3	15.5	5 U
Aug-11	6.4		155		5.0 U		5.0 U	5.0 U	5 U	24.4		120.0		47.2		15.8	15.3	5 U
Nov-11	6.2		156		1 J		5 U	1 J	5 U	24.7		121.0		44.5		15.0	15.2	5 U
Feb-12	5.2		158		0.6 J		5 U	5 U	5 U	27.2		136.0		48.4		16.7	16.3	0.6 J
May-12	5.8		133		0.9 J		5 U	5 U	5 U	28.8		116.0		54.2		16.4	15.9	5 U
Aug-12	4.9 J		135		5 U		5 U	5 U	5 U	27.5		114.0		52.7		15.3	15.5	5 U
Nov-12	6.2		170		5 U		5 U	5 U	5 U	28		137.0		50.6		15.7	15.8	5 U
Feb-13	6.1		119		5.0 U		5.0 U	5 U	5.0 U	26.1		90.4		54.9		13.9	14.2	5.0 U
Jun-13	6.8		138		1.5 J		5.0 U	1.1 J	1.1 J	26.1		85.5		53		13.3	13.3	4.0 U
Aug-13	6.3		140		1.0 J		5.0 U	5 U	5.0 U	27.5		115		54.4		16.1	15.2	4.0 U
Dec-13	6.4		164		1.3 J		5.0 U	5 U	5.0 U	26		124		47.3		15.1	15.6	4.0 U

TABLE 3c
Metals from Groundwater Sampling, April 2000 to November 2013
South Woodwaste Landfill

MCL/SMCL WA WQ Std	Cadmium, dissolved (µg/L)									Copper, dissolved (µg/L)								
	5									1,300								
	10									1,000								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		10 U		3 B		10 U
Apr-07	5 U	5 U	2.9 B		0.7 B		1.9 B		5 U	10 U	10 U	10 U		10 U		10 U		10 U
Jul-07	5 U		5 U		5 U		5 U	5 U		10 U		4.4 B		5.4 B		4.2 B	6 B	10 U
Oct-07	5 U	5 U	5 U		5 U		5 U			10 U	10 U	10 U		10 U		10 U		10 U
Jan-08	5 U		1.8 J		1.4 J		5 U	1.3 J		10 U		10 U		10 U		10 U	10 U	7 U
Apr-08	5 U		5 U		1.1 J		5 U	0.7 J		10 U		10 U		10 U		10 U	10 U	7 U
Jul-08	5 U		4.3 J		5 U	5 U	0.2 J			10 U		10 U		1.4 J	1.4 J	3.3 J		1.4 B
Oct-08	5 U		5 U		5 U	5 U	5 U			10 U		10 U		10 U	10 U	10 U		
Feb-09	5 U		1.2 J		5 U		0.2 J	0.3 J	0.2 J	10 U		10 U		2.1 J		1.6 J	2.6 J	10.0 U
May-09	5 U		2.1 J		5 U		5 U	5 U	5 U	10 U		10 U		10 U		10 U	10 U	5.8 J
Aug-09	5 U		5 U	5 U	5 U		5 U		5 U	22.2		10 U	10 U	10 U		21.2		10 U
Nov-09	5 U		5 U		5 U		5 U	5 U	5 U	10 U		10 U		10 U		10 U	10 U	10 U
Feb-10	5 U		5 U		5 U	5.0 U	5 U		5 U	1.3 J		2 J		3.8 J	4.1 J	3.9 J		10.0 U
May-10	5 U		5 U		5 U		5 U	5 U	5 U	10 U		10 U		1.6 J		2.0 J	2 J	10.0 U
Nov-10	5 U		3 J		5 U		5 U	5 U	5 U	4.2 J		7 J		4.4 J		4.0 J	7 J	10 U
Aug-10	5 U		4.5 J		5 U		5 U	5 U	5 U	10 U		10 U		10 U		10.0 U	10 U	5.8 J
Feb-11									5 U	10 U		3 J		10 U		2.0 J	2 J	10 U
May-11									5 U	10 U		10 U		2.8 J		10.0 U	10 U	2.2 J
Aug-11									5 U	10 U		10 U		10 U		10.0 U	10 U	10 U
Nov-11	5 U		2.9 J		2.6 J		5 U		5 U	10 U		10 U		10 U		10.0 U	2 J	10 U
Feb-12	5 U		5 U		5 U		5 U	5 U	5 U	10 U		5.2 J		1.7 J		1.7 J	2.9	10 U
May-12	5 U		5 U		0.6 J		5 U	5 U	5 U	0.6 J		10 U		1.7 J		2.1 J	2.2	10 U
Aug-12										10 U		10 U		1.5 J		2.1 J	1.9	10 U
Nov-12										10 U		10.0 U		3.4 J		10.0 U	10.0 U	10 U
Feb-13										10 U		10 U		1.5 J		1.4 J	1.7 J	10.0 U
Jun-13										4.0 U		4.0 U		2.8 J		2.1 J	2.0 J	4.0 U
Aug-13										4.0 U		4.0 U		2.3 J		2.0 J	1.6 J	4.0 U
Dec-13										4.0 U		4.0 U		3.6 J		2.6 J	2.9 J	4.0 U

TABLE 3c
Metals from Groundwater Sampling, April 2000 to November 2013
South Woodwaste Landfill

MCL/SMCL WA WQ Std	Iron, dissolved (µg/L)									Manganese, dissolved (µg/L)								
	300									50								
	300									50								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	38.6	36.7	110,000		846		20 U		20 U	112	114	13,500		1,350		89.5		5 U
Apr-07	42.8	36.4	90,500		771		10.1 B		4.7 B	107	106	13,500		1,330		123		1.6 B
Jul-07	38.3		88,100		699		20 U	20 U	20 U	118		14,000		1,330		268	268	5 U
Oct-07	36.1	36	62,700		656		20 U		20 U	121	120	14,700		1,280		353		2.7 B
Jan-08	41.3		35,500		608		7.8 J	8.2 J	3 U	125		17,900		1,270		422	428	1.6 B
Apr-08	41.5		102,000		624		8.8 J	8.3 J	3 U	110		12,600		1,150		240	234	0.3 B
Jul-08	35.2		96,800		593	591	20 U		4 U	111		13,100		1,190	1,210	309		0.2 U
Oct-08	74.8		53,800		560	571	8.8 J			111		15,400		1,290	1,300	297		
Feb-09	54.6		109,000		542		4.6 J	20 U	4.5 J	120		11,800		1,250		175	174	0.2 J
May-09	51.7		102,000		473		6.1 J	5 J	20.0 U	108		11,300		1,230		114	116	0.4 J
Aug-09	91.1		11.6 J	2,280	1340		91		0.8 J	4,220		7,870	2540	2,500		4,180		0.2 J
Nov-09	43.6		59,700		480		4.7 J	4 J	20 U	110		13,400		1,300		204	204	0.7 J
Feb-10	33.7		94,700		465	493	20 U		20.0 U	116		11,200		1,260	1330	36		5 U
May-10	43.5		104,000		451		3.5 J	8.9 J	20.0 U	115		9,380		1,340		78	78	5 U
Aug-10	38.6		104,000		482		3.7 J	1.6 J	20.0 U	108		9,670		1,310		48	47.2	5 U
Nov-10	20 U		116,000		420		8.7 J	6 J	20 U	112		7,880		1,340		93	95.4	5 U
Feb-11	46.8		109,000		466		20 U	20 U	20 U	125		9,610		1,400		159	160	0.2 J
May-11	55.6		110,000		470		11.7 J	13 J	7 J	100		13,600		1,460		122	116	5 U
Aug-11	35.1 N*		107,000		412 N*		20 UN	1 JN*	20 UN*	97		14,000		1,340		144	136	5 U
Nov-11	42.1		100,000		388		7.7 J	8 J	20 U	105				1,300		149	150	0.5 J
Feb-12	42.8		97,800		375		20 U	20 U	20 U	114		8,650		1,510		252	242	0.3 J
May-12	55.1		97,900		430		20 UJ	20 UJ	20 U	116		12,900		1,570		254	252	5 U
Aug-12	43.4		99,200		417		20 U	20 U	20 U	113		14,000		1,510		201	200	5 U
Nov-12	77.5		98,100		395		20 U	20 U	20 U	119		9,650		1,550		242	244	5 U
Feb-13	60.1		91,600		450		4.4 J	4.6 J	20.0 U	110		10,700		1,610		220	220	5.0 U
Jun-13	58.4		93,500		416		3.7 J	5.9 J	4.1 J	118		14,800		1,680		212	209	6.2
Aug-13	64.6		109,000		416		20 U	5.8 J	20.0 U	119		14,200		1,700		224	219	0.50 J
Dec-13	55.5		107,000		400		20 U	3 J	20.0 U	111				1,580		217	221	0.10 J

TABLE 3c
Metals from Groundwater Sampling, April 2000 to November 2013
South Woodwaste Landfill

	Nickel, dissolved (µg/L)									Zinc, dissolved (µg/L)								
MCL/SMCL	100									5,000								
WA WQ Std	---									5,000								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field Blank
Feb-07	20 U	20 U	20 U		38.4		20 U		20 U	2.4 B	10 U	12.9		5.8 B		4 B		10 U
Apr-07	20 U	20 U	18.2 B		33.9		10.4 B		20 U	10 U	10 U	8.5 B		30.2		10 U		10 U
Jul-07	20 U		20.4		30.1		20 U	20 U	20 U	10 U		12.4		11.1		8 B	6.5 B	10 U
Oct-07	20 U	20 U	20 U		31.4		20 U		20 U	10 U	12.9	15.9		22.3		7.9 B		10 U
Jan-08	20 U		17.0 J		30.6		16.0 J	15.5 J	2 U	8.3 J		10 U		14.8		10 U	8 J	7 U
Apr-08	20 U		20.2		31.8		11.1 J	11.8 J	2 U	10 U		10 U		10 U		10 U	10 U	7 U
Jul-08	20 U		4.5 J		24.8	25.1	10.2 J		0.5 U	1.0 J		4.8 J		4.4 J	4.2 J	9.1 J		1.5 B
Oct-08	20 U		22.8		31.7	32.4	15.5 J			10 U		3.9 J		6.2 J	7.1 J	12.1		
Feb-09	20 U		20.6		32.1		10.7 J	10.5 J	20.0 U	1.5 J		2.1 J		6.5 J		3.6 J	3.5 J	1.6 J
May-09	20 U		17.7 J		31.2		7 J	7.9 J	20.0 U	10 U		3.9 J		3.7 J		1.5 J	2.2 J	5 J
Aug-09	104		48.5	26.7	134		109		20 U	3.8 J		2.6 J	2.4 J	10 U		3.4 J		2.4 J
Nov-09	20 U		13.2 J		31.1		11.1 J	10.1 J	20 U	10 U		1.5 J		2.8 J		1.5 J	10 U	10 U
Feb-10	20 U		22.8		32.4	34.0	5.9 J		20 U	10 U		1.6 J		5.3 J	5.8 J	1.7 J		10 U
May-10	20 U		19.5 J		32.6		6.5 J	6.7 J	20 U	10 U		10 U		3.5 J		2.1 J	2.5 J	10 U
Nov-10	20 U		12.5 J		29.9		6.8 J	5.5 J	20 U	10 U		10 U		1.7 J		10.0 U	10 U	1.9 J
Aug-10	20 U		17.5 J		33.3		5.8 J	5.2 J	20 U	10 U		2.3 J		4.8 J		10 U	1.9 J	10 U
Feb-11	20 U		20.8		34.4		10 J	9.6 J	20 U	0 J		20.0 U		4.9 J		3 J	2.5 J	0.3 J
May-11	20 U		15.3 J		38.7		8.7 J	7.0 J	20 U									
Aug-11	20 U		16.2 J		32.2		8.5 J	9.2 J	20 U	10 U		4.2 J		4.7 J		2 J	3.1 J	10 U
Nov-11	20 U		11.2 J		30.5		10.6 J	10.1 J	20 U	10 U		3 J		4 J		1 J	1.3 J	10 U
Feb-12	20 U		23		29.6		9.4 J	9.3 J	20 U	0.7 J		6.8 J		5.5 J		3 J	3.2 J	0.7 J
May-12	20 U		13 J		33.7		9.2 J	8.9 J	20 U	0.4 J		10 U		4.3 J		2.5 J	2.3 J	10 U
Aug-12	0.7 J		15.8 J		33.5		8.9 J	9.1 J	20 U	10 U		0.8 J		2.3 J		2.6 J	2.5 J	10 U
Nov-12	20.0 U		13.6 J		32		9 J	10 J	20 U	10 U		0.8 J		3.8 J		2.7 J	2.3 J	10 U
Feb-13	20 U		18.2 J		36.1		9.2 J	9.4 J	20.0 U	10 U		0.9 J		3.2 J		2.4 J	2.1 J	10.0 U
Jun-13	0.4 J		18.4		36.9		8.5	8.4	4.0 U	4 U		2.7 J		3.8 J		2.4 J	2.5	4.0 U
Aug-13	2.2 J		22.2		38.4		11.2	10.8	4.0 U	4 U		2.9 J		3.6 J		2.7 J	2.5 J	4.0 U
Dec-13	5.4		25.1		38.2		12.8	13.5	4.0 U	4 U		1.9 J		3.7 J		3.1 J	3.1 J	4.0 U

Notes:

J = Estimated Value

R = Rejected Value

U = Not detected. Reporting limit shown.

MCL/SMCL = Maximum Contaminant Level - Primary and secondary MCLs

WA WQ Std = Water Quality Standards for Groundwater's of the State of Washington (WAC 173-200)

Blank fields = sample not tested or not taken

µg/L = micrograms per liter

TABLE 4
Parameters Statistically Higher than Background, 1988 to 2013
South Woodwaste Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient			Mean Value Upgradient
			BXS-1	BXS-2	BXS-3	BXS-4
Conventional	Ammonia as Nitrogen	2001			0.10	0.50
Conventional	Ammonia as Nitrogen	2007			0.84	0.50
Conventional	Ammonia as Nitrogen	2009			1.08	0.54
Conventional	Ammonia as Nitrogen	2010			1.11	0.53
Conventional	Ammonia as Nitrogen	2013			0.82	0.53
Conventional	Carbon, Total Organic	1992	3.6	5.0	18.7	1.5
Conventional	Carbon, Total Organic	1993		7.3	20.0	2.0
Conventional	Carbon, Total Organic	1994		8.6	21.9	2.3
Conventional	Carbon, Total Organic	1995		10.7	30.6	3.4
Conventional	Carbon, Total Organic	1996	4.9	12.7	38.5	2.3
Conventional	Carbon, Total Organic	1997		15.0		3.8
Conventional	Carbon, Total Organic	1998			32.1	10.8
Conventional	Carbon, Total Organic	1999		15.8	31.8	6.6
Conventional	Carbon, Total Organic	2000	8.1	15.2		1.0
Conventional	Carbon, Total Organic	2001	7.5	14.6	25.2	3.1
Conventional	Carbon, Total Organic	2002	6.4	13.8	22.2	2.0
Conventional	Carbon, Total Organic	2003		14.0	21.5	0.7
Conventional	Carbon, Total Organic	2004	5.1	14.7	23.1	0.9
Conventional	Carbon, Total Organic	2005	5.7	15.8	25.1	1.1
Conventional	Carbon, Total Organic	2006	5.1	14.5	28.4	1.0
Conventional	Carbon, Total Organic	2007	5.2	15.8	27.9	1.0
Conventional	Carbon, Total Organic	2008	6.7	16.2	25.9	0.9
Conventional	Carbon, Total Organic	2009	5.1	16.5	24.1	0.9
Conventional	Carbon, Total Organic	2010	4.8	17.0	23.8	1.3
Conventional	Carbon, Total Organic	2011	3.4	15.6	17.6	0.9
Conventional	Carbon, Total Organic	2012	2.8	15.0	19.7	0.9
Conventional	Chemical Oxygen Demand	1990	27.9	41.2	97.8	2.2
Conventional	Chemical Oxygen Demand	1993			106.0	30.5
Conventional	Chemical Oxygen Demand	1994		30.0	83.0	22.0
Conventional	Chemical Oxygen Demand	1995			90.0	32.0
Conventional	Chemical Oxygen Demand	1996		41.0	98.0	16.0
Conventional	Chemical Oxygen Demand	1997		43.0	87.0	19.0
Conventional	Chemical Oxygen Demand	1998		51.0	98.0	20.1
Conventional	Chemical Oxygen Demand	1999			92.0	40.5
Conventional	Chemical Oxygen Demand	2000		43.5	71.3	13.6
Conventional	Chemical Oxygen Demand	2001	22.3	42.5	69.5	17.3
Conventional	Chemical Oxygen Demand	2002	19.0	38.0	60.0	18.0
Conventional	Chemical Oxygen Demand	2003		37.0	55.8	2.9
Conventional	Chemical Oxygen Demand	2004		38.0	58.8	2.9

TABLE 4
Parameters Statistically Higher than Background, 1988 to 2013
South Woodwaste Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient			Mean Value Upgradient
			BXS-1	BXS-2	BXS-3	BXS-4
Conventionals	Chemical Oxygen Demand	2005		42.8	69.5	8.4
Conventionals	Chemical Oxygen Demand	2006	12.5	36.0	72.0	2.9
Conventionals	Chemical Oxygen Demand	2007	9.9	34.8	73.3	3.4
Conventionals	Chemical Oxygen Demand	2008	16.3	38.3	69.3	4.4
Conventionals	Chemical Oxygen Demand	2009	13.7	41.3	77.7	7.5
Conventionals	Chemical Oxygen Demand	2010	9.8	39.8	70.9	3.5
Conventionals	Chemical Oxygen Demand	2011	8.0	42.3	74.7	4.6
Conventionals	Chemical Oxygen Demand	2012		41.5	67.8	3.7
Conventionals	Chemical Oxygen Demand	2013	6.6	40	63	4.5
Conventionals	Chloride	1989	45.0	61.0	17.0	6.6
Conventionals	Chloride	1990	22.5	14.5	6.8	2.2
Conventionals	Chloride	1992	16.7	6.7	7.7	2.2
Conventionals	Chloride	1993	12.1	6.6	12.8	2.3
Conventionals	Chloride	1994	13.0	7.4	7.4	2.1
Conventionals	Chloride	1995	14.0	10.0	9.6	1.9
Conventionals	Chloride	1996	14.6	17.3	9.1	2.0
Conventionals	Chloride	1997	12.6	14.8	35.0	2.0
Conventionals	Chloride	1998	11.6	11.0	6.3	2.1
Conventionals	Chloride	1999	10.0		6.1	2.2
Conventionals	Chloride	2000	7.8	8.3	5.0	2.1
Conventionals	Chloride	2001	5.9	7.4	4.7	2.1
Conventionals	Chloride	2002	5.3	6.5	3.8	2.0
Conventionals	Chloride	2003	4.6	5.5		2.0
Conventionals	Chloride	2004		4.3	2.3	1.8
Conventionals	Chloride	2005	4.5	4.4	3.7	1.8
Conventionals	Chloride	2006	4.0	3.5	2.8	1.7
Conventionals	Chloride	2007	5.5	4.4	2.7	1.7
Conventionals	Chloride	2008	5.1	4.5	3.0	1.9
Conventionals	Chloride	2009	6.8	4.8	3.6	1.9
Conventionals	Chloride	2010	5.6	3.7	3.0	1.8
Conventionals	Chloride	2011	6.2	3.2		1.8
Conventionals	Chloride	2012		3.0		1.7
Conventionals	Chloride	2013	4.2	3.0	1.9	1.7
Conventionals	Coliform, total	2010		2.0		0.6
Conventionals	Conductivity (µmhos/cm)	1989	351	607	514	180
Conventionals	Conductivity (µmhos/cm)	1990	366	624	500	214
Conventionals	Conductivity (µmhos/cm)	1992	292	586	533	189
Conventionals	Conductivity (µmhos/cm)	1993		487	526	173
Conventionals	Conductivity (µmhos/cm)	1994	214	479	602	169

TABLE 4
Parameters Statistically Higher than Background, 1988 to 2013
South Woodwaste Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient			Mean Value Upgradient
			BXS-1	BXS-2	BXS-3	BXS-4
Conventionals	Conductivity (µmhos/cm)	1995	333	623		149
Conventionals	Conductivity (µmhos/cm)	1996	290	602	787	161
Conventionals	Conductivity (µmhos/cm)	1997	326		765	169
Conventionals	Conductivity (µmhos/cm)	1998	393	678	738	177
Conventionals	Conductivity (µmhos/cm)	1999	406	786	748	177
Conventionals	Conductivity (µmhos/cm)	2000	417	762	651	166
Conventionals	Conductivity (µmhos/cm)	2001	493	878	886	193
Conventionals	Conductivity (µmhos/cm)	2002	470	849	825	187
Conventionals	Conductivity (µmhos/cm)	2004		821	853	198
Conventionals	Conductivity (µmhos/cm)	2005	393	788	750	192
Conventionals	Conductivity (µmhos/cm)	2006	414	773	785	191
Conventionals	Conductivity (µmhos/cm)	2007	397	799	804	191
Conventionals	Conductivity (µmhos/cm)	2008	465	758	771	189
Conventionals	Conductivity (µmhos/cm)	2009	340	793	730	185
Conventionals	Conductivity (µmhos/cm)	2010	304	825	707	196
Conventionals	Conductivity (µmhos/cm)	2011	334	839	464	193
Conventionals	Conductivity (µmhos/cm)	2012	330	891	444	187
Conventionals	Conductivity (µmhos/cm)	2013	290	879	643	191
Conventionals	Nitrate + Nitrite as Nitrogen	1990	0.72			0.10
Conventionals	Nitrate + Nitrite as Nitrogen	1993	0.79			0.18
Conventionals	Nitrate + Nitrite as Nitrogen	1994	0.50			ND
Conventionals	Nitrate + Nitrite as Nitrogen	1996	1.65			ND
Conventionals	Nitrate + Nitrite as Nitrogen	1997	0.75			ND
Conventionals	Nitrate + Nitrite as Nitrogen	1999	0.43			ND
Conventionals	Nitrate + Nitrite as Nitrogen	2000	0.33			0.10
Conventionals	Nitrate + Nitrite as Nitrogen	2002	0.50			0.20
Conventionals	Nitrate + Nitrite as Nitrogen	2004	0.85			0.06
Conventionals	Nitrate + Nitrite as Nitrogen	2005	0.75			0.06
Conventionals	Nitrate + Nitrite as Nitrogen	2006	0.71			0.04
Conventionals	Nitrate + Nitrite as Nitrogen	2007	0.69			0.14
Conventionals	Nitrate + Nitrite as Nitrogen	2008	0.83			0.04
Conventionals	Nitrate + Nitrite as Nitrogen	2009	0.31		0.15	0.02
Conventionals	Nitrate + Nitrite as Nitrogen	2010	0.09		0.16	0.03
Conventionals	Nitrate + Nitrite as Nitrogen	2011	47.60			0.02
Conventionals	Nitrate + Nitrite as Nitrogen	2012	0.05		0.09	0.02
Conventionals	Nitrate + Nitrite as Nitrogen	2013	0.08		0.10	0.03
Conventionals	pH	1992	6.1	6.3	6.4	7.9
Conventionals	pH	2000	6.1	6.4	6.5	7.9
Conventionals	pH	2001	6.1	6.4	6.7	7.9

TABLE 4
Parameters Statistically Higher than Background, 1988 to 2013
South Woodwaste Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient			Mean Value Upgradient
			BXS-1	BXS-2	BXS-3	BXS-4
Conventionals	Solids, Total Dissolved	1990		397	436	228
Conventionals	Solids, Total Dissolved	1992		352	351	147
Conventionals	Solids, Total Dissolved	1993		330		141
Conventionals	Solids, Total Dissolved	1994	161	330	418	134
Conventionals	Solids, Total Dissolved	1995	188	361	492	141
Conventionals	Solids, Total Dissolved	1996	224	423	604	153
Conventionals	Solids, Total Dissolved	1997	236	456	613	150
Conventionals	Solids, Total Dissolved	1998	273	473	562	137
Conventionals	Solids, Total Dissolved	1999	256	524	517	156
Conventionals	Solids, Total Dissolved	2000	297	544	527	140
Conventionals	Solids, Total Dissolved	2001	261	299	346	135
Conventionals	Solids, Total Dissolved	2002	298	466	518	145
Conventionals	Solids, Total Dissolved	2003	291	525	572	132
Conventionals	Solids, Total Dissolved	2004	228	439	493	127
Conventionals	Solids, Total Dissolved	2005	255	516	449	135
Conventionals	Solids, Total Dissolved	2006	259	507	526	145
Conventionals	Solids, Total Dissolved	2007	254	471	476	152
Conventionals	Solids, Total Dissolved	2008	298	481	489	142
Conventionals	Solids, Total Dissolved	2009	215	500	438	127
Conventionals	Solids, Total Dissolved	2010	189	513	368	145
Conventionals	Solids, Total Dissolved	2011	206	538	375	134
Conventionals	Solids, Total Dissolved	2012	205	543	347	128
Conventionals	Sulfate	1989	5.9			2.3
Conventionals	Sulfate	1990	6.6			1.9
Conventionals	Sulfate	1992	9.1			2.0
Conventionals	Sulfate	1993	10.0			2.0
Conventionals	Sulfate	1994	11.8			1.9
Conventionals	Sulfate	1995	12.0			1.8
Conventionals	Sulfate	1996	10.7			1.7
Conventionals	Sulfate	1997	11.8			1.6
Conventionals	Sulfate	1998	9.5			1.3
Conventionals	Sulfate	1999	7.8			1.4
Conventionals	Sulfate	2001	7.5			1.4
Conventionals	Sulfate	2002	7.3			1.4
Conventionals	Sulfate	2005	10.1			1.3
Conventionals	Sulfate	2006	11.3			1.4
Conventionals	Sulfate	2007	12.4			1.4
Conventionals	Sulfate	2008	9.1			1.1
Conventionals	Sulfate	2009	10.5			1.9

TABLE 4
Parameters Statistically Higher than Background, 1988 to 2013
South Woodwaste Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient			Mean Value Upgradient
			BXS-1	BXS-2	BXS-3	BXS-4
Conventionals	Sulfate	2010	15.3			1.4
Conventionals	Sulfate	2011	15.8			1.1
Conventionals	Sulfate	2012	15.3			0.8
Conventionals	Sulfate	2013	13			0.82
Conventionals	Tannin and Lignin	1990			3.1	1.4
Conventionals	Tannin and Lignin	1993		0.5		0.3
Conventionals	Tannin and Lignin	1994		0.5	1.0	0.2
Conventionals	Tannin and Lignin	1995			3.1	0.6
Conventionals	Tannin and Lignin	1996		0.7	5.6	0.3
Conventionals	Tannin and Lignin	1998			8.1	0.7
Conventionals	Tannin and Lignin	1999			12.2	0.5
Conventionals	Tannin and Lignin	2000		9.1	9.2	0.4
Conventionals	Tannin and Lignin	2002		1.6	11.1	0.4
Conventionals	Tannin and Lignin	2003			6.3	0.4
Conventionals	Tannin and Lignin	2004		1.4		0.5
Conventionals	Tannin and Lignin	2005			8.1	0.4
Conventionals	Tannin and Lignin	2006			11.5	0.4
Conventionals	Tannin and Lignin	2007		1.2	8.5	0.3
Conventionals	Tannin and Lignin	2008		1.2	11.1	0.3
Conventionals	Tannin and Lignin	2009		1.1	9.4	0.3
Conventionals	Tannin and Lignin	2010		1.4	14.9	0.3
Conventionals	Tannin and Lignin	2011		1.2	15.0	0.3
Conventionals	Tannin and Lignin	2012		1.7	26.5	0.4
Conventionals	Tannin and Lignin	2013		1.3	10	0.26
Conventionals	Total Dissolved Solids	2013	191	549	333	103
Conventionals	Total Organic Carbon	2013	2.5	15	18	0.83
Metals	Arsenic	1996			9.0	4.0
Metals	Arsenic	1997			15.0	5.0
Metals	Arsenic	1998			20.0	4.6
Metals	Arsenic	1999			34.0	5.8
Metals	Arsenic	2002			10.4	3.8
Metals	Arsenic	2007			110	5.9
Metals	Arsenic	2008			79.3	5.9
Metals	Arsenic	2009			75.0	6.9
Metals	Arsenic	2010			151.8	5.9
Metals	Arsenic	2011			142.3	6.1
Metals	Arsenic	2012			149.0	5.5
Metals	Arsenic	2013			140	6.4
Metals	Barium	1993			38.0	28.0

TABLE 4
Parameters Statistically Higher than Background, 1988 to 2013
South Woodwaste Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient			Mean Value Upgradient
			BXS-1	BXS-2	BXS-3	BXS-4
Metals	Barium	1994		38.0	51.0	25.0
Metals	Barium	1995		45.0	58.0	27.0
Metals	Barium	1996		48.0	74.0	26.0
Metals	Barium	1997		50.0	58.0	21.0
Metals	Barium	1998		51.0	65.0	26.0
Metals	Barium	1999		51.0	58.0	27.0
Metals	Barium	2000			87.8	26.5
Metals	Barium	2001	28.3	51.0	60.0	27.3
Metals	Barium	2002		50.0	78.0	28.0
Metals	Barium	2003		46.5	54.7	29.2
Metals	Barium	2004		48.0	70.9	23.1
Metals	Barium	2005		44.3	87.8	29.1
Metals	Barium	2006		45.9	95.4	31.2
Metals	Barium	2007		46.3	84.6	29.2
Metals	Barium	2008		43.9	92.7	27.7
Metals	Barium	2009		45.1	91.7	77.9
Metals	Barium	2011		49.6	126.5	25.8
Metals	Barium	2012		51.5	125.8	27.9
Metals	Barium	2013		52	104	26
Metals	Cadmium	2002		1.1	1.1	<1.1
Metals	Copper	1993			8	5
Metals	Iron	1990		140	1,950	48
Metals	Iron	1994		748	1,950	45
Metals	Iron	1995		1,120	341	50
Metals	Iron	1996		1,520	9,490	46
Metals	Iron	1997		1,220	17,800	50
Metals	Iron	1998		1,130	20,700	56
Metals	Iron	1999		950	34,500	30
Metals	Iron	2000		665	37,740	47.5
Metals	Iron	2001	10	715	6,538	42.5
Metals	Iron	2002		729	10,474	42
Metals	Iron	2003		814		42.45
Metals	Iron	2004		784		38.18
Metals	Iron	2005		758	10,013	42.6
Metals	Iron	2006		813	47,648	39.7
Metals	Iron	2007		743	87,825	39.0
Metals	Iron	2008		596	72,025	48.2
Metals	Iron	2009		709	67,678	60.3
Metals	Iron	2010		455	104,675	31.5

TABLE 4
Parameters Statistically Higher than Background, 1988 to 2013
South Woodwaste Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient			Mean Value Upgradient
			BXS-1	BXS-2	BXS-3	BXS-4
Metals	Iron	2011		434	106,500	44.9
Metals	Iron	2012		404	98,250	54.7
Metals	Iron	2013		421	100,275	60
Metals	Lead	1993			2	1
Metals	Manganese	1989	210	580	1,100	120
Metals	Manganese	1990		650	1,820	99
Metals	Manganese	1993		570		110
Metals	Manganese	1994		670	1,110	120
Metals	Manganese	1995		834	3,780	122
Metals	Manganese	1996		1,120	10,800	121
Metals	Manganese	1997		1,510	13,000	90
Metals	Manganese	1998	175	1,650	13,800	126
Metals	Manganese	1999	200	1,420	14,800	116
Metals	Manganese	2000	331	1,450	15,025	124
Metals	Manganese	2001	426	1,513	15,350	119
Metals	Manganese	2002	430	1,502	15,763	119
Metals	Manganese	2003		1,523	15,750	113
Metals	Manganese	2004		1,420	16,625	103
Metals	Manganese	2005		1,305	13,503	112
Metals	Manganese	2006		1,330	15,275	113
Metals	Manganese	2007		1,323	13,925	114
Metals	Manganese	2008	317	1,225	14,750	114
Metals	Manganese	2009		1,570	11,093	1,140
Metals	Manganese	2010			9,533	113
Metals	Manganese	2011	144	1,375	12,403	107
Metals	Manganese	2012	237	1,535	11,300	116
Metals	Manganese	2013	218	1,643	13,233	115
Metals	Nickel	1993		18.0		1.0
Metals	Nickel	1994		18.0		ND
Metals	Nickel	1995		21.0	30.0	ND
Metals	Nickel	1996			25.0	ND
Metals	Nickel	1997		34.0	20.0	ND
Metals	Nickel	1998		43.0	29.0	ND
Metals	Nickel	1999		36.0	22.0	ND
Metals	Nickel	2000		37.0		ND
Metals	Nickel	2001	20.3	37.5	17.5	10.0
Metals	Nickel	2002	21.3	38.5	24.0	5.5
Metals	Nickel	2003		37.0		10.0
Metals	Nickel	2004		40.8		10.0

TABLE 4
Parameters Statistically Higher than Background, 1988 to 2013
South Woodwaste Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient			Mean Value Upgradient
			BXS-1	BXS-2	BXS-3	BXS-4
Metals	Nickel	2005		36.2		10.0
Metals	Nickel	2006		34.4		10.0
Metals	Nickel	2007		33.4		10.0
Metals	Nickel	2008		29.7	16.1	10.0
Metals	Nickel	2009		57.1		33.5
Metals	Nickel	2011		30.5		12.5
Metals	Nickel	2012		32.1	16.3	7.7
Metals	Nickel	2013	10	37	21	7
Metals	Zinc	2002	8.0	6.8		<2.4
Metals	Zinc	2005	10.0			5.0
Metals	Zinc	2007	6.2	17.3	12.4	4.4
Metals	Zinc	2008		7.6		4.8

Notes:

Mean values are yearly averages

ND = not detected

< = not detected above listed reporting limit

Metals units are micrograms per liter (µg/L)

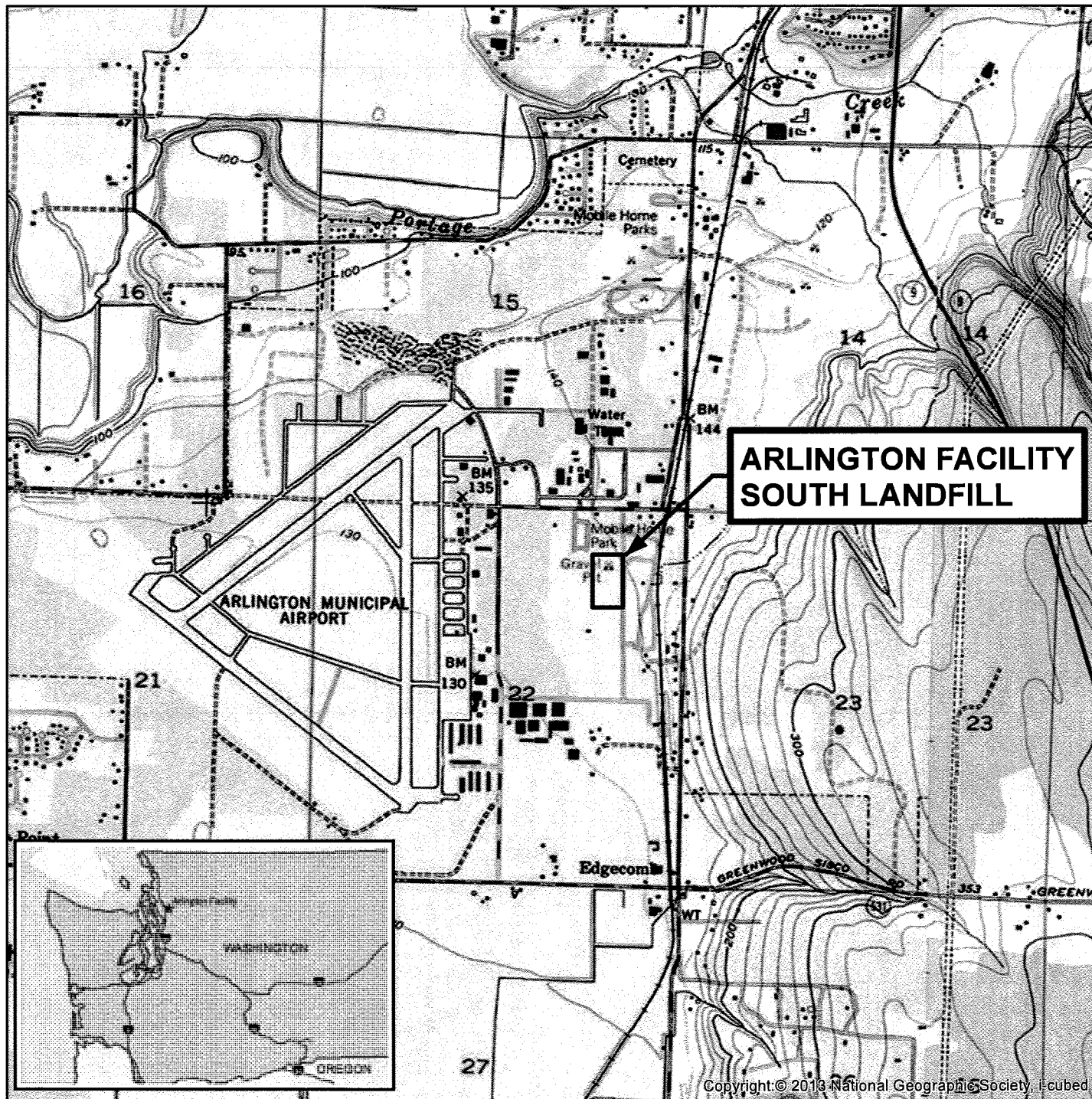
Conventional units are milligrams per liter (mg/L), unless otherwise noted

µmhos/cm = micromhos per centimeter

FIGURES

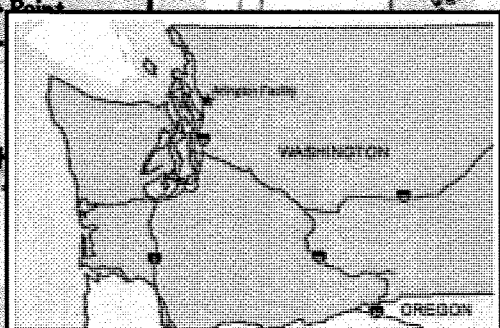


FIGURES



**ARLINGTON FACILITY
SOUTH LANDFILL**

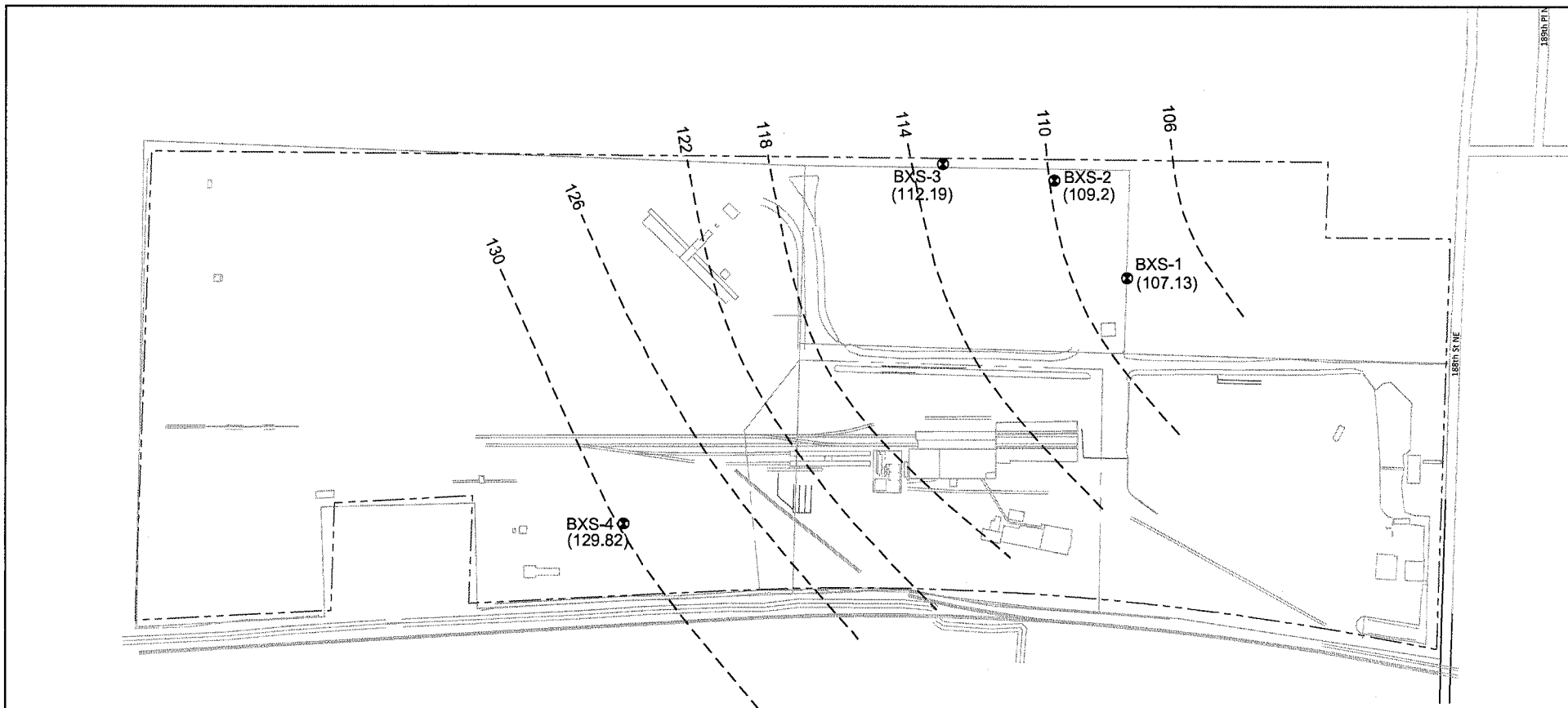
**ARLINGTON MUNICIPAL
AIRPORT**



0 1,000 2,000 4,000
Feet

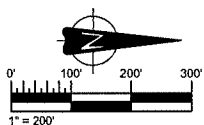


AMEC 7376 SW Durham Road Portland, OR, U.S.A. 97224		 		J.H. BAXTER	
TITLE: SITE VICINITY MAP - SOUTH LANDFILL		DWN BY: PM	DATUM: NAD83	DATE: JUNE 2014	
PROJECT: FORMER J.H. BAXTER AND CO. WOOD TREATING FACILITY ARLINGTON, WA		CHK'D BY: SB	REV. NO.: 1	PROJECT NO.: 461M125612.02.1	
		PROJECTION: WA SP N. Ft.	SCALE: 1 inch = 2,000 feet	FIGURE NO.: 1	

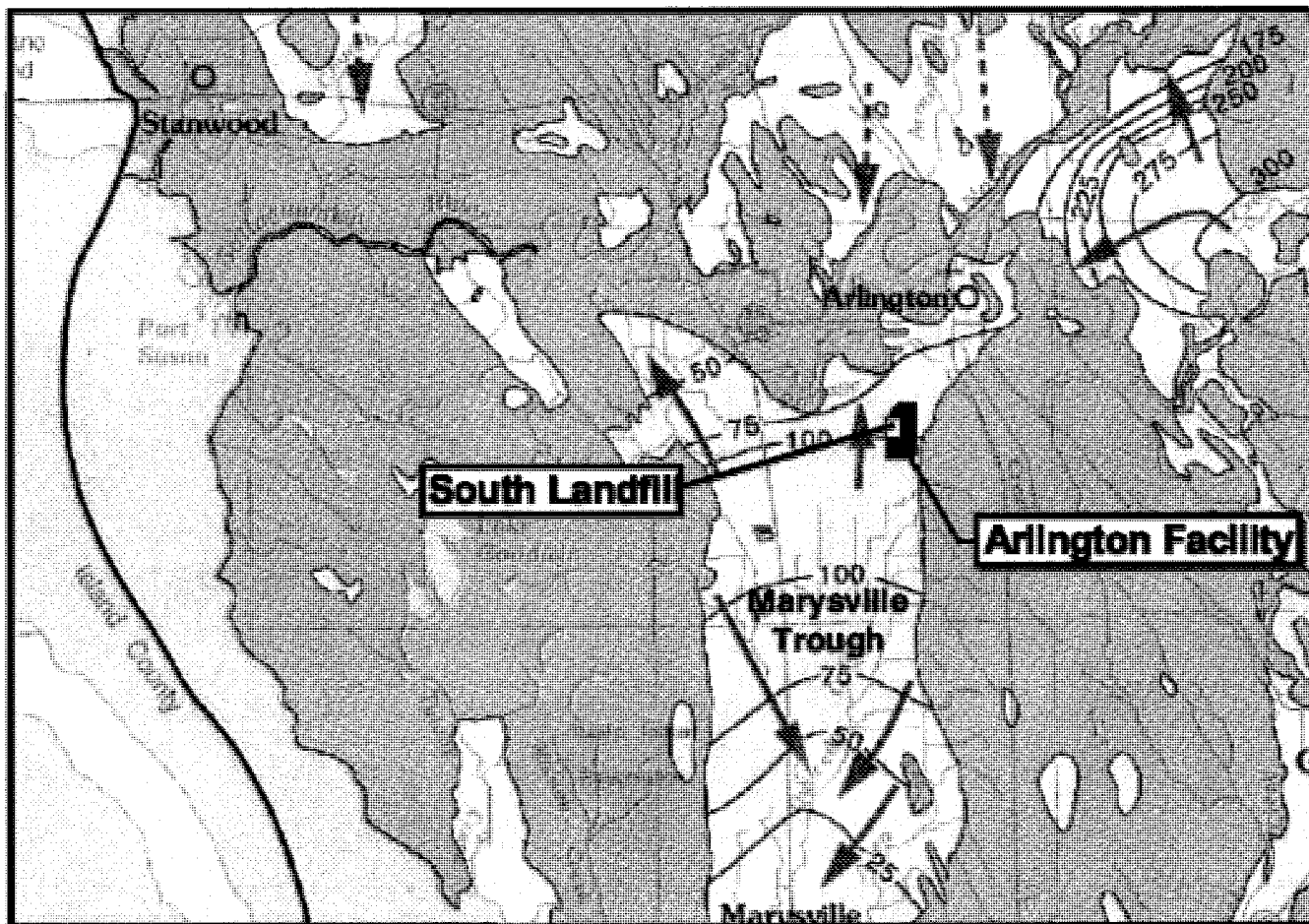


LEGEND

- MONITORING WELL
- (129.82) GROUNDWATER ELEVATION (msl)
- - - INFERRED ELEVATION CONTOUR
- - - SITE BOUNDARY



	CLIENT: J.H. BAXTER		DWN BY: PM/SD CHK'D BY: SB DATUM: - PROJECTION: - SCALE: 1"=200'	PROJECT: FORMER J.H. BAXTER AND CO. WOOD TREATING FACILITY ARLINGTON, WA TITLE: GROUNDWATER ELEVATION CONTOUR MAP DECEMBER 2 nd , 2013 - SOUTH LANDFILL	DATE: JUNE 2014 PROJECT NO.: 461M125612.02.1 REV. NO.: A FIGURE NO.: 3
	AMEC 7376 S.W. Durham Road Portland, OR, U.S.A. 97224				



Note:
Map created by base map by B.E. Thomas, J.M. Willson,
and S.S. Embrey, entitled "Plate 6. Areal Recharge From
Precipitation and Potentiometric Surfaces of Principal
Aquifers, Western Snohomish County, Washington,"
dated 1997

0 4 8 Miles

LEGEND

- 50 Groundwater Elevation
- Groundwater Elevation Contour
- Inferred Groundwater Flow Direction



AMEC
7376 SW Durham Road
Portland, OR, U.S.A. 97224

amec

J. Baxter

CLIENT:

J.H. BAXTER

TITLE:
REGIONAL GROUNDWATER FLOW - SOUTH LANDFILL

DWN BY: PM DATUM: - DATE: JUNE 2014

PROJECT:
**FORMER J.H. BAXTER AND CO.
WOOD TREATING FACILITY
ARLINGTON, WA**

CHK'D BY: SB REV. NO.: 1 PROJECT NO.: 461M125612.02.1

PROJECTION: - SCALE: AS SHOWN FIGURE NO.: 4

FIGURE 5
Concentration Trends for Ammonia
South Woodwaste Landfill Monitoring Well Data

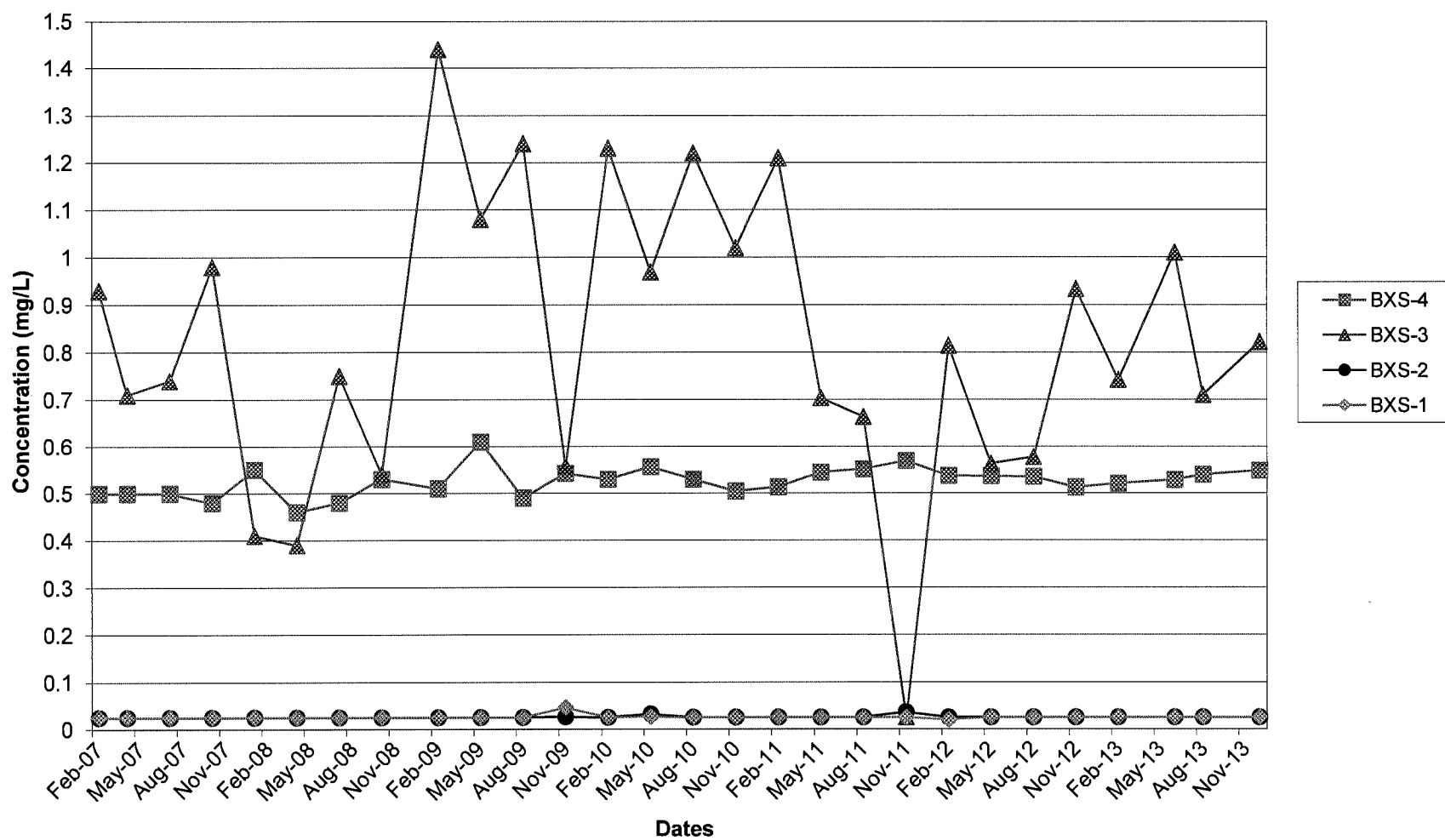


FIGURE 6
Concentration Trends for Arsenic
South Woodwaste Landfill Monitoring Well Data

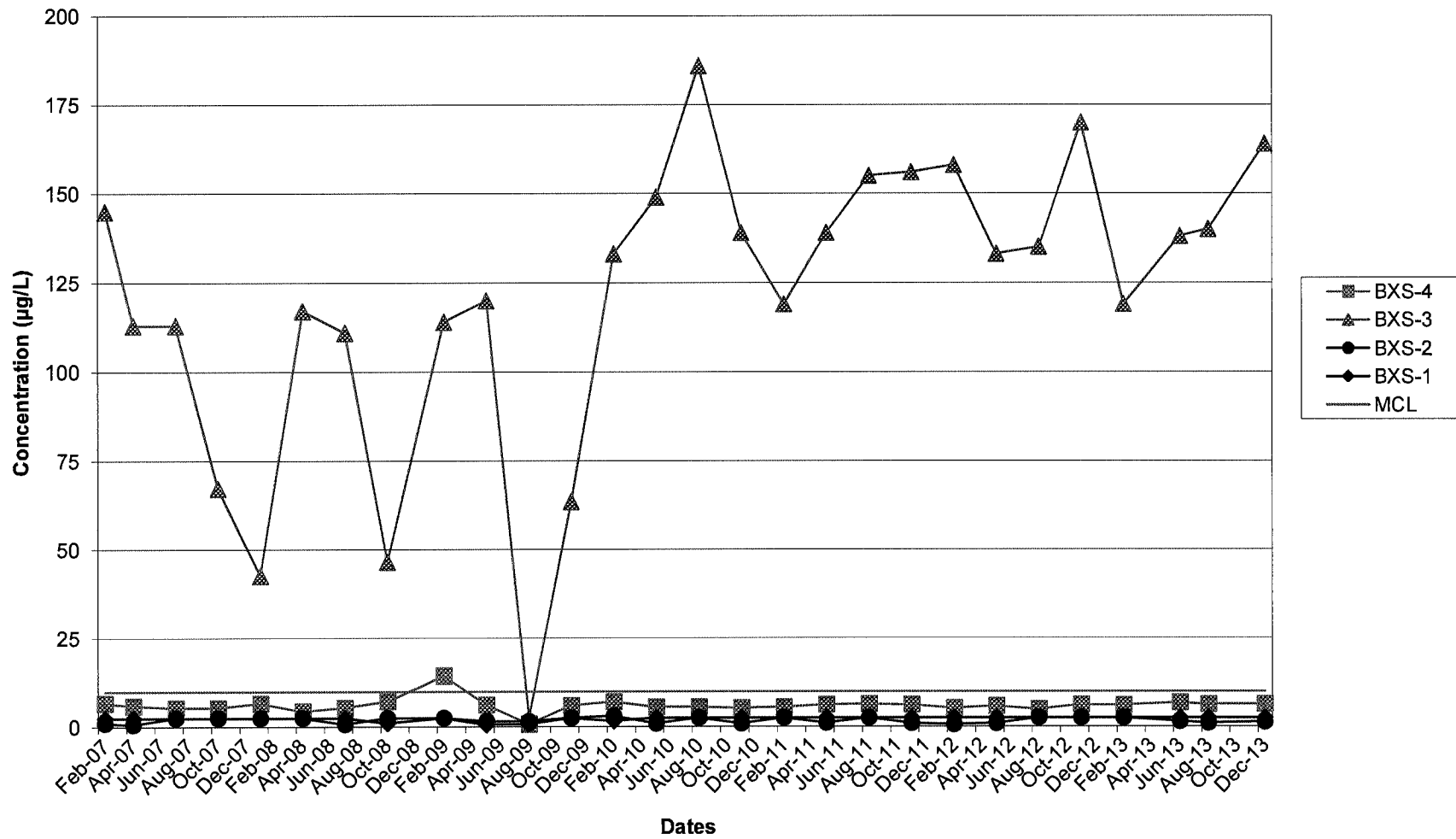


FIGURE 7
Concentration Trends for Barium
South Woodwaste Landfill Monitoring Well Data

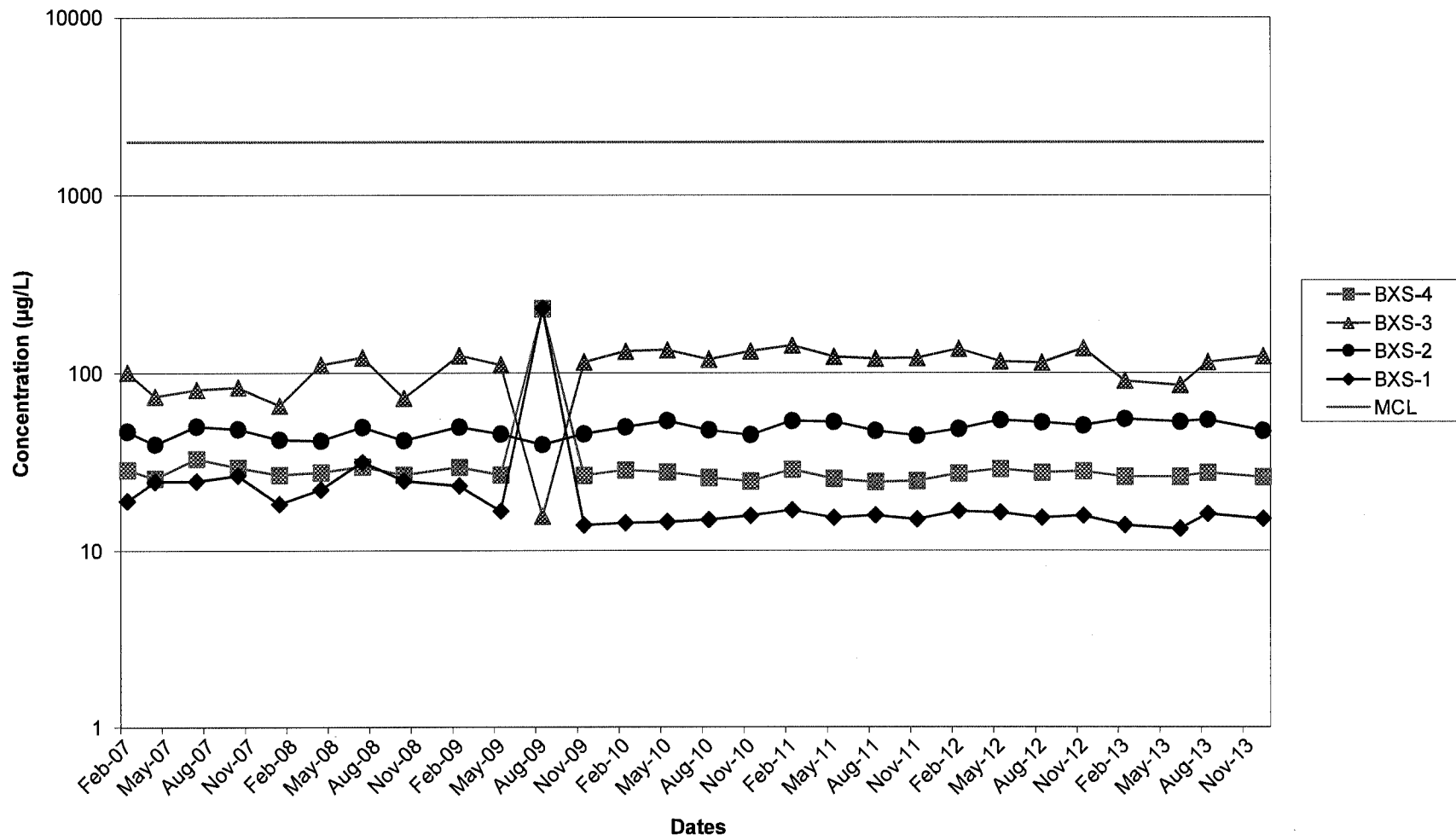


FIGURE 8
Concentration Trends for Chemical Oxygen Demand
South Woodwaste Landfill Monitoring Well Data

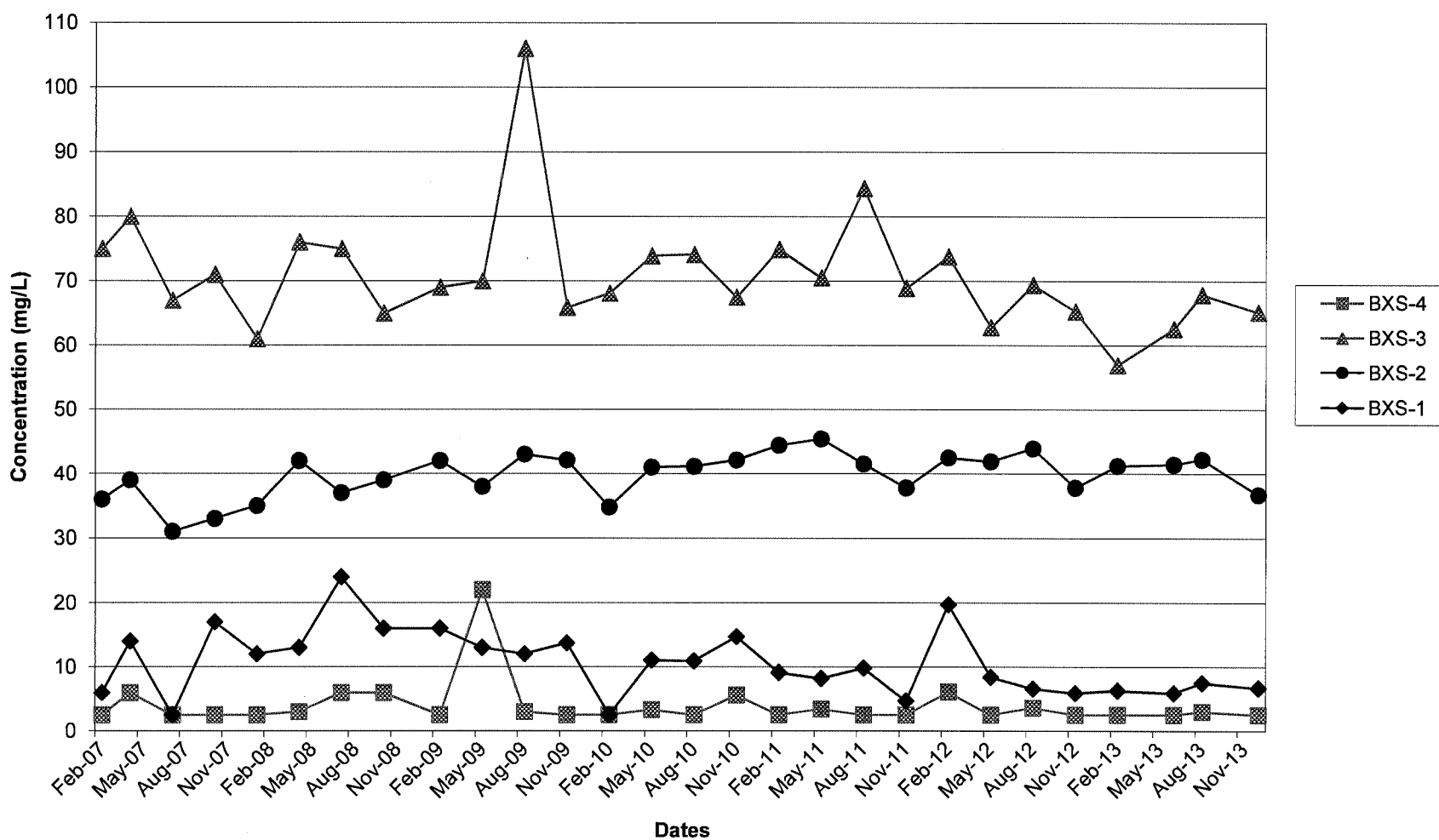


FIGURE 9
Concentration Trends for Chloride
South Woodwaste Landfill Monitoring Well Data

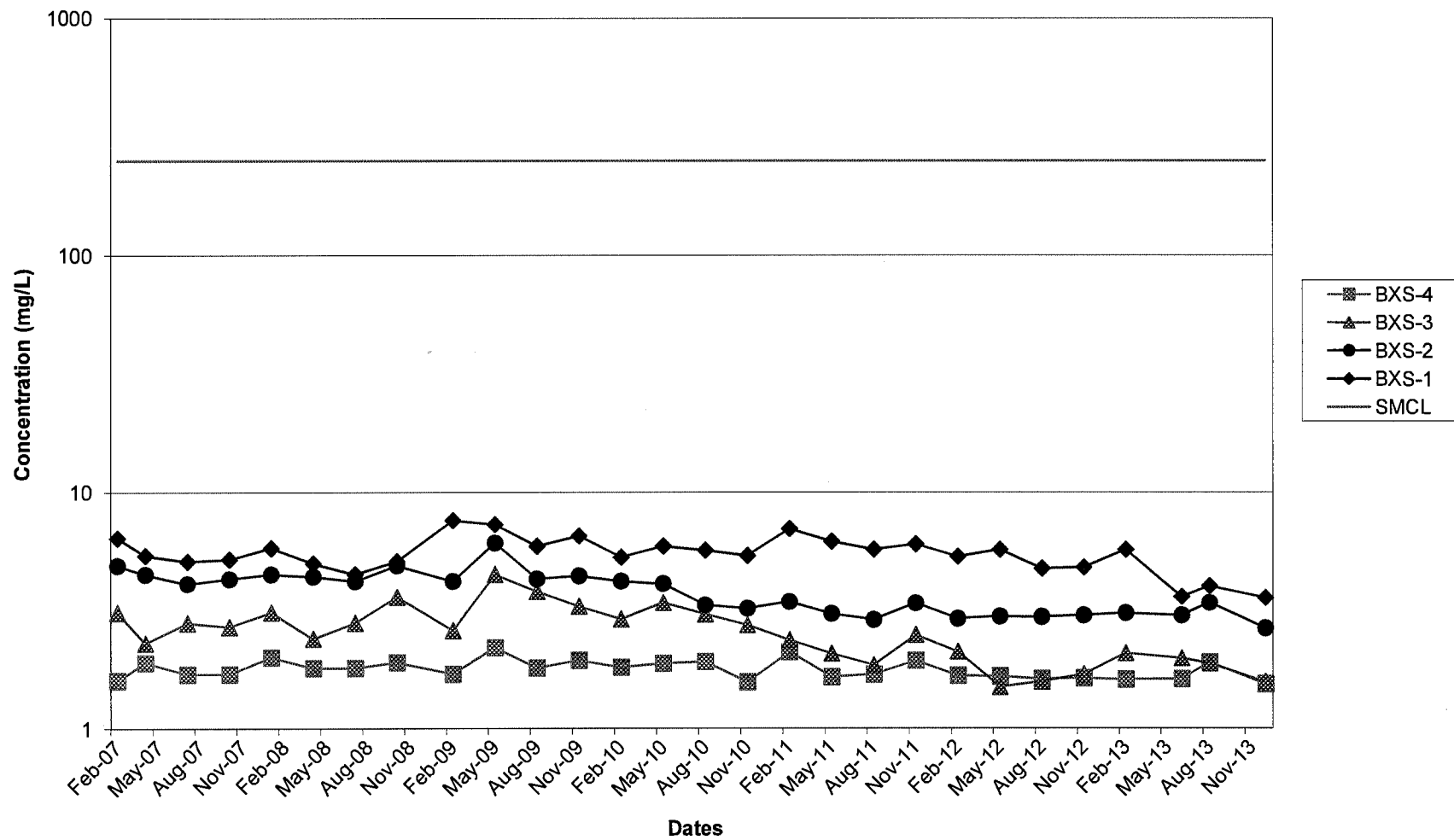


FIGURE 10
Concentration Trends for Field Conductivity
South Woodwaste Landfill Monitoring Well Data

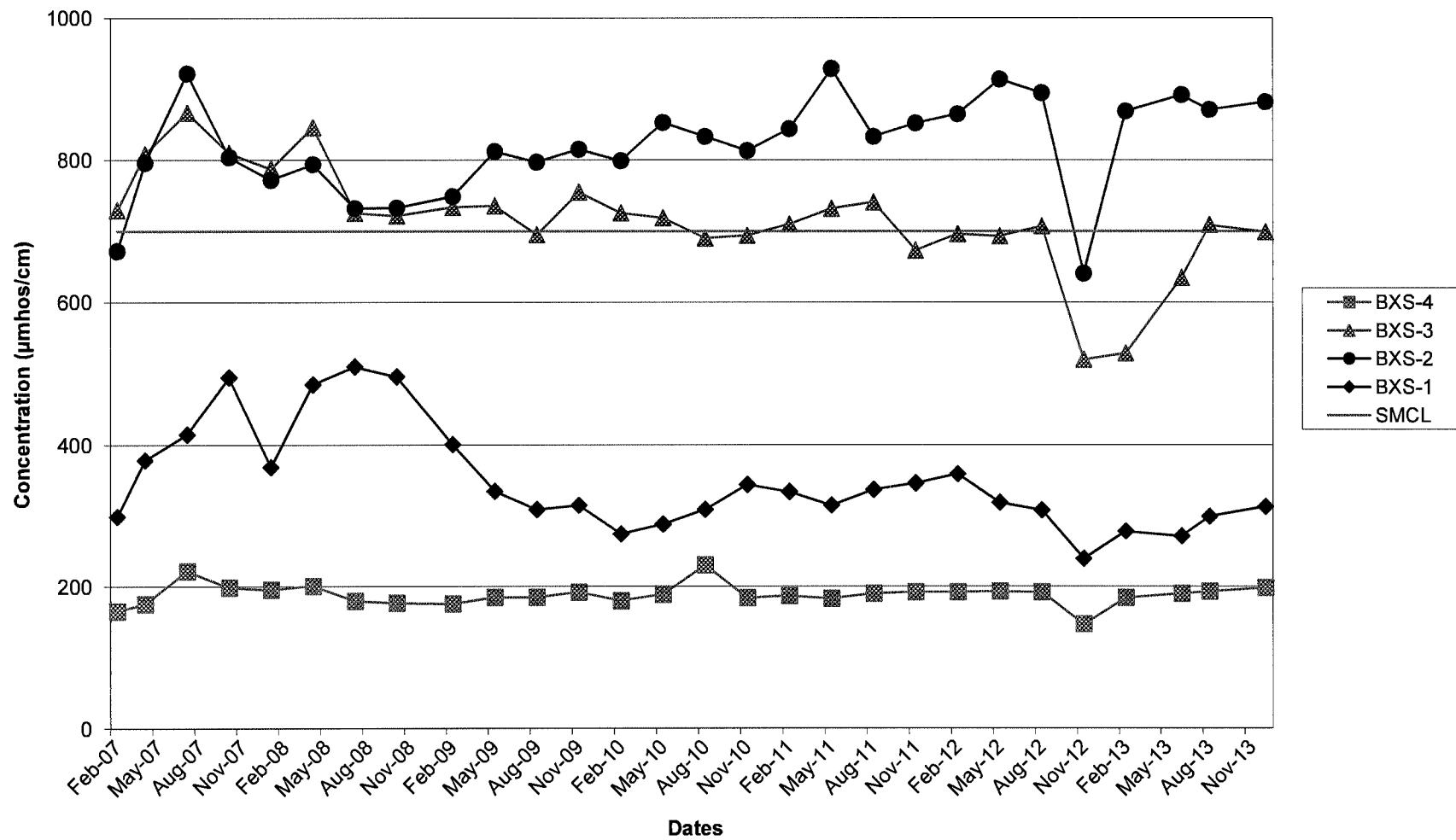


FIGURE 11
Concentration Trends for Iron
South Woodwaste Landfill Monitoring Well Data

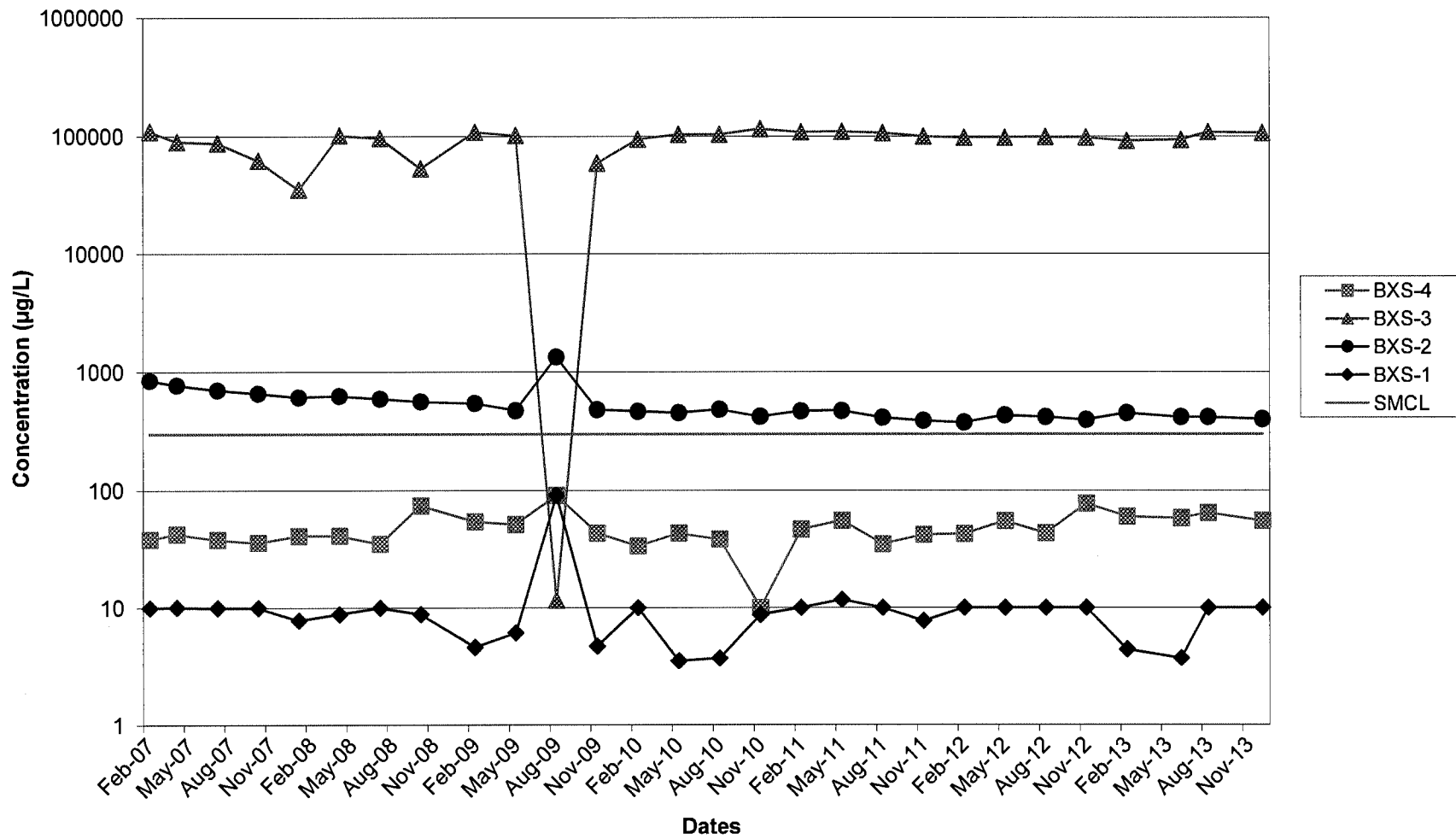


FIGURE 12
Concentration Trends for Manganese
South Woodwaste Landfill Monitoring Well Data

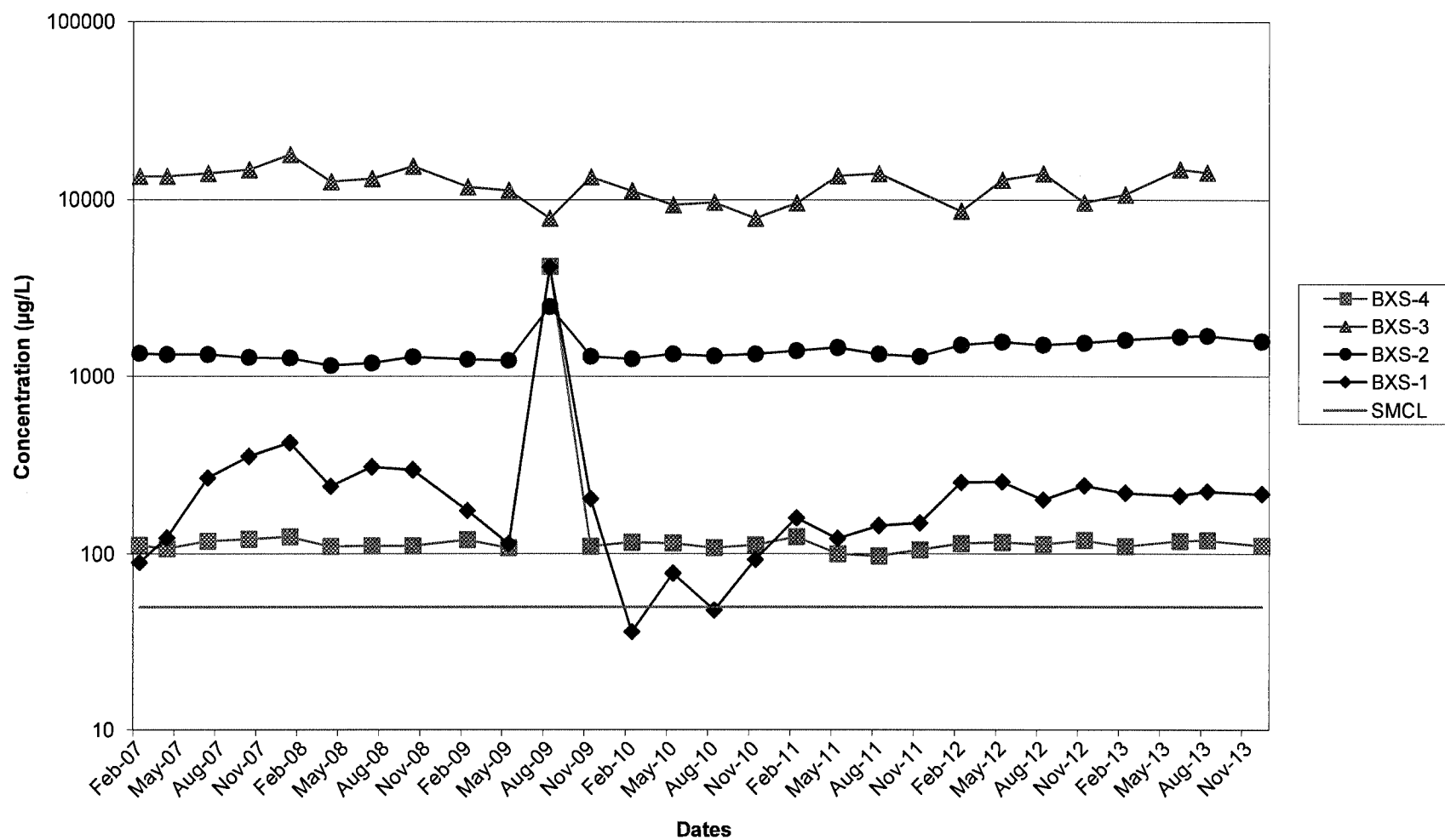


FIGURE 13
Concentration Trends for Nickel
South Woodwaste Landfill Monitoring Well Data

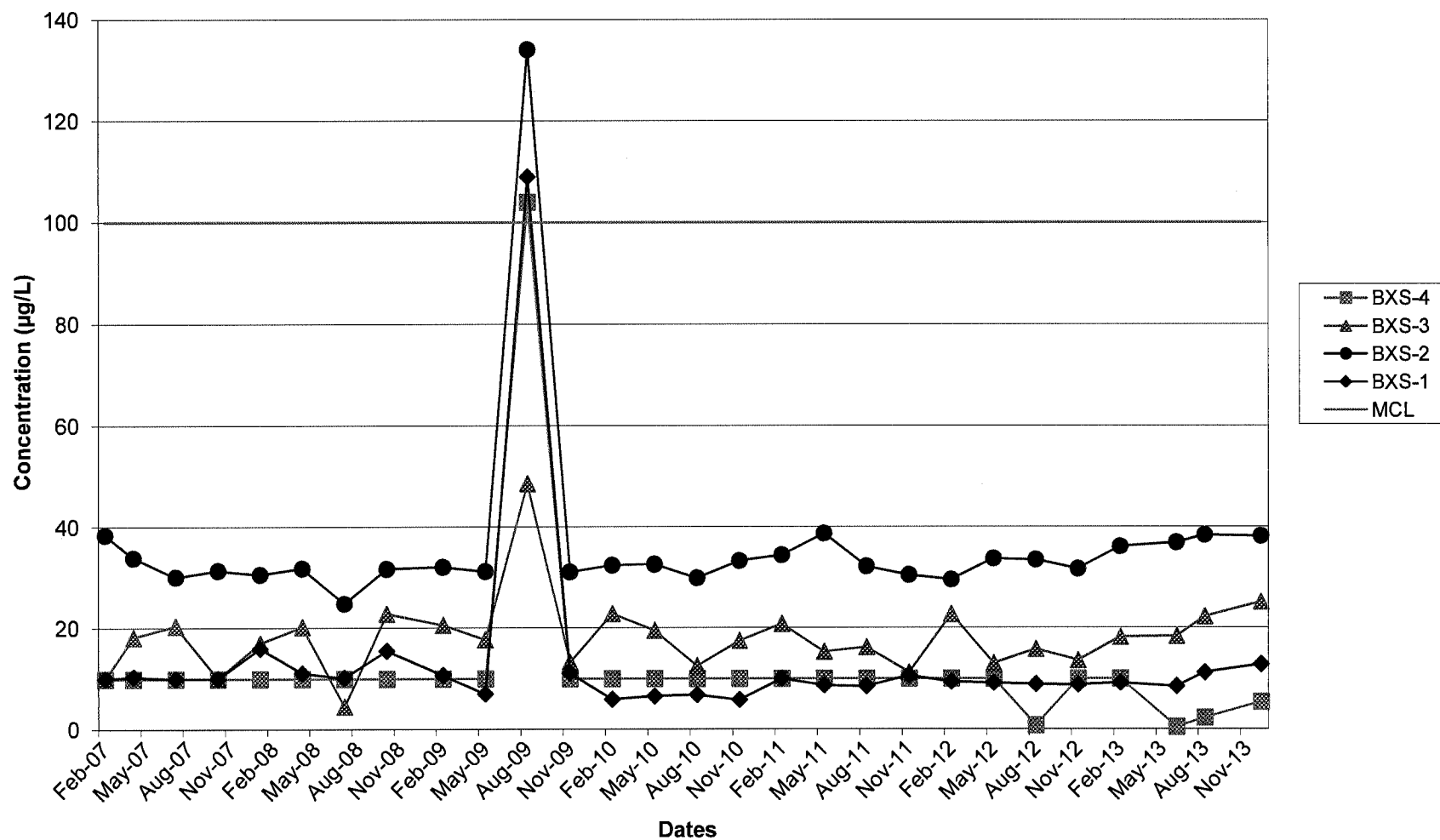


FIGURE 14
Concentration Trends for Sulfate
South Woodwaste Landfill Monitoring Well Data

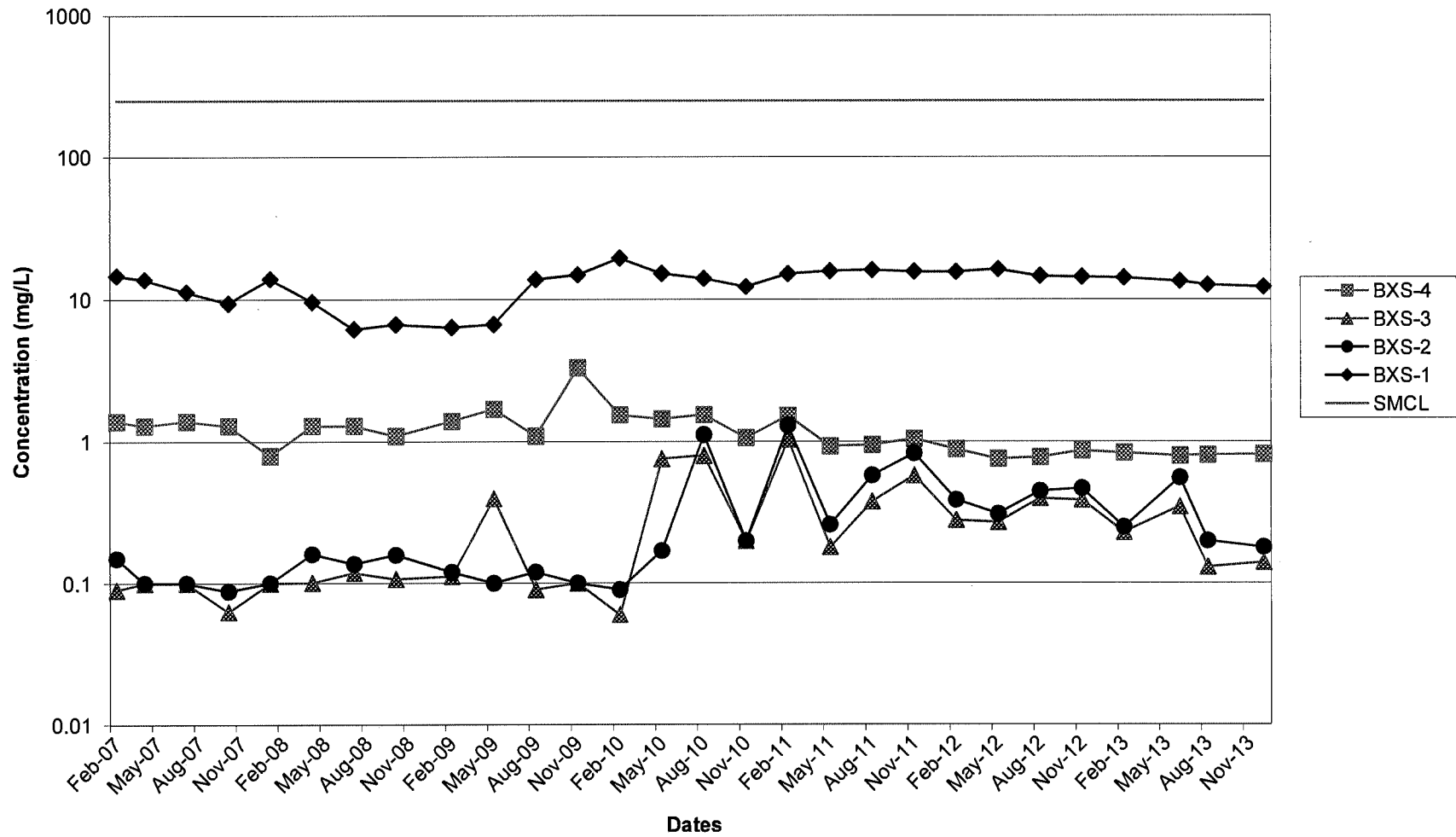


FIGURE 15
Concentration Trends for Tannin and Lignin
South Woodwaste Landfill Monitoring Well Data

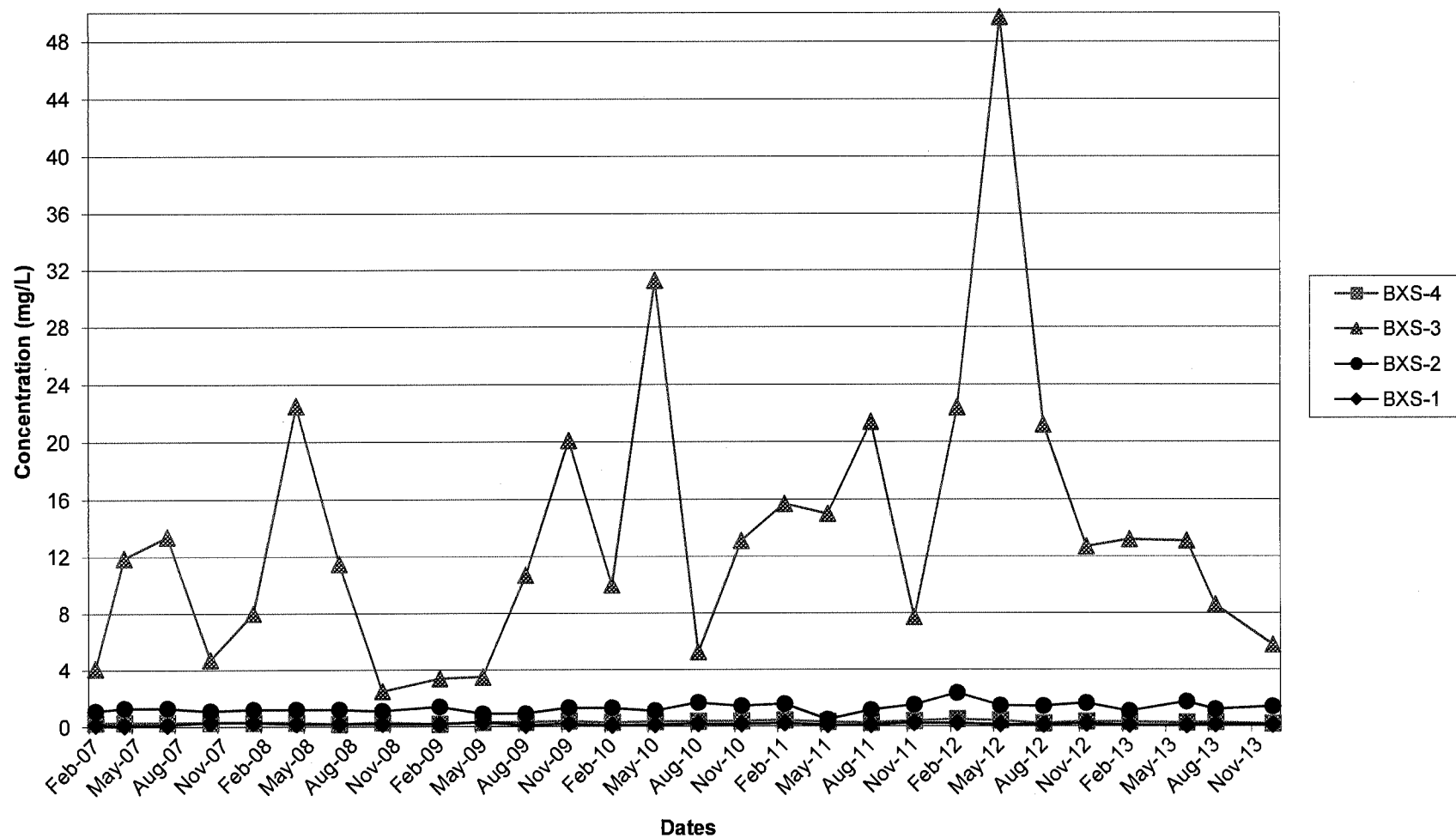


FIGURE 16
Concentration Trends for Total Organic Carbon
South Woodwaste Landfill Monitoring Well Data

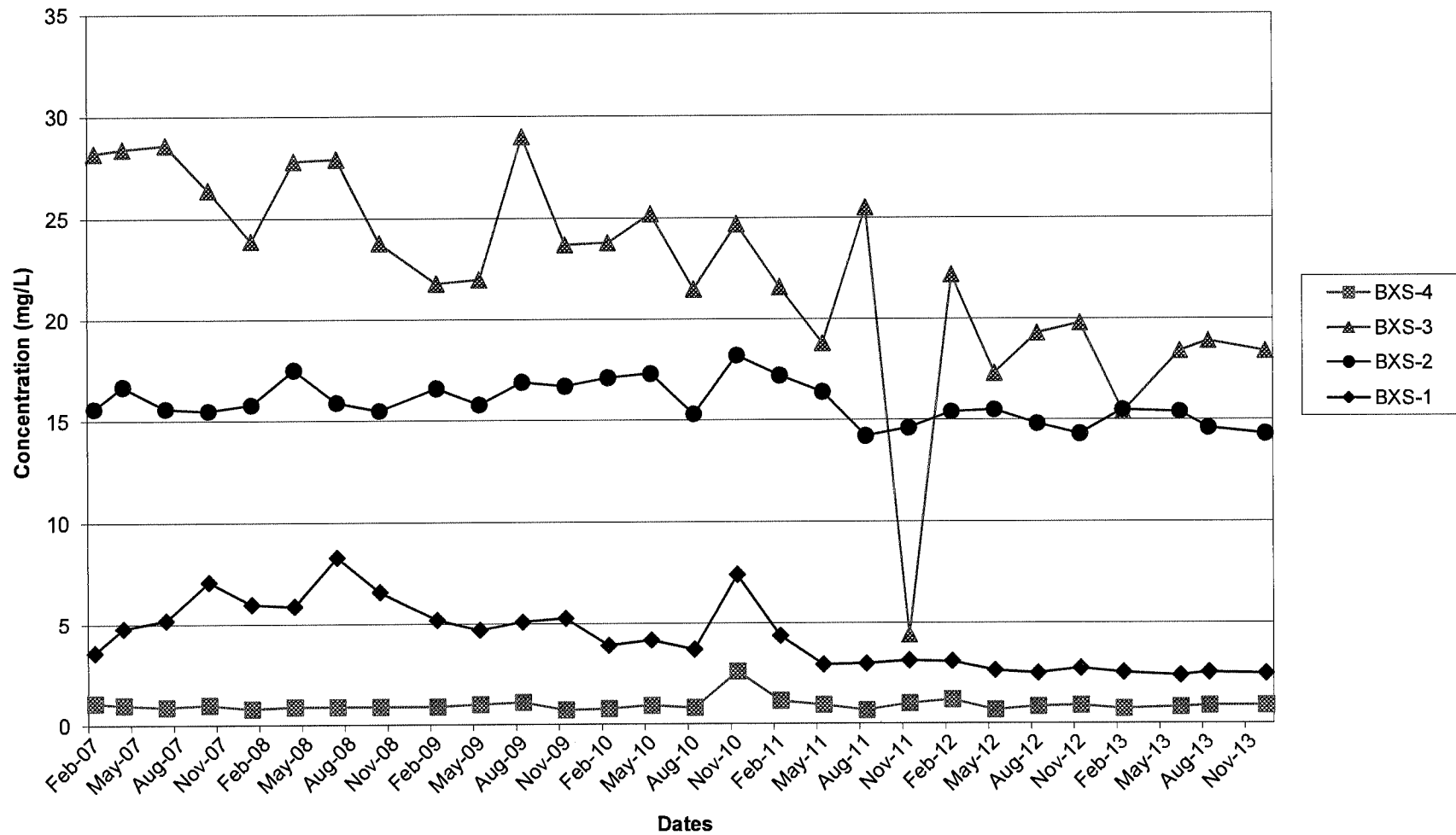


FIGURE 17
Concentration Trends for Field pH
South Woodwaste Landfill Monitoring Well Data

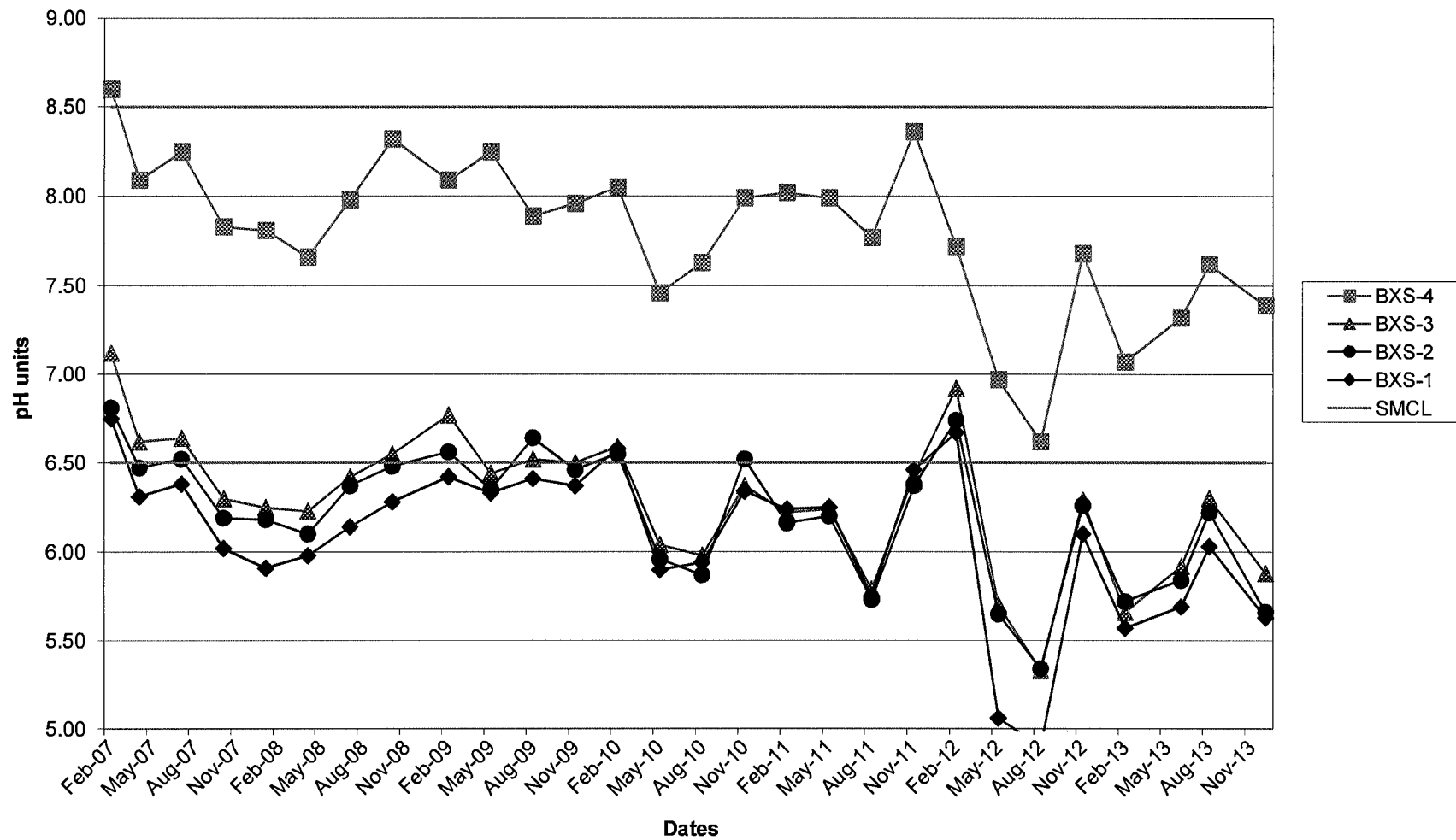
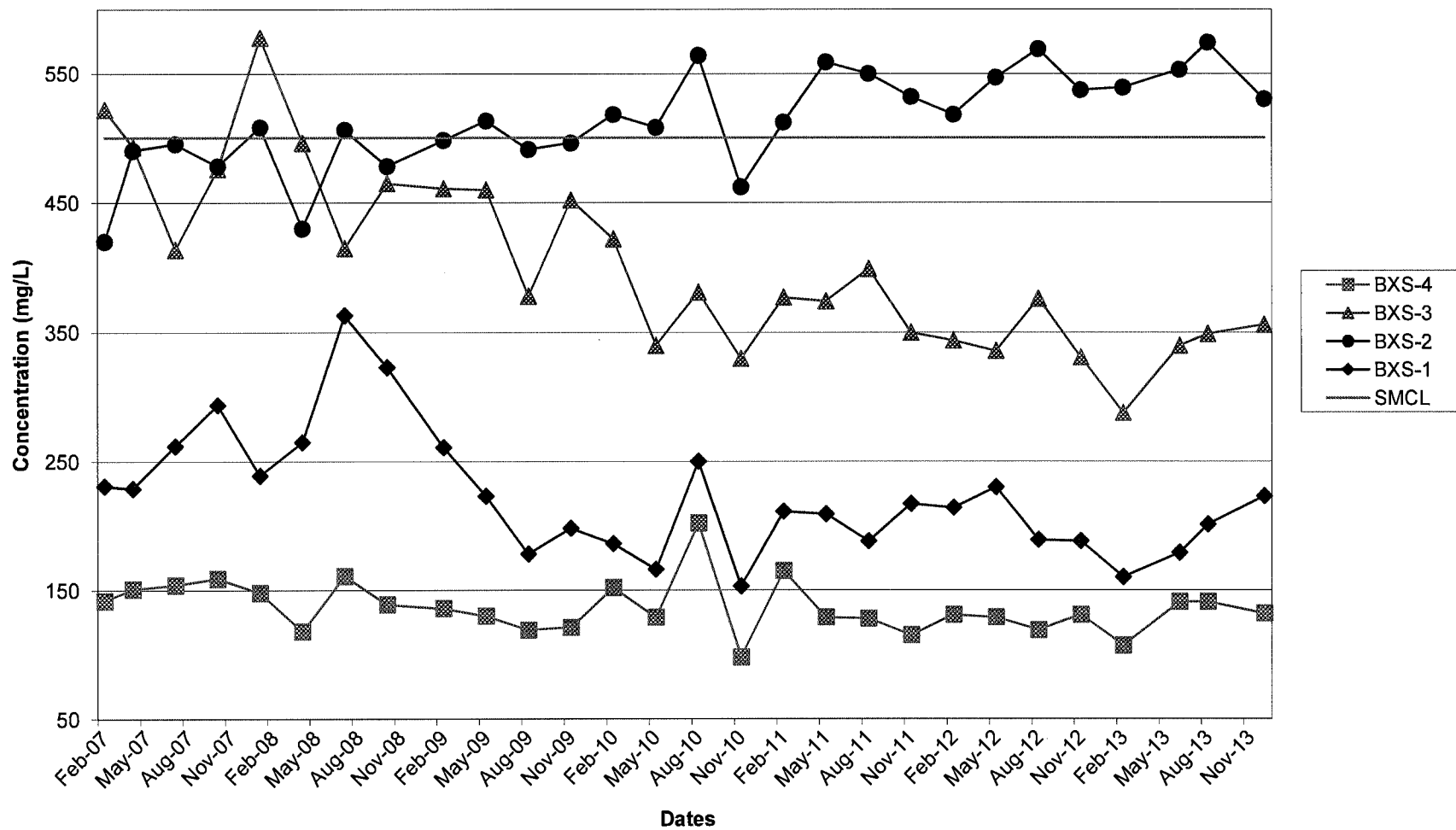


FIGURE 18
Concentration Trends for Total Dissolved Solids
South Woodwaste Landfill Monitoring Well Data





APPENDIX A

Groundwater Sampling Field Records

Groundwater Monitoring Wells

Case Well Number Water Level Bottom Date Time Pump

2"	BXN-1	44.82	58.18'	2-12-13	0815	
2"	BXN-2	40.96	57.24'	2-12-13	0845	
2"	BXN-3		58.66'	2-12-13		
2"	BXN-4	38.5	51.74'	2-12-13	0935	
	BXN-5		Dup BXN-1			
	BXN-6		Blank			
2"	BXS-1*	26.75	49.00'	2-10-13	1430	X
2"	BXS-2*	29.13	52.00'		1432	X
2"	BXS-3	19.76	42.50'		1425	X
2"	BXS-4	8.88	47.50'		1353	X
	BXS-5		Blank			
	BXS-6		Dup BXS-4			
4"	MW-1	20.56	43.00'		1340	
4"	MW-2*	31.31	47.50'		1330	X
4"	MW-3*	29.16	49.50'		1305	X
2"	MW-4	7.96	40.00'		1401	
2"	HCMW-5	16.96	35.00'		1408	X
2"	HCMW-6	28.23	51.50'		1335	X
2"	HCMW-7	31.75	54.00'		1237	
2"	MW-10	19.81	43.00'		1414	
2"	MW-11	18.30	38.00'		1342	
4"	MW-12	NAPL	38.00'			
4"	MW-13	NAPL	37.00'			
2"	MW-14	13.61	38.00'		1405	
2"	MW-15*	27.53	50.00'		1244	X
2"	MW-16*	28.81	50.00'		1235	X
2"	MW-17*	30.61	55.00'	2-10-13	1241	X
2"	MW-18*	30.63	55.00'			X
2"	MW-19	NAPL	37.10'			
2"	MW-20	NAPL	34.70'			

JH Baxter & Co.

PO Box 305

Arlington, WA 98223

(360) 435-2146

FAX (360) 435-3035

Groundwater Sampling Field Form

[illegible]

Groundwater Monitoring Wells

<u>Case</u>	<u>Well Number</u>	<u>Water Level</u>	<u>Bottom</u>	<u>Date</u>	<u>Time</u>	<u>Pump</u>
2"	BXN-1	45.20	58.18'	6-4-13	0800	
2"	BXN-2	41.27	57.24'	6-4-13	0845	
2"	BXN-3		58.66'			
2"	BXN-4	38.91	51.74'	6-4-13	0933	
	BXN-5		Dup BXN-1			
	BXN-6		Blank			
2"	BXS-1*	29.22	49.00'	6-2-13	1448	X
2"	BXS-2*	27.25	52.00'		1451	X
2"	BXS-3	23.00	42.50'		1455	X
2"	BXS-4	11.77	47.50'		1355	X
	BXS-5		Blank			
	BXS-6		Dup BXS-4			
4"	MW-1	23.85	43.00'		1350	
4"	MW-2*	34.44	47.50'		1503	X
4"	MW-3*	31.95	49.50'		1417	X
2"	MW-4	11.45	40.00'		1400	
2"	HCMW-5	21.55	35.00'		1353	X
2"	HCMW-6		51.50'			X
2"	HCMW-7	34.30	54.00'		1310	
2"	MW-10	24.22	43.00'		1414	
2"	MW-11	21.62	38.00'		1412	
4"	MW-12	NAPL	38.00'			
4"	MW-13	NAPL	37.00'			
2"	MW-14	18.32	38.00'		1404	
2"	MW-15*	29.81	50.00'		1314	X
2"	MW-16*	31.15	50.00		1306	X
2"	MW-17*	32.56	55.00'	6-2-13	1507	X
2"	MW-18*	32.5	55.00'	6-3-13	0728	X
2"	MW-19	NAPL	37.10'			
2"	MW-20	NAPL	34.70'			

(380) 435-2145 FAX (380) 435-3035

Groundwater Sampling Field Form

Well No. BXS-3	Location Arlington	Date 6-4-13						
Sample No.	Field Personnel/Company W.Krause/C.Baxter							
Sample Time (2400 hours)	Instrument Calibration Date							
Well Condition Poor <u>Satisfactory</u> New (If poor, explain)								
Field Conditions/Weather								
Equipment Decontamination <u>Liquinox and D.I. Water Rinse.</u>								
Casing Diameter: (Circle One) <u>2"</u> 4" 6" Other _____	Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47 Multiply Water Column Height by appropriate number above to get proper purge volume.							
Depth of Well (feet): <u>42.5'</u>	Sheen / LNAPL / DNAPL present: _____							
Depth to Water (feet): <u>23.0</u>	Other remarks: _____							
Water Column (feet): <u>19.5</u>								
Casing Volume (gallons):								
Calculated Purge Volume (gallons): <u>9.6</u>								
Actual Purge Volume (gallons):								
Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity mS/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
	0							Purge Start
0921	0	5.90	630	0.3	2.75	12.32	-75	
0930	3	5.94	634	1.3	3.01	12.22	-90	
0938	6	5.93	635	1.0	2.96	12.24	-97	
0946	9.5	5.92	635	1.0	2.62	12.21	-99	
0948		Sample						

Purging Equipment: Portable (Dedicated Bladder Pump) Disposable Baler Sampling Equipment: Horiba U-52

References

Revised 02/23/12

Revised 02/23/12

Groundwater Sampling Field Form

[illegible]

Groundwater Monitoring Wells

<u>Case</u>	<u>Well Number</u>	<u>Water Level</u>	<u>Bottom</u>	<u>Date</u>	<u>Time</u>	<u>Pump</u>
2"	BXN-1		58.18'			
2"	BXN-2		57.24'			
2"	BXN-3		58.66'			
2"	BXN-4		51.74'			
	BXN-5		Dup BXN-1			
	BXN-6		Blank			
2"	BXS-1*	32.75	49.00'	8-25-13	13:15	X
2"	BXS-2*	30.75	52.00'		13:19	X
2"	BXS-3	20.65	42.50'		13:21	X
2"	BXS-4	15.12	47.50'			X
	BXS-5		Blank			
	BXS-6		Dup BXS-4			
4"	MW-1	25.77	43.00'		12:29	
4"	MW-2*	38.25	47.50'		12:36	X
4"	MW-3*	35.65	49.50'		12:55	X
2"	MW-4	13.26	40.00'		12:55	
2"	HCMW-5		35.00'			X
2"	HCMW-6		51.50'			X
2"	HCMW-7	37.80	54.00'		12:03	
2"	MW-10	28.43	43.00'		13:10	
2"	MW-11	23.00	38.00'		12:43	
4"	MW-12	NAPL	38.00'			
4"	MW-13	NAPL	37.00'			
2"	MW-14	22.01	38.00'		13:38	
2"	MW-15*	33.33	50.00'		12:27	X
2"	MW-16*	34.74	50.00'		12:00	X
2"	MW-17*	30.10	55.00'		12:11	X
2"	MW-18*		55.00'			X
2"	MW-19	NAPL	37.10'			
2"	MW-20	NAPL	34.70'			

JH Baxler & Co.

Groundwater Sampling Field Form

Stella-Jones Corporation

Arlington, WA 98223

13691 437 2146

FAX (360) 435-3035

[illegible]

[illegible]

JH Baxter & Co.

Groundwater Sampling Field Form

Stella-Jones Corporation

Arlington, WA 98223

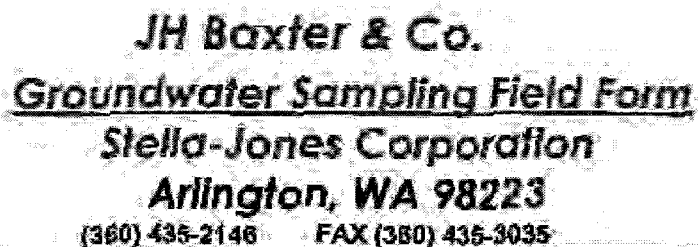
(380) 435-2146

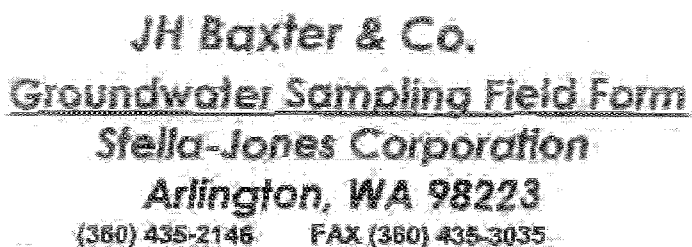
FAX (360) 435-3035

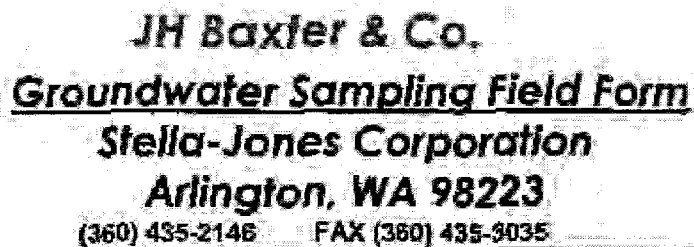
Well No. BXS-3	Location Arlington	Date 8-27-13						
Sample No.	Field Personnel/Company W. Krause/C. Baxter							
Sample Time (2400 hours) 0933	Instrument Calibration Date 8-15-13							
Well Condition: Poor (Satisfactory) New (If poor, explain)								
Field Conditions/Weather								
Equipment Decontamination Liquinox and D.I. Water Rinse.								
Casing Diameter: (Circle One) 2" 4" 6" Other	Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.853; 6"=1.47 Multiply Water Column Height by appropriate number above to get proper purge volume.							
Depth of Well (feet): 42.5'	Sheen / LNAPL / DNAPL present:							
Depth to Water (feet): 26.65	Other remarks:							
Water Column (feet): 15.85								
Casing Volume (gallons): 2.58								
Calculated Purge Volume (gallons): 7.7								
Actual Purge Volume (gallons): 7.74								
Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
	0							Purge Start
0911	0	6.28	0.691	1.9	3.18	12.39	-63	
0917	2.5	6.31	0.698	0.0	1.09	12.22	-93	
0925	5	6.30	0.708	0.7	0.86	12.24	-101	
0930	7.7	6.30	0.709	0.4	0.80	12.18	-104	
0933		Sample						

Purging Equipment: Portable (Dedicated Bladder Pump) Disposable Baler Sampling Equipment: Horiba U-52

Results

[illegible]

[illegible]

[illegible]

JH Baxter & Co.

Groundwater Sampling Field Form

Stella-Jones Corporation

Arlington, WA 98223

1300 435-2140

FAX (360) 435-3035

[illegible]

Groundwater Monitoring Wells

<u>Case</u>	<u>Well Number</u>	<u>Water Level</u>	<u>Bottom</u>	<u>Date</u>	<u>Time</u>	<u>Pump</u>
2"	BXN-1	48.73	58.18'	12-2-13	1438	
2"	BXN-2	44.94	57.24'	12-2-13	1508	
2"	BXN-3	N.D.A.	58.66'			
2"	BXN-4	43.45	51.74'	12-2-13	1538	
	BXN-5		Dup BXN-1			
	BXN-6		Blank	12-2-13	1630	
2"	BXS-1*	35.52	49.00'	12-2-13	1420	X
2"	BXS-2*	33.69	52.00'	12-2-13	1512	X
2"	BXS-3	29.88	42.50'	12-2-13	1550	X
2"	BXS-4	13.6	47.50'	12-3-13	0805	X
	BXS-5		Dup BXS-1			
	BXS-6		Blank			
4"	MW-1	27.15	43.00'	12-1	14:00	
4"	MW-2*	40.97	47.50'	12-1	15:00	X
4"	MW-3*	38.51	49.50'	12-1	13:10	X
2"	MW-4	11.25	40.00'	12-1	14:12	
2"	HCMW-5	27.01	35.00'	12-1	14:07	X
2"	HCMW-6		51.50'			X
2"	HCMW-7	40.65	54.00'	12-1		
2"	MW-10	31.41	43.00'	12-1	14:19	
2"	MW-11	23.25	38.00'	12-1	14:04	
4"	MW-12	NAPL	38.00'	12-3		
4"	MW-13	NAPL	37.00'			
2"	MW-14	22.67	38.00'	12-1	14:15	
2"	MW-15*	36.13	50.00'	12-2	14:45	X
2"	MW-16*	37.65	50.00	12-2	11:52	X
2"	MW-17*	38.97	55.00'	12-2	0950	X
2"	MW-18*	38.78	55.00'	12-2	0748	X
2"	MW-19	NAPL	37.10'			
2"	MW-20	NAPL	34.70'			



JH Baxter & Co.

Groundwater Sampling Field Form

Stella-Jones Corporation

Arlington, WA 98223

(360) 435-2146 FAX (360) 435-3035

Well No. BXS-1	Location Arlington	Date 12-2-13
Location: Landfill - South	Field Personnel/Company W.Krause/C.Baxter	
Sample Time (2400 hours)	Instrument Calibration Date	
Well Condition: Poor <u>Satisfactory</u> New (If poor, explain)		
Field Conditions/Weather		
Equipment Decontamination	Liquinox and D.I. Water Rinse	

Casing Diameter:
(Circle One)



Other

Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.853; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	49.0'
Depth to Water (feet):	35.52
Water Column (feet):	13.48
Casing Volume (gallons):	2.19
Calculated Purge Volume (gallons):	6.6
Actual Purge Volume (gallons):	6

Sheen / LNAPL / DNAPL present:
Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
	0							Purge Start
1422	0	5.87	304	0.7	10.59	11.43	353	
1433	2	5.50	325	0.3	1.30	12.04	352	
1443	4	5.59	321	0.2	1.36	12.08	337	
1454	6	5.63	313	0.2	2.36	12.06	328	
1456		Sample						
1400	→ BXS-5 Duplicate of BXS-1							

Pumping Equipment: Portable (Dedicated Bladder Pump) Disposable Baler Sampling Equipment: Horiba U-52

Remarks:

JH Baxter & Co.
Groundwater Sampling Field Form
Stella-Jones Corporation
Arlington, WA 98223

(360) 435-2146 FAX (360) 435-3035

Well No. BXS-2	Location Arlington	Date 12-2-13
Location: Landfill - South	Field Personnel/Company W. Krause/C. Baxter	
Sample Time (2400 hours)	Instrument Calibration Date	
Well Condition Poor <u>Satisfactory</u> New (If poor, explain)		
Field Conditions/Weather		
Equipment Decontamination <u>Liquinox and D.I. Water Rinse</u>		

Casing Diameter:
(Circle One) 2" 4" 6"
Other _____

Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	52.0'	Sheen / LNAPL / DNAPL present: Other remarks:
Depth to Water (feet):	33.69	
Water Column (feet):	18.31	
Casing Volume (gallons):	2985	
Calculated Purge Volume (gallons):	8.9	
Actual Purge Volume (gallons):	8.9	

[illegible]

Lifting Equipment: Portable (Dedicated Bladder Pump) Disposable Baler Sampling Equipment: Horiba U-52

Remarks: _____

Revised 02/23/12

Maxter

Stella-Jones Corporation

Amnaton, WA 98223

(360) 435-2148 FAX (360) 435-3035

ing Equipment: Portable (Dedicated Bladder Pump) Disposable Baler Sampling Equipment: Horiba U-52

Remarks:

Revised 02/27/03

Maxter

Stella-Jones Corporation

Arlington, WA 98223

(360) 435-2148 FAX (360) 435-3035

Lifting Equipment: Portable **Dedicated Bladder Pump:** **Disposable Baler** **Sampling Equipment:** Horiba U-52

Remarks:

Revised 02/23/12

Maxter

Stella-Jones Corporation

Arlington, WA 98223

(360) 435-2146 FAX (360) 435-3035

Well No. BXN-1	Location Arlington	Date 12-2
Location: Landfill - North	Field Personnel/Company S. Thielke/M. Duch	
Sample Time (2400 hours)	Instrument Calibration Date 11-22-13	
Well Condition: Poor Satisfactory New (If poor, explain) Needs work		
Field Conditions/Weather		
Equipment Decontamination Liquinox and D.I. Water Rinse		
Casing Diameter: (Circle One) 2" 6" Other _____	Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47 Multiply Water Column Height by appropriate number above to get proper purge volume.	

Depth of Well (feet):	58.18	Sheen / LNAPL / DNAPL present: _____
Depth to Water (feet):	48.73	
Water Column (feet):	9.450	Other remarks: _____
Casing Volume (gallons):	1540	
Calculated Purge Volume (gallons):	4.6	
Actual Purge Volume (gallons):	4.6	

[illegible]

Pumping Equipment (Portable) Dedicated Bladder Pump Disposable Bags Sampling Equipment Horiba D-32

Abstract

Revised 02/23/12

JH Baxter & Co.
Groundwater Sampling Field Form

Stella-Jones Corporation

Arlington, WA 98223

(360) 435-2146 FAX (360) 435-3035

Well No. BXN-2	Location Arlington	Date 12-2
Location Landfill - North	Field Personnel/Company S.Thielke/M.Duchl	
Sample Time (2400 hours)	Instrument Calibration Date 11-22-13	
Well Condition: Poor <u>Satisfactory</u> New (if poor, explain)		
Field Conditions/Weather		
Equipment Decontamination Liquinox and D.I. Water Rinse		

Casing Diameter: (Circle One) 2" 4" 6" Other _____	Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47 Multiply Water Column Height by appropriate number above to get proper purge volume.
---	--

Depth of Well (feet):	57.24	Sheen / LNAPL / DNAPL present: _____ Other remarks: _____
Depth to Water (feet):	14.94	
Water Column (feet):	13.3	
Casing Volume (gallons):	2.005	
Calculated Purge Volume (gallons):	6.0	
Actual Purge Volume (gallons):	6.0	

[illegible]

Leaching Equipment: (Portable) Dedicated Bladder Pump Disposable Baler Sampling Equipment Horiba U-22

Remarks:

Revised 02/23/12

Baxter & Co.

Groundwater Sampling Field Form

Stella-Jones Corporation

Arlington, WA 98223

(360) 435-2146 FAX (360) 435-3035

Well No. BXN -4	Location Arlington	Date 12-2
Location Landfill - North	Field Personnel/Company S.Thielke/M.Duchi	
Sample Time (2400 hours)	Instrument Calibration Date 11-22-13	
Well Condition Poor Satisfactory New (If poor, explain)		
Field Conditions/Weather		
Equipment Decontamination Liquinox and D.I. Water Rinse.		

Casing Diameter: (Circle One) 2" 4" 6" Other _____	Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47 Multiply Water Column Height by appropriate number above to get proper purge volume.
---	--

Depth of Well (feet):	51.74	Sheen / LNAPL / DNAPL present:
Depth to Water (feet):	43.45	
Water Column (feet):	8.29	Other remarks:
Casing Volume (gallons):	1,351	
Calculated Purge Volume (gallons):	4-1	
Actual Purge Volume (gallons):	4-0	

[illegible]

Sampling Equipment: (Portable) Dedicated Bladder Pump Disposable Baler Sampling Equipment: Horiba U-22

Remarks:

1994-1995



APPENDIX B

Chain of Custody Records and Laboratory Results



March 6, 2013

Analytical Report for Service Request No: K1301271

Scott Thielke
JH Baxter & Company
85 N. Baxter Road
P.O. Box 10797
Eugene, OR 97440

RE: J.H. Baxter / Arlington

Dear Scott:

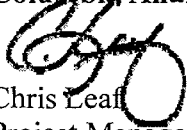
Enclosed are the results of the samples submitted to our laboratory on February 13, 2013. For your reference, these analyses have been assigned our service request number K1301271.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3275. You may also contact me via Email at Chris.Leaf@alsglobal.com.

Respectfully submitted,

Columbia Analytical Services, Inc. dba ALS Environmental



Chris Leaf
Project Manager

CL/ln

Page 1 of 60



ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068

Columbia Analytical Services, Inc.

Part of the ALS Group A Campbell Brothers Limited Company

Environmental

www.caslab.com • www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjllabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Louisiana DHH	Not available	LA110003
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
New Mexico ED	http://www.nmenv.state.nm.us/dwb/Index.htm	-
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon - DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.caslab.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

ALS ENVIRONMENTAL

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request No.: K1301271
Date Received: 02/13/13

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Laboratory Control Sample (LCS).

Sample Receipt

Five water samples were received for analysis at ALS Environmental on 02/13/13. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

Total Organic Carbon by Standard Method 5310 C:

The Relative Percent Difference (RPD) criterion for the replicate analysis of Total Organic Carbon in sample BXN-4 was not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

No other anomalies associated with the analysis of these samples were observed.

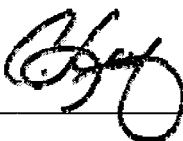
Dissolved Metals

Matrix Spike Recovery Exceptions:

The control criteria for matrix spike recovery of Iron and Manganese for the Batch QC2 sample were not applicable. The analyzed concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____



1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

Project Name J.H. BAXTER / ARLINGTON					Project Number		Project Manager		Company Name J.H. BAXTER		Company Address 85 N. BAXTER RD.		City/State/Zip EUGENE OR 97402		E-Mail Address		Phone #		FAX #		Sampler Signature			
Sample ID					Date		Time		Lab ID		Matrix		Number of Containers		OH		7D		28D		180D		Remarks	
BXS-1					2/12		0817		H2O		3		SM 4500-H+ B / pH											
BXS-2					1		0908				3		SM 2540 C / TDS											
BXS-3					1		0954				3		120.1 / Cond Spec											
BXS-4					1		1005				3		300.0 / Chloride											
BXS-5					1		0817				3		300.0 / SO4											
													350.1 / Ammonia T											
													353.2 / NO2 NO3 T											
													SM 5220 C / COD T											
													SM 5310 C / TOC T											
													SM 5550 B / Tan Lign											
													6010C / Metals D											
													7010 / As D											

Report Requirements ☐ I Routine Report Method Blank Surrogate, as required ☒ II Report Dup: MS MSD as required ☐ III Data Validation Report (includes all raw data) ☐ IV CLP Deliverable Report ☐ V EDD		Invoice Information P.O.# _____ Bill To: <u>J.D. BAXTER</u> _____ Turnaround Requirements ☐ 24 hr _____ 48 hr _____ ☐ 5 Day _____ ☒ Standard (10-15 working days) ☐ Provide Fax Results Requested Report Date _____		Circle which metals are to be analyzed Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg Dissolved Metals: Al <u>As</u> Sb <u>Ba</u> Be B Ca Cd Co Cr <u>Cu</u> Fe Pb Mg <u>Mn</u> Mo <u>Ni</u> <u>Ag</u> Na Se Sr Ti Sn V <u>Zn</u> Hg Special Instructions/Comments: <u>Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One)</u> <u>Metals are field filtered</u> <u>PLEASE contact w/ questions: STEVE BARNETT</u> <u>503-639-3900</u> ☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)			
Relinquished By: <u>Steve Barnett</u> Signature _____ Printed Name <u>Steve Barnett</u> Date/Time <u>2-12-13 14:56</u> Firm _____		Received By: <u>Steve Barnett</u> Signature _____ Printed Name <u>Steve Barnett</u> Date/Time <u>2-12-13 14:55</u> Firm _____		Relinquished By: <u>Steve Barnett</u> Signature _____ Printed Name <u>Steve Barnett</u> Date/Time <u>2-12-13 17:06</u> Firm _____		Received By: <u>Steve Barnett</u> Signature _____ Printed Name <u>Steve Barnett</u> Date/Time <u>2-13-13</u> Firm _____	

PC CL

Cooler Receipt and Preservation Form

Client / Project: SH Baxter Service Request K13 01271Received: GH 2/12/13 Opened: GH 2/12/13 By: GH Unloaded: 2/13/13 By: BS

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Temp	Corr. Temp	Raw Blank	Corr. Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	Filed
4.7	4.5	—	—	-1.2	309	<u>NA</u>	<u>NA</u>	
8.8	8.7	7.3	7.2	-1	307287			
5.9	5.8	—	—	-1	282			
6.9	7.1	9.1	9.3	+2	298			

7. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
8. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
15. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 120.1

Service Request: K1301271**Date Collected:** 02/12/13**Date Received:** 02/13/13**Units:** uMHOS/cm**Basis:** NA**Conductivity at 25 Degrees Celsius**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	303	2.0	0.4	1	03/04/13 13:30	
BXS-2	K1301271-002	939	2.0	0.4	1	03/04/13 13:30	
BXS-3	K1301271-003	377	2.0	0.4	1	03/04/13 13:30	
BXS-4	K1301271-004	194	2.0	0.4	1	03/04/13 13:30	
BXS-5	K1301271-005	299	2.0	0.4	1	03/04/13 13:30	
Method Blank	K1301271-MB1	1.5 J	2.0	0.4	1	03/04/13 13:30	
Method Blank	K1301271-MB2	1.3 J	2.0	0.4	1	03/04/13 13:30	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company**Project** J.H. Baxter / Arlington**Sample Matrix:** Water**Analysis Method:** 120.1**Service Request:** K1301271**Date Collected:** NA**Date Received:** NA**Units:** uMHOS/cm**Basis:** NA**Duplicate Sample Summary**
Conductivity at 25 Degrees Celsius

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1301273-004DUP	2.0	0.4	1.8	1.6	1.70	15	20	03/04/13
Batch QC	K1301287-006DUP	2.0	0.4	88.1	88.9	88.5	<1	20	03/04/13
Batch QC	K1301363-005DUP	2.0	0.4	1480	1500	1490	1	20	03/04/13

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Analyzed: 03/04/13

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method: 120.1

Units: uMHOS/cm

Basis: NA

Analysis Lot: 331174

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS2	336	330	102	86-113
Lab Control Sample	K1301271-LCS3	320	330	97	86-113

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13

Units: mg/L
Basis: NA

Chloride

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	5.7	1.0	0.2	5	02/13/13 21:06	
BXS-2	K1301271-002	3.07	0.40	0.06	2	02/13/13 21:22	
BXS-3	K1301271-003	2.08	0.40	0.06	2	02/13/13 21:37	
BXS-4	K1301271-004	1.61	0.40	0.06	2	02/13/13 22:40	
BXS-5	K1301271-005	5.7	1.0	0.2	5	02/13/13 23:27	
Method Blank	K1301271-MB1	ND U	0.20	0.03	1	02/13/13 07:28	
Method Blank	K1301271-MB2	ND U	0.20	0.03	1	02/13/13 21:53	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1301271**Date Collected:** NA**Date Received:** NA**Units:** mg/L**Basis:** NA

Duplicate Sample Summary
Chloride

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1301288-001DUP	4.0	0.6	115	118	116	3	20	02/14/13
Batch QC	K1301288-002DUP	4.0	0.6	98.8	98.4	98.6	<1	20	02/14/13

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COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271**Date Collected:**N/A**Date Received:**N/A**Date Analyzed:**02/14/13**Duplicate Matrix Spike Summary**
Chloride

Sample Name: Batch QC
Lab Code: K1301288-001
Analysis Method: 300.0

Units:mg/L**Basis:**NA

Analyte Name	Sample Result	Result	Matrix Spike K1301288-001MS		Result	Duplicate Matrix Spike K1301288-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Chloride	115	214	100	99	214	100	99	90-110	<1	20

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COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Collected: N/A
Date Received: N/A
Date Analyzed: 02/14/13

Duplicate Matrix Spike Summary
Chloride

Sample Name: Batch QC
Lab Code: K1301288-002
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Matrix Spike K1301288-002MS				Duplicate Matrix Spike K1301288-002DMS				RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
Chloride	98.8	197	100	98	198	100	100	90-110	<1	20

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COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Analyzed: 02/13/13 - 02/14/13

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method: 300.0

Units: mg/L

Basis: NA

Analysis Lot: 329056

Lab Control Sample
K1301271-LCS1

Duplicate Lab Control Sample
K1301271-DLCS1

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Chloride	4.77	5.00	95	4.68	5.00	94	90-110	2	20

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1301271**Date Collected:** 02/12/13**Date Received:** 02/13/13**Units:** mg/L**Basis:** NA

Sulfate

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	14.3	0.50	0.05	5	02/13/13 21:06	
BXS-2	K1301271-002	0.25	0.20	0.02	2	02/13/13 21:22	
BXS-3	K1301271-003	0.23	0.20	0.02	2	02/13/13 21:37	
BXS-4	K1301271-004	0.84	0.20	0.02	2	02/13/13 22:40	
BXS-5	K1301271-005	14.6	0.50	0.05	5	02/13/13 23:27	
Method Blank	K1301271-MB1	ND U	0.10	0.01	1	02/13/13 07:28	
Method Blank	K1301271-MB2	ND U	0.10	0.01	1	02/13/13 21:53	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company**Project:** J.H. Baxter / Arlington**Sample Matrix:** Water**Analysis Method:** 300.0**Service Request:** K1301271**Date Collected:** NA**Date Received:** NA**Units:** mg/L**Basis:** NA**Duplicate Sample Summary****Sulfate**

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1301288-001DUP	2.0	0.2	30.0	30.5	30.2	2	20	02/14/13
Batch QC	K1301288-002DUP	2.0	0.2	30.0	30.3	30.1	1	20	02/14/13

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Collected: N/A
Date Received: N/A
Date Analyzed: 02/14/13

**Duplicate Matrix Spike Summary
Sulfate**

Sample Name: Batch QC
Lab Code: K1301288-001
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1301288-001MS		Result	Duplicate Matrix Spike K1301288-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Sulfate	30.0	128	100	98	128	100	98	90-110	<1	20

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COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271**Date Collected:** N/A**Date Received:** N/A**Date Analyzed:** 02/14/13**Duplicate Matrix Spike Summary
Sulfate**

Sample Name: Batch QC
Lab Code: K1301288-002
Analysis Method: 300.0

Units: mg/L**Basis:** NA

Analyte Name	Sample Result	Result	Matrix Spike K1301288-002MS		Result	Duplicate Matrix Spike K1301288-002DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Sulfate	30.0	129	100	99	130	100	100	90-110	<1	20

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Analyzed: 02/13/13 - 02/14/13

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method: 300.0

Units: mg/L
Basis: NA
Analysis Lot: 329056

Lab Control Sample
K1301271-LCS1

Duplicate Lab Control Sample
K1301271-DLCS1

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Sulfate	4.73	5.00	95	4.67	5.00	93	90-110	1	20

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 350.1

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13

Units: mg/L
Basis: NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	ND U	0.050	0.020	1	02/20/13 08:09	
BXS-2	K1301271-002	ND U	0.050	0.020	1	02/20/13 08:09	
BXS-3	K1301271-003	0.742	0.050	0.020	1	02/20/13 08:09	
BXS-4	K1301271-004	0.520	0.050	0.020	1	02/20/13 08:09	
BXS-5	K1301271-005	ND U	0.050	0.020	1	02/20/13 08:09	
Method Blank	K1301271-MB1	ND U	0.050	0.020	1	02/20/13 08:09	
Method Blank	K1301271-MB2	ND U	0.050	0.020	1	02/20/13 08:09	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271**Date Collected:** NA**Date Received:** NA**Date Analyzed:** 02/20/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: Batch QC
Lab Code: KQ1301642-28

Units: mg/L**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1301642-28DUP Result	Average	RPD	RPD Limit
Ammonia as Nitrogen	350.1	0.050	0.020	ND	ND	NC	NC	20

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271**Date Collected:**N/A**Date Received:**N/A**Date Analyzed:**02/20/13

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: Batch QC
Lab Code: KQ1301642-28
Analysis Method: 350.1

Units:mg/L**Basis:**NA

Analyte Name	Sample Result	Result	Matrix Spike KQ1301642-28MS		Result	Duplicate Matrix Spike KQ1301642-28DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Ammonia as Nitrogen	ND	2.02	2.00	101	2.04	2.00	102	90-110	1	20

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271

Date Analyzed:02/20/13

Lab Control Sample Summary

Ammonia as Nitrogen

Analysis Method: 350.1

Units:mg/L

Basis:NA

Analysis Lot:329829

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS2	10.6	10.9	97	90-110
Lab Control Sample	K1301271-LCS3	10.5	10.9	96	90-110

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 353.2

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13

Units: mg/L
Basis: NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	0.085	0.050	0.009	1	02/15/13 08:32	
BXS-2	K1301271-002	ND U	0.050	0.009	1	02/15/13 08:32	
BXS-3	K1301271-003	0.134	0.050	0.009	1	02/15/13 08:32	
BXS-4	K1301271-004	0.016 J	0.050	0.009	1	02/15/13 08:32	
BXS-5	K1301271-005	0.088	0.050	0.009	1	02/15/13 08:32	
Method Blank	K1301271-MB1	ND U	0.050	0.009	1	02/15/13 08:32	
Method Blank	K1301271-MB2	0.011 J	0.050	0.009	1	02/15/13 08:32	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13
Date Analyzed: 02/15/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1
Lab Code: K1301271-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1301271- 001DUP	Average	RPD	RPD Limit
					Result			
Nitrate+Nitrite as Nitrogen	353.2	0.050	0.009	0.085	0.086	0.0852	1	20

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COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271**Date Collected:** 02/12/13**Date Received:** 02/13/13**Date Analyzed:** 02/15/13**Duplicate Matrix Spike Summary**

Nitrate+Nitrite as Nitrogen

Sample Name: BXS-1
Lab Code: K1301271-001
Analysis Method: 353.2

Units: mg/L**Basis:** NA

Analyte Name	Matrix Spike K1301271-001MS				Duplicate Matrix Spike K1301271-001DMS				RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
Nitrate+Nitrite as Nitrogen	0.085	2.10	2.00	101	2.05	2.00	98	89-114	2	20

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271**Date Analyzed:**02/15/13**Lab Control Sample Summary**

Nitrate+Nitrite as Nitrogen

Analysis Method: 353.2**Units:**mg/L**Basis:**NA**Analysis Lot:**329344

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS2	4.26	4.35	98	90-110
Lab Control Sample	K1301271-LCS3	4.24	4.35	97	90-110

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 2540 C

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13

Units: mg/L**Basis:** NA**Solids, Total Dissolved**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	160	10	-	1	02/18/13 11:30	
BXS-2	K1301271-002	539	10	-	1	02/18/13 11:30	
BXS-3	K1301271-003	288	10	-	1	02/18/13 11:30	
BXS-4	K1301271-004	107	10	-	1	02/18/13 11:30	
BXS-5	K1301271-005	174	10	-	1	02/18/13 11:30	
Method Blank	K1301271-MB1	ND U	5.0	-	1	02/18/13 11:30	
Method Blank	K1301271-MB2	ND U	5.0	-	1	02/18/13 11:30	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13
Date Analyzed: 02/18/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-2
Lab Code: K1301271-002

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1301271-002DUP Result	Average	RPD	RPD Limit
Solids, Total Dissolved	SM 2540 C	10	-	539	563	551	4	10

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271

Date Analyzed:02/18/13

Lab Control Sample Summary

Solids, Total Dissolved

Analysis Method: SM 2540 C

Units:mg/L

Basis:NA

Analysis Lot:329545

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS2	1860	1810	103	90-108

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 4500-H+ B

Service Request: K1301271**Date Collected:** 02/12/13**Date Received:** 02/13/13**Units:** pH Units**Basis:** NA

pH

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	7.07	-	-	1	02/13/13 16:43	H
BXS-2	K1301271-002	7.03	-	-	1	02/13/13 16:44	H
BXS-3	K1301271-003	6.60	-	-	1	02/13/13 16:45	H
BXS-4	K1301271-004	8.28	-	-	1	02/13/13 16:47	H
BXS-5	K1301271-005	6.93	-	-	1	02/13/13 16:47	H

COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company**Project** J.H. Baxter / Arlington**Sample Matrix:** Water**Analysis Method:** SM 4500-H+ B**Service Request:** K1301271**Date Collected:** NA**Date Received:** NA**Units:** pH Units**Basis:** NA**Duplicate Sample Summary****pH**

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1301277-001DUP	-		7.83	7.85	7.84	<1	20	02/13/13
Batch QC	K1301287-001DUP	-		7.31	7.28	7.30	<1	20	02/13/13

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271

Date Analyzed:02/13/13

Lab Control Sample Summary

pH

Analysis Method: SM 4500-H+ B

Units:pH Units

Basis:NA

Analysis Lot:329192

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS2	7.67	7.65	100	85-115

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Analyzed: 02/26/13

Lab Control Sample Summary
pH

Analysis Method: SM 4500-H+ B

Units: pH Units
Basis: NA
Analysis Lot: 330715

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS3	7.59	7.65	99	85-115

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Analytical Report

Client: JH Baxter & Company

Project: J.H. Baxter / Arlington

Sample Matrix: Water

Analysis Method: SM 5220 C

Service Request: K1301271

Date Collected: 02/12/13

Date Received: 02/13/13

Units: mg/L

Basis: NA

Chemical Oxygen Demand (COD)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	6.3	5.0	3.0	1	02/26/13 10:05	
BXS-2	K1301271-002	41.2	5.0	3.0	1	02/26/13 10:05	
BXS-3	K1301271-003	56.9	5.0	3.0	1	02/26/13 10:05	
BXS-4	K1301271-004	ND U	5.0	3.0	1	02/26/13 10:05	
BXS-5	K1301271-005	7.3	5.0	3.0	1	02/26/13 10:05	
Method Blank	K1301271-MB1	ND U	5.0	3.0	1	02/26/13 10:05	
Method Blank	K1301271-MB2	ND U	5.0	3.0	1	02/26/13 10:05	
Method Blank	K1301271-MB3	ND U	5.0	3.0	1	02/26/13 10:05	
Method Blank	K1301271-MB4	ND U	5.0	3.0	1	02/26/13 10:05	

COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company**Project:** J.H. Baxter / Arlington**Sample Matrix:** Water**Analysis Method:** SM 5220 C**Service Request:** K1301271**Date Collected:** NA**Date Received:** NA**Units:** mg/L**Basis:** NA**Duplicate Sample Summary
Chemical Oxygen Demand (COD)**

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1301287-001DUP	5.0	3.0	8.9	9.9	9.39	11	20	02/26/13
Batch QC	K1301367-001DUP	5.0	3.0	4.7	4.7	4.70	<1	20	02/26/13

Results flagged with an asterisk (*) indicate values outside control criteria.

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Collected: N/A
Date Received: N/A
Date Analyzed: 02/26/13

**Duplicate Matrix Spike Summary
 Chemical Oxygen Demand (COD)**

Sample Name: Batch QC
Lab Code: K1301287-001
Analysis Method: SM 5220 C

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Matrix Spike K1301287-001MS			Duplicate Matrix Spike K1301287-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Chemical Oxygen Demand (COD)	8.9	110	100	101	112	100	103	80-128	2	20

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271**Date Collected:**N/A**Date Received:**N/A**Date Analyzed:**02/26/13

Duplicate Matrix Spike Summary
Chemical Oxygen Demand (COD)

Sample Name: Batch QC
Lab Code: K1301367-001
Analysis Method: SM 5220 C

Units:mg/L**Basis:**NA

Analyte Name	Sample Result	Matrix Spike K1301367-001MS			Duplicate Matrix Spike K1301367-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Chemical Oxygen Demand (COD)	4.7	110	100	105	110	100	105	80-128	<1	20

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271**Date Analyzed:** 02/26/13

Lab Control Sample Summary
Chemical Oxygen Demand (COD)

Analysis Method: SM 5220 C**Units:** mg/L**Basis:** NA**Analysis Lot:** 330524

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS2	112	115	97	83-117
Lab Control Sample	K1301271-LCS3	110	115	96	83-117

COLUMBIA ANALYTICAL SERVICES, INC.

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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5310 C

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13

Units: mg/L**Basis:** NA**Carbon, Total Organic**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	2.54	0.50	0.07	1	02/13/13 18:34	
BXS-2	K1301271-002	15.5	1.0	0.2	2	02/13/13 18:34	
BXS-3	K1301271-003	15.4	1.0	0.2	2	02/13/13 18:34	
BXS-4	K1301271-004	0.73	0.50	0.07	1	02/13/13 18:34	
BXS-5	K1301271-005	2.46	0.50	0.07	1	02/13/13 18:34	
Method Blank	K1301271-MB1	ND U	0.50	0.07	1	02/13/13 18:34	
Method Blank	K1301271-MB2	ND U	0.50	0.07	1	02/13/13 18:34	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5310 C

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13

Units: mg/L

Basis: NA

Duplicate Sample Summary

Carbon, Total Organic

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
BXS-1	K1301271-001DUP	0.50	0.07	2.54	2.48	2.51	2	10	02/13/13
BXS-2	K1301271-002DUP	1.0	0.2	15.5	14.9	15.2	4	10	02/13/13
BXS-3	K1301271-003DUP	1.0	0.2	15.4	15.4	15.4	<1	10	02/13/13
BXS-4	K1301271-004DUP	0.50	0.07	0.73	0.60	0.668	20 *	10	02/13/13
BXS-5	K1301271-005DUP	0.50	0.07	2.46	2.45	2.45	<1	10	02/13/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271**Date Collected:**02/12/13**Date Received:**02/13/13**Date Analyzed:**02/13/13**Matrix Spike Summary
Carbon, Total Organic**

Sample Name: BXS-1
Lab Code: K1301271-001
Analysis Method: SM 5310 C

Units:mg/L**Basis:**NA**Matrix Spike
K1301271-001MS**

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	2.54	28.6	25.0	104	83-117

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Analyzed: 02/13/13

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L

Basis: NA

Analysis Lot: 329140

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS2	23.1	22.7	102	83-117
Lab Control Sample	K1301271-LCS3	22.9	22.7	101	83-117

COLUMBIA ANALYTICAL SERVICES, INC.

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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5550 B

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13

Units: mg/L
Basis: NA

Tannin and Lignin

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1301271-001	0.09 J	0.20	0.03	1	02/27/13 14:20	
BXS-2	K1301271-002	1.06	0.20	0.03	1	02/27/13 14:20	
BXS-3	K1301271-003	13.2	2.0	0.3	10	02/27/13 14:20	
BXS-4	K1301271-004	0.31	0.20	0.03	1	02/27/13 14:20	
BXS-5	K1301271-005	0.09 J	0.20	0.03	1	02/27/13 14:20	
Method Blank	K1301271-MB1	ND U	0.20	0.03	1	02/27/13 14:20	

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13
Date Analyzed: 02/27/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1
Lab Code: K1301271-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1301271-001DUP Result	Average	RPD	RPD Limit
Tannin and Lignin	SM 5550 B	0.20	0.03	0.09	0.08	0.0860	11	20

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COLUMBIA ANALYTICAL SERVICES, INC.

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1301271
Date Collected: 02/12/13
Date Received: 02/13/13
Date Analyzed: 02/27/13

Duplicate Matrix Spike Summary
Tannin and Lignin

Sample Name: BXS-1
Lab Code: K1301271-001
Analysis Method: SM 5550 B

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1301271-001MS		Result	Duplicate Matrix Spike K1301271-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Tannin and Lignin	0.09	1.09	1.00	100	2.04	2.00	97	75-120	3	20

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COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1301271

Date Analyzed:02/27/13

Lab Control Sample Summary

Tannin and Lignin

Analysis Method: SM 5550 B

Units:mg/L

Basis:NA

Analysis Lot:330711

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1301271-LCS2	1.08	1.00	108	85-115

COLUMBIA ANALYTICAL SERVICES, INC.
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- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project Name: J.H. Baxter / Arlington
Project No.:

Service Request: K1301271

Sample Name:

BXS-1

BXS-2

BXS-3

BXS-4

BXS-5

Method Blank

Batch QC1D

Batch QC1S

Batch QC2D

Batch QC2S

Lab Code:

K1301271-001DISS

K1301271-002DISS

K1301271-003DISS

K1301271-004DISS

K1301271-005DISS

K1301271-MB

K1301363-001D

K1301363-001S

K1301365-001D

K1301365-001S

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1301271

Project No.: NA

Date Collected: 02/12/13

Project Name: J.H. Baxter / Arlington

Date Received: 02/13/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-1

Lab Code: K1301271-001DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	02/19/13	02/25/13	1.0	U	
Barium	6010C	5.0	0.4	1.0	02/19/13	02/21/13	13.9		
Copper	6010C	10.0	0.8	1.0	02/19/13	02/21/13	1.4	J	
Iron	6010C	20.0	3.0	1.0	02/19/13	02/21/13	4.4	J	
Manganese	6010C	5.00	0.20	1.0	02/19/13	02/21/13	220		
Nickel	6010C	20.0	0.7	1.0	02/19/13	02/21/13	9.2	J	
Zinc	6010C	10.0	0.7	1.0	02/19/13	02/21/13	2.4	J	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.
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Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company **Service Request:** K1301271
Project No.: NA **Date Collected:** 02/12/13
Project Name: J.H. Baxter / Arlington **Date Received:** 02/13/13
Matrix: WATER **Units:** ug/L
Basis: NA

Sample Name: BXS-2 **Lab Code:** K1301271-002DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	02/19/13	02/25/13	1.0	U	
Barium	6010C	5.0	0.4	1.0	02/19/13	02/21/13	54.9		
Copper	6010C	10.0	0.8	1.0	02/19/13	02/21/13	1.5	J	
Iron	6010C	20.0	3.0	1.0	02/19/13	02/21/13	450		
Manganese	6010C	5.00	0.20	1.0	02/19/13	02/21/13	1610		
Nickel	6010C	20.0	0.7	1.0	02/19/13	02/21/13	36.1		
Zinc	6010C	10.0	0.7	1.0	02/19/13	02/21/13	3.2	J	

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1301271

Project No.: NA

Date Collected: 02/12/13

Project Name: J.H. Baxter / Arlington

Date Received: 02/13/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-3

Lab Code: K1301271-003DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	02/19/13	02/25/13	119		
Barium	6010C	5.0	0.4	1.0	02/19/13	02/21/13	90.4		
Copper	6010C	10.0	0.8	1.0	02/19/13	02/21/13	0.8	U	
Iron	6010C	20.0	3.0	1.0	02/19/13	02/21/13	91600		
Manganese	6010C	5.00	0.20	1.0	02/19/13	02/21/13	10700		
Nickel	6010C	20.0	0.7	1.0	02/19/13	02/21/13	18.2	J	
Zinc	6010C	10.0	0.7	1.0	02/19/13	02/21/13	0.9	J	

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company **Service Request:** K1301271
Project No.: NA **Date Collected:** 02/12/13
Project Name: J.H. Baxter / Arlington **Date Received:** 02/13/13
Matrix: WATER **Units:** ug/L
Basis: NA

Sample Name: BXS-4 **Lab Code:** K1301271-004DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	02/19/13	02/25/13	6.1		
Barium	6010C	5.0	0.4	1.0	02/19/13	02/21/13	26.1		
Copper	6010C	10.0	0.8	1.0	02/19/13	02/21/13	0.8	U	
Iron	6010C	20.0	3.0	1.0	02/19/13	02/21/13	60.1		
Manganese	6010C	5.00	0.20	1.0	02/19/13	02/21/13	110		
Nickel	6010C	20.0	0.7	1.0	02/19/13	02/21/13	0.7	U	
Zinc	6010C	10.0	0.7	1.0	02/19/13	02/21/13	0.7	U	

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1301271

Project No.: NA

Date Collected: 02/12/13

Project Name: J.H. Baxter / Arlington

Date Received: 02/13/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-5

Lab Code: K1301271-005DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	02/19/13	02/25/13	1.0	U	
Barium	6010C	5.0	0.4	1.0	02/19/13	02/21/13	14.2		
Copper	6010C	10.0	0.8	1.0	02/19/13	02/21/13	1.7	J	
Iron	6010C	20.0	3.0	1.0	02/19/13	02/21/13	4.6	J	
Manganese	6010C	5.00	0.20	1.0	02/19/13	02/21/13	220		
Nickel	6010C	20.0	0.7	1.0	02/19/13	02/21/13	9.4	J	
Zinc	6010C	10.0	0.7	1.0	02/19/13	02/21/13	2.1	J	

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company **Service Request:** K1301271
Project No.: NA **Date Collected:**
Project Name: J.H. Baxter / Arlington **Date Received:**
Matrix: WATER **Units:** ug/L
Basis: NA

Sample Name: Method Blank **Lab Code:** K1301271-MB

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	02/19/13	02/25/13	1.0	U	
Barium	6010C	5.0	0.4	1.0	02/19/13	02/21/13	0.4	U	
Copper	6010C	10.0	0.8	1.0	02/19/13	02/21/13	0.8	U	
Iron	6010C	20.0	3.0	1.0	02/19/13	02/21/13	3.0	U	
Manganese	6010C	5.00	0.20	1.0	02/19/13	02/21/13	0.20	U	
Nickel	6010C	20.0	0.7	1.0	02/19/13	02/21/13	0.7	U	
Zinc	6010C	10.0	0.7	1.0	02/19/13	02/21/13	0.7	U	

Comments:

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company

Service Request: K1301271

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter / Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC1S

Lab Code: K1301363-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	37.5		1.0	U	40.00	93.8		7010

An empty field in the Control Limit column indicates the control limit is not applicable

COLUMBIA ANALYTICAL SERVICES, INC.
Now part of the ALS Group

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company

Service Request: K1301271

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter / Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC2S

Lab Code: K1301365-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Barium	80 - 124	2330		378		2000.00	97.6		6010C
Copper	86 - 113	231		0.8	U	250.00	92.4		6010C
Iron		16200		15200		1000.00	100.0		6010C
Manganese		3400		2970		500.00	86.0		6010C
Nickel	86 - 120	473		19.8	J	500.00	90.6		6010C
Zinc	87 - 113	460		2.3	J	500.00	91.5		6010C

An empty field in the Control Limit column indicates the control limit is not applicable

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Metals

- 6 -

DUPLICATES**Client:** JH Baxter & Company**Service Request:** K1301271**Project No.:** NA**Units:** UG/L**Project Name:** J.H. Baxter / Arlington**Basis:** NA**Matrix:** WATER**Sample Name:** Batch QC1D**Lab Code:** K1301363-001D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		1.0	U	1.0	U			7010

An empty field in the Control Limit column indicates the control limit is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

Now part of the ALS Group

Metals
- 6 -
DUPLICATES**Client:** JH Baxter & Company**Service Request:** K1301271**Project No.:** NA**Units:** UG/L**Project Name:** J.H. Baxter / Arlington**Basis:** NA**Matrix:** WATER**Sample Name:** Batch QC2D**Lab Code:** K1301365-001D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Barium	20	378		385		1.8		6010C
Copper		0.8	U	0.8	U			6010C
Iron	20	15200		15700		3.2		6010C
Manganese	20	2970		3030		2.0		6010C
Nickel		19.8	J	19.9	J	0.5		6010C
Zinc		2.3	J	2.0	J	14.0		6010C

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: JH Baxter & Company

Service Request: K1301271

Project No.: NA

Project Name: J.H. Baxter / Arlington

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous (ug/L)			Solid (mg/kg)					
	True	Found	%R	True	Found	C	Limits	%R	
Arsenic	25	26.4	105.6						
Barium	5000	5000	100.0						
Copper	625	605	96.8						
Iron	2500	2540	101.6						
Manganese	1250	1210	96.8						
Nickel	1250	1230	98.4						
Zinc	1250	1240	99.2						



June 26, 2013

Analytical Report for Service Request No: K1305357

Scott Thielke
JH Baxter & Company
85 N. Baxter Road
P.O. Box 10797
Eugene, OR 97440

RE: J.H. Baxter / Arlington

Dear Scott:

Enclosed are the results of the samples submitted to our laboratory on June 06, 2013. For your reference, these analyses have been assigned our service request number K1305357.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3275. You may also contact me via Email at Chris.Leaf@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental


Chris Leaf
Project Manager

CL/tj

Page 1 of 60

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjlabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Louisiana DHH	Not available	LA110003
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
New Mexico ED	http://www.nmenv.state.nm.us/dwb/Index.htm	-
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon - DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.caslab.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

ALS ENVIRONMENTAL

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request No.: K1305357
Date Received: 06/06/13

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Laboratory Control Sample (LCS).

Sample Receipt

Five water samples were received for analysis at ALS Environmental on 06/06/13. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

Chloride by EPA Method 300.0:

The matrix spike recoveries for sample Batch QC were outside control criteria because of suspected matrix interference. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. No further corrective action was taken.

Sulfate by EPA Method 300.0:

The control criteria for matrix spike recoveries for sample Batch QC were not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

No other anomalies associated with the analysis of these samples were observed.

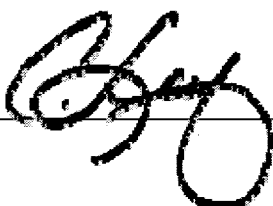
Dissolved Metals

Matrix Spike Recovery Exceptions:

The control criteria for matrix spike recovery of Iron and Manganese for the batch QC1 sample were not applicable. The analyzed concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____



29647

CHAIN OF CUSTODY

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

SR# K1309357

COC Set _____ of _____

Page 1 OF 1 COC#

[illegible]

Report Requirements		Invoice Information		Special Instructions/Comments	
☐ Routine Report: Method Book Surrogate As required	Turnaround Requirements ___ 24 hr ___ 48 hr ___ 5 Day ☒ Standard: 10-15 working days ___ Provide Fax Results Requested Report Date: _____	P.O.# _____	Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Hg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Pb Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Hg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Pb	Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One)	
☒ Report Due: MS MSD as required		Bill To: <u>J.H. BAXTER</u>		Metals are field filtered	
☐ Data Validation Report (includes all raw data)		PLEASE contact w/question: STEVE BARNETT			
☐ CLP Deliverable Report		503-689-3400			
☐ EOD		☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)			
Relinquished By: <u>Scott Thorne</u> Signature <u>SCOTT THORNE</u> Printed Name		Received By: <u>John Baxter</u> Signature <u>JOHN BAXTER</u> Printed Name		Relinquished By: _____ Signature _____ Printed Name	
Date/Time <u>06-05-13 0715</u> Firm		Date/Time <u>6/6/13</u> Firm		Date/Time _____ Firm	

PC CL

Cooler Receipt and Preservation Form

Client / Project: JH Buxter Service Request K13 05357Received: 6/6/13 Opened: 6/6/13 By: BT Unloaded: 6/6/13 By: BT

1. Samples were received via? Mail FedEx UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 front
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
1.6	1.3	1.2	0.9	-0.3	332		8084 1030 8791		
2.4	2.2	2.0	1.8	-0.2	294		8020 1659 7478		
1.6	1.3	2.4	2.1	-0.3	298		8020 1659 7467		
0.6	0.4	1.0	0.8	-0.2	331		8020 1659 7489		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
12. Was C12/Res negative? Y Y N

Sample ID on Bottle	Sample ID on COC	Identified by: <u>BT 6/6/13</u>

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
<u>MW-17</u>	<u>1x40mL</u>			<u>X</u>		<u>NA CL 6/6/13</u>				

Notes, Discrepancies, & Resolutions: Rec'd 1x 1L 8270 for MW-41, Cor
only has PCP listed. NA CL 6/6/13

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/06/13

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method: 120.1

Units: uMHOS/cm
Basis: NA
Analysis Lot: 343794

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	335	330	101	86-113

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/07/13

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method: 120.1

Units: uMHOS/cm

Basis: NA

Analysis Lot: 343940

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS2	350	330	106	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13

Units: mg/L
Basis: NA

Chloride

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	3.6	1.0	0.2	5	06/06/13 13:33	
BXS-2	K1305357-002	3.00	0.40	0.06	2	06/06/13 13:48	
BXS-3	K1305357-003	1.98	0.40	0.06	2	06/06/13 14:02	
BXS-4	K1305357-004	1.62	0.40	0.06	2	06/06/13 14:15	
BXS-5	K1305357-005	3.6	1.0	0.2	5	06/06/13 14:29	
Method Blank	K1305357-MB1	ND U	0.20	0.03	1	06/06/13 08:08	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1305357

Date Collected: NA

Date Received: NA

Units: mg/L

Basis: NA

Duplicate Sample Summary
Chloride

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1305352-001DUP	2.0	0.3	16.1	15.9	16.0	1	20	06/06/13
Batch QC	KQ1305853-19DUP	0.40	0.06	4.68	4.49	4.58	4	20	06/06/13

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/6/13

Duplicate Matrix Spike Summary
Chloride

Sample Name: Batch QC
Lab Code: K1305352-001
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1305352-001MS		Result	Duplicate Matrix Spike K1305352-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Chloride	16.1	54.3	40.0	95	54.2	40.0	95	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/6/13

Duplicate Matrix Spike Summary
Chloride

Sample Name: Batch QC **Units:** mg/L
Lab Code: KQ1305853-19 **Basis:** NA
Analysis Method: 300.0

Analyte Name	Sample Result	Result	Matrix Spike KQ1305853-19MS		Result	Duplicate Matrix Spike KQ1305853-19DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Chloride	4.68	9.28	4.00	115 *	9.38	4.00	118 *	90-110	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/06/13

Lab Control Sample Summary
Chloride

Analysis Method: 300.0

Units: mg/L
Basis: NA
Analysis Lot: 343645

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	4.72	5.00	94	90-110

ALS Group USA, Corp.

dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13

Units: mg/L
Basis: NA

Sulfate

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	13.5	0.50	0.05	5	06/06/13 13:33	
BXS-2	K1305357-002	0.56	0.20	0.02	2	06/06/13 13:48	
BXS-3	K1305357-003	0.35	0.20	0.02	2	06/06/13 14:02	
BXS-4	K1305357-004	0.80	0.20	0.02	2	06/06/13 14:15	
BXS-5	K1305357-005	13.3	0.50	0.05	5	06/06/13 14:29	
Method Blank	K1305357-MB1	ND U	0.10	0.01	1	06/06/13 08:08	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1305357

Date Collected: NA

Date Received: NA

Units: mg/L

Basis: NA

Duplicate Sample Summary
Sulfate

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1305352-001DUP	1.0	0.1	55.6	54.5	55.1	2	20	06/06/13
Batch QC	KQ1305853-19DUP	0.20	0.02	5.60	5.50	5.55	2	20	06/06/13

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/6/13

Duplicate Matrix Spike Summary
Sulfate

Sample Name: Batch QC
Lab Code: K1305352-001
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1305352-001MS		Result	Duplicate Matrix Spike K1305352-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Sulfate	55.6	95.3	40.0	99	95.6	40.0	100	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/6/13

Duplicate Matrix Spike Summary
Sulfate

Sample Name: Batch QC
Lab Code: KQ1305853-19
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Matrix Spike KQ1305853-19MS				Duplicate Matrix Spike KQ1305853-19DMS				RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
Sulfate	5.60	10.1	4.00	111 *	10.0	4.00	111 *	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/06/13

Lab Control Sample Summary
Sulfate

Analysis Method: 300.0

Units: mg/L

Basis: NA

Analysis Lot: 343645

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	4.61	5.00	92	90-110

ALS Group USA, Corp.
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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 350.1

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13

Units: mg/L
Basis: NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	ND U	0.050	0.020	1	06/08/13 10:14	
BXS-2	K1305357-002	ND U	0.050	0.020	1	06/08/13 10:14	
BXS-3	K1305357-003	1.01	0.050	0.020	1	06/08/13 10:14	
BXS-4	K1305357-004	0.528	0.050	0.020	1	06/08/13 10:14	
BXS-5	K1305357-005	ND U	0.050	0.020	1	06/08/13 10:14	
Method Blank	K1305357-MB1	ND U	0.050	0.020	1	06/08/13 10:14	
Method Blank	K1305357-MB2	ND U	0.050	0.020	1	06/08/13 10:14	
Method Blank	K1305357-MB3	ND U	0.050	0.020	1	06/08/13 10:14	
Method Blank	K1305357-MB4	0.021 J	0.050	0.020	1	06/08/13 10:14	

ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 350.1

Service Request: K1305357

Date Collected: NA

Date Received: NA

Units: mg/L

Basis: NA

Duplicate Sample Summary

Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1305242-012DUP	0.050	0.020	ND	ND	NC	NC	20	06/08/13
Batch QC	K1305309-002DUP	0.050	0.020	ND	ND	NC	NC	20	06/08/13
Batch QC	K1305360-001DUP	0.050	0.020	0.606	0.600	0.603	<1	20	06/08/13
Batch QC	K1305398-001DUP	0.050	0.020	ND	ND	NC	NC	20	06/08/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/8/13

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: Batch QC
Lab Code: K1305242-012
Analysis Method: 350.1

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Matrix Spike K1305242-012MS			Duplicate Matrix Spike K1305242-012DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Ammonia as Nitrogen	ND	1.95	2.00	98	1.96	2.00	98	90-110	<1	20

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/8/13

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: Batch QC
Lab Code: K1305309-002
Analysis Method: 350.1

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1305309-002MS		Result	Duplicate Matrix Spike K1305309-002DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Ammonia as Nitrogen	ND	1.96	2.00	98	1.98	2.00	99	90-110	1	20

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/8/13

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: Batch QC
Lab Code: K1305360-001
Analysis Method: 350.1

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1305360-001MS		Result	Duplicate Matrix Spike K1305360-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Ammonia as Nitrogen	0.606	2.41	2.00	90	2.41	2.00	90	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/8/13

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: Batch QC **Units:** mg/L
Lab Code: K1305398-001 **Basis:** NA
Analysis Method: 350.1

Analyte Name	Sample Result	Result	Matrix Spike K1305398-001MS		Result	Duplicate Matrix Spike K1305398-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Ammonia as Nitrogen	ND	1.96	2.00	98	1.99	2.00	100	90-110	2	20

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/08/13

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method: 350.1

Units: mg/L
Basis: NA
Analysis Lot: 344022

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	10.5	10.9	96	90-110
Lab Control Sample	K1305357-LCS2	10.5	10.9	96	90-110
Lab Control Sample	K1305357-LCS3	10.5	10.9	96	90-110
Lab Control Sample	K1305357-LCS4	10.5	10.9	96	90-110

ALS Group USA, Corp.

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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 353.2

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13

Units: mg/L
Basis: NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	0.087	0.050	0.009	1	06/18/13 11:41	
BXS-2	K1305357-002	ND U	0.050	0.009	1	06/18/13 11:41	
BXS-3	K1305357-003	0.052	0.050	0.009	1	06/18/13 11:41	
BXS-4	K1305357-004	ND U	0.050	0.009	1	06/18/13 11:41	
BXS-5	K1305357-005	0.073	0.050	0.009	1	06/18/13 11:41	
Method Blank	K1305357-MB1	ND U	0.050	0.009	1	06/18/13 11:41	
Method Blank	K1305357-MB2	0.028 J	0.050	0.009	1	06/18/13 11:41	
Method Blank	K1305357-MB3	0.027 J	0.050	0.009	1	06/18/13 11:41	

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: 06/04/13
Date Received: 06/06/13
Date Analyzed: 06/18/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1
Lab Code: K1305357-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1305357- 001DUP	Average	RPD	RPD Limit
					Result			
Nitrate+Nitrite as Nitrogen	353.2	0.050	0.009	0.087	0.091	0.0894	4	20

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ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1305357
Date Collected:06/04/13
Date Received:06/06/13
Date Analyzed:06/18/13

Duplicate Matrix Spike Summary
Nitrate+Nitrite as Nitrogen

Sample Name: BXS-1
Lab Code: K1305357-001
Analysis Method: 353.2

Units:mg/L
Basis:NA

Analyte Name	Matrix Spike K1305357-001MS				Duplicate Matrix Spike K1305357-001DMS				RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
Nitrate+Nitrite as Nitrogen	0.087	2.09	2.00	100	2.05	2.00	98	89-114	2	20

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ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1305357
Date Analyzed:06/18/13

Lab Control Sample Summary
Nitrate+Nitrite as Nitrogen

Analysis Method: 353.2

Units:mg/L

Basis:NA

Analysis Lot:345388

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	4.16	4.35	96	90-110
Lab Control Sample	K1305357-LCS2	4.21	4.35	97	90-110
Lab Control Sample	K1305357-LCS3	4.29	4.35	99	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 2540 C

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13

Units: mg/L
Basis: NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	179	10	-	1	06/06/13 14:40	
BXS-2	K1305357-002	553	10	-	1	06/06/13 14:40	
BXS-3	K1305357-003	340	10	-	1	06/06/13 14:40	
BXS-4	K1305357-004	141	10	-	1	06/06/13 14:40	
BXS-5	K1305357-005	168	10	-	1	06/06/13 14:40	
Method Blank	K1305357-MB1	ND U	5.0	-	1	06/06/13 14:40	
Method Blank	K1305357-MB2	ND U	10	-	1	06/06/13 14:40	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357**Date Collected:** 06/04/13**Date Received:** 06/06/13**Date Analyzed:** 06/06/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-4
Lab Code: K1305357-004

Units: mg/L**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1305357- 004DUP	Average	RPD	RPD Limit
					Result			
Solids, Total Dissolved	SM 2540 C	10	-	141	134	138	5	10

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/06/13

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method: SM 2540 C

Units: mg/L
Basis: NA
Analysis Lot: 343797

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	1130	1160	98	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 4500-H+ B

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13
Units: pH Units
Basis: NA

pH

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	6.94	-	-	1	06/06/13 16:46	H
BXS-2	K1305357-002	6.75	-	-	1	06/06/13 16:48	H
BXS-3	K1305357-003	6.60	-	-	1	06/06/13 16:49	H
BXS-4	K1305357-004	8.21	-	-	1	06/06/13 16:50	H
BXS-5	K1305357-005	6.78	-	-	1	06/06/13 16:53	H

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 4500-H+ B

Service Request: K1305357
Date Collected: NA
Date Received: NA
Units: pH Units
Basis: NA

Duplicate Sample Summary
pH

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1305351-001DUP	-		7.00	7.05	7.03	<1	20	06/06/13
Batch QC	K1305360-003DUP	-		7.25	7.14	7.20	2	20	06/06/13

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/06/13

Lab Control Sample Summary
pH

Analysis Method: SM 4500-H+ B

Units: pH Units
Basis: NA
Analysis Lot: 343735

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	7.65	7.65	100	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5220 C

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13

Units: mg/L
Basis: NA

Chemical Oxygen Demand (COD)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	5.9	5.0	3.0	1	06/13/13 14:45	
BXS-2	K1305357-002	41.4	5.0	3.0	1	06/13/13 14:45	
BXS-3	K1305357-003	62.6	5.0	3.0	1	06/13/13 14:45	
BXS-4	K1305357-004	ND U	5.0	3.0	1	06/13/13 14:45	
BXS-5	K1305357-005	7.4	5.0	3.0	1	06/13/13 14:45	
Method Blank	K1305357-MB1	ND U	5.0	3.0	1	06/13/13 14:45	
Method Blank	K1305357-MB2	ND U	5.0	3.0	1	06/13/13 14:45	

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dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: 06/04/13
Date Received: 06/06/13
Date Analyzed: 06/13/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1
Lab Code: K1305357-001

Units: mg/L
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1305357-001DUP	Average	RPD	RPD Limit
					Result			
Chemical Oxygen Demand (COD)	SM 5220 C	5.0	3.0	5.9	5.4	5.67	9	20

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ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: 06/04/13
Date Received: 06/06/13
Date Analyzed: 06/13/13

Duplicate Matrix Spike Summary
Chemical Oxygen Demand (COD)

Sample Name: BXS-1
Lab Code: K1305357-001
Analysis Method: SM 5220 C

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Matrix Spike K1305357-001MS			Duplicate Matrix Spike K1305357-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Chemical Oxygen Demand (COD)	5.9	107	100	101	105	100	99	80-128	2	20

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ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/13/13

Lab Control Sample Summary
Chemical Oxygen Demand (COD)

Analysis Method: SM 5220 C

Units: mg/L
Basis: NA
Analysis Lot: 344769

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	112	115	97	83-117

ALS Group USA, Corp.

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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5310 C

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13

Units: mg/L**Basis:** NA**Carbon, Total Organic**

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	2.39	0.50	0.07	1	06/12/13 22:00	
BXS-2	K1305357-002	15.4	2.0	0.3	4	06/12/13 22:00	
BXS-3	K1305357-003	18.4	1.0	0.2	2	06/12/13 22:00	
BXS-4	K1305357-004	0.82	0.50	0.07	1	06/12/13 22:00	
BXS-5	K1305357-005	2.44	0.50	0.07	1	06/12/13 22:00	
Method Blank	K1305357-MB1	0.08 J	0.50	0.07	1	06/12/13 22:00	
Method Blank	K1305357-MB2	ND U	0.50	0.07	1	06/12/13 22:00	

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5310 C

Service Request: K1305357
Date Collected: 06/04/13
Date Received: 06/06/13

Units: mg/L
Basis: NA

Duplicate Sample Summary
Carbon, Total Organic

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
BXS-1	K1305357-001DUP	0.50	0.07	2.39	2.43	2.41	1	10	06/12/13
BXS-2	K1305357-002DUP	2.0	0.3	15.4	14.7	15.1	5	10	06/12/13
BXS-3	K1305357-003DUP	1.0	0.2	18.4	18.2	18.3	<1	10	06/12/13
BXS-4	K1305357-004DUP	0.50	0.07	0.82	0.82	0.820	1	10	06/12/13
BXS-5	K1305357-005DUP	0.50	0.07	2.44	2.44	2.44	<1	10	06/12/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Collected: 06/04/13
Date Received: 06/06/13
Date Analyzed: 06/12/13

Matrix Spike Summary
Carbon, Total Organic

Sample Name: BXS-1
Lab Code: K1305357-001
Analysis Method: SM 5310 C

Units: mg/L
Basis: NA

Matrix Spike
K1305357-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	2.39	27.5	25.0	100	83-117

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357
Date Analyzed: 06/12/13

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L
Basis: NA
Analysis Lot: 344617

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	17.1	18.1	94	83-117
Lab Control Sample	K1305357-LCS2	17.1	18.1	94	83-117

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5550 B

Service Request: K1305357
Date Collected: 06/4/13
Date Received: 06/6/13

Units: mg/L
Basis: NA

Tannin and Lignin

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1305357-001	0.06 J	0.20	0.03	1	06/17/13 16:16	
BXS-2	K1305357-002	1.73	0.20	0.03	1	06/17/13 16:16	
BXS-3	K1305357-003	13.1	1.0	0.2	5	06/17/13 16:16	
BXS-4	K1305357-004	0.25	0.20	0.03	1	06/17/13 16:16	
BXS-5	K1305357-005	0.07 J	0.20	0.03	1	06/17/13 16:16	
Method Blank	K1305357-MB1	0.04 J	0.20	0.03	1	06/17/13 16:16	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1305357**Date Collected:** 06/04/13**Date Received:** 06/06/13**Date Analyzed:** 06/17/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-5
Lab Code: K1305357-005

Units: mg/L**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1305357- 005DUP	Average	RPD	RPD Limit
					Result			
Tannin and Lignin	SM 5550 B	0.20	0.03	0.07	0.06	0.0662	16	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1305357
Date Collected:06/04/13
Date Received:06/06/13
Date Analyzed:06/17/13

Duplicate Matrix Spike Summary
Tannin and Lignin

Sample Name: BXS-5
Lab Code: K1305357-005
Analysis Method: SM 5550 B

Units:mg/L
Basis:NA

Analyte Name	Sample Result	Result	Matrix Spike K1305357-005MS		Result	Duplicate Matrix Spike K1305357-005DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Tannin and Lignin	0.07	0.96	1.00	89	2.09	2.00	101	75-120	13	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request:K1305357
Date Analyzed:06/17/13

Lab Control Sample Summary
Tannin and Lignin

Analysis Method: SM 5550 B

Units:mg/L
Basis:NA
Analysis Lot:345234

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1305357-LCS1	0.914	1.00	91	85-115

ALS Group USA, Corp.
dba ALS Environmental

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project Name: J.H. Baxter / Arlington
Project No.:

Service Request: K1305357

Sample Name:

BXS-1

BXS-2

BXS-3

BXS-4

BXS-5

Method Blank

Batch QC1D

Batch QC1S

Lab Code:

K1305357-001DISS

K1305357-002DISS

K1305357-003DISS

K1305357-004DISS

K1305357-005DISS

K1305357-MB

K1305360-001DISSD

K1305360-001DISSS

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1305357

Project No.: NA

Date Collected: 06/04/13

Project Name: J.H. Baxter / Arlington

Date Received: 06/06/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-1

Lab Code: K1305357-001DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	06/11/13	06/18/13	1.0	U	
Barium	6010C	4.0	0.6	1.0	06/11/13	06/13/13	13.3		
Copper	6010C	4.0	0.9	1.0	06/11/13	06/13/13	2.1	J	
Iron	6010C	20.0	3.0	1.0	06/11/13	06/13/13	3.7	J	
Manganese	6010C	1.0	0.1	1.0	06/11/13	06/13/13	212		
Nickel	6010C	4.0	0.4	1.0	06/11/13	06/13/13	8.5		
Zinc	6010C	4.0	0.4	1.0	06/11/13	06/13/13	2.4	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company **Service Request:** K1305357
Project No.: NA **Date Collected:** 06/04/13
Project Name: J.H. Baxter / Arlington **Date Received:** 06/06/13
Matrix: WATER **Units:** ug/L
Basis: NA

Sample Name: BXS-2 **Lab Code:** K1305357-002DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	06/11/13	06/18/13	1.5	J	
Barium	6010C	4.0	0.6	1.0	06/11/13	06/13/13	53.0		
Copper	6010C	4.0	0.9	1.0	06/11/13	06/13/13	2.8	J	
Iron	6010C	20.0	3.0	1.0	06/11/13	06/13/13	416		
Manganese	6010C	1.0	0.1	1.0	06/11/13	06/13/13	1680		
Nickel	6010C	4.0	0.4	1.0	06/11/13	06/13/13	36.9		
Zinc	6010C	4.0	0.4	1.0	06/11/13	06/13/13	3.8	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1305357

Project No.: NA

Date Collected: 06/04/13

Project Name: J.H. Baxter / Arlington

Date Received: 06/06/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-3

Lab Code: K1305357-003DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	06/11/13	06/18/13	138		
Barium	6010C	4.0	0.6	1.0	06/11/13	06/13/13	85.5		
Copper	6010C	4.0	0.9	1.0	06/11/13	06/13/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	06/11/13	06/13/13	93500		
Manganese	6010C	5.0	0.4	5.0	06/11/13	06/13/13	14800		
Nickel	6010C	4.0	0.4	1.0	06/11/13	06/13/13	18.4		
Zinc	6010C	4.0	0.4	1.0	06/11/13	06/13/13	2.7	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1305357

Project No.: NA

Date Collected: 06/04/13

Project Name: J.H. Baxter / Arlington

Date Received: 06/06/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-4

Lab Code: K1305357-004DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	06/11/13	06/18/13	6.8		
Barium	6010C	4.0	0.6	1.0	06/11/13	06/13/13	26.1		
Copper	6010C	4.0	0.9	1.0	06/11/13	06/13/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	06/11/13	06/13/13	58.4		
Manganese	6010C	1.0	0.1	1.0	06/11/13	06/13/13	118		
Nickel	6010C	4.0	0.4	1.0	06/11/13	06/13/13	0.4	J	
Zinc	6010C	4.0	0.4	1.0	06/11/13	06/13/13	0.4	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1305357

Project No.: NA

Date Collected: 06/04/13

Project Name: J.H. Baxter / Arlington

Date Received: 06/06/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-5

Lab Code: K1305357-005DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	06/11/13	06/18/13	1.1	J	
Barium	6010C	4.0	0.6	1.0	06/11/13	06/13/13	13.3		
Copper	6010C	4.0	0.9	1.0	06/11/13	06/13/13	2.0	J	
Iron	6010C	20.0	3.0	1.0	06/11/13	06/13/13	5.9	J	
Manganese	6010C	1.0	0.1	1.0	06/11/13	06/13/13	209		
Nickel	6010C	4.0	0.4	1.0	06/11/13	06/13/13	8.4		
Zinc	6010C	4.0	0.4	1.0	06/11/13	06/13/13	2.5	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1305357

Project No.: NA

Date Collected:

Project Name: J.H. Baxter / Arlington

Date Received:

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: Method Blank

Lab Code: K1305357-MB

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	06/11/13	06/18/13	1.0	U	
Barium	6010C	4.0	0.6	1.0	06/11/13	06/13/13	0.6	U	
Copper	6010C	4.0	0.9	1.0	06/11/13	06/13/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	06/11/13	06/13/13	3.0	U	
Manganese	6010C	1.0	0.1	1.0	06/11/13	06/13/13	0.1	J	
Nickel	6010C	4.0	0.4	1.0	06/11/13	06/13/13	0.4	U	
Zinc	6010C	4.0	0.4	1.0	06/11/13	06/13/13	0.4	U	

Comments:

Metals

- 5A -

SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company

Service Request: K1305357

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter / Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC1S

Lab Code: K1305360-001DISSS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	67.1		25.1		40.00	105.0		7010
Barium	75 - 125	2100		102		2000.00	99.9		6010C
Copper	75 - 125	249		0.9	U	250.00	99.6		6010C
Iron		44900		45600		1000.00	-70.0		6010C
Manganese		6650		6370		500.00	56.0		6010C
Nickel	75 - 125	521		39.1		500.00	96.4		6010C
Zinc	75 - 125	487		3.4	J	500.00	96.7		6010C

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
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DUPLICATES

Client: JH Baxter & Company

Service Request: K1305357

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter / Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC1D

Lab Code: K1305360-001DISSD

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		25.1		24.2		3.7		7010
Barium	20	102		100		2.0		6010C
Copper		0.9	U	0.9	U			6010C
Iron	20	45600		44700		2.0		6010C
Manganese	20	6370		6250		1.9		6010C
Nickel	20	39.1		38.2		2.3		6010C
Zinc		3.4	J	3.5	J	2.9		6010C

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

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LABORATORY CONTROL SAMPLE

Client: JH Baxter & Company

Service Request: K1305357

Project No.: NA

Project Name: J.H. Baxter / Arlington

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Arsenic	25	27.9	111.6					
Barium	5000	5040	100.8					
Copper	625	630	100.8					
Iron	2500	2510	100.4					
Manganese	1250	1260	100.8					
Nickel	1250	1240	99.2					
Zinc	1250	1250	100.0					



September 16, 2013

Analytical Report for Service Request No: K1308869

Scott Thielke
JH Baxter & Company
85 N. Baxter Road
P.O. Box 10797
Eugene, OR 97440

RE: J.H. Baxter / Arlington

Dear Scott:

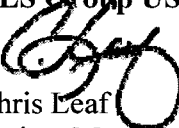
Enclosed are the results of the samples submitted to our laboratory on August 29, 2013. For your reference, these analyses have been assigned our service request number K1308869.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3275. You may also contact me via Email at Chris.Leaf@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental


Chris Leaf
Project Manager

CL/mj

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjllabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon - DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

[illegible]

Report Requirements ☐ Routine Report: Method Blank Surrogate as required ☒ II Report Dup.: MS, MSD as required ☐ III Data Validation Report (includes all raw data) ☐ IV QLP Deliverable Report ☐ V EDD		Invoice Information P.O. # _____ Bill To: <u>J.H. BAXTER</u> _____ _____ Turnaround Requirements ____ 24 hr _____ 48 hr ____ 5 Day ☒ Standard 10-15 working days ____ Provide Fax Results _____ Request Report Date _____		Circle which metals are to be analyzed Total Metals: Al As Sb Ba Be B Ca Cd Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Si Ti Zn V Zr Hg Dissolved Metals: Al As Sb Ba Be B Ca Cd Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Si Ti Zn V Zr Hg Special Instructions/Comments: *Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One) Metals are field filtered PLEASE CONTACT w/questions: STEVE BARNETT 503-689-3400 ☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)			
Relinquished By: <u>Scott Thorne</u> 82813 1015 Signature Date/Time <u>Scott Thorne</u> Printed Name Firm		Received By: <u>[Signature]</u> 82813 Signature Date/Time <u>[Signature]</u> Printed Name Firm		Relinquished By: _____ Signature Date/Time _____ Printed Name Firm		Received By: _____ Signature Date/Time _____ Printed Name Firm	

PC CL

Cooler Receipt and Preservation Form

Client / Project: JH Baxter Service Request K13 8869
 Received: 8/29/13 Opened: 8/29/13 By: BT Unloaded: 8/29/13 By: BT

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1-Front
 If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/CDC ID	Tracking Number	NA	Filed
0.9	1.0	0.9	1.0	+0.1	304		8684 5811 8926		
0.5	0.6	0.2	0.3	+0.1	340		" " 8948		
1.1	1.2	1.2	1.3	+0.1	334		" " 8915		
1.2	1.2	0.9	0.9	0	341		" " 8937		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
 5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA (Y) N
 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on CDC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

Page ____ of ____

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 120.1

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: uMHOS/cm
Basis: NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	293	2.0	0.4	1	09/10/13 17:05	
BXS-2	K1308869-002	876	2.0	0.4	1	09/10/13 17:05	
BXS-3	K1308869-003	428	2.0	0.4	1	09/10/13 17:05	
BXS-4	K1308869-004	188	2.0	0.4	1	09/10/13 17:05	
BXS-5	K1308869-005	292	2.0	0.4	1	09/10/13 17:05	
Method Blank	K1308869-MB1	0.8 J	2.0	0.4	1	09/10/13 17:05	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: NA
Date Received: NA
Date Analyzed: 09/10/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: Batch QC
Lab Code: KQ1310188-04

Units: uMHOS/cm
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1310188- 04DUP	Average	RPD	RPD Limit
					Result			
Conductivity at 25 Degrees Celsius	120.1	2.0	0.4	133	133	133	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 09/10/13

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method: 120.1

Units: uMHOS/cm
Basis: NA
Analysis Lot: 357730

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	327	330	99	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: mg/L
Basis: NA

Chloride

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	4.0	1.0	0.2	5	08/29/13 14:53	
BXS-2	K1308869-002	3.39	0.40	0.06	2	08/29/13 15:02	
BXS-3	K1308869-003	1.88	0.40	0.06	2	08/29/13 15:12	
BXS-4	K1308869-004	1.90	0.40	0.06	2	08/29/13 15:21	
BXS-5	K1308869-005	3.9	1.0	0.2	5	08/29/13 15:31	
Method Blank	K1308869-MB1	ND U	0.20	0.03	1	08/29/13 07:50	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company**Project:** J.H. Baxter / Arlington**Sample Matrix:** Water**Analysis Method:** 300.0**Service Request:** K1308869**Date Collected:** NA**Date Received:** NA**Units:** mg/L**Basis:** NA**Duplicate Sample Summary****Chloride**

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1308833-002DUP	0.40	0.06	3.28	3.27	3.27	<1	20	08/29/13
Batch QC	KQ1309722-19DUP	0.40	0.06	2.55	2.54	2.54	<1	20	08/29/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: N/A
Date Received: N/A
Date Analyzed: 08/29/13

Duplicate Matrix Spike Summary
Chloride

Sample Name: Batch QC
Lab Code: K1308833-002
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Matrix Spike K1308833-002MS				Duplicate Matrix Spike K1308833-002DMS				RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
Chloride	3.28	13.4	10.0	101	13.5	10.0	102	90-110	<1	20

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ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: N/A
Date Received: N/A
Date Analyzed: 08/29/13

**Duplicate Matrix Spike Summary
Chloride**

Sample Name: Batch QC
Lab Code: KQ1309722-19
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike KQ1309722-19MS		Result	Duplicate Matrix Spike KQ1309722-19DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Chloride	2.55	12.7	10.0	101	12.7	10.0	102	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 08/29/13

Lab Control Sample Summary
Chloride

Analysis Method: 300.0

Units: mg/L
Basis: NA
Analysis Lot: 356032

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	4.76	5.00	95	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: mg/L
Basis: NA

Sulfate

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	12.7	0.50	0.05	5	08/29/13 14:53	
BXS-2	K1308869-002	0.20 J	0.20	0.02	2	08/29/13 15:02	
BXS-3	K1308869-003	0.13 J	0.20	0.02	2	08/29/13 15:12	
BXS-4	K1308869-004	0.81	0.20	0.02	2	08/29/13 15:21	
BXS-5	K1308869-005	12.6	0.50	0.05	5	08/29/13 15:31	
Method Blank	K1308869-MB1	ND U	0.10	0.01	1	08/29/13 07:50	

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dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 300.0

Service Request: K1308869
Date Collected: NA
Date Received: NA

Units: mg/L

Basis: NA

Duplicate Sample Summary
Sulfate

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1308833-002DUP	0.20	0.02	5.58	5.53	5.55	<1	20	08/29/13
Batch QC	KQ1309722-19DUP	0.20	0.02	5.05	5.01	5.03	<1	20	08/29/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: N/A
Date Received: N/A
Date Analyzed: 08/29/13

Duplicate Matrix Spike Summary
Sulfate

Sample Name: Batch QC
Lab Code: K1308833-002
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1308833-002MS		Result	Duplicate Matrix Spike K1308833-002DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Sulfate	5.58	16.0	10.0	105	16.0	10.0	104	90-110	<1	20

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ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: N/A
Date Received: N/A
Date Analyzed: 08/29/13

Duplicate Matrix Spike Summary
Sulfate

Sample Name: Batch QC
Lab Code: KQ1309722-19
Analysis Method: 300.0

Units: mg/L
Basis: NA

Analyte Name	Matrix Spike KQ1309722-19MS				Duplicate Matrix Spike KQ1309722-19DMS				RPD	RPD Limit
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
Sulfate	5.05	15.4	10.0	104	15.5	10.0	105	90-110	<1	20

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 08/29/13

Lab Control Sample Summary
Sulfate

Analysis Method: 300.0

Units: mg/L
Basis: NA
Analysis Lot: 356032

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	4.70	5.00	94	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 350.1

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: mg/L
Basis: NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	ND U	0.050	0.020	1	09/10/13 09:46	
BXS-2	K1308869-002	ND U	0.050	0.020	1	09/10/13 09:46	
BXS-3	K1308869-003	0.710	0.050	0.020	1	09/10/13 09:46	
BXS-4	K1308869-004	0.539	0.050	0.020	1	09/10/13 09:46	
BXS-5	K1308869-005	ND U	0.050	0.020	1	09/10/13 09:46	
Method Blank	K1308869-MB1	ND U	0.050	0.020	1	09/10/13 09:46	
Method Blank	K1308869-MB2	ND U	0.050	0.020	1	09/10/13 09:46	
Method Blank	K1308869-MB3	ND U	0.050	0.020	1	09/10/13 09:46	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 350.1

Service Request: K1308869
Date Collected: NA
Date Received: NA
Units: mg/L
Basis: NA

Duplicate Sample Summary
Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1308759-001DUP	0.050	0.020	ND	0.026	NC	NC	20	09/10/13
Batch QC	K1308871-003DUP	0.50	0.20	12.3	12.2	12.2	<1	20	09/10/13
Batch QC	K1308922-013DUP	0.50	0.20	19.9	19.8	19.9	<1	20	09/10/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: N/A
Date Received: N/A
Date Analyzed: 09/10/13

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: Batch QC
Lab Code: K1308759-001
Analysis Method: 350.1

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1308759-001MS		Result	Duplicate Matrix Spike K1308759-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Ammonia as Nitrogen	ND	2.00	2.00	100	2.03	2.00	102	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: N/A
Date Received: N/A
Date Analyzed: 09/10/13

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: Batch QC
Lab Code: K1308871-003
Analysis Method: 350.1

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1308871-003MS		Result	Duplicate Matrix Spike K1308871-003DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Ammonia as Nitrogen	12.3	32.4	20.0	101	31.9	20.0	98	90-110	2	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: N/A
Date Received: N/A
Date Analyzed: 09/10/13

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: Batch QC
Lab Code: K1308922-013
Analysis Method: 350.1

Units: mg/L
Basis: NA

Analyte Name	Matrix Spike K1308922-013MS				Duplicate Matrix Spike K1308922-013DMS					
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Ammonia as Nitrogen	19.9	39.7	20.0	99	39.6	20.0	98	90-110	<1	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 09/10/13

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method: 350.1

Units: mg/L
Basis: NA
Analysis Lot: 357587

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	10.7	10.9	98	90-110
Lab Control Sample	K1308869-LCS2	10.6	10.9	97	90-110
Lab Control Sample	K1308869-LCS3	10.7	10.9	98	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: 353.2

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: mg/L
Basis: NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	0.125	0.050	0.009	1	09/11/13 15:03	
BXS-2	K1308869-002	0.022 J	0.050	0.009	1	09/11/13 15:03	
BXS-3	K1308869-003	0.033 J	0.050	0.009	1	09/11/13 15:03	
BXS-4	K1308869-004	0.021 J	0.050	0.009	1	09/11/13 15:03	
BXS-5	K1308869-005	0.141	0.050	0.009	1	09/11/13 15:03	
Method Blank	K1308869-MB1	0.041 J	0.050	0.009	1	09/11/13 15:03	
Method Blank	K1308869-MB2	0.031 J	0.050	0.009	1	09/11/13 15:03	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869**Date Collected:** 08/27/13**Date Received:** 08/29/13**Date Analyzed:** 09/11/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1**Units:** mg/L**Lab Code:** K1308869-001**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1308869-001DUP Result	Average	RPD	RPD Limit
Nitrate+Nitrite as Nitrogen	353.2	0.050	0.009	0.125	0.118	0.122	6	20

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ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13
Date Analyzed: 09/11/13

Duplicate Matrix Spike Summary
Nitrate+Nitrite as Nitrogen

Sample Name: BXS-1
Lab Code: K1308869-001
Analysis Method: 353.2

Units: mg/L
Basis: NA

Matrix Spike
K1308869-001MS

Duplicate Matrix Spike
K1308869-001DMS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Nitrate+Nitrite as Nitrogen	0.125	2.07	2.00	97	2.06	2.00	97	89-114	<1	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 09/11/13

Lab Control Sample Summary
Nitrate+Nitrite as Nitrogen

Analysis Method: 353.2

Units: mg/L
Basis: NA
Analysis Lot: 358042

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	4.31	4.35	99	90-110
Lab Control Sample	K1308869-LCS2	4.38	4.35	101	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 2540 C

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: mg/L
Basis: NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	201	10	-	1	09/03/13 16:00	
BXS-2	K1308869-002	574	10	-	1	09/03/13 16:00	
BXS-3	K1308869-003	349	10	-	1	09/03/13 16:00	
BXS-4	K1308869-004	141	10	-	1	09/03/13 16:00	
BXS-5	K1308869-005	189	10	-	1	09/03/13 16:00	
Method Blank	K1308869-MB1	ND U	10	-	1	09/03/13 16:00	
Method Blank	K1308869-MB2	ND U	10	-	1	09/03/13 16:00	
Method Blank	K1308869-MB3	ND U	5.0	-	1	09/03/13 16:00	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 2540 C

Service Request: K1308869
Date Collected: NA
Date Received: NA
Units: mg/L
Basis: NA

Duplicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1308572-007DUP	10		78	80	79.0	3	10	09/03/13
Batch QC	K1308833-003DUP	10		227	229	228	<1	10	09/03/13
Batch QC	K1308871-002DUP	10		193	193	193	<1	10	09/03/13

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 09/03/13

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method: SM 2540 C

Units: mg/L
Basis: NA
Analysis Lot: 356651

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	1080	1120	97	85-115
Lab Control Sample	K1308869-LCS2	1100	1120	98	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 4500-H+ B

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: pH Units
Basis: NA

pH

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	6.69	-	-	1	08/29/13 16:25	H
BXS-2	K1308869-002	6.62	-	-	1	08/29/13 16:26	H
BXS-3	K1308869-003	6.54	-	-	1	08/29/13 16:28	H
BXS-4	K1308869-004	8.04	-	-	1	08/29/13 16:32	H
BXS-5	K1308869-005	6.63	-	-	1	08/29/13 16:33	H

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 4500-H+ B

Service Request: K1308869

Date Collected: NA

Date Received: NA

Units: pH Units

Basis: NA

Duplicate Sample Summary

pH

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1308854-001DUP	-		7.36	7.42	7.39	<1	20	08/29/13
Batch QC	K1308855-001DUP	-		7.04	7.05	7.05	<1	20	08/29/13
Batch QC	K1308892-001DUP	-		7.60	7.68	7.64	1	20	08/29/13

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 08/29/13

Lab Control Sample Summary
pH

Analysis Method: SM 4500-H+ B

Units: pH Units
Basis: NA
Analysis Lot: 356149

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	7.59	7.65	99	85-115
Lab Control Sample	K1308869-LCS2	7.62	7.65	100	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5220 C

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: mg/L
Basis: NA

Chemical Oxygen Demand (COD)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	7.5	5.0	3.0	1	09/10/13 13:10	
BXS-2	K1308869-002	42.2	5.0	3.0	1	09/10/13 13:10	
BXS-3	K1308869-003	67.9	5.0	3.0	1	09/10/13 13:10	
BXS-4	K1308869-004	3.0 J	5.0	3.0	1	09/10/13 13:10	
BXS-5	K1308869-005	10.1	5.0	3.0	1	09/10/13 13:10	
Method Blank	K1308869-MB1	ND U	5.0	3.0	1	09/10/13 13:10	
Method Blank	K1308869-MB2	ND U	5.0	3.0	1	09/10/13 13:10	
Method Blank	K1308869-MB3	ND U	5.0	3.0	1	09/10/13 13:10	
Method Blank	K1308869-MB4	ND U	5.0	3.0	1	09/10/13 13:10	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869**Date Collected:** 08/27/13**Date Received:** 08/29/13**Date Analyzed:** 09/10/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1
Lab Code: K1308869-001

Units: mg/L**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1308869-001DUP Result	Average	RPD	RPD Limit
Chemical Oxygen Demand (COD)	SM 5220 C	5.0	3.0	7.5	7.0	7.29	7	20

Results flagged with an asterisk (*) indicate values outside control criteria.

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13
Date Analyzed: 09/10/13

Duplicate Matrix Spike Summary
Chemical Oxygen Demand (COD)

Sample Name: BXS-1
Lab Code: K1308869-001
Analysis Method: SM 5220 C

Units: mg/L
Basis: NA

Analyte Name	Matrix Spike K1308869-001MS				Duplicate Matrix Spike K1308869-001DMS					
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand (COD)	7.5	111	100	103	114	100	107	80-128	3	20

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 09/10/13

Lab Control Sample Summary
Chemical Oxygen Demand (COD)

Analysis Method: SM 5220 C

Units: mg/L
Basis: NA
Analysis Lot: 357491

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	87.0	91.5	95	83-117
Lab Control Sample	K1308869-LCS2	88.0	91.5	96	83-117

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5310 C

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: mg/L
Basis: NA

Carbon, Total Organic

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1308869-001	2.54	0.50	0.07	1	08/30/13 11:03	
BXS-2	K1308869-002	14.6	1.0	0.2	2	08/30/13 11:03	
BXS-3	K1308869-003	18.9	1.0	0.2	2	08/30/13 11:03	
BXS-4	K1308869-004	0.88	0.50	0.07	1	08/30/13 11:03	
BXS-5	K1308869-005	2.49	0.50	0.07	1	08/30/13 11:03	
Method Blank	K1308869-MB1	ND U	0.50	0.07	1	08/30/13 11:03	
Method Blank	K1308869-MB2	ND U	0.50	0.07	1	08/30/13 11:03	
Method Blank	K1308869-MB3	ND U	0.50	0.07	1	08/30/13 11:03	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter / Arlington
Sample Matrix: Water
Analysis Method: SM 5310 C

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13

Units: mg/L
Basis: NA

Duplicate Sample Summary
Carbon, Total Organic

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
BXS-1	K1308869-001DUP	0.50	0.07	2.54	2.58	2.56	2	10	08/30/13
BXS-2	K1308869-002DUP	1.0	0.2	14.6	14.6	14.6	<1	10	08/30/13
BXS-3	K1308869-003DUP	1.0	0.2	18.9	18.8	18.9	<1	10	08/30/13
BXS-4	K1308869-004DUP	0.50	0.07	0.88	0.82	0.849	7	10	08/30/13
BXS-5	K1308869-005DUP	0.50	0.07	2.49	2.50	2.50	<1	10	08/30/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13
Date Analyzed: 08/30/13

Matrix Spike Summary
Carbon, Total Organic

Sample Name: BXS-1
Lab Code: K1308869-001
Analysis Method: SM 5310 C

Units: mg/L
Basis: NA

Matrix Spike
K1308869-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	2.54	27.6	25.0	100	83-117

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 08/30/13

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C

Units: mg/L
Basis: NA
Analysis Lot: 356272

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	17.1	18.1	95	83-117
Lab Control Sample	K1308869-LCS2	17.1	18.1	95	83-117
Lab Control Sample	K1308869-LCS3	16.8	18.1	93	83-117

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Collected: 08/27/13
Date Received: 08/29/13
Date Analyzed: 09/11/13

Duplicate Matrix Spike Summary
Tannin and Lignin

Sample Name: BXS-1
Lab Code: K1308869-001
Analysis Method: SM 5550 B

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1308869-001MS		Result	Duplicate Matrix Spike K1308869-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Tannin and Lignin	0.13	1.07	1.00	94	1.12	1.00	99	75-120	5	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter / Arlington
Sample Matrix: Water

Service Request: K1308869
Date Analyzed: 09/11/13

Lab Control Sample Summary
Tannin and Lignin

Analysis Method: SM 5550 B

Units: mg/L
Basis: NA
Analysis Lot: 357899

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1308869-LCS1	0.941	1.00	94	85-115

ALS Group USA, Corp.
dba ALS Environmental

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project Name: J.H. Baxter / Arlington
Project No.:

Service Request: K1308869

Sample Name:

BXS-1

BXS-1D

BXS-1S

BXS-2

BXS-3

BXS-4

BXS-5

Method Blank

Batch QC1D

Batch QC1S

Lab Code:

K1308869-001DISS

K1308869-001DISSD

K1308869-001DISSS

K1308869-002DISS

K1308869-003DISS

K1308869-004DISS

K1308869-005DISS

K1308869-MB

K1308916-001D

K1308916-001S

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: NA
Project Name: J.H. Baxter / Arlington
Matrix: WATER

Service Request: K1308869

Date Collected: 08/27/13

Date Received: 08/29/13

Units: ug/L

Basis: NA

Sample Name: BXS-1

Lab Code: K1308869-001DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	09/03/13	09/10/13	1.0	U	
Barium	6010C	4.0	0.6	1.0	09/05/13	09/10/13	16.1		
Copper	6010C	4.0	0.9	1.0	09/05/13	09/10/13	2.0	J	
Iron	6010C	20.0	3.0	1.0	09/05/13	09/10/13	3.0	U	
Manganese	6010C	2.00	0.07	1.0	09/05/13	09/10/13	224		
Nickel	6010C	4.0	0.4	1.0	09/05/13	09/10/13	11.2		
Zinc	6010C	4.0	0.4	1.0	09/05/13	09/10/13	2.7	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Date Collected: 08/27/13

Project Name: J.H. Baxter / Arlington

Date Received: 08/29/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-2

Lab Code: K1308869-002DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	09/03/13	09/10/13	1.0	J	
Barium	6010C	4.0	0.6	1.0	09/05/13	09/10/13	54.4		
Copper	6010C	4.0	0.9	1.0	09/05/13	09/10/13	2.3	J	
Iron	6010C	20.0	3.0	1.0	09/05/13	09/10/13	416		
Manganese	6010C	2.00	0.07	1.0	09/05/13	09/10/13	1700		
Nickel	6010C	4.0	0.4	1.0	09/05/13	09/10/13	38.4		
Zinc	6010C	4.0	0.4	1.0	09/05/13	09/10/13	3.6	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company **Service Request:** K1308869
Project No.: NA **Date Collected:** 08/27/13
Project Name: J.H. Baxter / Arlington **Date Received:** 08/29/13
Matrix: WATER **Units:** ug/L
Basis: NA

Sample Name: BXS-3 **Lab Code:** K1308869-003DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	09/03/13	09/10/13	140		
Barium	6010C	4.0	0.6	1.0	09/05/13	09/10/13	115		
Copper	6010C	4.0	0.9	1.0	09/05/13	09/10/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	09/05/13	09/10/13	109000		
Manganese	6010C	2.00	0.07	1.0	09/05/13	09/10/13	14200		
Nickel	6010C	4.0	0.4	1.0	09/05/13	09/10/13	22.2		
Zinc	6010C	4.0	0.4	1.0	09/05/13	09/10/13	2.9	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Date Collected: 08/27/13

Project Name: J.H. Baxter / Arlington

Date Received: 08/29/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-4

Lab Code: K1308869-004DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	09/03/13	09/10/13	6.3		
Barium	6010C	4.0	0.6	1.0	09/05/13	09/10/13	27.5		
Copper	6010C	4.0	0.9	1.0	09/05/13	09/10/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	09/05/13	09/10/13	64.6		
Manganese	6010C	2.00	0.07	1.0	09/05/13	09/10/13	119		
Nickel	6010C	4.0	0.4	1.0	09/05/13	09/10/13	2.2	J	
Zinc	6010C	4.0	0.4	1.0	09/05/13	09/10/13	0.4	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Date Collected: 08/27/13

Project Name: J.H. Baxter / Arlington

Date Received: 08/29/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-5

Lab Code: K1308869-005DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	09/03/13	09/10/13	1.0	U	
Barium	6010C	4.0	0.6	1.0	09/05/13	09/10/13	15.2		
Copper	6010C	4.0	0.9	1.0	09/05/13	09/10/13	1.6	J	
Iron	6010C	20.0	3.0	1.0	09/05/13	09/10/13	5.8	J	
Manganese	6010C	2.00	0.07	1.0	09/05/13	09/10/13	219		
Nickel	6010C	4.0	0.4	1.0	09/05/13	09/10/13	10.8		
Zinc	6010C	4.0	0.4	1.0	09/05/13	09/10/13	2.5	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Date Collected:

Project Name: J.H. Baxter / Arlington

Date Received:

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: Method Blank

Lab Code: K1308869-MB

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	09/03/13	09/10/13	1.0	U	
Barium	6010C	4.0	0.6	1.0	09/05/13	09/10/13	0.6	U	
Copper	6010C	4.0	0.9	1.0	09/05/13	09/10/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	09/05/13	09/10/13	3.0	U	
Manganese	6010C	2.00	0.07	1.0	09/05/13	09/10/13	0.10	J	
Nickel	6010C	4.0	0.4	1.0	09/05/13	09/10/13	0.4	U	
Zinc	6010C	4.0	0.4	1.0	09/05/13	09/10/13	0.4	U	

Comments:

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter / Arlington

Basis: NA

Matrix: WATER

Sample Name: BXS-1S

Lab Code: K1308869-001DISSS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	40.0		1.0	U	40.00	100.0		7010

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter / Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC1S

Lab Code: K1308916-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Barium	75 - 125	2110		32.6		2000.00	103.9		6010C
Copper	75 - 125	243		1.8	J	250.00	96.5		6010C
Iron	75 - 125	1800		814		1000.00	98.6		6010C
Manganese	75 - 125	800		287		500.00	102.6		6010C
Nickel	75 - 125	498		5.2		500.00	98.6		6010C
Zinc	75 - 125	504		3.9	J	500.00	100.0		6010C

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 6 -
DUPLICATES

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter / Arlington

Basis: NA

Matrix: WATER

Sample Name: BXS-1D

Lab Code: K1308869-001DISSD

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		1.0	U	1.0	U			7010

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals
- 6 -
DUPLICATES

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter / Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC1D

Lab Code: K1308916-001D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Barium	20	32.6		32.5		0.3		6010C
Copper		1.8	J	1.6	J	11.8		6010C
Iron	20	814		802		1.5		6010C
Manganese	20	287		286		0.3		6010C
Nickel		5.2		5.1		1.9		6010C
Zinc		3.9	J	2.7	J	36.4		6010C

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

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LABORATORY CONTROL SAMPLE

Client: JH Baxter & Company

Service Request: K1308869

Project No.: NA

Project Name: J.H. Baxter / Arlington

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous (ug/L)			Solid (mg/kg)					
	True	Found	%R	True	Found	C	Limits	%R	
Arsenic	25	26.6	106.4						
Barium	5000	5130	102.6						
Copper	625	622	99.5						
Iron	2500	2540	101.6						
Manganese	1250	1280	102.4						
Nickel	1250	1250	100.0						
Zinc	1250	1310	104.8						



December 23, 2013

Analytical Report for Service Request No: K1313153

Scott Thielke
JH Baxter & Company
85 N. Baxter Road
P.O. Box 10797
Eugene, OR 97440

RE: J.H. Baxter/Arlington

Dear Scott:

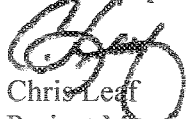
Enclosed are the results of the samples submitted to our laboratory on December 04, 2013. For your reference, these analyses have been assigned our service request number K1313153.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3275. You may also contact me via Email at Chris.Leaf@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental


Chris Leaf
Project Manager

CL/kd

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjllabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon - DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	1704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

ALS ENVIRONMENTAL

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request No.: K1313153
Date Received: 12/04/13

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Laboratory Control Sample (LCS).

Sample Receipt

Five water samples were received for analysis at ALS Environmental on 12/04/13. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

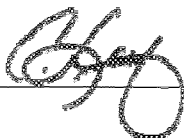
Dissolved Metals

Matrix Spike Recovery Exceptions:

The control criteria for matrix spike recovery of Copper for the Batch QC2 sample were not applicable. The analyzed concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____



Project Name: <u>J.H. BAXTER / ARLINGTON</u>					Number of Containers	OH	TD	28D		180D							
Project Number: _____						SM 1500-H+ B / pH	SM 2540 C / TDS	120.1 / Cond Spec	300.0 / Chloride	300.0 / SO4	350.1 / Ammonia T	353.2 / NO2 NO3 T	SM 5220 C / COD T	SM 5310 C / TOC T	SM 5550 B / Tan Lign	6010C / Metals D	7010 / As D
Project Manager: _____																	
Company Name: <u>J.H. BAXTER</u>																	
Company Address: <u>85 N. BAXTER RD.</u>																	
City/State/Zip: <u>EUGENE OR 97402</u>																	
E-Mail Address: _____																	
Phone #: _____ FAX #: _____																	
Sampler Signature: _____																	
Sample ID:	Date:	Time:	Label:	Matrix:												Remarks	
BXS-1	12-2	1456		H2O	3												
BXS-2	12-2	1542			3												
BXS-3	12-2	1615			3												
BXS-4	12-3	0852			3												
BXS-5	12-2	1400			3												

Report Requirements ☐ Routine Report Method ☐ Blank Surrogate as required ☒ II Report Supp. MS MSD as required ☐ III Data Validation Report (includes all raw data) ☐ IV C/P Deliverable Report ☐ V FDD		Invoice Information P.O.# _____ Bill To: <u>J.H. BAXTER</u> _____ _____		Metals are field filtered PLEASE contact questions: STEVE BARNETT 503-639-3400	
Turnaround Requirements _____ 24 hr _____ 5 Day ☒ Standard (10-15 working days) _____ Provide Fax Results		Special Instructions/Comments: _____ Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One)			
Relinquished By: <u>Scott Thiers</u> Signature: _____ Date/Time: <u>12-3-13 0945</u> Printed Name: <u>SCOTT THIERS</u> Firm: _____		Received By: <u>Alan Thiers</u> Signature: _____ Date/Time: <u>12/4/13 1000</u> Printed Name: <u>ALAN THIERS</u> Firm: _____		Relinquished By: _____ Signature: _____ Date/Time: _____ Printed Name: _____ Firm: _____	
Received By: _____ Signature: _____ Date/Time: _____ Printed Name: _____ Firm: _____		Received By: _____ Signature: _____ Date/Time: _____ Printed Name: _____ Firm: _____			

PC CL

Cooler Receipt and Preservation Form

Client / Project: JM BAXTER Service Request K13 13153Received: 12/4/13 Opened: 12/4/13 By: AM Unloaded: 12/4/13 By: M

1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other NA
3. Were custody seals on coolers? NA Y N If yes, how many and where? 4 FRONT
- If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
2.6	2.7	2.0	2.1	0.1	325	29047	804100114065		
4.4	4.3	2.9	2.8	-0.1	298		804100114076		
3.5	3.5	2.8	2.8	0.0	334		804100114054		
1.8	1.8	0.7	0.7	0.0	316		804100113852		

4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: SHORT HOLD TIMEPage of

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: 120.1
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13
Units: uMHOS/cm
Basis: NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	312	2.0	0.4	1	12/05/13 11:40	
BXS-2	K1313153-002	866	2.0	0.4	1	12/05/13 11:40	
BXS-3	K1313153-003	513	2.0	0.4	1	12/05/13 11:40	
BXS-4	K1313153-004	193	2.0	0.4	1	12/05/13 11:40	
BXS-5	K1313153-005	310	2.0	0.4	1	12/05/13 11:40	
Method Blank	K1313153-MB1	1.0 J	2.0	0.4	1	12/05/13 11:40	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: 12/02/13
Date Received: 12/04/13
Date Analyzed: 12/05/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1
Lab Code: K1313153-001

Units: uMHOS/cm
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1313153-001DUP	Average	RPD	RPD Limit
					Result			
Conductivity at 25 Degrees Celsius	120.1	2.0	0.4	312	311	312	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Analyzed: 12/05/13
Date Extracted: NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method: 120.1
Prep Method: None

Units: uMHOS/cm
Basis: NA
Analysis Lot: 371455

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1313153-LCS1	335	330	101	86-113

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: 300.0
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13
Units: mg/L
Basis: NA

Chloride

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	3.56	0.40	0.06	2	12/04/13 12:46	
BXS-2	K1313153-002	2.65	0.40	0.06	2	12/04/13 13:01	
BXS-3	K1313153-003	1.57	0.40	0.06	2	12/04/13 13:17	
BXS-4	K1313153-004	1.54	0.40	0.06	2	12/04/13 13:32	
BXS-5	K1313153-005	3.56	0.40	0.06	2	12/04/13 13:47	
Method Blank	K1313153-MB1	ND U	0.20	0.03	1	12/04/13 06:46	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153**Date Collected:** NA**Date Received:** NA**Date Analyzed:** 12/04/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: Batch QC**Units:** mg/L**Lab Code:** KQ1314458-11**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1314458-11DUP	Average	RPD	RPD Limit
					Result			
Chloride	300.0	0.40	0.06	4.16	4.17	4.17	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

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ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: N/A
Date Received: N/A
Date Analyzed: 12/4/13
Date Extracted: NA

Duplicate Matrix Spike Summary
Chloride

Sample Name: Batch QC
Lab Code: KQ1314458-11
Analysis Method: 300.0
Prep Method: None

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike KQ1314458-11MS		Duplicate Matrix Spike KQ1314458-11DMS			% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec	Result	Spike Amount	% Rec			
Chloride	4.16	13.7	10.0	96	13.7	10.0	95	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Analyzed: 12/04/13
Date Extracted: NA

Lab Control Sample Summary
Chloride

Analysis Method: 300.0
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 371292

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1313153-LCS1	4.60	5.00	92	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: 300.0
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13
Units: mg/L
Basis: NA

Sulfate

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	12.3	0.20	0.02	2	12/04/13 12:46	
BXS-2	K1313153-002	0.18 J	0.20	0.02	2	12/04/13 13:01	
BXS-3	K1313153-003	0.14 J	0.20	0.02	2	12/04/13 13:17	
BXS-4	K1313153-004	0.82	0.20	0.02	2	12/04/13 13:32	
BXS-5	K1313153-005	11.9	0.20	0.02	2	12/04/13 13:47	
Method Blank	K1313153-MB1	ND U	0.10	0.01	1	12/04/13 06:46	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153**Date Collected:** NA**Date Received:** NA**Date Analyzed:** 12/04/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: Batch QC**Units:** mg/L**Lab Code:** KQ1314458-11**Basis:** NA

					Duplicate Sample KQ1314458- 11DUP			
Analyte Name	Analysis Method	MRL	MDL	Sample Result	Result	Average	RPD	RPD Limit
Sulfate	300.0	0.20	0.02	5.22	5.18	5.20	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:13-0000271751 rev 00

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: 350.1
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13

Units: mg/L
Basis: NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	ND U	0.050	0.020	1	12/06/13 09:49	
BXS-2	K1313153-002	ND U	0.050	0.020	1	12/06/13 09:49	
BXS-3	K1313153-003	0.822	0.050	0.020	1	12/06/13 09:49	
BXS-4	K1313153-004	0.548	0.050	0.020	1	12/06/13 09:49	
BXS-5	K1313153-005	ND U	0.050	0.020	1	12/06/13 09:49	
Method Blank	K1313153-MB1	ND U	0.050	0.020	1	12/06/13 09:49	
Method Blank	K1313153-MB2	ND U	0.050	0.020	1	12/06/13 09:49	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153**Date Collected:** 12/02/13**Date Received:** 12/04/13**Date Analyzed:** 12/06/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1**Units:** mg/L**Lab Code:** K1313153-001**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1313153-001DUP Result	Average	RPD	RPD Limit
Ammonia as Nitrogen	350.1	0.050	0.020	ND	ND	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Printed 12/20/2013 11:57:55 AM

Superset Reference:13-0000271751 rev 00

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: 12/02/13
Date Received: 12/04/13
Date Analyzed: 12/6/13
Date Extracted: NA

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name: BXS-1
Lab Code: K1313153-001
Analysis Method: 350.1
Prep Method: None

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1313153-001MS		Result	Duplicate Matrix Spike K1313153-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Ammonia as Nitrogen	ND U	2.01	2.00	100	2.03	2.00	101	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Analyzed: 12/06/13
Date Extracted: NA

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method: 350.1
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 371676

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1313153-LCS1	10.9	10.9	100	90-110
Lab Control Sample	K1313153-LCS2	10.9	10.9	100	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: 353.2
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13

Units: mg/L
Basis: NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	0.033 J	0.050	0.009	1	12/09/13 13:52	
BXS-2	K1313153-002	0.009 J	0.050	0.009	1	12/09/13 13:52	
BXS-3	K1313153-003	0.198	0.050	0.009	1	12/09/13 13:52	
BXS-4	K1313153-004	ND U	0.050	0.009	1	12/09/13 13:52	
BXS-5	K1313153-005	0.027 J	0.050	0.009	1	12/09/13 13:52	
Method Blank	K1313153-MB1	ND U	0.050	0.009	1	12/09/13 13:52	
Method Blank	K1313153-MB2	0.009 J	0.050	0.009	1	12/09/13 13:52	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153**Date Collected:** 12/02/13**Date Received:** 12/04/13**Date Analyzed:** 12/09/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1**Units:** mg/L**Lab Code:** K1313153-001**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1313153-001DUP Result	Average	RPD	RPD Limit
Nitrate+Nitrite as Nitrogen	353.2	0.050	0.009	0.033	0.031	0.0319	6	20

Results flagged with an asterisk (*) indicate values outside control criteria.

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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ALS Group USA, Corp.
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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: SM 2540 C
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13

Units: mg/L
Basis: NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	223	10	-	1	12/09/13 14:10	
BXS-2	K1313153-002	530	10	-	1	12/09/13 14:10	
BXS-3	K1313153-003	356	10	-	1	12/09/13 14:10	
BXS-4	K1313153-004	132	10	-	1	12/09/13 14:10	
BXS-5	K1313153-005	197	10	-	1	12/09/13 14:10	
Method Blank	K1313153-MB1	ND U	5.0	-	1	12/09/13 14:10	
Method Blank	K1313153-MB2	ND U	5.0	-	1	12/09/13 14:10	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153**Date Collected:** 12/02/13**Date Received:** 12/04/13**Date Analyzed:** 12/09/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-5**Units:** mg/L**Lab Code:** K1313153-005**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1313153-005DUP Result	Average	RPD	RPD Limit
Solids, Total Dissolved	SM 2540 C	10	-	197	212	205	7	10

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Analyzed: 12/09/13
Date Extracted: NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method: SM 2540 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 371991

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1313153-LCS1	1110	1120	99	85-115

ALS Group USA, Corp.
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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: SM 4500-H+ B
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13

Units: pH Units
Basis: NA

pH

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	6.93	-	-	1	12/04/13 15:00	H
BXS-2	K1313153-002	6.88	-	-	1	12/04/13 15:04	H
BXS-3	K1313153-003	6.58	-	-	1	12/04/13 15:05	H
BXS-4	K1313153-004	8.13	-	-	1	12/04/13 15:07	H
BXS-5	K1313153-005	6.79	-	-	1	12/04/13 15:09	H

ALS Group USA, Corp.

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QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: 12/02/13
Date Received: 12/04/13
Date Analyzed: 12/04/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: BXS-1
Lab Code: K1313153-001

Units: pH Units
Basis: NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1313153-001DUP Result	Average	RPD	RPD Limit
pH	SM 4500-H+ B	-	-	6.93	6.87	6.90	<1	20

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Analyzed: 12/04/13
Date Extracted: NA

Lab Control Sample Summary
pH

Analysis Method: SM 4500-H+ B
Prep Method: None

Units: pH Units
Basis: NA
Analysis Lot: 371372

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1313153-LCS1	5.40	5.38	100	85-115

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: SM 5220 C
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13
Units: mg/L
Basis: NA

Chemical Oxygen Demand (COD)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	6.7	5.0	3.0	1	12/11/13 16:40	
BXS-2	K1313153-002	36.7	5.0	3.0	1	12/11/13 16:40	
BXS-3	K1313153-003	65.2	5.0	3.0	1	12/11/13 16:40	
BXS-4	K1313153-004	ND U	5.0	3.0	1	12/11/13 16:40	
BXS-5	K1313153-005	5.2	5.0	3.0	1	12/11/13 16:40	
Method Blank	K1313153-MB1	ND U	5.0	3.0	1	12/11/13 16:40	
Method Blank	K1313153-MB2	ND U	5.0	3.0	1	12/11/13 16:40	
Method Blank	K1313153-MB3	ND U	5.0	3.0	1	12/11/13 16:40	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153**Date Collected:** NA**Date Received:** NA**Date Analyzed:** 12/11/13

Replicate Sample Summary
General Chemistry Parameters

Sample Name: Batch QC**Units:** mg/L**Lab Code:** K1313152-001**Basis:** NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1313152-001DUP	Average	RPD	RPD Limit
					Result			
Chemical Oxygen Demand (COD)	SM 5220 C	5.0	3.0	20.7	20.7	20.7	<1	20

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: N/A
Date Received: N/A
Date Analyzed: 12/11/13
Date Extracted: NA

Duplicate Matrix Spike Summary
Chemical Oxygen Demand (COD)

Sample Name: Batch QC
Lab Code: K1313152-001
Analysis Method: SM 5220 C
Prep Method: None

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Matrix Spike K1313152-001MS			Duplicate Matrix Spike K1313152-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Chemical Oxygen Demand (COD)	20.7	123	100	102	122	100	101	80-128	1	20

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Analyzed: 12/11/13
Date Extracted: NA

Lab Control Sample Summary
Chemical Oxygen Demand (COD)

Analysis Method: SM 5220 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 372465

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1313153-LCS1	87.4	91.5	96	83-117

ALS Group USA, Corp.
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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: SM 5310 C
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13
Units: mg/L
Basis: NA

Carbon, Total Organic

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	2.48	0.50	0.07	1	12/05/13 22:38	
BXS-2	K1313153-002	14.3	0.50	0.07	1	12/05/13 22:38	
BXS-3	K1313153-003	18.4	1.0	0.2	2	12/05/13 22:38	
BXS-4	K1313153-004	0.90	0.50	0.07	1	12/05/13 22:38	
BXS-5	K1313153-005	2.54	0.50	0.07	1	12/05/13 22:38	
Method Blank	K1313153-MB1	0.32 J	0.50	0.07	1	12/05/13 22:38	
Method Blank	K1313153-MB2	ND U	0.50	0.07	1	12/05/13 22:38	
Method Blank	K1313153-MB3	ND U	0.50	0.07	1	12/05/13 22:38	

ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/04/13

Analysis Method: SM 5310 C
Prep Method: None

Units: mg/L
Basis: NA

Duplicate Sample Summary
Carbon, Total Organic

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
BXS-1	K1313153-001DUP	0.50	0.07	2.48	2.58	2.53	4	10	12/05/13
BXS-2	K1313153-002DUP	0.50	0.07	14.3	14.3	14.3	<1	10	12/05/13
BXS-3	K1313153-003DUP	1.0	0.2	18.4	18.5	18.4	<1	10	12/05/13
BXS-4	K1313153-004DUP	0.50	0.07	0.90	0.90	0.900	<1	10	12/05/13
BXS-5	K1313153-005DUP	0.50	0.07	2.54	2.56	2.55	1	10	12/05/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: 12/02/13
Date Received: 12/04/13
Date Analyzed: 12/5/13
Date Extracted: NA

Matrix Spike Summary
Carbon, Total Organic

Sample Name: BXS-1
Lab Code: K1313153-001
Analysis Method: SM 5310 C
Prep Method: None

Units: mg/L
Basis: NA

Matrix Spike
K1313153-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic	2.48	27.6	25.0	101	83-117

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Analyzed: 12/05/13
Date Extracted: NA

Lab Control Sample Summary
Carbon, Total Organic

Analysis Method: SM 5310 C
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 371554

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1313153-LCS1	17.0	18.1	94	83-117
Lab Control Sample	K1313153-LCS2	17.0	18.1	94	83-117
Lab Control Sample	K1313153-LCS3	16.9	18.1	94	83-117

ALS Group USA, Corp.
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Analytical Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: SM 5550 B
Prep Method: None

Service Request: K1313153
Date Collected: 12/02/13 - 12/03/13
Date Received: 12/4/13
Units: mg/L
Basis: NA

Tannin and Lignin

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
BXS-1	K1313153-001	0.10 J	0.20	0.03	1	12/19/13 15:37	
BXS-2	K1313153-002	1.38	0.20	0.03	1	12/19/13 15:37	
BXS-3	K1313153-003	5.75	0.40	0.06	2	12/19/13 15:37	
BXS-4	K1313153-004	0.18 J	0.20	0.03	1	12/19/13 15:37	
BXS-5	K1313153-005	ND U	0.20	0.03	1	12/19/13 15:37	
Method Blank	K1313153-MB1	ND U	0.20	0.03	1	12/19/13 15:37	
Method Blank	K1313153-MB2	0.04 J	0.20	0.03	1	12/19/13 15:37	

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QA/QC Report

Client: JH Baxter & Company
Project J.H. Baxter/Arlington
Sample Matrix: Water
Analysis Method: SM 5550 B
Prep Method: None

Service Request:K1313153
Date Collected:NA
Date Received:NA

Units:mg/L
Basis:NA

Duplicate Sample Summary
Tannin and Lignin

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1313152-004DUP	0.20	0.03	ND U	ND U	NC	NC	20	12/19/13
Batch QC	K1313658-001DUP	0.20	0.03	ND U	0.04 J	NC	NC	20	12/19/13

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: N/A
Date Received: N/A
Date Analyzed: 12/19/13
Date Extracted: NA

Duplicate Matrix Spike Summary
Tannin and Lignin

Sample Name: Batch QC
Lab Code: K1313152-004
Analysis Method: SM 5550 B
Prep Method: None

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1313152-004MS		Result	Duplicate Matrix Spike K1313152-004DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Tannin and Lignin	ND U	0.95	1.00	95	1.11	1.00	111	75-120	16	20

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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Collected: N/A
Date Received: N/A
Date Analyzed: 12/19/13
Date Extracted: NA

Duplicate Matrix Spike Summary
Tannin and Lignin

Sample Name: Batch QC
Lab Code: K1313658-001
Analysis Method: SM 5550 B
Prep Method: None

Units: mg/L
Basis: NA

Analyte Name	Sample Result	Result	Matrix Spike K1313658-001MS		Result	Duplicate Matrix Spike K1313658-001DMS		% Rec Limits	RPD	RPD Limit
			Spike Amount	% Rec		Spike Amount	% Rec			
Tannin and Lignin	ND U	1.07	1.00	107	1.02	1.00	102	75-120	5	20

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
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QA/QC Report

Client: JH Baxter & Company
Project: J.H. Baxter/Arlington
Sample Matrix: Water

Service Request: K1313153
Date Analyzed: 12/19/13
Date Extracted: NA

Lab Control Sample Summary
Tannin and Lignin

Analysis Method: SM 5550 B
Prep Method: None

Units: mg/L
Basis: NA
Analysis Lot: 373785

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1313153-LCS1	1.13	1.00	113	85-115
Lab Control Sample	K1313153-LCS2	0.959	1.00	96	85-115

ALS Group USA, Corp.
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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project Name: J.H. Baxter/Arlington
Project No.:

Service Request: K1313153

Sample Name:

Batch QC2D

Batch QC2S

Batch QC1D

Batch QC1S

BXS-1

BXS-2

BXS-3

BXS-4

BXS-5

Method Blank

Lab Code:

K1312987-001D

K1312987-001S

K1313152-001DISSD

K1313152-001DISSS

K1313153-001DISS

K1313153-002DISS

K1313153-003DISS

K1313153-004DISS

K1313153-005DISS

K1313153-MB

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Date Collected: 12/02/13

Project Name: J.H. Baxter/Arlington

Date Received: 12/04/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-1

Lab Code: K1313153-001DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	12/09/13	12/18/13	1.0	U	
Barium	6010C	4.0	0.6	1.0	12/09/13	12/10/13	15.1		
Copper	6010C	4.0	0.9	1.0	12/09/13	12/10/13	2.6	J	
Iron	6010C	20.0	3.0	1.0	12/09/13	12/10/13	3.0	U	
Manganese	6010C	1.00	0.07	1.0	12/09/13	12/10/13	217		
Nickel	6010C	4.0	0.4	1.0	12/09/13	12/10/13	12.8		
Zinc	6010C	4.0	0.4	1.0	12/09/13	12/10/13	3.1	J	

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Date Collected: 12/02/13

Project Name: J.H. Baxter/Arlington

Date Received: 12/04/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-2

Lab Code: K1313153-002DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	12/09/13	12/18/13	1.3	J	
Barium	6010C	4.0	0.6	1.0	12/09/13	12/10/13	47.3		
Copper	6010C	4.0	0.9	1.0	12/09/13	12/10/13	3.6	J	
Iron	6010C	20.0	3.0	1.0	12/09/13	12/10/13	400		
Manganese	6010C	1.00	0.07	1.0	12/09/13	12/10/13	1580		
Nickel	6010C	4.0	0.4	1.0	12/09/13	12/10/13	38.2		
Zinc	6010C	4.0	0.4	1.0	12/09/13	12/10/13	3.7	J	

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Date Collected: 12/02/13

Project Name: J.H. Baxter/Arlington

Date Received: 12/04/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-3

Lab Code: K1313153-003DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	12/09/13	12/18/13	164		
Barium	6010C	4.0	0.6	1.0	12/09/13	12/10/13	124		
Copper	6010C	4.0	0.9	1.0	12/09/13	12/10/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	12/09/13	12/10/13	107000		
Nickel	6010C	4.0	0.4	1.0	12/09/13	12/10/13	25.1		
Zinc	6010C	4.0	0.4	1.0	12/09/13	12/10/13	1.9	J	

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company **Service Request:** K1313153
Project No.: NA **Date Collected:** 12/03/13
Project Name: J.H. Baxter/Arlington **Date Received:** 12/04/13
Matrix: WATER **Units:** ug/L
Basis: NA

Sample Name: BXS-4 **Lab Code:** K1313153-004DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	12/09/13	12/18/13	6.4		
Barium	6010C	4.0	0.6	1.0	12/09/13	12/10/13	26.0		
Copper	6010C	4.0	0.9	1.0	12/09/13	12/10/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	12/09/13	12/10/13	55.5		
Manganese	6010C	1.00	0.07	1.0	12/09/13	12/10/13	111		
Nickel	6010C	4.0	0.4	1.0	12/09/13	12/10/13	5.4		
Zinc	6010C	4.0	0.4	1.0	12/09/13	12/10/13	0.4	U	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Date Collected: 12/02/13

Project Name: J.H. Baxter/Arlington

Date Received: 12/04/13

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: BXS-5

Lab Code: K1313153-005DISS

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	12/09/13	12/18/13	1.0	U	
Barium	6010C	4.0	0.6	1.0	12/09/13	12/10/13	15.6		
Copper	6010C	4.0	0.9	1.0	12/09/13	12/10/13	2.9	J	
Iron	6010C	20.0	3.0	1.0	12/09/13	12/10/13	3.0	J	
Manganese	6010C	1.00	0.07	1.0	12/09/13	12/10/13	221		
Nickel	6010C	4.0	0.4	1.0	12/09/13	12/10/13	13.5		
Zinc	6010C	4.0	0.4	1.0	12/09/13	12/10/13	3.1	J	

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Date Collected:

Project Name: J.H. Baxter/Arlington

Date Received:

Matrix: WATER

Units: ug/L

Basis: NA

Sample Name: Method Blank

Lab Code: K1313153-MB

Analyte	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7010	5.0	1.0	1.0	12/09/13	12/18/13	1.0	U	
Barium	6010C	4.0	0.6	1.0	12/09/13	12/10/13	0.6	U	
Copper	6010C	4.0	0.9	1.0	12/09/13	12/10/13	0.9	U	
Iron	6010C	20.0	3.0	1.0	12/09/13	12/10/13	3.0	U	
Manganese	6010C	1.00	0.07	1.0	12/09/13	12/10/13	0.07	U	
Nickel	6010C	4.0	0.4	1.0	12/09/13	12/10/13	0.4	U	
Zinc	6010C	4.0	0.4	1.0	12/09/13	12/10/13	0.4	U	

Comments:

Metals

- 5A -

SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter/Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC2S

Lab Code: K1312987-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Barium	75 - 125	2190		177		2000.00	100.6		6010C
Copper		6160		5820		250.00	136.0		6010C
Iron	75 - 125	1050		9.3	J	1000.00	104.1		6010C
Manganese	75 - 125	483		2.20		500.00	96.2		6010C
Nickel	75 - 125	630		147		500.00	96.6		6010C
Zinc	75 - 125	540		59.0		500.00	96.2		6010C

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter/Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC1S

Lab Code: K1313152-001DISSS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	75 - 125	66.3		25.7		40.00	101.5		7010

An empty field in the Control Limit column indicates the control limit is not applicable

Metals
- 6 -
DUPLICATES

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter/Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC2D

Lab Code: K1312987-001D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Barium	20	177		181		2.2		6010C
Copper	20	5820		5960		2.4		6010C
Iron		9.3	J	8.6	J	7.8		6010C
Manganese		2.20		2.20		0.0		6010C
Nickel	20	147		147		0.0		6010C
Zinc	20	59.0		60.1		1.8		6010C

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals
- 6 -
DUPLICATES

Client: JH Baxter & Company

Service Request: K1313153

Project No.: NA

Units: UG/L

Project Name: J.H. Baxter/Arlington

Basis: NA

Matrix: WATER

Sample Name: Batch QC1D

Lab Code: K1313152-001DISSD

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic	20	25.7		25.9		0.8		7010

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: JH Baxter & Company

Service Request: K1313153

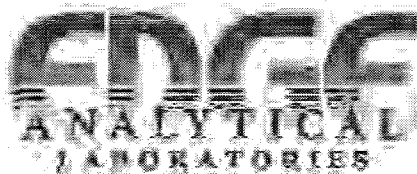
Project No.: NA

Project Name: J.H. Baxter/Arlington

Aqueous LCS Source: Inorganic Ventures

Solid LCS Source:

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Arsenic	25	26.3	105.2					
Barium	5000	4840	96.8					
Copper	625	606	97.0					
Iron	2500	2500	100.0					
Manganese	1250	1200	96.0					
Nickel	1250	1200	96.0					
Zinc	1250	1190	95.2					



Burlington, WA
Corporate Office

1630 G. Wilson Rd. - V7713
509.725.3295 & 509.757.1400

Bellingham, WA
Laboratory

805 Orchard Dr. Box 4 - 98228
360.671.0863

Portland, OR
Microbiology, Chemistry

2153 SW Flamingo Circle, Suite 200
503.667.7852

Page 1 of 2

Data Report

Client Name: J.H. Baxter Company
PO Box 5902
San Mateo, CA 94402

Reference Number: 13-02487
Project: J.H. Baxter & Company

Report Date: 2/18/13
Date Received: 2/13/13
Reviewed by:

Sample Description: BXS-1		Lab Number: 5663		Sample Comment:		Sample Date: 2/12/13		Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	
	TOTAL COLIFORM	<1	1	1		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	

Sample Description: BXS-5		Lab Number: 5664		Sample Comment:		Sample Date: 2/12/13		Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	
	TOTAL COLIFORM	<1	1	1		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	

Sample Description: BXS-2		Lab Number: 5665		Sample Comment:		Sample Date: 2/12/13		Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	
	TOTAL COLIFORM	<1	1	1		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	

Sample Description: BXS-4		Lab Number: 5666		Sample Comment:		Sample Date: 2/12/13		Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	
	TOTAL COLIFORM	<1	1	1		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	

Sample Description: BXS-3		Lab Number: 5667		Sample Comment:		Sample Date: 2/12/13		Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<10	10	10		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	
	TOTAL COLIFORM	<10	10	10		MPN/100mL	10	SM9223 B.2.b Collier 2/14/13	SLM	OT	130213	

Sample Description: BXS-1		Lab Number: 5668		Sample Comment:		Sample Date: 2/12/13		Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment

Notes:

ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
PQL = Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. = Dilution Factor

If you have any questions concerning this report contact Lawrence Henderson at the above phone number.

Form: Rpt_2.pl

Data Report

E. Coli	<10	10	10	APR100001.D	SM9223 B.2.bColi	2/14/13	SLM	QT_130213
TOTAL COLIFORM	20	10	10	APR100001.D	SM9223 B.2.bColi	2/14/13	SLM	QT_130213

Sample Description: BXN-2										Sample Date: 2/12/13		
Lab Number: 5669		Sample Comment:								Collected By:		
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		APR100001.D		SM9223 B.2.bColi	2/14/13	SLM	QT_130213	
	TOTAL COLIFORM	20	10	10		APR100001.D		SM9223 B.2.bColi	2/14/13	SLM	QT_130213	

Sample Description: BXN-4								Sample Date: 2/12/13				
Lab Number: 5670		Sample Comment:						Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		APR100001.D		SM9223 B.2.bColi	2/14/13	SLM	QT_130213	
	TOTAL COLIFORM	<1	1	1		APR100001.D		SM9223 B.2.bColi	2/14/13	SLM	QT_130213	

Sample Description: BXN-5								Sample Date: 2/12/13				
Lab Number: 5671		Sample Comment:						Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		APR100001.D		SM9223 B.2.bColi	2/14/13	SLM	QT_130213	
	TOTAL COLIFORM	<1	1	1		APR100001.D		SM9223 B.2.bColi	2/14/13	SLM	QT_130213	

Notes:

ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.

PQL = Practical Quantitation Limit is the lowest level that can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

D.F. = Dilution Factor

Chain of Custody / Analysis Request (Please complete all applicable shaded sections)

18476

Report to: J H Baxter Company	Bill to:	For Lab Use Only
Ship Address: PO Box 8902	Addres:	Ref #
City: San Mateo st CA Zip: 94402	City: St: Zip:	Check Regulatory Program
Attn: Steve Thielke	Phone: FAX:	☐ Safe Drinking Water Act
Phone: 541.888-3801 FAX:	F.O.B. Air:	☐ Clean Water Act
Email: steve.barnett@amco.com;sthieka@jh	Via: M/C A/E Express /	☐ RCRA / CERCLA
Project:	Card:	☐ Other

EDGE
ANALYTICAL
LABORATORIES

1820 S. Walnut St.
Burlington, WA 98233
1.800.756.9296

805 W. Orchard Dr. Suite 4
Bellingham, WA 98226

Analyses Requested

Instructions

1. Use one line per sample Location.
2. Be specific in analysis requests.
3. new List each metal individually. (new)
4. Check off analyses to be performed for each sample Location.
5. Enter number of containers.

Turn Around Time Required

Standard

Half-Jim's (50% surcharge)

Quickshot (100% surcharge) Phone Call Req.

Emergency (Phone Call Req.)

Back 500 County-Trey
(new) 541.888.3801

Total Count

Field ID	Location	Grab/ Comp.	Sample Matrix	Date	Time	Number of Containers	Special Instructions Conditions on Receipt
1	BXS-1			1/12	0817	2	
2	BXS-5			1/12	0817	2	
3	BXS-2			1/12	0908	2	
4	BXS-4			1/12	1104	2	
5	BXS-3			1/12	0854	2	
6	BXM-1			1/12	0845	2	
7	BXM-2			1/12	0920	2	
8	BXM-4			1/12	1005	2	
9	BXM-6			1/12	1100	2	
10							

Sampled by:

Phone:

FAX:

Email:

Total Containers

Sample Receipt Request (Must include FAX or Email)

* W - water

DWW - Drinking water

SW - surface water

GW - Ground water

WW - waste water

S - soil

OL - oil

Other

Yes No N/A

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

Custody seals intact

Sample temp _____ C satisfactory

Samples received intact

Chain of custody & labels agree



Burlington, WA
Corporate Office

Bellingham, WA
Laboratory

Portland, OR

1825 S. Walnut St., #1025
Burlington, WA 98223

105 Orchard Dr. Ste. 4, #1025
Bellingham, WA 98225

6500 NW River Dr. Ste. 400
Portland, OR 97209

Page 1 of 2

Data Report

Client Name: J.H. Baxter Company
PO Box 5902
San Mateo, CA 94402

Reference Number: 11-16020
Project: JHBaxterArlington

Report Date: 9/3/13
Date Received: 8/28/13
Reviewed by:

Sample Description: 60XN-1 - JHB Arlington										Sample Date: 8/27/13			
Lab Number: 36480				Sample Comment:						Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment	

E. Coli	<1	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	CLC	JHM	OT_130826	
TOTAL COLIFORM	66.3	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	CLC	JHM	OT_130826	

Sample Description: BXN-2 - JHB Arlington										Sample Date: 8/27/13			
Lab Number: 36481		Sample Comment:								Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment	

E. Coli	<1	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	JHM	JHM	OT_130826	
TOTAL COLIFORM	1413.6	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	JHM	JHM	OT_130826	

Sample Description: BXN-4 - JHB Arlington										Sample Date: 8/27/13			
Lab Number: 36482		Sample Comment:								Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment	

E. Coli	<1	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	JHM	JHM	OT_130826	
TOTAL COLIFORM	<1	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	JHM	JHM	OT_130826	

Sample Description: BXN-8 - JHB Arlington								Sample Date: 8/27/13				
Lab Number: 36483		Sample Comment:						Collected By:				
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment

E. Coli	<1	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	JHM	JHM	OT_130826	
TOTAL COLIFORM	<1	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	JHM	JHM	OT_130826	

Sample Description: BXS-1 - JHB Arlington										Sample Date: 8/27/13		
Lab Number: 36484		Sample Comment:								Collected By:		
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment

E. Coli	<1	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	JHM	JHM	OT_130826	
TOTAL COLIFORM	<1	1	1			MPN/100mL	00	SM9223 B.2.b/Colifer 42m13	JHM	JHM	OT_130826	

Sample Description: BWX-2 - JHB Arlington										Sample Date: 8/27/13		
Lab Number: 36485				Sample Comment:						Collected By:		
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment

Notes:

ND = Not Detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
PQL = Practical Quantitation Limit is the lowest level that can be achieved with acceptable levels of precision and accuracy during routine laboratory operating conditions.
D.F. = Division Factor

If you have any questions concerning this report contact Lawrence Henderson at the above phone number.

Printed: 9/3/13

Data Report

E. Coli	<1	1	1	MPN/100mL	SM9225 E.2.b/Coller 82813	JMH	QT_130828
TOTAL COLIFORM	<1	1	1	MPN/100mL	SM9225 E.2.b/Coller 82813	JMH	QT_130828

Sample Description: BXS-3 - JHB Arlington									Sample Date: 8/27/13			
Lab Number: 36486		Sample Comment:							Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL		SM9225 E.2.b/Coller 82813	CLC	JMH	QT_130828	
	TOTAL COLIFORM	<1	1	1		MPN/100mL		SM9225 E.2.b/Coller 82813	CLC	JMH	QT_130828	

Sample Description: BXS-4 - JHB Arlington										Sample Date: 8/27/13		
Lab Number: 36487		Sample Comment:								Collected By:		
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL		SM9225 E.2.b/Coller 82813	CLC	JMH	QT_130828	
	TOTAL COLIFORM	<1	1	1		MPN/100mL		SM9225 E.2.b/Coller 82813	CLC	JMH	QT_130828	

Sample Description: BXS-5 - JHB Arlington									Sample Date: 8/27/13			
Lab Number: 36488		Sample Comment:							Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL		SM9225 E.2.b/Coller 82813	CLC	JMH	QT_130828	
	TOTAL COLIFORM	<1	1	1		MPN/100mL		SM9225 E.2.b/Coller 82813	CLC	JMH	QT_130828	

Notes:

ND = Not detected above the listed practical quantization limit (PQL) or not above the Method Detection Limit (MDL) if requested.
PQL = Practical Quantization Limit is the lowest level that can be achieved with specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. = Dilution Factor

Chain of Custody / Analysis Request (Please complete all applicable shaded sections)

Page 1 of 1

20249

Report to: JH Baxter Company	Bill to: SAME AS SHIP ADDRESS	For Lab Use Only
Ship Address: PO Box 5902	Address:	Ref #
City: San Mateo St: CA Zip: 94402	City: St: Zip:	Check Regulatory Program
Attn: SCOTT HIRLKE	Phone: FAX:	Safe Drinking Water Act
Phone: 541.889-3801 FAX:	P.O.#: Attn:	Clean Water Act
Email: steve.barnett@amca.com, sthirlke@jh	Visa: MC: A/E: Expires:	RCRA / CERCLA
Project: JH BAXTER - ARLINGTON	Card#:	Other



Main Lab (800-755-9256)
 1029 South Walnut St. Burlington, WA 98623
Microbiology (888-725-1212)
 805 W. Orchard Dr. Suite 4 Bellingham, WA 98225
Willamette Lab (503-682-7902)
 8150 SW Marshall Ct. Suite W111 Willamette, OR 97141
Corvallis Lab (541-753-4848)
 640 SW 3rd St. Corvallis, OR 97331

Instructions

1. Use one line per sample location.
2. Be specific in analysis requests.
3. **INWEL** List each metal individually. **INWEL**
4. Check off analyses to be performed for each sample location.
5. Enter number of containers.

Turn Around Time Required

- Standard
- Halt-time (50% surcharge)
- Quickest (100% surcharge) Phone Call Req.
- Emergency (Phone Call Req.)

Analyses Requested

SW/23B 2B (DW)
 Quantity-Tray (MPM)

PLEASE CALL STEVE BARNETT WITH ANY QUESTIONS 503-805-3395

Number of Containers



00020249

Special Instructions
 Conditions on Review

Field ID	Location	Grav. Comp	Sample Mat'l	Date	Time	SW/23B 2B (DW) Quantity-Tray (MPM)	Number of Containers	Special Instructions Conditions on Review
1	JH BAXTER - ARLINGTON			8/27/13				
2	BXN-1	G	W		1344			
3	BXN-2		W		1305			
4	BXN-4		W		1355			
5	BXN-6		W		1510			
6	BXS-1		W		1315			
7	BXS-2		W		1341			
8	BXS-3		W		1405			
9	BXS-4		W		1435			
10	BXS-5		W		1317			
Sampled by:		Phone:	FAX:	Email:	Total Containers 9			

Sample Receipt Request (Must include FAX or Email)

* W - water
 DW - drinking water

SW - surface water
 GW - Ground water

WW - waste water
 S - soil
 OL - oil
 Other

Requisitioned by

Date

Time

Received by

Date

Time

Custody seals intact

Yes No N/A

Sample temp. C satisfactory

Samples received intact

Chain of custody & labels agree



Burlington WA

Capeview Office
18205 Washington 11293
PLU 775 208 5 600 757 400
200 001 0455

Bellingham WA

Seaside Office
620 Orchard Way 4-5125
200 001 0455

Portland OR

Adelphi Office
1180 SW Pioneer Dr 200-001070
200 001 0455

Page 1 of 2

Data Report

Client Name: J H Baxter Company
PO Box 5902
San Mateo, CA 94402

Reference Number: 13-22867
Project: J H Baxter - Arlington

Report Date: 12/9/13

Date Received: 12/3/13

Reviewed by:

Sample Description: BXN-1 - JHB Arlington									Sample Date: 12/2/13			
Lab Number: 51852									Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	
	TOTAL COLIFORM	<1	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	

Sample Description: BXN-2 - JHB Arlington									Sample Date: 12/2/13			
Lab Number: 51853									Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	
	TOTAL COLIFORM	14.8	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	

Sample Description: BXN-4 - JHB Arlington									Sample Date: 12/2/13			
Lab Number: 51854									Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	
	TOTAL COLIFORM	<1	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	

Sample Description: BXN-6 - JHB Arlington									Sample Date: 12/2/13			
Lab Number: 51855									Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	
	TOTAL COLIFORM	<1	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	

Sample Description: BXS-1 - JHB Arlington									Sample Date: 12/2/13			
Lab Number: 51856									Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	E. Coli	<1	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	
	TOTAL COLIFORM	40.8	1	1		MPN/100mL		SM9223 B.2.b/Coli50 12/4/13	CLC		131203040	

Sample Description: BXS-2 - JHB Arlington									Sample Date: 12/2/13			
Lab Number: 51857									Collected By:			
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment

Notes:

ND = Not detected above the stated practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
PQL = Practical Quantitation Limit is the lowest level that can be achieved with specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. = Dilution Factor

If you have any questions concerning this report, contact Lawrence Henderson at the above phone number.
Form: CR94-3-04

Data Report

E. Coli	<1	1	1	Method: 518223 E.2.b Colifu 124/13	CLC	q_131209aue
TOTAL COLIFORM	<1	1	1	Method: 518223 E.2.b Colifu 124/13	CLC	q_131209aue

Sample Description: BXS-3 - JHB Arlington										Sample Date: 12/2/13	
Lab Number: 51855										Collected By:	
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch
	E. Coli	<1	1	1		CFU/100mL		518223 E.2.b Colifu 124/13	CLC	q_131209aue	
	TOTAL COLIFORM	<1	1	1		CFU/100mL		518223 E.2.b Colifu 124/13	CLC	q_131209aue	

Sample Description: BXS-4 - JHB Arlington										Sample Date: 12/3/13	
Lab Number: 51855										Collected By:	
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch
	E. Coli	<1	1	1		CFU/100mL		518223 E.2.b Colifu 124/13	CLC	q_131209aue	
	TOTAL COLIFORM	<1	1	1		CFU/100mL		518223 E.2.b Colifu 124/13	CLC	q_131209aue	

Sample Description: BXS-5 - JHB Arlington										Sample Date: 12/2/13	
Lab Number: 51855										Collected By:	
CAS ID#	Parameter	Result	PQL	MRL	MDL	Units	DF	Method	Analyzed	Analyst	Batch
	E. Coli	<1	1	1		CFU/100mL		518223 E.2.b Colifu 124/13	CLC	q_131209aue	
	TOTAL COLIFORM	24.1	1	1		CFU/100mL		518223 E.2.b Colifu 124/13	CLC	q_131209aue	

Notes:

ND = Not Detected above the listed detection limit (PQL) or not above the Method Detection Limit (MDL), if requested.
PQL = Practical Quantitation Limit is the lowest level that can be achieved with specified level of precision and accuracy using routine laboratory operating conditions.
D.F. = Dilution Factor.



APPENDIX C

Statistical Analysis of Groundwater Quality Results (BXS 1 through BXS 4)

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Ammonia

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	0.536				Average Concentration m_o s^1	
Aug-12	0.535					
Nov-12	0.512					
Feb-13	0.52	0.536	0.535	0.512	0.53	0.0001
Jun-13	0.528	0.535	0.512	0.52	0.52	0.0001
Aug-13	0.539	0.512	0.52	0.528	0.52	0.0001
Dec-13	0.548	0.52	0.528	0.539	0.53	0.0002

BXS-3

(Downgradient well)

May-12	0.563				X_{bar} s^2 s t_{stat}			
Aug-12	0.577							
Nov-12	0.934							
Feb-13	0.742	0.563	0.577	0.934	0.70	0.03	0.17	2.05
Jun-13	1.01	0.577	0.934	0.742	0.82	0.04	0.20	2.99
Aug-13	0.71	0.934	0.742	1.01	0.85	0.02	0.15	4.43
Dec-13	0.822	0.742	1.01	0.71	0.82	0.02	0.13	4.25

BXS-2

(Downgradient well)

May-12	0.025				X_{bar} s^2 s t_{stat}			
Aug-12	0.025							
Nov-12	0.025							
Feb-13	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-85.38
Jun-13	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-85.04
Aug-13	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-85.21
Dec-13	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-86.75

BXS-1

(Downgradient well)

May-12	0.025				X_{bar} s^2 s t_{stat}			
Aug-12	0.025							
Nov-12	0.025							
Feb-13	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-85.38
Jun-13	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-85.04
Aug-13	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-85.21
Dec-13	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-86.75

Notes:

X_{bar} Average Concentration
 s^2 Sample variance
 s^1 Sample variance
 s Sample Standard Deviation
 t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
 Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Chloride

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	1.66				Average Concentration	
Aug-12	1.62				m_o	s^1
Nov-12	1.63					
Feb-13	1.61	1.66	1.62	1.63	1.63	0.000
Jun-13	1.62	1.62	1.63	1.61	1.62	0.000
Aug-13	1.9	1.63	1.61	1.62	1.69	0.020
Dec-13	1.54	1.61	1.62	1.9	1.67	0.025

BXS-3

(Downgradient well)

May-12	1.5				X_{bar}	s^2	s	t_{stat}
Aug-12	1.58							
Nov-12	1.69							
Feb-13	2.08	1.5	1.58	1.69	1.71	0.07	0.26	0.64
Jun-13	1.98	1.58	1.69	2.08	1.83	0.06	0.24	1.79
Aug-13	1.88	1.69	2.08	1.98	1.91	0.03	0.17	2.59
Dec-13	1.57	2.08	1.98	1.88	1.88	0.05	0.22	1.89

BXS-2

(Downgradient well)

May-12	2.97				X_{bar}	s^2	s	t_{stat}
Aug-12	2.96							
Nov-12	3.00							
Feb-13	3.07	2.97	2.96	3	3.00	0.00	0.05	50.59
Jun-13	3.00	2.96	3	3.07	3.01	0.00	0.05	54.86
Aug-13	3.39	3	3.07	3	3.12	0.03	0.19	15.20
Dec-13	2.65	3.07	3	3.39	3.03	0.09	0.30	8.94

BXS-1

(Downgradient well)

May-12	5.7				X_{bar}	s^2	s	t_{stat}
Aug-12	4.75							
Nov-12	4.8							
Feb-13	5.7	5.7	4.75	4.8	5.24	0.29	0.53	13.49
Jun-13	3.6	4.75	4.8	5.7	4.71	0.74	0.86	7.18
Aug-13	4	4.8	5.7	3.6	4.53	0.86	0.93	6.10
Dec-13	3.56	5.7	3.6	4	4.22	1.02	1.01	5.04

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Chemical Oxygen Demand

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	2.5				Average Concentration	
Aug-12	3.6				m_o	s^1
Nov-12	2.5					
Feb-13	2.5	2.5	3.6	2.5	2.78	0.30
Jun-13	2.5	3.6	2.5	2.5	2.78	0.30
Aug-13	3	2.5	2.5	2.5	2.63	0.06
Dec-13	2.5	2.5	2.5	3	2.63	0.06

BXS-3

(Downgradient well)

May-12	62.8				X_{bar}	s^2	s	t_{stat}
Aug-12	69.4							
Nov-12	65.3							
Feb-13	56.9	62.8	69.4	65.3	63.60	27.35	5.23	23.13
Jun-13	62.6	69.4	65.3	56.9	63.55	27.47	5.24	23.06
Aug-13	67.9	65.3	56.9	62.6	63.18	22.18	4.71	25.54
Dec-13	65.2	56.9	62.6	67.9	63.15	22.04	4.70	25.61

BXS-2

(Downgradient well)

May-12	41.9				X_{bar}	s^2	s	t_{stat}
Aug-12	43.9							
Nov-12	37.8							
Feb-13	41.2	41.9	43.9	37.8	41.20	6.45	2.54	29.58
Jun-13	41.4	43.9	37.8	41.2	41.08	6.28	2.51	29.87
Aug-13	42.2	37.8	41.2	41.4	40.65	3.80	1.95	37.56
Dec-13	36.7	41.2	41.4	42.2	40.38	6.19	2.49	29.63

BXS-1

(Downgradient well)

May-12	8.4				X_{bar}	s^2	s	t_{stat}
Aug-12	6.6							
Nov-12	5.9							
Feb-13	6.3	8.4	6.6	5.9	6.80	1.22	1.10	6.52
Jun-13	5.9	6.6	5.9	6.3	6.18	0.12	0.34	10.51
Aug-13	7.5	5.9	6.3	5.9	6.40	0.57	0.76	8.07
Dec-13	6.7	6.3	5.9	7.5	6.60	0.47	0.68	9.06

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Total Coliform

$$t_{stat} = (X_{bar} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples **n**

4

Critical Statistic **t_c**

2.447

BXS-4

(Upgradient well)

May-12	NT				Average Concentration	
Aug-12	0.5				m_o	s¹
Nov-12	0.5					
Feb-13	0.5	NT	0.5	0.5	0.50	0.0000
Jun-13	NT	0.5	0.5	0.5	0.50	0.0000
Aug-13	0.5	0.5	0.5	NT	0.50	0.0000
Dec-13	0.5	0.5	NT	0.5	0.50	0.0000

BXS-3

(Downgradient well)

May-12	NT				X_{bar}	s²	s	t_{stat}
Aug-12	0.5							
Nov-12	0.5							
Feb-13	5	NT	0.5	0.5	2.0	6.8	2.6	1.15
Jun-13	NT	0.5	0.5	5	2.0	6.8	2.6	1.15
Aug-13	0.5	0.5	5	NT	2.0	6.8	2.6	1.15
Dec-13	0.5	5	NT	0.5	2.0	6.8	2.6	1.15

BXS-2

(Downgradient well)

May-12	NT				X_{bar}	s²	s	t_{stat}
Aug-12	0.5							
Nov-12	1							
Feb-13	0.5	NT	0.5	1	1	0	0	1.15
Jun-13	NT	0.5	1	0.5	1	0	0	1.15
Aug-13	0.5	1	0.5	NT	1	0	0	1.15
Dec-13	0.5	0.5	NT	0.5	1	0	0	#DIV/0!

BXS-1

(Downgradient well)

May-12	NT				X_{bar}	s²	s	t_{stat}
Aug-12	2							
Nov-12	0.5							
Feb-13	0.5	NT	2	0.5	1.0	0.8	0.9	1.15
Jun-13	NT	2	0.5	0.5	1.0	0.8	0.9	1.15
Aug-13	0.5	0.5	0.5	NT	0.5	0.0	0.0	#DIV/0!
Dec-13	40.8	0.5	NT	0.5	13.9	541.4	23.3	1.15

Notes:

- X_{bar}** Average Concentration
- s²** Sample variance
- s¹** Sample variance
- s** Sample Standard Deviation
- t_{stat}** Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).

Items with no difference at all (zero difference) will indicate #DIV/0!

P - positive value for qualitative test

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Field Conductivity

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	193				Average Concentration	
Aug-12	192				m_o	s^1
Nov-12	147					
Feb-13	184	193	192	147	179.00	471.33
Jun-13	190	192	147	184	178.25	445.58
Aug-13	193	147	184	190	178.50	455.00
Dec-13	198	184	190	193	191.25	34.25

BXS-3

(Downgradient well)

May-12	693				X_{bar}	s^2	s	t_{stat}
Aug-12	707							
Nov-12	520							
Feb-13	529	693	707	520	612	10313	102	8.34
Jun-13	635	707	520	529	598	8032	90	9.10
Aug-13	709	520	529	635	598	8178	90	9.03
Dec-13	699	529	635	709	643	6851	83	10.56

BXS-2

(Downgradient well)

May-12	914				X_{bar}	s^2	s	t_{stat}
Aug-12	895							
Nov-12	641							
Feb-13	869	914	895	641	830	16174	127	10.09
Jun-13	892	895	641	869	824	15060	123	10.37
Aug-13	871	641	869	892	818	14072	119	10.61
Dec-13	882	869	892	871	879	114	11	56.83

BXS-1

(Downgradient well)

May-12	319				X_{bar}	s^2	s	t_{stat}
Aug-12	308							
Nov-12	239							
Feb-13	278	319	308	239	286	1282	36	5.11
Jun-13	271	308	239	278	274	802	28	5.37
Aug-13	299	239	278	271	272	618	25	5.65
Dec-13	313	278	271	299	290	372	19	6.82

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Field pH

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
May-12	6.97					
Aug-12	6.62					
Nov-12	7.68					
Feb-13	7.07	6.97	6.62	7.68	7.09	0.19
Jun-13	7.32	6.62	7.68	7.07	7.17	0.20
Aug-13	7.62	7.68	7.07	7.32	7.42	0.08
Dec-13	7.39	7.07	7.32	7.62	7.35	0.05

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
May-12	5.70							
Aug-12	5.33							
Nov-12	6.29							
Feb-13	5.66	5.7	5.33	6.29	5.75	0.16	0.40	-4.50
Jun-13	5.92	5.33	6.29	5.66	5.80	0.17	0.41	-4.58
Aug-13	6.30	6.29	5.66	5.92	6.04	0.10	0.31	-5.12
Dec-13	5.88	5.66	5.92	6.3	5.94	0.07	0.27	-5.48

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
May-12	5.65							
Aug-12	5.34							
Nov-12	6.26							
Feb-13	5.72	5.65	5.34	6.26	5.74	0.15	0.38	-4.60
Jun-13	5.84	5.34	6.26	5.72	5.79	0.14	0.38	-4.75
Aug-13	6.22	6.26	5.72	5.84	6.01	0.07	0.27	-5.46
Dec-13	5.66	5.72	5.84	6.22	5.86	0.06	0.25	-5.87

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
May-12	5.06							
Aug-12	4.90							
Nov-12	6.10							
Feb-13	5.57	5.06	4.9	6.1	5.41	0.29	0.54	-4.80
Jun-13	5.69	4.9	6.1	5.57	5.57	0.25	0.50	-4.83
Aug-13	6.03	6.10	5.57	5.69	5.85	0.07	0.26	-6.17
Dec-13	5.63	5.57	5.69	6.03	5.73	0.04	0.21	-6.66

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).

Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Nitrate + Nitrite as N

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	0.025				Average Concentration m_o s^1	
Aug-12	0.025					
Nov-12	0.009					
Feb-13	0.016	0.025	0.025	0.009	0.019	0.000060
Jun-13	0.025	0.025	0.009	0.016	0.019	0.000060
Aug-13	0.021	0.009	0.016	0.025	0.018	0.000048
Dec-13	0.025	0.016	0.025	0.021	0.022	0.000018

BXS-3

(Downgradient well)

May-12	0.104				X_{bar}	s^2	s	t_{stat}
Aug-12	0.098							
Nov-12	0.025							
Feb-13	0.134	0.104	0.098	0.025	0.09	0.00	0.05	3.05
Jun-13	0.052	0.098	0.025	0.134	0.08	0.00	0.05	2.39
Aug-13	0.033	0.025	0.134	0.052	0.06	0.00	0.05	1.71
Dec-13	0.198	0.134	0.052	0.033	0.10	0.01	0.08	2.15

BXS-2

(Downgradient well)

May-12	0.01				X_{bar}	s^2	s	t_{stat}
Aug-12	0.025							
Nov-12	0.01							
Feb-13	0.025	0.01	0.025	0.01	0.02	0.00	0.01	-0.21
Jun-13	0.025	0.025	0.01	0.025	0.02	0.00	0.01	0.46
Aug-13	0.022	0.01	0.025	0.025	0.02	0.00	0.01	0.52
Dec-13	0.009	0.025	0.025	0.022	0.02	0.00	0.01	-0.28

BXS-1

(Downgradient well)

May-12	0.049				X_{bar}	s^2	s	t_{stat}
Aug-12	0.053							
Nov-12	0.035							
Feb-13	0.085	0.049	0.053	0.035	0.06	0.00	0.02	3.27
Jun-13	0.087	0.053	0.035	0.085	0.07	0.00	0.03	3.49
Aug-13	0.125	0.035	0.085	0.087	0.08	0.00	0.04	3.46
Dec-13	0.033	0.085	0.087	0.125	0.08	0.00	0.04	3.15

Notes:

X_{bar} Average Concentration
 s^2 Sample variance
 s^1 Sample variance
 s Sample Standard Deviation
 t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
 Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Sulfate

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n

4

Critical Statistic t_c

2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
May-12	0.76					
Aug-12	0.78					
Nov-12	0.87					
Feb-13	0.84	0.76	0.78	0.87	0.81	0.003
Jun-13	0.80	0.78	0.87	0.84	0.82	0.002
Aug-13	0.81	0.87	0.84	0.8	0.83	0.001
Dec-13	0.82	0.84	0.8	0.81	0.82	0.000

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
May-12	0.27							
Aug-12	0.40							
Nov-12	0.39							
Feb-13	0.23	0.27	0.4	0.39	0.323	0.007	0.085	-9.84
Jun-13	0.35	0.4	0.39	0.23	0.343	0.006	0.078	-10.28
Aug-13	0.13	0.39	0.23	0.35	0.275	0.014	0.118	-8.62
Dec-13	0.14	0.23	0.35	0.13	0.213	0.010	0.102	-10.59

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
May-12	0.31							
Aug-12	0.45							
Nov-12	0.47							
Feb-13	0.25	0.31	0.45	0.47	0.37	0.011	0.107	-7.46
Jun-13	0.56	0.45	0.47	0.25	0.43	0.017	0.131	-5.55
Aug-13	0.20	0.47	0.25	0.56	0.37	0.030	0.173	-5.11
Dec-13	0.18	0.25	0.56	0.2	0.30	0.031	0.177	-5.63

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
May-12	16.4							
Aug-12	14.7							
Nov-12	14.5							
Feb-13	14.3	16.4	14.7	14.5	14.98	0.93	0.96	29.34
Jun-13	13.5	14.7	14.5	14.3	14.25	0.28	0.53	50.82
Aug-13	12.7	14.5	14.3	13.5	13.75	0.68	0.82	31.35
Dec-13	12.3	14.3	13.5	12.7	13.20	0.79	0.89	27.88

Notes:

X_{bar} Average Concentration
 s^2 Sample variance
 s^1 Sample variance
 s Sample Standard Deviation
 t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
 Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Tannin and Lignin

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	0.41				Average Concentration	
Aug-12	0.2				m_o	s^1
Nov-12	0.33					
Feb-13	0.31	0.41	0.2	0.33	0.31	0.0075
Jun-13	0.25	0.2	0.33	0.31	0.27	0.0035
Aug-13	0.28	0.33	0.31	0.25	0.29	0.0012
Dec-13	0.18	0.31	0.25	0.28	0.26	0.0031

BXS-3

(Downgradient well)

May-12	49.7				X_{bar} s^2 s t_{stat}			
Aug-12	21.2							
Nov-12	12.7							
Feb-13	13.2	49.7	21.2	12.7	24.20	304.17	17.44	2.74
Jun-13	13.1	21.2	12.7	13.2	15.05	16.86	4.11	7.20
Aug-13	8.6	12.7	13.2	13.1	11.90	4.89	2.21	10.49
Dec-13	5.75	13.2	13.1	8.6	10.16	13.26	3.64	5.44

BXS-2

(Downgradient well)

May-12	1.46				X_{bar} s^2 s t_{stat}			
Aug-12	1.42							
Nov-12	1.63							
Feb-13	1.06	1.46	1.42	1.63	1.39	0.057	0.240	8.48
Jun-13	1.73	1.42	1.63	1.06	1.46	0.088	0.296	7.69
Aug-13	1.18	1.63	1.06	1.73	1.40	0.109	0.330	6.50
Dec-13	1.38	1.06	1.73	1.18	1.34	0.086	0.293	7.08

BXS-1

(Downgradient well)

May-12	0.13				X_{bar} s^2 s t_{stat}			
Aug-12	0.10							
Nov-12	0.17							
Feb-13	0.09	0.13	0.1	0.17	0.12	0.00	0.04	-4.05
Jun-13	0.06	0.1	0.17	0.09	0.11	0.00	0.05	-3.41
Aug-13	0.13	0.17	0.09	0.06	0.11	0.00	0.05	-3.64
Dec-13	0.10	0.09	0.06	0.13	0.10	0.00	0.03	-3.51

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).

Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Total Dissolved Solids

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	129					Average Concentration	
Aug-12	119					m_o	s^1
Nov-12	131						
Feb-13	107	129	119	131	121.50	121.00	
Jun-13	141	119	131	107	124.50	217.00	
Aug-13	141	131	107	141	130.00	257.33	
Dec-13	132	107	141	141	130.25	258.25	

BXS-3

(Downgradient well)

May-12	336								
Aug-12	376					X_{bar}	s^2	s	t_{stat}
Nov-12	331								
Feb-13	288	336	376	331	333	1296	36	11.23	
Jun-13	340	376	331	288	334	1308	36	11.07	
Aug-13	349	331	288	340	327	730	27	13.51	
Dec-13	356	288	340	349	333	953	31	12.39	

BXS-2

(Downgradient well)

May-12	547								
Aug-12	569					X_{bar}	s^2	s	t_{stat}
Nov-12	537								
Feb-13	539	547	569	537	548	215	15	46.56	
Jun-13	553	569	537	539	550	220	15	46.05	
Aug-13	574	537	539	553	551	291	17	41.46	
Dec-13	530	539	553	574	549	367	19	37.90	

BXS-1

(Downgradient well)

May-12	230								
Aug-12	189					X_{bar}	s^2	s	t_{stat}
Nov-12	188								
Feb-13	160	230	189	188	192	831	29	4.55	
Jun-13	179	189	188	160	179	181	13	6.28	
Aug-13	201	188	160	179	182	297	17	5.09	
Dec-13	223	160	179	201	191	743	27	4.12	

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Total Organic Carbon

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{s^1/n + s^2/n}$$

Number of Samples **n** 4

Critical Statistic **t_c** 2.447

BXS-4

(Upgradient well)

May-12	0.68				Average Concentration	
Aug-12	0.84				m_o	s^1
Nov-12	0.9					
Feb-13	0.73	0.68	0.84	0.9	0.79	0.0101
Jun-13	0.82	0.84	0.9	0.73	0.82	0.0050
Aug-13	0.88	0.9	0.73	0.82	0.83	0.0058
Dec-13	0.9	0.73	0.82	0.88	0.83	0.0058

BXS-3

(Downgradient well)

May-12	17.3				X_{bar}	s^2	s	t_{stat}
Aug-12	19.3							
Nov-12	19.8							
Feb-13	15.4	17.3	19.3	19.8	17.95	4.06	2.01	17.02
Jun-13	18.4	19.3	19.8	15.4	18.23	3.88	1.97	17.64
Aug-13	18.9	19.8	15.4	18.4	18.13	3.64	1.91	18.11
Dec-13	18.4	15.4	18.4	18.9	17.78	2.56	1.60	21.13

BXS-2

(Downgradient well)

May-12	15.5				X_{bar}	s^2	s	t_{stat}
Aug-12	14.8							
Nov-12	14.3							
Feb-13	15.5	15.5	14.8	14.3	15.03	0.34	0.59	47.95
Jun-13	15.4	14.8	14.3	15.5	15.00	0.31	0.56	49.86
Aug-13	14.6	14.3	15.5	15.4	14.95	0.35	0.59	47.05
Dec-13	14.3	15.5	15.4	14.6	14.95	0.35	0.59	47.05

BXS-1

(Downgradient well)

May-12	2.64				X_{bar}	s^2	s	t_{stat}
Aug-12	2.51							
Nov-12	2.74							
Feb-13	2.54	2.64	2.51	2.74	2.61	0.01	0.10	25.13
Jun-13	2.39	2.51	2.74	2.54	2.55	0.02	0.15	19.51
Aug-13	2.54	2.74	2.54	2.39	2.55	0.02	0.14	19.63
Dec-13	2.48	2.54	2.39	2.54	2.49	0.01	0.07	26.92

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Arsenic

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

	May-12	Aug-12	Nov-12	Feb-13	Jun-13	Aug-13	Dec-13	Average Concentration m_o	s^1
	5.8	4.9	6.2	6.1	6.8	6.3	6.4	5.75	0.35
				5.8	4.9	6.2	6.1	6.00	0.63
								6.35	0.10
								6.40	0.09

BXS-3

(Downgradient well)

	May-12	Aug-12	Nov-12	Feb-13	Jun-13	Aug-13	Dec-13	X_{bar}	s^2	s	t_{stat}
	133	135	170	119	138	140	164	139.25	470.92	21.70	12.30
				133	135	170	119	140.50	456.33	21.36	12.59
								141.75	444.25	21.08	12.84
								140.25	340.25	18.45	14.51

BXS-2

(Downgradient well)

	May-12	Aug-12	Nov-12	Feb-13	Jun-13	Aug-13	Dec-13	X_{bar}	s^2	s	t_{stat}
	0.9	2.5	2.5	2.5	1.5	1	1.3	2.10	0.64	0.80	-7.34
				0.9	2.5	2.5	2.5	2.25	0.25	0.50	-9.68
								1.88	0.56	0.75	-9.37
								1.58	0.42	0.65	-10.98

BXS-1

(Downgradient well)

	May-12	Aug-12	Nov-12	Feb-13	Jun-13	Aug-13	Dec-13	X_{bar}	s^2	s	t_{stat}
	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.50	0.00	0.00	-10.99
				2.5	2.5	2.5	2.5	2.50	0.00	0.00	-11.83
								2.50	0.00	0.00	-13.02
								2.50	0.00	0.00	-13.18

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Barium

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{s^1/n + s^2/n}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	28.8				Average Concentration m_o s^1	
Aug-12	27.5					
Nov-12	28					
Feb-13	26.1	28.8	27.5	28	27.60	1.29
Jun-13	26.1	27.5	28	26.1	26.93	0.95
Aug-13	27.5	28	26.1	26.1	26.93	0.95
Dec-13	26	26.1	26.1	27.5	26.43	0.52

BXS-3

(Downgradient well)

May-12	116				X_{bar} s^2 s t_{stat}			
Aug-12	114							
Nov-12	137							
Feb-13	90.4	116	114	137	114.35	363.16	19.06	9.09
Jun-13	85.5	114	137	90.4	106.73	562.17	23.71	6.72
Aug-13	115	137	90.4	85.5	106.98	567.27	23.82	6.71
Dec-13	124	90.4	85.5	115	103.73	349.30	18.69	8.26

BXS-2

(Downgradient well)

May-12	54.2				X_{bar} s^2 s t_{stat}			
Aug-12	52.7							
Nov-12	50.6							
Feb-13	54.9	54.2	52.7	50.6	53.10	3.62	1.90	23.02
Jun-13	53	52.7	50.6	54.9	52.80	3.10	1.76	24.71
Aug-13	54.4	50.6	54.9	53	53.23	3.71	1.93	23.53
Dec-13	47.3	54.9	53	54.4	52.40	12.21	3.49	14.14

BXS-1

(Downgradient well)

May-12	16.4				X_{bar} s^2 s t_{stat}			
Aug-12	15.3							
Nov-12	15.7							
Feb-13	13.9	16.4	15.3	15.7	15.33	1.11	1.05	-15.86
Jun-13	13.3	15.3	15.7	13.9	14.55	1.29	1.14	-15.42
Aug-13	16.1	15.7	13.9	13.3	14.75	1.85	1.36	-13.75
Dec-13	15.1	13.9	13.3	16.1	14.60	1.56	1.25	-14.02

Notes:

X_{bar} Average Concentration
 s^2 Sample variance
 s^1 Sample variance
 s Sample Standard Deviation
 t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
 Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Cadmium

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	2.5				Average Concentration	
Aug-12	NT				m_o	s^1
Nov-12	NT					
Feb-13	NT	2.5	NT	NT	2.50	#DIV/0!
Jun-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!
Aug-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!
Dec-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!

BXS-3

(Downgradient well)

May-12	2.5				X_{bar}	s^2	s	t_{stat}
Aug-12	NT							
Nov-12	NT							
Feb-13	NT	2.5	NT	NT	2.50	#DIV/0!	#DIV/0!	#DIV/0!
Jun-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Aug-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Dec-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

BXS-2

(Downgradient well)

May-12	0.6				X_{bar}	s^2	s	t_{stat}
Aug-12	NT							
Nov-12	NT							
Feb-13	NT	0.6	NT	NT	0.60	#DIV/0!	#DIV/0!	#DIV/0!
Jun-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Aug-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Dec-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

BXS-1

(Downgradient well)

May-12	2.5				X_{bar}	s^2	s	t_{stat}
Aug-12	NT							
Nov-12	NT							
Feb-13	NT	2.5	NT	NT	2.50	#DIV/0!	#DIV/0!	#DIV/0!
Jun-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Aug-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Dec-13	NT	NT	NT	NT	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Notes:

X_{bar} Average Concentration
 s^2 Sample variance
 s^1 Sample variance
 s Sample Standard Deviation
 t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
 Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Copper

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples **n** 4

Critical Statistic **t_c** 2.447

BXS-4

(Upgradient well)

	May-12	0.6				Average Concentration	
	Aug-12	5				m_o	s¹
	Nov-12	5					
	Feb-13	5	0.6	5	5	3.90	4.84
	Jun-13	2	5	5	5	4.25	2.25
	Aug-13	2	5	5	2	3.50	3.00
	Dec-13	2	5	2	2	2.75	2.25

BXS-3

(Downgradient well)

	May-12	5				X_{bar}	s²	s	t_{stat}
	Aug-12	5							
	Nov-12	5							
	Feb-13	5	5	5	5	5.00	0.00	0.00	1.00
	Jun-13	2	5	5	5	4.25	2.25	1.50	0.00
	Aug-13	2	5	5	2	3.50	3.00	1.73	0.00
	Dec-13	2	5	2	2	2.75	2.25	1.50	0.00

BXS-2

(Downgradient well)

	May-12	1.7				X_{bar}	s²	s	t_{stat}
	Aug-12	1.5							
	Nov-12	3.4							
	Feb-13	1.5	1.7	1.5	3.4	2.03	0.85	0.92	-1.57
	Jun-13	2.8	1.5	3.4	1.5	2.30	0.91	0.96	-1.63
	Aug-13	2.3	3.4	1.5	2.8	2.50	0.65	0.80	-0.85
	Dec-13	3.6	1.5	2.8	2.3	2.55	0.78	0.88	-0.17

BXS-1

(Downgradient well)

	May-12	2.1				X_{bar}	s²	s	t_{stat}
	Aug-12	2.1							
	Nov-12	5							
	Feb-13	1.4	2.1	2.1	5	2.65	2.56	1.60	-0.92
	Jun-13	2.1	2.1	5	1.4	2.65	2.56	1.60	-1.18
	Aug-13	2	5	1.4	2.1	2.63	2.60	1.61	-0.64
	Dec-13	2.6	1.4	2.1	2	2.03	0.24	0.49	-0.64

Notes:

- X_{bar}** Average Concentration
- s²** Sample variance
- s¹** Sample variance
- s** Sample Standard Deviation
- t_{stat}** Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well,
South Landfill

Iron

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n

4

Critical Statistic t_c

2.447

BXS-4

(Upgradient well)

May-12	55.1				Average Concentration	
Aug-12	43.4				m_o	s^1
Nov-12	77.5					
Feb-13	60.1	55.1	43.4	77.5	59.03	200.68
Jun-13	58.4	43.4	77.5	60.1	59.85	194.76
Aug-13	64.6	77.5	60.1	58.4	65.15	74.63
Dec-13	55.5	60.1	58.4	64.6	59.65	14.50

BXS-3

(Downgradient well)

May-12	97900				X_{bar}	s^2	s	t_{stat}
Aug-12	99200							
Nov-12	98100							
Feb-13	91600	97,900	99,200	98,100	96,700	11,886,667	3447.70	56.06
Jun-13	93500	99,200	98,100	91,600	95,600	13,206,667	3634.10	52.58
Aug-13	109000	98,100	91,600	93,500	98,050	60,736,667	7793.37	25.15
Dec-13	107000	91,600	93,500	109,000	100,275	80,835,833	8990.88	22.29

BXS-2

(Downgradient well)

May-12	430				X_{bar}	s^2	s	t_{stat}
Aug-12	417							
Nov-12	395							
Feb-13	450	430	417	395	423	533	23.08	26.88
Jun-13	416	417	395	450	420	516	22.72	26.86
Aug-13	416	395	450	416	419	518	22.77	26.41
Dec-13	400	450	416	416	421	444	21.06	28.43

BXS-1

(Downgradient well)

May-12	10				X_{bar}	s^2	s	t_{stat}
Aug-12	10							
Nov-12	10							
Feb-13	4.4	10	10	10	8.60	7.84	2.80	-6.98
Jun-13	3.7	10	10	4.4	7.03	11.88	3.45	-7.25
Aug-13	10	10	4.4	3.7	7.03	11.88	3.45	-7.97
Dec-13	10	4.4	3.7	10	7.03	11.88	3.45	-7.22

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).

Items with no difference at all (zero difference) will indicate #DIV/0!

* t_{stat} value invalid, data not normally distributed

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Manganese

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

May-12	116				Average Concentration	
Aug-12	113				m_o	s^1
Nov-12	119					
Feb-13	110	116	113	119	114.50	15
Jun-13	118	113	119	110	115.00	18
Aug-13	119	119	110	118	116.50	19.00
Dec-13	111	110	118	119	114.50	21.67

BXS-3

(Downgradient well)

May-12	12900				X_{bar}	s^2	s	t_{stat}
Aug-12	14000							
Nov-12	9650							
Feb-13	10700	12,900	14,000	9,650	11,813	3,960,625	1,990.13	11.76
Jun-13	14800	14,000	9,650	10,700	12,288	6,240,625	2,498.12	9.75
Aug-13	14200	9,650	10,700	14,800	12,338	6,478,958	2,545.38	9.60
Dec-13	NT	10,700	14,800	14,200	13,233	4,903,333	2,214.35	11.85

BXS-2

(Downgradient well)

May-12	1570				X_{bar}	s^2	s	t_{stat}
Aug-12	1510							
Nov-12	1550							
Feb-13	1610	1570	1510	1550	1560	1733	41.63	69.14
Jun-13	1680	1510	1550	1610	1588	5492	74.11	39.69
Aug-13	1700	1550	1610	1680	1635	4700	68.56	44.23
Dec-13	1580	1610	1680	1700	1643	3225	56.79	53.69

BXS-1

(Downgradient well)

May-12	254				X_{bar}	s^2	s	t_{stat}
Aug-12	201							
Nov-12	242							
Feb-13	220	254	201	242	229	553	23.51	9.63
Jun-13	212	201	242	220	219	301	17.35	11.67
Aug-13	224	242	220	212	225	161	12.69	16.28
Dec-13	217	220	212	224	218	26	5.06	32.57

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Nickel

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples n 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

	May-12	Aug-12	Nov-12	Feb-13	Jun-13	Aug-13	Dec-13	Average Concentration m_o s^1	
	10	0.7	10	10	0.4	2.2	5.4	7.68	21.62
				0.7	10	10	0.4	5.28	29.78
						0.4	2.2	5.65	25.77
								4.50	17.72

BXS-3

(Downgradient well)

	May-12	Aug-12	Nov-12	Feb-13	Jun-13	Aug-13	Dec-13	X_{bar}	s^2	s	t_{stat}
	13	15.8	13.6	18.2	18.4	22.2	25.1	15.15	5.58	2.36	2.87
				13	15.8	18.2	18.4	16.50	5.13	2.27	4.34
						18.2	22.2	18.10	12.39	3.52	4.27
								20.98	10.95	3.31	5.77

BXS-2

(Downgradient well)

	May-12	Aug-12	Nov-12	Feb-13	Jun-13	Aug-13	Dec-13	X_{bar}	s^2	s	t_{stat}
	33.7	33.5	31.7	36.1	36.9	38.4	38.2	33.75	3.26	1.81	10.45
				33.7	33.5	36.1	36.9	34.55	5.72	2.39	11.20
						36.1	36.9	35.78	8.29	2.88	11.02
								37.40	1.19	1.09	13.78

BXS-1

(Downgradient well)

	May-12	Aug-12	Nov-12	Feb-13	Jun-13	Aug-13	Dec-13	X_{bar}	s^2	s	t_{stat}
	9.2	8.9	8.8	9.2	8.5	11.2	12.8	9.03	0.04	0.21	0.58
				9.2	8.9	8.8	9.2	8.85	0.08	0.29	1.53
						8.5	11.2	9.43	1.48	1.22	1.57
								10.43	3.82	1.95	2.35

Notes:

X_{bar} Average Concentration

s^2 Sample variance

s^1 Sample variance

s Sample Standard Deviation

t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).

Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for
Downgradient Well, South Landfill

Zinc

$$t_{\text{stat}} = (X_{\text{bar}} - m_o) / \sqrt{(s^1/n + s^2/n)}$$

Number of Samples **n** 4

Critical Statistic **t_c** 2.447

BXS-4

(Upgradient well)

May-12	0.4				Average Concentration	
Aug-12	5				m_o	s¹
Nov-12	5					
Feb-13	5	0.4	5	5	3.85	5.29
Jun-13	2	5	5	5	4.25	2.25
Aug-13	2	5	5	2	3.50	3.00
Dec-13	2	5	2	2	2.75	2.25

BXS-3

(Downgradient well)

May-12	5				X_{bar} s² s t_{stat}			
Aug-12	0.8							
Nov-12	0.8							
Feb-13	0.9	5	0.8	0.8	1.88	4.34	2.08	-1.27
Jun-13	2.7	0.8	0.8	0.9	1.30	0.87	0.93	-2.38
Aug-13	2.9	0.8	0.9	2.7	1.83	1.28	1.13	-1.31
Dec-13	1.9	0.9	2.7	2.9	2.10	0.83	0.91	-0.53

BXS-2

(Downgradient well)

May-12	4.3				X_{bar} s² s t_{stat}			
Aug-12	2.3							
Nov-12	3.8							
Feb-13	3.2	4.3	2.3	3.8	3.40	0.74	0.86	-0.37
Jun-13	3.8	2.3	3.8	3.2	3.28	0.50	0.71	-0.81
Aug-13	3.6	3.8	3.2	3.8	3.60	0.08	0.28	0.09
Dec-13	3.7	3.2	3.8	3.6	3.58	0.07	0.26	0.71

BXS-1

(Downgradient well)

May-12	2.5				X_{bar} s² s t_{stat}			
Aug-12	2.6							
Nov-12	2.7							
Feb-13	2.4	2.5	2.6	2.7	2.55	0.02	0.13	-1.13
Jun-13	2.4	2.6	2.7	2.4	2.53	0.02	0.15	-1.50
Aug-13	2.7	2.7	2.4	2.4	2.55	0.03	0.17	-0.82
Dec-13	3.1	2.4	2.4	2.7	2.65	0.11	0.33	-0.09

Notes:

- X_{bar}** Average Concentration
- s²** Sample variance
- s¹** Sample variance
- s** Sample Standard Deviation
- t_{stat}** Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!