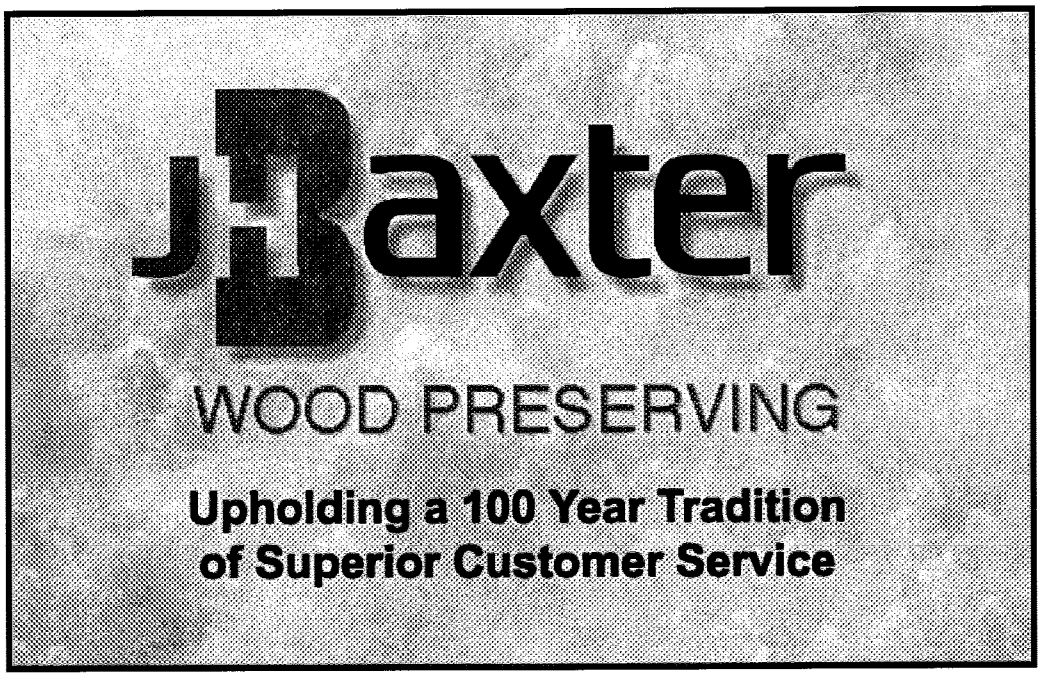
2009 Groundwater Monitoring Report
South Woodwaste Landfill
J.H. Baxter & Company
Arlington, Washington



Prepared for:

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

Prepared by:

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May 27, 2010

JBaxter

PREMIER
ENVIRONMENTAL SERVICES, INC

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May 27, 2010

Mr. Peter Jorgenson, R.S.
Environmental Health Specialist
Snohomish Health District
3020 Rucker Avenue, Suite 104
Everett, Washington 98201

Re: 2009 Groundwater Monitoring Reports, North and South Woodwaste Landfills
J.H. Baxter & Co., Arlington, Washington

Dear Mr. Jorgenson:

On behalf of J.H. Baxter & Co. (Baxter), please find enclosed copies of the *2009 Groundwater Monitoring Report – North Woodwaste Landfill* and the *2009 Groundwater Monitoring Report – South Woodwaste Landfill* for Baxter's two closed woodwaste landfills in Arlington, Washington. These reports are 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 these reports, please do not hesitate to contact me at (503) 241-8172.

Sincerely,

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

cc: Krystyna Kowalik, Ecology
Georgia Baxter, J.H. Baxter & Co.
RueAnn Thomas, Bluefield Holdings

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Acronyms and Abbreviations

AVD	absolute value difference
Baxter	J. H. Baxter & Company
COD	chemical oxygen demand
CAS	Columbia Analytical Services, Inc.
EAL	Edge Analytical Laboratory
EPA	Environmental Protection Agency
MCL	maximum contaminant level
MDL	method detection limit
MRL	method reporting limit
PQL	practical quantitation limit
QA	quality assurance
QC	quality control
RPD	relative percent difference
SMCL	secondary maximum contaminant level
TDS	total dissolved solids
TOC	total organic carbon
WAC	Washington Administrative Code

1 Introduction

This report presents quarterly groundwater data collected from February to November 2009 for the J. H. Baxter & Company's (Baxter) 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, May, August, and November 2009. Field measurements were taken for pH, conductivity, temperature, redox potential (Eh), and dissolved oxygen. In addition, methane measurements were collected in February and August 2009. 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, cadmium, 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 Hydrogeology

As discussed, quarterly groundwater monitoring events were performed during February, May, August, and November 2009 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 during each of the four monitoring events. 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 2009 monitoring period are summarized in Table 1.

Groundwater elevations were highest during the February event for wells BXS-1 and BXS-4 and during the May event for wells BXS-2 and BXS-3. Groundwater elevations were lowest during the August event for wells BXS-1 and BXS-4 and during the November event for wells BXS-2 and BXS-3. The static groundwater level in wells BXS-1, BXS-2, BXS-3, and BXS-4 fluctuated throughout the year by 3.02 feet, 4.55 feet, 5.77 feet, and 5.25 feet, respectively. Groundwater surface elevations measured in February 2009 (Figure 2) and the November 2009 (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 varied between 0.0165 and 0.0230 during 2009 (Table 2).

2.2 Groundwater Velocities

Groundwater velocities ($\mathbf{v_x}$) for each monitoring event were estimated using Darcy's Law.

$$v_x = -Ki / n_e$$

Hydraulic conductivity ($\mathbf{K}$) 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 ($\mathbf{n_e}$) was assumed to be 0.300 (i.e., 30%).

The average gradient ($\boldsymbol{i}$) ranged from 0.0165 to 0.0230, resulting in velocity estimates of 4.677 to 13.039 feet per day. Table 2 shows the calculated hydraulic gradients and groundwater velocities during the monitoring events in 2009.

3 Groundwater Quality

Groundwater samples were collected February 10, 11, and 12 for the first quarter, May 6 and 7 for the second quarter, August 5 for the third quarter, and November 18 for the fourth quarter of 2009 using sampling procedures 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 (EAL) in Burlington, Washington. Samples for pH, conductivity, ammonia as nitrogen, COD, chloride, nitrate + nitrite as nitrogen, TDS, sulfate, tannin and lignin, TOC, and dissolved metals (arsenic, barium, cadmium, copper, iron, manganese, nickel and zinc) were submitted to Columbia Analytical Services, Inc. (CAS) in Kelso, Washington. Groundwater levels were measured in each well prior to purging.

3.1 Groundwater Sampling

Groundwater sampling was performed using dedicated submersible pumps (bladder pumps). A field duplicate, labeled BXS-5, was collected from well BXS-1 during the first, second, and fourth quarter events and from well BXS-3 during the third quarter sampling event. Field blanks, i.e., equipment rinsate blanks, were collected during each quarterly sampling event.

Prior to sample collection, field measurements were taken for pH, conductivity, temperature, redox potential, and dissolved oxygen. In addition, the well headspace was

tested for methane using a methane meter during the February and August 2009 events. Field measurement data are summarized in Table 3a.

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, cadmium, copper, iron, manganese, nickel, and zinc).

The analytical data for the groundwater samples are summarized in Tables 3a, 3b, and 3c. Laboratory analytical reports and chain-of-custody forms for the 2009 groundwater monitoring events are presented in Appendix B.

4 Data Review

This section describes the data review process that was performed to evaluate the adequacy and quality of the analytical data from the 2009 groundwater monitoring events. The objective of the data review was 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) (EPA 1994).

4.1 Field Quality Assurance/Quality Control (QA/QC)

During the quarterly groundwater sampling events, field duplicates were prepared and containerized by Baxter field personnel in accordance with standard practice. The field duplicate samples were collected from wells BXS-2 and BXS-3 and were labeled BXS-5.

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. If the RPD was greater than 35 percent, the reported values are considered estimated concentrations.

The precision of the field duplicate samples collected in 2009 is acceptable, with the following three exceptions.

- The November ammonia, August tannin and lignin, August dissolved barium, February dissolved cadmium, and dissolved copper, August dissolved iron, dissolved manganese and dissolved nickel, and May dissolved zinc results are imprecise. The RPD values are 119, 98, 37, 40, 48, 198, 102, 58, and 38, respectively.

4.2 Laboratory QA/QC

Collected groundwater samples were received by the laboratory with the proper chain-of-custody (COC) documentation, were properly preserved, and at the proper temperature. Samples for total Coliform were analyzed by Edge Analytical, located in Burlington Washington. The remaining analyses were performed by CAS.

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 two days after collection. The method used for pH analysis, Standard Methods 4500-H+ B (APHA 1998), does not list an analysis holding time. The USEPA method for pH analysis of water samples, Method 150.1 (USEPA 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 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 of Student's t-test was 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 ($\mathbf{t_{stat}}$) 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 $\mathbf{t_{stat}}$ was greater than the critical test statistic ($\mathbf{t_c}$). The critical test statistic was computed using the percent point function. The percent point function (ppf) is the inverse of the cumulative distribution function.

Statistically significant detections above background well (BXS-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 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 are listed below:

- Field conductivity, COD, chloride, TDS, TOC, and dissolved manganese for wells BXS-1, BXS-2, and BXS-3
- Tannin and lignin, dissolved barium, and dissolved iron for wells BXS-2 and BXS-3
- Sulfate for well BXS-1
- Nitrate plus nitrite as nitrogen for wells BXS-1 and BXS-3
- Dissolved nickel for well BXS-2
- Ammonia and dissolved arsenic for well BXS-3.

5.2 Concentration Trends over Time

Figures 5 through 18 show the concentration trends from 2005 through 2009 for each parameter discussed below.

Ammonia as Nitrogen (Figure 5) – The samples collected from well BXS-3 during February, May, and August were higher than the concentrations in background well BXS-4. The ammonia concentrations in wells BXS-1, BXS-2, and BXS-4 have remained steady since 2003. Ammonia concentration in well BXS-3 in February (1.44 mg/L) is the highest concentration observed since monitoring began, however, concentrations dropped considerably in subsequent sampling events.

Arsenic (Figure 6) – Dissolved arsenic concentrations in well BXS-3 were above background levels during the first, second, and fourth quarters of 2009. Dissolved arsenic was not detected in well BXS-3 during the third quarter. The dissolved arsenic was detected in background well, BXS-4, in February was the highest observed (14.4 mg/L) concentration since monitoring began in April 2000. Concentrations of arsenic in wells BXS-1 and BXS-2 have been stable during the last five years.

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 the first, second, and forth sampling events of 2009. The concentrations of barium in the most downgradient well, BXS-1, were below the corresponding concentrations in the background well, with one exception. The barium concentration of well BXS-1 was above the background level during August 2009. Concentrations of barium in background well BXS-4 and well BSX-1 increased in August, while the barium concentration in well BXS-3 decreased during August.

Chemical Oxygen Demand (COD) (Figure 8) – The COD concentrations in the downgradient wells were higher than the corresponding COD concentrations in background well BXS-4, with one exception. COD in well BXS-1 was below the background concentration in BXS-4 during May 2009. COD concentrations in wells BXS-1, BXS-2, and BXS-4 were within historical levels during 2009. The COD concentration in well BXS-3 was historically high during August 2009.

Chloride (see Figure 9) – The concentrations of chloride in down gradient wells BXS-1, BXS-2, and BXS-3 for all 2009 sampling events were slightly greater than the corresponding concentrations in background well BXS-4. Concentrations of chloride have been stable over the last five 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 for all four sampling events. Conductivity values observed in 2009 are within historical levels.

Iron (Figure 11) – The dissolved iron concentration in well BXS-3 fell to its lowest level in August 2009. The dissolved iron concentration was back within the historical range during the November event. Iron concentrations in well BXS-1 were below the background concentrations in well BXS-4 during all of 2009.

Manganese (Figure 12) – The concentrations of dissolved manganese in downgradient wells BXS-1 and BXS-2 during the first, second, and fourth quarter and BXS-3 during all four quarters were higher than the corresponding levels in the background well BXS-4. During August, the background concentration is well BXS-4 was higher than the concentrations in wells BXS-1 and BXS-2. Manganese concentrations were at historically high levels in wells BXS-1 and BXS-4 during August 2009.

Nickel (Figure 13) – Dissolved nickel values were uncharacteristically high in all four wells during August 2009. Nickel concentrations returned to typical levels in November. Dissolved nickel was detected at low concentrations in wells BXS-1, BXS-2, and BXS-3 during the first, second, and fourth quarter of 2009. Excluding the spike in August 2009, dissolved nickel concentrations have been relatively stable for the last four years.

Sulfate (Figure 14) – During all four sampling events 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 relatively stable over the last two years.

Tannin and Lignin (Figure 15) – Concentrations of tannin and lignin detected in wells BXS-2 and BXS-3 for all four sampling events were greater than the corresponding concentrations in the background well. Tannin and lignin concentrations in well BXS-1 were lower than or equal to the corresponding background well concentration during 2009. Tannin and lignin levels in wells BXS-1, BXS-2, and BXS-4 have remained stable for the last five years. Tannin and lignin concentrations observed in well BXS-3 were within historical levels during 2009.

Total Organic Carbon (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 four years.

Field pH (Figure 17) – Field pH measurements in all of the downgradient wells were less than the background well with values ranging from 6.33 to 6.77 standard pH units. The pH of well BXS-4 groundwater varied from a low of 7.89 to a high of 8.25 pH units. Field pH measurements have been stable for the last three years.

Total Dissolved Solids (TDS) (Figure 18) – TDS measured in the downgradient wells were higher than the TDS in the background well for all 2009 sampling events. TDS levels were within historical levels during 2009.

Methane – The headspace of each well was tested for methane during the February and August 2009 sampling events. Methane has not been detected above the detection limit of 1 part per million in any of the monitoring wells since methane testing began in 2005.

5.3 Comparison to Standards

MCLs for groundwater were established in WAC 173-304-9901 as equal to the primary drinking water standards set forth in WAC 246-290-310. MCLs are the maximum permissible concentration of a contaminant in drinking water supplies, whereas SMCLs are guidelines related to criteria other than adverse health effects. MCLs and SMCLs are listed in Tables 3a, 3b, and 3c and are shown on the time series plots on Figures 5 through 18 for reference.

5.3.1 Comparison to MCLs

Of the monitored parameters, MCLs apply to arsenic, barium, cadmium, copper, nickel, and nitrate plus nitrite as nitrogen. Concentrations in all of the groundwater samples were lower than the MCLs for barium, cadmium, copper, and nitrate plus nitrite as nitrogen during the 2009 monitoring events.

- The dissolved arsenic concentrations in well BXS-4 during the first quarter, BXS-3 during the first, second, and fourth quarter sampling events are greater than the MCL of 10 µg/L. The arsenic concentrations ranged from 14.4 in well BSX-4 to 120 µg/L in well BXS-3.

- The dissolved nickel concentrations of wells BXS-1, BXS-2, and BXS-4 were above the MCL of 100 µg/L during the August 2009 sampling event. The dissolved barium concentrations ranged from 104 to 134 µg/L.

The MCL for total Coliform is a drinking water criteria used to alert treatment system operators of potential bacterial contamination. This criterion does not apply to groundwater and the MCL is provided for informational purposes only. The levels of total Coliform found in the monitoring wells during the 2009 sampling events are relatively low.

5.3.2 Comparison to SMCLs

Among the monitored parameters, SMCLs apply to pH, conductivity, chloride, TDS, sulfate, iron, manganese, and zinc. The data from the 2009 monitoring events indicated that the groundwater concentrations from all the monitoring wells were lower than the SMCLs for chloride, sulfate, and zinc. Samples exceeded the SMCLs for conductivity, TDS, dissolved iron, dissolved manganese, and several samples were below the SMCL for pH, as described below:

Field Conductivity values were higher than the SMCL of 700 µS/cm for groundwater collected from wells BXS-2 and BXS-3. Conductivity values were above the SMCL for all four sampling events for BXS-2, with values ranging from 749 to 815 µS/cm. Conductivity values were above the SMCL for the first, second, and fourth quarters of 2009 for well BXS-3, with values ranging from 734 to 755 µS/cm. Conductivity measurements were below the SMCL in background well BXS-4 and in the most downgradient well BXS-1.

Laboratory Conductivity values for well BXS-2 were higher than the SMCL of 700 µmhos/cm, with values ranging from 757 to 889 µmhos/cm. Conductivity values for the

background well BXS-4 and down gradient wells BXS-1 and BXS-3 were below the SMCL during 2009.

TDS levels in down gradient wells BSX-1 and BXS-3, and background wells BXS-4 were below the SMCL. TDS was slightly higher than the SMCL of 500 mg/L in well BXS-3 during the May event (513 mg/L).

Dissolved iron concentrations detected in groundwater samples from well BXS-2 were higher than the SMCL of 300 µg/L during 2009. Dissolved iron detected in BXS-2 ranged from 473 to 1,340 µg/L. Dissolved iron concentrations in well BXS-3 were above the SMCL during the first, second, and fourth quarters with values ranging from 59,700 to 109,000 µg/L. The dissolved iron concentrations in the wells BXS-1 and BXS-4 were below the SMCL.

Dissolved manganese concentrations detected in all four wells exceeded the 50 µg/L SMCL during the 2009 monitoring period. Concentrations detected in well BXS-3 were the highest, averaging 11,100 µg/L.

Field pH measurements were below the SMCL range of 6.5 to 8.5 standard pH units during several events for wells BXS-1, BXS-2, and BXS-3 in 2009. Field pH values were below the SMCL for well BXS-1 during all four events, with a low 6.33 standard pH units in May and a high of 6.42 standard pH units in February. The field pH readings of well BXS-2 were below the SMCL during the May and November events, with values of 6.35 and 6.46 standard pH units. Field pH readings were below the SMCL during May for well BXS-3, with a value of 6.44 standard pH units. The field pH values were within the SMCL range for well BXS-4 during 2009.

Laboratory pH measurements were below the SMCL range of 6.5 to 8.5 standard pH units for well BXS-3 during all four 2009 monitoring events, during the second, third and

fourth quarter monitoring events for wells BXS-2 and BXS-1, and during the third quarter event for well BXS-4.

6 Summary

Quarterly groundwater monitoring samples were collected from one upgradient well and three downgradient wells during 2009 at the J.H. Baxter South Woodwaste Landfill. The samples were analyzed for eleven groundwater quality parameters and eight dissolved metals. Well headspace was tested for vapor phase methane during the first and third quarterly monitoring events.

Groundwater samples collected during the 2009 monitoring events did not exceed the MCLs for any of the monitored parameters, with the exception of arsenic and nickel.

- Dissolved arsenic concentrations in well BXS-3 exceeded the MCL during the first, second, and fourth quarter sampling events. The statistical analysis of dissolved arsenic concentrations in well BXS-3 indicates that concentrations detected in these quarterly events were statistically greater than background. The dissolved arsenic concentration of well BSX-4 in February 2009 was above the MCL at 14.4 µg/L. This concentration represents a historical high level of arsenic in the background well.

- Dissolved nickel concentrations in wells BXS-1, BXS-2, and BXS-4 were above the MCL of 100 µg/L during the August monitoring event. The dissolved nickel concentrations were 109, 134, and 104 µg/L, respectively. Statistical analysis reveals that the February and May concentrations of well BXS-2 are statistically greater than the corresponding background concentrations. The concentrations observed in wells BXS-1, BXS-2, and BXS-4 during August are the highest since monitoring began in April 2000. Dissolved nickel concentration returned to normal historical levels in November 2009.

There were no exceedances of the SMCLs for chloride, sulfate, or dissolved zinc in the groundwater samples collected during the quarterly groundwater monitoring events. The parameters that exceeded the SMCLs in the groundwater samples collected during the 2009 monitoring events include field and laboratory conductivity, field and laboratory pH, TDS, dissolved iron, and dissolved manganese. These exceedances are discussed below.

Field Conductivity – Field conductivity measurements exceeded the SMCL in wells BXS-2 during all 2009 monitoring events and in well BXS-3 during the first, second, and fourth quarter events. The statistical evaluation indicated that all measured field conductivity values in the downgradient wells are statistically greater than background. Field conductivity in the farthest downgradient well BXS-1 was below the SMCL during 2009. Field conductivity in all wells has remained relatively stable over the last several years.

Laboratory Conductivity – Laboratory conductivity measurements exceeded the SMCL in well BXS-2 during all 2009 events. Laboratory conductivity measurements have remained fairly stable in all wells for the last four years.

Field pH – Field pH values were below the lower SMCL for all four quarterly measurements in well BXS-1, the second and fourth quarterly events for well BXS-2, and during the second event for well BXS-3. Field pH values for the downgradient wells have remained stable for the last two years.

Laboratory pH – Laboratory pH values were below the lower SMCL for wells BXS-1 and BXS-2 during May, August, and November, well BXS-3 during all four 2009 sampling events, and well BXS-4 during August. Laboratory pH values for wells BXS-1, BXS-2, and BXS-3 have been relatively stable since 2003. The pH value of 6.32 standard pH units observed in well BXS-4 in August is the lowest laboratory pH value

recorded since monitoring began in April 2000. The pH value of well BXS-4 was within "normal" range in November.

TDS – TDS exceeded the SMCL in well BXS-2 during the May 2009 monitoring event. All TDS concentrations in the downgradient wells were determined to be statistically greater than background. TDS concentrations in the wells have remained relatively stable over the last four years/

Dissolved Iron – The iron SMCL was exceeded in well BXS-2 during all quarterly sampling events and in well BXS-3 during the first, second, and fourth quarter events of 2009. Dissolved iron concentrations in wells BXS-2 and BXS-3 were statistically greater than background.

Dissolved Manganese – Dissolved manganese concentrations in the upgradient and downgradient wells exceeded the SMCL during quarterly monitoring in 2009. Dissolved manganese levels in well BXS-3 during all four events, in well BXS-2 during the February and May events, and in well BXS-1 during the February event were statistically greater than background. Except for the high levels observed in wells BXS-1 and BXS-4 in August, dissolved manganese levels have remained stable for the last four years.

For parameters without MCLs or SMCLs, the statistical evaluation of groundwater results for the three downgradient wells indicated that the following parameter concentrations are statistically greater than the corresponding background concentrations.

Ammonia as nitrogen – Ammonia levels in the downgradient well BXS-3 were statistically greater than background during the August and November 2009 monitoring events. The ammonia in well BXS-3 during February was at a historically high level, however, levels returned to the normal range for the remainder of 2009.

COD – COD levels in downgradient wells BXS-1, BXS-2, and BXS-3 were statistically greater than background during 2009. With the exception of the high levels observed in wells BXS-3 in August and BXS-4 in May, COD levels have remained stable over the last four years.

Chloride – Chloride concentrations in all three downgradient wells during all of 2009 were statistically greater than background. Chloride levels have been stable for the last five years.

Nitrate plus nitrite as nitrogen – Nitrate plus nitrite as nitrogen concentrations in well BXS-1 in February and May and BXS-3 in May, August, and November were statistically greater than background. Nitrite plus nitrite levels have remained stable.

Sulfate – Sulfate concentrations in well BXS-1 were statistically greater than background during 2009. All sulfate concentrations were below the SMCL. Sulfate levels in all wells have remained relatively stable for the last five years.

TOC – TOC levels were statistically greater than background for the downgradient wells during all 2009 sampling events. TOC levels in all wells have been stable since 2002.

Tannin and Lignin – Tannin and lignin concentrations in wells BXS-2 during all four monitoring events and BXS-3 during the August event were statistically greater than background. Tannin and lignin levels in well BXS-3 exhibit some seasonal variation with concentrations above the corresponding background well concentration. Tannin and lignin levels in wells BXS-1, BXS-2, and BXS-4 have been stable since 2002.

Methane – The headspace of each well was tested for methane during the February and August 2009 sampling events. Methane was not detected in any of the monitoring wells during 2009.

Concentrations of several parameters were at historically high levels during 2009. Ammonia in well BXS-3, dissolved barium in wells BXS-1 and BXS-4, COD in well BXS-3, dissolved manganese in well BXS-1, BXS-2, and BXS-4, dissolved nickel in wells BXS-1, BXS-2, and BXS-4 were at their highest since April 2000. Most of these higher concentrations were observed during the August 2009 monitoring event, and may represent increased sample turbidity due to low water levels.

- The high ammonia concentration observed in well BXS-3 in February was above the background concentration. Ammonia concentration decreased to its normal historical range during the rest of 2009.

- Historically high concentration of dissolved barium was observed in wells BXS-1 and BXS-4 during August 2009. Dissolved barium concentrations returned to within its normal historical range in November.

- The high COD concentration observed in well BXS-3 in August was statistically above the background concentration. The COD concentration decreased to within its normal historical range during November.

- Historically high concentrations of dissolved manganese were observed in wells BXS-1, BXS-2, and BXS-4 during August 2009. Dissolved manganese concentrations returned to within normal historical range in November.

- Historically high concentrations of dissolved nickel were observed in wells BXS-1, BXS-2, and BXS-4 during August 2009. Dissolved nickel concentrations decreased to within its normal historical range in November.

The nature of elevated concentrations will be further evaluated in 2010. Monitoring data gathered in 2010 will be carefully reviewed to determine the need for further action, if any.

7 Limitations

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of J. H. Baxter & Co. for specific application to the referenced property. This report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

8 References

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

Figures

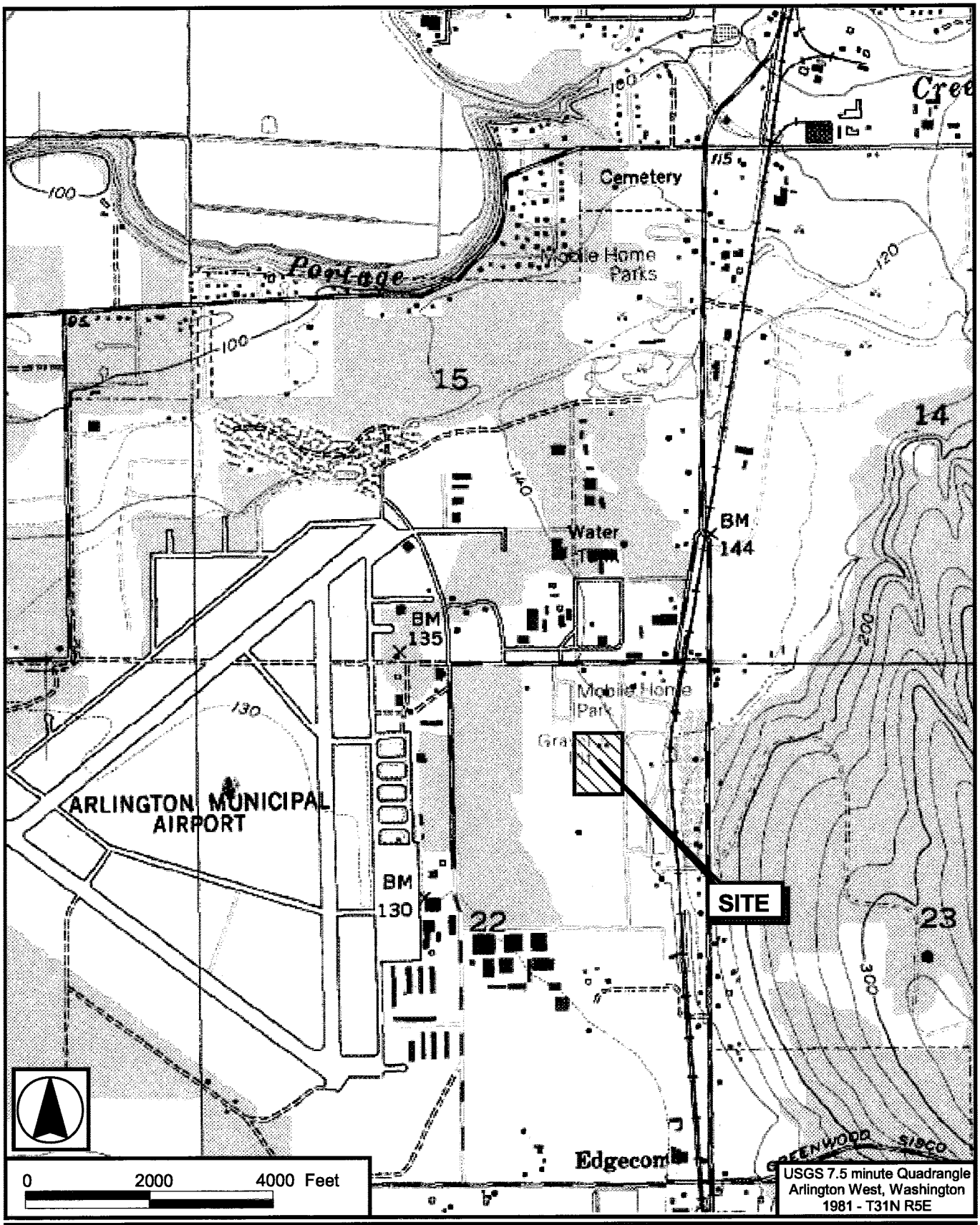

Figure 1. Site Location Map - South Landfill

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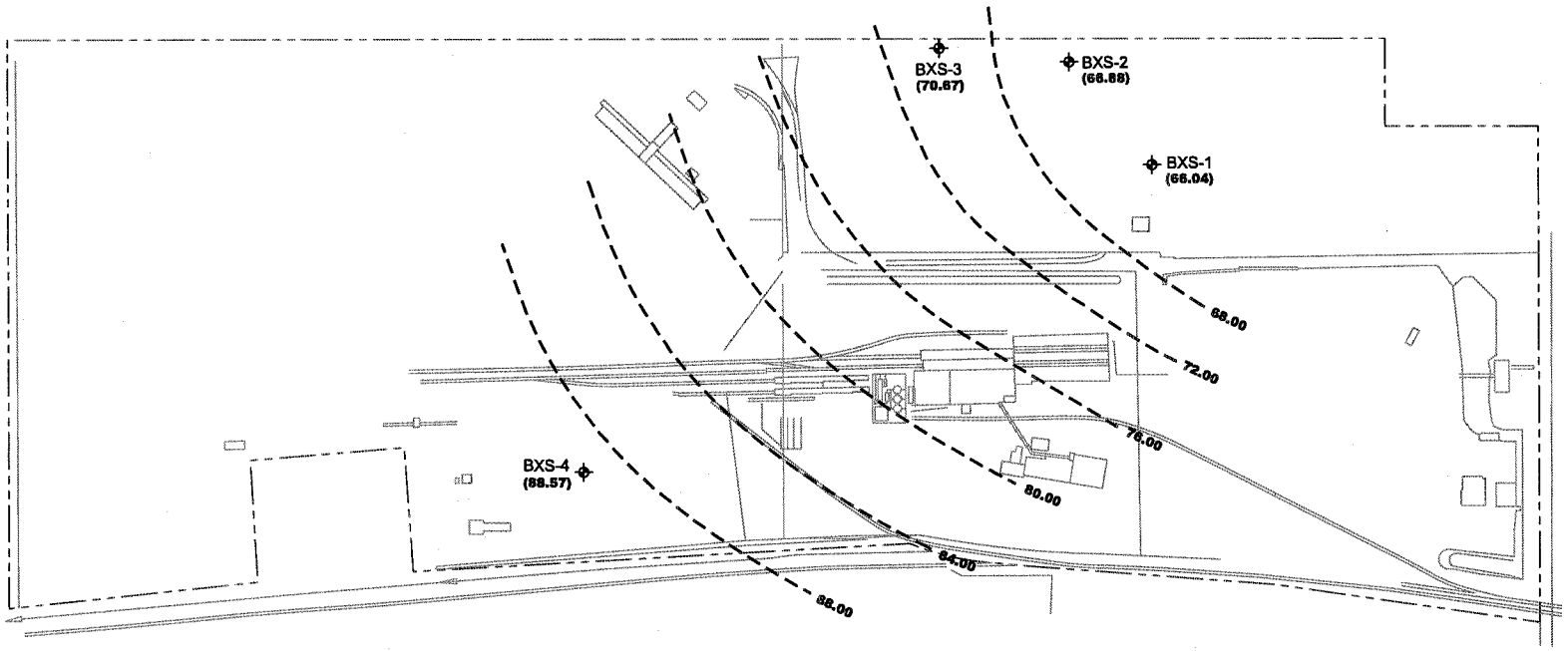


LEGEND

BXS-1 ⊕	MONITORING WELL
(66.04)	GROUNDWATER ELEVATION (FEET ABOVE ASSUMED SITE DATUM)
- - - - - -	INFERRED ELEVATION CONTOUR
———	SITE BOUNDARY

0 200 FEET
SCALE

PREMIER
333 SW FIFTH AVENUE, SUITE 410
PORTLAND, OR 97204
(503) 241-8172

PROJECT NO. 210130.00-002

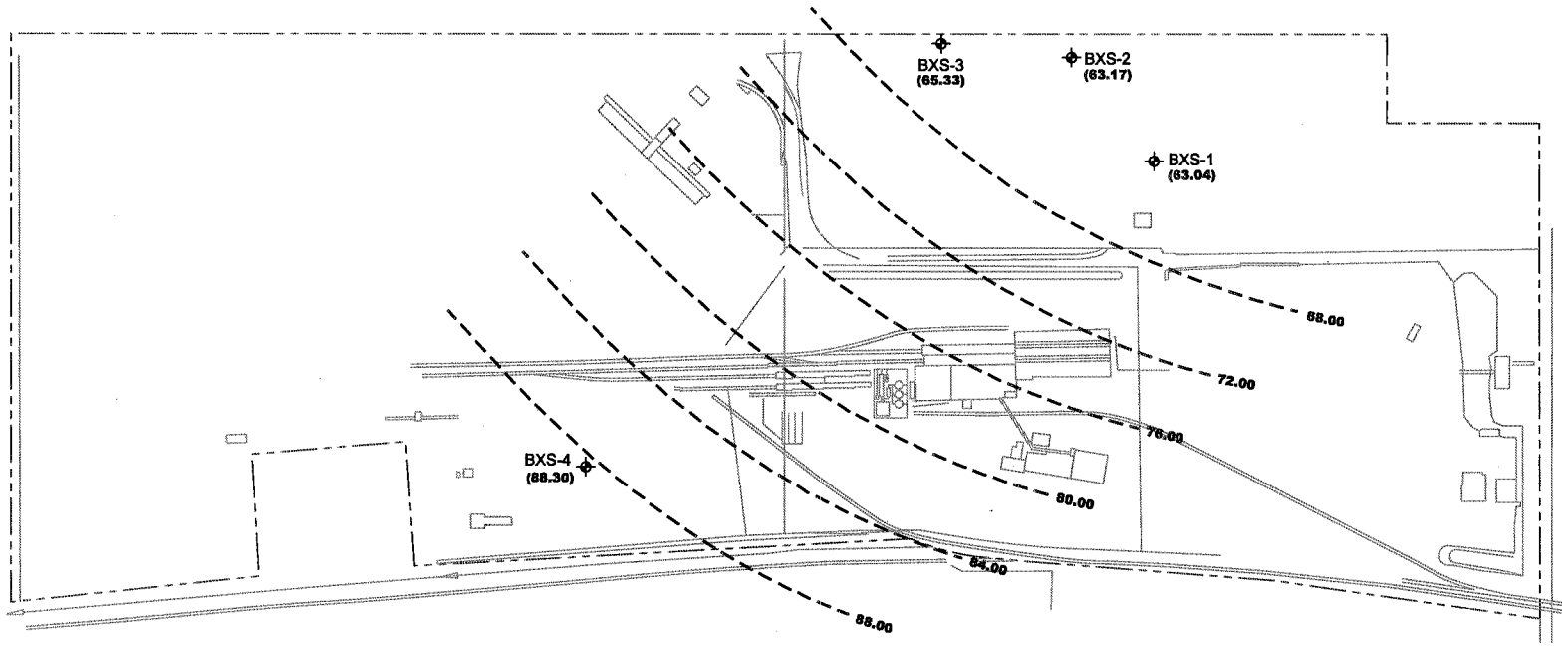
DRAWN BY:	DCN
DATE:	04/22/10
REVISED BY:	DCN
REVISED:	04/23/10
APPROVED BY:	KG
DATE:	04/23/10

GROUNDWATER ELEVATION
CONTOUR MAP
FEBRUARY 9, 2009 – SOUTH LANDFILL

J Baxter

FIGURE 2

PATH: K:\PREMIER\J H BAXTER\
FILE: SP 04-22-10.DWG TAB: [F2-FEB.2009-SOUTH] DATE PLOTTED: 04/23/10



LEGEND

BXS-1 ⊕	MONITORING WELL
(63.04)	GROUNDWATER ELEVATION (FEET ABOVE ASSUMED SITE DATUM)
- - - - - -	INFERRED ELEVATION CONTOUR
———	SITE BOUNDARY

0 200 FEET
SCALE

PREMIER

333 SW FIFTH AVENUE, SUITE 410
PORTLAND, OR 97204
(503) 241-8172

PROJECT NO. 210130.00-002

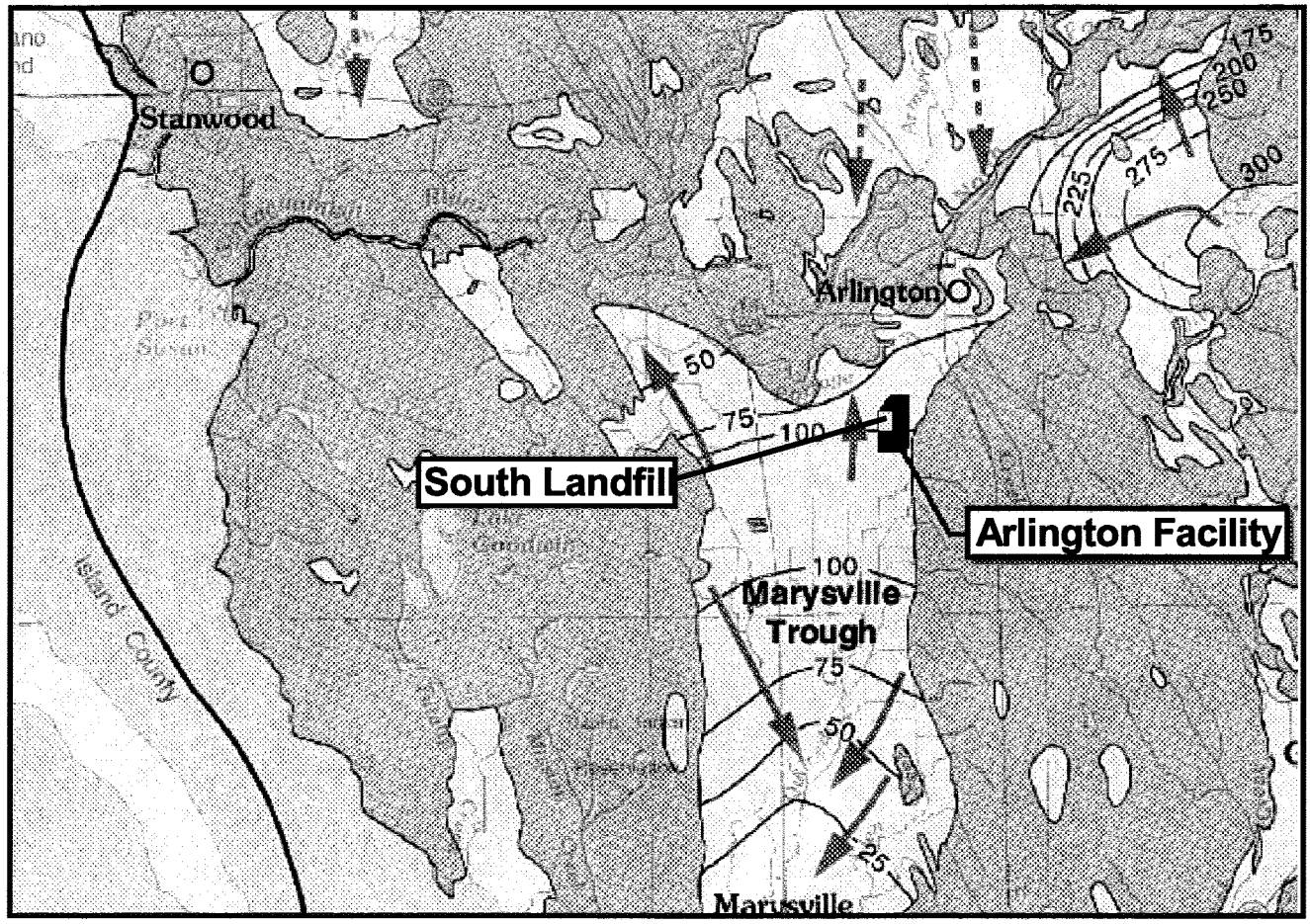
DRAWN BY:	DCN
DATE:	04/22/10
REVISED BY:	DCN
REVISED:	04/23/10
APPROVED BY:	KG
DATE:	04/23/10

GROUNDWATER ELEVATION
CONTOUR MAP
NOVEMBER 16, 2009 - SOUTH LANDFILL

J Baxter

FIGURE 3

PATH: K:\PREMIER\J H BAXTER\
FILE: SP 04-22-10.DWG TAB: [F3-NOV.2009-SOUTH] DATE PLOTTED: 04/23/10



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

0 4 8 Miles

LEGEND

50	Groundwater Elevation
	Groundwater Elevation Contour
	Inferred Groundwater Flow Direction

Figure 4. Regional Groundwater Flow Directions

PREMIER Baxter

Figure 5. Concentration Trends for Ammonia
South Woodwaste Landfill Monitoring Well Data

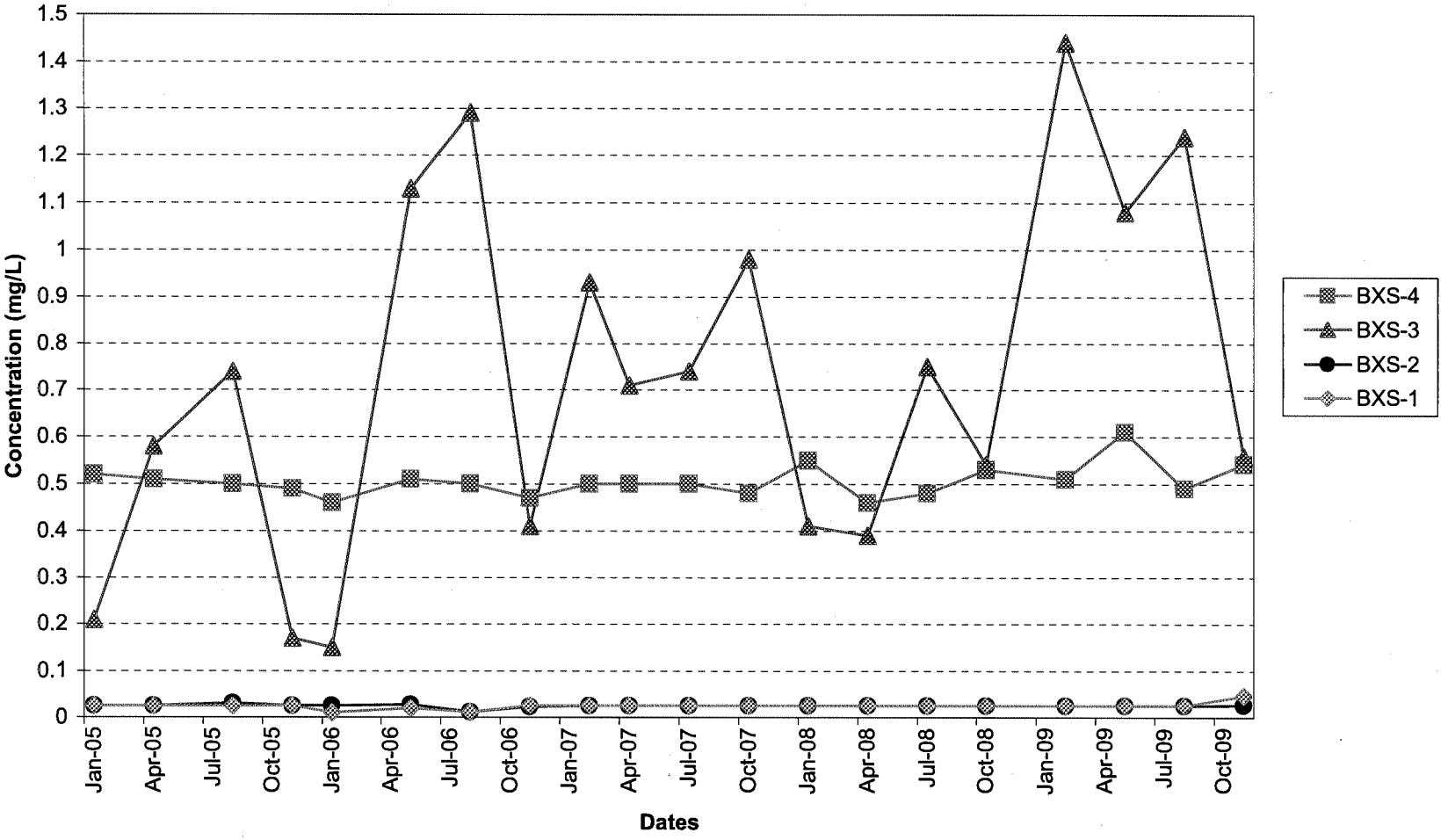


Figure 6. Concentration Trends for Arsenic
South Woodwaste Landfill Monitoring Well Data

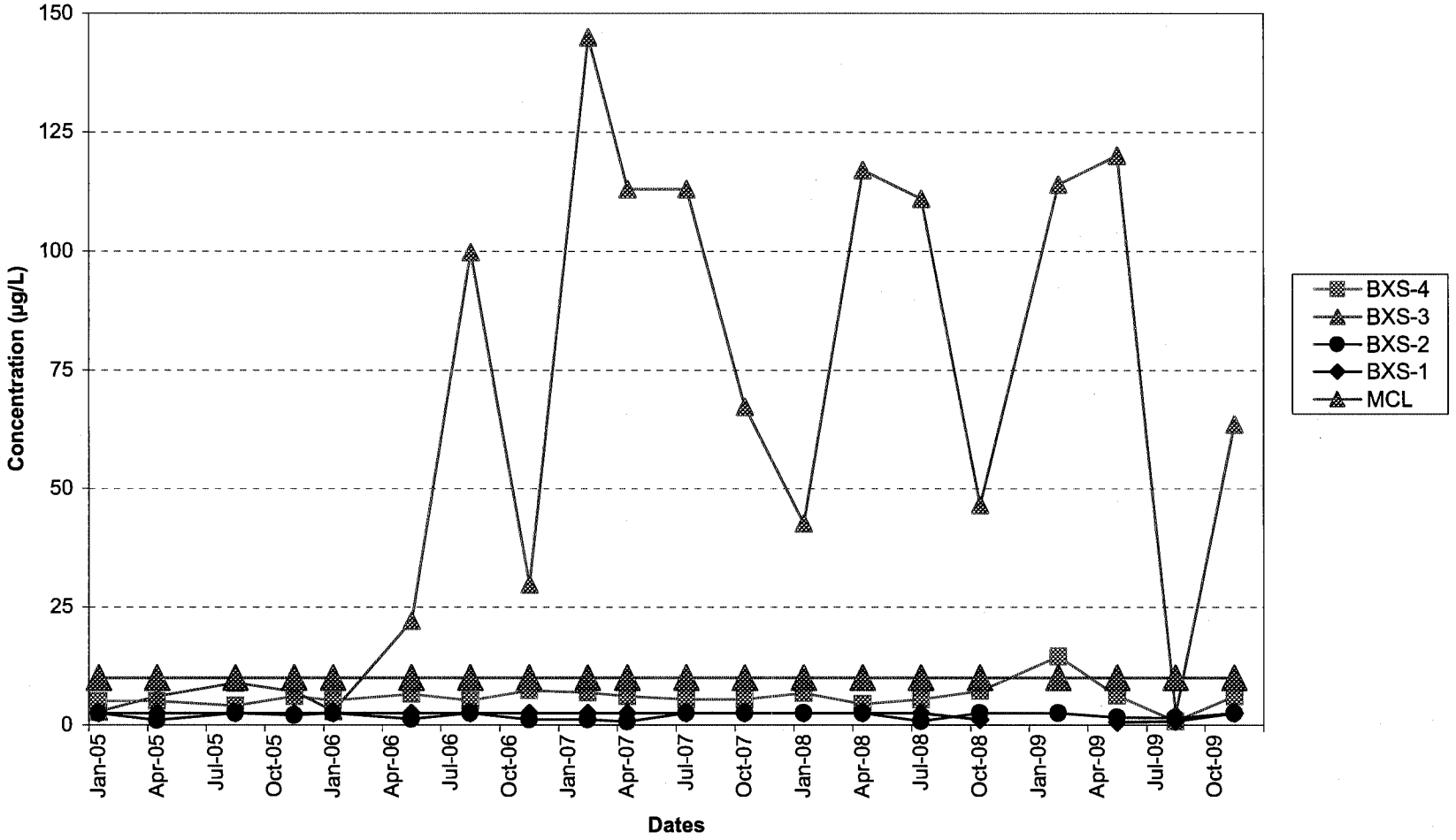


Figure 7. Concentration Trends for Barium
South Woodwaste Landfill Monitoring Well Data

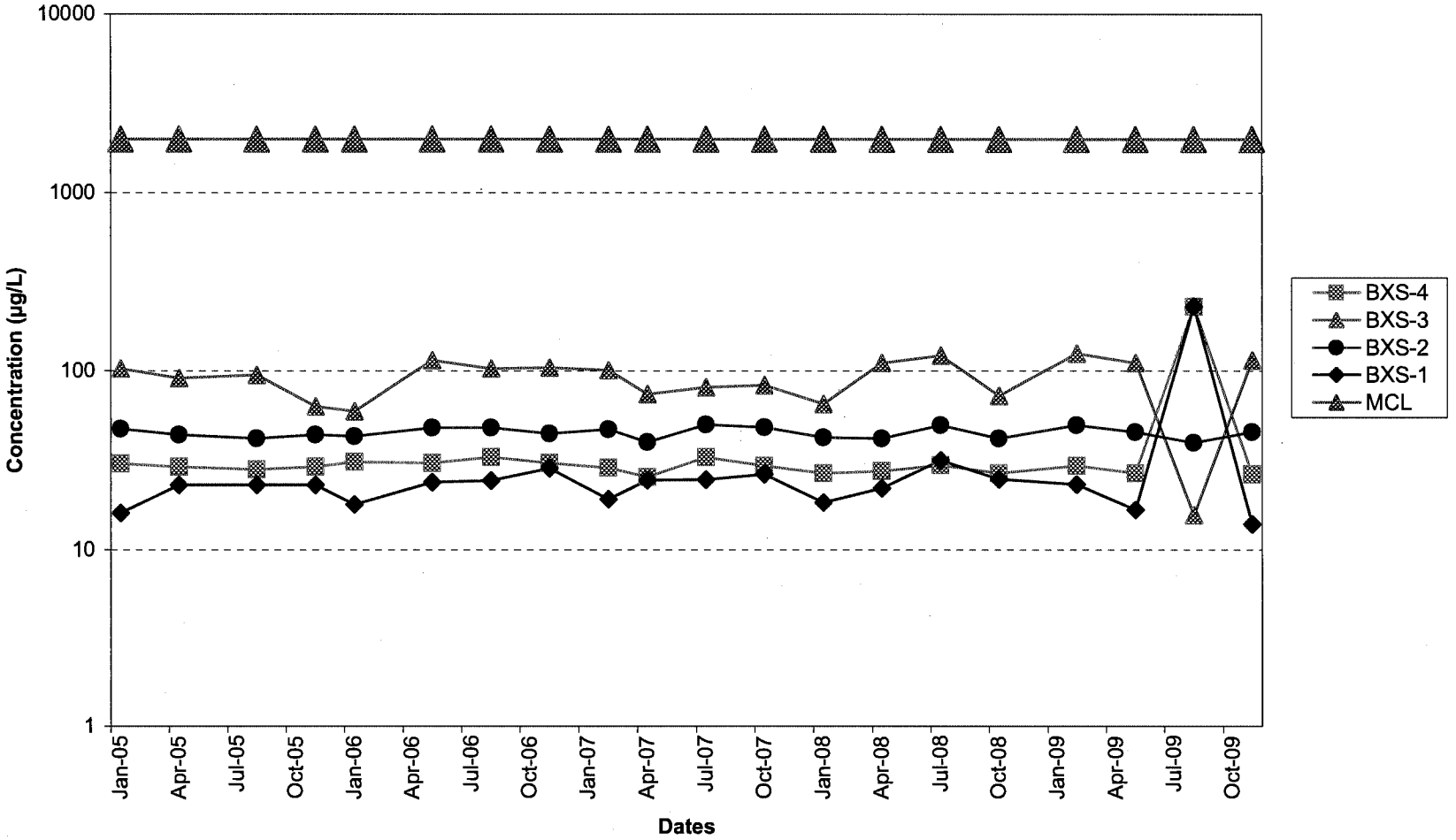


Figure 8. Concentration Trends for Chemical Oxygen Demand
South Woodwaste Landfill Monitoring Well Data

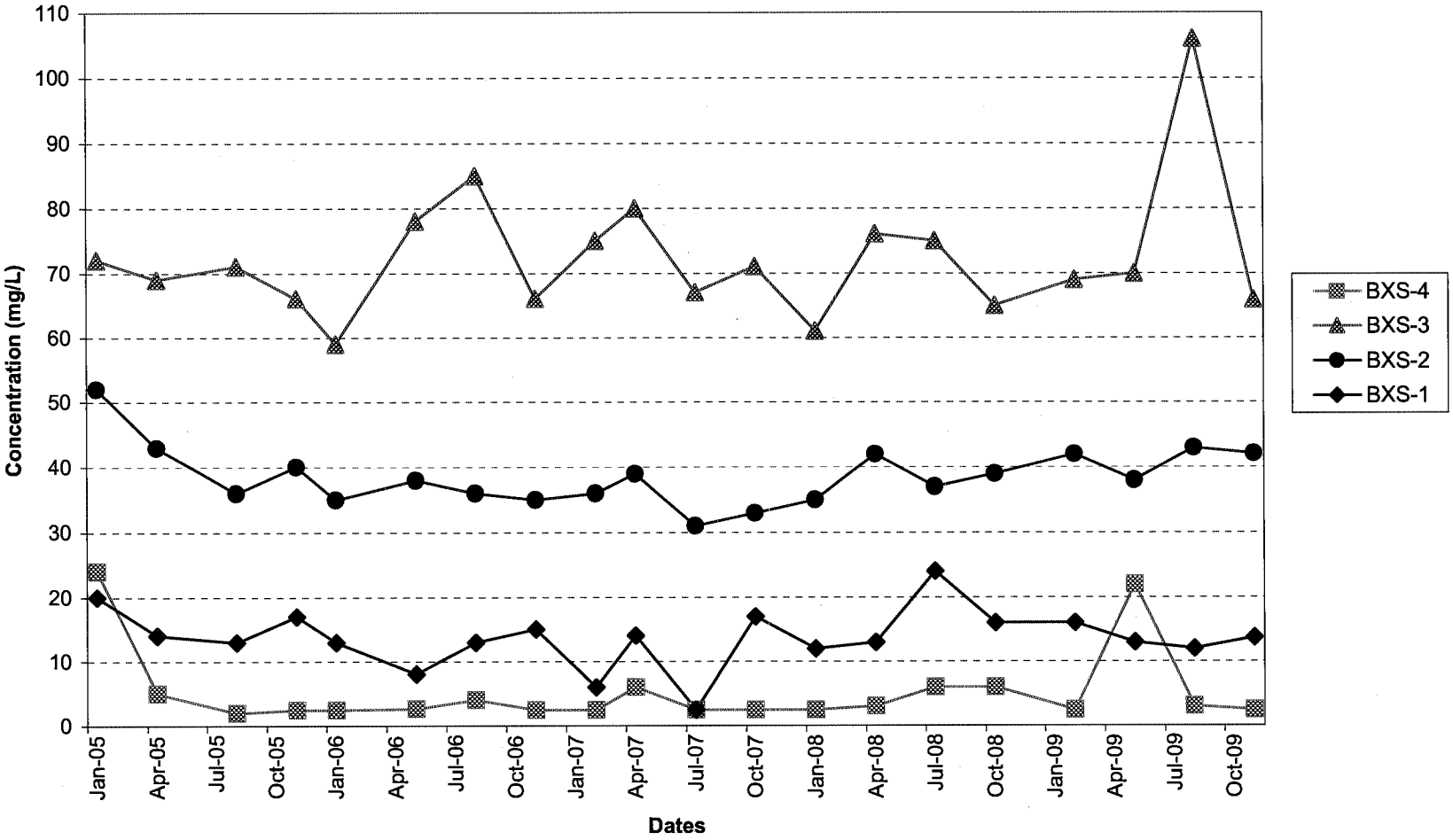


Figure 9. Concentration Trends for Chloride
South Woodwaste Landfill Monitoring Well Data

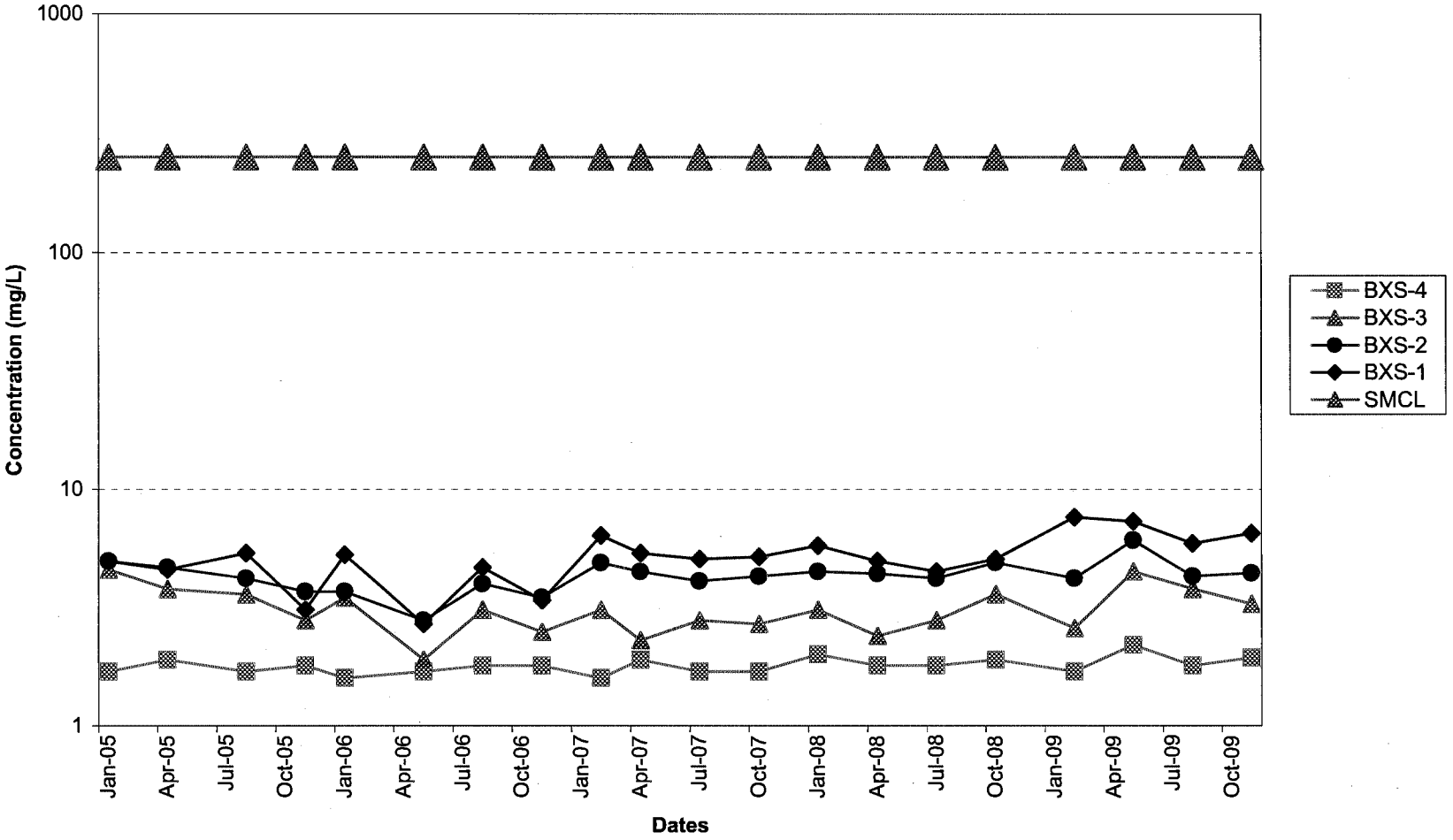


Figure 10. Concentration Trends for Field Conductivity
South Woodwaste Landfill Monitoring Well Data

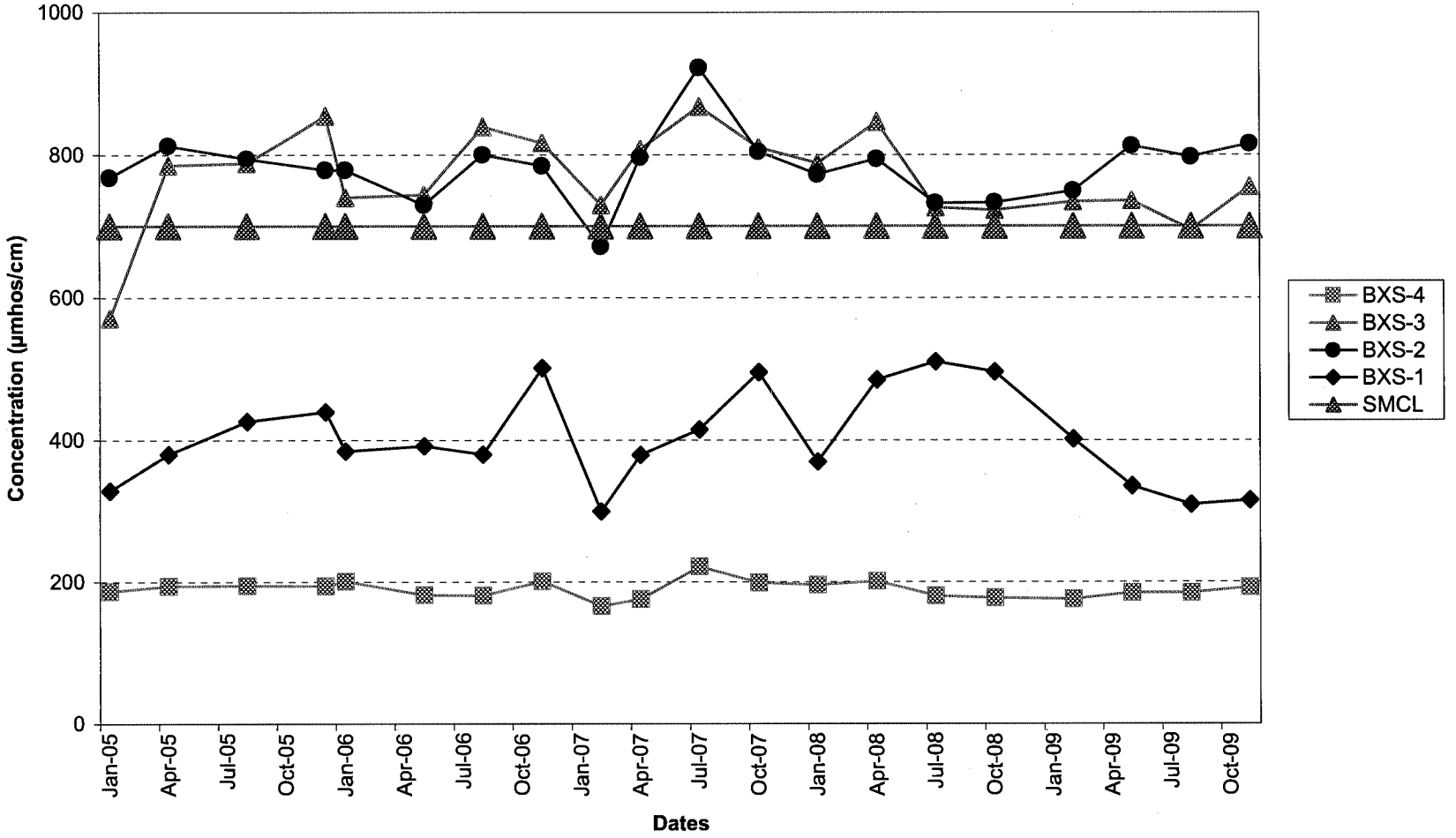


Figure 11. Concentration Trends for Iron
South Woodwaste Landfill Monitoring Well Data

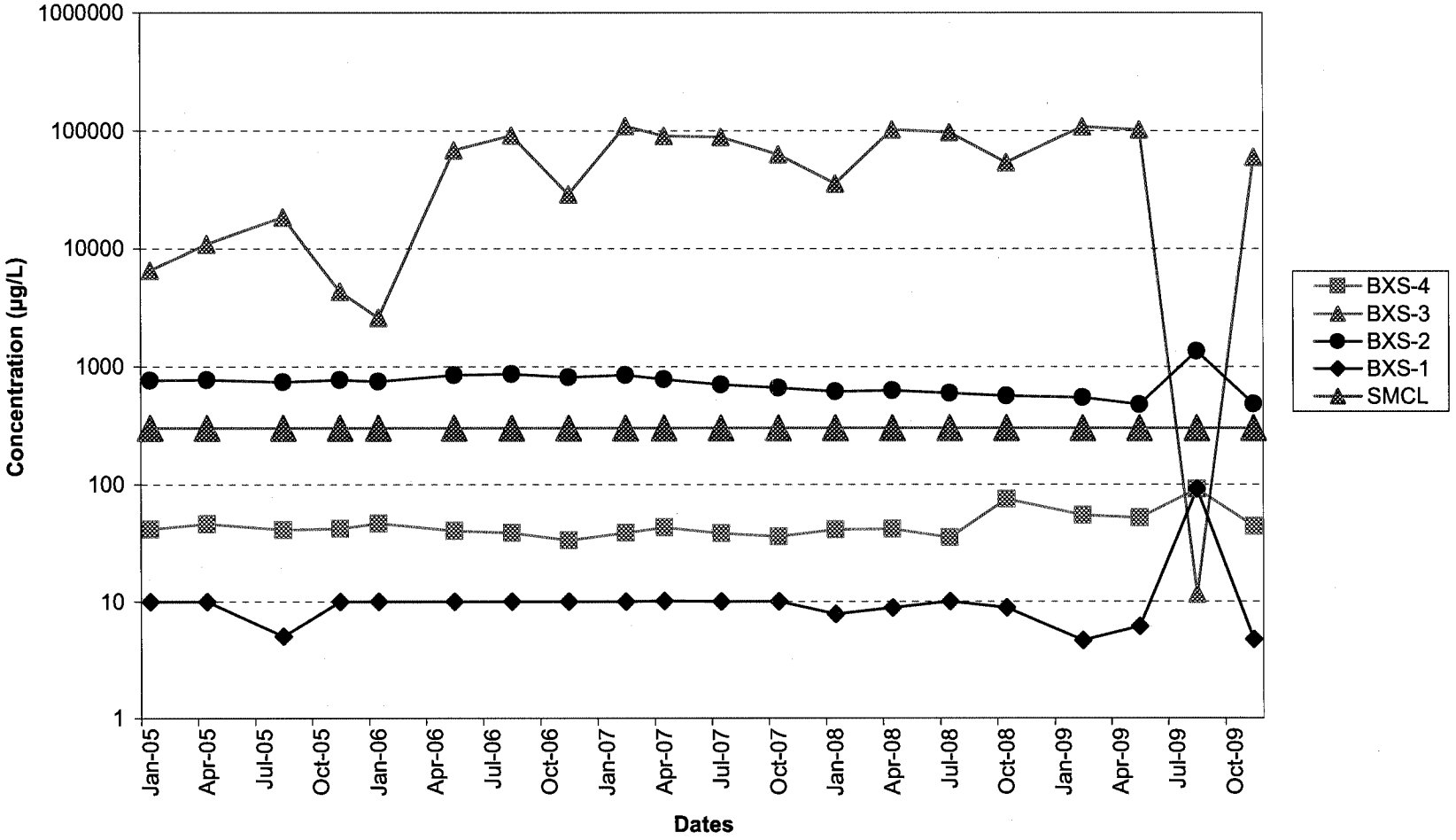


Figure 12. Concentration Trends for Manganese
South Woodwaste Landfill Monitoring Well Data

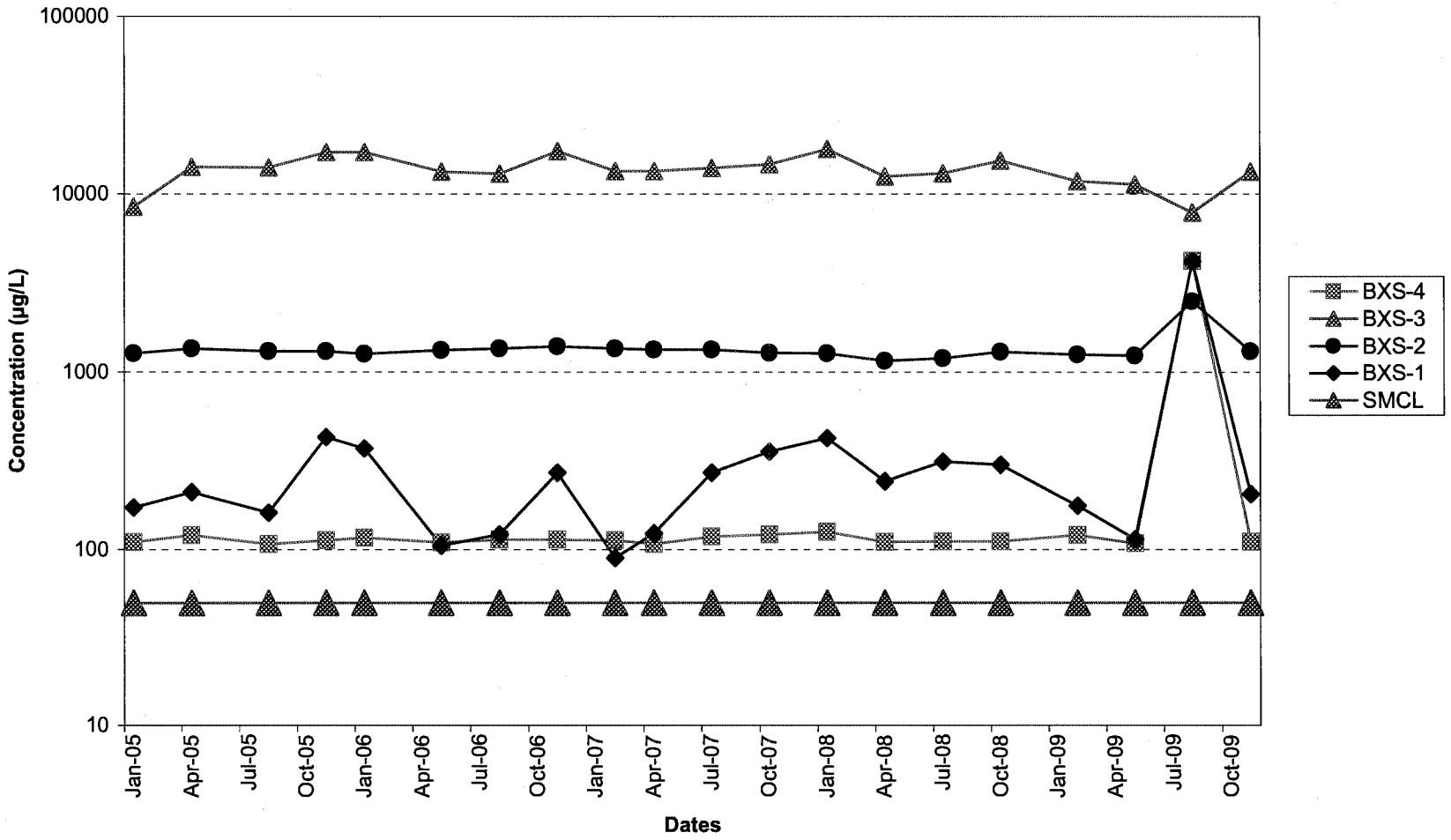


Figure 13. Concentration Trends for Nickel
South Woodwaste Landfill Monitoring Well Data

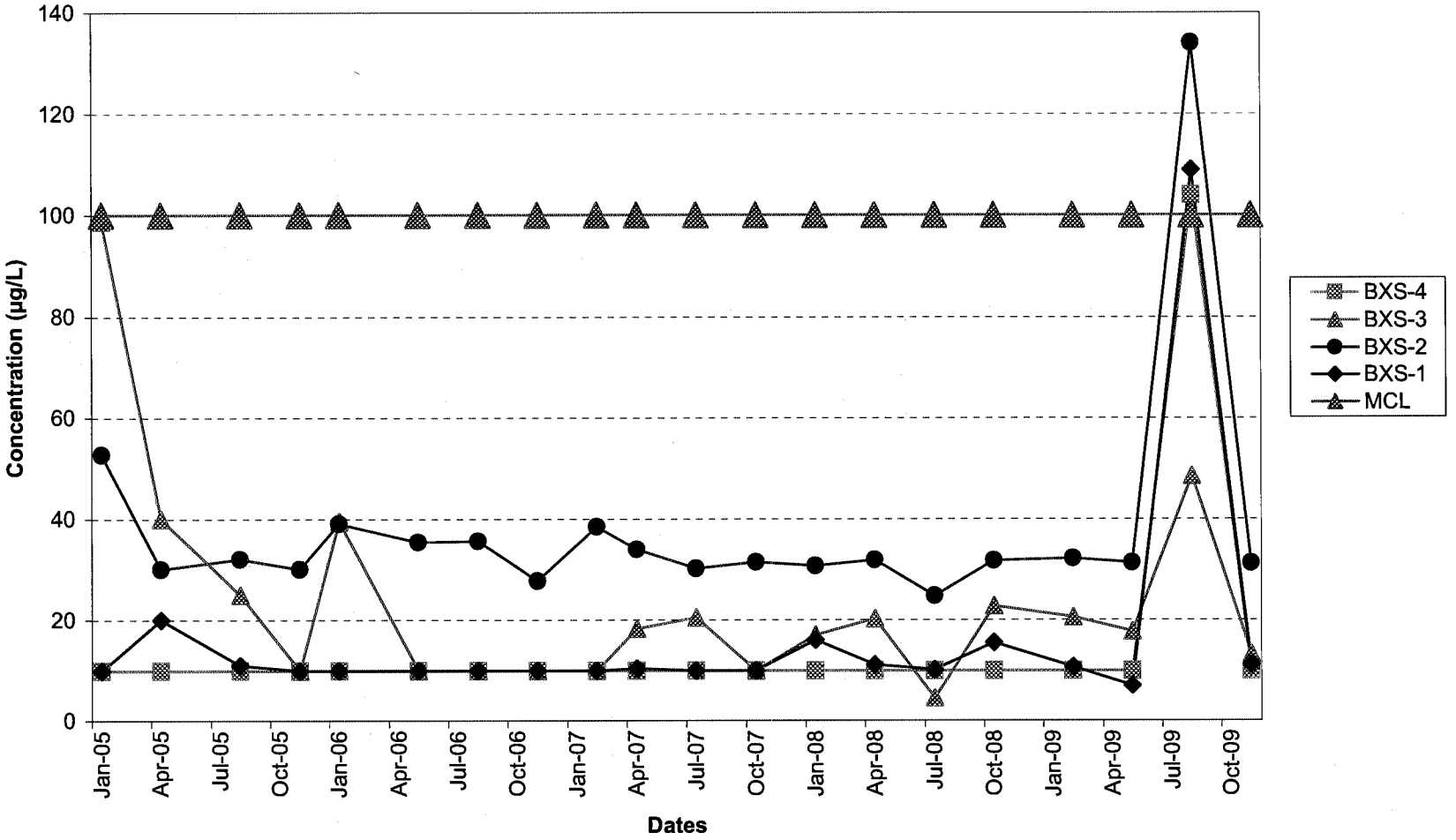


Figure 14. Concentration Trends for Sulfate
South Woodwaste Landfill Monitoring Well Data

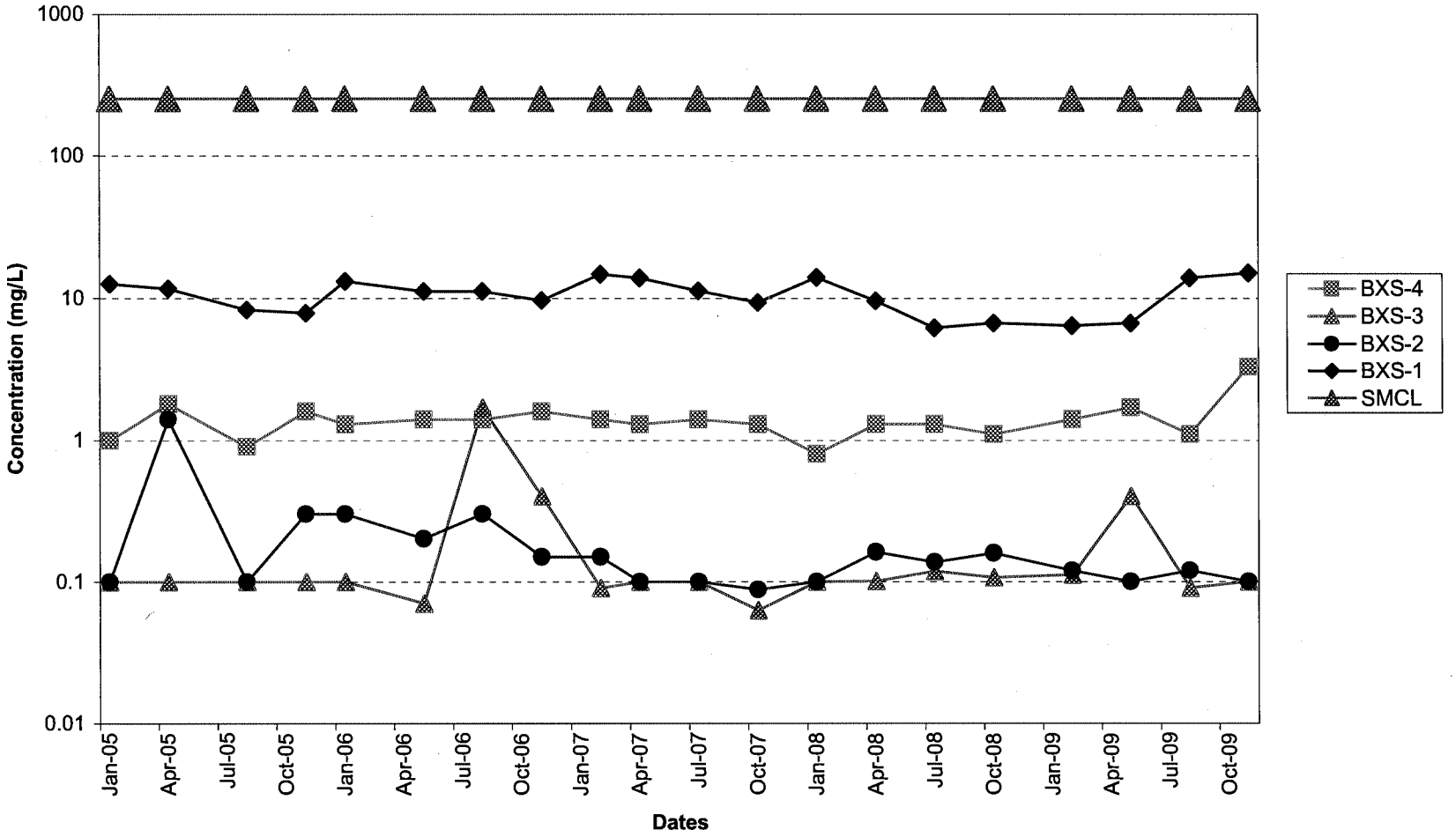


Figure 15. Concentration Trends for Tannin and Lignin
South Woodwaste Landfill Monitoring Well Data

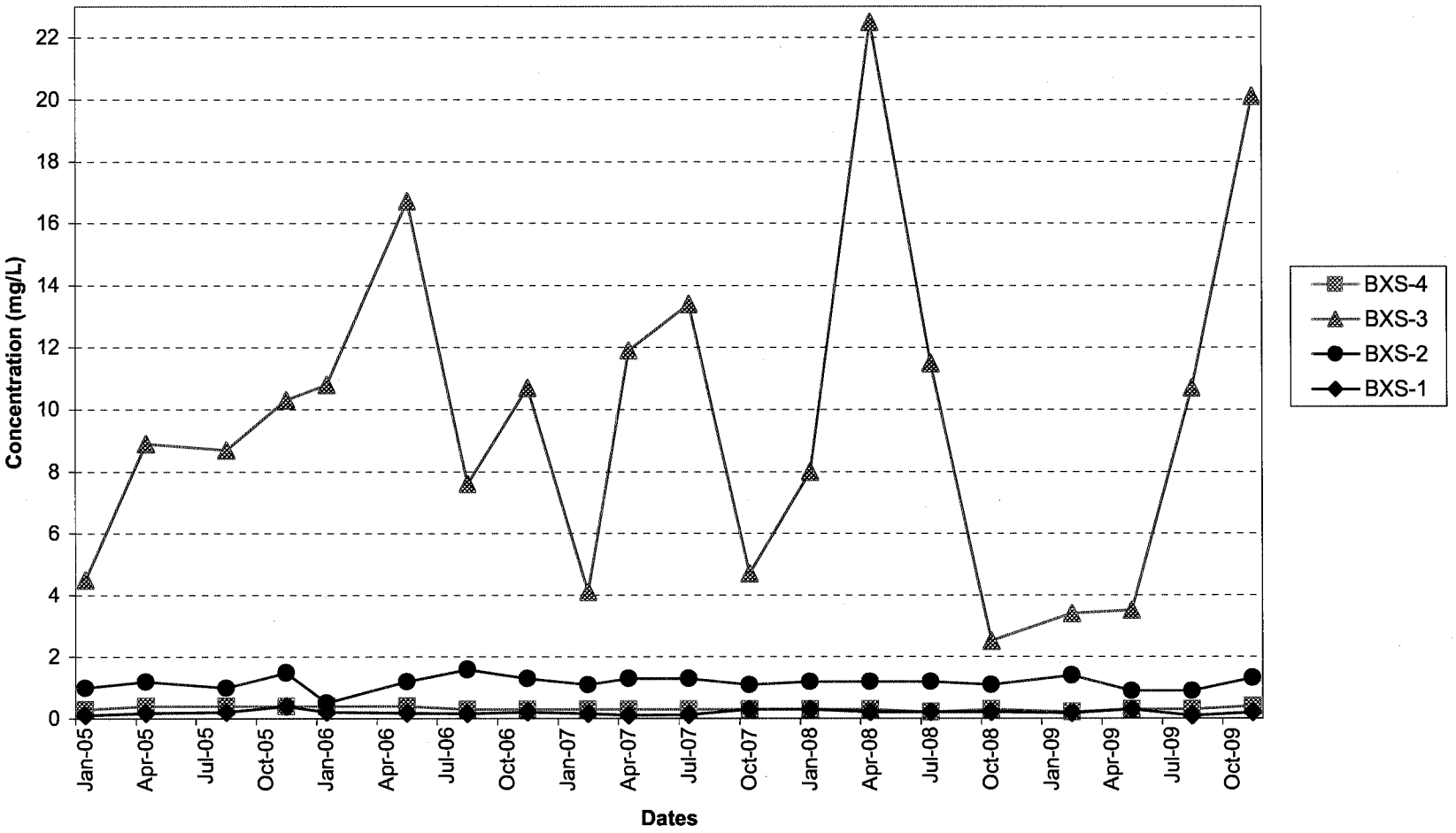


Figure 16. Concentration Trends for Total Organic Carbon
South Woodwaste Landfill Monitoring Well Data

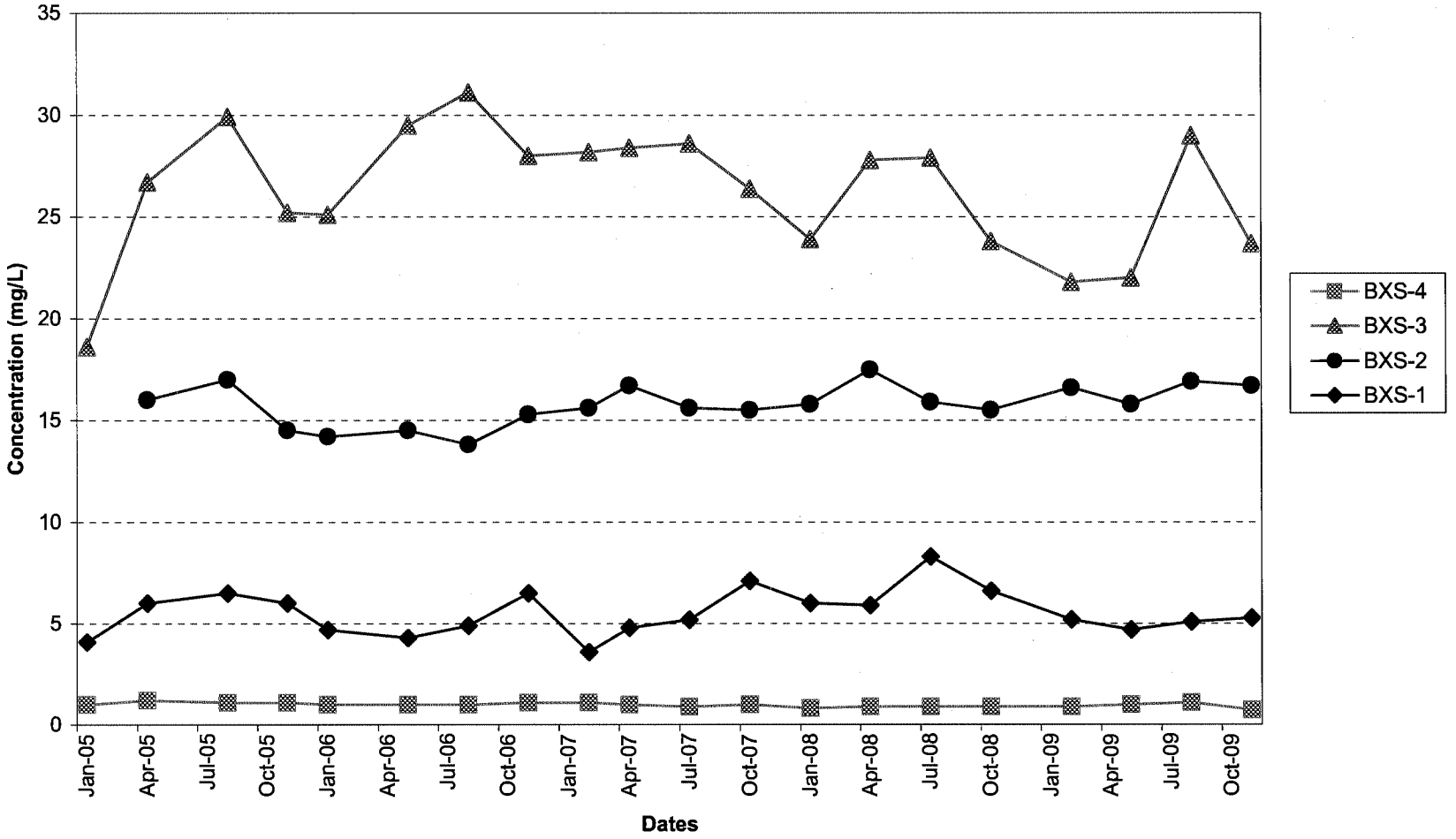


Figure 17. Concentration Trends for Field pH
South Woodwaste Landfill Monitoring Well Data

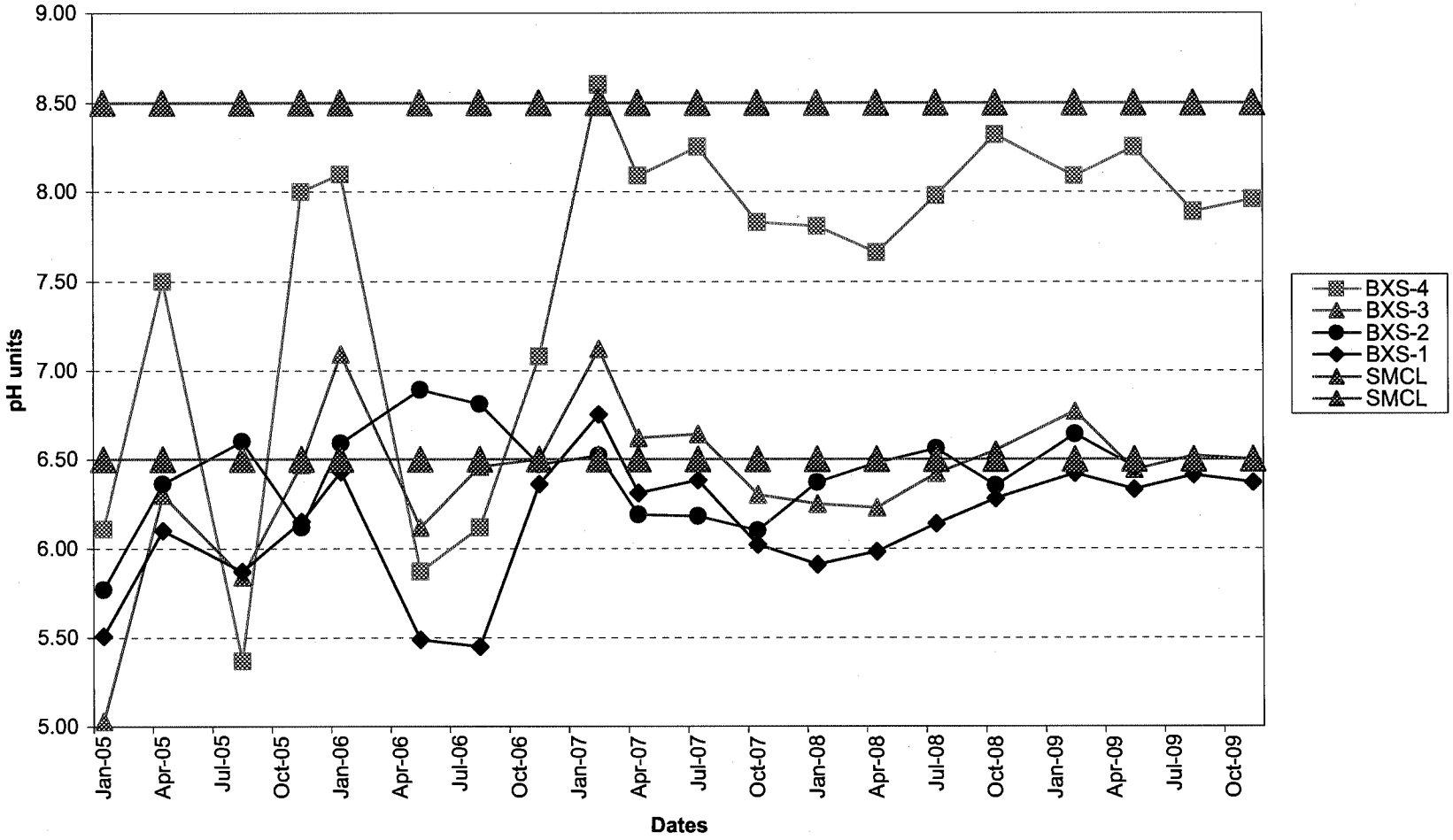
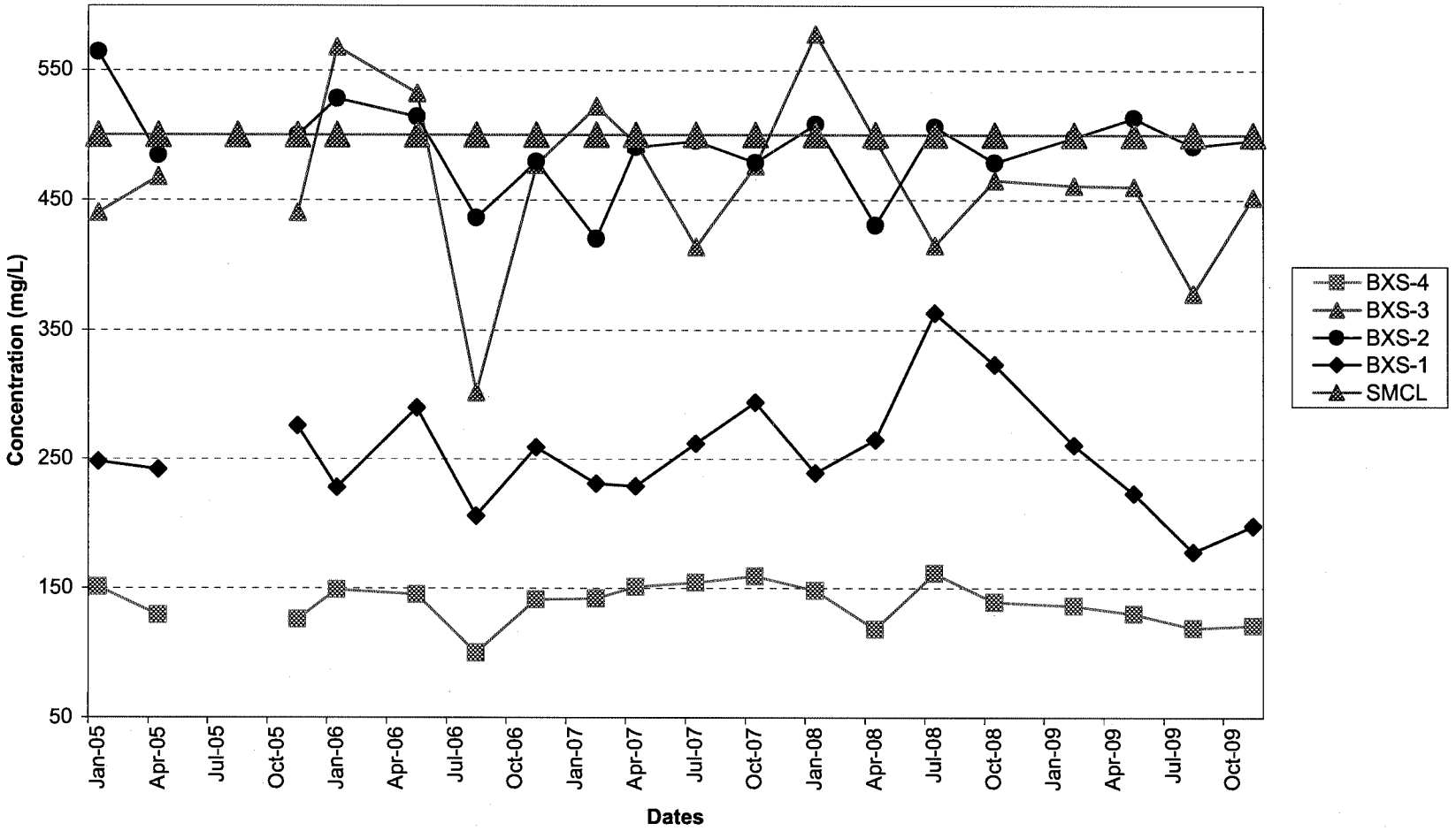


Figure 18. Concentration Trends for Total Dissolved Solids
South Woodwaste Landfill Monitoring Well Data



Tables

Table 1. Summary of Groundwater Elevations in 2009 (South Landfill)

	Inner Casing (inches)	Depth of Well (ft bgs)	Length of Screen (ft)	TOC Elevation (ft asd)	TOC Elevation 10/2002a (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	142.90	37.90	47.90	2/09/09	33.55	66.04
								5/04/09	33.92	65.67
								8/04/09	36.57	63.02
								11/16/09	36.55	63.04
BXS-2	2	45.40	10	99.77	143.02	35.40	45.40	2/09/09	32.89	66.88
								5/04/09	32.05	67.72
								8/04/09	34.54	65.23
								11/16/09	36.60	63.17
BXS-3	2	44.15	10	98.99	142.07	34.15	44.15	2/09/09	28.32	70.67
								5/04/09	27.89	71.10
								8/04/09	30.54	68.45
								11/16/09	33.66	65.33
BXS-4	2	47.40	10	100.34	143.42	37.40	47.40	2/09/09	11.77	88.57
								5/04/09	12.24	88.10
								8/04/09	17.02	83.32
								11/16/09	12.04	88.30

Notes:

a) Wells were resurveyed in October 2002. Groundwater elevations are based on the earlier 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 Landfill)

Date	Average Gradient *i* (cm/cm)	Hydraulic Conductivity K (cm/sec)	Porosity n_e	Velocity v (cm/sec)	Velocity v (ft/day)
2/09/09	0.0198	3.00E-02 to 6.00E-02	0.300	0.002 to 0.004	5.613 to 11.225
5/04/09	0.0186			0.002 to 0.004	5.272 to 10.545
8/04/09	0.0165			0.002 to 0.003	4.677 to 9.354
11/16/09	0.0230			0.002 to 0.005	6.520 to 13.039

Table 3a. Field Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	pH (standard units)				Conductivity (µS/cm)				Temperature (°C)			
Primary MCL [a] Secondary MCL [a]	6.5 - 8.5				700							
	BXS-4	**BXS-3**	**BXS-2**	**BXS-1**	**BXS-4**	**BXS-3**	**BXS-2**	**BXS-1**	**BXS-4**	**BXS-3**	**BXS-2**	**BXS-1**
Apr-00	7.59	7.51	7.53	7.50	187	831	875	431	10.8	15.30	16.10	15.2
Jul-00	7.74	6.58	6.52	6.18	182	822	905	464	13.5	19.90	15.90	14.4
Oct-00	7.92	6.39	6.45	6.22	185	855	833	502	9.9	16.2	19.40	12.6
Jan-01	8.07	7.11	6.73	6.55	182	925	893	522	8	11.4	10.60	9.6
Apr-01	7.52	6.49	6.47	6.07	184	860	860	476	9.4	14.9	15.30	14
Jul-01	6.89	7.87	8.37	7.26	183	833	850	477	8.6	17.3	14.10	13.8
Oct-01	6.91	6.70	6.05	5.71	203	872	847	495	11.5	15.4	15.50	14
Jan-02	7.30	6.38	6.28	6.14	186	825	844	474	7.1	10.6	10.80	9.3
Apr-02	7.73	6.57	6.35	6.09	181	832	838	441	10.4	14.9	13.40	11.9
Jul-02	7.68	6.26	6.31	6.06	178	827	840	469	11.9	16.4	14.40	13.1
Oct-02	6.95	6.36	6.49		205	930	930		9.8	13.2	13.20	
Jan-03	7.77	6.14	6.12	5.93	178	1430	1400	1130	9.8	13.4	13.3	11.6
Apr-03	7.91	6.96	6.52	5.97	191	899	808	442	9.6	13.6	13.4	11.7
Jul-03	7.90	6.33	6.25	6.12	193	945	869	441	10.91	13.58	13.37	16.19
Oct-03	7.84	6.26	6.07		207	945	883		10.16	13.76	13.92	
Feb-04	7.14	5.31	4.73	8.87	174	699	737	297	9.58	13.13	12.79	12.54
Apr-04	7.48	6.11	6.07	5.84	197	836	838	339	9.69	13.42	12.89	13.71
Jul-04	7.38	6.02	5.96	5.92	216	926	874	417	10.27	13.76	13.51	13.66
Oct-04	7.54	6.16	6.11	6.01	203	949	834	478	10.81	13.82	14.48	13.14
Jan-05	6.11	5.03	5.16	5.51	187	571	768	328	9.88	13.52	12.9	11.92
Apr-05	7.50	6.30	6.20	6.10	194	785	812	380	9.6	13.5	13	11.9
Aug-05	5.37	5.84	5.77	5.87	195	788	794	426	10.51	13.16	12.84	12.61
Dec-05	8.00	6.47	6.36	6.15	194	854	778	439	9.7	12.2	12.5	11.7
Jan-06	8.10	7.09	6.60	6.43	201	740	778	384	9.6	12.6	12.4	11.7
May-06	5.87	6.12	6.12	5.49	182	744	730	392	10.1	138	13.9	12.6
Aug-06	6.12	6.46	6.59	5.45	181	839	800	380	10.2	13.4	12.9	12.3
Nov-06	7.08	6.50	6.89	6.36	201	817	784	501	10.9	12	12.4	11.7
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
Oct-07	7.83	6.30	6.19	6.02	199	810	804	495	9.8	12.8	12.5	12
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

Table 3a. Field Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	EH (mV)				Dissolved Oxygen (mg/L)				Methane (Percent)			
Primary MCL [(a)] Secondary MCL [(a)]												
	BXS-4	BXS-3	BXS-2	BXS-1	BXS-4	BXS-3	BXS-2	BXS-1	BXS-4	BXS-3	BXS-2	BXS-1
Apr-00	-80	-70	80	120	0	0.8	0.00	0	nt	nt	nt	nt
Jul-00	-70	-45	120	135	2.22	1.62	2.33	0.76	nt	nt	nt	nt
Oct-00	-1	0	0	130	4.99	5.24	5.22	5.89	nt	nt	nt	nt
Jan-01		-20	90	110	4.3	2.54	1.28	6.98	nt	nt	nt	nt
Apr-01	-65	45	105	100	0.75	1.37	1.11	1.22	nt	nt	nt	nt
Jul-01	-1	1	0	120	1.46	0.99	1.32	0.33	nt	nt	nt	nt
Oct-01	180	20	50	115	0.99	0.83	0.93	0.86	nt	nt	nt	nt
Jan-02	-65	-5	80	160	1.37	1.39	1.01	1.96	nt	nt	nt	nt
Apr-02	-45	0.5	135	180	0.87	2.17	0.79	0.49	nt	nt	nt	nt
Jul-02	-55	-5	90	180	1.24	0.84	1.01	0.4	nt	nt	nt	nt
Oct-02	60	57	166		7.97	1.72	1.37		nt	nt	nt	nt
Jan-03	-3	183	217	258	3.92	2.04	2.74	3.4	nt	nt	nt	nt
Apr-03	-31	43	126	366	7.8	5.5	3.64	5.56	nt	nt	nt	nt
Jul-03	-253	-57	-9	202	0.82	2.28	0.44	2.79	nt	nt	nt	nt
Oct-03	-162	35	59		1.53	2.82	3.31		nt	nt	nt	nt
Feb-04	-110	-6	35	143	11.24	4.81	8.84	7.39	nt	nt	nt	nt
Apr-04	-174	-28	51	212	0.35	1.27	1.28	3.18	nt	nt	nt	nt
Jul-04	-92	6	30	182	0.41	0.46	1.52	2.73	nt	nt	nt	nt
Oct-04	-198	-39	11	148	4.57	3.06	10.92	3.36	nt	nt	nt	nt
Jan-05	5	3	3	4	7.10	4.66	3.80	4.46	nt	nt	nt	nt
Apr-05	-171	-1	67	317	1.1	4.4	1.7	6.4	0.0	0.0	0.0	0.0
Aug-05	-86	-1	84	84	4.13	9.66	4.74	3.98	nt	nt	nt	nt
Dec-05	-120	-25	51	177	8	1.9	6.5	0.7	0.0	0.0	0.0	0.0
Jan-06	5	28	76	179	2.70	10.50	3.70	0.9	nt	nt	nt	nt
May-06	-147	-85	59	225	3.6	0.7	1.4	1.6	0.0	0.0	0.0	0.0
Aug-06	-126	-77	48	148	2.9	4.5	2	0.9	nt	nt	nt	nt
Nov-06	-138	3	80	212	1.3	7.4	3	1.7	0.0	0.0	0.0	0.0
Feb-07	-40	-103	0.8	241	9.80	2.40	3	2.3	nt	nt	nt	nt
Apr-07	-136	-113	45	187	1.20	1.80	1.2	0.8	nt	nt	nt	nt
Jul-07	-145	-113	62	219	0.00	0.00	0	0	0.0	0.0	0.0	0.0
Oct-07	-148	-97	40	226	0	0	0	0	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

Notes: (a) Primary and secondary MCLs (maximum contaminant levels) per WAC 246-290-310.
nt Not tested

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	pH (standard units)									Conductivity (umhos/cm)								
Primary MCL Secondary MCL	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 blk	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	7.97		6.47		6.39		6.15	6.08	6.01	150		568		685		342	344	2 U
Jul-00	7.78		6.34		6.31		5.96	5.93	5.16	165		589		767		401	429	2 U
Oct-00	7.99		6.47		6.37		6.15	6.12	5.72	159		614		719		414	436	2 U
Jan-01	8.03		6.83		6.48		6.06	6.1	5.52	189		872		878		473	494	2
Apr-01	7.87		6.9		6.36		6.33	6.01	5.4	193		901		884		506	474	3
Jul-01	7.96		6.64		6.44		6.09	6.12	5.53	193		885		890		489	490	1
Oct-01	7.58		6.36		6.27		6.07	5.96	5.92	195		887		861		504	500	6
Jan-02	8.03		6.45		6.34		6.17	6.14	5.77	192		806		842		471	474	2 U
Apr-02	8.02 J		6.6 J		6.32 J		6 J	6.06 J	5.9 J	192		804		863		443	445	2
Jul-02	8		6.4		6.51		6.21	6.2	5.9	176		710		794		434	425	2 U
Oct-02			6.51		6.57							817		785				
Jan-03																		
Apr-03																		
Jul-03									5.86									2 U
Oct-03	8.04	7.99	6.56		6.41				7.05	182	182	851		789				2 U
Feb-04	8	8	6.37		6.39		6.22		5.76	182	179	692		736		286		0.6 J
Apr-04	7.91	7.92	6.41		6.38		6.14		5.65	172	175	696		716		295		2 U
Jul-04	8	8.01	6.52		6.5		6.28		5.78	171	168	739		681		347		2 U
Oct-04	7.96	7.97	6.57		6.67		6.26		6.5	179	178	933		819		395		0.2 J
Jan-05	7.95	7.97	6.28		6.55		6.29		5.63	194	195	526		813		334		1.8 J
Apr-05	8.06	8.1	6.82		6.6		6.42		6.06	191	188	749		803		370		1.4 J
Aug-05	7.98	8.02	6.67		6.54		6.28		5.95	190	192	741		799		418		2 U
Nov-05	8	7.91	6.73		6.63		6.33		5.78	194	194	793		778		442		1.4 J
Jan-06	7.87	7.85	6.36		6.36		6.15		5.42	194	194	735		772		368		3
May-06	7.94	7.94	6.36		6.41		6.31		5.45	195	195	682		792		404		1.5 J
Aug-06	7.88	7.9	6.4		6.33		6.39		5.19	226	228	824		935		481		2
Nov-06	7.62	6.08	6.43		6.41		6.09		5.56	188	406	682		719		424		1.8 J
Feb-07	7.81	7.9	6.38		6.36		6.36		5.5	193	192	517		743		338		5
Apr-07	7.61	7.45	6.05		6.1		5.94		5.77	195	199	565		779		377		2 U
Jul-07	7.69		6.34		6.96		6.28	6.23		201		518		798		410	401	
Oct-07	7.82	7.85	6.36		6.35		6.18			200	201	638		814		482		
Jan-08	7.75		6.41		6.46		6.23	6.25		215		681		747		375	360	
Apr-08	7.76		6.36		6.44		6.38	6.38		188		658		797		475	472	
Jul-08	7.83		6.32		6.45	6.4	6.27			206		659		853	865	592		
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	0
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	6.4	194		598		823		299	314	3.4

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Ammonia as N (mg/L)									Chemical Oxygen Demand (COD) (mg/L)								
Primary MCL Secondary MCL																		
	BXS-4	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**	**BXS-4**	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00	0.51		0.3		0.05 U		0.05 U	0.05 U	0.05 U	16		91		44		24	21	5 U
Jul-00	0.54		0.31		0.05		0.05 U	0.05	0.05 U	5 U		49		49		29	14	5 U
Oct-00	0.46		0.16		0.05 U		0.05 U	0.05 U	0.05 U	29		77		41		26	27	5 U
Jan-01	0.63		0.12		0.05 U		0.1	0.07	0.06	7		68		40		21	23	5 U
Apr-01	0.48		0.14		0.05 U		0.05 U	0.05 U	0.05 U	14		79		47		27	27	5 U
Jul-01	0.53		0.11		0.05 U		0.05 U	0.05 U	0.05 U	38		71		46		23	24	5 U
Oct-01	0.37		0.05 U		0.05 U		0.05 U	0.05 U	0.05 U	10		60		37		18	19	5 U
Jan-02	0.47		0.07		0.05 U		0.05 U	0.05 U	0.05 U	7		54		41		20	17	5 U
Apr-02	0.38		0.19		0.05 U		0.05 UJ	0.05 U	0.05 U	19		59		36		14	16	5 U
Jul-02	0.49		0.3		0.05 UJ		0.05 U	0.05 U	0.05 U	25		57		29			14 J	5 U
Oct-02	0.05 U		0.2		0.05 U					37		49		33				
Jan-03	0.44		0.02 J		0.05 U		0.05 UJ	0.46	0.025	3		53		35		22	3	5 U
Apr-03	0.53		0.15		0.05 U		0.05 U	0.05 U	0.025	2 J		59		40		16	16	5 U
Jul-03	0.55		0.18		0.02 J		0.05 U	0.05 U		5 U		56		37		14	14	
Oct-03	0.48	0.53	0.25		0.05 U				0.05 U	4 J	3 J	55		36				5 U
Feb-04	0.51	0.51	0.12		0.04 J		0.05 U		0.05 U	5 U	5 U	49		35		5		5
Apr-04	0.55	0.55	0.61		0.05		0.05 U		0.05 U	5 U	5 U	65		37		10		5 U
Jul-04	0.5	0.47	0.13		0.06		0.05 U		0.05 U	5 U	5 U	58		37		14		5 U
Oct-04	0.53	0.51	0.12		0.05 U		0.05 U		0.05 U	4 J	3 J	63		43		15		5 U
Jan-05	0.52	0.51	0.21		0.05 U		0.05 U		0.05 U	24	16	72		52		20		2 J
Apr-05	0.51	0.53	0.58		0.05 U		0.05 U		0.05 U	5	6	69		43		14		5
Aug-05	0.5	0.5	0.74		0.03 J		0.05 U		0.05 U	2 J	5 U	71		36		13		5 U
Nov-05	0.49	0.48	0.17		0.05 U		0.05 U		0.05 U	5 U	3 J	66		40		17		5 U
Jan-06	0.46	0.47	0.15		0.05 U		0.01 J		0.05 U	5 U	3 J	59		35		13		5 U
May-06	0.51	0.51	1.13		0.027 J		0.019 J		0.018 J	2.6 J	2.6 J	78		38		8		5 U
Aug-06	0.5	0.51	1.29		0.011 J		0.011 J		0.05 U	4 J	2.5 J	85		36		13		5 U
Nov-06	0.47	0.05 U	0.41		0.022 J		0.05 U		0.05 U	5 U	16	66		35		15		5 U
Feb-07	0.5	0.52	0.93		0.05 U		0.05 U		0.05 U	5 U	5 U	75		36		6		5 U
Apr-07	0.5	0.5	0.71		0.05 U		0.05 U		0.05 U	6	6	80		39		14		5 U
Jul-07	0.5		0.74		0.05 U		0.05 U	0.05 U		5 U		67		31		5 U	6	
Oct-07	0.48	0.49	0.98		0.05 U		0.05 U			5 U	5 U	71		33		17		
Jan-08	0.55		0.41		0.05 U		0.05 U	0.05 U		5 U		61		35		12	13	
Apr-08	0.46		0.39		0.05 U		0.05 U	0.05 U		3 J		76		42		13	14	
Jul-08	0.48		0.75		0.05 U	0.05 U	0.05 U			6		75		37	35	24		
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

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Chloride (mg/L)									Nitrate + Nitrite as N (mg/L)								
Primary MCL Secondary MCL	250									10								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	2		3.9		7.4		8.2	8.2	0.2 U	0.2 U		0.2 U		0.2 U		0.4	0.4	0.2 U
Jul-00	2		5.5		8.8		8.3	8.2	0.2 U	0.1		0.2 U		0.2 U		0.5	0.5	
Oct-00	2		5		8.1		6.7	7	0.2 U	0.2 U		0.2 U		0.2 U		0.2 U	0.2 U	0.2 U
Jan-01	2.2		5.5		8.7		7.7	7.7	0.2 U	0.2 U		0.2 U		0.2 U		0.3	0.3	0.2 U
Apr-01	2		4.8		7.6		5.9	5.8	0.2 U	0.2 U		0.2 U		0.2 U		0.2	0.4	0.2 U
Jul-01	2		4.4		6.7		5.6	5.5	0.2 U	0.2 U		0.2 U		0.2 U		0.4	0.4	0.2 U
Oct-01	2		4.1		6.7		4.3	4.3	0.2 U									
Jan-02	2		3.2		6.1		5	4.9	0.2 U	0.2 U		0.2 U		0.2 U		0.2	0.3	0.2 U
Apr-02	2		2.9		6.3		5.7	5.9	0.2 U	0.2 U		0.2 U		0.2 U		1.1	1.1	0.2 U
Jul-02	2.2		4		6.7		6	6.4	0.2 U	0.2 U		0.2 U		0.2 U		0.7	0.6	0.2 U
Oct-02	1.9		3		5.6					0.9				0.2 U				
Jan-03	2		3.5		5.8		4	2.2	0.2 U									
Apr-03	2.1		4		6		4.9	4.7	0.2 U	0.2 U		0.2 U		0.2 U		0.9	0.8	0.2 U
Jul-03	1.8		3		5.2		4.8	5	0.2 U	0.2 U		0.2 U		0.2 U		1.5	1.5	0.02 J
Oct-03	2	1.8	3.1		5				0.2 U	0.2 U	0.2 U	0.2 U		0.2 U				0.2 U
Feb-04	1.9	1.9	2.7		4.6		6.1		0.2 U	0.06 J	0.06 J	0.08 J		0.1 J		1.1		0.2 U
Apr-04	1.8	1.8	3.1		4.6		4.8		0.2 U	0.2 U	0.2 U	0.2 U		0.2 U		1.4		0.2 U
Jul-04	1.9	1.8	2.7		4.8		4.3		0.2 U	0.05 J	0.05 J	0.2 U		0.2 U		0.6		0.04 J
Oct-04	1.6	1.6	0.8		3.3		3		0.2 U	0.05 U	0.05 U	0.01 J		0.01 J		0.3		0.2 U
Jan-05	1.7	1.7	4.6		5		5		0.2 U	0.01 J	0.02 J	0.03 J		0.01 J		0.75		0.01 J
Apr-05	1.9	1.9	3.8		4.7		4.6		0.2 U	0.2 U	0.2 U	0.2 U		0.2 U		1		0.2 U
Aug-05	1.7	1.7	3.6		4.2		5.4		0.2 U	0.05 U	0.05 U	0.02 J		0.01 J		0.95		0.05 U
Nov-05	1.8	1.9	2.8		3.7		3.1		0.04 J	0.1 J	0.09 J	0.08 J		0.11 J		0.3		0.1 J
Jan-06	1.6	1.6	3.5		3.7		5.3		0.2 U	0.09 J	0.1 J	0.07 J		0.2 U		0.5		0.1 J
May-06	1.7	1.9	1.9		2.8		2.7		0.4 U	0.05 U	0.05 U	0.16		0.039 J		0.92		0.05 U
Aug-06	1.8	1.8	3.1		4		4.7		0.4 U	0.05 U	0.05 U	0.14		0.01 J		0.96		0.05 U
Nov-06	1.8	3.4	2.5		3.5		3.4		0.2 U	0.05 U	0.46	0.07		0.008 J		0.46		0.05 U
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		1.02
Apr-07	1.9	1.9	2.3		4.5		5.4		0.2	0.23	1.21	0.2		0.63		0.85		0.63
Jul-07	1.7		2.8		4.1		5.1	5		0.05 U		0.19		0.08		0.7	0.68	
Oct-07	1.7	1.7	2.7		4.3		5.2			0.05 U	0.05 U	0.17		0.05 U		0.47		
Jan-08	2		3.1		4.5		5.8	5.8		0.05 U		0.07		0.05 U		0.58	0.54	
Apr-08	1.8		2.4		4.4		5	5.1		0.05 U		0.05 U		0.05 U		0.74	0.73	
Jul-08	1.8		2.8		4.2	4.4	4.5			0.1		0.15		0.05 U	0.05 U	1.48		
Oct-08	1.9		3.6		4.9	4.9	5.1			0.05 U		0.1		0.026 J	0.008 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

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Nitrate as N (mg/L)									Nitrite as N (mg/L)								
Primary MCL Secondary MCL																		
	BXS-4	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**	**BXS-4**	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00																		
Jul-00									0.05 U									0.1 U
Oct-00																		
Jan-01																		
Apr-01																		
Jul-01																		
Oct-01	0.2 UJ		0.3 UJ		0.3 UJ		0.3 UJ	0.3 UJ	0.3	0.1 U		0.2		0.1 J		0.1 UJ	0.1 U	0.1 U
Jan-02																		
Apr-02																		
Jul-02																		
Oct-02			0.003									0.004						
Jan-03	0.003		0.1 UJ		0.1 UJ		0.3 J	0.3	0.05	0.007		0.1 UJ		0.1 UJ		0.1 UJ	0.007	0.1 UJ
Apr-03																		
Jul-03																		
Oct-03																		
Feb-04																		
Apr-04																		
Jul-04																		
Oct-04																		
Jan-05																		
Apr-05																		
Aug-05																		
Nov-05																		
Jan-06																		
May-06																		
Aug-06																		
Nov-06																		
Feb-07																		
Apr-07																		
Jul-07																		
Oct-07																		
Jan-08																		
Apr-08																		
Jul-08																		
Oct-08																		
Feb-09																		
May-09																		
Aug-09																		
Nov-09																		

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Solids, total dissolved (TDS) (mg/L)									Sulfate (mg/L)								
Primary MCL Secondary MCL	500									250								
	BXS-4	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**	**BXS-4**	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00	180		561		598		330	318	27	1.6		0.3		0.3		7.7	7.6	0.2
Jul-00	156		517		532		323	291	5 U	1.7		0.2		0.2		7.8	7.2	0.2
Oct-00	94		503		501		281	275	5 U	1.6		0.2 U		0.3		6.1	6.1	0.2
Jan-01	131						286	272	5 U	1.2		0.2		0.4		7.7	7.8	0.2
Apr-01	134		556		456		284	258	5 U	1.6		0.4		0.4		8.3	8	0.3
Jul-01	134		420		320		212	262	5 U	1.6		0.2		0.3		7.2	7.1	0.2
Oct-01	140		408		420		262	274	8	1.2		0.2		0.3		6.7	6.5	0.2
Jan-02	136		496		428		275	246	5 U	1.1		0.7		0.3		6.8	7	0.2
Apr-02	167		520		584		356	302	5 U	1.6		0.3		0.5		7.9	8.1	0.2
Jul-02	174		592		532		384	352	10	1.6		0.3		0.3		7.5	7.6	0.2
Oct-02	112		518		564					1.1		0.4		0.3				
Jan-03	117		604		620		392	168	5 U	1		0.4		0.4		4.2	1.1	0.2
Apr-03	143		524		460		236	252	5 U	1.1		0.19 J		0.3		8.2	7.6	0.2
Jul-03	128		592		492		245	250	5 U	1.5		0.2 U		0.2		9.6	9.7	0.2
Oct-03	140	137	568		528				5	1	0.7	0.2 U		0.2				0.2
Feb-04	123	113	404		428		202		5 U	1.3	1.3	0.15 J		0.14 J		12.1		0.2
Apr-04	126	138	512		492		226		5 U	0.9	1	0.2 U		0.2 U		10.5		0.2
Jul-04	128	123	528		396		222		5 U	0.9	0.9	0.2 U		0.2 U		7.7		0.2
Oct-04	129	132	528		440		262		5 U	1.5	1.4	0.2 U		0.2 U		6.9		0.2
Jan-05	151	150	440		564		248		5 UX	1	0.9	0.2 U		0.2 U		12.6		0.2
Apr-05	129	128	468		484		242		5 U	1.8	1.6	0.2 U		1.4		11.7		0.2
Aug-05										0.9	1	0.2 U		0.2 U		8.3		0.2
Nov-05	126	127	440		500		276		5 U	1.6	1.6	0.2 U		0.3		7.9		0.2
Jan-06	149	169	568		528		228		34	1.3	1.4	0.2 U		0.3		13.2		0.2
May-06	145	156	532		514		290		27	1.4	1.5	0.07 J		0.4 U		11.2		0.4
Aug-06	100	90	302		436		206		5 U	1.4	1.4	1.7		0.3		11.2		0.4
Nov-06	141	242	477		479		259		6	1.6	3.4	0.4		0.15 J		9.7		0.2
Feb-07	142	146	522		420		231		5 U	1.4	1.4	0.09 J		0.15 J		14.8		0.03
Apr-07	151	140	493		490		229		5 U	1.3	1.3	0.2 U		0.2 U		13.9		0.2
Jul-07	154		414		495		262	248		1.4		0.2 U		0.2 U		11.3	11.4	
Oct-07	159	151	476		478		294			1.3	1.3	0.063 J		0.088 J		9.4		
Jan-08	148		578		508		239	233		0.8		0.2 U		0.2 U		14	14.9	
Apr-08	118		496		430		265	256		1.3		0.101 J		0.161 J		9.6	9.7	
Jul-08	161		415		506	505	363			1.3		0.119 J		0.137 J	0.152	6.2		
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
May-09	130		460		513		223	220	7	1.7		0.4		0.2 U		6.7	6.6	0.2
Aug-09	119		378	425	491		178		5 U	1.1		0.09 J	0.1 J	0.12 J		13.9		0.2
Nov-09	121		452		496		198	201	5 U	3.32		0.2 U		0.2 U		15	14.9	0.2

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Tannin & Lignin (mg/L)									Total Organic Carbon (TOC) (mg/L)								
Primary MCL Secondary MCL																		
	BXS-4	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**	**BXS-4**	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00	0.3		9.1		1.1		0.3	0.3	0.2 U	0.7		28.8		13.5		6.6	6.6	0.5 U
Jul-00	0.3		7.1		1.1		0.3	0.4	0.2 U	1.1		29.2		16.8		7.7	7.1	0.5 U
Oct-00	0.4		8.2		1		0.5	0.5	0.2 U	1.3		0.5 U		15.5		9.7	9.7	0.5 U
Jan-01	0.6		12.2		1.7		0.6	0.7	0.2 U	1		27.1		14.8		8.6	8.6	0.5 U
Apr-01	0.2		3.2		0.9		0.4	0.4	0.2 U	1.2		26.1		14.6		7.5	7.5	0.5 U
Jul-01	0.4		6.4		1.4		0.5	0.5	0.2 U	9.3		25.9		15.1		6.8	7.3	0.5 U
Oct-01	0.5		21.6		2.8		0.6	0.8	0.2 U	0.9		21.6		13.7		7.1	7.1	0.5 U
Jan-02	0.5		9.9		1.3		0.3	0.4	0.2 U	1		19.1		13.5		5.9	5.8	0.5 U
Apr-02	0.5		10.9		1.5		0.4	0.6	0.2 U	1		23		14.2		6.4	6.4	0.5 U
Jul-02	0.4		8		1		0.5	0.3	0.2 U	0.8		21.8		11.9		6	5.7	0.5 U
Oct-02	0.3		8.1		1.1							23.1		15				
Jan-03	0.3		9.5		0.9		0.8	0.3	0.2 U	1.1		21		13.2		8.4	0.9	0.4 J
Apr-03	0.6		2.5		2		0.3	0.3	0.2 U	1		22.2		14.1		5.9	6	0.5 U
Jul-03	0.3		4.6		1.5		0.2	0.2	0.2 U	0.7								
Oct-03	0.5	0.5	8.5		1.9				0.2 U	0.25 U	10.4	21.2		14.6				0.4 J
Feb-04	0.4	0.5	10		1.9		0.2		0.08 J	1	0.9	19.7		14		3.7		1
Apr-04	0.5	0.5	9.9		1.8		0.2 U		0.2 U	0.8	0.9	24.8		15		4.6		0.5 U
Jul-04	0.5	0.5	4.4		0.2 U		0.3		0.14 J	0.9	1	23.6		15		6.1		0.17 J
Oct-04	0.5	0.4	8.3		1.6		0.3		0.08 J	1	0.9	24.4		14.7		5.8		0.5 U
Jan-05	0.3	0.3	4.5		1		0.1 J		0.2 U	1	0.9	18.6				4.1		0.5 U
Apr-05	0.4	0.5	8.9		1.2		0.18 J		0.18 J	1.2	1	26.7		16		6		0.6
Aug-05	0.4	0.4	8.7		1		0.2		0.05 J	1.1	1	29.9		17		6.5		0.2 J
Nov-05	0.4	0.4	10.3		1.5		0.4		0.09 J	1.1	0.9	25.2		14.5		6		0.1 J
Jan-06	0.4	0.4	10.8		0.5		0.2		0.2 U	1	1	25.1		14.2		4.7		0.07 J
May-06	0.4	0.4	16.7		1.2		0.17 J		0.5	1	0.9	29.5		14.5		4.3		0.09 J
Aug-06	0.3	0.3	7.6		1.6		0.15 J		0.2 U	1	0.9	31.1		13.8		4.9		0.5 U
Nov-06	0.3	0.2	10.7		1.3		0.2		0.2 U	1.1	6.8	28		15.3		6.5		0.5 U
Feb-07	0.3	0.4	4.1		1.1		0.16 J		0.05 J	1.1	1	28.2		15.6		3.6		0.5 U
Apr-07	0.3	0.3	11.9		1.3		0.2 U		0.2 U	1	1	28.4		16.7		4.8		0.5 U
Jul-07	0.3		13.4		1.3		0.12 J	0.13 J		0.9		28.6		15.6		5.2	5.2	
Oct-07	0.3	0.3	4.7		1.1		0.3			1	0.9	26.4		15.5		7.1		
Jan-08	0.3		8		1.2		0.3	0.3		0.8		23.9		15.8		6	6.1	
Apr-08	0.3		22.5		1.2		0.2	0.2		0.9		27.8		17.5		5.9	5.9	
Jul-08	0.2		11.5		1.2	1.2	0.2			0.9		27.9		15.9	16.2	8.3		
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

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Total Coliforms (MPN/100 mL)								
Primary MCL Secondary MCL	<5%[a]								
	BXS-4	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00	2 U		2 U		2 U		11	7	
Jul-00	2 U		110		6		2 U	2 U	2 U
Oct-00	4 J		80 J		11 J		2 UJ	2 J	2 UJ
Jan-01	2 UJ		14 J		4 J		2 UJ	2 UJ	2 UJ
Apr-01	2 UJ		2 UJ		17 J		2 UJ	2 UJ	2 UJ
Jul-01	2 UJ		2 UJ		500 J		2 UJ	2 UJ	2 UJ
Oct-01	2 UJ		900 J		2 UJ		2 U	2 UJ	2 UJ
Jan-02	2 U		2 UJ		2 UJ		2 UJ	2 UJ	2 UJ
Apr-02	2 UJ				2 UJ		2 UJ	2 UJ	2 UJ
Jul-02	2 UX		1600 E		8		2 U	2 UX	2 UX
Oct-02	2 U		2						
Jan-03	2		2 U		2 U		2 U	2	2 U
Apr-03	2 U		2 U		2 U		2 UJ	2 UJ	2 UJ
Jul-03	23 J		2 UJ		1600 J		30 J	300 J	
Oct-03	900 J	300 J	2 UJ		2 UJ				2 UJ
Feb-04	1	1 U	2 UX		2 UX		25 X		1 U
Apr-04	2 UX	2 UX	2 UX		2 UX		2 UX		2 UX
Jul-04	23	23	14		4		2 U		2 U
Oct-04	2 U	2	12		2 U		4		2 U
Jan-05	2 U	2 U	27		2 U		2 U		2 U
Apr-05	2 U	2 U	2 U		220		2 U		2 U
Aug-05	2 U	2 U	2 U		2 U		2 U		2 U
Nov-05	2 U	2 U	170		17		2 U		2 U
Jan-06	2 U	2 U	5.1		2 U		2 U		2 U
May-06	-9 U	2 U	2 U		2 U		2 U		2 U
Aug-06	2 U	2 U	2 U		2 U		36.4		2 U
Nov-06	2 U	8.7	2 U		129.8		5.3		2 U
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		2419.6 >		1 U	1	
Oct-07	1 U	1 U	1 U		5.1		1 U		
Jan-08	1 U		1 U		1 U		1 U	1 U	
Apr-08	1 U		1 U		2		1 U	1 U	
Jul-08	1 U		1 U		248.9	70.8	1 U		
Oct-08	1 U		1 U		1 U	1 U	1 U		
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

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

Notes: (a) <5% criteria indicates less than 5 percent of total Coliform samples can be positive in a month.
MCL - Maximum contaminant levels per WAC 246-290-310.
SMCL - Secondary maximum contaminant levels per WAC 246-290-310.
J - Estimated Value
U - Not detected. Reporting limit shown.
X - Analysis performed past method holding time
> - Exceeds maximum detection level of test

Table 3c. Metals from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Arsenic, dissolved (µg/L)									Barium, dissolved (µg/L)								
Primary MCL Secondary MCL	10									2000								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	5		46		5 U		5 U	5 U	5 U	26		83		56		29	27	5 U
Jul-00	6		49		5 U		5 U	5 U	5 U	26		105		51		28	27	5 U
Oct-00	5		6 U		5 U		5 U	5 U	5 U	29		103		56		34	33	5 U
Jan-01	5 U		8		5 U		5 U	5 U	5 U	25		60		51		30	30	5 U
Apr-01	5		16		5 U		5 U	5 U	5 U	26		67		50		25	25	5 U
Jul-01	5		9		5 U		5 U	5 U	5 U	32		64		53		27	27	5 U
Oct-01	5		5		5 U		5 U	5 U	5 U	26		49		50		31	28	5 U
Jan-02	5 U		6		5 U		5 U	5 U	5 U	27.1		71.2		52.3		27.1	27.2	5 U
Apr-02	5		14		5 U		5 U	5 U	5 U	26		99		47		24	23	5 U
Jul-02	10 U		21.9		10 U		10 U	10 U	10 U	29.6		129		52.8		28.4	28.1	5 U
Oct-02	5.4		8		5 U					26.6		64.9		43.8				
Jan-03	4.7 B		5.3		1.4 B		1 B	4.9 B	5 U	26.8		55.7		47.2		30.8	28	5 U
Apr-03	5.2		4.6 B		1.2 B		5 U	5 U	5 U	29.1		54.4		48.7		20.3	20.1	5 U
Jul-03	6		5 U		5 U		5 U	5 U	5 U	32		58.1		42.1		18	18.9	5 U
Oct-03	4.9 B	5.3	3.7 B		5 U				5 U		28.8	50.7		47.8				5 U
Feb-04	5 U	5 B	3 B		5 U		5 U		4.9 B	5 U	28.3	65.3		45		10		29.1
Apr-04	5.6	5.5	8.5		5 U		5 U		5 U	29.3	29.1	111		48.8		19.9		5 U
Jul-04	5	5	3 B		1 B		5 U		5 U	31	29	54		55		21		5 U
Oct-04	5.7	5.3	4.4 B		5 U		5 U		5 U	29.4	28.3	53.3		43.3		23.4		5 U
Jan-05	5	5.1	2.8 B		5 U		5 U		5 U	30.2	30.2	103		47.2		16		5 U
Apr-05	5	5 B	6		1 B		5 U		5 U	29	28	91		44		23		5 U
Aug-05	4 B	5 B	9		5 U		5 U		5 U	28	28.4	94.4		41.9		23		5 U
Nov-05	6	5 U	7		2 B		5 U		5 U	29	5 U	63		44		23		5 U
Jan-06	5.2	5.6	2.9 B		5 U		5 U		5 U	31	28.3	59.5		43		17.8		5 U
May-06	6.5	5.8	21.9		1.2 B		5 U		5 U	30.4	32	115		48.1		23.9		5 U
Aug-06	5.1	5 B	99.8		5 U		5 U		5 U	33	35.3	103		48		24.3		5 U
Nov-06	7.3	5 U	29.8		1.1 B		5 U		5 U	30.4	25	104		44.6		28.4		3 B
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		5 U	25.6	25.6	73.8		39.8		24.5		5 U
Jul-07	5.4		113		5 U		5 U	5 U		33		80.6		50.1		24.6	23	
Oct-07	5.4	4.8 B	67.2		5 U		5 U			29.4	29.3	83.2		48.3		26.5		
Jan-08	6.7		42.6		5 U		5 U	5 U		26.7		65.4		42.3		18.3	19.0	
Apr-08	4.4 J		117.0		5 U		5 U	5 U		27.6		111.0		41.7		22.1	22.6	
Jul-08	5.4		111.0		0.8 J	5 U	5 U			29.7		122.0		49.5	50.9	31.5		
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

Table 3c. Metals from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Cadmium, dissolved (µg/L)									Copper, dissolved (µg/L)								
Primary MCL Secondary MCL	5									1300								
	BXS-4	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**	**BXS-4**	**BXS-4 Dup**	**BXS-3**	**BXS-3 Dup**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00	4 U		4 U		4 U		4 U	4 U	4 U	10 U		10 U		10 U		10 U	10 U	10 U
Jul-00	4 U		4 U		4 U		4 U	4 U	4 U	10 U		10 U		10 U		10 U	10 U	10 U
Oct-00	4 U		4 U		4 U		4 U	4 U	4 U	10 U		10 U		10 U		10 U	10 U	10 U
Jan-01	4 U		4 U		4 U		4 U	4 U	4 U	10 U		10 U		10 U		10 U	10 U	10 U
Apr-01	4 U		4 U		4 U		4 U	4 U	4 U	10 U		10 U		10 U		10 U	10 U	10 U
Jul-01	4 U		4 U		4 U		4 U	4 U	4 U	10 U		10 U		10 U		10 U	10 U	10 U
Oct-01	5 U		5 U		5 U		5 U	5 U	5 U	10 U		10 U		10 U		10 U	10 U	10 U
Jan-02	5 U		5 U		5 U		5 U	5 U	5 U	10 U		10 U		10 U		10 U	10 U	10 U
Apr-02	5 U		5 U		5 U		5 U	5 U	5 U	10 U		10 U		10 U		10 U	10	10 U
Jul-02	5 U		5 U		5 U		5 U	5 U	5 U	10 U		10 U		10 U		10 U	10 U	10 U
Oct-02	5 U		1.1 B		1.1 B					10 U		10 U		10 U				
Jan-03	0.5 B		3.6 B		5 U		5 U	5 U	5 U	10 U		10 U		10 U		5.1 B	10 U	10 U
Apr-03	2 R		2 R		2 R		2 R	2 R	2 R	10 U		10 U		10 U		16.8 J	9.2 J	5.4 B
Jul-03	5 UJ		5 U		5 U		5 U	5 U	5 U	10 U		10 U		10 U		10 U	10 U	10 U
Oct-03	5 U	5 U	5 B		5 U				5 U	10 U	10 U	10 U		10 U				10 U
Feb-04	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		10 U		10 U		10 U
Apr-04	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		10 U		10 U		10 U
Jul-04	5 U	5 U	6		5 U		5 U		5 U	5 B	6 B	5 B		10 U		11		10 U
Oct-04	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		10 U		10 U		10 U
Jan-05	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		10 U		6.1 B		10 U
Apr-05	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		8 B		9 B		10 U
Aug-05	0.8 B	0.3 B	1.4 B		0.3 B		5 U		5 U	10 U	10 U	10 U		10 U		10 U		10 U
Nov-05	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		10 U		10 U		10 U
Jan-06	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		10 U		10 U		10 U
May-06	5 U	5 U	5 U		5 U		5 U		5 U	10 U	10 U	10 U		10 U		2.6 B		10 U
Aug-06	5 U	5 U	3.2 B		5 U		5 U		5 U	10 U	10 U	20 U		2.5 B		3.1 B		10 U
Nov-06	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-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	
Oct-07	5 U	5 U	5 U		5 U		5 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	
Apr-08	5 U		5 U		1.1 J		5 U	0.7 J		10 U		10 U		10 U		10 U	10 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		
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 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

Table 3c. Metals from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Iron, dissolved (µg/L)									Manganese, dissolved (µg/L)								
Primary MCL Secondary MCL	300									50								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	40		56,600		690		20 U	20 U	20 U	123		15,900		1,450		264	272	5 U
Jul-00	40		52,600		720		20 U	20 U	20 U	120		13,900		1,500		307	308	5 U
Oct-00	60		34,200		630		20 U	20 U	20 U	129		15,800		1,390		346	348	5 U
Jan-01	50		7,560		620		20 U	30	20 U	123		14,500		1,460		409	397	5 U
Apr-01	50		5,530		780		20 U	20 U	20 U	116		16,200		1,470		341	345	5 U
Jul-01	43.8		8,530		736		20 U	20 U	20 U	123		17,100		1,540		396	400	5 U
Oct-01	35		4,740		789		20 U	20 U	20 U	114		13,600		1,580		556	534	5 U
Jan-02	50		5,760		806		20 U	20 U	20 U	127		15,600		1,500		464	470	5 U
Apr-02	40		19,600		640		20 U	20 U	20 U	112		15,600		1,430		362	353	5 U
Jul-02	32.9		21,900		670		20 U	20 U	20 U	123		17,900		1,520		373	384	5 U
Oct-02	41.8		5,340		628					105		16,000		1,410				
Jan-03	39.9 J		3,220		714		20 U	126	20 U	103		14,800		1,560		733	107	5 U
Apr-03	40.8		4,280		780		20 U	20 U	20 U	118		17,800		1,560		431	451	5 U
Jul-03	53		3,680		926		20 U	20 U	20 U	115		15,900		1,390		370	377	5 U
Oct-03	36.1	36.9	903		836				20 U	115	110	14,500		1,580				5 U
Feb-04	20 U	41.4	2,950		753		20 U		48.1	5 U	113	15,700		1,410		277		115
Apr-04	42.4	90.6	8,890		796		20 U		20 U	110	111	14,900		1,420		144		5 U
Jul-04	60	50	4,290		750		20 U		20 U	189	114	18,200		1,420		326		5 U
Oct-04	40.3	39.3	1,710		836		20 U		20 U	110	107	17,700		1,430		478		5 U
Jan-05	41.6	42.4	6,520		761		20 U		20 U	110	112	8,510		1,270		172		2.8 B
Apr-05	46	48	10,900		769		20 U		20 U	120	120	14,200		1,350		210		5 U
Aug-05	41	40	18,300		732		5 B		20 U	107	107	14,100		1,300		160		0.3 B
Nov-05	42	20 U	4,330		770		20 U		4 B	112	5 U	17,200		1,300		429		5 U
Jan-06	46.6	43.2	2,590		740		20 U		20 U	116	114	17,200		1,260		367		5 U
May-06	40.1	41.9	67,900		842		20 U		20 U	109	114	13,400		1,320		105		5 U
Aug-06	38.7	40.5	91,400		860		20 U		5 B	113	112	13,000		1,350		121		5 U
Nov-06	33.3	20 U	28,700		811		20 U		20 U	113	261	17,500		1,390		268		0.5 B
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		20 U	107	106	13,500		1,330		123		5 U
Jul-07	38.3		88,100		699		20 U	20 U		118		14,000		1,330		268	268	
Oct-07	36.1	36	62,700		656		20 U			121	120	14,700		1,280		353		
Jan-08	41.3		35,500		608		7.8 J	8.2 J		125		17,900		1,270		422	428	
Apr-08	41.5		102,000		624		8.8 J	8.3 J		110		12,600		1,150		240	234	
Jul-08	35.2		96,800		593	591	20 U			111		13,100		1,190	1,210	309		
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	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 U	108		11,300		1,230		114	116	0.4 J
Aug-09	91.1		11.6 J	2,280	1340		91		1 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	1 J

Table 3c. Metals from Groundwater Sampling, April 2000 to November 2009 (South Landfill)

	Nickel, dissolved (µg/L)									Zinc, dissolved (µg/L)								
Primary MCL	100																	
Secondary MCL										5000								
	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-3 Dup	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	20 U		20 U		40		20 U	20 U	20 U	10 U		10 U		10 U		10 U	10 U	10 U
Jul-00	20 U		20 U		38		20	20	20 U	10 U		15		10 U		10 U	10 U	10 U
Oct-00	20 U		20 U		30		20 U	20 U	20 U	10 U		10 U		10 U		10	10 U	10 U
Jan-01	20 U		20 U		40		20 U	20	20 U	10 U		10 U		10 U		10 U	10	10 U
Apr-01	20 U		20 U		30		20 U	20 U	20 U	10 U		20		10		10 U	10	10 U
Jul-01	20 U		38		41		27	26	20 U	10 U		10 U		10 U		10 U	10 U	10 U
Oct-01	20 U		20 U		39		24	21	20 U	10 U		10 U		11		13	12	10 U
Jan-02	20 U		33		39		27	22	20 U	10 U		10 U		11		14	10 U	10 U
Apr-02	20 U		20		40		20 U	20 U	20 U	10 U		10 U		10 U		10 U	10 U	10 U
Jul-02	20 U		36.3		38.7		26.5	26.6	20 U	10 U		10.2		10 U		10 U	10 U	10 U
Oct-02	20 U		19.8 B		32.9					10 U		8.8 B		6.5 B				
Jan-03	20 U		32.2		37.3		34.7	20 U	20 U	10 U		10 U		14.7		16.8	10 U	10 U
Apr-03	20 U		22.9		39		20 U	20 U	20 U	10 U		14.5		10 U		36.1	32.2	10 U
Jul-03	20 U		18.5 B		35.9		14.8 B	15.3 B	20 U	6 B		5.8 B		9.9 B		26.2	29.4	10 U
Oct-03	20 U	20 U	33.3		37.1				20 U	10 U	10 U	10 U		12.7				10 U
Feb-04	20 U	20 U	49		36.2		20 U		20 U	10 U	10 U	10.6		6.1 B		10 U		10 U
Apr-04	20 U	20 U	30.8		40.3		20 U		20 U	10 U	10 U	10 U		10 U		33		10 U
Jul-04	20 U	20 U	20 U		50		20		20 U	4 B	7 B	21		8 B		24		9 B
Oct-04	20 U	20 U	29.5		36.5		18.8 B		20 U	10 U	10 U	8 B		12.8		9.9 B		10 U
Jan-05	20 U	20 U	98.9		52.6		20 U		20 U	10 U	10 U	11.2		7.9 B		15.1		10 U
Apr-05	20 U	20 U	40		30		20		20 U	10 U	10 U	63		10		13		10 U
Aug-05	20 U	20 U	25		32		11 B		20 U	10 U	10 U	5 B		15		5 B		10 U
Nov-05	20 U	20 U	20 U		30		20 U		20 U	10 U	10 U	7 B		51		7 B		10 U
Jan-06	20 U	20 U	39.4		39		20 U		20 U	6.2 B	10 U	18.9		19.4		25.5		10 U
May-06	20 U	20 U	20 U		35.3		20 U		20 U	3 B	3.9 B	22.1		46.7		8.5 B		2.7 B
Aug-06	20 U	20 U	20 U		35.5		20 U		20 U	2.6 B	10 U	13.7		21.9		8.1 B		10 U
Nov-06	20 U	20 U	20 U		27.7		20 U		20 U	10 U	9.2 B	14		18.5		9.6 B		2.1 B
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		10 U		12.4		11.1		8 B	6.5 B	
Oct-07	20 U	20 U	20 U		31.4		20 U			10 U	12.9	15.9		22.3		7.9 B		
Jan-08	20 U		17.0 J		30.6		16.0 J	15.5 J		8.3 J		10 U		14.8		10 U	8 J	
Apr-08	20 U		20.2		31.8		11.1 J	11.8 J		10 U		10 U		10 U		10 U	10 U	
Jul-08	20 U		4.5 J		24.8	25.1	10.2 J			1.0 J		4.8 J		4.4 J	4.2 J	9.1 J		
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 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 U	10 U		3.9 J		3.7 J		1.5 J	2.2 J	5.0 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

Notes: J Estimated Value
R Rejected Value

MCL Maximum Contaminant Level

Table 4. Parameters Statistically Higher than Background (1988-2009), South Landfill

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

Table 4. Parameters Statistically Higher than Background (1988-2009), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient 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	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	Conductivity (umhos/cm)	1989	351	607	514	180
Conventionals	Conductivity (umhos/cm)	1990	366	624	500	214
Conventionals	Conductivity (umhos/cm)	1992	292	586	533	189
Conventionals	Conductivity (umhos/cm)	1993		487	526	173
Conventionals	Conductivity (umhos/cm)	1994	214	479	602	169
Conventionals	Conductivity (umhos/cm)	1995	333	623		149
Conventionals	Conductivity (umhos/cm)	1996	290	602	787	161
Conventionals	Conductivity (umhos/cm)	1997	326		765	169
Conventionals	Conductivity (umhos/cm)	1998	393	678	738	177

Table 4. Parameters Statistically Higher than Background (1988-2009), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Conventionals	Conductivity (umhos/cm)	1999	406	786	748	177
Conventionals	Conductivity (umhos/cm)	2000	417	762	651	166
Conventionals	Conductivity (umhos/cm)	2001	493	878	886	193
Conventionals	Conductivity (umhos/cm)	2002	470	849	825	187
Conventionals	Conductivity (umhos/cm)	2004		821	853	198
Conventionals	Conductivity (umhos/cm)	2005	393	788	750	192
Conventionals	Conductivity (umhos/cm)	2006	414	773	785	191
Conventionals	Conductivity (umhos/cm)	2007	397	799	804	191
Conventionals	Conductivity (umhos/cm)	2008	465	758	771	189
Conventionals	Conductivity (umhos/cm)	2009	340	793	730	185
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	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
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

Table 4. Parameters Statistically Higher than Background (1988-2009), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
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	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	1.5			1.9
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

Table 4. Parameters Statistically Higher than Background (1988-2009), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
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
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	Barium	1993		36.0	38.0	28.0
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

Table 4. Parameters Statistically Higher than Background (1988-2009), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Metals	Barium	2008		43.9	92.7	27.7
Metals	Barium	2009		45.1	91.7	77.9
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	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

Table 4. Parameters Statistically Higher than Background (1988-2009), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
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	1,168	1,570	11,093	1,140
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
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	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

Mean values are yearly averages
ND = not detected
< = not detected above listed reporting limit
Metals units are ug/L
Conventionals units are mg/L, unless otherwise noted

Appendix A

Field Groundwater Sampling Records

JH Baxter & Co.

6520 188th St. NE / PO Box 305
Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BSX 1 BXS1	Location Arlington A S Haat		Date 2/10/09
Sample No. BSX 1 BXS1	Field Personnel/Company ~~Jim Clawson / Mary Larson~~ J.H. Baxter		
Sample Time (2400 hours) 1613	Instrument Calibration Date 2/10/09		

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather Cloudy

Equipment Decontamination **Liquinox, Hexane, Methanol, 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): 47.90'
Depth to Water (feet): 33.55'
Water Column (feet): 14.35'
Casing Volume (gallons): 2.4
Calculated Purge Volume (gallons): 7.1
Actual Purge Volume (gallons): 11.0

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
1554	0							Purge Start
1557	0.5	6.31	34.5	0.0	5.44	11.5	305	clear
1601	2.5	6.38	37.5	0.0	30.66	11.6	302	
1608	~~[illegible]~~ 5.0	6.42	39.1	0.0	2.92	11.6	300	
1613	~~[illegible]~~ 7.5	6.42	40.1	0.0	2.66	11.6	299	

Purging Equipment: ~~Portable~~ / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: **Horiba U22**

Remarks: (BXS5) - 1620

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Groundwater Sampling Field Form

Well No. BXS2	Location Arlington	A Schaaf	Date 2/10/09
Sample No. BXS2 1647	Field Personnel/Company ~~Jim Clawson / Mary Larson~~ J.H. Baxter		
Sample Time (2400 hours)	Instrument Calibration Date 2/10/09		

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather cloudy, light rain

Equipment Decontamination Liquinox, Hexane, Methanol, 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):	45.4
Depth to Water (feet):	32.89
Water Column (feet):	9.51
Casing Volume (gallons):	1.6
Calculated Purge Volume (gallons):	4.7
Actual Purge Volume (gallons):	7.2

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
1638	0							Purge Start
1640	0.50	6.42	70.0	0.0	5.59	12.1	79	clear
1642	1.6	6.54	73.8	0.0	2.31	12.0	67	
1644	3.2	6.69	74.6	0.0	1.96	12.0	63	
1647	4.8	6.56	74.9	0.0	1.87	12.0	59	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: pump removed and casing trimmed approx. 6"

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Subtract 3.5 ft from TOC elevation until re...

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Arlington, WA 98223

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Groundwater Sampling Field Form

Well No. BXS3	Location Arlington A Schaaf	Date 2-10-08 09
Sample No. BXS3	Field Personnel/Company ~~Jim Clawson / Mary Larsen~~ J.H. Baxter	
Sample Time (2400 hours) 1718	Instrument Calibration Date 2-10-08	

Well Condition Poor Satisfactory New (If poor, explain)

Field Conditions/Weather

Equipment Decontamination **Liquinox, Hexane, Methanol, 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):	44.56
Depth to Water (feet):	28.32
Water Column (feet):	16.24
Casing Volume (gallons):	~~2.6~~ 10 2.7
Calculated Purge Volume (gallons):	8.0
Actual Purge Volume (gallons):	10.0

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
1703	0							
1704	0.5	6.58	66.2	0.0	5.05	12.3	-77	Purge Start
1708	2.8	6.65	74.5	0.0	2.18	12.7	-111	Clear
1712	5.5	6.77	73.8	0.0	2.08	12.7	-117	
1717	8.0	6.77	73.4	0.0	2.04	12.7	-118	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks:

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Groundwater Sampling Field Form

Well No. BX54	Location Arlington A Schaut	Date 2/11/09
Sample No. BX54	Field Personnel/Company ~~Jim Clawson / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 0840	Instrument Calibration Date 2/10/09	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather Partly cloudy

Equipment Decontamination Liquinox, Hexane, Methanol, 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):	47.40'
Depth to Water (feet):	11.77'
Water Column (feet):	35.63'
Casing Volume (gallons):	5.9'
Calculated Purge Volume (gallons):	17.5'
Actual Purge Volume (gallons):	18.5'

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
0745	0							
0748	0.9	7.47	17.6	10.0	4.96	8.3	-79	Purge Start
0803	5.9	8.00	17.6	0.0	2.08	9.1	-140	
0819	12.0	8.09	17.6	0.0	2.21	9.1	-149	
0834	17.5	8.09	17.60	0.0	2.33	9.2	-154	

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: Horiba U22

Remarks:

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Groundwater Sampling Field Form

Well No. BXS-1	Location **Arlington**
Sample No. BXS-1	Field Personnel/Company A. Ragan / K. Hanes ~~Jim Clawson / Mary Larson~~ **J.H. Baxter** Date 5/6/09
Sample Time (2400 hours) 0940	Instrument Calibration Date 5/

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather rainy - light

Equipment Decontamination **Liquinox, Hexane, Methanol, 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): 47.9'	Sheen / LNAPL / DNAPL present:
Depth to Water (feet): 33.92'	Other remarks:
Water Column (feet): 13.98	
Casing Volume (gallons): 2.3 gal	
Calculated Purge Volume (gallons): 6.9 gal	
Actual Purge Volume (gallons): 7.5 gal	

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
0925 AS ~~0825~~	0							
0927 AS ~~0827~~	0.5	6.88	.293	8.8	3.13	11.98	52	Purge Start
0930	2.4	6.36	.316	6.9	1.16	11.97	81	
0935	4.1	6.52	.330	7.2	2.4	11.96	104	
0940	6.9	6.33	.335	8.7	0.53	11.95	121	

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: ~~Horiba U22~~

Remarks: BXS-5 (Duplicate) ~~AL 0940~~ 0941 Quanta Hydrolab

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Groundwater Sampling Field Form

Well No. BXS-2 | Location Arlington A. Ragan / K Ahn | Date 5/6/09
Sample No. BXS-2 | Field Personnel/Company ~~Jim Clawson / Mary Larson~~ J.H. Baxter
Sample Time (2400 hours) 1210 | Instrument Calibration Date
Well Condition Poor (Satisfactory) New (If poor explain)
Field Conditions/Weather Rainy
Equipment Decontamination **Liquinox, Hexane, Methanol, 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): 45.4'
Depth to Water (feet): 32.05'
Water Column (feet): 13.35'
Casing Volume (gallons): 2.18 ~ 2.2 gal
Calculated Purge Volume (gallons): 6.6 gal
Actual Purge Volume (gallons): 7.0 gal

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
1020	0							Purge Start
1023	1.0	6.92	.784	13.2	1.48	12.39	28	
1025	2.2	6.56	.805	34.9	.5	12.34	35	
	4.4							
~~1045~~								
1157	0							
1158	.5	6.77	.788	103	4.76	12.57	59	
1201	2.2	6.44	.808	30.2	1.07	12.59	78	
1205	4.4	6.37	.813	10.2	.13	12.6	86	
1210	8.6	6.35	.812	9.8	.1	12.59	86	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: ~~Horiba U22~~ Quartz 1156 Hydrolab

Remarks: pump malfunction and had to remove to investigate - switched to submersible pump

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Groundwater Sampling Field Form

Well No. BX5-3	Location Arlington A. Rogers K Hansen	Date 5/6/09
Sample No. BX5-3	Field Personnel/Company ~~Jim Gherasim / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 1140	Instrument Calibration Date	

Well Condition Poor Satisfactory New (If poor explain)

Field Conditions/Weather rainy

Equipment Decontamination Liquinox, Hexane, Methanol, 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): 44.56'
Depth to Water (feet): 27.89'
Water Column (feet): 16.67'
Casing Volume (gallons): 2.8 gal
Calculated Purge Volume (gallons): 8.2 gal
Actual Purge Volume (gallons): 8.3 gal

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
1104	0							
1106	.25	6.91	.374	20.3	3.28	12.68	-70	Purge Start
1127								
1128 H2O	1.00	6.45	0.733	1.01	0.19	13.16	-81	
1134 ~~H2O~~	2.8	6.44	0.734	34.5	0.19	13.24	-83	
1135	5.6	6.44	0.738	34.6	0.10	13.27	-93	
1140	8.2	6.44	0.736	36.0	0.08	13.24	-99	

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: ~~Horiba U22~~ Quanta

Remarks: Pump pulled out due to air comp. malfunction- used submersible pump

Quanta Hydrolab

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Groundwater Sampling Field Form

Well No. BXS-4	Location Arlington A.Ragan K Hansen	Date 5/6/09
Sample No. BXS-4	Field Personnel/Company ~~Jim Clawson / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 0905	Instrument Calibration Date ~~5/6/09~~ MR	

Well Condition Poor (Satisfactory) New (If poor, explain)
Field Conditions/Weather Overcast
Equipment Decontamination **Liquinox, Hexane, Methanol, 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):	47.4'
Depth to Water (feet):	12.24'
Water Column (feet):	35.16'
Casing Volume (gallons):	5.8 gal
Calculated Purge Volume (gallons):	17.4 gal
Actual Purge Volume (gallons):	17.4 gal

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
0820	0							Purge Start
0921	5.25	7.93	0.183	58.7	4.23	9.20	-118	
0833	5.9	8.25	0.184	5.8	2.28	9.28	-174	
0849	11.6	8.18	0.181	5.1	1.12	9.38	-186	
0905	17.4	8.25	0.185	4.7	1.21	9.43	-192	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: ~~Horiba U22~~

Remarks: Quanta Hydrolab

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on computer includes CH4 results

ARLINGTON, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-1	Location Arlington Ascmast / A Road Date 8-5-09
Sample No. BXS-1	Field Personnel/Company ~~Jim Gleason, Mary Lou~~ J.H. Baxter
Sample Time (2400 hours) 0825	Instrument Calibration Date 8-4-09

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather overcast, cool

Equipment Decontamination **Liquinox, Hexane, Methanol, 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):	47.90'
Depth to Water (feet):	36.57'
Water Column (feet):	11.33'
Casing Volume (gallons):	1.9 gal
Calculated Purge Volume (gallons):	5.7 gal
Actual Purge Volume (gallons):	8.0 gal

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
0806	0							Purge Start
0807	.25	6.58	30.1	112	7.92	11.9	246	clear
0812	1.9	6.54	29.8	114	6.51	11.9	250	
0818	4.0	6.40	30.7	111	6.16	11.9	247	
0823	5.7	6.41	30.9	111	6.04	11.9	245	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks:

Revised 12/05/05

Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-2	Location Arlington	A Schaaf / A Ragan	Date 8-5-09
Sample No. BXS-2	Field Personnel/Company	~~Jim Clawson / Mary Lemon~~	J.H. Baxter
Sample Time (2400 hours) 915	Instrument Calibration Date	8-4-09	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather Overcast, str

Equipment Decontamination Liquinox, Hexane, Methanol, 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): 45.40'
Depth to Water (feet): 34.54'
Water Column (feet): 10.86'
Casing Volume (gallons): 1.8 gal
Calculated Purge Volume (gallons): 5.4 gal
Actual Purge Volume (gallons): 7.0 gal

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
850	0							Purge Start
851	.25	6.71	71.5	129	8.1	12.6	47	clear
856	2.0	6.52	77.6	107	6.27	12.3	35	
904	3.6	6.54	79.4	105	6.05	12.3	36	
913	5.4	6.64	79.7	103	6.03	12.3	36	

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: Horiba U22

Remarks:

Revised 12/05/05

Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-3	Location Arlington A Schaaf/A Ragan	Date 8-5-09
Sample No. BXS-3	Field Personnel/Company ~~Jim Claussen / Mary Lou~~ J.H. Baxter	
Sample Time (2400 hours) 0957	Instrument Calibration Date 8-4-09	

Well Condition Poor Satisfactory New (If poor, explain)

Field Conditions/Weather Overcast, cool

Equipment Decontamination Liquinox, Hexane, Methanol, 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):	44.56'
Depth to Water (feet):	30.54'
Water Column (feet):	14.02'
Casing Volume (gallons):	2.3 gal
Calculated Purge Volume (gallons):	6.9 gal
Actual Purge Volume (gallons):	12 gal

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
0932	0							Purge Start
0933	.25	6.55	106.8	233	9.69	12.8	-68	cloudy
0938	2.3	6.57	69.7	899	6.63	12.6	-117	
0943	4.6	6.61	69.9	81.6	5.91	12.6	-130	
0948	6.9	6.53	69.9	88.5	6.21	12.6	-128	
0955	10.0	6.52	69.5	86.1	6.28	12.6	-128	

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: Horiba U22

Remarks: Field Duplicate BXS-5 (8-5-09 ~~0952~~ 0957)

Revised 12/05/05

Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-4	Location Arlington	A Schaaf/A Ragan	Date 8-5-09
Sample No. BXS-4	Field Personnel/Company ~~Jim Clawson / Mary Lucas~~		J.H. Baxter
Sample Time (2400 hours) 1112	Instrument Calibration Date 8-4-09		

Well Condition Poor (Satisfactory) New (If poor, explain) _____

Field Conditions/Weather overcast cool

Equipment Decontamination **Liquinox, Hexane, Methanol, 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):	47.40'	Sheen / LNAPL / DNAPL present:	
Depth to Water (feet):	17.02'	Other remarks:	
Water Column (feet):	30.38'		
Casing Volume (gallons):	5 gal		
Calculated Purge Volume (gallons):	15 gal		
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
1032	0							Purge Start
1033	2.5	7.06	19.0	293	9.33	9.5	-147	
1044	5.0	7.73	18.6	143	8.66	9.3	-159	
1058	10.0	7.82	18.5	111	8.66	9.4	-166	
1110	15.0	7.89	18.5	96	8.6	9.4	-172	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: _____

Revised 12/05/05

Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. ~~BXN-1~~ BXS 1	Location Arlington	A Ragan/A Schaaf	Date 11-18-09
Sample No. ~~BXN-1~~ BXS 1	Field Personnel/Company	[redacted] J.H. Baxter	
Sample Time (2400 hours) 0845	Instrument Calibration Date	11-18-09	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather cloudy

Equipment Decontamination **Liquinox, Hexane, Methanol, 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): 58.18'
Depth to Water (feet): 36.55'
Water Column (feet): 21.63'
Casing Volume (gallons): 3.6 gal
Calculated Purge Volume (gallons): 10.8 gal
Actual Purge Volume (gallons): 12.5 gal

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
0744	0							
~~0745~~	~~0.25~~ 3							
0745	0.25	6.25	36.6	6.2	8.52	11.4	326	Purge Start
0803	3.6	6.40	33.2	0.0	1.79	11.4	293	clear
0823	7.2	6.37	32.0	0.1	1.11	11.4	272	
0843	10.8	6.37	31.5	13.0	1.18	11.5	297	
0845	—							

Purging Equipment: Portable / Dedicated (Bladder Pump) or Disposable Bailer Sampling Equipment: (Horiba U22)

Remarks:

Dup ~~BXN-5~~ BXS-5 0850

Revised 12/05/05

Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-2	Location Arlington	A Ragan/A Schaf	Date 11-18-09
Sample No. BXS-2	Field Personnel/Company		J.H. Baxter
Sample Time (2400 hours) 1031	Instrument Calibration Date	11-18-09	

Well Condition Poor Satisfactory New (If poor, explain)

Field Conditions/Weather sunny, cold

Equipment Decontamination Liquinox, Hexane, Methanol, 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): 45.41
Depth to Water (feet): 36.61
Water Column (feet): 8.81
Casing Volume (gallons): 1.5 gal
Calculated Purge Volume (gallons): 4.5 gal
Actual Purge Volume (gallons): 6.0 gal

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
1019	0							Purge Start
1018	0.25	6.10	77.4	13.3	4.19	12.0	33	clear
1026	2.5	6.46	~~8005.08~~	0	2.59	12.6	49	
1028	4.0	6.46	81.2	0	2.25	12.0	51	
1030	6.0	10.46	81.5	0	1.98	12.0	52	
1031								

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: Horiba U22

Remarks:

Revised 12/05/05

Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BX53	Location Arlington	A Schaaf/A Ragan	Date 11-18-09
Sample No. BX53	Field Personnel/Company		J.H. Baxter
Sample Time (2400 hours) 0959	Instrument Calibration Date	11-18-09	

Well Condition: Poor / Satisfactory / New (If poor, explain)

Field Conditions/Weather: cold, sunny

Equipment Decontamination: Liquinox, Hexane, Methanol, 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): 44.56'
Depth to Water (feet): 33.66'
Water Column (feet): 10.9'
Casing Volume (gallons): 1.8 gal
Calculated Purge Volume (gallons): 5.4 gal
Actual Purge Volume (gallons): ~~7.0~~ 5.4 - 9.0 gal

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
0943	0							Purge Start
0945	0.25	6.97	410.4	71.4	11.86	12.3	-70	clear
0949	1.8	6.38	73.0	14.7	5.11	12.4	-84	
0952	~~3.6~~ 9.0	6.44	75.9	8.9	3.98	12.3	-113	
0955	8.4	6.5	75.5	50.3	2.86	12.2	-98	
0959								

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: Horiba U22

Remarks:

Revised 12/05/05

Arlington, WA 98223
PHONE (360) 435-2148 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS4	Location Arlington		
Sample No. BXS4	Field Personnel/Company	A. Raggio / K. Hansen	Date 11/18/09
Sample Time (2400 hours) 1250	Instrument Calibration Date	11/18/09	J.H. Baxter
Well Condition Poor (Satisfactory) New (If poor, explain)			
Field Conditions/Weather Overcast			
Equipment Decontamination Liquinox, Hexane, Methanol, 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): 47.4'
Depth to Water (feet): 12.04'
Water Column (feet): 35.36'
Casing Volume (gallons): 5.8 gal
Calculated Purge Volume (gallons): 17.4 gal
Actual Purge Volume (gallons): 19 gal

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
1153	0							Purge Start
1155	0.25	6.83	19.7	22.0	9.67	9.7	-27	
1210	6.0	7.75	19.3	4.7	6.23	9.5	-146	
1227	12.0	7.92	19.2	0.0	6.66	9.4	-160	
1247	18.0	7.96	19.2	0.0	6.73	9.3	-167	
1250								

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: Horiba U22

Remarks:

Revised 12/05/05

JH Baxter - Arlington, Washington

First Quarter 2009 - Methane Readings

Monitoring Well	Date	Time	CH_4
South Landfill			
BXS-1	2-11-09	1605	0.0
BXS-2	2-11-09	1618	0.0
BXS-3	2-11-09	1625	0.0
BXS-4	2-11-09	1715	0.0
North Landfill			
BXN-1	2-12-09	0900	0.0
BXN-2	2-12-09	0830	0.0
BXN-3	2-12-09	0950	0.0
BXN-4	2-12-09	1025	0.0

Instrument: Landtec GEM 500, E18605 - U49859A

Appendix B

Chain of Custody Records
and Laboratory Reports

1317 South 13th Avenue Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia Analytical Services
An Employee - Owned Company

March 9, 2009 Analytical Report for Service Request No: K0901211

Anita Ragan
JH Baxter & Company
85 Baxter Road
Eugene, OR 97440

RE: J.H. Baxter Arlington/Landfills

Dear Anita:

Enclosed are the results of the samples submitted to our laboratory on February 12, 2009. For your reference, these analyses have been assigned our service request number K0901211.

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. (CAS) 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 CLeaf@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Chris Leaf
Project Chemist

CL/lb

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
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.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
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 compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
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 has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

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.
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 estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
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 (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

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.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	J. H. Baxter & Company	**Service Request No.:**	K0901211
Project:	J. H. Baxter Arlington	**Date Received:**	02/12/09
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). 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

Eleven water samples were received for analysis at Columbia Analytical Services on 02/12/09. 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.

Total Metals

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

Approved by C. Lee **Date** 3/7/09

Chain of Custody Documentation

Columbia Analytical Services[INC]
An Employee - Owned Company

CHAIN OF CUSTODY

SR#: K0901[illegible]

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE ____ OF ____ COC #____

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: Landfills
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 N. Baxter Rd
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter.com
PHONE #: 541 689 3801 FAX#: 5416898303
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐	Hydrocarbons (*see below) Gas ☐ 8021 ☐ BTEX ☐ Diesel ☐ Oil ☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐	pH, Cond., Cl, SO4, PO4, F, NO_2, NO_3, BOD, TSS, TDS (circle) ☐	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	COD, TOC, Nitrate/Nitrite NH4		TDS Sulfate chloride Cond	pH tannins & lignin AR 2/12/09	REMARKS
BXS-1	2/10	1613		H_2O	3										X					X		X	X	
BXS-5	2/10	1620			3										X					X		X	X	
BXS-2	2/10	1647			3										X					X		X	X	
BXS-3	2/10	1718			3										X					X		X	X	
BXS-4	2/11	0840			3										X					X		X	X	
BXN-2	2/12	0847			3										X					X		X	X	
BXN-1	2/12	0925			3										X					X		X	X	
BXN-3	2/12	1010			3										X					X		X	X	
BXN-4	2/12	1040			3										X					X		X	X	
BXN-5	2/12	1050			3										X					X		X	X	

8

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: JH.Baxter

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X 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 Tl Sn V Zn Hg

Dissolved Metals: Al (As) Sb (Ba) Be B Ca Cd Co Cr (Cu) (Fe) Pb Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V (Zn) Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
Contact Kathy Gunderson @ (360) 942-3409 for any questions. metals are field filter.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 2/12/09 1703	Signature: [signature] Date/Time: 2.12.09 505	Signature: [signature] Date/Time: 2.12.09 511	Signature: [signature] Date/Time: 2/12/09 1015
Printed Name: Anita Ragan Firm: Baxter	Printed Name: Dwight Firm: OBS	Printed Name: Dwight Firm: OBS	Printed Name: [illegible] Firm: CAS

CHAIN OF CUSTODY

Columbia Analytical Services™

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SR#: 1004021 11

PAGE _____ OF _____ COC # _____

PROJECT NAME: J.H. Baxter Arlington Landfills
PROJECT NUMBER:
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 N Baxter Rd.
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter.com
PHONE #: 541 689 3801 FAX: 541 689 5303
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (* see below) Gas ☐ Diesel ☐ Oil ☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHS 8310 ☐ SIM ☐	Metals: Total & (Dissolved) (See list below)	Cyanide ☐	Hex-Chrom ☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	cop, Toc, Nitrate & Nitrite	TDS, Sulfate, Chloride, Cond., pH, Tannins & Lignins		REMARKS
Equip check	2/12	1140		H_2O										X							X		X		

6

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: JH. Baxter

TURNAROUND REQUIREMENTS

- ___ 24 hr. ___ 48 hr.
- ___ 5 Day
- X 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 Tl Sn V Zn Hg

Dissolved Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co Cr (Cu) (Fe) Pb Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V (Zn) Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
Contact Kathy Gunderson @ (360) 942-3409 for any questions. metals are field filtered

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date/Time: 2/12/09 1703	Date/Time: 2-12-09 5:05	Date/Time: 2-12-09 5:11	Date/Time: 2/12/09 1715
Printed Name: Anita Ragan	Printed Name:	Printed Name:	Printed Name:
Firm: Baxter	Firm: CAS	Firm:	Firm: CAS

RC[illegible] #1 06/08

PC CL

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

SHORT HOLD TIME

Client / Project: J H Baxter　Service Request K09 0901211

Received: 2-12-09　Opened: 2-12-09　By: [illegible]

1. Samples were received via? *US Mail　Fed Ex　UPS　DHL　GH　GS　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)
4. Is shipper's air-bill filed? If not, record air-bill number: ______　(NA)　Y　N
5. **Temperature of cooler(s) upon receipt (°C):**　2.6　2.6
   Temperature Blank (°C):　1.9　1.3
   Thermometer ID:　SMO-244　SMO-235
6. If applicable, list Chain of Custody Numbers: ______
7. Packing material used. *(Inserts)　Baggies　(Bubble Wrap)　Gel Packs　(Wet Ice)　Sleeves　Other* ______
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 in the table below*　NA　(Y)　N
12. **Were appropriate bottles/containers and volumes received for the tests indicated?**　NA　(Y)　N
13. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below*　NA　(Y)　N
14. Were VOA vials and 1631 Mercury bottles received without headspace? *Indicate in the table below.*　(NA)　Y　N
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?**　(NA)　Y　N
16. Was Cl2/Res negative?　(NA)　Y　N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

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

**Does not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).*

Additional Notes, Discrepancies, & Resolutions: Called K. Gunderson add Cd to test list. Tier II - results with QA/QC - will be reported. Tier I marked on COC. [initials] 2/12/09

Page 1 of: 1　2

General Chemistry Parameters

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Conductivity at 25 Degrees Celsius

Units : uMHOS/cm
Analysis Method 120.1
Basis : NA
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	2	0.4	1	02/21/09	489	
BXS-5	K0901211-002	2	0.4	1	02/21/09	479	
BXS-2	K0901211-003	2	0.4	1	02/21/09	889	
BXS-3	K0901211-004	2	0.4	1	02/21/09	604	
BXS-4	K0901211-005	2	0.4	1	02/21/09	209	
BXN-2	K0901211-006	2	0.4	1	02/21/09	458	
BXN-1	K0901211-007	2	0.4	1	02/21/09	556	
BXN-3	K0901211-008	2	0.4	1	02/21/09	542	
BXN-4	K0901211-009	2	0.4	1	02/21/09	1130	
[illegible]5	K0901211-010	2	0.4	1	02/21/09	1150	
Equip Check	K0901211-011	2	0.4	1	02/21/09	6	
Method Blank	K0901211-MB	2	0.4	1	02/21/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/21/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001DUP
Test Notes :

Units : uMHOS/cm
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Conductivity at 25 Degrees Celsius	120.1	2	489	486	488	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/21/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	uMHOS/cm
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Conductivity at 25 Degrees Celsius	NONE	120.1	1150	1230	107	85-115	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Chloride

Units : mg/L
Analysis Method 300.0
Basis : NA
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	0.2	0.016	2	02/18/09	7.6	
BXS-5	K0901211-002	0.2	0.016	2	02/18/09	7.6	
BXS-2	K0901211-003	0.2	0.016	2	02/18/09	4.2	
BXS-3	K0901211-004	0.2	0.016	2	02/18/09	2.6	
BXS-4	K0901211-005	0.2	0.016	2	02/18/09	1.7	
BXN-2	K0901211-006	0.2	0.016	2	02/18/09	6.6	
BXN-1	K0901211-007	0.2	0.016	2	02/19/09	13.0	
BXN-3	K0901211-008	0.2	0.016	2	02/18/09	8.2	
BXN-4	K0901211-009	0.2	0.016	2	02/18/09	40.8	
BXN-5	K0901211-010	2.0	0.080	10	02/18/09	47.9	
Equip Check	K0901211-011	0.2	0.008	1	02/18/09	0.020	J
Method Blank	K0901211-MB	0.2	0.008	1	02/19/09	ND	
Method Blank	K0901211-MB	0.2	0.008	1	02/18/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 02/19/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0901316-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chloride	300.0	0.2	0.6	0.6	0.6	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 02/19/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0901316-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	300.0	0.2	4.0	0.6	4.3	92	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/19/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	NONE	300.0	5.0	4.6	92	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Sulfate

Analysis Method 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	0.2	0.012	2	02/18/09	6.4	
BXS-5	K0901211-002	0.2	0.012	2	02/18/09	6.4	
BXS-2	K0901211-003	0.2	0.012	2	02/18/09	0.120	J
BXS-3	K0901211-004	0.2	0.012	2	02/18/09	0.112	J
BXS-4	K0901211-005	0.2	0.012	2	02/18/09	1.4	
BXN-2	K0901211-006	0.2	0.012	2	02/18/09	15.3	
BXN-1	K0901211-007	0.2	0.012	2	02/19/09	7.0	
BXN-3	K0901211-008	0.2	0.012	2	02/18/09	12.5	
BXN-4	K0901211-009	0.2	0.012	2	02/18/09	23.0	
[illegible]5	K0901211-010	2.0	0.060	10	02/18/09	22.9	
Equip Check	K0901211-011	0.2	0.006	1	02/18/09	0.027	J
Method Blank	K0901211-MB	0.2	0.006	1	02/19/09	ND	
Method Blank	K0901211-MB	0.2	0.006	1	02/18/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 02/19/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0901316-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfate	300.0	0.2	2.1	2.0	2.1	5	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 02/19/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0901313-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	300.0	0.2	4.0	9.2	13.2	99	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/18/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.9	98	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/19/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.9	98	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Ammonia as Nitrogen

Units : mg/L
Analysis Method 350.1 Basis : NA
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	0.05	0.009	1	02/17/09	ND	
BXS-5	K0901211-002	0.05	0.009	1	02/17/09	ND	
BXS-2	K0901211-003	0.05	0.009	1	02/17/09	ND	
BXS-3	K0901211-004	0.05	0.009	1	02/17/09	1.44	
BXS-4	K0901211-005	0.05	0.009	1	02/17/09	0.51	
BXN-2	K0901211-006	0.05	0.009	1	02/17/09	ND	
BXN-1	K0901211-007	0.05	0.009	1	02/17/09	0.22	
BXN-3	K0901211-008	0.05	0.009	1	02/17/09	0.06	
BXN-4	K0901211-009	0.50	0.090	10	02/17/09	15.9	
BXN-5	K0901211-010	0.50	0.090	10	02/17/09	15.9	
Equip Check	K0901211-011	0.05	0.009	1	02/17/09	ND	
Method Blank	K0901211-MB	0.05	0.009	1	02/17/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

lient :	JH Baxter & Company	**Service Request :**	K0901211
roject Name :	J.H. Baxter Arlington	**Date Collected :**	NA
roject Number :	Landfills	**Date Received :**	NA
ample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/17/09

Duplicate Summary
Inorganic Parameters

ample Name :	Batch QC	Units :	mg/L
ab Code :	K0901159-002DUP	Basis :	NA
est Notes :			

nalyte	**Analysis Method**	**MRL**	**Sample Result**	**Duplicate Sample Result**	**Average**	**Relative Percent Difference**	**Result Notes**
mmonia as Nitrogen	350.1	0.05	0.07	0.07	0.07	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 02/17/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0901159-002MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	350.1	0.05	2.00	0.07	2.14	104	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/17/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	NONE	350.1	16.9	17.1	101	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Nitrate+Nitrite as Nitrogen

Analysis Method 353.2
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	0.05	0.009	1	02/18/09	0.99	
BXS-5	K0901211-002	0.05	0.009	1	02/18/09	1.02	
BXS-2	K0901211-003	0.05	0.009	1	02/18/09	0.010	J
BXS-3	K0901211-004	0.05	0.009	1	02/18/09	0.17	
BXS-4	K0901211-005	0.05	0.009	1	02/18/09	ND	
BXN-2	K0901211-006	0.05	0.009	1	02/18/09	0.74	
BXN-1	K0901211-007	0.05	0.009	1	02/18/09	0.043	J
BXN-3	K0901211-008	0.05	0.009	1	02/18/09	1.71	
BXN-4	K0901211-009	0.05	0.009	1	02/18/09	26.2	
BXN-5	K0901211-010	0.05	0.009	1	02/18/09	26.9	
Equip Check	K0901211-011	0.05	0.009	1	02/18/09	0.05	
Method Blank	K0901211-MB	0.05	0.009	1	02/18/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/18/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	0.99	1.03	1.01	4	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/18/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	2.00	0.99	3.04	103	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/18/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	1.70	1.70	100	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Solids, Total Dissolved

Analysis Method SM 2540 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	5	5	1	02/13/09	261	
BXS-5	K0901211-002	5	5	1	02/13/09	263	
BXS-2	K0901211-003	5	5	1	02/13/09	498	
BXS-3	K0901211-004	5	5	1	02/13/09	461	
BXS-4	K0901211-005	5	5	1	02/13/09	136	
BXN-2	K0901211-006	5	5	1	02/13/09	238	
BXN-1	K0901211-007	5	5	1	02/13/09	331	
BXN-3	K0901211-008	5	5	1	02/13/09	298	
BXN-4	K0901211-009	5	5	1	02/13/09	527	
BXN-5	K0901211-010	5	5	1	02/13/09	548	
Equip Check	K0901211-011	5	5	1	02/13/09	ND	
Method Blank	K0901211-MB	5	5	1	02/13/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/11/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/13/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0901211-005DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total Dissolved	SM 2540 C	5	136	137	137	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/13/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Solids, Total Dissolved	NONE	SM 2540 C	1900	1920	101	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

pH

Analysis Method SM 4500-H+ B
Test Notes :

Units : pH Units
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date/Time Analyzed	Result	Result Notes
BXS-1	K0901211-001	-	-	1	02/12/09 21:21	6.67	
BXS-5	K0901211-002	-	-	1	02/12/09 21:22	6.42	
BXS-2	K0901211-003	-	-	1	02/12/09 21:23	6.50	
BXS-3	K0901211-004	-	-	1	02/12/09 21:24	6.30	
BXS-4	K0901211-005	-	-	1	02/12/09 21:26	7.94	
BXN-2	K0901211-006	-	-	1	02/12/09 21:28	6.72	
BXN-1	K0901211-007	-	-	1	02/12/09 21:31	6.47	
BXN-3	K0901211-008	-	-	1	02/12/09 21:31	6.59	
BXN-4	K0901211-009	-	-	1	02/12/09 21:32	6.48	
[illegible]5	K0901211-010	-	-	1	02/12/09 21:35	6.52	
Equip Check	K0901211-011	-	-	1	02/12/09 21:39	5.89	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/12/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/12/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXN-2
Lab Code : K0901211-006DUP
Test Notes :

Units : pH Units
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
pH	SM 4500-H+ B	-	6.72	6.61	6.67	2	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	6.58	6.54	99	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Chemical Oxygen Demand (COD)

Analysis Method SM 5220 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	5	3	1	02/25/09	16	
BXS-5	K0901211-002	5	3	1	02/25/09	16	
BXS-2	K0901211-003	5	3	1	02/25/09	42	
BXS-3	K0901211-004	5	3	1	02/25/09	69	
BXS-4	K0901211-005	5	3	1	02/25/09	ND	
BXN-2	K0901211-006	5	3	1	02/25/09	5	
BXN-1	K0901211-007	5	3	1	02/25/09	38	
BXN-3	K0901211-008	5	3	1	02/25/09	10	
BXN-4	K0901211-009	5	3	1	02/25/09	39	
BXN-5	K0901211-010	5	3	1	02/25/09	27	
Equip Check	K0901211-011	5	3	1	02/25/09	ND	
Method Blank	K0901211-MB	5	3	1	02/25/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/25/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	16	15	16	6	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/25/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	13	100	16	130	114	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/25/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	106	106	100	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Carbon, Total Organic

Analysis Method SM 5310 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	0.5	0.07	1	02/18/09	5.2	
BXS-5	K0901211-002	0.5	0.07	1	02/18/09	5.2	
BXS-2	K0901211-003	0.5	0.07	1	02/18/09	16.6	
BXS-3	K0901211-004	0.5	0.07	1	02/18/09	21.8	
BXS-4	K0901211-005	0.5	0.07	1	02/18/09	0.9	
BXN-2	K0901211-006	0.5	0.07	1	02/18/09	2.1	
BXN-1	K0901211-007	0.5	0.07	1	02/18/09	12.0	
BXN-3	K0901211-008	0.5	0.07	1	02/18/09	3.5	
BXN-4	K0901211-009	0.5	0.07	1	02/18/09	10.3	
BXN-5	K0901211-010	0.5	0.07	1	02/18/09	9.9	
Equip Check	K0901211-011	0.5	0.07	1	02/18/09	ND	
Method Blank	K0901211-MB	0.5	0.07	1	02/18/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/18/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	5.2	5.4	5.4	4	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/18/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	25.0	5.2	28.5	93	49-156	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/18/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	NONE	SM 5310 C	24.0	22.3	93	69-136	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 02/10-12/09
Date Received : 02/12/09

Tannin and Lignin

Analysis Method SM 5550 B
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0901211-001	0.2	0.03	1	02/24/09	0.17	J
BXS-5	K0901211-002	0.2	0.03	1	02/24/09	0.2	
BXS-2	K0901211-003	0.2	0.03	1	02/24/09	1.4	
BXS-3	K0901211-004	0.2	0.03	1	02/24/09	3.4	
BXS-4	K0901211-005	0.2	0.03	1	02/24/09	0.2	
BXN-2	K0901211-006	0.2	0.03	1	02/24/09	1.5	
BXN-1	K0901211-007	0.2	0.03	1	02/24/09	1.7	
BXN-3	K0901211-008	0.2	0.03	1	02/24/09	0.9	
BXN-4	K0901211-009	0.2	0.03	1	02/24/09	2.3	
BXN-5	K0901211-010	0.2	0.03	1	02/24/09	2.7	
Equip Check	K0901211-011	0.2	0.03	1	02/24/09	ND	
Method Blank	K0901211-MB	0.2	0.03	1	02/24/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/24/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Tannin and Lignin	SM 5550 B	0.2	0.17	0.2	0.19	16	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0901211
Date Collected : 2/10/2009
Date Received : 2/12/2009
Date Prepared : NA
Date Analyzed : 02/24/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0901211-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	SM 5550 B	0.2	1.0	0.17	1.0	83	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0901211
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	02/24/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0901211-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.0	1.0	100	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Metals

Columbia Analytical Services

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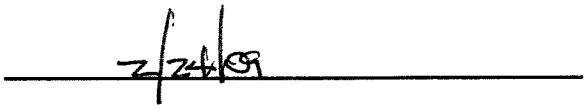
INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0901211

Sample Name:	Lab Code:
BXS-1	K0901211-001 DISS
BXS-1D	K0901211-001D DISS
BXS-1S	K0901211-001S DISS
BXS-5	K0901211-002 DISS
BXS-2	K0901211-003 DISS
BXS-2D	K0901211-003D DISS
BXS-2S	K0901211-003S DISS
BXS-3	K0901211-004 DISS
BXS-4	K0901211-005 DISS
BXN-2	K0901211-006 DISS
BXN-1	K0901211-007 DISS
BXN-3	K0901211-008 DISS
BXN-4	K0901211-009 DISS
BXN-5	K0901211-010 DISS
Equip Check	K0901211-011 DISS
Method Blank	K0901211-MB

Comments:

Approved By:  **Date:** 

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/10/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-1 **Lab Code:** K0901211-001 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	0.6	U	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	23.2		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.20	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	1.6	B	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	4.6	B	
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	175		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	10.7	B	
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	3.6	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0901211
Date Collected: 2/10/2009
Date Received: 2/12/2009
Units: ug/L
Basis: N/A

Sample Name: BXS-5
Lab Code: K0901211-002 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	0.6	U	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	22.6		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.30	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	2.6	B	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	4.0	U	
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	174		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	10.5	B	
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	3.5	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/10/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-2 **Lab Code:** K0901211-003 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	0.6	U	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	49.7		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.20	U	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	2.1	B	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	542		
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	1250		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	32.1		
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	6.5	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/10/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-3 **Lab Code:** K0901211-004 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	114		
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	125		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	1.2	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	0.8	U	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	109000		
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	11800		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	20.6		
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	2.1	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/11/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-4 **Lab Code:** K0901211-005 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	14.4		
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	29.5		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.20	U	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	0.8	U	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	54.6		
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	120		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	0.5	U	
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	1.5	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/12/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXN-2 **Lab Code:** K0901211-006 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	1.3	B	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	14.1		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.30	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	1.0	B	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	4.0	U	
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	6680		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	42.4		
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	3.3	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/12/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXN-1 **Lab Code:** K0901211-007 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	9.3		
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	45.6		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.40	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	2.4	B	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	16500		
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	2490		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	42.8		
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	5.2	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/12/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXN-3 **Lab Code:** K0901211-008 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	3.7	B	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	40.2		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.20	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	0.8	U	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	6280		
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	2890		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	56.1		
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	1.2	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0901211
Date Collected: 2/12/2009
Date Received: 2/12/2009
Units: ug/L
Basis: N/A

Sample Name: BXN-4
Lab Code: K0901211-009 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	0.6	U	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	278		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.40	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	20.4		
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	63.9		
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	3370		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	82.7		
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	2.4	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/12/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXN-5 **Lab Code:** K0901211-010 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	0.6	U	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	269		
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.40	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	19.3		
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	69.4		
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	3330		
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	78.4		
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	4.6	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0901211
Project No.:	Landfills	**Date Collected:**	2/12/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	2/12/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: Equip Check **Lab Code:** K0901211-011 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	0.6	U	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	0.5	U	
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.20	B	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	0.8	U	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	4.5	B	
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	0.2	B	
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	0.5	U	
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	1.6	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Service Request: K0901211
Project No.: Landfills
Date Collected:
Project Name: J.H. Baxter Arlington
Date Received:
Matrix: WATER
Units: ug/L
Basis: N/A

Sample Name: Method Blank
Lab Code: K0901211-MB

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	02/18/09	02/20/09	0.6	U	
Barium	6010B	5.0	0.5	1.0	02/18/09	02/19/09	0.5	U	
Cadmium	6010B	5.0	0.20	1.0	02/18/09	02/19/09	0.20	U	
Copper	6010B	10.0	0.8	1.0	02/18/09	02/19/09	0.8	U	
Iron	6010B	20.0	4.0	1.0	02/18/09	02/19/09	4.0	U	
Manganese	6010B	5.0	0.2	1.0	02/18/09	02/19/09	0.2	U	
Nickel	6010B	20.0	0.5	1.0	02/18/09	02/19/09	0.5	U	
Zinc	6010B	10.0	0.6	1.0	02/18/09	02/19/09	0.9	B	

% Solids: 0.0

Comments:

Metals

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SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company
Service Request: K0901211

Project No.: Landfills
Units: UG/L

Project Name: J.H. Baxter Arlington
Basis: N/A

Matrix: WATER
% Solids: 0.0

Sample Name: BXS-1S
Lab Code: K0901211-001S DISS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Barium	80 - 125	2070		23.2		2000.00	102.3		6010B
Cadmium	71 - 143	48.3		0.20	B	50.00	96.2		6010B
Copper	88 - 117	262		1.6	B	250.00	104.2		6010B
Iron	68 - 135	982		4.6	B	1000.00	97.7		6010B
Manganese	85 - 122	678		175		500.00	100.6		6010B
Nickel	87 - 121	487		10.7	B	500.00	95.3		6010B
Zinc	88 - 113	466		3.6	B	500.00	92.5		6010B

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:**	K0901211
Project No.:	Landfills	**Units:**	UG/L
Project Name:	J.H. Baxter Arlington	**Basis:**	N/A
Matrix:	WATER	**% Solids:**	0.0

Sample Name: BXS-2S **Lab Code:** K0901211-003S DISS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	58 - 131	36.6		0.6	U	40.00	91.5		7060A

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: K0901211

Project No.: Landfills

Units: UG/L

Project Name: J.H. Baxter Arlington

Basis: N/A

Matrix: WATER

% Solids: 0.0

Sample Name: BXS-1D

Lab Code: K0901211-001D DISS

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Barium		23.2		23.2		0.0		6010B
Cadmium		0.20	B	0.30	B	40.0		6010B
Copper		1.6	B	1.7	B	6.1		6010B
Iron		4.6	B	4.0	U	200.0		6010B
Manganese	20	175		176		0.6		6010B
Nickel		10.7	B	10.4	B	2.8		6010B
Zinc		3.6	B	3.9	B	8.0		6010B

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:**	K0901211
Project No.:	Landfills	**Units:**	UG/L
Project Name:	J.H. Baxter Arlington	**Basis:**	N/A
Matrix:	WATER	**% Solids:**	0.0

Sample Name: BXS-2D **Lab Code:** K0901211-003D DISS

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		0.6	U	0.6	U			7060A

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: K0901211

Project No.: Landfills

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	23.2	92.8					
Barium	5000	4970	99.4					
Cadmium	1250	1190	95.2					
Copper	625	640	102.4					
Iron	2500	2450	98.0					
Manganese	1250	1260	100.8					
Nickel	1250	1200	96.0					
Zinc	1250	1180	94.4					

JH Baxter - Arlington, Washington

First Quarter 2009 - Methane Readings

Monitoring Well	Date	Time	CH_4
South Landfill			
BXS-1	2-11-09	1605	0.0
BXS-2	2-11-09	1618	0.0
BXS-3	2-11-09	1625	0.0
BXS-4	2-11-09	1715	0.0
North Landfill			
BXN-1	2-12-09	0900	0.0
BXN-2	2-12-09	0830	0.0
BXN-3	2-12-09	0950	0.0
BXN-4	2-12-09	1025	0.0

Instrument: Landtec GEM 500, E18605 - U49859A

EDGE ANALYTICAL LABORATORIES

Burlington WA | 1620 S Walnut St - 98233
Corporate Office | 800.755.9295 • 360.757.1400 • 360.757.1402fax
Bellingham WA | 805 Orchard Dr Suite 4 - 98225
Microbiology | 360.671.0688 • 360.671.1577fax

Data Report

Client Name: J H Baxter Company
P O Box 305
Eugene, OR 97440

Reference Number: **09-01986**
Project: Landfill Wells & Carbon
Report Date: 2/17/09
Date Received: 2/11/09
Peer Review:

Sample Description: BXS-1 - Baxter
Lab Number: 4165
Sample Date: 2/10/09
Collected By:

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	1.0	1		MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211	
	E. Coli	<1	1		MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211	

Sample Description: BXS-5 - Baxter
Lab Number: 4166
Sample Date: 2/10/09
Collected By:

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211	
	E. Coli	<1	1		MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211	

Sample Description: BXS-2 - Baxter
Lab Number: 4167
Sample Date: 2/10/09
Collected By:

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	17.5	1		MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211	
	E. Coli	<1	1		MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211	

Sample Description: BXS-3 - Baxter
Lab Number: 4168
Sample Date: 2/10/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211	
	E. Coli	<1	1		MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211	

Sample Description: BXS-4 - Baxter
Lab Number: 4169
Sample Date: 2/11/09
Collected By:

CAS ID#	Parameter	Result	PQL	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 acheived 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.

Reference Number: **09-01986**
Report Date: 2/17/09

Data Report

TOTAL COLIFORM	<1	1	MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211
E. Coli	<1	1	MPN/100 mL	1	SM9223 B.2.b	2/12/09	AS	QT_090211

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 acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. - Dilution Factor

Page ___ of

...hain of Custody / Analysis Request (Please complete all applicable shaded sections)

7080

EDGE ANALYTICAL LABORATORIES
1620 S. Walnut St.
Burlington, WA 98233
1.800.755.9295

805 W. Orchard Dr. Suite 4
Bellingham, WA 98225

Report to	J.H. Baxter Company
Address	P.O Box 305
City	Arlington St WA Zip 98223
	Kathy Gunderson
Phone	360.435.2146 FAX
Email	kgunderson@premiercorp-usa.com
Project	Landfill Wells And Carbon

Bill to	J.H. Baxter & Company
Address	P.O Box 10797
City	Eugene St OR Zip 97440
Phone	541 689 3801 FAX
P.O.#	Attn Anita Ragan
Visa / M/C / A/E	Expires
Card#	

For Lab Use Only
Ref #

Check Regulatory Program
- Safe Drinking Water Act
- Clean Water Act
- RCRA / CERCLA
- Other

09-01986

Instructions
- Use one line per sample Location
- Be specific in analysis requests
- (NEW) List each metal individually (NEW)
- Check off analyses to be performed for each sample Location
- Enter number of containers

Turn Around Time Required
- Standard
- Half-time (50% surcharge)
- Quickest (100% surcharge) Phone Call Req.
- Emergency (Phone Call Req.)

Analyses Requested

CO007080

Field ID	Location	Grab/Comp	Sample Matrix*	Date	Time	SM9221E	Total/Coliform SM 9223 B	Number of Containers	Special Instructions Conditions on Receipt
BXS-1	JHB-Arlington	G	H_2O	2/10	1613		X		
BXS-5	|	|	|	|	1630		X		
BXS-2	|	|	|	|	1647		X		
BXS-3	|	|	|	|	1718		X		
BXS-4	|	|	|	2/11	0846		X		

Mailed by | Phone | FAX | Email | Total Containers

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 ___

Relinquished by	Date	Time	Received by	Date	Time
[signature]	2/11/09	0900	A. Stoner	2/12/09	12:28

	Yes	No	N/A
Custody seals intact			
Sample temp ___C satisfactory			
Samples received intact			
Chain of custody & labels agree			

AJ-09021

1317 South 13th Avenue Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia Analytical Services INC.
An Employee - Owned Company

May 28, 2009 Analytical Report for Service Request No: K0904038

Anita Ragan
JH Baxter & Company
85 Baxter Road
Eugene, OR 97440

RE: J.H. Baxter Arlington/Landfill South

Dear Anita:

Enclosed are the results of the samples submitted to our laboratory on May 07, 2009. For your reference, these analyses have been assigned our service request number K0904038.

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. (CAS) 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 CLeaf@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Chris Leaf
Project Chemist

CL/rh

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
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.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
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 compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
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 has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

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.
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 estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
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 (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

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.
)	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.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	J.H. Baxter & Company	**Service Request No.:**	K0904038
Project:	J.H. Baxter Arlington Landfill South	**Date Received:**	05/07/2009
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). 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

Six water samples were received for analysis at Columbia Analytical Services on 05/07/2009. 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

Nitrate+Nitrite as Nitrogen by EPA 353.2;
The Relative Percent Difference (RPD) criterion for the replicate analysis of nitrate+nitrite as nitrogen in sample BXS-2 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.

pH by Standard Methods 4500-H+B;
Samples BXS-2, BXS-1, BXS-5, BXS-3 and BXS-4 were received with insufficient holding time remaining. The analysis was performed as soon as possible after receipt by the laboratory.

Chemical Oxygen Demand by Standard Methods 5220C;
The Relative Percent Difference (RPD) criterion for the replicate analysis of chemical oxygen demand in sample Batch QC 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.

Tannin and Lignin by Standard Methods 5550B;
The Relative Percent Difference (RPD) criterion for the replicate analysis of tannin and lignin in sample BXS-1 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.

Dissolved Metals

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

Approved by Chris Lee **Date** 5/28/09

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

Conductivity at 25 Degrees Celsius

Analysis Method 120.1
Test Notes :

Units : uMHOS/cm
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	2	0.4	1	05/15/09	768	
BXS-1	K0904038-002	2	0.4	1	05/15/09	357	
BXS-5	K0904038-003	2	0.4	1	05/15/09	328	
BXS-3	K0904038-004	2	0.4	1	05/15/09	496	
BXS-4	K0904038-005	2	0.4	1	05/15/09	171	
Equip Check	K0904038-006	2	0.4	1	05/15/09	2	
Method Blank	K0904038-MB	2	0.4	1	05/15/09	1.9	J

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 5/6/2009
Date Received : 5/7/2009
Date Prepared : NA
Date Analyzed : 05/15/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-5
Lab Code : K0904038-003DUP
Test Notes :

Units : uMHOS/cm
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Conductivity at 25 Degrees Celsius	120.1	2	328	328	328	<1	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/15/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	uMHOS/cm
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Conductivity at 25 Degrees Celsius	NONE	120.1	1150	1070	93	85-115	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

Chloride

Units : mg/L
Analysis Method 300.0
Basis : NA
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	2.0	0.080	10	05/12/09	6.1	
BXS-1	K0904038-002	1.0	0.040	5	05/12/09	7.3	
BXS-5	K0904038-003	1.0	0.040	5	05/12/09	7.3	
BXS-3	K0904038-004	2.0	0.080	10	05/12/09	4.5	
BXS-4	K0904038-005	0.2	0.016	2	05/12/09	2.2	
Equip Check	K0904038-006	0.2	0.008	1	05/12/09	ND	
Method Blank	K0904038-MB	0.2	0.008	1	05/12/09	ND	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	5/6/2009
Project Number :	Landfill South	**Date Received :**	5/7/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0904038-005DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chloride	300.0	0.2	2.2	2.2	2.2	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	5/6/2009
Project Number :	Landfill South	**Date Received :**	5/7/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Matrix Spike Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0904038-005MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	300.0	0.2	4.0	2.2	5.4	80	80-120	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	NONE	300.0	5.0	5.0	100	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

Sulfate

Units : mg/L
Basis : NA

Analysis Method 300.0
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	0.2	0.006	2	05/12/09	ND	
BXS-1	K0904038-002	0.2	0.012	2	05/12/09	6.7	
BXS-5	K0904038-003	0.2	0.012	2	05/12/09	6.6	
BXS-3	K0904038-004	0.2	0.012	2	05/12/09	0.4	
BXS-4	K0904038-005	0.2	0.012	2	05/12/09	1.7	
Equip Check	K0904038-006	0.2	0.006	1	05/12/09	ND	
Method Blank	K0904038-MB	0.2	0.006	1	05/12/09	ND	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	5/6/2009
Project Number :	Landfill South	**Date Received :**	5/7/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0904038-005DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfate	300.0	0.2	1.7	1.5	1.6	13	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 5/6/2009
Date Received : 5/7/2009
Date Prepared : NA
Date Analyzed : 05/12/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0904038-005MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	300.0	0.2	4.0	1.7	5.2	88	80-120	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.8	96	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

Ammonia as Nitrogen

Units : mg/L
Analysis Method 350.1
Basis : NA
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	0.05	0.009	1	05/08/09	ND	
BXS-1	K0904038-002	0.05	0.009	1	05/08/09	ND	
BXS-5	K0904038-003	0.05	0.009	1	05/08/09	ND	
BXS-3	K0904038-004	0.05	0.009	1	05/08/09	1.08	
BXS-4	K0904038-005	0.05	0.009	1	05/08/09	0.61	
Equip Check	K0904038-006	0.05	0.009	1	05/08/09	ND	
Method Blank	K0904038-MB	0.05	0.009	1	05/08/09	ND	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	5/6/2009
Project Number :	Landfill South	**Date Received :**	5/7/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/08/09

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-2	Units :	mg/L
Lab Code :	K0904038-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Ammonia as Nitrogen	350.1	0.05	ND	ND	ND	-	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 5/6/2009
Date Received : 5/7/2009
Date Prepared : NA
Date Analyzed : 05/08/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-2
Lab Code : K0904038-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	350.1	0.05	2.00	ND	1.92	96	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/08/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	NONE	350.1	16.9	17.0	101	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

Nitrate+Nitrite as Nitrogen

Units : mg/L
Basis : NA

Analysis Method 353.2
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	0.05	0.009	1	05/12/09	0.029	J
BXS-1	K0904038-002	0.05	0.009	1	05/12/09	0.12	
BXS-5	K0904038-003	0.05	0.009	1	05/12/09	0.13	
BXS-3	K0904038-004	0.05	0.009	1	05/12/09	0.21	
BXS-4	K0904038-005	0.05	0.009	1	05/12/09	0.013	J
Equip Check	K0904038-006	0.05	0.009	1	05/12/09	0.019	J
Method Blank	K0904038-MB	0.05	0.009	1	05/12/09	0.010	J

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 5/6/2009
Date Received : 5/7/2009
Date Prepared : NA
Date Analyzed : 05/12/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-2
Lab Code : K0904038-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	0.029	0.022	0.026	27	J *

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 5/6/2009
Date Received : 5/7/2009
Date Prepared : NA
Date Analyzed : 05/12/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-2
Lab Code : K0904038-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	2.00	0.029	1.91	94	90-110	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	1.70	1.60	94	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

Solids, Total Dissolved

Units : mg/L
Basis : NA

Analysis Method SM 2540 C
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	5	5	1	05/12/09	513	
BXS-1	K0904038-002	5	5	1	05/12/09	223	
BXS-5	K0904038-003	5	5	1	05/12/09	220	
BXS-3	K0904038-004	5	5	1	05/12/09	460	
BXS-4	K0904038-005	5	5	1	05/12/09	130	
Equip Check	K0904038-006	5	5	1	05/12/09	7	
Method Blank	K0904038-MB	5	5	1	05/12/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 05/12/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0904034-004DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total Dissolved	SM 2540 C	5	425	425	425	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Solids, Total Dissolved	NONE	SM 2540 C	896	906	101	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

pH

Analysis Method SM 4500-H+ B
Test Notes :

Units : pH Units
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date/Time Analyzed	Result	Result Notes
BXS-2	K0904038-001	-	-	1	05/08/09 09:21	6.29	
BXS-1	K0904038-002	-	-	1	05/08/09 09:22	6.38	
BXS-5	K0904038-003	-	-	1	05/08/09 09:23	6.30	
BXS-3	K0904038-004	-	-	1	05/08/09 09:24	6.29	
BXS-4	K0904038-005	-	-	1	05/08/09 09:25	7.92	
Equip Check	K0904038-006	-	-	1	05/07/09 17:39	5.64	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 5/6/2009
Date Received : 5/7/2009
Date Prepared : NA
Date Analyzed : 05/08/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-2
Lab Code : K0904038-001DUP
Test Notes :

Units : pH Units
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
pH	SM 4500-H+ B	-	6.29	6.30	6.30	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/07/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	6.58	6.55	100	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/08/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	6.58	6.51	99	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	05/06,07/09
Project Number :	Landfill South	**Date Received :**	05/07/09
Sample Matrix :	WATER		

Chemical Oxygen Demand (COD)

Analysis Method SM 5220 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	5	3	1	05/12/09	38	
BXS-1	K0904038-002	5	3	1	05/14/09	13	
BXS-5	K0904038-003	5	3	1	05/12/09	11	
BXS-3	K0904038-004	5	3	1	05/12/09	70	
BXS-4	K0904038-005	5	3	1	05/12/09	22	
Equip Check	K0904038-006	5	3	1	05/12/09	ND	
Method Blank	K0904038-MB	5	3	1	05/14/09	ND	
Method Blank	K0904038-MB	5	3	1	05/12/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 05/12/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0904034-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	10	13	12	25	*

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0904034-001MS	Basis :	NA

Test Notes :

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	13	100	10	113	103	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	106	106	100	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/14/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	106	108	102	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

Carbon, Total Organic

Units : mg/L
Basis : NA

Analysis Method SM 5310 C
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	0.5	0.07	1	05/11/09	15.8	
BXS-1	K0904038-002	0.5	0.07	1	05/11/09	4.7	
BXS-5	K0904038-003	0.5	0.07	1	05/11/09	4.9	
BXS-3	K0904038-004	0.5	0.07	1	05/11/09	22.0	
BXS-4	K0904038-005	0.5	0.07	1	05/11/09	1.0	
Equip Check	K0904038-006	0.5	0.07	1	05/11/09	ND	
Method Blank	K0904038-MB	0.5	0.07	1	05/11/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	5/6/2009
Project Number :	Landfill South	**Date Received :**	5/7/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/11/09

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0904038-005DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	1.0	1.0	1.0	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 5/6/2009
Date Received : 5/7/2009
Date Prepared : NA
Date Analyzed : 05/11/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0904038-005MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	25.0	1.0	23.9	92	49-156	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/11/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	NONE	SM 5310 C	21.0	22.2	106	69-136	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 05/06,07/09
Date Received : 05/07/09

Tannin and Lignin

Units : mg/L
Basis : NA

Analysis Method SM 5550 B
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-2	K0904038-001	0.2	0.03	1	05/14/09	0.9	
BXS-1	K0904038-002	0.2	0.03	1	05/14/09	0.3	
BXS-5	K0904038-003	0.2	0.03	1	05/14/09	0.3	
BXS-3	K0904038-004	0.2	0.03	1	05/14/09	3.5	
BXS-4	K0904038-005	0.2	0.03	1	05/14/09	0.3	
Equip Check	K0904038-006	0.2	0.03	1	05/14/09	ND	
Method Blank	K0904038-MB	0.2	0.03	1	05/14/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	5/6/2009
Project Number :	Landfill South	**Date Received :**	5/7/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/14/09

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-1	Units :	mg/L
Lab Code :	K0904038-002DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Tannin and Lignin	SM 5550 B	0.2	0.3	0.2	0.3	33	*

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfill South
Sample Matrix : WATER

Service Request : K0904038
Date Collected : 5/6/2009
Date Received : 5/7/2009
Date Prepared : NA
Date Analyzed : 05/14/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0904038-002MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	SM 5550 B	0.2	1.0	0.3	1.1	80	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0904038
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfill South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	05/14/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0904038-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.0	1.0	100	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Columbia Analytical Services

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0904038

Sample Name:	Lab Code:
BXS-2	K0904038-001 DISS
BXS-2D	K0904038-001D DISS
BXS-2S	K0904038-001S DISS
BXS-1	K0904038-002 DISS
BXS-5	K0904038-003 DISS
BXS-3	K0904038-004 DISS
BXS-4	K0904038-005 DISS
Equip Check	K0904038-006 DISS
Method Blank	K0904038-MB

Comments:

Approved By: _____ **Date:** 5/27/09

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0904038
Project No.:	Landfill South	**Date Collected:**	5/6/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	5/7/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-2 **Lab Code:** K0904038-001 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	05/24/09	05/26/09	1.6	B	
Barium	6010B	5.0	0.6	1.0	05/24/09	05/26/09	45.4		
Cadmium	6010B	5.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	05/24/09	05/26/09	473		
Manganese	6010B	5.0	0.2	1.0	05/24/09	05/26/09	1230		
Nickel	6010B	20.0	2.0	1.0	05/24/09	05/26/09	31.2		
Zinc	6010B	10.0	0.8	1.0	05/24/09	05/26/09	3.7	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0904038
Project No.:	Landfill South	**Date Collected:**	5/6/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	5/7/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-1 **Lab Code:** K0904038-002 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	05/24/09	05/26/09	0.6	B	
Barium	6010B	5.0	0.6	1.0	05/24/09	05/26/09	16.7		
Cadmium	6010B	5.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	05/24/09	05/26/09	6.1	B	
Manganese	6010B	5.0	0.2	1.0	05/24/09	05/26/09	114		
Nickel	6010B	20.0	2.0	1.0	05/24/09	05/26/09	7.0	B	
Zinc	6010B	10.0	0.8	1.0	05/24/09	05/26/09	1.5	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0904038
Project No.:	Landfill South	**Date Collected:**	5/6/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	5/7/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-5 **Lab Code:** K0904038-003 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	05/24/09	05/26/09	0.7	B	
Barium	6010B	5.0	0.6	1.0	05/24/09	05/26/09	16.8		
Cadmium	6010B	5.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	05/24/09	05/26/09	4.9	B	
Manganese	6010B	5.0	0.2	1.0	05/24/09	05/26/09	116		
Nickel	6010B	20.0	2.0	1.0	05/24/09	05/26/09	7.9	B	
Zinc	6010B	10.0	0.8	1.0	05/24/09	05/26/09	2.2	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0904038
Project No.:	Landfill South	**Date Collected:**	5/6/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	5/7/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-3 **Lab Code:** K0904038-004 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	05/24/09	05/26/09	120		
Barium	6010B	5.0	0.6	1.0	05/24/09	05/26/09	111		
Cadmium	6010B	5.0	2.0	1.0	05/24/09	05/26/09	2.1	B	
Copper	6010B	10.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	05/24/09	05/26/09	102000		
Manganese	6010B	5.0	0.2	1.0	05/24/09	05/26/09	11300		
Nickel	6010B	20.0	2.0	1.0	05/24/09	05/26/09	17.7	B	
Zinc	6010B	10.0	0.8	1.0	05/24/09	05/26/09	3.9	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0904038
Project No.:	Landfill South	**Date Collected:**	5/6/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	5/7/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-4 **Lab Code:** K0904038-005 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	05/24/09	05/26/09	6.2		
Barium	6010B	5.0	0.6	1.0	05/24/09	05/26/09	26.7		
Cadmium	6010B	5.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	05/24/09	05/26/09	51.7		
Manganese	6010B	5.0	0.2	1.0	05/24/09	05/26/09	108		
Nickel	6010B	20.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Zinc	6010B	10.0	0.8	1.0	05/24/09	05/26/09	0.8	U	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0904038
Project No.:	Landfill South	**Date Collected:**	5/7/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	5/7/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: Equip Check **Lab Code:** K0904038-006 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	05/24/09	05/26/09	0.5	U	
Barium	6010B	5.0	0.6	1.0	05/24/09	05/26/09	0.6	U	
Cadmium	6010B	5.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	05/24/09	05/26/09	5.8	B	
Iron	6010B	20.0	0.8	1.0	05/24/09	05/26/09	0.8	U	
Manganese	6010B	5.0	0.2	1.0	05/24/09	05/26/09	0.4	B	
Nickel	6010B	20.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Zinc	6010B	10.0	0.8	1.0	05/24/09	05/26/09	5.0	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0904038
Project No.:	Landfill South	**Date Collected:**	
Project Name:	J.H. Baxter Arlington	**Date Received:**	
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: Method Blank **Lab Code:** K0904038-MB

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	05/24/09	05/26/09	0.5	U	
Barium	6010B	5.0	0.6	1.0	05/24/09	05/26/09	0.6	U	
Cadmium	6010B	5.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	05/24/09	05/26/09	0.8	U	
Manganese	6010B	5.0	0.2	1.0	05/24/09	05/26/09	0.2	U	
Nickel	6010B	20.0	2.0	1.0	05/24/09	05/26/09	2.0	U	
Zinc	6010B	10.0	0.8	1.0	05/24/09	05/26/09	0.8	U	

% Solids: 0.0

Comments:

Metals

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SPIKE SAMPLE RECOVERY

Client:	JH Baxter & Company	Service Request:	K0904038
Project No.:	Landfill South	Units:	UG/L
Project Name:	J.H. Baxter Arlington	Basis:	N/A
Matrix:	WATER	% Solids:	0.0

Sample Name: BXS-2S Lab Code: K0904038-001S DISS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	58 - 131	42		1.6	B	40.00	101.0		7060A
Barium	80 - 125	2040		45.4		2000.00	99.7		6010B
Cadmium	71 - 143	49		2.0	U	50.00	98.0		6010B
Copper	88 - 117	257		2.0	U	250.00	102.8		6010B
Iron	68 - 135	1360		435		1000.00	92.5		6010B
Manganese	85 - 122	1770		1230		500.00	108.0		6010B
Nickel	87 - 121	494		31.2		500.00	92.6		6010B
Zinc	88 - 113	461		3.7	B	500.00	91.5		6010B

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: K0904038

Project No.: Landfill South
Units: UG/L

Project Name: J.H. Baxter Arlington
Basis: N/A

Matrix: WATER
% Solids: 0.0

Sample Name: BXS-2D
Lab Code: K0904038-001D DISS

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		1.6	B	1.0	B	46.2		7060A
Barium	20	45.4		46.3		2.0		6010B
Cadmium		2.0	U	2.0	U			6010B
Copper		2.0	U	2.0	U			6010B
Iron	20	473		476		0.6		6010B
Manganese	20	1230		1260		2.4		6010B
Nickel		31.2		30.6		1.9		6010B
Zinc		3.7	B	2.5	B	38.7		6010B

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:** K0904038

Project No.: Landfill South

Project Name: J.H. Baxter Arlington

Aqueous LCS Source: CAS MIXED **Solid LCS Source:**

Analyte	Aqueous: ug/L			Solid: mg/kg				
	True	Found	%R	True	Found	C	Limits	%R
Arsenic	25	26	104.0					
Barium	5000	4960	99.2					
Cadmium	1250	1200	96.0					
Copper	625	640	102.4					
Iron	2500	2420	96.8					
Manganese	1250	1230	98.4					
Nickel	1250	1180	94.4					
Zinc	1250	1180	94.4					

CHAIN OF CUSTODY

SR#: K0904L3

Columbia Analytical Services
1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE ____ OF ____ COC #____

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: Landfill South
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 Baxter
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter.com
PHONE #: 541 689 3801 FAX #: 541 689 8303
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons Gas☐ 8021☐ BTEX☐ (*see below) Diesel☐ Oil☐	Fuel Fingerprint (FIQ) NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHs 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	COD, TOC, NH4, NO3, Nitrate/Nitrite	TDS, Sulfate, Chloride, Total Alkalinity	REMARKS
BXS-2	5/6	1210		H_2O	3										X					X	XX	
BXS-1	5/6	0940			3										X					X	XX	
BXS-5	5/6	0941			3										X					X	XX	
BXS-3	5/6	1140			3										X					X	XX	
BXS-4	5/6	0905			3										X					X	XX	
Equip Check	5/7	0800			3										X					X	X	

REPORT REQUIREMENTS

X I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
X III. Data Validation Report (includes all raw data) 5/7/09
___ IV. CLP Deliverable Report
___ V. EDD

INVOICE INFORMATION

P.O. # ____
Bill To: J.H. Baxter

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 Day
X 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 Tl Sn V Zn Hg

Dissolved Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co Cr (Cu) (Fe) Pb Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

for Questions please contact Kathy Gunderson
360 942 3409.
Metals have been filtered

[redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date/Time: 5/7/09 1537	Date/Time: 5/7/09 1537	Date/Time:	Date/Time:
Printed Name: Anita Ragan	Printed Name:	Printed Name:	Printed Name:
Firm: Baxter	Firm:	Firm:	Firm:

56

RCOC #1 06/08

PC CL

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

Client / Project: T.H. Baxter Service Request K09 4038

Received: 5/7/09 Opened: 5/7/09 By: CL

1. Samples were received via? *US Mail* *Fed Ex* *UPS* *DHL* *GH* *GS* *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
4. Is shipper's air-bill filed? If not, record air-bill number: _____ NA Y N

5. **Temperature of cooler(s) upon receipt (°C):**	6.2	2.7	4.4	
Temperature Blank (°C):	6.2	0.9	0.6	
Thermometer ID:	SMO-259	SMO-269	SMO-259	
6. If applicable, list Chain of Custody Numbers:				

7. Packing material used. *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other* _____

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 in the table below*	NA	Y	N
12. **Were appropriate bottles/containers and volumes received for the tests indicated?**	NA	Y	N
13. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below*	NA	Y	N
Were VOA vials received without headspace? *Indicate in the table below.*	NA	Y	N
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?**	NA	Y	N
16. Was C12/Res negative?	NA	Y	N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

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

*Does not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

Additional Notes, Discrepancies, & Resolutions: ~~No SMO PAH bottle received for MW-29~~ DO Jar I marked. Historical work has indicated Jar III, Jar III will be reported unless notified.

Page 1 of: 1 2

ANALYTICAL LABORATORIES

Burlington WA | 1620 S Walnut St - 98233
Corporate Office | 800.755.9295 • 360.757.1400 • 360.757.1402fax
Bellingham WA | 805 Orchard Dr Suite 4 - 98225
Microbiology | 360.671.0688 • 360.671.1577fax

Data Report

Client Name: J H Baxter Company
P O Box 85
Eugene, OR 97402

Reference Number: **09-06516**
Project: Landfill Wells & Carbon
Report Date: 5/11/09
Date Received: 5/7/09
Peer Review:

Sample Description: BXS-3 - JHB Arlington
Lab Number: 13364
Sample Date: 5/6/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	1.0	1		MPN/100 mL	1	SM9223 B.2.b	5/9/09	KMS	QT_090507	
	E. Coli	<1	1		MPN/100 mL	1	SM9223 B.2.b	5/9/09	KMS	QT_090507	

Sample Description: BXS-2 - JHB Arlington
Lab Number: 13365
Sample Date: 5/6/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	1.0	1		MPN/100 mL	1	SM9223 B.2.b	5/8/09	DL	QT_090507	
	E. Coli	<1	1		MPN/100 mL	1	SM9223 B.2.b	5/8/09	DL	QT_090507	

Sample Description: BXS-1 - JHB Arlington
Lab Number: 13366
Sample Date: 5/6/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100 mL	1	SM9223 B.2.b	5/8/09	DL	QT_090507	
	E. Coli	<1	1		MPN/100 mL	1	SM9223 B.2.b	5/8/09	DL	QT_090507	

Sample Description: BXS-5 - JHB Arlington
Lab Number: 13367
Sample Date: 5/6/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100 mL	1	SM9223 B.2.b	5/8/09	DL	QT_090507	
	E. Coli	<1	1		MPN/100 mL	1	SM9223 B.2.b	5/8/09	DL	QT_090507	

Sample Description: BXS-4 - JHB Arlington
Lab Number: 13368
Sample Date: 5/6/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100 mL	1	SM9223 B.2.b	5/8/09	DL	QT_090507	

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 acheived 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.

Reference Number: **09-06516**
Report Date: 5/11/09

Data Report

E. Coli	<1	1	MPN/100 mL	1	SM9223 B.2.b	5/8/09	DL	QT_090507

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 acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
D.F. - Dilution Factor

1317 South 13th Avenue Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

August 27, 2009 Analytical Report for Service Request No: K0907114

Kathy Gunderson
Premier Environmental Services
kgunderson@premiercorp-usa.com
981 State Street
Raymond, WA 98577

RE: J.H. Baxter Arlington/Landfills

Dear Kathy:

Enclosed are the results of the samples submitted to our laboratory on August 06, 2009. For your reference, these analyses have been assigned our service request number K0907114.

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. (CAS) 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 CLeaf@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Chris Leaf
Project Chemist

CL/lg

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
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.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
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 compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
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 has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

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.
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 estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
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 (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

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.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Conductivity at 25 Degrees Celsius

Analysis Method 120.1
Test Notes :

Units : uMHOS/cm
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	2	0.4	1	08/22/09	299	
BXS-2	K0907114-002	2	0.4	1	08/22/09	757	
BXS-4	K0907114-003	2	0.4	1	08/22/09	176	
BXS-3	K0907114-004	2	0.4	1	08/22/09	412	
BXS-5	K0907114-005	2	0.4	1	08/22/09	413	
Equ. Check	K0907114-006	2	0.4	1	08/22/09	3	
Method Blank	K0907114-MB	2	0.4	1	08/22/09	1.7	J

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/22/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907363-001DUP
Test Notes :

Units : uMHOS/cm
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Conductivity at 25 Degrees Celsius	120.1	2	252	254	253	<1	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/22/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	uMHOS/cm
Lab Code :	K0907114-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Conductivity at 25 Degrees Celsius	NONE	120.1	839	865	103	85-115	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Chloride

Units : mg/L
Analysis Method 300.0
Basis : NA
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	0.2	0.06	2	08/12/09	5.9	
BXS-2	K0907114-002	0.2	0.06	2	08/12/09	4.3	
BXS-4	K0907114-003	0.2	0.06	2	08/12/09	1.8	
BXS-3	K0907114-004	0.2	0.06	2	08/12/09	3.8	
BXS-5	K0907114-005	0.2	0.06	2	08/12/09	3.7	
Equ. Check	K0907114-006	0.2	0.03	1	08/12/09	ND	
Method Blank	K0907114-MB	0.2	0.03	1	08/12/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/12/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907307-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chloride	300.0	0.2	0.2	0.2	0.2	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/12/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907307-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	300.0	0.2	4.0	0.2	3.8	89	80-120	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0907114-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	NONE	300.0	5.0	4.8	96	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Sulfate

Analysis Method 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	0.2	0.02	2	08/12/09	13.9	
BXS-2	K0907114-002	0.2	0.02	2	08/12/09	0.12	J
BXS-4	K0907114-003	0.2	0.02	2	08/12/09	1.1	
BXS-3	K0907114-004	0.2	0.02	2	08/12/09	0.09	J
BXS-5	K0907114-005	0.2	0.02	2	08/12/09	0.10	J
Equ. Check	K0907114-006	0.2	0.01	1	08/12/09	ND	
Method Blank	K0907114-MB	0.2	0.01	1	08/12/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/12/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907307-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfate	300.0	0.2	0.8	0.8	0.8	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/12/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907307-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	300.0	0.2	4.0	0.8	4.7	97	80-120	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0907114-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.7	94	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Ammonia as Nitrogen

Analysis Method 350.1
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	0.05	0.009	1	08/07/09	ND	
BXS-2	K0907114-002	0.05	0.009	1	08/07/09	ND	
BXS-4	K0907114-003	0.05	0.009	1	08/07/09	0.49	
BXS-3	K0907114-004	0.05	0.009	1	08/07/09	1.24	
BXS-5	K0907114-005	0.05	0.009	1	08/07/09	1.14	
Equ. Check	K0907114-006	0.05	0.009	1	08/07/09	0.009	J
Method Blank	K0907114-MB	0.05	0.009	1	08/07/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/07/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907081-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Ammonia as Nitrogen	350.1	0.05	ND	ND	ND	-	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/07/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907081-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	350.1	0.05	2.00	ND	1.98	99	90-110	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/07/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0907114-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	NONE	350.1	15.2	14.9	98	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Nitrate+Nitrite as Nitrogen

Analysis Method 353.2
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	0.05	0.009	1	08/13/09	0.11	
BXS-2	K0907114-002	0.05	0.009	1	08/13/09	0.017	J
BXS-4	K0907114-003	0.05	0.009	1	08/13/09	ND	
BXS-3	K0907114-004	0.05	0.009	1	08/13/09	0.17	
BXS-5	K0907114-005	0.05	0.009	1	08/13/09	0.17	
Equ. Check	K0907114-006	0.05	0.009	1	08/13/09	ND	
Method Blank	K0907114-MB	0.05	0.009	1	08/13/09	ND	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 8/5/2009
Date Received : 8/6/2009
Date Prepared : NA
Date Analyzed : 08/13/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0907114-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	0.11	0.11	0.11	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 8/5/2009
Date Received : 8/6/2009
Date Prepared : NA
Date Analyzed : 08/13/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0907114-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	2.00	0.11	2.14	102	90-110	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/13/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0907114-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	21.0	20.9	100	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Solids, Total Dissolved

Units : mg/L
Basis : NA

Analysis Method SM 2540 C
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	5	5	1	08/12/09	178	
BXS-2	K0907114-002	5	5	1	08/12/09	491	
BXS-4	K0907114-003	5	5	1	08/12/09	119	
BXS-3	K0907114-004	5	5	1	08/12/09	378	
BXS-5	K0907114-005	5	5	1	08/12/09	425	
Equ. Check	K0907114-006	5	5	1	08/12/09	ND	
Method Blank	K0907114-MB	5	5	1	08/12/09	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/12/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907175-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total Dissolved	SM 2540 C	5	492	489	491	<1	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/12/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0907114-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Solids, Total Dissolved	NONE	SM 2540 C	1200	1170	98	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

pH

Analysis Method SM 4500-H+ B
Test Notes :

Units : pH Units
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date/Time Analyzed	Result	Result Notes
BXS-1	K0907114-001	-	-	1	08/06/09 18:09	6.31	
BXS-2	K0907114-002	-	-	1	08/06/09 18:10	6.40	
BXS-4	K0907114-003	-	-	1	08/06/09 18:10	6.32	
BXS-3	K0907114-004	-	-	1	08/06/09 18:11	6.45	
BXS-5	K0907114-005	-	-	1	08/06/09 18:12	6.42	
Equ. Check	K0907114-006	-	-	1	08/06/09 18:13	5.44	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/06/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907099-031DUP
Test Notes :

Units : pH Units
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
pH	SM 4500-H+ B	-	7.63	7.65	7.64	<1	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/06/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0907114-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	6.58	6.57	100	85-115	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Chemical Oxygen Demand (COD)

Units : mg/L
Basis : NA

Analysis Method SM 5220 C
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	5	3	1	07/21/09	12	
BXS-2	K0907114-002	5	3	1	07/21/09	43	
BXS-4	K0907114-003	5	3	1	07/21/09	3	J
BXS-3	K0907114-004	5	3	1	07/21/09	106	
BXS-5	K0907114-005	5	3	1	07/21/09	83	
Equ. Check	K0907114-006	5	3	1	07/21/09	3	J
Method Blank	K0907114-MB	5	3	1	07/21/09	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 07/21/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907438-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	23	20	22	14	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 07/21/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907438-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	13	100	23	124	101	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	07/21/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0907114-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	106	110	104	85-115	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Carbon, Total Organic

Units : mg/L
Analysis Method SM 5310 C
Basis : NA
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	0.5	0.07	1	08/13/09	5.1	
BXS-2	K0907114-002	0.5	0.07	1	08/13/09	16.9	
BXS-4	K0907114-003	0.5	0.07	1	08/13/09	1.1	
BXS-3	K0907114-004	1.0	0.1	2	08/13/09	29.0	
BXS-5	K0907114-005	1.0	0.1	2	08/13/09	28.4	
Equ. Check	K0907114-006	0.5	0.07	1	08/13/09	0.17	J
Method Blank	K0907114-MB	0.5	0.07	1	08/13/09	ND	

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Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 8/5/2009
Date Received : 8/6/2009
Date Prepared : NA
Date Analyzed : 08/13/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0907114-003DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	1.1	1.0	1.1	9	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 8/5/2009
Date Received : 8/6/2009
Date Prepared : NA
Date Analyzed : 08/13/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0907114-003MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	25.0	1.1	25.8	99	49-156	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/13/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0907114-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	NONE	SM 5310 C	24.7	25.5	103	69-136	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : 08/05/09
Date Received : 08/06/09

Tannin and Lignin

Analysis Method SM 5550 B
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0907114-001	0.2	0.03	1	08/18/09	0.09	J
BXS-2	K0907114-002	0.2	0.03	1	08/18/09	0.9	
BXS-4	K0907114-003	0.2	0.03	1	08/18/09	0.3	
BXS-3	K0907114-004	1.0	0.2	5	08/18/09	10.7	
BXS-5	K0907114-005	2.0	0.3	10	08/18/09	31.4	
Equ. Check	K0907114-006	0.2	0.03	1	08/18/09	ND	
Method Blank	K0907114-MB	0.2	0.03	1	08/18/09	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/18/09

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0907111-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Tannin and Lignin	SM 5550 B	0.4	2.7	2.6	2.7	4	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0907114
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/18/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0907111-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	SM 5550 B	0.4	2.0	2.7	4.6	93	75-125	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0907114
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/18/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0907114-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.0	1.1	110	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Columbia Analytical Services

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0907114

Sample Name:	Lab Code:
Batch QCD	K0907111-001D DISS
Batch QCS	K0907111-001S DISS
BXS-1	K0907114-001 DISS
BXS-2	K0907114-002 DISS
BXS-4	K0907114-003 DISS
BXS-3	K0907114-004 DISS
BXS-5	K0907114-005 DISS
Equ. Check	K0907114-006 DISS
Method Blank	K0907114-MB

Comments:

Approved By: 3C **Date:** 8/25/09

Metals

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INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0907114
Date Collected: 8/5/2009
Date Received: 8/6/2009
Units: ug/L
Basis: N/A

Sample Name: BXS-1 **Lab Code:** K0907114-001 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	08/18/09	08/19/09	0.8	B	
Barium	6010B	5.0	0.6	1.0	08/18/09	08/19/09	230		
Cadmium	6010B	5.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	08/18/09	08/19/09	21.2		
Iron	6010B	20.0	0.8	1.0	08/18/09	08/19/09	91.0		
Manganese	6010B	5.0	0.2	1.0	08/18/09	08/19/09	4180		
Nickel	6010B	20.0	2.0	1.0	08/18/09	08/19/09	109		
Zinc	6010B	10.0	0.8	1.0	08/18/09	08/19/09	3.4	B	

% Solids: 0.0

Comments:

Metals

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INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0907114
Date Collected: 8/5/2009
Date Received: 8/6/2009
Units: ug/L
Basis: N/A

Sample Name: BXS-2 **Lab Code:** K0907114-002 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	08/18/09	08/19/09	1.5	B	
Barium	6010B	5.0	0.6	1.0	08/18/09	08/19/09	39.6		
Cadmium	6010B	5.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	08/18/09	08/19/09	1340		
Manganese	6010B	5.0	0.2	1.0	08/18/09	08/19/09	2500		
Nickel	6010B	20.0	2.0	1.0	08/18/09	08/19/09	134		
Zinc	6010B	10.0	0.8	1.0	08/18/09	08/19/09	0.8	U	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0907114
Project No.:	Landfills	**Date Collected:**	8/5/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	8/6/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-4 **Lab Code:** K0907114-003 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	08/18/09	08/19/09	0.8	B	
Barium	6010B	5.0	0.6	1.0	08/18/09	08/19/09	229		
Cadmium	6010B	5.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	08/18/09	08/19/09	22.2		
Iron	6010B	20.0	0.8	1.0	08/18/09	08/19/09	91.1		
Manganese	6010B	5.0	0.2	1.0	08/18/09	08/19/09	4220		
Nickel	6010B	20.0	2.0	1.0	08/18/09	08/19/09	104		
Zinc	6010B	10.0	0.8	1.0	08/18/09	08/19/09	3.8	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0907114
Date Collected: 8/5/2009
Date Received: 8/6/2009
Units: ug/L
Basis: N/A

Sample Name: BXS-3 **Lab Code:** K0907114-004 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	08/18/09	08/19/09	0.5	U	
Barium	6010B	5.0	0.6	1.0	08/18/09	08/19/09	15.6		
Cadmium	6010B	5.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	08/18/09	08/19/09	11.6	B	
Manganese	6010B	5.0	0.2	1.0	08/18/09	08/19/09	7870		
Nickel	6010B	20.0	2.0	1.0	08/18/09	08/19/09	48.5		
Zinc	6010B	10.0	0.8	1.0	08/18/09	08/19/09	2.6	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0907114
Project No.:	Landfills	**Date Collected:**	8/5/2009
Project Name:	J.H. Baxter Arlington	**Date Received:**	8/6/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-5 **Lab Code:** K0907114-005 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	08/18/09	08/19/09	2.5	B	
Barium	6010B	5.0	0.6	1.0	08/18/09	08/19/09	22.7		
Cadmium	6010B	5.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	08/18/09	08/19/09	2280		
Manganese	6010B	5.0	0.2	1.0	08/18/09	08/19/09	2540		
Nickel	6010B	20.0	2.0	1.0	08/18/09	08/19/09	26.7		
Zinc	6010B	10.0	0.8	1.0	08/18/09	08/19/09	2.4	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

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

Service Request: K0907114
Date Collected: 8/5/2009
Date Received: 8/6/2009
Units: ug/L
Basis: N/A

Sample Name: Equ. Check
Lab Code: K0907114-006 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	08/18/09	08/19/09	0.5	U	
Barium	6010B	5.0	0.6	1.0	08/18/09	08/19/09	0.6	U	
Cadmium	6010B	5.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	08/18/09	08/19/09	0.8	B	
Manganese	6010B	5.0	0.2	1.0	08/18/09	08/19/09	0.2	B	
Nickel	6010B	20.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Zinc	6010B	10.0	0.8	1.0	08/18/09	08/19/09	2.4	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0907114
Project No.:	Landfills	**Date Collected:**	
Project Name:	J.H. Baxter Arlington	**Date Received:**	
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: Method Blank **Lab Code:** K0907114-MB

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.5	1.0	08/18/09	08/19/09	0.5	U	
Barium	6010B	5.0	0.6	1.0	08/18/09	08/19/09	0.6	U	
Cadmium	6010B	5.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	08/18/09	08/19/09	0.8	U	
Manganese	6010B	5.0	0.2	1.0	08/18/09	08/19/09	0.2	U	
Nickel	6010B	20.0	2.0	1.0	08/18/09	08/19/09	2.0	U	
Zinc	6010B	10.0	0.8	1.0	08/18/09	08/19/09	0.8	U	

% Solids: 0.0

Comments:

Metals

- 5A -

SPIKE SAMPLE RECOVERY

Client: JH Baxter & Company

Project No.: Landfills

Project Name: J.H. Baxter Arlington

Matrix: WATER

Service Request: K0907114

Units: UG/L

Basis: N/A

% Solids: 0.0

Sample Name: Batch QCS

Lab Code: K0907111-001S DISS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	63 - 127	41		0.8	B	40.00	100.5		7060A
Barium	80 - 124	1990		15.6		2000.00	98.7		6010B
Cadmium	71 - 142	50		2.0	U	50.00	100.0		6010B
Copper	86 - 113	250		2.9	B	250.00	98.8		6010B
Iron	72 - 131	988		5.1	B	1000.00	98.3		6010B
Manganese	84 - 121	552		43.5		500.00	101.7		6010B
Nickel	86 - 120	484		7.5	B	500.00	95.3		6010B
Zinc	87 - 113	489		2.0	B	500.00	97.4		6010B

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

Project No.: Landfills

Project Name: J.H. Baxter Arlington

Matrix: WATER

Service Request: K0907114

Units: UG/L

Basis: N/A

% Solids: 0.0

Sample Name: Batch QCD

Lab Code: K0907111-001D DISS

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		0.8	B	0.6	B	28.6		7060A
Barium		15.6		15.1		3.3		6010B
Cadmium		2.0	U	2.0	U			6010B
Copper		2.9	B	2.0	U	200.0		6010B
Iron		5.1	B	5.4	B	5.7		6010B
Manganese	20	43.5		43.1		0.9		6010B
Nickel		7.5	B	6.5	B	14.3		6010B
Zinc		2.0	B	2.3	B	14.0		6010B

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:** K0907114

Project No.: Landfills

Project Name: J.H. Baxter Arlington

Aqueous LCS Source: CAS MIXED **Solid LCS Source:**

Analyte	Aqueous: ug/L			Solid: mg/kg				
	True	Found	%R	True	Found	C	Limits	%R
Arsenic	25	26	104.0					
Barium	5000	5020	100.4					
Cadmium	1250	1220	97.6					
Copper	625	635	101.6					
Iron	2500	2540	101.6					
Manganese	1250	1250	100.0					
Nickel	1250	1210	96.8					
Zinc	1250	1200	96.0					

Columbia Analytical Services™ — CHAIN OF CUSTODY

SR#: 160901, 14

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE _____ OF _____ COC # _____

PROJECT NAME	J.H. Baxter Arlington
PROJECT NUMBER	Land fills
PROJECT MANAGER	Anita Ragan
COMPANY/ADDRESS	85 Baxter Rd
CITY/STATE/ZIP	Eugene OR 97402
E-MAIL ADDRESS	aragan@jhbaxter.com
PHONE #	541 689 3801
FAX #	541 689 8303
SAMPLER'S SIGNATURE	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	PAHs 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐	Hex-Chrom ☐	pH, Cond, Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐, AOX 1650 ☐ 506 ☐	COD, TOC, Ultimate, Nitrate	TDS, Sulfate, chloride, Cond, pH, Tannins & Lignins	REMARKS
BXS-1	8/5	0825		H_2O	4	X	X					X	X	X	
BXS-2	8/5	0915		H_2O	4	X	X					X	X	X	
BXS-4	8/5	1112		H_2O	4	X	X					X	X	X	
BXS-3	8/5	0957		H_2O	4	X	X					X	X	X	
BXS-5	8/5	0957		H_2O	4	X	X					X	X	X	
Equ. Check	8/5	1600		H_2O	4	X	X					X	X	X	

Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐ | Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐ | Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐ ☐ Fuel Fingerprint (FIO) ☐ NW-HCID Screen | Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐ | PCB's Aroclors ☐ Congeners ☐ | Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐ | Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐

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REPORT REQUIREMENTS

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X 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: J.H. Baxter

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.

___ 5 Day

X 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 Tl Sn V Zn Hg

Dissolved Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co Cr (Cu) (Fe) Pb Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V (Zn) Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

-Please call Kathy Gunderson w/ questions 360 942-3409

Metals have NOT been filtered.

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date/Time: 8/6/09 1335	Date/Time: 8/6/09 1335	Date/Time:	Date/Time: 8/6/09 1340
Printed Name: Anita Ragan	Printed Name:	Printed Name:	Printed Name:
Firm: Baxter	Firm: DHS	Firm:	Firm: CAS

RCOC #1 06/08

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC CL

Client / Project: UH Baxter Service Request K09 0714

Received: 8.6.09 Opened: 8.6.09 By: BW / SL

1. Samples were received via? *US Mail* *Fed Ex* *UPS* *DHL* *GH* *GS* *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
4. Is shipper's air-bill filed? If not, record air-bill number: _____ NA Y N

5. **Temperature of cooler(s) upon receipt (°C):**	1.7	2.4	1.5	1.4	
Temperature Blank (°C):	2.3	4.0	1.7	3.5	
Thermometer ID:	273	265	275	258	
6. If applicable, list Chain of Custody Numbers:					

7. Packing material used. *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other* _____
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 in the table below* NA (Y) N
12. **Were appropriate bottles/containers and volumes received for the tests indicated?** NA (Y) N
13. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below* NA (Y) N
    Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?** (NA) Y N
16. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

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

Does not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

Additional Notes, Discrepancies, & Resolutions: _____

EDGE ANALYTICAL LABORATORIES

Burlington WA | 1620 S Walnut St - 98233
Corporate Office | 800.755.9295 • 360.757.1400 • 360.757.1402fax
Bellingham WA | 805 Orchard Dr Suite 4 - 98225
Microbiology | 360.671.0688 • 360.671.1577fax

Data Report

Client Name: J H Baxter Company
85 Baxter Rd
Eugene, OR 97402

Reference Number: 09-11757
Project: Landfill Wells
Report Date: 8/19/09
Date Received: 8/6/09
Reviewed by:

Sample Description: BXN-4 - Baxter
Lab Number: 24892
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	22.2	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: BXN-3 - Baxter
Lab Number: 24893
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	15.0	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: BXN-5 - Baxter
Lab Number: 24894
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	20.7	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: BXN-2 - Baxter
Lab Number: 24895
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	109.1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: BXN-1 - Baxter
Lab Number: 24896
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	59.1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

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 acheived 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: cRslt_2.rpt

Reference Number: **09-11757**
Report Date: 8/19/09

Data Report

Sample Description: BXS-1 - Baxter
Lab Number: 24897
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: BXS-2 - Baxter
Lab Number: 24898
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: BXS-4 - Baxter
Lab Number: 24899
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: BXS-3 - Baxter
Lab Number: 24900
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: BXS-5 - Baxter
Lab Number: 24901
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

Sample Description: Equ. Check - Baxter
Lab Number: 24902
Sample Date: 8/5/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	1.0	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	8/7/09	MS	MQT_090806	

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 acheived 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)

8418

Report to:	J.H Baxter Company		Bill to:	J.H. Baxter & Company			
Ship Address:	~~P O Box 365~~ 85 Baxter Rd		Address:	PO BOX 10797			
City:	Eugene Arlington	St: ~~OR~~ WA Zip: ~~97463~~ 98223	City:	Eugene	St: OR	Zip: 97440	
Attn:			Phone:		FAX:		
Phone:	360 435-2146 FAX:		P.O.#:		Attn:		
Email:	kgunderson@premiercorp-usa.com		☐ Visa	☐ M/C	☐ A/E	Expires	/
Project:	Landfill Wells		Card#:				

For Lab Use Only
Ref # 09-11757

Check Regulatory Program
- ☐ Safe Drinking Water Act
- ☐ Clean Water Act
- ☐ RCRA / CERCLA
- ☐ Other

EDGE ANALYTICAL LABORATORIES
1620 S. Walnut St.
Burlington, WA 98233
1.800.755.9295

805 W. Orchard Dr. Suite 4
Bellingham, WA 98225

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 Loaction.
5. Enter number of containers.

Turn Around Time Required
- ☒ Standard
- ☐ Half-time (50% surcharge)
- ☐ Quickest (100% surcharge) Phone Call Req.
- ☐ Emergency (Phone Call Req.)

Analyses Requested

CO008418

	Field ID	Location	Grab/ Comp.	Sample Matrix*	Date	Time	SM9223QT								Number of Containers	Special Instructions Conditions on Receipt
1	BXW-4		Grab	H_2O	8/5	1519	☒	☐	☐	☐	☐	☐	☐	☐		
2	BXW-3		"	"	8/5	1449	☒	☐	☐	☐	☐	☐	☐	☐		
3	BXW-5		"	"	8/5	1519	☒	☐	☐	☐	☐	☐	☐	☐		
4	BXW-2		"	"	8/5	1327	☒	☐	☐	☐	☐	☐	☐	☐		
5	BXW-1		"	"	8/5	1407	☒	☐	☐	☐	☐	☐	☐	☐		
6							☐	☐	☐	☐	☐	☐	☐	☐		
7							☐	☐	☐	☐	☐	☐	☐	☐		
8							☐	☐	☐	☐	☐	☐	☐	☐		
9							☐	☐	☐	☐	☐	☐	☐	☐		
10							☐	☐	☐	☐	☐	☐	☐	☐		

Sampled by: Anita Ragan Phone: FAX: Email: Total Containers

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 _____

Relinquished by	Date	Time	Received by	Date	Time
[signature]	8/5/09	1645	[signature]	8/6/09	0902

	Yes	No	N/A
Custody seals intact			
Sample temp _____ C satisfactory			
Samples received intact			
Chain of custody & labels agree			

Chain of Custody / Analysis Request (Please complete all applicable shaded sections)

8418

Report to:	J H Baxter Company		Bill to:	J.H. Baxter & Company				For Lab Use Only	
Ship Address:	~~P O Box 305~~ 85 Baxter Rd		Address:	PO BOX 10797				Ref #	
City:	~~Eugene~~ Arlington	St: ~~OR~~ WA Zip: ~~97402~~ 98223	City:	Eugene	St:	OR	Zip: 97440	Check Regulatory Program	
Attn:			Phone:		FAX:			☐ Safe Drinking Water Act	
Phone:	360.435-2146 FAX:		P.O.#:		Attn:			☐ Clean Water Act	
Email:	kgunderson@premiercorp-usa.com		☐ Visa	☐ M/C	☐ A/E	Expires	/	☐ RCRA / CERCLA	
Project	Landfill Wells		Card#:					☐ Other	

ENCE ANALYTICAL LABORATORIES
1620 S. Walnut St.
Burlington, WA 98233
1.800.755.9295

805 W. Orchard Dr. Suite 4
Bellingham, WA 98225

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 Loaction.
5. Enter number of containers.

Turn Around Time Required

- ☒ Standard
- ☐ Half-time (50% surcharge)
- ☐ Quickest (100% surcharge) Phone Call Req.
- ☐ Emergency (Phone Call Req.)

Analyses Requested

TCO CO008418

	Field ID	Location	Grab/ Comp.	Sample Matrix*	Date	Time	SM9223QT								Number of Containers	Special Instructions Conditions on Receipt
1	BXS-1		Grab	H_2O	8/5	0825	☒	☐	☐	☐	☐	☐	☐	☐		
2	BXS-2		|	|	8/5	0915	☒	☐	☐	☐	☐	☐	☐	☐		
3	BXS-4		|	|	8/5	1112	☒	☐	☐	☐	☐	☐	☐	☐		
4	BXS-3		|	|	8/5	0957	☒	☐	☐	☐	☐	☐	☐	☐		
5	BXS-5		|	|	8/5	0957	☒	☐	☐	☐	☐	☐	☐	☐		
6	Equ. Check		|	|	8/5	1600	☒	☐	☐	☐	☐	☐	☐	☐		
7							☐	☐	☐	☐	☐	☐	☐	☐		
8							☐	☐	☐	☐	☐	☐	☐	☐		
9							☐	☐	☐	☐	☐	☐	☐	☐		
10							☐	☐	☐	☐	☐	☐	☐	☐		

Sampled by: Phone: FAX: Email: Total Containers

Sample Receipt Request (Must include FAX or Email) ☐

* **W** - water **SW** - surface water **WW** - waste water **OL** - oil
DW - drinking water **GW** - Ground water **S** - soil Other ____

Relinquished by	Date	Time	Received by	Date	Time
[signature]	8/5/09	1645	[signature]	8/6/09	1200

	Yes	No	N/A
Custody seals intact	☐	☐	☐
Sample temp____C satisfactory	☐	☐	☐
Samples received intact	☐	☐	
Chain of custody & labels agree		☐	

FORM COC 01-06-2009

Columbia Analytical Services
1317 S. 13th Avenue, Kelso, WA 98626 360.577.7222 360.636.1068 (fax) www.caslab.com

December 21, 2009 Analytical Report for Service Request No: K0911313

Kathy Gunderson
Premier Environmental Services
kgunderson@premiercorp-usa.com
129 Monohon Landing
Raymond, WA 98577

RE: JH Baxter Arlington/Landfills-South

Dear Kathy:

Enclosed are the results of the samples submitted to our laboratory on November 19, 2009. For your reference, these analyses have been assigned our service request number K0911313.

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. (CAS) 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 CLeaf@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Chris Leaf
Project Chemist

CL/lg

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
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.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL or LOQ but greater than or equal to the MDL or LOD.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The LOD has been adjusted for dilution.
i	The MRL/MDL or LOQ/LOD has been elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated concentration that is less than the MRL or LOQ but greater than or equal to the MDL or LOD.
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 compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The LOD has been adjusted for any dilution or
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 has been 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.
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 estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
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 compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The LOD has been adjusted for any dilution or
i	The MRL/MDL or LOQ/LOD has been 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.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	11/18/09
Project Number :	Landfills-South	**Date Received :**	11/19/09
Sample Matrix :	WATER		

Conductivity at 25 Degrees Celsius

Units : uMHOS/cm
Analysis Method 120.1 Basis : NA
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	2.0	0.4	1	12/01/09	299	
BXS-5	K0911313-002	2.0	0.4	1	12/01/09	314	
BXS-3	K0911313-003	2.0	0.4	1	12/01/09	598	
BXS-2	K0911313-004	2.0	0.4	1	12/01/09	823	
BXS-4	K0911313-005	2.0	0.4	1	12/01/09	194	
Method Blank	K0911313-MB	2.0	0.4	1	12/01/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/2009
Date Received : 11/19/2009
Date Prepared : NA
Date Analyzed : 12/01/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0911313-001DUP
Test Notes :

Units : uMHOS/cm
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Conductivity at 25 Degrees Celsius	120.1	2.0	299	314	307	5	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	12/01/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	uMHOS/cm
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Conductivity at 25 Degrees Celsius	NONE	120.1	839	881	105	85-115	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/09
Date Received : 11/19/09

Chloride

Analysis Method 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	0.20	0.06	2	11/30/09	6.52	
BXS-5	K0911313-002	0.20	0.06	2	11/30/09	6.55	
BXS-3	K0911313-003	0.20	0.06	2	11/30/09	3.28	
BXS-2	K0911313-004	0.20	0.06	2	11/30/09	4.43	
BXS-4	K0911313-005	0.20	0.06	2	11/30/09	1.94	
Method Blank	K0911313-MB	0.20	0.03	1	11/30/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 11/30/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0911180-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chloride	300.0	0.20	0.98	0.97	0.98	1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 11/30/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0911180-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	300.0	0.20	3.00	0.98	3.73	91	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/30/09

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	Batch QC		Units :	mg/L
Lab Code :	K0911180-001MS	K0911180-001DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Chloride	NONE	300.0	0.20	3.00	3.00	0.98	3.73	3.82	91	95	80-120	2	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/30/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	NONE	300.0	5.00	5.04	101	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/09
Date Received : 11/19/09

Sulfate

Analysis Method 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	0.20	0.02	2	11/30/09	15.0	
BXS-5	K0911313-002	0.20	0.02	2	11/30/09	14.9	
BXS-3	K0911313-003	0.20	0.02	2	11/30/09	ND	
BXS-2	K0911313-004	0.20	0.02	2	11/30/09	ND	
BXS-4	K0911313-005	0.20	0.02	2	11/30/09	3.32	
Method Blank	K0911313-MB	0.20	0.01	1	11/30/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 11/30/09

Duplicate Summary
Inorganic Parameters

Sample Name : BatchQC
Lab Code : K0911180-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfate	300.0	0.20	0.37	0.35	0.36	6	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 11/30/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BatchQC
Lab Code : K0911180-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	300.0	0.20	3.00	0.37	3.14	92	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

ient :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/30/09

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	BatchQC		Units :	mg/L
Lab Code :	K0911180-001MS	K0911180-001DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Sulfate	NONE	300.0	0.20	3.00	3.00	0.37	3.14	3.18	92	94	80-120	1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/30/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.00	4.95	99	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/09
Date Received : 11/19/09

Ammonia as Nitrogen

Units : mg/L
Basis : NA

Analysis Method 350.1
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	0.050	0.009	1	11/23/09	0.046	J
BXS-5	K0911313-002	0.050	0.009	1	11/23/09	0.181	
BXS-3	K0911313-003	0.050	0.009	1	11/23/09	0.557	
BXS-2	K0911313-004	0.050	0.009	1	11/23/09	0.026	J
BXS-4	K0911313-005	0.050	0.009	1	11/23/09	0.542	
Method Blank	K0911313-MB	0.050	0.009	1	11/23/09	0.015	J

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 11/23/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0911302-002DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Ammonia as Nitrogen	350.1	0.050	0.025	0.021	ND	-	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 11/23/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0911302-002MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	350.1	0.050	2.00	0.025	1.99	100	90-112	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/23/09

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	Batch QC		Units :	mg/L
Lab Code :	K0911302-002MS	K0911302-002DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Ammonia as Nitrogen	NONE	350.1	0.050	2.00	2.00	0.025	1.99	1.96	100	98	90-112	2	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/23/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	NONE	350.1	15.2	15.3	101	90-112	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/09
Date Received : 11/19/09

Nitrate+Nitrite as Nitrogen

Analysis Method 353.2
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	0.050	0.009	1	11/24/09	ND	
BXS-5	K0911313-002	0.050	0.009	1	11/24/09	ND	
BXS-3	K0911313-003	0.050	0.009	1	11/24/09	0.063	
BXS-2	K0911313-004	0.050	0.009	1	11/24/09	ND	
BXS-4	K0911313-005	0.050	0.009	1	11/24/09	ND	
Method Blank	K0911313-MB	0.050	0.009	1	11/24/09	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/2009
Date Received : 11/19/2009
Date Prepared : NA
Date Analyzed : 11/24/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0911313-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.050	ND	ND	ND	-	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/2009
Date Received : 11/19/2009
Date Prepared : NA
Date Analyzed : 11/24/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0911313-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.050	2.00	ND	2.05	103	86-117	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

ient :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	11/18/2009
Project Number :	Landfills-South	**Date Received :**	11/19/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/24/09

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	BXS-1		Units :	mg/L
Lab Code :	K0911313-001MS	K0911313-001DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	0.050	2.00	2.00	ND	2.05	2.05	103	103	86-117	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/24/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	21.0	21.5	102	88-110	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/09
Date Received : 11/19/09

Solids, Total Dissolved

Units : mg/L
Basis : NA

Analysis Method SM 2540 C
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	5.0	5.0	1	11/21/09	198	
BXS-5	K0911313-002	5.0	5.0	1	11/21/09	201	
BXS-3	K0911313-003	5.0	5.0	1	11/21/09	452	
BXS-2	K0911313-004	5.0	5.0	1	11/21/09	496	
BXS-4	K0911313-005	5.0	5.0	1	11/21/09	121	
Method Blank	K0911313-MB	5.0	5.0	1	11/21/09	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 11/21/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0911226-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total Dissolved	SM 2540 C	5.0	9750	10100	9930	4	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/21/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Solids, Total Dissolved	NONE	SM 2540 C	1200	1200	100	83-117	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/09
Date Received : 11/19/09

pH

Analysis Method SM 4500-H+ B
Test Notes :

Units : pH Units
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date/Time Analyzed	Result	Result Notes
BXS-1	K0911313-001	-	-	1	11/19/09 16:25	6.42	
BXS-5	K0911313-002	-	-	1	11/19/09 16:27	6.42	
BXS-3	K0911313-003	-	-	1	11/19/09 16:28	6.41	
BXS-2	K0911313-004	-	-	1	11/19/09 16:29	6.41	
BXS-4	K0911313-005	-	-	1	11/19/09 16:30	7.66	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 11/19/09

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0911218-001DUP
Test Notes :

Units : pH Units
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
pH	SM 4500-H+ B	-	5.91	5.95	5.93	<1	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/19/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	5.81	5.83	100	85-115	

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/09
Date Received : 11/19/09

Chemical Oxygen Demand (COD)

Units : mg/L
Basis : NA

Analysis Method SM 5220 C
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	5.0	3.0	1	12/01/09	13.7	
BXS-5	K0911313-002	5.0	3.0	1	12/01/09	13.7	
BXS-3	K0911313-003	5.0	3.0	1	12/01/09	65.9	
BXS-2	K0911313-004	5.0	3.0	1	12/01/09	42.1	
BXS-4	K0911313-005	5.0	3.0	1	12/01/09	ND	
Method Blank	K0911313-MB	5.0	3.0	1	12/01/09	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/2009
Date Received : 11/19/2009
Date Prepared : NA
Date Analyzed : 12/01/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0911313-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5.0	13.7	13.2	13.5	4	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/2009
Date Received : 11/19/2009
Date Prepared : NA
Date Analyzed : 12/01/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0911313-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	13	100	14	129	108	75-125	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	11/18/2009
Project Number :	Landfills-South	**Date Received :**	11/19/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	12/01/09

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	BXS-1		Units :	mg/L
Lab Code :	K0911313-001MS	K0911313-001DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	13	100	100	14	129	122	108	115	75-125	6	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	12/01/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	188	190	101	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	11/18/09
Project Number :	Landfills-South	**Date Received :**	11/19/09
Sample Matrix :	WATER		

Carbon, Total Organic

Analysis Method SM 5310 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	0.50	0.07	1	11/23/09	5.27	
BXS-5	K0911313-002	0.50	0.07	1	11/23/09	5.15	
BXS-3	K0911313-003	1.0	0.1	2	11/23/09	23.7	
BXS-2	K0911313-004	1.0	0.1	2	11/23/09	16.7	
BXS-4	K0911313-005	0.50	0.07	1	11/23/09	0.72	
Method Blank	K0911313-MB	0.50	0.07	1	11/23/09	ND	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/2009
Date Received : 11/19/2009
Date Prepared : NA
Date Analyzed : 11/23/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0911313-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	SM 5310 C	0.05	5.27	5.08	5.18	4	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/2009
Date Received : 11/19/2009
Date Prepared : NA
Date Analyzed : 11/23/09

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0911313-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	SM 5310 C	0.05	25.0	5.27	29.3	96	85-108	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/23/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	NONE	SM 5310 C	24.7	24.8	100	83-117	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/09
Date Received : 11/19/09

Tannin and Lignin

Units : mg/L
Basis : NA

Analysis Method SM 5550 B
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0911313-001	0.20	0.03	1	11/25/09	0.19	J
BXS-5	K0911313-002	0.20	0.03	1	11/25/09	0.18	J
BXS-3	K0911313-003	1.0	0.2	5	11/25/09	20.1	
BXS-2	K0911313-004	0.20	0.03	1	11/25/09	1.32	
BXS-4	K0911313-005	0.20	0.03	1	12/02/09	0.39	
Method Blank	K0911313-MB	0.20	0.03	1	11/25/09	ND	
Method Blank	K0911313-MB	0.20	0.03	1	12/02/09	0.09	J

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills-South
Sample Matrix : WATER

Service Request : K0911313
Date Collected : 11/18/2009
Date Received : 11/19/2009
Date Prepared : NA
Date Analyzed : 12/02/09

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0911313-005DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Tannin and Lignin	SM 5550 B	0.20	0.39	0.39	0.39	<1	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	11/18/2009
Project Number :	Landfills-South	**Date Received :**	11/19/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	12/02/09

Matrix Spike Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0911313-005MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	SM 5550 B	0.20	1.00	0.39	1.47	108	61-127	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

ient :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	11/18/2009
Project Number :	Landfills-South	**Date Received :**	11/19/2009
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	12/02/09

Matrix Spike/Duplicate Matrix Spike Summary

Sample Name :	BXS-4		Units :	mg/L
Lab Code :	K0911313-005MS	K0911313-005DMS	Basis :	NA
Test Notes :				

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Spike Recovery MS	Spike Recovery DMS	CAS Acceptance Limits	Relative Percent Difference	Result Notes
Tannin and Lignin	NONE	SM 5550 B	0.20	1.00	2.00	0.39	1.47	2.59	108	110	61-127	2	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/25/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.00	1.02	102	82-115	

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0911313
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills-South	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	12/02/09

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0911313-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.00	0.92	92	82-115	

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Columbia Analytical Services

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project Name: JH Baxter Arlington
Project No.: Landfills-South

Service Request: K0911313

Sample Name:	Lab Code:
BXS-1	K0911313-001 DISS
BXS-1D	K0911313-001D DISS
BXS-1S	K0911313-001S DISS
BXS-5	K0911313-002 DISS
BXS-3	K0911313-003 DISS
BXS-2	K0911313-004 DISS
BXS-4	K0911313-005 DISS
Method Blank	K0911313-MB

Comments:

Approved By: SC **Date:** 12/10/09

METALS

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INORGANIC ANALYSIS DATA PACKAGE

Client:	JH Baxter & Company	**Service Request:**	K0911313
Project No.:	Landfills-South	**Date Collected:**	11/18/2009
Project Name:	JH Baxter Arlington	**Date Received:**	11/19/2009
Matrix:	WATER	**Units:**	ug/L
		Basis:	N/A

Sample Name: BXS-1 **Lab Code:** K0911313-001 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	1.0	1.0	12/03/09	12/07/09	1.0	U	
Barium	6010B	5.0	0.6	1.0	12/04/09	12/04/09	13.9		
Cadmium	6010B	5.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	12/04/09	12/04/09	4.7	J	
Manganese	6010B	5.0	0.2	1.0	12/04/09	12/04/09	204		
Nickel	6010B	20.0	2.0	1.0	12/04/09	12/04/09	11.1	J	
Zinc	6010B	10.0	0.8	1.0	12/04/09	12/04/09	1.5	J	

% Solids: 0.0

Comments:

METALS

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INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills-South
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0911313
Date Collected: 11/18/2009
Date Received: 11/19/2009
Units: ug/L
Basis: N/A

Sample Name: BXS-5
Lab Code: K0911313-002 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	1.0	1.0	12/03/09	12/07/09	1.0	U	
Barium	6010B	5.0	0.6	1.0	12/04/09	12/04/09	13.1		
Cadmium	6010B	5.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	12/04/09	12/04/09	4.2	J	
Manganese	6010B	5.0	0.2	1.0	12/04/09	12/04/09	204		
Nickel	6010B	20.0	2.0	1.0	12/04/09	12/04/09	10.1	J	
Zinc	6010B	10.0	0.8	1.0	12/04/09	12/04/09	0.8	U	

% Solids: 0.0

Comments:

METALS

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills-South
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0911313
Date Collected: 11/18/2009
Date Received: 11/19/2009
Units: ug/L
Basis: N/A

Sample Name: BXS-3
Lab Code: K0911313-003 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	10.6	2.1	2.1	12/03/09	12/07/09	63.5		
Barium	6010B	5.0	0.6	1.0	12/04/09	12/04/09	115		
Cadmium	6010B	5.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	12/04/09	12/04/09	59700		
Manganese	6010B	5.0	0.2	1.0	12/04/09	12/04/09	13400		
Nickel	6010B	20.0	2.0	1.0	12/04/09	12/04/09	13.2	J	
Zinc	6010B	10.0	0.8	1.0	12/04/09	12/04/09	1.5	J	

% Solids: 0.0

Comments:

METALS

- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills-South
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0911313
Date Collected: 11/18/2009
Date Received: 11/19/2009
Units: ug/L
Basis: N/A

Sample Name: BXS-2
Lab Code: K0911313-004 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	1.0	1.0	12/03/09	12/07/09	1.0	U	
Barium	6010B	5.0	0.6	1.0	12/04/09	12/04/09	45.5		
Cadmium	6010B	5.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	12/04/09	12/04/09	480		
Manganese	6010B	5.0	0.2	1.0	12/04/09	12/04/09	1300		
Nickel	6010B	20.0	2.0	1.0	12/04/09	12/04/09	31.1		
Zinc	6010B	10.0	0.8	1.0	12/04/09	12/04/09	2.8	J	

% Solids: 0.0

Comments:

METALS

- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills-South
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0911313
Date Collected: 11/18/2009
Date Received: 11/19/2009
Units: ug/L
Basis: N/A

Sample Name: BXS-4 **Lab Code:** K0911313-005 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	1.0	1.0	12/03/09	12/07/09	6.0		
Barium	6010B	5.0	0.6	1.0	12/04/09	12/04/09	26.5		
Cadmium	6010B	5.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	12/04/09	12/04/09	43.6		
Manganese	6010B	5.0	0.2	1.0	12/04/09	12/04/09	110		
Nickel	6010B	20.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Zinc	6010B	10.0	0.8	1.0	12/04/09	12/04/09	0.8	U	

% Solids: 0.0

Comments:

METALS

- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills-South
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0911313
Date Collected:
Date Received:
Units: ug/L
Basis: N/A

Sample Name: Method Blank
Lab Code: K0911313-MB

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	1.0	1.0	12/03/09	12/07/09	1.0	U	
Barium	6010B	5.0	0.6	1.0	12/04/09	12/04/09	0.6	U	
Cadmium	6010B	5.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Copper	6010B	10.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Iron	6010B	20.0	0.8	1.0	12/04/09	12/04/09	0.8	U	
Manganese	6010B	5.0	0.2	1.0	12/04/09	12/04/09	0.2	U	
Nickel	6010B	20.0	2.0	1.0	12/04/09	12/04/09	2.0	U	
Zinc	6010B	10.0	0.8	1.0	12/04/09	12/04/09	0.8	U	

% Solids: 0.0

Comments:

METALS

- 5A -

SPIKE SAMPLE RECOVERY

Client:	JH Baxter & Company	**Service Request:**	K0911313
Project No.:	Landfills-South	**Units:**	UG/L
Project Name:	JH Baxter Arlington	**Basis:**	N/A
Matrix:	WATER	**% Solids:**	0.0

Sample Name: BXS-1S **Lab Code:** K0911313-001S DISS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	63 - 127	41.5		1.0	U	40.00	103.8		7060A
Barium	80 - 124	2060		13.9		2000.00	102.3		6010B
Cadmium	71 - 142	50		2.0	U	50.00	100.0		6010B
Copper	86 - 113	247		2.0	U	250.00	98.8		6010B
Iron	72 - 131	986		4.7	J	1000.00	98.1		6010B
Manganese	84 - 121	717		204		500.00	102.6		6010B
Nickel	86 - 120	499		11.1	J	500.00	97.6		6010B
Zinc	87 - 113	492		1.5	J	500.00	98.1		6010B

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: K0911313

Project No.: Landfills-South
Units: UG/L

Project Name: JH Baxter Arlington
Basis: N/A

Matrix: WATER
% Solids: 0.0

Sample Name: BXS-1D
Lab Code: K0911313-001D DISS

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		1.0	U	1.0	U			7060A
Barium		13.9		13.0		6.7		6010B
Cadmium		2.0	U	2.0	U			6010B
Copper		2.0	U	2.0	U			6010B
Iron		4.7	J	3.5	J	29.3		6010B
Manganese	20	204		205		0.5		6010B
Nickel		11.1	J	10.3	J	7.5		6010B
Zinc		1.5	J	1.7	J	12.5		6010B

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:** K0911313

Project No.: Landfills-South

Project Name: JH Baxter Arlington

Aqueous LCS Source: CAS MIXED **Solid LCS Source:**

Analyte	Aqueous: ug/L			Solid: mg/kg				
	True	Found	%R	True	Found	C	Limits	%R
Arsenic	25	25.5	102.0					
Barium	5000	5210	104.2					
Cadmium	1250	1210	96.8					
Copper	625	613	98.1					
Iron	2500	2540	101.6					
Manganese	1250	1250	100.0					
Nickel	1250	1240	99.2					
Zinc	1250	1230	98.4					

CHAIN OF CUSTODY

Columbia Analytical Services™

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: KDM 11312

PAGE _____ OF _____ COC #_____

PROJECT NAME: JH Baxter Arlington Landfills - South

PROJECT NUMBER:

PROJECT MANAGER: Anita Ragan

COMPANY/ADDRESS: 25 Baxter Rd

CITY/STATE/ZIP: Eugene, OR 97402

E-MAIL ADDRESS: aragan@jhbaxter

PHONE #: 541 689 3801 FAX #: 541 689 8303

SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐ 8021 ☐ BTEX ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐	Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHs 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐	Hex-Chrom ☐	pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	COD, TOC, Nitrate, Phosphate	TDS, Sulfate, Chloride	REMARKS
BXS-1	11/18	0845		H_2O	3										X					X		X	
BXS-5	11/18	0850			3										X					X		X	
BXS-3	11/18	0959			3										X					X		X	
BXS-2	11/18	1031			3										X					X		X	
BXS-4	11/18	1250			3										X					X		X	

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REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

_X_ 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: Baxter

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.

___ 5 Day

_X_ 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 Tl Sn V Zn Hg

Dissolved Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co Cr (Cu) (Fe) Pb Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V (Zn) Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

- please contact Kathy Gunderson w/ questions 360-942-3409
- metals are field filtered

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Date/Time: 11/19/09 1414	Date/Time: 11/19/09 1414	Date/Time:	Date/Time:
Printed Name: Anita Ragan	Printed Name: Tom Jones	Printed Name:	Printed Name:
Firm: Baxter	Firm: CAS	Firm:	Firm:

RCOC #1 06/08

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC AC

Client / Project: Burke Service Request K09

Received: 11/19/09 Opened: 11/19/09 By: 77

1. Samples were received via? *US Mail* *Fed Ex* *UPS* *DHL* *GH* *GS* *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? NA
   If present, were custody seals intact? ~~Y NA~~ N If present, were they signed and dated? ~~Y NA~~ N
4. Is shipper's air-bill filed? If not, record air-bill number: _____ (NA) Y N

5. **Temperature of cooler(s) upon receipt (°C):**	0.3	2.6	-0.3	
Temperature Blank (°C):	0.9	0.5	3.3/2.0/2.3	Thermo 3
Thermometer ID:	285	257	279	
6. If applicable, list Chain of Custody Numbers:				

7. Packing material used. *(Inserts)* *Baggies* *(Bubble Wrap)* *Gel Packs* *(Wet Ice)* *(Sleeves)* *Other* _____

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 in the table below*	NA	(Y)	N
12. **Were appropriate bottles/containers and volumes received for the tests indicated?**	NA	(Y)	N
13. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below*	NA	(Y)	N
Were VOA vials received without headspace? *Indicate in the table below.*	(NA)	Y	N
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?**	(NA)	Y	N
16. Was C12/Res negative?	(NA)	Y	N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

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

*Does not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

Additional Notes, Discrepancies, & Resolutions: _____

EDGE ANALYTICAL LABORATORIES

Burlington WA (Corporate Office) | 1620 S Walnut St - 98233
800.755.9295 • 360.757.1400 • 360.757.1402fax
Bellingham WA (Microbiology) | 805 Orchard Dr Suite 4 - 98225
360.671.0688 • 360.671.1577fax

Data Report

Client Name: J H Baxter Company
85 Baxter Rd
Eugene, OR 97402

Reference Number: **09-17990**
Project: Landfill Wells & Carbon
Report Date: 11/23/09
Date Received: 11/19/09
Reviewed by:

Sample Description: BXS-1 - JHB Arlington
Lab Number: 38316
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

Sample Description: BXS-2 - JHB Arlington
Lab Number: 38317
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

Sample Description: BXS-3 - JHB Arlington
Lab Number: 38318
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	ms	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	ms	QT_091119	

Sample Description: BXS-4 - JHB Arlington
Lab Number: 38319
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

Sample Description: BXS-5 - JHB Arlington
Lab Number: 38320
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

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 acheived 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: cRslt_2.rpt

Reference Number: **09-17990**

Report Date: 11/23/09

Data Report

Sample Description: BXN-1 - JHB Arlington
Lab Number: 38321
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	11.0	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

Sample Description: BXN-2 - JHB Arlington
Lab Number: 38322
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	6.3	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

Sample Description: BXN-3 - JHB Arlington
Lab Number: 38323
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	4.1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

Sample Description: BXN-4 - JHB Arlington
Lab Number: 38324
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	1.0	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

Sample Description: BXN-5 - JHB Arlington
Lab Number: 38325
Sample Date: 11/18/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	6.3	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

Sample Description: Equ. Check - JHB Arlington
Lab Number: 38326
Sample Date: 11/19/09
Collected By: A. Ragan

CAS ID#	Parameter	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comment
	TOTAL COLIFORM	3.1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	
	E. Coli	<1	1		MPN/100mL	1	SM9223 B.2.b	11/20/09	MS	QT_091119	

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 acheived 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)

PAGE ___ OF ___

EDGE ANALYTICAL

Corporate
1620 S Walnut St
Burlington, WA 98233
1.800.755.9295

Microbiology
805 W. Orchard Dr. Suite 4
Bellingham, WA 98225

REPORT TO: JH Baxter
ADDRESS: 85 N Baxter Rd
CITY: Eugene STATE: OR ZIP: 97402
ATTN: Kathy Gunderson
PHONE: 360-435-2146 FAX:
EMAIL: Kgunderson@premiercorp-usa.com
PROJECT NAME:

BILL TO: JH Baxter + Co.
ADDRESS: 85 N. Baxter Rd
CITY: Eugene STATE: OR ZIP: 97402
PHONE: 541-689-3801 FAX: 541-689-8303
PO#: ATTN: Anita Ragan
☐ VISA ☐ M/C ☐ A/E EXPIRES
CARD#

FOR LAB USE ONLY
REF# 09-17990

CHECK REGULATORY PROGRAM
☐ SAFE DRINKING WATER ACT
☐ CLEAN WATER ACT
☐ RCRA / CERCLA
☐ OTHER

INSTRUCTIONS
1. USE ONE LINE PER SAMPLE.
2. BE SPECIFIC IN TEST REQUESTS.
3. CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE.
4. ENTER NUMBER OF CONTAINERS.

TURN AROUND TIME REQUIRED
☑ STANDARD
☐ HALF-TIME (50% SURCHARGE)
☐ QUICKEST (100% SURCHARGE)
☐ OTHER ____

ANALYSIS REQUESTED

	SAMPLE ID	LOCATION	GRAB/COMP.	MATRIX	DATE	TIME	Total Colif. SM 9223QT							NUMBER OF CONTAINERS	SPECIAL INSTRUCTIONS/CONDITIONS ON RECEIPT
1	BXS-1	JHB Arlington	G	H_2O	11-18	0845	☑	☐	☐	☐	☐	☐	☐	1	
2	BXS-2	|	|	|	11-18	1031	☑	☐	☐	☐	☐	☐	☐	1	
3	BXS-3	|	|	|	11-16	0959	☑	☐	☐	☐	☐	☐	☐	1	
4	BXS-4	|	|	|	11-18	1250	☑	☐	☐	☐	☐	☐	☐	1	
5	BXS-5	|	|	|	11-18	0850	☑	☐	☐	☐	☐	☐	☐	1	
6	BXN-1	|	|	|	11-18	1525	☑	☐	☐	☐	☐	☐	☐	1	
7	BXN-2	|	|	|	11-18	1455	☑	☐	☐	☐	☐	☐	☐	1	
8	BXN-3	|	|	|	11-18	1557	☑	☐	☐	☐	☐	☐	☐	1	
9	BXN-4	|	|	|	11-18	1621	☑	☐	☐	☐	☐	☐	☐	1	
10	BXN-5	|	|	|	11-18	1600	☑	☐	☐	☐	☐	☐	☐	1	

SAMPLED BY: Anita Ragan PHONE: 541-689-3801 FAX: 541-689-8303 EMAIL: aragan@jhbaxter.com

TOTAL CONTAINERS: 10

SAMPLE RECEIPT REQUESTED (MUST INCLUDE FAX OR EMAIL) ☐

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	11/19/09	0812	Megan Schara	11/19/09	11:80

	YES	NO	N/A
CUSTODY SEALS INTACT	☐	☐	☐
SAMPLE TEMP ____ °C SATISFACTORY	☐	☐	☐
SAMPLES RECEIVED INTACT	☐	☐	
CHAIN OF CUSTODY & LABELS AGREE	☐	☐	

CHAIN OF CUSTODY / ANALYSIS REQUEST (PLEASE COMPLETE ALL APPLICABLE SHADED SECTIONS)

PAGE ____ OF ____

REPORT TO: JH Baxter	BILL TO: J.H. Baxter
ADDRESS: 85 N Baxter Rd	ADDRESS: 85 N Baxter Rd
CITY: Eugene STATE: OR ZIP: 97402	CITY: Eugene STATE: OR ZIP: 97402
ATTN: Kathy Gunderson	PHONE: 5416893801 FAX: 5416898303
PHONE: 360-435-2146 FAX	P.O.#: ATTN: Anita Ragan
EMAIL: kgunderson@premiercorpusa.com	☐ VISA ☐ M/C ☐ A/E EXPIRES
PROJECT NAME:	CARD#:

FOR LAB USE ONLY

REF#

CHECK REGULATORY PROGRAM

- ☐ SAFE DRINKING WATER ACT
- ☐ CLEAN WATER ACT
- ☐ RCRA / CERCLA
- ☐ OTHER

ENCO ANALYTICAL

Corporate
1620 S Walnut St
Burlington, WA 98233
1.800.755.9295

Microbiology
805 W. Orchard Dr. Suite 4
Bellingham, WA 98225

INSTRUCTIONS

1. USE ONE LINE PER SAMPLE.
2. BE SPECIFIC IN TEST REQUESTS.
3. CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE.
4. ENTER NUMBER OF CONTAINERS.

TURN AROUND TIME REQUIRED

- ☑ STANDARD
- ☐ HALF-TIME (50% SURCHARGE)
- ☐ QUICKEST (100% SURCHARGE)
- ☐ OTHER ____

ANALYSIS REQUESTED

	SAMPLE ID	LOCATION	GRAB/ COMP.	MATRIX	DATE	TIME	total Coli/E. coli 9223B QT							NUMBER OF CONTAINERS	SPECIAL INSTRUCTIONS/ CONDITIONS ON RECEIPT
1	Equicheck	JHB Arlington	G	H_2O	11/19	0800	☒	☐	☐	☐	☐	☐	☐	1	
2							☐	☐	☐	☐	☐	☐	☐		
3							☐	☐	☐	☐	☐	☐	☐		
4							☐	☐	☐	☐	☐	☐	☐		
5							☐	☐	☐	☐	☐	☐	☐		
6							☐	☐	☐	☐	☐	☐	☐		
7							☐	☐	☐	☐	☐	☐	☐		
8							☐	☐	☐	☐	☐	☐	☐		
9							☐	☐	☐	☐	☐	☐	☐		
10							☐	☐	☐	☐	☐	☐	☐		

SAMPLED BY: Anita Ragan PHONE: 5416893801 FAX: 5416898303 EMAIL: aragan@jhbaxter.com ◀ TOTAL CONTAINERS

SAMPLE RECEIPT REQUESTED (MUST INCLUDE FAX OR EMAIL) ☐

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	11/19/09	0812	Megan Schenck	11/19/09	11:50

	YES	NO	N/A
CUSTODY SEALS INTACT	☐	☐	☐
SAMPLE TEMP ____ °C SATISFACTORY	☐	☐	☐
SAMPLES RECEIVED INTACT	☐	☐	
CHAIN OF CUSTODY & LABELS AGREE	☐	☐	

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

Field pH

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-08	7.66					
Jul-08	7.98					
Oct-08	8.32					
Feb-09	8.09	7.66	7.98	8.32	8.01	0.08
May-09	8.25	7.98	8.32	8.09	8.16	0.02
Aug-09	7.89	8.32	8.09	8.25	8.14	0.04
Nov-09	7.96	8.09	8.25	7.89	8.05	0.03

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	6.23							
Jul-08	6.42							
Oct-08	6.55							
Feb-09	6.77	6.23	6.42	6.55	6.49	0.05	0.23	*-8.54*
May-09	6.44	6.42	6.55	6.77	6.55	0.03	0.16	*-10.16*
Aug-09	6.52	6.55	6.77	6.44	6.57	0.02	0.14	*-10.16*
Nov-09	6.50	6.77	6.44	6.52	6.56	0.02	0.15	*-9.59*

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	6.10							
Jul-08	6.37							
Oct-08	6.48							
Feb-09	6.56	6.1	6.37	6.48	6.38	0.04	0.20	*-9.62*
May-09	6.35	6.37	6.48	6.56	6.44	0.01	0.10	*-11.80*
Aug-09	6.64	6.48	6.56	6.35	6.51	0.02	0.12	*-10.83*
Nov-09	6.46	6.56	6.35	6.64	6.50	0.02	0.13	*-10.24*

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5.98							
Jul-08	6.14							
Oct-08	6.28							
Feb-09	6.42	5.98	6.14	6.28	6.21	0.04	0.19	*-10.86*
May-09	6.33	6.14	6.28	6.42	6.29	0.01	0.12	*-12.52*
Aug-09	6.41	6.28	6.42	6.33	6.36	0.00	0.07	*-12.59*
Nov-09	6.37	6.42	6.33	6.41	6.38	0.00	0.04	*-12.00*

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 Conductivity

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
Apr-08	201				m_o	s^1
Jul-08	180					
Oct-08	177					
Feb-09	176	201	180	177	183.50	139.00
May-09	185	180	177	176	179.50	16.33
Aug-09	185	177	176	185	180.75	24.25
Nov-09	192	176	185	185	184.50	43.00

BXS-3

(Downgradient well)

Apr-08	846							
Jul-08	726				X_{bar}	s^2	s	t_{stat}
Oct-08	722							
Feb-09	734	846	726	722	757	3545	60	**18.90**
May-09	736	726	722	734	730	44	7	**81.39**
Aug-09	695	722	734	736	722	356	19	**48.62**
Nov-09	755	734	736	695	730	634	25	**39.24**

BXS-2

(Downgradient well)

Apr-08	794							
Jul-08	732				X_{bar}	s^2	s	t_{stat}
Oct-08	733							
Feb-09	749	794	732	733	752	845	29	**36.25**
May-09	812	732	733	749	757	1430	38	**29.14**
Aug-09	797	733	749	812	773	1424	38	**29.95**
Nov-09	815	749	812	797	793	932	31	**37.20**

BXS-1

(Downgradient well)

Apr-08	485							
Jul-08	510				X_{bar}	s^2	s	t_{stat}
Oct-08	496							
Feb-09	401	485	510	496	473	2409	49	**11.47**
May-09	335	510	496	401	436	6834	83	**6.13**
Aug-09	309	496	401	335	385	6951	83	**4.86**
Nov-09	315	401	335	309	340	1777	42	**7.10**

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

Ammonia

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
Apr-08	0.46				m_o	s^1
Jul-08	0.48					
Oct-08	0.53					
Feb-09	0.51	0.46	0.48	0.53	0.50	0.0010
May-09	0.61	0.48	0.53	0.51	0.53	0.0031
Aug-09	0.49	0.53	0.51	0.61	0.54	0.0028
Nov-09	0.542	0.51	0.61	0.49	0.54	0.0028

BXS-3

(Downgradient well)

Apr-08	0.39				X_{bar}	s^2	s	t_{stat}
Jul-08	0.75							
Oct-08	0.54							
Feb-09	1.44	0.39	0.75	0.54	0.78	0.22	0.46	1.23
May-09	1.08	0.75	0.54	1.44	0.95	0.16	0.39	2.13
Aug-09	1.24	0.54	1.44	1.08	1.08	0.15	0.39	**2.79**
Nov-09	0.557	1.44	1.08	1.24	1.08	0.14	0.38	**2.85**

BXS-2

(Downgradient well)

Apr-08	0.025				X_{bar}	s^2	s	t_{stat}
Jul-08	0.025							
Oct-08	0.025							
Feb-09	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-30.23*
May-09	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-32.65*
Aug-09	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-32.81*
Nov-09	0.026	0.025	0.025	0.025	0.03	0.00	0.00	*-32.96*

BXS-1

(Downgradient well)

Apr-08	0.025				X_{bar}	s^2	s	t_{stat}
Jul-08	0.025							
Oct-08	0.025							
Feb-09	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-30.23*
May-09	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-32.65*
Aug-09	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-32.81*
Nov-09	0.046	0.025	0.025	0.025	0.03	0.00	0.01	*-30.94*

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 *grey 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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** 4

Critical Statistic t_c **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	3					
Jul-08	6					
Oct-08	6					
Feb-09	2.5	3	6	6	4.38	3.56
May-09	22	6	6	2.5	9.13	76.40
Aug-09	3	6	2.5	22	8.38	84.90
Nov-09	2.5	2.5	22	3	7.50	93.50

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	76							
Jul-08	75							
Oct-08	65							
Feb-09	69	76	75	65	71.25	26.92	5.19	**24.23**
May-09	70	75	65	69	69.75	16.92	4.11	**26.79**
Aug-09	106	65	69	70	77.50	365.67	19.12	**7.19**
Nov-09	65.9	69	70	106	77.73	358.37	18.93	**7.38**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	42							
Jul-08	37							
Oct-08	39							
Feb-09	42	42	37	39	40.00	6.00	2.45	**23.04**
May-09	38	37	39	42	39.00	4.67	2.16	**20.83**
Aug-09	43	39	42	38	40.50	5.67	2.38	**21.15**
Nov-09	42.1	42	38	43	41.28	4.97	2.23	**23.13**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	13							
Jul-08	24							
Oct-08	16							
Feb-09	16	13	24	16	17.25	22.25	4.72	**5.07**
May-09	13	24	16	16	17.25	22.25	4.72	**3.20**
Aug-09	12	16	16	13	14.25	4.25	2.06	**4.20**
Nov-09	13.7	16	13	12	13.68	2.89	1.70	**4.86**

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-08	1.8					
Jul-08	1.8					
Oct-08	1.9					
Feb-09	1.7	1.8	1.8	1.9	1.80	0.007
May-09	2.2	1.8	1.9	1.7	1.90	0.047
Aug-09	1.8	1.9	1.7	2.2	1.90	0.047
Nov-09	1.94	1.7	2.2	1.8	1.91	0.047

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	2.4							
Jul-08	2.8							
Oct-08	3.6							
Feb-09	2.6	2.4	2.8	3.6	2.85	0.28	0.53	**3.95**
May-09	4.5	2.8	3.6	2.6	3.38	0.75	0.87	**3.39**
Aug-09	3.8	3.6	2.6	4.5	3.63	0.62	0.78	**4.37**
Nov-09	3.28	2.6	4.5	3.8	3.55	0.65	0.80	**4.05**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	4.4							
Jul-08	4.2							
Oct-08	4.9							
Feb-09	4.2	4.4	4.2	4.9	4.43	0.11	0.33	**15.43**
May-09	6.1	4.2	4.9	4.2	4.85	0.80	0.90	**6.56**
Aug-09	4.3	4.9	4.2	6.1	4.88	0.76	0.87	**6.78**
Nov-09	4.43	4.2	6.1	4.3	4.76	0.81	0.90	**6.30**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5							
Jul-08	4.5							
Oct-08	5.1							
Feb-09	7.6	5	4.5	5.1	5.55	1.94	1.39	**5.38**
May-09	7.3	4.5	5.1	7.6	6.13	2.42	1.55	**5.43**
Aug-09	5.9	5.1	7.6	7.3	6.48	1.39	1.18	**7.74**
Nov-09	6.52	7.6	7.3	5.9	6.83	0.59	0.77	**12.72**

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	0.025					
Jul-08	0.1					
Oct-08	0.025					
Feb-09	0.025	0.025	0.1	0.025	0.044	0.0014
May-09	0.013	0.1	0.025	0.025	0.041	0.0016
Aug-09	0.025	0.025	0.025	0.013	0.022	0.0000
Nov-09	0.025	0.025	0.013	0.025	0.022	0.0000

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	0.025							
Jul-08	0.15							
Oct-08	0.1							
Feb-09	0.17	0.025	0.15	0.1	0.11	0.00	0.06	1.81
May-09	0.21	0.15	0.1	0.17	0.16	0.00	0.05	**3.95**
Aug-09	0.17	0.1	0.17	0.21	0.16	0.00	0.05	**4.75**
Nov-09	0.063	0.17	0.21	0.17	0.15	0.00	0.06	**3.58**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	0.025							
Jul-08	0.025							
Oct-08	0.026							
Feb-09	0.01	0.025	0.025	0.026	0.02	0.00	0.01	-1.16
May-09	0.029	0.025	0.026	0.01	0.02	0.00	0.01	-0.95
Aug-09	0.017	0.026	0.01	0.029	0.02	0.00	0.01	-0.08
Nov-09	0.025	0.01	0.029	0.017	0.02	0.00	0.01	-0.09

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	0.74							
Jul-08	1.48							
Oct-08	0.51							
Feb-09	0.99	0.74	1.48	0.51	0.93	0.17	0.42	**4.25**
May-09	0.12	1.48	0.51	0.99	0.78	0.35	0.59	**2.49**
Aug-09	0.11	0.51	0.99	0.12	0.43	0.17	0.42	1.97
Nov-09	0.025	0.99	0.12	0.11	0.31	0.21	0.45	1.27

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-08	118					
Jul-08	161					
Oct-08	139					
Feb-09	136	118	161	139	138.50	311.00
May-09	130	161	139	136	141.50	183.00
Aug-09	119	139	136	130	131.00	78.00
Nov-09	121	136	130	119	126.50	63.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	496							
Jul-08	415							
Oct-08	465							
Feb-09	461	496	415	465	459	1115	33	**16.99**
May-09	460	415	465	461	450	557	24	**20.96**
Aug-09	378	465	461	460	441	1769	42	**13.60**
Nov-09	452	461	460	378	438	1603	40	**14.23**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	430							
Jul-08	506							
Oct-08	478							
Feb-09	498	430	506	478	478	1163	34	**17.69**
May-09	513	506	478	498	499	229	15	**30.75**
Aug-09	491	478	498	513	495	213	15	**31.81**
Nov-09	496	498	513	491	500	90	9	**37.27**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	265							
Jul-08	363							
Oct-08	323							
Feb-09	261	265	363	323	303	2403	49	**6.32**
May-09	223	363	323	261	293	3908	63	**4.65**
Aug-09	178	323	261	223	246	3769	61	**3.61**
Nov-09	198	261	223	178	215	1279	36	**4.44**

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** 4

Critical Statistic t_c **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	1.3					
Jul-08	1.3					
Oct-08	1.1					
Feb-09	1.4	1.3	1.3	1.1	1.28	0.016
May-09	1.7	1.3	1.1	1.4	1.38	0.063
Aug-09	1.1	1.1	1.4	1.7	1.33	0.082
Nov-09	3.32	1.4	1.7	1.1	1.88	0.982

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	0.101							
Jul-08	0.119							
Oct-08	0.107							
Feb-09	0.112	0.101	0.119	0.107	0.110	0.000	0.008	*-18.49*
May-09	0.4	0.119	0.107	0.112	0.185	0.021	0.144	*-12.46*
Aug-09	0.09	0.107	0.112	0.4	0.177	0.022	0.149	*-11.78*
Nov-09	0.1	0.112	0.4	0.09	0.176	0.022	0.150	*-17.42*

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	0.161							
Jul-08	0.137							
Oct-08	0.159							
Feb-09	0.12	0.161	0.137	0.159	0.14	0.000	0.019	*-17.76*
May-09	0.1	0.137	0.159	0.12	0.13	0.001	0.025	*-19.42*
Aug-09	0.12	0.159	0.12	0.1	0.12	0.001	0.025	*-18.72*
Nov-09	0.1	0.12	0.1	0.12	0.11	0.000	0.012	*-28.02*

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	9.6							
Jul-08	6.2							
Oct-08	6.7							
Feb-09	6.4	9.6	6.2	6.7	7.23	2.55	1.60	**7.43**
May-09	6.7	6.2	6.7	6.4	6.50	0.06	0.24	**37.22**
Aug-09	13.9	6.7	6.4	6.7	8.43	13.34	3.65	**3.89**
Nov-09	15	6.4	6.7	13.9	10.50	21.02	4.58	**3.76**

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	0.3					
Jul-08	0.2					
Oct-08	0.3					
Feb-09	0.2	0.3	0.2	0.3	0.25	0.003
May-09	0.3	0.2	0.3	0.2	0.25	0.003
Aug-09	0.3	0.3	0.2	0.3	0.28	0.0025
Nov-09	0.39	0.2	0.3	0.3	0.30	0.0060

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	22.5							
Jul-08	11.5							
Oct-08	2.5							
Feb-09	3.4	22.5	11.5	2.5	9.98	86.10	9.28	2.10
May-09	3.5	11.5	2.5	3.4	5.23	17.70	4.21	2.36
Aug-09	10.7	2.5	3.4	3.5	5.03	14.52	3.81	**2.49**
Nov-09	20.1	3.4	3.5	10.7	9.43	62.33	7.89	2.31

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	1.2							
Jul-08	1.2							
Oct 08	1.1							
Feb-09	1.4	1.2	1.2	1.1	1.23	0.016	0.126	**14.09**
May-09	0.9	1.2	1.1	1.4	1.15	0.043	0.208	**8.33**
Aug-09	0.9	1.1	1.4	0.9	1.08	0.056	0.236	**6.58**
Nov-09	1.32	1.4	0.9	0.9	1.13	0.072	0.268	**6.08**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	0.2							
Jul-08	0.2							
Oct-08	0.2							
Feb-09	0.17	0.2	0.2	0.2	0.19	0.00	0.02	-1.93
May-09	0.3	0.2	0.2	0.17	0.22	0.00	0.06	-0.80
Aug-09	0.09	0.2	0.17	0.3	0.19	0.01	0.09	-1.63
Nov-09	0.19	0.17	0.3	0.09	0.19	0.01	0.09	-2.11

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	0.9					
Jul-08	0.9					
Oct-08	0.9					
Feb-09	0.9	0.9	0.9	0.9	0.90	0.000
May-09	1	0.9	0.9	0.9	0.93	0.003
Aug-09	1.1	0.9	0.9	1	0.98	0.009
Nov-09	0.72	0.9	1	1.1	0.93	0.026

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	27.8							
Jul-08	27.9							
Oct-08	23.8							
Feb-09	21.8	27.8	27.9	23.8	25.33	9.17	3.03	**16.13**
May-09	22	27.9	23.8	21.8	23.88	8.01	2.83	**16.22**
Aug-09	29	23.8	21.8	22	24.15	11.26	3.36	**13.81**
Nov-09	23.7	21.8	22	29	24.13	11.29	3.36	**13.81**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	17.5							
Jul-08	15.9							
Oct-08	15.5							
Feb-09	16.6	17.5	15.9	15.5	16.38	0.77	0.88	**35.29**
May-09	15.8	15.9	15.5	16.6	15.95	0.22	0.47	**64.56**
Aug-09	16.9	15.5	16.6	15.8	16.20	0.43	0.66	**46.26**
Nov-09	16.7	16.6	15.8	16.9	16.50	0.23	0.48	**64.47**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5.9							
Jul-08	8.3							
Oct-08	6.6							
Feb-09	5.2	5.9	8.3	6.6	6.50	1.77	1.33	**8.43**
May-09	4.7	8.3	6.6	5.2	6.20	2.61	1.61	**6.53**
Aug-09	5.1	6.6	5.2	4.7	5.40	0.69	0.83	**10.68**
Nov-09	5.27	5.2	4.7	5.1	5.07	0.06	0.25	**32.48**

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)

					Average Concentration	
					m_o	s^1
Apr-08	0.5					
Jul-08	0.5					
Oct-08	0.5					
Feb-09	0.5	0.5	0.5	0.5	0.50	0.00
May-09	0.5	0.5	0.5	0.5	0.50	0.00
Aug-09	0.5	0.5	0.5	0.5	0.50	0.00
Nov-09	0.5	0.5	0.5	0.5	0.50	0.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	0.5							
Jul-08	0.5							
Oct-08	0.5							
Feb-09	0.5	0.5	0.5	0.5	0.5	0.0	0.0	#DIV/0!
May-09	1	0.5	0.5	0.5	0.6	0.1	0.3	1.00
Aug-09	0.5	0.5	0.5	1	0.6	0.1	0.3	1.00
Nov-09	0.5	0.5	1	0.5	0.6	0.1	0.3	1.00

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	2							
Jul-08	248.9							
Oct 08	0.5							
Feb-09	17.5	2	248.9	0.5	67	14728	121	1.10
May-09	1	248.9	0.5	17.5	67	14772	122	1.09
Aug-09	0.5	0.5	17.5	1	5	71	8	1.04
Nov-09	0.5	17.5	1	0.5	5	71	8	1.04

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	0.5							
Jul-08	0.5							
Oct-08	0.5							
Feb-09	1	0.5	0.5	0.5	0.6	0.1	0.3	1.00
May-09	0.5	0.5	0.5	1	0.6	0.1	0.3	1.00
Aug-09	0.5	0.5	1	0.5	0.6	0.1	0.3	1.00
Nov-09	0.5	1	0.5	0.5	0.6	0.1	0.3	1.00

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	4.4					
Jul-08	5.4					
Oct-08	7.2					
Feb-09	14.4	4.4	5.4	7.2	7.85	20.41
May-09	6.2	5.4	7.2	14.4	8.30	17.08
Aug-09	0.8	7.2	14.4	6.2	7.15	31.26
Nov-09	6	14.4	6.2	0.8	6.85	31.58

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	117							
Jul-08	111							
Oct-08	46.5							
Feb-09	114	117	111	46.5	97.13	1145.06	33.84	**5.23**
May-09	120	111	46.5	114	97.88	1187.06	34.45	**5.16**
Aug-09	2.5	46.5	114	120	70.75	3180.75	56.40	2.25
Nov-09	63.5	114	120	2.5	75.00	2978.17	54.57	**2.49**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	2.5							
Jul-08	0.8							
Oct-08	2.5							
Feb-09	2.5	2.5	0.8	2.5	2.08	0.72	0.85	*-2.51*
May-09	1.6	0.8	2.5	2.5	1.85	0.67	0.82	*-2.81*
Aug-09	1.5	2.5	2.5	1.6	2.03	0.30	0.55	-2.25
Nov-09	2.5	2.5	1.6	1.5	2.03	0.30	0.55	-2.12

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	2.5							
Jul-08	2.5							
Oct-08	1.1							
Feb-09	2.5	2.5	2.5	1.1	2.15	0.49	0.70	*-2.49*
May-09	0.6	2.5	1.1	2.5	1.68	0.95	0.97	*-2.87*
Aug-09	0.8	1.1	2.5	0.6	1.25	0.74	0.86	*-2.57*
Nov-09	2.5	2.5	0.6	0.8	1.60	1.09	1.04	-2.26

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	27.6					
Jul-08	29.7					
Oct-08	26.7					
Feb-09	29.5	27.6	29.7	26.7	28.38	2.14
May-09	26.7	29.7	26.7	29.5	28.15	2.81
Aug-09	229	26.7	29.5	26.7	77.98	10138.88
Nov-09	26.5	29.5	26.7	229	77.93	10145.72

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	111							
Jul-08	122							
Oct-08	72.2							
Feb-09	125	111	122	72.2	107.55	591.61	24.32	**6.50**
May-09	111	122	72.2	125	107.55	591.61	24.32	**6.52**
Aug-09	15.6	72.2	125	111	80.95	2396.86	48.96	0.12
Nov-09	115	125	111	15.6	91.65	2605.16	51.04	0.54

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	41.7							
Jul-08	49.5							
Oct-08	41.9							
Feb-09	49.7	41.7	49.5	41.9	45.70	20.29	4.50	**7.32**
May-09	45.4	49.5	41.9	49.7	46.63	13.85	3.72	**9.24**
Aug-09	39.6	41.9	49.7	45.4	44.15	19.38	4.40	*-14.58*
Nov-09	45.5	49.7	45.4	39.6	45.05	17.22	4.15	*-14.94*

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	22.1							
Jul-08	31.5							
Oct-08	24.8							
Feb-09	23.2	22.1	31.5	24.8	25.40	17.77	4.22	-1.33
May-09	16.7	31.5	24.8	23.2	24.05	36.94	6.08	-1.31
Aug-09	230	24.8	23.2	16.7	73.68	10873.38	104.28	-0.08
Nov-09	13.9	23.2	16.7	230	70.95	11258.24	106.10	-0.13

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	5					
Jul-08	5					
Oct-08	5					
Feb-09	5	5	5	5	5.00	0.00
May-09	5	5	5	5	5.00	0.00
Aug-09	22.2	5	5	5	9.30	73.96
Nov-09	5	5	5	22.2	9.30	73.96

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5							
Jul-08	5							
Oct-08	5							
Feb-09	5	5	5	5	5.00	0.00	0.00	#DIV/0!
May-09	5	5	5	5	5.00	0.00	0.00	#DIV/0!
Aug-09	5	5	5	5	5.00	0.00	0.00	#DIV/0!
Nov-09	5	5	5	5	5.00	0.00	0.00	#DIV/0!

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5							
Jul-08	1.4							
Oct-08	5							
Feb-09	2.1	5	1.4	5	3.38	3.60	1.90	-1.71
May-09	5	1.4	5	2.1	3.38	3.60	1.90	-1.71
Aug-09	5	5	2.1	5	4.28	2.10	1.45	*-6.93*
Nov-09	5	2.1	5	5	4.28	2.10	1.45	*-6.93*

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5							
Jul-08	3.3							
Oct-08	5							
Feb-09	1.6	5	3.3	5	3.73	2.65	1.63	-1.57
May-09	5	3.3	5	1.6	3.73	2.65	1.63	-1.57
Aug-09	21.2	5	1.6	5	8.20	77.68	8.81	-0.25
Nov-09	5	1.6	5	21.2	8.20	77.68	8.81	-0.25

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-08	2.5					
Jul-08	2.5					
Oct-08	2.5					
Feb-09	2.5	2.5	2.5	2.5	2.50	0.00
May-09	2.5	2.5	2.5	2.5	2.50	0.00
Aug-09	2.5	2.5	2.5	2.5	2.50	0.00
Nov-09	2.5	2.5	2.5	2.5	2.50	0.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	2.5							
Jul-08	4.3							
Oct-08	2.5							
Feb-09	1.2	2.5	4.3	2.5	2.63	1.62	1.27	0.20
May-09	2.1	4.3	2.5	1.2	2.53	1.70	1.30	0.04
Aug-09	2.5	2.5	1.2	2.1	2.08	0.38	0.61	-1.39
Nov-09	2.5	1.2	2.1	2.5	2.08	0.38	0.61	-1.39

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	1.1							
Jul-08	2.5							
Oct-08	2.5							
Feb-09	2.5	1.1	2.5	2.5	2.15	0.49	0.70	-1.00
May-09	2.5	2.5	2.5	2.5	2.50	0.00	0.00	#DIV/0!
Aug-09	2.5	2.5	2.5	2.5	2.50	0.00	0.00	#DIV/0!
Nov-09	2.5	2.5	2.5	2.5	2.50	0.00	0.00	#DIV/0!

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	2.5							
Jul-08	0.2							
Oct-08	2.5							
Feb-09	0.2	2.5	0.2	2.5	1.35	1.76	1.33	-1.73
May-09	2.5	0.2	2.5	0.2	1.35	1.76	1.33	-1.73
Aug-09	2.5	2.5	0.2	2.5	1.93	1.32	1.15	-1.00
Nov-09	2.5	0.2	2.5	2.5	1.93	1.32	1.15	-1.00

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

Iron

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
Apr-08	41.5				m_o	s^1
Jul-08	35.2					
Oct-08	74.8					
Feb-09	54.6	41.5	35.2	74.8	51.53	306.06
May-09	51.7	35.2	74.8	54.6	54.08	263.90
Aug-09	91.1	74.8	54.6	51.7	68.05	341.70
Nov-09	43.6	54.6	51.7	91.1	60.25	444.66

BXS-3

(Downgradient well)

Apr-08	102,000				X_{bar}	s^2	s	t_{stat}
Jul-08	96,800							
Oct-08	53,800							
Feb-09	109,000	102,000	96,800	53,800	90,400	620,346,667	24906.76	**7.25**
May-09	102,000	96,800	53,800	109,000	90,400	620,346,667	24906.76	**7.25**
Aug-09	11.6	53,800	109,000	102,000	66,203	2,549,381,420	50491.40	**2.62**
Nov-09	59,700	109,000	102,000	12	67,678	2,509,299,180	50092.91	**2.70**

BXS-2

(Downgradient well)

Apr-08	624				X_{bar}	s^2	s	t_{stat}
Jul-08	593							
Oct-08	560							
Feb-09	542	624	593	560	580	1316	36.28	**26.23**
May-09	473	593	560	542	542	2562	50.62	**18.22**
Aug-09	1340	560	542	473	729	167462	409.22	**3.23**
Nov-09	480	542	473	1340	709	178062	421.97	**3.07**

BXS-1

(Downgradient well)

Apr-08	8.8				X_{bar}	s^2	s	t_{stat}
Jul-08	10							
Oct-08	8.8							
Feb-09	4.6	8.8	10	8.8	8.05	5.61	2.37	*-4.93*
May-09	6.1	10	8.8	4.6	7.38	6.08	2.47	*-5.29*
Aug-09	91	8.8	4.6	6.1	27.63	1788.08	42.29	-1.77
Nov-09	4.7	4.6	6.1	91	26.60	1843.74	42.94	-1.45

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	110					
Jul-08	111					
Oct-08	111					
Feb-09	120	110	111	111	113.00	22.00
May-09	108	111	111	120	112.50	27.00
Aug-09	4220	111	120	108	1139.75	4216888
Nov-09	110	120	108	4220	1139.50	4217574

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	12,600							
Jul-08	13,100							
Oct-08	15,400							
Feb-09	11,800	12,600	13,100	15,400	13,225	2,389,167	1,545.69	**16.97**
May-09	11,300	13,100	15,400	11,800	12,900	3,353,333	1,831.21	**13.97**
Aug-09	7,870	15,400	11,800	11,300	11,593	9,494,225	3,081.27	**6.78**
Nov-09	13,400	11,800	11,300	7,870	11,093	5,417,558	2,327.56	**8.55**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	1150							
Jul-08	1190							
Oct-08	1290							
Feb-09	1250	1150	1190	1290	1220	3867	62.18	**35.50**
May-09	1230	1190	1290	1250	1240	1733	41.63	**53.82**
Aug-09	2500	1290	1250	1230	1568	387092	622.17	1.37
Nov-09	1300	1250	1230	2500	1570	385267	620.70	1.39

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	240							
Jul-08	309							
Oct-08	297							
Feb-09	175	240	309	297	255	3768	61.39	**4.62**
May-09	114	309	297	175	224	9018	94.96	2.34
Aug-09	4180	297	175	114	1192	3975180	1993.79	0.05
Nov-09	204	175	114	4180	1168	4032802	2008.18	0.03

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

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	10					
Jul-08	10					
Oct-08	10					
Feb-09	10	10	10	10	10.00	0.00
May-09	10	10	10	10	10.00	0.00
Aug-09	104	10	10	10	33.50	2209.00
Nov-09	10	10	10	104	33.50	2209.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	20.2							
Jul-08	4.5							
Oct-08	22.8							
Feb-09	20.6	20.2	4.5	22.8	17.03	71.03	8.43	1.67
May-09	17.7	4.5	22.8	20.6	16.40	67.30	8.20	1.56
Aug-09	48.5	22.8	20.6	17.7	27.40	202.23	14.22	-0.86
Nov-09	13.2	20.6	17.7	48.5	25.00	254.71	15.96	-1.07

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	31.8							
Jul-08	24.8							
Oct-08	31.7							
Feb-09	32.1	31.8	24.8	31.7	30.10	12.51	3.54	**11.36**
May-09	31.2	24.8	31.7	32.1	29.95	11.92	3.45	**11.56**
Aug-09	134	31.7	32.1	31.2	57.25	2618.16	51.17	0.93
Nov-09	31.1	32.1	31.2	134	57.10	2628.47	51.27	0.92

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	11.1							
Jul-08	10.2							
Oct-08	15.5							
Feb-09	10.7	11.1	10.2	15.5	11.88	5.98	2.44	1.53
May-09	7	10.2	15.5	10.7	10.85	12.30	3.51	0.48
Aug-09	109	15.5	10.7	7	35.55	2409.84	49.09	0.08
Nov-09	11.1	10.7	7	109	34.45	2473.50	49.73	0.04

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

Zinc

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-08	5					
Jul-08	1					
Oct-08	5					
Feb-09	1.5	5	1	5	3.13	4.73
May-09	5	1	5	1.5	3.13	4.73
Aug-09	3.8	5	1.5	5	3.83	2.72
Nov-09	5	1.5	5	3.8	3.83	2.72

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5							
Jul-08	4.8							
Oct-08	3.9							
Feb-09	2.1	5	4.8	3.9	3.95	1.75	1.32	0.65
May-09	3.9	4.8	3.9	2.1	3.68	1.28	1.13	0.45
Aug-09	2.6	3.9	2.1	3.9	3.13	0.84	0.92	-0.59
Nov-09	1.5	2.1	3.9	2.6	2.53	1.04	1.02	-1.08

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5							
Jul-08	4.4							
Oct-08	6.2							
Feb-09	6.5	5	4.4	6.2	5.53	0.98	0.99	2.01
May-09	3.7	4.4	6.2	6.5	5.20	1.86	1.36	1.62
Aug-09	5	6.2	6.5	3.7	5.35	1.63	1.28	1.21
Nov-09	2.8	6.5	3.7	5	4.50	2.59	1.61	0.50

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-08	5							
Jul-08	9.1							
Oct-08	12.1							
Feb-09	3.6	5	9.1	12.1	7.45	15.06	3.88	1.94
May-09	1.5	9.1	12.1	3.6	6.58	23.84	4.88	1.29
Aug-09	3.4	12.1	3.6	1.5	5.15	22.36	4.73	0.51
Nov-09	1.5	3.6	1.5	3.4	2.50	1.34	1.16	-1.08

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!