MORRISON HERSHFIELD

Resort Municipality of Whistler Landfill Annual Monitoring Report – 2014

Whistler, BC

Presented to:

James Hallisey
Manager of Environmental Projects

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WHISTLER

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November 6, 2015

File: 625.1

David O'Malley **M**.Sc., Environmental Protection Officer
Environmental Management Section
Ministry of Environment
#200-10470 152nd Street
Surrey, B.C. V3R 0Y3

Dear Mr. O'Malley,

RE: Resort Municipality of Whistler Landfill Annual Monitoring Report, 2014

Please accept our submission of the *Resort Municipality of Whistler Landfill Annual Monitoring Report, 2014.* The report presents the results, preliminary interpretation and a summary of environmental issues and actions taken based on the surface water, groundwater, and landfill gas monitoring data collected in 2014, and has been completed to meet the requirements as set out in Section 3.31 of the 2005 Whistler Landfill Operational Certificate (MR-04693).

If you have any further questions or concerns please contact me at 604-935-8196 or jhallisey@whistler.ca.

Yours truly,

James Hallisey, P.Eng.
Manager of Transportation and Waste Management
JH/cs

Enclosure

cc: Joe Paul, General Manager Infrastructure Services, RMOW
Paul Bencharski, Project Manager, RMOW

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1. INTRODUCTION

This annual report incorporates landfill monitoring data collected in 2014. The Resort Municipality of Whistler (RMOW) former landfill site is located approximately 8 km west of Whistler Village and is accessed off Highway 99 on Cheakamus Lake Road. The location of the site is illustrated in Figure 1.

The Whistler landfill opened in 1977 and initially accepted residential, industrial, commercial and institutional waste. This continued until the landfill's operating permit was amended in 1988 to also accept construction and demolition waste. The landfill site was closed in October, 2005, to accommodate plans to use the area east of the site as the location of the Athletes' Village for the 2010 Winter Olympic Games. Between 1977 and 2005 approximately 350,000 tonnes of waste was disposed of at the Whistler Landfill (CH2M Hill, 2008a).

Construction of residential and commercial buildings in the area commenced in 2007 following the installation of a cover system and landfill gas (LFG) collection system in 2006.

Morrison Hershfield was retained by RMOW to complete the annual environmental monitoring and fulfill reporting requirements as set out in Section 3.31 of the 2005 Whistler Landfill Operational Certificate (MR-04693) and the Whistler Landfill Closure Plan (CH2M Hill, 2006a).

This current report documents the 2014 monitoring program and presents a summary of its findings.

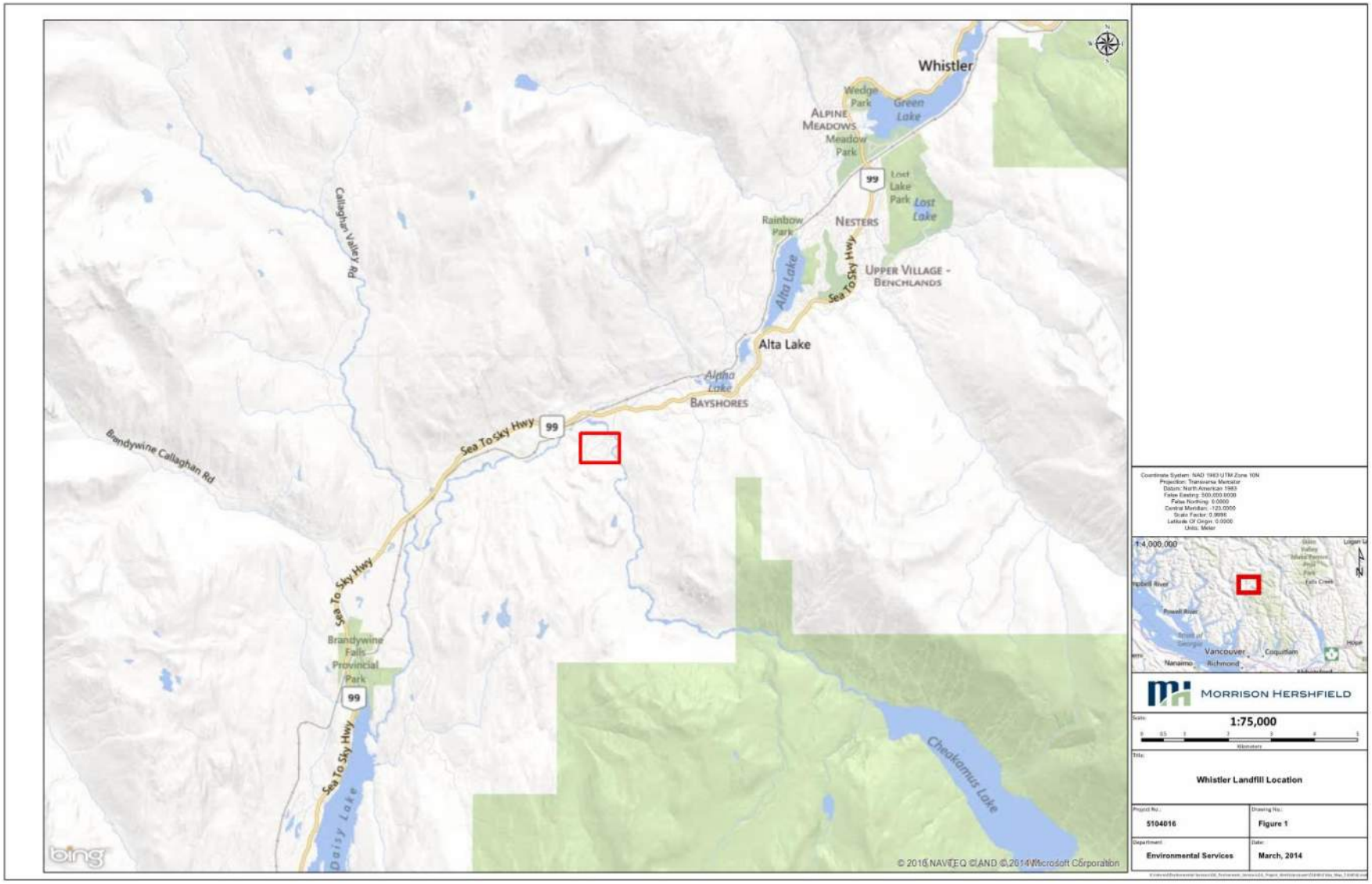


Figure 1: Former Whistler Landfill Location

1.1 Program Objectives

The overall objective of the Whistler landfill monitoring program is to help ensure and confirm that the closed landfill is not causing impacts to the surrounding environment. Three distinct facets of the former landfill site were assessed: on-site surface water, groundwater and migration of landfill gas (LFG).

The objectives of the Surface Water and Groundwater Monitoring Program are as follows:

- Determine if the landfill is negatively affecting local groundwater and surface water quality; and
- Apply corrective measures as necessary to minimize landfill effects on groundwater and surface water.

The objectives of the LFG monitoring program are as follows:

- Monitor levels of LFG generation;
- Assess the overall collection performance of the Landfill Gas Collection System (LFGCS)
- Identify the composition of LFG within the soil at monitoring probe locations; and
- Adjust LFGCS as necessary based on monitoring data results to prevent off-site gas migration.

As outlined in the Closure Plan (CH2M Hill, 2006a), the monitoring program was to be re-evaluated following the completion of monitoring over a 2-year period. This evaluation occurred in 2011. Subsequent monitoring reports, including this one, incorporate the MOE recommendations that were made in 2012.

1.2 Report Purpose

The purpose of this report is to address the reporting requirements of the facility's Landfill Operational Certificate (MR-04692) and the following requirements included in the Whistler Landfill Closure Plan:

- Annual reporting of monitoring data collected (2014); and
- Summary of maintenance activities that were competed on site in 2014, as well as any planned objectives in 2014.

2. SITE DESCRIPTION

2.1 Landfill

The former landfill contains three distinct cells that were developed at different times over its lifespan.

- The northeast cell commenced in 1977 and contains residential waste in addition to industrial, commercial and institutional (ICI) waste. This material is not contained in a lined cell and relies on natural attenuation, coupled with a perimeter collection system, to manage leachate.
- Operations within the southwest cell began in 1988. Only construction and demolition (C & D) waste was accepted within this cell, which also relies on natural attenuation and a perimeter collection system to manage leachate.
- A central cell was developed in 1988 between the northeast and southwest cells for further residential and ICI waste. This area was developed with a high-density polyethylene (HDPE) liner and a leachate collection system.

In addition to the three cells, a biosolids storage area was installed at the south end of the landfill, covering a portion of the old southwest cell. Based on CH2M Hill (2006a) preliminary survey information from 2005, there was an estimated 6,000 m^3 of biosolids stockpiled there.

2.2 Hydrological Conditions

The former landfill site is located within the Cheakamus River watershed. The Cheakamus River itself is located approximately 300 metres north of the waste mass and flows along the eastern boundary of the Athletes' Village (CH2M Hill, 2006a). The surface water features are concentrated mainly to the perimeter of the site, which is due to a combination of the natural and constructed topography of the area.

2.3 Geological Conditions

The following description of geological conditions associated with the site is described by CH2M Hill (2008a).

> *In general, the site topography slopes from south to north. As described in the Whistler Landfill Closure Plan, within areas on the site and within adjacent lands, aggregate extraction activities have removed much of the natural overburden materials for use as industrial aggregates and replaced them with imported fill materials. As a result, the present ground surface associated with the landfill has likely been altered by industrial activities. As part of historical aggregate extraction activities conducted at the site, much of the natural overburden materials had been removed from the area and replaced with imported fill, resulting in a disturbance of the natural topography of the site. Exposed bedrock surface, characterized by glaciated surfaces and steep inclines, are present throughout the site. Areas between the exposed bedrock are infilled by coarse and medium grain sediments.*

Based on the results of the borehole investigation conducted by CH2M Hill in January 2006, the top layer of the site stratigraphy is composed of sand, gravel, cobbles, and boulders (fill material), followed by a gravel-sand layer. The subsurface includes a poorly graded fine sand layer with some silt, followed by still sandy silt located above the bedrock (green basalt) (CH2M Hill, 2006a).

Overburden at the site was generally found to be consistent across the advanced boreholes and is characterized by progressively finer particle size of the sediments with increasing depth. Overburden thickness is highly variable, ranging from 0 to greater than 21 m. The overburden is consistent with fluvial or near-shore lacustrine deposition environments.

2.4 Hydrogeological Conditions

The following description of hydrogeological conditions associated with the site is described by CH2M Hill (2006a) as follows:

A single unconfined aquifer is within the overburden on the site. The saturated zone in most locations extends from the bedrock surface at depth to within less than one metre of the ground surface. Bedrock in the area was found to be relatively dry and presented no visual indication of water bearing fractures. Groundwater flow is generally in a south to north direction, consistent with the surface topography.

Interpreted groundwater flow at the site is illustrated in Figure 2 (from CH2M Hill, 2006a).

2.5 Climate

The long-term average climatic conditions (1971 – 2000) recorded at the Whistler meteorological station (approximately 8 km from the site) indicate the daily average annual temperature in the area is 6.3^{o}C, and the mean annual precipitation is 1229.1 mm. The precipitation can be further divided into an average of 850.1 mm of rainfall, and 411.2 cm of snowfall.

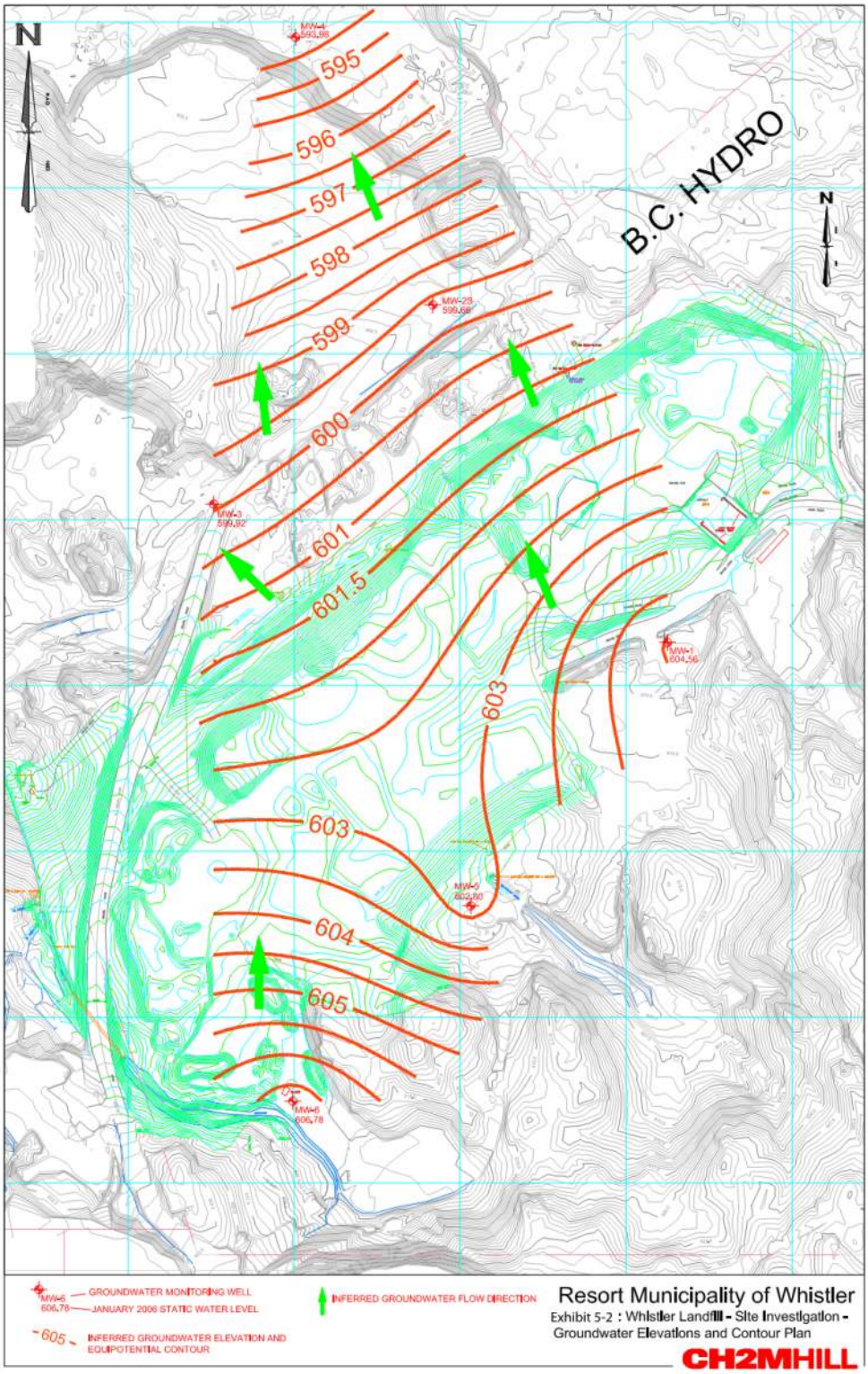


Figure 2: Groundwater Elevations and Flow Pattern at the Former Whistler Landfill Site (from CH2M Hill. 2006a)

3. MONITORING REQUIREMENTS

The following documents form the basis of the post-closure monitoring program and associated requirements, including parameters to be monitored. They are frequently referenced throughout this report.

- *Whistler Landfill Closure Plan, Final Report (CH2M HILL, 2006a)*
- *Whistler Landfill Gas Pre-Design Memorandum (CH2M HILL, 2006b)*
- *Landfill Operational Certificate MR-04692 (B.C. Ministry of Environment, 2005)*
- *Mitigation and Safety Measures for Reduction of Landfill Gas Migration Risks (CH2M HILL, 2008a)*
- *Landfill Gas Collection System Operation and Maintenance Manual (CH2M HILL, 2008b)*
- *Monitoring and Reporting Requirements (CH2M HILL, 2008c)*
- *Resort Municipality of Whistler Landfill Annual Monitoring Report – 2011 & Revised Monitoring Program Recommendations (Morrison Hershfield, June 2012).*

The original monitoring and reporting requirements have been included in past annual reports and were subsequently reviewed and amended by the Ministry of the Environment (MOE) in November 2012 after the completion of the 2011 monitoring program.

4. METHODOLOGY

4.1 Overview of Sampling Locations and Schedule

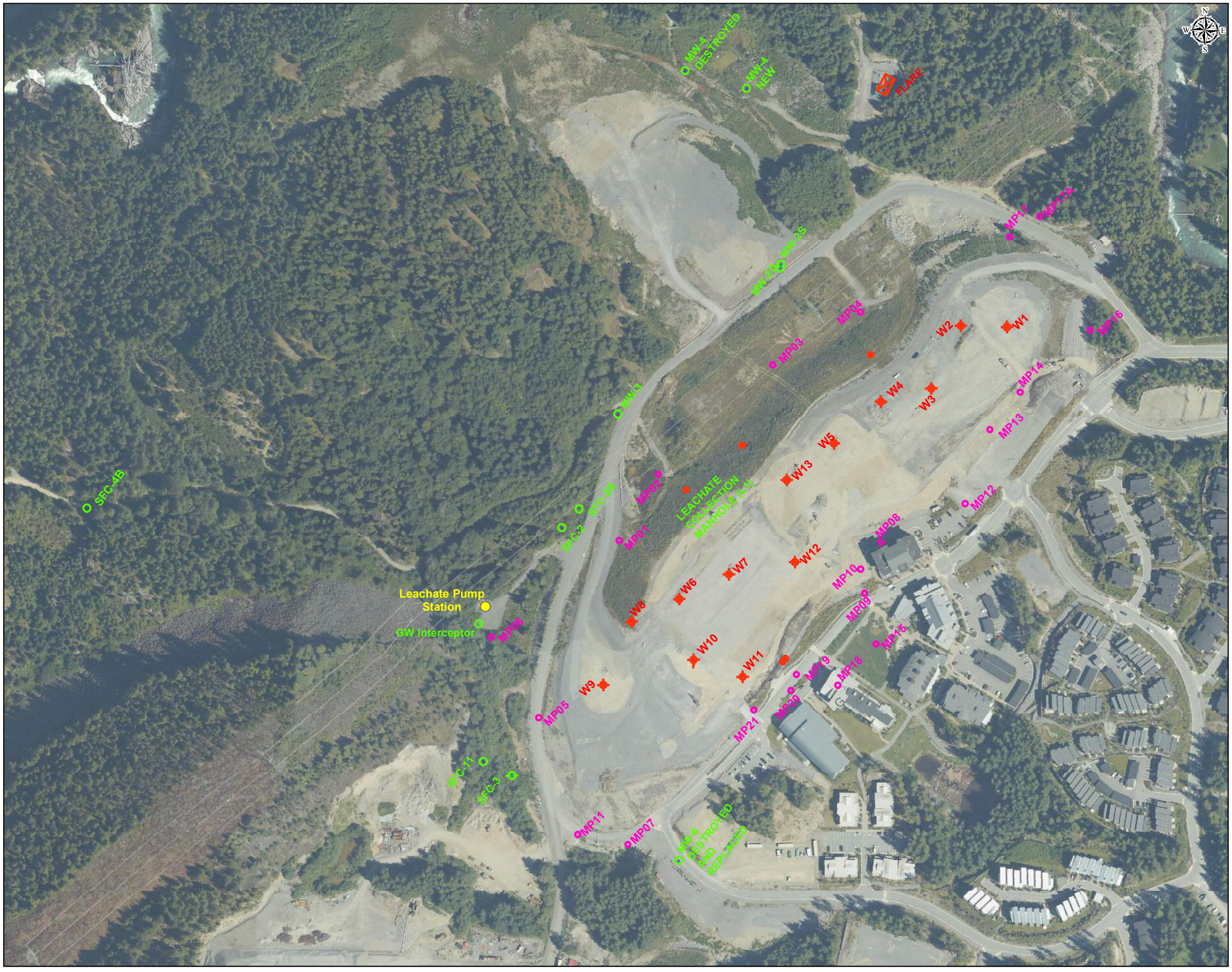
The various leachate, groundwater, surface water and landfill gas (LFG) monitoring locations are shown in Figure 3. Groundwater monitoring locations are identified as MW (monitoring well) followed by a number or number / letter combination (e.g. MW-3, MW-2S), a letter is added when both a shallow (S) and a deep (D) well were installed within a single borehole. Surface water sample locations are identified as SFC (surface), followed by a number or number / letter combination (e.g. SFC-2, SFC-2B), where the letter is used to indicate a second surface water sample on the same watercourse. L1 is the single leachate collection point.

The LFG collection system consists of the following components:

- Thirteen vertical LFG extraction wells connected to horizontal LFG collection trenches covering the landfill cell footprint;
- A 200mm diameter header approximately 800m in length that carries the LFG from the vertical well and horizontal trench network to a flare station;
- A LFG abstraction plant on the north side of the property that burns the collected LFG in a candle-stick flare;
- Twenty-one monitoring probes (MP) located around the perimeter of the landfill cell; and
- Approximately 91 test ports within selected buildings and residences in close proximity to the landfill.

The landfill gas monitoring probes around the circumference of the landfill mass are identified as MP followed by a number (e.g. MP 14). Also identified in Figure 3 are several components of the LFG collection system, including: thirteen LFG extraction wells (labeled as “W” followed by a number [e.g. W11]), the flare station, and header valves. A new monitoring probe was installed in November 2012 to the west of MP17 (identified as MP17A). As of December 2012, sampling commenced at MP17A and was omitted at MP17.

As per the requirements outlined in CH2M Hill (2008c) and confirmed by the MOE in 2012, groundwater and surface water monitoring have been conducted quarterly. Quarterly monitoring is tracked and reported based on a calendar year.



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Projection: Transverse Mercator
Datum: North American 1983
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: -123.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter

MORRISON HERSHFIELD

Scale: **1:3,000**

0 12.5 25 50 75 100 125 150
Meters

Title:

Post-closure Monitoring Sites at Whistler Landfill

Project No.:	Drawing No.:
5104016	**Figure 3**
Department: **Environmental Services**	Date: **June, 2015**

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Table 1: 2014 Quarterly Monitoring Dates

Monitoring Dates 2014	
Quarter 1 (Q1 2014)	March 21, 2014
Quarter 2 (Q2 2014)	June 25, 2014
Quarter 3 (Q3 2014)	October 14, 2014
Quarter 4 (Q4 2014)	December 18, 2014

The 2014 leachate, groundwater and surface water monitoring program was completed by Morrison Hershfield. The LFG monitoring program that has been in effect since 2009 has been conducted by Norseman Engineering Ltd. on a minimum monthly basis. During the winter months monitoring occurs on a weekly basis when there is snow cover on the landfill or frozen ground (i.e. conditions that could facilitate subsurface LFG migration).

4.1.1 Leachate Monitoring

A leachate collection point (Leachate Manhole) located on the down gradient side of the landfill mass (Figure 3) was sampled to provide an indicator of the elevated concentration of target parameters within the landfill cell. Leachate samples were obtained using a plastic pail rinsed three times with the leachate water.

A leachate sample was collected during first and fourth quarter sampling events. In addition to the samples for laboratory analysis, standard leachate quality parameters were collected and measured during the sampling events. The parameters measured include: pH, temperature (^{o}C), dissolved oxygen (mg/L), and conductivity (µS/cm). Field parameters were measured using an YSI model 556 multi-probe meter.

Sampling is also conducted at the Groundwater (GW) Interceptor, adjacent to the Leachate Pump Station to the west and north of the landfill mass (Figure 3). The GW Interceptor is located adjacent to the existing leachate pump station in the southwest area of the closed landfill. The interceptor consists of 24 metres of perforated HDPE pipe (60 cm diameter). A new leachate collection wet well and pump station were constructed in 2009 in close proximity to the GW Interceptor. Intercepted groundwater is piped to the new leachate pump station wet well where it is pumped, along with landfill leachate, to the RMOW Wastewater Treatment Plant (WWTP) for treatment.

The interceptor is located downgradient from the unlined Construction and Demolition (C&D) waste cell and was (presumably) installed to minimize the potential for off-site impacts associated with groundwater influenced by the C&D waste cell.

Samples were obtained using a plastic pail rinsed three times with the water in the manhole. Three samples were collected in 2014 during Q1, Q2, and Q4.

4.1.2 Groundwater Monitoring

CH2M Hill originally installed six monitoring wells (MW-1 to MW-6), one of which (MW-2) was constructed with a shallow and a deep screen, for a total of seven initial monitoring points. Monitoring wells were constructed with 50 mm (2") diameter new PVC pipe. Screen intervals were constructed with 50 mm (2") diameter #10 slot PVC screen. The depth and screen length of each well was selected in the field based on observations made during drilling. Bentonite seals were installed (as required) to prevent infiltration of surface water into the well (CH2M Hill, 2006a).

The groundwater monitoring locations are situated both up- and down-gradient of the landfill to monitor the potential migration of any leachate, and to be able to separate groundwater impacts of residential and commercial development from impacts of the landfill. MW-6 is up gradient of the landfill mass and is used to represent the local background conditions for the area, while all of the other wells are down gradient.

The installation of these wells by CH2M Hill was conducted prior to the extensive grading that occurred during construction of the Athlete's Village. During grading and construction operations four of the existing wells were destroyed: MW-1, MW-4, MW-5 and MW-6. The four destroyed wells are indicated in Figure 3 with the monitoring well name followed by "destroyed" (i.e. MW-1 DESTROYED).

Three of the four destroyed monitoring wells (MW-4, MW-5, and MW-6) were replaced prior to 2010 sampling to prevent data gaps in the monitoring program. However, due to insufficient groundwater levels since 2010, the replacement for MW-5 has since been omitted from the sampling program. Table 2 provides a summary of groundwater wells monitored in 2014.

Table 2: 2014 Groundwater Monitoring Events and Locations

Site	Site Description	Q1	Q2	Q3	Q4
MW-2S and 2D	Immediately down gradient of the landfill footprint	✔	✔	✔	✔
MW-3	Down gradient of the landfill mass	✔	✔	✔	✔
MW-4	Down gradient of the landfill mass	✔	✔	✔	✔
MW-6	Up gradient of the landfill mass (background)	✔	✔	✔	✔

Groundwater samples were collected using dedicated HDPE tubing and foot valves. The procedure for the collection of all groundwater samples follows that described in CH2M Hill (2008c). Laboratory analyses for all of the samples were performed by CARO Analytical Services in Richmond, BC. Appendix A provides a summary of the analytical results associated with groundwater quality monitoring. Appendix C provides a summary of the parameters that were analyzed for, the detection method and detection limit.

All groundwater samples collected for dissolved metals analysis were filtered and preserved in the field. In addition to the samples for laboratory analysis, field parameters were also collected

using a YSI model 556 multi-probe meter. The static water level depth in each well prior to sample collection was also measured.

4.1.3 Surface Water Monitoring

Table 3 provides a summary of the surface water sites sampled in 2014. Sample station SFC-11 is located cross-gradient from the landfill and the tributary extends southwest away from the landfill; therefore the watershed for this tributary does not include the landfill area (Figure 3). Sample station SFC-2B is located in a watercourse which originates in the wetland feature immediately adjacent to the leachate collection point. It is also located immediately down gradient of the lined ICI and Residential Waste Cell and the historic biosolids and wood chip storage area. SFC-2 is located approximately 10 m downstream of SFC-2B. The source of the water in SFC-2 is from a culvert extending from the Athlete's Village that collects surface water runoff. SFC-3 is located in a perimeter watercourse. SFC-3 and SFC-11 are up gradient of the landfill and provide indicators of natural background surface water conditions.

Table 3: 2014 Surface Water Monitoring Events and Locations

Site	Site Description	Q1	Q2	Q3	Q4
SFC-2	Down stream of landfill	✔	✔	✔	✔
SFC-2B	immediately adjacent to the leachate collection point	✔	✔	✔	✔
SFC-3	Located in a perimeter watercourse (background)	✔	✔	✔	✔
SFC-11	Cross gradient from the landfill (background)	✔	✔	✔	✔
SFC-4B	Furthest down gradient and the closest monitoring point to the Cheakamus River	✔	✔	✔	✔

Surface water samples were collected using the techniques outlined in CH2M Hill (2008c). Field parameters were also collected using a YSI model 556 multi-probe meter was used to measure the field parameters.

Similar to the groundwater samples, all surface water samples were sent to CARO in Richmond, B.C. for analysis. Appendix A provides a summary of the analytical results associated with groundwater quality monitoring. Appendix C provides a summary of the parameters that were analyzed for, the detection method and detection limit. As required, the surface water samples collected for total metal analyses were not filtered however they were preserved with nitric acid.

4.1.4 Landfill Gas Monitoring

Landfill gas monitoring was completed by Norseman Engineering Ltd. on a weekly (winter months) to monthly basis throughout the year.

Standard monitoring procedures were followed for LFG monitoring.

The following data has been collected:

- Methane content at the subsurface probes;
- Methane and oxygen contents, flow rate, and inlet suction at the flare station; and
- Valve position (percent open), methane content and suction at each of the extraction wells (monitored for assessing the operational efficiency of the LFG collection system).

Pressure at the wells is measured using 0 – 5" water column (w.c.) or 0 – 0.5" w.c. magnahelic pressure gauges. Methane content, as percent of the Lower Explosive Limit (LEL), is detected using a Gastech device, model NP204[1]. Other parameters measured at the flare station are obtained from the programmable logic controller associated with the LFG collection system. The data gathered are important for assessing the overall function of the LFG collection system, particularly the concentration of methane present in the landfill for flaring, and to determine if the gas is escaping into the atmosphere or migrating off-site.

As per Morrison Hershfield (2012), the frequency of LFG monitoring should increase from monthly or weekly to daily in the event of LFG collection system malfunction or maintenance requirements, or if detection of methane in excess of the trigger level (10% LEL) is observed. Morrison Hershfield (2012) also notes that, following detection of methane in excess of the trigger levels, monitoring should be increased to daily at all of the monitoring probes and any buildings within 100 m of the MP which exceeded the trigger level will be monitored until there are two consecutive days of undetectable methane content in the monitoring probes. If gas concentrations at the property boundaries remain above recommended trigger limits for more than 2 days, additional measures are outlined in the revised LFG monitoring program.

4.2 Quality Assurance and Quality Control

In addition to using an accredited laboratory, Quality Assurance/Quality Control (QA/QC) measures were applied to the monitoring program to determine the accuracy and precision of the field results and the laboratory testing procedures.

For each surface and groundwater sampling event a sample replicate and a travel blank were submitted for analysis. Replicate samples were also collected from one monitoring location each Quarter using the word "rep" as denoted in the sample ID. Travel blanks are used to confirm that the samples have not been contaminated during transportation from the site to the laboratory. The samples are transported in laboratory supplied coolers, remain closed, and are only reopened in the laboratory for analyses.

[1] A concentration of 5% methane in the air is "the lower explosive limit" (LEL), and concentrations equal to or greater than the LEL are considered hazardous (BC MOE, 1996)

5. RESULTS AND INTERPRETATION

Water quality monitoring at Whistler Landfill has included a broad suite of parameters, including the following groups of parameters:

- Dissolved & total metals
- Hardness
- Alkalinity
- Total Dissolved Solids
- Ammonia
- Dissolved Organic Carbon (DOC)
- Volatile Organic Compounds (VOCs)
- Chemical Oxygen Demand (COD)
- Extractable and Volatile Hydrocarbons (EPH & VH)
- BTEX
- Polycyclic Aromatic Hydrocarbons (PAHs)

There are a limited number of key parameters that have been reviewed as both landfill related *indicator* parameters and parameters of potential *concern*:

Indicators parameters are compounds that are indicative and reliable indicators of groundwater impact from waste disposal, but in of themselves may not be a compound of concern. For the purposes of this water quality review, the landfill-related indicator parameters assessed include:

- Chloride,
- conductivity,
- hardness,
- sulfate, and
- iron and manganese

Parameters of potential concern at landfill sites consist primarily of ammonia (which can be toxic to aquatic life if it reaches an aquatic receptor at high enough concentrations). Other parameters of concern, may include: presence of:

- hydrocarbons and/or volatile organic compounds and
- possibly elevated concentration of heavy metals.

5.1 Groundwater

Monitoring locations up gradient as well as down gradient of the closed landfill provide a method to identify parameters that occur at naturally elevated levels in the local environment. MW-6 is up gradient of the landfill and is used to represent the local background conditions for the area, whereas MW-4 is down gradient of the landfill and the closest groundwater monitoring point to the Cheakamus River.

The regulatory framework that applies to this project for groundwater water quality include the provincial standard for landfill closure: Schedule 6, Column II (Generic Numerical Water Standards for Aquatic Life) of the B.C. Contaminated Sites Regulation. This is a requirement that is stated in the "Closure Plan". The standards assume a minimum 10 to 1 dilution factor is available prior to the groundwater reaching any water body that supports aquatic life.

In addition to the comparison to the regulatory standards, the tables showing the ground-water results also include the comparison to the B.C. Working and Approved Water Quality Guidelines (per MoE reporting recommendations). These guidelines are more restrictive since they generally apply to receiving water conditions and not to groundwater within the landfill site (the guidelines do not incorporate any dilution factors). The guidelines provide concentrations to prevent detrimental effects in water bodies that support aquatic life. Unlike the B.C. Contaminated Sites regulation there is no dilution factor incorporated; therefore the values represented in the BC Ambient Water Quality guidelines are more stringent for many parameters. Therefore, while not directly applicable to monitoring locations at the landfill site, these guidelines provide a point of reference for assessing contaminant levels over time.

A summary of the groundwater quality results in comparison to the applicable standards and guidelines are provided in Table 7 and Table 8. Detailed laboratory results can be found in Appendix A.

5.1.1 Landfill-Related Indicator Parameters in Groundwater

A summary of the average indicator parameter concentrations for 2014 is provided in Table 4. The concentrations of indicator parameters are all within the regulatory standards. The concentrations of indicator parameters are generally elevated at MW-2D and MW-2S when compared to background concentrations. It is suspected that the wells immediately down gradient of the landfill footprint (MW-2D and MW-2S) are impacted by leachate.

The average chloride concentration detected in MW-6 is elevated compared to other down gradient wells. Since this well is up gradient of the landfill footprint, it is suspected that these concentrations are related to road salt application on the road immediately adjacent to the monitoring well, and not indicative of landfill leachate impacts.

Table 4: Average values of water quality indicator parameters for groundwater in 2014

Parameter	BC – SCR AW*	BC WQG**	MW-6 (Background)	MW-2S	MW-2D	MW-3	MW-4
Chloride (mg/L)	1500	150	120.7	22.9	42.1	55.0	22.6
Conductivity (µS/cm)	-	-	759	585	1297	185	407
Hardness (mg/L)	-	-	140.3	190.0	516.0	42.3	133.8
Sulfate (mg/L)	1000	50 (warning) 100 (maximum)	128.0	114.0	386.8	32.7	54.6
Iron (mg/L)	-	0.35	0.81	50.1	64.5	0.75	27.4
Manganese (mg/L)	-	"0.7 (H = 25)[1] 0.8 (H = 50) 1.0 (H = 100) 1.3 (H = 150) 1.9 (H = 300) (for total metals)"	0.62	2.8	3.1	1.8	2.9

***** Schedule 6, Column II (Generic Numerical Water Standards for Aquatic Life) of the B.C. Contaminated Sites Regulation
** BC Water Quality Guidelines (Working and Approved)

[1] H represents water hardness measured in units of mg/L as $CaCO_3$. Manganese availability, and hence its toxicity, in the aquatic environment can be influenced by water hardness. Average hardness levels measured in groundwater samples ranged between 42 and 516 mg/L.

5.1.2 Landfill Related Parameters of Potential Concern in Groundwater

Ammonia- Ammonia is the primary contaminant of potential concern with municipal solid waste sites. It is related to the decomposition of organic matter in the landfill. Ammonia is a potential concern because of its relative mobility in groundwater systems that allow it to be potentially discharged to surface water and its toxicity to aquatic organisms (if concentrations are sufficiently elevated).

Ammonia concentrations above the applicable standard (18.4mg/L for pH conditions of <7.0) were not detected in any of the wells.

As would be expected, ammonia was detected in monitoring wells located within the landfill footprint (MW-2S/2D) at concentrations above background levels (range in concentration between 6 and 15.8 mg/L). However, concentrations outside the landfill footprint are well below 1 mg/L (including MW-4), which is consistent with background levels.

Hydrocarbons and Volatile Organic Compounds - Hydrocarbons and volatile organic compounds (VOCs) are routinely tested for at landfills. All groundwater samples collected and analyzed for hydrocarbons and VOC compounds in 2014 were below the applicable standards.

Heavy Metals - Heavy metals are also sometimes considered compounds of concern at landfill sites.

There was only one heavy metal detection above the applicable regulatory standard. At MW-4, one monitoring observation indicated a total cobalt concentration (0.0405 mg/L) which marginally exceeded the applicable regulatory standard (0.04 /mg/L). All other cobalt measurements in 2014 at this location were below the standard. Previous monitoring results indicate that high naturally occurring levels of cobalt in groundwater (as measured at MW-6) may be contributing to elevated levels of cobalt at the site (2013 Annual Report; Morrison Hershfield 2014).

5.1.3 Groundwater Quality Conclusions

Strong indicators of leachate influenced groundwater quality appears at this time to be limited to locations within the landfill footprint, namely at the deep monitoring well location MW-2D. Concentrations in groundwater of landfill-leachate contaminants of concern (COCs) are well below the applicable regulatory standards, with the exception of one marginal exceedance of total cobalt from down gradient well MW-4. This observation is consistent with previous sampling results and may be related to naturally elevated levels of cobalt in the area. All other monitoring results at this location were below the cobalt standard.

There have been no detections of hydrocarbons or volatile organic compounds at or near the regulatory standard. With only a few exceptions, hydrocarbons and VOCs were below the laboratory detection limit.

5.2 Surface Water

Similarly to groundwater, there are surface water monitoring locations both up gradient and down gradient of the landfill. SFC-3 and SFC-11 are up gradient of the landfill and provide indicators of natural background surface water conditions. SFC-4B is the furthest down gradient and the closest monitoring point to the Cheakamus River.

The regulatory framework that applies to this project for surface water quality is the same as for ground water and includes the provincial standard for landfill closure: Schedule 6, Column II (Generic Numerical Water Standards for Aquatic Life) of the B.C. Contaminated Sites Regulation.

Surface water results are also compared to the B.C. Working and Approved Water Quality Guidelines (per MoE reporting recommendations) in the same manner as groundwater results are. These guidelines are more restrictive since they generally apply to receiving water conditions and not to locations within the landfill site (the guidelines do not incorporate any dilution factors). The guidelines provide concentrations to prevent detrimental effects in water bodies that support aquatic life. Unlike the B.C. Contaminated Sites regulation there is no dilution factor incorporated; therefore the values represented in the BC Ambient Water Quality guidelines are more stringent for many parameters. Therefore, while not directly applicable to monitoring locations at the landfill site, these guidelines provide a point of reference for assessing contaminant levels over time.

A summary of the surface water monitoring results in comparison to the applicable standards and guidelines are provided in Table 9. Complete laboratory results can be found in Appendix A.

5.2.1 Landfill-Related Indicator Parameters in Surface Water

None of the indicator parameters in the surface water samples collected in 2014 exceeded the regulatory standards. A summary of the average water quality indicator parameters for surface water is provided in Table 5. Hardness, conductivity, sulphate, iron and manganese were consistently elevated at SFC-2 and SFC-2B relative to background concentrations. These results indicate probable influences of landfill leachate at these locations.

5.2.2 Landfill Related Parameters of Potential Concern in Surface Water

Ammonia – Analyses for ammonia have been conducted at each monitoring location on two occasions in 2014. The standards for ammonia were not exceeded in 2014.

Heavy Metals – All heavy metal concentrations were below respective regulatory standards with the exception of copper and cobalt at SFC-2B and copper at SFC-2.

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Table 5: Average values of water quality indicator parameters for surface water in 2014

Parameter	BC – SCR AW*	BC WQG**	SFC-11 (Background)	SFC-3 (Background)	SFC-2	SFC-2B	SFC-4B
Chloride (mg/L)	1500	150	8.5	25.3	17.2	15.1	24.1
Conductivity (µS/cm)	-	-	116	239	361	904	251
Hardness (mg/L)	-	-	36.9	75.3	131.8	295.5	95.9
Sulfate (mg/L)	1000	50 (warning) 100 (maximum)	12.2	39.3	86.7	579.8	56.1
Iron (mg/L)	-	0.35	0.1	1.0	5.5	37.3	0.8
Manganese (mg/L)	-	"0.7 (H = 25)[1] 0.8 (H = 50) 1.0 (H = 100) 1.3 (H = 150) 1.9 (H = 300) (for total metals)"	0.007	0.134	1.84	6.60	0.296

*** Schedule 6, Column II (Generic Numerical Water Standards for Aquatic Life) of the B.C. Contaminated Sites Regulation**
**** BC Water Quality Guidelines (Working and Approved)**

[1] H represents water hardness measured in units of mg/L as CaCO3. Manganese availability, and hence its toxicity, in the aquatic environment can be influenced by water hardness. Average hardness levels measured in surface water samples ranged between 36 and 296 mg/L

5.2.3 Surface Water Quality Conclusions

All surface water quality standards were met at all monitoring locations with the exception of copper and cobalt at locations SFC-2 and SFC-2B (similar observations have been recorded in the 2013 Annual Monitoring Report (Morrison Hershfield 2014). These locations appear to be influenced by landfill leachate.

Monitoring of the nearest receiving waterbody (Cheakamus River) is not incorporated within this monitoring program (as defined by the provincially-approved Landfill Closure Plan). Sampling results from the furthest down gradient surface water monitoring location, and the one nearest the Cheakamus River, at SFC-4B, provide the best indication of potential impacts to receiving water quality resulting from the site. All regulatory standards were met during each of the sampling events at this location in 2014. Further, all receiving water guidelines (intended for receiving water locations), were met at SFC-4B with the exception of parameters which appear to be naturally elevated in the area (aluminum, cobalt, manganese and iron).

5.3 Leachate

Leachate is captured and treated by the Whistler Wastewater Treatment Plant. For monitoring purposes, the leachate quality is tested as part of this monitoring program. The monitoring results will help to determine when in the future, leachate treatment will no longer be required.

A technical memo summarizing the water quality conditions from 2012 to Q1 – 2014 at the Groundwater (GW) Interceptor adjacent to the Leachate Pump Station was developed in December 2014. The memo provides recommendations based on the water quality conditions; namely to continue quarterly monitoring at this location and incorporate the results into the annual monitoring reports. The complete memo is attached as Appendix D.

A summary of the leachate monitoring results in comparison to the applicable standards and guidelines are provided in Table 10 and Table 11. Complete laboratory results can be found in Appendix A.

5.3.1 Landfill-Related Indicator Parameters in Leachate

Indicator water quality parameters, as average concentrations, are summarized in Table 6. The concentration of the indicator parameters were generally higher at the GW Interceptor than at the Leachate Manhole.

Table 6: Average values of water quality indicator parameters for leachate in 2014

Parameter	BC – SCR AW*	BC WQG**	Leachate Manhole	GW Interceptor
Chloride (mg/L)	1500	150	4.55	56.8
Conductivity (µS/cm)	-	-	407	916.5
Hardness (mg/L)	-	-	189.5	414.0
Sulfate (mg/L)	1000	50 (warning) 100 (maximum)	71.6	351
Iron (mg/L)	-	0.35	0.0445	16.07
Manganese (mg/L)	-	0.7 (H = 25) 0.8 (H = 50) 1.0 (H = 100) 1.3 (H = 150) 1.9 (H = 300)	0.067	4.00

***** Schedule 6, Column II (Generic Numerical Water Standards for Aquatic Life) of the B.C. Contaminated Sites Regulation
** BC Water Quality Guidelines (Working and Approved

[1] H represents water hardness measured in units of mg/L as $CaCO_3$. Manganese availability, and hence its toxicity, in the aquatic environment can be influenced by water hardness. Average hardness levels measured in leachate samples ranged between 190 and 414 mg/L

5.3.2 Landfill Related Parameter of Potential Concern in Leachate

Ammonia – Observed ammonia levels were relatively low (for leachate) with no exceedances of the standard. Elevated concentrations of nitrate at the leachate manhole indicates that ammonia had been transformed to nitrate within the leachate collection system.

Hydrocarbons and Volatile Organic Compounds – Hydrocarbons and volatile organic compounds were not detected routinely or at significant concentrations. At the Leachate Manhole there was a marginal detection of Heavy Extractable Petroleum Hydrocarbon (HEPH), for which a standard doesn't exist. At the Groundwater Interceptor location there were detections in both Q1 and Q4 of total Polycyclic Armonatic Hydrocarbons (PAH), fluoranthene and fluorene. Total PAH is not regulated; however, fluoranthene and fluorene concentrations were below their respective regulatory standards.

Heavy Metals –Metal concentrations in the Leachate Manhole and GW Interceptor were all well below the applicable standards.

5.3.3 Leachate Quality Conclusions

Measured water quality from the Leachate Manhole and GW Interceptor did not exceed the regulatory standards during the 2014 monitoring program.

Leachate continues to be collected and treated at the RMOW Wastewater Treatment Plant prior to discharge.

5.4 Landfill Gas

Methane measurements are obtained from perimeter monitoring probes located around the landfill.

Triggers levels for LFG monitoring results which indicate when additional action is required are based on the B.C. Environmental Monitoring Guidelines. They are provided in the Operation and Maintenance Manual for the project (CH2M Hill, 2008b) and the permitted requirements are as follows:

- Methane gas concentrations in excess of, or predicted to exceed 10% LEL in subsurface soils at the eastern and southern property boundaries of the Whistler Landfill (MP 8 through MP 21, excluding MP 11)

- Methane gas concentrations in excess of, or predicted to exceed, 25% LEL in soils at the western and northern property boundaries (MP1 through MP7, and MP 11).

A summary of the landfill gas monitoring results is provided in Table 12.

5.4.1 Summary of Landfill Gas Results

Methane detection occurred at MP 12 and MP 14 during the month of November. The methane concentrations were below the trigger levels. These monitoring probes are located north of the Hostel and west of Legacy Way.

Regular testing and adjustment of the landfill gas extraction wells was performed on November 28th, 2014 in order to increase landfill gas abstraction rates and prevent off site migration of landfill gas. Subsequent monitoring did not detect methane in any of the locations.

5.4.2 Landfill Gas Conclusions and Recommendations

Based on 2014 data, the operation and maintenance of the landfill gas system ensured that landfill gas is effectively abstracted from the landfill area and lateral migration is prevented. Continued operation and monitoring as prescribed in the methodology (Morrison Hershfield 2012) is recommended.

5.5 Maintenance Activities

Routine maintenance of monitoring probes were completed on as needed basis during monthly (and weekly) monitoring activities by Norseman Engineering. The casing for monitoring probe MP20 was damaged by snow clearing equipment in February and was repaired in March 2014.

A steam condensate valve was installed to reduce surging at the landfill gas flare.

6. RECOMMENDATIONS

Continued monitoring in 2015 is required as per the Closure Plan. Data from the 2014 monitoring results are generally consistent with the results from previous years' monitoring. There were no new or extraordinary issues noted in the groundwater, surface water, leachate, or landfill gas monitoring results. No remedial actions are recommended based on the 2014 monitoring results.

Future sampling and analytical protocols should follow the revised monitoring program recommendations outlined in Morrison Hershfield (2012).

7. REFERENCES

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MORRISON HERSHFIELD

TABLE 7: 2014 GROUNDWATER QUALITY - GENERAL CHEMISTRY AND DISSOLVED METALS

SAMPLE LOCATION					MW2S					MW2D				MW3				MW4					MW6			
SAMPLE ID					MW2S	MW2SRep	MW2S	MW2S	MW2S	MW2D	MW2D	MW2D	MW2D	MW3	MW3	MW3	MW3	MW4	MW4	MW4	MW4	MW4-REP	MW6	MW6	MW6	MW6
SAMPLE DATE					21-Mar-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4
Field Parameters																										
Field Conductivity	uS/cm	-	-	-	741	741	217	379	535	1390	747	871	897	233	-	148	138	532	390	232	341	341	-	595	431	462
Temp	C	-	-	-	7.4	7.4	9.41	7.13	6.43	7.7	8.03	6.78	7.65	7.37	11.45	8.45	8.97	6.91	8.3	6.43	7.69	7.69	-	7.1	7.1	7.14
pH	-	-	-	-	6.17	6.17	6.27	6.29	6.38	6.39	6.18	6.19	6.28	6.26	6.3	5.34	5.52	5.55	6.17	6.01	5.41	5.41	-	5.74	5.11	5.35
Dissolved Oxygen	mg/L	-	-	-	13.9	13.9	25.04	3.53	3.44	-	22.22	3.42	3.51	7.11	15.75	4.27	4.33	9.02	24.4	5.21	6.46	6.46	-	7.13	5.67	7.67
ANIONS AND GENERAL CHEMISTRY																										
Alkalinity as CaCO3	mg/L	1	-	-	149	160	121	142	188	282	252	273	271	30	36	35	33	164	127	64	117	108	-	9	25	11
Bromide	mg/L	0.1	-	-	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1			-	<0.1	<0.1	
Chloride	mg/L	0.1	1500	150	29.8	30.8	17.2	12.6	24.1	41.6	43.7	41.5	41.7	19.5	8.24	12.4	14.8	21.7	27.8	12.5	24.3	26.9	-	**182**	80	100
Fluoride	mg/L	0.01	2	0.4	0.1	0.09	0.11	0.1	0.11	0.09	0.1	0.12	0.12	<0.05	0.06	<0.05	0.08	0.06	0.08	0.15	0.07	0.08	-	0.11	0.11	0.22
Nitrite as N	mg/L	0.001	0.2	0.06	<0.01	<0.01	<0.01	0.001	<0.010	<0.01	<0.010	<0.001	<0.010	<0.01	<0.010	<0.001	<0.010	<0.01	<0.010	0.001	<0.010	<0.010	-	<0.010	0.03	<0.010
Ammonia as N	mg/L	0.005	1.31 @ pH ≥ 8.5 3.7 @ pH 8.0 - < 8.5 11.3 @ pH 7.5 - < 8.0 18.5 @ pH 7.0 - < 7.5 18.4 @ pH < 7.0	Funtion of temperature and pH, ref. to guidelines.	**9.06**	**9.57**	-	**6**	-	**15.2**	-	**15.8**	-	0.398	-	0.426	-	0.874	-	0.846	-	-	-	-	0.082	-
Nitrate+Nitrite as N	mg/L	0.005	400	-	0.01	0.01	0.02	0.05	115	0.02	0.03	0.05	368	0.05	0.05	0.007	34.7	0.01	0.02	0.04	57.1	60.7	-	0.06	0.76	146
Nitrogen Kjeldahl	mg/L	0.05	-	-	9.24	9.77	8.67	6.63	-	15.8	19	16.2	-	0.54	0.27	0.43		1.5	2.67	1.57	-	-	-	1.4	0.87	-
Nitrate as N	mg/L	0.01	400	32.8	0.01	0.01	0.014	0.05	<0.010	0.02	<0.010	0.05	<0.010	0.05	0.034	0.007	<0.010	0.01	0.01	0.04	<0.010	<0.010	-	0.031	0.73	0.056
Nitrogen	mg/L	0.05	-	-	9.26	9.79	8.68	6.68	-	15.9	19.1	16.2	-	0.59	0.32	0.44		1.51	2.69	1.61	-	-	-	1.46	1.63	-
Sulfate	mg/L	1	1000	50 (warning level) 100 (maximum)	**132**	**132**	**94.1**	**96.9**	**115**	**423**	**397**	**359**	**368**	43.3	20.7	32.1	34.7	**61.6**	**54.4**	39.2	**57.1**	**60.7**	-	**105**	**133**	**146**
Chemical Oxygen Demand	mg/L	5	-	-	21	25	15	15	16	32	27	24	24	<5	<5	<5	<5	10	9	10	13	15	-	14	5	8
Solids Suspended	mg/L	2	-	-			532	579			369	603		12	17	18			178	275			-	2270	1730	-
pH	pH units	0.01	-	9	6.46	6.45	6.47	6.86	6.85	6.47	6.5	6.84	6.88	6.53	6.35	6.61	6.43	6.22	6.35	6.79	6.61	6.63	-	5.6	6.29	6.02
Conductivity (EC)	uS/cm	2	-		641	705	472	522		1360	1290	1240		222	148	186		520	444	258			-	891	626	-
Hardness (Diss. as CaCO3)	mg/L	0.5	-	-	206	212	147	161	224	543	514	483	524	54.7	39.5	50.5	44.4	178	124	70.9	150	146	-	173	113	135
DISSOLVED METALS																										
Aluminum	mg/L	0.005	-	(at pH ≥ 6.5) 0.1 - max. 0.05 - avg.	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.073**	0.009	0.012	0.019	0.006	0.009	**0.676**	0.008	0.01	-	**0.104**	**0.076**	**0.162**
Antimony	mg/L	0.0001	0.2	0.02	0.0002	0.0002	<0.0001	0.0002	<0.0001	0.0003	<0.0001	0.0002	<0.0001	0.0002	<0.0001	0.0001	<0.0001	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	-	0.0005	0.0001	<0.0001
Arsenic	mg/L	0.0005	0.05	0.005 (for total metals)	**0.0074**	**0.008**	**0.0051**	**0.0078**	**0.0093**	**0.0136**	**0.0132**	**0.0148**	**0.0147**	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	0.0031	0.0018	0.0024	0.0025	-	<0.0005	<0.0005	<0.0005
Barium	mg/L	0.005	10	1	0.16	0.162	0.098	0.099	0.154	0.033	0.029	0.029	0.033	0.066	0.048	0.071	0.066	0.145	0.143	0.082	0.152	0.152	-	0.057	0.037	0.055
Beryllium	mg/L	0.0001	0.053	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Bismuth	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Boron	mg/L	0.004	50	1.2	0.216	0.211	0.175	0.148	0.223	0.38	0.368	0.302	0.425	0.007	0.021	0.014	0.013	0.057	0.079	0.034	0.07	0.068	-	0.018	0.009	0.012
Cadmium	mg/L	0.00001	0.0001 @ H ≤ 30 0.0003 @ H = 30 - < 90 0.0005 @ H = 90 - < 150 0.0006 @ H = 150 - < 210	0.01 (H = 30) 0.02 (H= 60) 0.03 (H = 90) 0.04 (H = 120) 0.05 (H = 150) 0.06 (H= 210) (for total metals)	<0.00001	0.00006	<0.00001	<0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00038	0.0001	0.00017	0.00027	0.00038	0.00018	0.00024	0.00051	0.0005	-	0.00033	0.00021	0.00033
Calcium	mg/L	0.2	-	-	66.8	68.5	46.9	49	71.6	180	172	161	176	16.3	12.5	15.1	13.2	57.4	39.1	23	46.9	45.1	-	56.2	36.3	43.4
Chromium	mg/L	0.0005	0.01	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005
Cobalt	mg/L	0.00005	0.04	0.004	0.00277	0.00293	0.00179	0.00362	0.00301	**0.0167**	**0.0149**	**0.0147**	**0.0163**	**0.015**	0.00177	**0.00575**	**0.00642**	0.0405	**0.0302**	**0.0158**	**0.0367**	**0.0366**	-	**0.00844**	0.00182	0.00135
Copper	mg/L	0.0002	0.02 @ H < 50 0.03 @ H = 50 - < 75 0.04 @ H = 75 - < 100 0.05 @ H = 100 - < 125 0.06 @ H = 125 - < 150 0.07 @ H = 150 - < 175 0.08 @ H = 175 - < 200 0.09 @ H ≥ 200	0.094(H) + 2 (in µg/L) (for total metals)	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0073	0.0016	0.0018	0.0035	0.0012	0.0011	0.0031	0.0023	0.0027	-	0.0024	0.0044	0.0036
Iron	mg/L	0.01	-	0.35	**53.7**	**54.5**	**33.5**	**47.3**	**61.3**	**66.5**	**62.5**	**63.1**	**65.7**	**2.06**	**0.091**	**0.202**	**0.635**	**27.5**	**41.4**	**8.73**	**29.5**	**29.9**	-	**2.36**	0.043	0.014
Lead	mg/L	0.0001	0.04 @ H < 50 0.05 @ H = 50 - < 100 0.06 @ H = 100 - < 200 0.11 @ H = 200 - < 300 0.16 @ H ≥ 300	0.003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Lithium	mg/L	0.0001	-	0.014	0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0003	0.0001	<0.0001	0.0002	0.0002	0.0002	0.0004	0.0002	0.0002	-	0.0001	0.0001	<0.0001
Magnesium	mg/L	0.01	-	-	9.66	9.92	7.37	9.42	10.9	22.5	20.6	19.8	20.6	3.39	2.01	3.14	2.8	8.4	6.51	3.25	8.09	7.99	-	8.01	5.46	6.35
Manganese	mg/L	0.0002	-	0.7 (H = 25) 0.8 (H = 50) 1.0 (H = 100) 1.3 (H = 150) 1.9 (H = 300) (for total metals)	**2.96**	**3**	**2.15**	**2.37**	**3.5**	**2.82**	**2.93**	**3.35**	**3.33**	**2.19**	0.782	**2.38**	**1.99**	**4.12**	**2.79**	**1.37**	**3.02**	**3.03**	-	0.816	0.499	0.53
Mercury	mg/L	0.00002	0.001	0.000001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00003	<0.00002	0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	-	<0.00002	<0.00002	<0.00002
Molybdenum	mg/L	0.0001	10	1	0.0048	0.005	0.0043	0.0066	0.0048	0.0182	0.0168	0.0165	0.0183	0.0007	0.0012	0.0013	0.0007	0.0045	0.0118	0.0098	0.0063	0.0064	-	0.0002	0.0002	0.0002
Nickel	mg/L	0.0002	0.25 @ H < 60 0.65 @ H = 60 - < 120 1.1 @ H = 120 - < 180 1.5 @ H ≥ 180	0.025	0.0005	0.001	0.0011	**0.0365**	0.0015	0.0025	0.0029	0.0031	0.0032	0.0026	0.0004	0.0018	0.0015	0.0046	0.0034	0.0045	0.0055	0.0055	-	0.0022	0.0016	0.0023
Phosphorus	mg/L	0.02	-	-	<0.02	0.03	<0.02	<0.02	0.05	0.08	<0.02	0.13	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	<0.02	<0.02	<0.02
Potassium	mg/L	0.02	-	373	14	14.1	10.6	13.3	14	22.3	21.2	21.9	21.9	2.83	2.66	3.84	3.08	5.62	5.95	4.84	6.32	6.35	-	4.51	4.52	4.21
Selenium	mg/L	0.0005	0.01	0.002	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	-	0.0007	<0.0005	<0.0005
Silicon	mg/L	0.5	-	-	9.9	10.2	9.2	10.8	12.4	14.2	14.3	15.6	16.4	6.9	7.2	9.2	8.2	10.9	10	12	12.6	12.7	-	8.2	9.3	10.4
Silver	mg/L	0.00005	0.0005 @ H ≤ 100 0.015 @ H > 100	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	-	<0.00005	<0.00005	<0.00005
Sodium	mg/L	0.02	-	-	20.4	20.7	12.8	12.4	27.6	33.6	32.8	33.7	34.1	16.2	9.85	14.5	11.7	16.3	19.8	21.2	21.5	21.7	-	89.8	82.1	90.3
Strontium	mg/L	0.001	-	-	0.359	0.365	0.25	0.286	0.408	0.68	0.653	0.627	0.683	0.122	0.115	0.166	0.118	0.312	0.242	0.161	0.314	0.315	-	0.658	0.482	0.618

MORRISON HERSHFIELD

TABLE 7: 2014 GROUNDWATER QUALITY - GENERAL CHEMISTRY AND DISSOLVED METALS

SAMPLE LOCATION					MW2S					MW2D				MW3				MW4					MW6			
SAMPLE ID					MW2S	MW2SRep	MW2S	MW2S	MW2S	MW2D	MW2D	MW2D	MW2D	MW3	MW3	MW3	MW3	MW4	MW4	MW4	MW4	MW4-REP	MW6	MW6	MW6	MW6
SAMPLE DATE					21-Mar-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4
Sulfur	mg/L	1	-	-	37	38	28	31	42	142	119	118	124	8	6	9	8	18	17	14	18	18	-	33	46	53
Tellurium	mg/L	0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002
Thallium	mg/L	0.00002	0.003	0.0003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00013	0.00003	0.00006	0.00012	0.00004	<0.00002	0.00003	0.00004	0.00003	-	0.00008	0.00005	0.00005
Thorium	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001
Tin	mg/L	0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002
Titanium	mg/L	0.005	1	2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	-	<0.005	<0.005	<0.005
Uranium	mg/L	0.00002	3	0.3	0.00013	0.00012	0.00006	0.00007	0.00011	0.0003	0.00027	0.00026	0.00031	<0.00002	<0.00002	<0.00002	<0.00002	0.0001	0.00014	0.00015	0.00017	0.00017	-	0.00004	0.00004	0.00003
Vanadium	mg/L	0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001
Zinc	mg/L	0.004	0.075 @ H ≤ 90 0.15 @ H = 90 - < 100 0.9 @ H = 100 - < 200 1.65 @ H = 100 - < 200 2.4 @ H = 300 - < 400	33 + 0.75 (H - 90) (for total metals)	<0.004	0.013	0.005	0.008	<0.004	<0.004	<0.004	<0.004	<0.004	0.008	<0.004	<0.004	0.005	0.01	0.005	0.004	0.009	0.011	-	<0.004	0.005	0.004
Zirconium	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0006	<0.0001	<0.0001	-	<0.0001	<0.0001	<0.0001

Yellow = exceed standard

Bold = exceed guideline

Orange = RDL is > or = to guideline or standard

MORRISON HERSHFIELD

TABLE 8: 2014 GROUNDWATER QUALITY - PETROLEUM HYDROCARBONS

SAMPLE LOCATION					MW2S					MW2D				MW3				MW4					MW6			
SAMPLE ID					MW2S	MW2S-REP	MW2S	MW2S	MW2S	MW2D	MW2D	MW2D	MW2D	MW3	MW3	MW3	MW3	MW4	MW4	MW4	MW4	MW4-REP	MW6	MW6	MW6	MW6
SAMPLE DATE					21-Mar-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (ug/L)	BC Ambient Water Quality Guidelines (ug/L)	Q1	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q4	Q1	Q2	Q3	Q4
HYDROCARBONS																										
VPHw	ug/L	100	1500	-	<100	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	-	-	<100	-	-
LEPHw	ug/L	100	500	-	<100	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	<100	-	-	-	<100	-	-
HEPHw	ug/L	100	-	-	<100	<100	-	106	-	115	-	<100	-	<100	-	<100	-	<100	-	<100	-	-	-	<100	-	-
Total PAH	ug/L	0.05	-	-	<0.05	0.05	-	<0.05	-	0.14	-	<0.05	-	<0.05	-	<0.05	-	0.09	-	<0.05	-	-	-	<0.05	-	-
PAHs																										
Acenaphthene	ug/L	0.02	60	6	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Acenaphthylene	ug/L	0.02	-	-	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Acridine	ug/L	0.05	0.5	0.05	<0.05	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Anthracene	ug/L	0.01	1	0.1	<0.01	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	-	-	<0.01	-	-
Benzo (a) anthracene	ug/L	0.01	1	0.1	<0.01	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	-	-	<0.01	-	-
Benzo (a) pyrene	ug/L	0.01	0.1	0.01	<0.01	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	<0.01	-	-	-	<0.01	-	-
Benzo (b) fluoranthene	ug/L	0.02	-	-	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Benzo (g,h,i) perylene	ug/L	0.02	-	-	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Benzo (k) fluoranthene	ug/L	0.02	-	-	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Chrysene	ug/L	0.02	1	-	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Dibenz (a,h) anthracene	ug/L	0.02	-	-	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Fluoranthene	ug/L	0.02	2	0.2	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Fluorene	ug/L	0.02	120	12	<0.02	<0.02	-	<0.02	-	0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Indeno (1,2,3-cd) pyrene	ug/L	0.02	-	-	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Naphthalene	ug/L	0.05	10	1	<0.05	0.05	-	<0.05	-	0.12	-	<0.05	-	<0.05	-	<0.05	-	0.09	-	<0.05	-	-	-	<0.05	-	-
Phenanthrene	ug/L	0.05	3	0.3	<0.05	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Pyrene	ug/L	0.02	0.2	0.02	<0.02	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	<0.02	-	-	-	<0.02	-	-
Quinoline	ug/L	0.05	34	3.4	<0.05	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	<0.05	-	-	-	<0.05	-	-
Acetone	ug/L	10	-	-	<10.0	<10.0	-	-	-	<10.0	-		-	<10.0	-	-	-	<10.0	-	-	-	-	-	-	-	-
Benzene	ug/L	0.5	4000	40	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
Bromodichloromethane	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Bromoform	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Bromomethane	ug/L	2	-	-	<2.0	<2.0	-	-	-	<2.0	-		-	<2.0	-	-	-	<2.0	-	-	-	-	-	-	-	-
2-Butanone (MEK)	ug/L	5	-	-	<5.0	<5.0	-	-	-	<5.0	-		-	<5.0	-	-	-	<5.0	-	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	1	130	133	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Chlorobenzene	ug/L	1	13	1.3	<1.0	<1.0	-	<1.0	-	**1.3**	-	<2.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Chloroethane	ug/L	2	-	-	<2.0	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	-	-	<2.0	-	-
Chloroform	ug/L	1	20	1.8	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Chloromethane	ug/L	2	-	-	<2.0	<2.0	-	-	-	<2.0	-		-	<2.0	-	-	-	<2.0	-	-	-	-	-	-	-	-
Dibromochloromethane	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Dibromomethane	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,2-Dichlorobenzene	ug/L	0.5	7	0.7	<0.5	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	-	<0.5	-	-
1,3-Dichlorobenzene	ug/L	1	1500	150	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,4-Dichlorobenzene	ug/L	1	260	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,1-Dichloroethane	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,2-Dichloroethane	ug/L	1	1000	100	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,1-Dichloroethene	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
cis-1,2-Dichloroethene	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
trans-1,2-Dichloroethene	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,2-Dichloropropane	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
cis-1,3-Dichloropropene	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
trans-1,3-Dichloropropene	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Ethylbenzene	ug/L	1	2000	200	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Methyl tert-butyl ether	ug/L	1	34000	3400	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Methylene chloride	ug/L	3	980	98.1	<3.0	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	<3.0	-	-	-	<3.0	-	-
4-Methyl-2-Pentanone (MIBK)	ug/L	10	-	-	<10.0	<10.0	-		-	<10.0	-		-	<10.0	-	-	-	<10.0	-	-	-	-	-	-	-	-
Styrene	ug/L	1	720	72	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,1,1,2-Tetrachloroethane	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,1,2,2-Tetrachloroethane	ug/L	1	1100	111	<1.0	<1.0	-		-	<1.0	-		-	<1.0	-	-	-	<1.0	-	-	-	-	-	-	-	-
Tetrachloroethene	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Toluene	ug/L	1	390	0.5	**5.8**	**2**	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,1,1-Trichloroethane	ug/L	1	-	11100	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
1,1,2-Trichloroethane	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Trichloroethene	ug/L	1	200	21	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Trichlorofluoromethane	ug/L	1	-	-	<1.0	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	<1.0	-	-	-	<1.0	-	-
Vinyl chloride	ug/L	2	-	-	<2.0	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	-	-	<2.0	-	-
m,p-Xylene	ug/L	1	-	30	<1.0	<1.0	-		-	<1.0	-	-	-	<1.0	-	-	-	<1.0	-	-	-	-	-	-	-	-
Xylenes (total)	ug/L	2	-	30	<2.0	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	<2.0	-	-	-	<2.0	-	-
o-Xylene	ug/L	1	-	30	<1.0	<1.0	-		-	<1.0	-	-	-	<1.0	-	-	-	<1.0	-	-	-	-	-	-	-	-
1,2-Dibromoethane	ug/L	0.3	-	-	-	-	-	<0.3	-	-	-	<0.3	-	-	-	<0.3	-	-	-	<0.3	-	-	-	<0.3	-	-
1,2-Dichlorobenzene	ug/L	0.5	7	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Yellow = exceed standard

Bold = exceed guideline

MORRISON HERSHFIELD

TABLE 9: 2014 SURFACE WATER GENERAL CHEMISTRY AND METALS

SAMPLE LOCATION					SFC 2				SFC 2B				SFC 3					SFC 4B					SFC 11			
SAMPLE ID					SFC 2	SFC 2	SFC2	SFC 2	SFC 2B	SFC 2B	SFC2B	SFC 2B	SFC 3	SFC 3	SFC 3-REDP	SFC3	SFC 3	SFC 4B	SFC 4B	SFC4B	SFC4B Rep	SFC 4B	SFC 11	SFC 11	SFC11	SFC 11
SAMPLE DATE					21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		Q3	Q4	Q1	Q2	Q3		Q4	Q1	Q2	Q3	Q4
Field Parameters																										
Field Conductivity	uS/cm	-	-	-	372	115	266	229	609	732	761	340	233	112	112	270	109	253	225	230	230	205	82	84	87	56
Temp	C	-	-	-	5.87	8.52	8.19	7.43	3.72	12.59	8	4.21	3.84	8.4	8.4	7.22	4.9	3.54	9.31	7.25	7.25	5.01	3.34	7.15	5.47	4.77
pH	-	-	-	-	5.17	6.16	5.68	5.02	4.03	3.46	3.46	3.5	5.88	6.11	6.11	5.59	5.53	6.34	7.36	6.19	6.19	5.85	5.95	6.24	5.93	5.13
Dissolved Oxygen	mg/L	-	-	-	10.47	14.04	8.05	13.45	11.95	7.76	4.42	8.25	13.8	10.99	10.99	9.17	12.39	24.5	11.82	10.78	10.78	14.4	13.05	10.93	8.69	15.01
ANIONS AND GENERAL CHEMISTRY																										
Alkalinity as CaCO3	mg/L	1	-	-	38	71	44	46	<2	<1	<1	<1	32	31	32	14	29	26	38	22	24	34	19	29	31	20
Bromide	mg/L	0.1	-	-	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	
Chloride	mg/L	0.1	1500	150	22.8	15.8	16.9	13.3	7.86	20.8	22.6	9.15	33.4	14.7	14.9	34.4	29.1	20.1	29.8	26.3	26.2	18.1	5.76	11.1	12.7	4.31
Fluoride	mg/L	0.01	2	0.4	0.08	0.07	0.1	0.09	0.31	**0.4**	0.14	0.36	0.06	0.07	0.07	0.08	0.07	0.08	0.08	<0.05	<0.05	0.06	0.05	<0.05	<0.05	0.05
Nitrite as N	mg/L	0.001	0.2	0.06	<0.01	<0.010	0.002	<0.010	0.02	<0.010	0.004	0.017	<0.01	<0.01	<0.010	0.005	<0.010	<0.01	<0.010	0.002	0.002	<0.010	<0.01	<0.010	<0.001	<0.010
Ammonia as N	mg/L	0.005	1.31 @ pH ≥ 8.5 3.7 @ pH 8.0 - < 8.5 11.3 @ pH 7.5 - < 8.0 18.5 @ pH 7.0 - < 7.5 18.4 @ pH < 7.0	Funtion of temperature and pH, ref. to guidelines.	0.38	-	0.592	-	0.696	-	**3.39**	-	0.042	-	-	0.022	-	0.006	-	0.018	0.017		0.015	-	0.008	-
Nitrate+Nitrite as N	mg/L	0.005	400	-	1.78	0.28	0.34		9.79	0.06	0.26		0.28	0.11	0.11	0.69	-	0.32	0.31	0.65	0.65	89.1	0.29	0.14	0.19	
Nitrogen Kjeldahl	mg/L	0.05	-	-	0.63	1.14	0.82		1.87	2.78	3.39		0.27	0.12	0.15	0.24		0.24	0.24	0.3	0.38		0.13	0.08	0.16	
Nitrate as N	mg/L	0.01	400	32.8	1.78	0.249	0.34	0.637	9.76	0.085	0.26	4.28	0.28	0.106	0.103	0.68	0.219	0.32	0.313	0.65	0.65	0.325	0.29	0.118	0.19	0.198
Nitrogen	mg/L	0.05	-	-	2.41	1.42	1.16		11.7	2.84	3.65		0.56	0.23	0.26	0.93		0.56	0.55	0.94	1.03		0.42	0.22	0.35	
Sulfate	mg/L	1	1000	50 (warning level) 100 (maximum)	**95.8**	**63.6**	**101**	**86.3**	**332**	**795**	**676**	**516**	24.7	17	16.8	**105**	32.9	**57.2**	**55.5**	39.6	39.1	**89.1**	8.2	12.4	15.5	12.6
Chemical Oxygen Demand	mg/L	5	-	-	5	<5	<5	8	22	15	15	17	<5	<5	<5	<5	5	<5	<5	25	7	6	<5	<5	<5	<5
Solids Suspended	mg/L	2	-	-		6	26			34	28			3	18	14			1	<1	1			<1	<1	
pH	pH units	0.01	-	9	6.13	6.42	6.78	6.94	3.79	3.71	3.67	4.44	6.87	6.44	6.45	6.57	6.93	6.98	6.36	6.84	6.95	7.26	7.01	6.42	6.99	7.06
Conductivity (EC)	uS/cm	2	-		373	334	377		588	984	1140		240	154	154	406		256	304	221	221		78	127	144	
Hardness (Diss. as CaCO3)	mg/L	0.5	-	-	126	126	160	115	192	328	454	208	58.4	45.2	44.4	178	50.3	85.9	111	87.2	81.5	114	21.6	43.4	55.4	27.1
TOTAL METALS																										
Aluminum	mg/L	0.005	-	Maximum 0.1 (pH ≥ 6.5)	**3.18**	**0.722**	**2.02**	**1.93**	**12.5**	**11**	**10.9**	**11.7**	**1.74**	**0.039**	**0.067**	**1.06**	0.1	**0.973**	0.026	0.055	0.05	**0.504**	**0.496**	0.028	0.029	**0.211**
Antimony	mg/L	0.0001	0.2	0.02	0.0001	<0.0001	0.0002	<0.0001	0.0002	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.0005	0.05	0.005 (for total metals)	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	0.0007	0.0007	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Barium	mg/L	0.005	10	1	0.044	0.067	0.071	0.052	0.035	0.062	0.075	0.051	0.039	0.016	0.015	0.082	0.024	0.028	0.026	0.02	0.019	0.038	0.011	0.011	0.013	0.011
Beryllium	mg/L	0.0001	0.053	-	0.0001	<0.0001	0.0001	<0.0001	0.0005	0.0005	0.0005	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Boron	mg/L	0.004	50	1.2	0.032	0.091	0.084	0.031	0.031	0.05	0.059	0.05	0.015	0.02	0.016	0.02	0.014	0.039	0.063	0.036	0.035	0.05	0.007	0.015	0.014	0.005
Cadmium	mg/L	0.00001	0.0001 @ H ≤ 30 0.0003 @ H = 30 - < 90 0.0005 @ H = 90 - < 150 0.0006 @ H = 150 - < 210	0.01 (H = 30) 0.02 (H= 60) 0.03 (H = 90) 0.04 (H = 120) 0.05 (H = 150) 0.06 (H= 210) (for total metals)	0.00016	0.00009	0.00021	0.00011	0.00081	0.00035	0.00068	0.00068	0.00005	0.00002	0.00002	0.00026	0.00002	0.00005	0.00002	0.00001	<0.00001	0.00005	0.00001	0.00003	0.00002	0.00002
Calcium	mg/L	0.2	-	-	43	42.2	53	38.9	60	91.1	134	64.2	18.8	14.7	14.4	63.3	17	28.6	37.5	30.6	28.6	37.7	6.6	13.9	18.6	8.4
Chromium	mg/L	0.0005	0.01	0.001	0.0005	<0.0005	<0.0005	0.0009	**0.0027**	0.0008	<0.0005	**0.0023**	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008
Cobalt	mg/L	0.00005	0.04	0.004	**0.0146**	**0.0095**	**0.0199**	**0.0103**	0.069	0.0871	0.103	0.0654	0.00126	0.00015	0.00019	**0.0187**	0.0003	**0.00418**	0.00029	0.00024	0.00023	**0.005**	0.00014	<0.00005	0.00005	0.00006
Copper	mg/L	0.0002	0.02 @ H < 50 0.03 @ H = 50 - < 75 0.04 @ H = 75 - < 100 0.05 @ H = 100 - < 125 0.06 @ H = 125 - < 150 0.07 @ H = 150 - < 175 0.08 @ H = 175 - < 200 0.09 @ H ≥ 200	0.094(H) + 2 (in µg/L) (for total metals)	0.0647	0.012	0.0314	0.0379	0.308	0.143	0.163	0.248	0.0149	0.0011	0.0014	0.0289	0.0028	0.0156	0.0012	0.0019	0.0017	0.0091	0.0035	0.0015	0.0005	0.0019
Iron	mg/L	0.01	-	0.35	**5.48**	**5.71**	**6.51**	**4.38**	**29.9**	**57.9**	**30.9**	**30.5**	**1.92**	0.23	**0.42**	**2.19**	0.14	**1.64**	0.16	0.18	0.17	**1.91**	**0.29**	0.03	0.08	0.12
Lead	mg/L	0.0001	0.04 @ H < 50 0.05 @ H = 50 - < 100 0.06 @ H = 100 - < 200 0.11 @ H = 200 - < 300 0.16 @ H ≥ 300	0.003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0009	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001
Lithium	mg/L	0.0001	-	0.014	0.001	0.0005	0.0019	0.0007	0.0042	0.0055	0.0067	0.0041	0.0007	0.0005	0.0005	0.001	0.0003	0.0007	0.0006	0.0005	0.0005	0.0005	0.0005	0.0006	0.0007	0.0004
Magnesium	mg/L	0.01	-	-	4.51	4.86	6.78	4.33	10.1	24.2	28.6	11.4	2.76	2.07	2.04	4.8	1.89	3.48	4.24	2.61	2.45	4.76	1.21	2.1	2.19	1.49
Manganese	mg/L	0.0002	-	0.7 (H = 25) 0.8 (H = 50) 1.0 (H = 100) 1.3 (H = 150) 1.9 (H = 300) (for total metals)	0.695	**2.42**	**3.36**	0.882	**2.07**	**9.77**	**11**	**3.54**	0.0629	0.0236	0.0275	0.533	0.0239	0.393	0.131	0.106	0.102	0.749	0.0071	0.0062	0.01	0.0034
Mercury	mg/L	0.00002	0.001	0.000001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Molybdenum	mg/L	0.0001	10	1	0.0034	0.0025	0.0026	0.0041	0.0003	0.0004	0.0001	0.0004	0.0018	0.0003	0.0003	0.0005	0.0005	0.0011	0.0004	0.0004	0.0004	0.0011	0.0003	0.0002	0.0002	0.0005
Nickel	mg/L	0.0002	0.25 @ H < 60 0.65 @ H = 60 - < 120 1.1 @ H = 120 - < 180 1.5 @ H ≥ 180	0.025	0.0058	<0.0002	0.0082	0.0047	**0.0316**	0.0244	**0.0343**	**0.0313**	0.0006	<0.0002	<0.0002	0.007	<0.0002	0.0015	<0.0002	0.0004	0.0004	0.0022	<0.0002	<0.0002	0.0002	<0.0002
Phosphorus	mg/L	0.02	-	-	0.107	<0.020	<0.020	0.056	0.519	<0.020	<0.020	0.257	0.063	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.038	0.021	0.036	<0.020	<0.020	<0.020	<0.020
Potassium	mg/L	0.02	-	373	3.8	4.4	4.19	4.03	4.14	4.96	11.7	5.79	1.9	0.92	0.9	3.03	1.52	2.06	2.33	1.82	1.71	2.74	0.51	0.64	0.72	0.6
Selenium	mg/L	0.0005	0.01	0.002	0.001	<0.0005	<0.0005	<0.0005	**0.0055**	0.0019	**0.0021**	**0.0024**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Silicon	mg/L	0.5	-	-	3.8	5.6	7.1	5.2	7.7	12.1	10.4	10.9	7.7	9.3	9.2	8.8	6.9	5.7	7.6	5.6	5.3	7.6	6.5	10.1	10.1	8.1
Silver	mg/L	0.00005	0.0005 @ H ≤ 100 0.015 @ H > 100	0.00005	<0.00005	0.00009	<0.00005	<0.00005	<0.00005	0.00006	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0003	0.00015	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Sodium	mg/L	0.02	-	-	15.2	14.7	14.1	13.9	9.29	17.4	18.2	11.3	24	13.2	12.8	22.4	21.3	14.4	17.2	11.8	11.1	14.7	6.23	7.72	8.01	5.27
Strontium	mg/L	0.001	-	-	0.214	0.266	0.304	0.231	0.209	0.501	0.689	0.297	0.138	0.156	0.153	0.431	0.134	0.195	0.361	0.302	0.284	0.3	0.072	0.169	0.21	0.101
Sulfur	mg/L	1	-	-	26	21	31	27	78	160	170	93	3	4	4	34	6	16	16	8	7	29	<1	2	<1	1

MORRISON HERSHFIELD

TABLE 9: 2014 SURFACE WATER GENERAL CHEMISTRY AND METALS

SAMPLE LOCATION					SFC 2				SFC 2B				SFC 3					SFC 4B					SFC 11			
SAMPLE ID					SFC 2	SFC 2	SFC2	SFC 2	SFC 2B	SFC 2B	SFC2B	SFC 2B	SFC 3	SFC 3	SFC 3-REDP	SFC3	SFC 3	SFC 4B	SFC 4B	SFC4B	SFC4B Rep	SFC 4B	SFC 11	SFC 11	SFC11	SFC 11
SAMPLE DATE					21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		Q3	Q4	Q1	Q2	Q3		Q4	Q1	Q2	Q3	Q4
Tellurium	mg/L	0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Thallium	mg/L	0.00002	0.003	0.0003	<0.00002	<0.00002	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Thorium	mg/L	0.0001	-	-	0.0004	<0.0001	<0.0001	0.0002	0.0033	0.0009	0.0002	0.0023	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Tin	mg/L	0.0002	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Titanium	mg/L	0.005	1	2	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.064	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	<0.005	0.017	<0.005	<0.005	0.007
Uranium	mg/L	0.00002	3	0.3	0.00026	0.00005	0.00014	0.00016	0.00112	0.00055	0.00039	0.00073	0.00007	<0.00002	<0.00002	0.00008	0.00002	0.00006	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	<0.00002	<0.00002	<0.00002
Vanadium	mg/L	0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Zinc	mg/L	0.004	0.075 @ H ≤ 90 0.15 @ H = 90 - < 100 0.9 @ H = 100 - < 200 1.65 @ H = 100 - < 200 2.4 @ H = 300 - < 400	33 + 0.75 (H - 90) (for total metals)	0.022	0.009	0.03	0.016	0.095	0.045	0.08	0.09	0.013	<0.004	<0.004	0.03	0.007	0.01	<0.004	0.004	0.006	0.014	<0.004	<0.004	0.006	<0.004
Zirconium	mg/L	0.0001	-	-	<0.0001	<0.0001	<0.0001	0.0001	0.0001	<0.0001	<0.0001	0.0002	0.0005	<0.0001	<0.0001	<0.0001	0.0001	0.0002	<0.0001	<0.0001	<0.0001	0.0001	0.0004	<0.0001	<0.0001	0.0002

Yellow = exceed standard

Bold = exceed guideline

MORRISON HERSHFIELD

TABLE 10: 2014 Leachate Manhole / GW Interceptor WATER QUALITY - GENERAL CHEMISTRY AND METALS

	SAMPLE LOCATION			LEACHATE MANHOLE				GW INTERCEPTOR			
	SAMPLE ID			Leachate Manhole	Leachate Manhole	Leachate Manhole	Leachate Manhole	GW Interceptor	GW Interceptor	GW Interceptor	GW Interceptor
	SAMPLE DATE			21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Field Parameters												
Field Conductivity	uS/cm	-	-	-	1046	-	-	307	404	585	-	859
Temp	C	-	-	-	9.02	-	-	7.26	4.21	9.23	-	9.1
pH	-	-	-	-	5.59	-	-	5.56	6.04	5.79	-	5.91
Dissolved Oxygen	mg/L	-	-	-	4.07	-	-	7.5	7.77	81.4	-	6.65
ANIONS AND GENERAL CHEMISTRY												
Alkalinity as CaCO3	mg/L	1	-	-	66	-	-	89	111	121	-	123
Bromide	mg/L	0.1	-	-	<0.1	-	-		<0.1	<0.1	-	
Chloride	mg/L	0.1	1500	150	2.91	-	-	6.19	50.7	68.2	-	51.6
Fluoride	mg/L	0.01	2	0.4	0.06	-	-	0.07	0.12	0.09	-	0.16
Nitrite as N	mg/L	0.001	0.2	0.06	<0.01	-	-	<0.010	<0.01	<0.01	-	<0.010
Ammonia as N	mg/L	0.005	1.31 @ pH ≥ 8.5 3.7 @ pH 8.0 - < 8.5 11.3 @ pH 7.5 - < 8.0 18.5 @ pH 7.0 - < 7.5 18.4 @ pH < 7.0	Funtion of temperature and pH, ref. to guidelines.	0.042	-	-	-	1.25	0.947	-	-
Nitrate+Nitrite as N	mg/L	0.005	400	-	17.1	-	-	-	0.63	0.02	-	
Nitrogen Kjeldahl	mg/L	0.05	-	-	1.8	-	-	-	1.61	1.56	-	
Nitrate as N	mg/L	0.01	400	32.8	17.1	-	-	4.47	0.63		-	<0.010
Nitrogen	mg/L	0.05	-	-	18.9	-	-	-	2.24	1.58	-	
Sulfate	mg/L	1	1000	50 (warning level) 100 (maximum)	**58.8**	-	-	**84.4**	**408**	**166**	-	**480**
Chemical Oxygen Demand	mg/L	5	-	-	41	-	-	30	12	14	-	24
Solids Suspended	mg/L	2	-	-		-	-	-		46	-	
pH	pH units	0.01	-	9	6.19	-	-	6.75	6	6.3	-	6.55
Conductivity (EC)	uS/cm	2	-		407	-	-	-	1060	773	-	
Hardness (Diss. as CaCO3)	mg/L	0.5	-	-	171	-	-	208	444	255	-	543
DISSOLVED METALS												
Aluminum	mg/L	0.005	-	Maximum 0.1 (pH ≥ 6.5)	0.041	-	-	0.034	0.016	0.012	-	0.006
Antimony	mg/L	0.0001	0.2	0.02	0.0002	-	-	0.0001	0.0001	0.0004	-	<0.0001
Arsenic	mg/L	0.0005	0.05	0.005 (for total metals)	<0.0005	-	-	<0.0005	<0.0005	<0.0005	-	<0.0005
Barium	mg/L	0.005	10	1	0.023	-	-	0.039	0.117	0.076	-	0.126
Beryllium	mg/L	0.0001	0.053	-	<0.0001	-	-	<0.0001	<0.0001	<0.0001	-	<0.0001
Bismuth	mg/L	0.0001	-	-	<0.0001	-	-	<0.0001	<0.0001	<0.0001	-	<0.0001
Boron	mg/L	0.004	50	1.2	0.028	-	-	0.046	0.282	0.169	-	0.376
Cadmium	mg/L	0.00001	0.0001 @ H ≤ 30 0.0003 @ H = 30 - < 90 0.0005 @ H = 90 - < 150 0.0006 @ H = 150 - < 210	0.01 (H = 30) 0.02 (H= 60) 0.03 (H = 90) 0.04 (H = 120) 0.05 (H = 150) 0.06 (H= 210) (for total metals)	0.00007	-	-	0.00006	0.00006	<0.00001	-	0.00004
Calcium	mg/L	0.2	-	-	59.3	-	-	72.2	146	85.5	-	184
Chromium	mg/L	0.0005	0.01	0.001	<0.0005	-	-	<0.0005	<0.0005	<0.0005	-	<0.0005

MORRISON HERSHFIELD

TABLE 10: 2014 Leachate Manhole / GW Interceptor WATER QUALITY - GENERAL CHEMISTRY AND METALS

SAMPLE LOCATION					LEACHATE MANHOLE				GW INTERCEPTOR			
SAMPLE ID					Leachate Manhole	Leachate Manhole	Leachate Manhole	Leachate Manhole	GW Interceptor	GW Interceptor	GW Interceptor	GW Interceptor
SAMPLE DATE					21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Cobalt	mg/L	0.00005	0.04	0.004	0.00047	-	-	0.00049	**0.0138**	0.00291	-	**0.0222**
Copper	mg/L	0.0002	0.02 @ H < 50 0.03 @ H = 50 - < 75 0.04 @ H = 75 - < 100 0.05 @ H = 100 - < 125 0.06 @ H = 125 - < 150 0.07 @ H = 150 - < 175 0.08 @ H = 175 - < 200 0.09 @ H ≥ 200	0.094(H) + 2 (in µg/L) (for total metals)	0.0339	-	-	0.0267	0.0005	<0.0002	-	0.0004
Iron	mg/L	0.01	-	0.35	0.055	-	-	0.034	**18.2**	**19**	-	**11**
Lead	mg/L	0.0001	0.04 @ H < 50 0.05 @ H = 50 - < 100 0.06 @ H = 100 - < 200 0.11 @ H = 200 - < 300 0.16 @ H ≥ 300	0.003	0.0002	-	-	<0.0001	0.0001	<0.0001	-	<0.0001
Lithium	mg/L	0.0001	-	0.014	0.0004	-	-	0.0003	0.0009	0.0003	-	0.0009
Magnesium	mg/L	0.01	-	-	5.6	-	-	6.7	19	10	-	20
Manganese	mg/L	0.0002	-	0.7 (H = 25) 0.8 (H = 50) 1.0 (H = 100) 1.3 (H = 150) 1.9 (H = 300) (for total metals)	0.0574	-	-	0.0772	**3.94**	**2.95**	-	**5.12**
Mercury	mg/L	0.00002	0.001	0.000001	<0.00002	-	-	0.00002	<0.00002	<0.00002	-	<0.00002
Molybdenum	mg/L	0.0001	10	1	0.0003	-	-	0.0005	<0.0001	0.0002	-	0.0002
Nickel	mg/L	0.0002	0.25 @ H < 60 0.65 @ H = 60 - < 120 1.1 @ H = 120 - < 180 1.5 @ H ≥ 180	0.025	0.0012	-	-	0.0025	0.0077	0.0014	-	0.0102
Phosphorus	mg/L	0.02	-	-	0.2	-	-	0.29	<0.02	<0.02	-	<0.02
Potassium	mg/L	0.02	-	373	2.96	-	-	4.7	6.99	6.35	-	9.04
Selenium	mg/L	0.0005	0.01	0.002	<0.0005	-	-	<0.0005	<0.0005	<0.0005	-	<0.0005
Silicon	mg/L	0.5	-	-	8.6	-	-	10.3	10.3	8.6	-	11.8
Silver	mg/L	0.00005	0.0005 @ H ≤ 100 0.015 @ H > 100	0.00005	<0.00005	-	-	<0.00005	<0.00005	<0.00005	-	<0.00005
Sodium	mg/L	0.02	-	-	7.32	-	-	12	38.2	43.4	-	47
Strontium	mg/L	0.001	-	-	0.206	-	-	0.284	0.955	0.595	-	1.2
Sulfur	mg/L	1	-	-	14	-	-	30	135	52	-	163
Tellurium	mg/L	0.0002	-	-	<0.0002	-	-	<0.0002	<0.0002	<0.0002	-	<0.0002
Thallium	mg/L	0.00002	0.003	0.0003	<0.00002	-	-	<0.00002	<0.00002	<0.00002	-	<0.00002
Thorium	mg/L	0.0001	-	-	<0.0001	-	-	<0.0001	<0.0001	<0.0001	-	<0.0001
Tin	mg/L	0.0002	-	-	<0.0002	-	-	<0.0002	<0.0002	<0.0002	-	<0.0002
Titanium	mg/L	0.005	1	2	<0.005	-	-	<0.005	<0.005	<0.005	-	<0.005
Uranium	mg/L	0.00002	3	0.3	0.00003	-	-	0.00002	<0.00002	<0.00002	-	<0.00002
Vanadium	mg/L	0.001	-	-	<0.001	-	-	<0.001	<0.001	<0.001	-	<0.001

MORRISON HERSHFIELD

TABLE 10: 2014 Leachate Manhole / GW Interceptor WATER QUALITY - GENERAL CHEMISTRY AND METALS

	SAMPLE LOCATION	LEACHATE MANHOLE				GW INTERCEPTOR			
	SAMPLE ID	Leachate Manhole	Leachate Manhole	Leachate Manhole	Leachate Manhole	GW Interceptor	GW Interceptor	GW Interceptor	GW Interceptor
	SAMPLE DATE	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (mg/L)	BC Ambient Water Quality Guidelines (mg/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Zinc	mg/L	0.004	0.075 @ H ≤ 90 0.15 @ H = 90 - < 100 0.9 @ H = 100 - < 200 1.65 @ H = 100 - < 200 2.4 @ H = 300 - < 400	33 + 0.75 (H - 90) (for total metals)	0.035	-	-	0.031	0.177	0.031	-	0.107
Zirconium	mg/L	0.0001	-	-	0.0001	-	-	<0.0001	<0.0001	<0.0001	-	<0.0001

Yellow = exceed standard

Bold = exceed guideline

Orange = RDL is > or = to guideline or standard

MORRISON HERSHFIELD

TABLE 11: 2014 Leachate Manhole / GW Interceptor WATER QUALITY - PETROLEUM HYDROCARBONS

	SAMPLE LOCATION	LEACHATE MANHOLE				GW INTERCEPTOR			
	SAMPLE ID	Leachate Manhole	Leachate Manhole	Leachate Manhole	Leachate Manhole	GW Interceptor	GW Interceptor	GW Interceptor	GW Interceptor
	SAMPLE DATE	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (ug/L)	BC Ambient Water Quality Guidelines (ug/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
HYDROCARBONS												
VPHw	ug/L	100	1500	-	<100	-	-	<100	-	-	-	<100
LEPHw	ug/L	100	500	-	<100	-	-	<100	<100	-	-	<100
HEPHw	ug/L	100	-	-	116	-	-	<100	<100	-	-	<100
Total PAH	ug/L	0.05	-	-	<0.05	-	-	<0.30	0.84	-	-	1.67
PAHs												
Acenaphthene	ug/L	0.02	60	6	<0.02	-	-	<0.05	0.46	-	-	1.01
Acenaphthylene	ug/L	0.02	-	-	<0.02	-	-	<0.05	<0.02	-	-	<0.05
Acridine	ug/L	0.05	0.5	0.05	<0.05	-	-	<0.10	<0.05	-	-	<0.10
Anthracene	ug/L	0.01	1	0.1	<0.01	-	-	<0.05	0.02	-	-	<0.05
Benzo (a) anthracene	ug/L	0.01	1	0.1	<0.01	-	-	<0.05	<0.01	-	-	<0.05
Benzo (a) pyrene	ug/L	0.01	0.1	0.01	<0.01	-	-	<0.01	<0.01	-	-	<0.01
Benzo (b) fluoranthene	ug/L	0.02	-	-	<0.02	-	-	<0.05	<0.02	-	-	<0.05
Benzo (g,h,i) perylene	ug/L	0.02	-	-	<0.02	-	-	<0.05	<0.02	-	-	<0.05
Benzo (k) fluoranthene	ug/L	0.02	-	-	<0.02	-	-	<0.05	<0.02	-	-	<0.05
Chrysene	ug/L	0.02	1	-	<0.02	-	-	<0.05	<0.02	-	-	<0.05
Dibenz (a,h) anthracene	ug/L	0.02	-	-	<0.02	-	-	<0.05	<0.02	-	-	<0.05
Fluoranthene	ug/L	0.02	2	0.2	<0.02	-	-	<0.05	0.11	-	-	0.15
Fluorene	ug/L	0.02	120	12	<0.02	-	-	<0.05	0.19	-	-	0.5
Indeno (1,2,3-cd) pyrene	ug/L	0.02	-	-	<0.02	-	-	<0.05	<0.02	-	-	<0.05
Naphthalene	ug/L	0.05	10	1	<0.05	-	-	<0.30	<0.05	-	-	<0.30
Phenanthrene	ug/L	0.05	3	0.3	<0.05	-	-	<0.10	<0.05	-	-	<0.10
Pyrene	ug/L	0.02	0.2	0.02	<0.02	-	-	<0.10	0.06	-	-	<0.10
Quinoline	ug/L	0.05	34	3.4	<0.05	-	-	<0.10	<0.05	-	-	<0.10
Acetone	ug/L	10	-	-	<10.0	-	-	-	-	-	-	-
Benzene	ug/L	0.5	4000	40	<0.5	-	-	<0.5	<0.5	<0.5	-	<0.5
Bromodichloromethane	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
Bromoform	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
Bromomethane	ug/L	2	-	-	<2.0	-	-	-	-	-	-	-
2-Butanone (MEK)	ug/L	5	-	-	<5.0	-	-	-	-	-	-	-
Carbon tetrachloride	ug/L	1	130	133	<1.0	-	-	<1.0	-	-	-	<1.0
Chlorobenzene	ug/L	1	13	1.3	<1.0	-	-	<1.0	-	-	-	<1.0
Chloroethane	ug/L	2	-	-	<2.0	-	-	<2.0	-	-	-	<2.0
Chloroform	ug/L	1	20	1.8	<1.0	-	-	<1.0	-	-	-	<1.0
Chloromethane	ug/L	2	-	-	<2.0	-	-		-	-	-	-
Dibromochloromethane	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
Dibromomethane	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
1,2-Dichlorobenzene	ug/L	0.5	7	0.7	<0.5	-	-	<0.3	-	-	-	<0.3
1,3-Dichlorobenzene	ug/L	1	1500	150	<1.0	-	-	<1.0	-	-	-	<1.0
1,4-Dichlorobenzene	ug/L	1	260	-	<1.0	-	-	<1.0	-	-	-	<1.0
1,1-Dichloroethane	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
1,2-Dichloroethane	ug/L	1	1000	100	<1.0	-	-	<1.0	-	-	-	<1.0

MORRISON HERSHFIELD

TABLE 11: 2014 Leachate Manhole / GW Interceptor WATER QUALITY - PETROLEUM HYDROCARBONS

SAMPLE LOCATION					LEACHATE MANHOLE				GW INTERCEPTOR			
SAMPLE ID					Leachate Manhole	Leachate Manhole	Leachate Manhole	Leachate Manhole	GW Interceptor	GW Interceptor	GW Interceptor	GW Interceptor
SAMPLE DATE					21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14	21-Mar-14	25-Jun-14	14-Oct-14	18-Dec-14
MATRIX	UNITS	MRL	BCCSR-SR-Water FAL (ug/L)	BC Ambient Water Quality Guidelines (ug/L)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1,1-Dichloroethene	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
cis-1,2-Dichloroethene	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
trans-1,2-Dichloroethene	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
1,2-Dichloropropane	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
cis-1,3-Dichloropropene	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
trans-1,3-Dichloropropene	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
Ethylbenzene	ug/L	1	2000	200	<1.0	-	-	<1.0	<1.0	<1.0	-	<1.0
Methyl tert-butyl ether	ug/L	1	34000	3400	<1.0	-	-	<1.0	<1.0	<1.0	-	<1.0
Methylene chloride	ug/L	3	980	98.1	<3.0	-	-	<3.0	-	-	-	<3.0
4-Methyl-2-Pentanone (MIBK)	ug/L	10	-	-	<10.0	-	-	-	-		-	-
Styrene	ug/L	1	720	72	<1.0	-	-	<1.0	-	-	-	<1.0
1,1,1,2-Tetrachloroethane	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
1,1,2,2-Tetrachloroethane	ug/L	1	1100	111	<1.0	-	-	-	-	-	-	-
Tetrachloroethene	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
Toluene	ug/L	1	390	0.5	<1.0	-	-	<1.0	<1.0	<1.0	-	<1.0
1,1,1-Trichloroethane	ug/L	1	-	11100	<1.0	-	-	<1.0	-	-	-	<1.0
1,1,2-Trichloroethane	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
Trichloroethene	ug/L	1	200	21	<1.0	-	-	<1.0	-	-	-	<1.0
Trichlorofluoromethane	ug/L	1	-	-	<1.0	-	-	<1.0	-	-	-	<1.0
Vinyl chloride	ug/L	2	-	-	<2.0	-	-	<2.0	-	-	-	<2.0
m,p-Xylene	ug/L	1	-	30	<1.0	-	-	-	-	-	-	-
Xylenes (total)	ug/L	2	-	30	<2.0	-	-	<2.0	<2.0	<2.0	-	<2.0
o-Xylene	ug/L	1	-	30	<1.0	-	-	-	-	-	-	-
1,2-Dibromoethane	ug/L	0.3	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	ug/L	0.5	7	-	-	-	-	<0.5	-	-	-	<0.5

Yellow = exceed standard

Bold = exceed guideline

MORRISON HERSHFIELD

TABLE 12: 2014 LANDFILL GAS METHANE MEASUREMENTS (% CH_4)

	Monitoring Probe																			
SAMPLE DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17A	18	19	20	21
3-Jan-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10-Jan-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17-Jan-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24-Jan-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31-Jan-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-Feb-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-Feb-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-Feb-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Feb-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-Mar-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-Mar-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
21-Mar-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Mar-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-Apr-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Apr-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Apr-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Apr-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30-May-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24-Jun-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Jul-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27-Aug-15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28-Sep-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31-Oct-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-Nov-14	0	0	0	0	0	0	0	0	0	0	0	<1%	0	<1%	0	0	0	0	0	0	0
14-Nov-14	0	0	0	0	0	0	0	0	0	0	0	<1%	0	<1%	0	0	0	0	0	0	0
21-Nov-14	0	0	0	0	0	0	0	0	0	0	0	1%	0	1%	0	0	0	0	0	0	0
24-Nov-14	-	-	-	-	-	-	-	-	-	-	-	0	0	1%	-	-	-	-	-	-	-
28-Nov-14	0	0	0	0	0	0	0	0	0	0	0	0	0	1%	0	0	0	0	0	0	0
29-Nov-14	-	-	-	-	-	-	-	-	-	-	-	0	0	0	-	-	-	-	-	-	-
4-Dec-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Dec-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Dec-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29-Dec-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Data Collected by Leonard Hanson, Norseman Engineering Ltd.

APPENDIX A: Analytical Laboratory Results for Leachate, Groundwater & Surface Water Results

CERTIFICATE OF ANALYSIS

REPORTED TO	Morrison Hershfield Limited 310 - 4321 Still Creek Drive Burnaby, BC V5C 6S7	**TEL** **FAX**	(604) 454-0402 (604) 454-0403
ATTENTION	Kevin Coulter	**WORK ORDER**	4031173
PO NUMBER	NA	**RECEIVED / TEMP**	Mar-22-14 09:00 / 1°C
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Mar-31-14
PROJECT INFO	RMOW 5104016	**COC NUMBER**	B06941

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Issued By: **Jennifer Shanko, AScT For Brent Coates, BSc**
Business Manager, Richmond

Please contact CARO if more information is needed or to provide feedback on our services.

Locations:

#110 4011 Viking Way
Richmond, BC V6V 2K9
Tel: 604-279-1499 Fax: 604-279-1599

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Kelowna, BC V1X 5C3
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17225 109 Avenue
Edmonton, AB T5S 1H7
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www.caro.ca

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4031173
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Mar-31-14

Analysis Description	Method Reference (* = modified from) Preparation	Analysis	Location
Alkalinity, speciated	N/A	APHA 2320 B	Kelowna
Ammonia-N, total colorimetric	N/A	APHA 4500-NH3 G	Kelowna
Bromide in Water by IC	N/A	APHA 4110 B	Kelowna
BTEX in Water	EPA 5030B / 5021A	EPA 8260B (1996)	Richmond
Chemical Oxygen Demand (low level)	N/A	APHA 5220 D	Kelowna
Chloride in Water by IC	N/A	APHA 4110 B	Kelowna
Conductivity in Water	N/A	APHA 2510 B	Kelowna
Dissolved Metals	APHA 3030 B	APHA 3125 B	Richmond
EPH in Water	EPA 3510C	BCMOE	Richmond
Fluoride in Water by IC	N/A	APHA 4110 B	Kelowna
Hardness as CaCO3 (CALC)	N/A	APHA 2340 B	Richmond
L/HEPH in Water Pkg	N/A	BCMOE	Richmond
Nitrate+Nitrite-N in Water	N/A	APHA 4500-NO3- F	Kelowna
Nitrite-N in Water, colorimetric	N/A	APHA 4500-NO2 H	Kelowna
PAH in Water (low)	EPA 3510C	EPA 8270D (2007)	Richmond
pH in Water	N/A	APHA 4500-H+ B	Richmond
Sulfate in Water by IC	N/A	APHA 4110 B	Kelowna
Total Kjeldahl Nitrogen	N/A	EPA 351.2 (1993) *	Kelowna
Total Recoverable Metals	APHA 3030E *	APHA 3125 B	Richmond
Total Suspended Solids	N/A	APHA 2540 D	Kelowna
VH in Water	EPA 5030B / 5021A	BCMOE	Richmond
VOC in Water	EPA 5030B / 5021A	EPA 8260B (1996)	Richmond
VOC/VH/VPH in Water Pkg	N/A	BCMOE	Richmond

Note: The numbers in brackets represent the year that the method was published/approved

Method Reference Descriptions:

BCMOE	British Columbia Environmental Laboratory Manual, 2009, British Columbia Ministry of Environment
APHA	Standard Methods for the Examination of Water and Wastewater, American Public Health Association
EPA	United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
ug/L	Micrograms per litre
uS/cm	Microsiemens per centimeter

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4031173-01) [Water] Sampled: Mar-21-14 09:00						
Anions						
Alkalinity, Total as CaCO3	**164**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**164**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**21.7**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.06**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**61.6**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	**10**	5	mg/L	N/A	Mar-25-14	
Conductivity (EC)	**520**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**0.874**	0.005	mg/L	N/A	Mar-28-14	
Nitrogen, Nitrate+Nitrite as N	**0.01**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**1.50**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.22**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**98**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
VPHw	< 100	100	ug/L	N/A	N/A	
LEPHw	< 100	100	ug/L	N/A	N/A	
HEPHw	< 100	100	ug/L	N/A	N/A	
Total PAH	**0.09**	0.05	ug/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**178**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.01**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**1.51**	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.006**	0.005	mg/L	N/A	Mar-25-14	
Antimony, dissolved	**0.0004**	0.0001	mg/L	N/A	Mar-25-14	
Arsenic, dissolved	**0.0019**	0.0005	mg/L	N/A	Mar-25-14	
Barium, dissolved	**0.145**	0.005	mg/L	N/A	Mar-25-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Boron, dissolved	**0.057**	0.004	mg/L	N/A	Mar-25-14	
Cadmium, dissolved	**0.00038**	0.00001	mg/L	N/A	Mar-25-14	
Calcium, dissolved	**57.4**	0.2	mg/L	N/A	Mar-25-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Cobalt, dissolved	**0.0405**	0.00005	mg/L	N/A	Mar-25-14	
Copper, dissolved	**0.0012**	0.0002	mg/L	N/A	Mar-25-14	
Iron, dissolved	**27.5**	0.010	mg/L	N/A	Mar-25-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Lithium, dissolved	**0.0002**	0.0001	mg/L	N/A	Mar-25-14	
Magnesium, dissolved	**8.40**	0.01	mg/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4031173-01) [Water] Sampled: Mar-21-14 09:00, Continued						
Dissolved Metals, Continued						
Manganese, dissolved	**4.12**	0.0002	mg/L	N/A	Mar-25-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Molybdenum, dissolved	**0.0045**	0.0001	mg/L	N/A	Mar-25-14	
Nickel, dissolved	**0.0046**	0.0002	mg/L	N/A	Mar-25-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Mar-25-14	
Potassium, dissolved	**5.62**	0.02	mg/L	N/A	Mar-25-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Silicon, dissolved	**10.9**	0.5	mg/L	N/A	Mar-25-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-25-14	
Sodium, dissolved	**16.3**	0.02	mg/L	N/A	Mar-25-14	
Strontium, dissolved	**0.312**	0.001	mg/L	N/A	Mar-25-14	
Sulfur, dissolved	**18**	1	mg/L	N/A	Mar-25-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Thallium, dissolved	**0.00004**	0.00002	mg/L	N/A	Mar-25-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Uranium, dissolved	**0.00010**	0.00002	mg/L	N/A	Mar-25-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-25-14	
Zinc, dissolved	**0.010**	0.004	mg/L	N/A	Mar-25-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	ug/L	N/A	Mar-25-14	
EPHw (10-19)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
EPHw (19-32)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acenaphthylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acridine	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) pyrene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (b) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (k) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Chrysene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluorene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Naphthalene	**0.09**	0.05	ug/L	Mar-24-14	Mar-24-14	
Phenanthrene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Quinoline	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4031173-01) [Water] Sampled: Mar-21-14 09:00, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Naphthalene-d8	*74 %*	*40-96*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Acenaphthene-d10	*76 %*	*45-92*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Phenanthrene-d10	*84 %*	*48-90*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Chrysene-d12	*78 %*	*41-96*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Perylene-d12	*72 %*	*47-104*		*Mar-24-14*	*Mar-24-14*	
Volatile Organic Compounds (VOC)						
Acetone	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Benzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
Bromodichloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromoform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromomethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
2-Butanone (MEK)	< 5.0	5.0	ug/L	N/A	Mar-25-14	
Carbon tetrachloride	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloroethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Chloroform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloromethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Dibromochloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Dibromomethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichlorobenzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
1,3-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,4-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloropropane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methylene chloride	< 3.0	3.0	ug/L	N/A	Mar-25-14	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Styrene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Tetrachloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Toluene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichlorofluoromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Vinyl chloride	< 2.0	2.0	ug/L	N/A	Mar-25-14	
m,p-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4031173-01) [Water] Sampled: Mar-21-14 09:00, Continued						
Volatile Organic Compounds (VOC), Continued						
o-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Surrogate: Toluene-d8	*88 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 4-Bromofluorobenzene	*84 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*79 %*	*70-130*		*N/A*	*Mar-25-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4031173-02) [Water] Sampled: Mar-21-14 09:30						
Anions						
Alkalinity, Total as CaCO3	**282**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**282**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**41.6**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.09**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**423**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	**32**	5	mg/L	N/A	Mar-25-14	
Conductivity (EC)	**1360**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**15.2**	0.005	mg/L	N/A	Mar-28-14	
Nitrogen, Nitrate+Nitrite as N	**0.02**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**15.8**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.47**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**273**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
VPHw	< 100	100	ug/L	N/A	N/A	
LEPHw	< 100	100	ug/L	N/A	N/A	
HEPHw	**115**	100	ug/L	N/A	N/A	
Total PAH	**0.14**	0.05	ug/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**543**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.02**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**15.9**	1.00	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Antimony, dissolved	**0.0003**	0.0001	mg/L	N/A	Mar-25-14	
Arsenic, dissolved	**0.0136**	0.0005	mg/L	N/A	Mar-25-14	
Barium, dissolved	**0.033**	0.005	mg/L	N/A	Mar-25-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Boron, dissolved	**0.380**	0.004	mg/L	N/A	Mar-25-14	
Cadmium, dissolved	**0.00001**	0.00001	mg/L	N/A	Mar-25-14	
Calcium, dissolved	**180**	0.2	mg/L	N/A	Mar-25-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Cobalt, dissolved	**0.0167**	0.00005	mg/L	N/A	Mar-25-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Iron, dissolved	**66.5**	0.010	mg/L	N/A	Mar-25-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Lithium, dissolved	**0.0001**	0.0001	mg/L	N/A	Mar-25-14	
Magnesium, dissolved	**22.5**	0.01	mg/L	N/A	Mar-25-14	
Manganese, dissolved	**2.82**	0.0002	mg/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4031173-02) [Water] Sampled: Mar-21-14 09:30, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Molybdenum, dissolved	**0.0182**	0.0001	mg/L	N/A	Mar-25-14	
Nickel, dissolved	**0.0025**	0.0002	mg/L	N/A	Mar-25-14	
Phosphorus, dissolved	**0.08**	0.02	mg/L	N/A	Mar-25-14	
Potassium, dissolved	**22.3**	0.02	mg/L	N/A	Mar-25-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Silicon, dissolved	**14.2**	0.5	mg/L	N/A	Mar-25-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-25-14	
Sodium, dissolved	**33.6**	0.02	mg/L	N/A	Mar-25-14	
Strontium, dissolved	**0.680**	0.001	mg/L	N/A	Mar-25-14	
Sulfur, dissolved	**142**	1	mg/L	N/A	Mar-25-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Uranium, dissolved	**0.00030**	0.00002	mg/L	N/A	Mar-25-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-25-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Mar-25-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	ug/L	N/A	Mar-25-14	
EPHw (10-19)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
EPHw (19-32)	**115**	100	ug/L	Mar-24-14	Mar-24-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acenaphthylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acridine	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) pyrene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (b) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (k) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Chrysene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluorene	**0.02**	0.02	ug/L	Mar-24-14	Mar-24-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Naphthalene	**0.12**	0.05	ug/L	Mar-24-14	Mar-24-14	
Phenanthrene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Quinoline	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Surrogate: Naphthalene-d8	*72 %*	*40-96*		*Mar-24-14*	*Mar-24-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4031173-02) [Water] Sampled: Mar-21-14 09:30, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*78 %*	*45-92*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Phenanthrene-d10	*86 %*	*48-90*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Chrysene-d12	*87 %*	*41-96*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Perylene-d12	*86 %*	*47-104*		*Mar-24-14*	*Mar-24-14*	
Volatile Organic Compounds (VOC)						
Acetone	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Benzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
Bromodichloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromoform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromomethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
2-Butanone (MEK)	< 5.0	5.0	ug/L	N/A	Mar-25-14	
Carbon tetrachloride	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chlorobenzene	**1.3**	1.0	ug/L	N/A	Mar-25-14	
Chloroethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Chloroform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloromethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Dibromochloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Dibromomethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichlorobenzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
1,3-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,4-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloropropane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methylene chloride	< 3.0	3.0	ug/L	N/A	Mar-25-14	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Styrene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Tetrachloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Toluene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichlorofluoromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Vinyl chloride	< 2.0	2.0	ug/L	N/A	Mar-25-14	
m,p-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
o-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4031173-02) [Water] Sampled: Mar-21-14 09:30, Continued						
Volatile Organic Compounds (VOC), Continued						
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Surrogate: Toluene-d8	*97 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 4-Bromofluorobenzene	*95 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*91 %*	*70-130*		*N/A*	*Mar-25-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4031173-03) [Water] Sampled: Mar-21-14 09:30						
Anions						
Alkalinity, Total as CaCO3	**149**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**149**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**29.8**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.10**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**132**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	**21**	5	mg/L	N/A	Mar-25-14	
Conductivity (EC)	**641**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**9.06**	0.005	mg/L	N/A	Mar-28-14	
Nitrogen, Nitrate+Nitrite as N	**0.01**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**9.24**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.46**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**681**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
VPHw	< 100	100	ug/L	N/A	N/A	
LEPHw	< 100	100	ug/L	N/A	N/A	
HEPHw	< 100	100	ug/L	N/A	N/A	
Total PAH	< 0.05	0.05	ug/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**206**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.01**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**9.26**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Antimony, dissolved	**0.0002**	0.0001	mg/L	N/A	Mar-25-14	
Arsenic, dissolved	**0.0074**	0.0005	mg/L	N/A	Mar-25-14	
Barium, dissolved	**0.160**	0.005	mg/L	N/A	Mar-25-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Boron, dissolved	**0.216**	0.004	mg/L	N/A	Mar-25-14	
Cadmium, dissolved	< 0.00001	0.00001	mg/L	N/A	Mar-25-14	
Calcium, dissolved	**66.8**	0.2	mg/L	N/A	Mar-25-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Cobalt, dissolved	**0.00277**	0.00005	mg/L	N/A	Mar-25-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Iron, dissolved	**53.7**	0.010	mg/L	N/A	Mar-25-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Lithium, dissolved	**0.0001**	0.0001	mg/L	N/A	Mar-25-14	
Magnesium, dissolved	**9.66**	0.01	mg/L	N/A	Mar-25-14	
Manganese, dissolved	**2.96**	0.0002	mg/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4031173-03) [Water] Sampled: Mar-21-14 09:30, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Molybdenum, dissolved	**0.0048**	0.0001	mg/L	N/A	Mar-25-14	
Nickel, dissolved	**0.0005**	0.0002	mg/L	N/A	Mar-25-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Mar-25-14	
Potassium, dissolved	**14.0**	0.02	mg/L	N/A	Mar-25-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Silicon, dissolved	**9.9**	0.5	mg/L	N/A	Mar-25-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-25-14	
Sodium, dissolved	**20.4**	0.02	mg/L	N/A	Mar-25-14	
Strontium, dissolved	**0.359**	0.001	mg/L	N/A	Mar-25-14	
Sulfur, dissolved	**37**	1	mg/L	N/A	Mar-25-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Uranium, dissolved	**0.00013**	0.00002	mg/L	N/A	Mar-25-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-25-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Mar-25-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	ug/L	N/A	Mar-25-14	
EPHw (10-19)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
EPHw (19-32)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acenaphthylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acridine	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) pyrene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (b) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (k) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Chrysene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluorene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Naphthalene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Phenanthrene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Quinoline	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Surrogate: Naphthalene-d8	*72 %*	*40-96*		*Mar-24-14*	*Mar-24-14*	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4031173
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4031173-03) [Water] Sampled: Mar-21-14 09:30, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*77 %*	*45-92*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Phenanthrene-d10	*85 %*	*48-90*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Chrysene-d12	*83 %*	*41-96*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Perylene-d12	*77 %*	*47-104*		*Mar-24-14*	*Mar-24-14*	
Volatile Organic Compounds (VOC)						
Acetone	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Benzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
Bromodichloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromoform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromomethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
2-Butanone (MEK)	< 5.0	5.0	ug/L	N/A	Mar-25-14	
Carbon tetrachloride	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloroethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Chloroform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloromethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Dibromochloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Dibromomethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichlorobenzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
1,3-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,4-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloropropane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methylene chloride	< 3.0	3.0	ug/L	N/A	Mar-25-14	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Styrene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Tetrachloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Toluene	**5.8**	1.0	ug/L	N/A	Mar-25-14	
1,1,1-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichlorofluoromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Vinyl chloride	< 2.0	2.0	ug/L	N/A	Mar-25-14	
m,p-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
o-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4031173-03) [Water] Sampled: Mar-21-14 09:30, Continued						
Volatile Organic Compounds (VOC), Continued						
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Surrogate: Toluene-d8	*97 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 4-Bromofluorobenzene	*93 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*89 %*	*70-130*		*N/A*	*Mar-25-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4031173-04) [Water] Sampled: Mar-21-14 10:30						
Anions						
Alkalinity, Total as CaCO3	**30**	1	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**30**	1	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**19.5**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**43.3**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	N/A	Mar-25-14	
Conductivity (EC)	**222**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**0.398**	0.005	mg/L	N/A	Mar-28-14	
Nitrogen, Nitrate+Nitrite as N	**0.05**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**0.54**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.53**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**12**	1	mg/L	N/A	Mar-25-14	
Calculated Parameters						
VPHw	< 100	100	ug/L	N/A	N/A	
LEPHw	< 100	100	ug/L	N/A	N/A	
HEPHw	< 100	100	ug/L	N/A	N/A	
Total PAH	< 0.05	0.05	ug/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**54.7**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.05**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.59**	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.073**	0.005	mg/L	N/A	Mar-25-14	
Antimony, dissolved	**0.0002**	0.0001	mg/L	N/A	Mar-25-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Barium, dissolved	**0.066**	0.005	mg/L	N/A	Mar-25-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Boron, dissolved	**0.007**	0.004	mg/L	N/A	Mar-25-14	
Cadmium, dissolved	**0.00038**	0.00001	mg/L	N/A	Mar-25-14	
Calcium, dissolved	**16.3**	0.2	mg/L	N/A	Mar-25-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Cobalt, dissolved	**0.0150**	0.00005	mg/L	N/A	Mar-25-14	
Copper, dissolved	**0.0073**	0.0002	mg/L	N/A	Mar-25-14	
Iron, dissolved	**2.06**	0.010	mg/L	N/A	Mar-25-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Lithium, dissolved	**0.0003**	0.0001	mg/L	N/A	Mar-25-14	
Magnesium, dissolved	**3.39**	0.01	mg/L	N/A	Mar-25-14	
Manganese, dissolved	**2.19**	0.0002	mg/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4031173-04) [Water] Sampled: Mar-21-14 10:30, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Molybdenum, dissolved	**0.0007**	0.0001	mg/L	N/A	Mar-25-14	
Nickel, dissolved	**0.0026**	0.0002	mg/L	N/A	Mar-25-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Mar-25-14	
Potassium, dissolved	**2.83**	0.02	mg/L	N/A	Mar-25-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Silicon, dissolved	**6.9**	0.5	mg/L	N/A	Mar-25-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-25-14	
Sodium, dissolved	**16.2**	0.02	mg/L	N/A	Mar-25-14	
Strontium, dissolved	**0.122**	0.001	mg/L	N/A	Mar-25-14	
Sulfur, dissolved	**8**	1	mg/L	N/A	Mar-25-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Thallium, dissolved	**0.00013**	0.00002	mg/L	N/A	Mar-25-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-25-14	
Zinc, dissolved	**0.008**	0.004	mg/L	N/A	Mar-25-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	ug/L	N/A	Mar-25-14	
EPHw (10-19)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
EPHw (19-32)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
Polycyclic Aromatic Hydrocarbons (PAH)						CT1a
Acenaphthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acenaphthylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acridine	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) pyrene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (b) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (k) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Chrysene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluorene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Naphthalene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Phenanthrene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Quinoline	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Surrogate: Naphthalene-d8	*77 %*	*40-96*		*Mar-24-14*	*Mar-24-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4031173-04) [Water] Sampled: Mar-21-14 10:30, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						CT1a
Surrogate: Acenaphthene-d10	*81 %*	*45-92*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Phenanthrene-d10	*86 %*	*48-90*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Chrysene-d12	*82 %*	*41-96*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Perylene-d12	*82 %*	*47-104*		*Mar-24-14*	*Mar-24-14*	
Volatile Organic Compounds (VOC)						
Acetone	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Benzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
Bromodichloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromoform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromomethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
2-Butanone (MEK)	< 5.0	5.0	ug/L	N/A	Mar-25-14	
Carbon tetrachloride	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloroethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Chloroform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloromethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Dibromochloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Dibromomethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichlorobenzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
1,3-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,4-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloropropane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methylene chloride	< 3.0	3.0	ug/L	N/A	Mar-25-14	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Styrene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Tetrachloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Toluene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichlorofluoromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Vinyl chloride	< 2.0	2.0	ug/L	N/A	Mar-25-14	
m,p-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
o-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4031173-04) [Water] Sampled: Mar-21-14 10:30, Continued						
Volatile Organic Compounds (VOC), Continued						
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Surrogate: Toluene-d8	*92 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 4-Bromofluorobenzene	*87 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*83 %*	*70-130*		*N/A*	*Mar-25-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S-REP (4031173-05) [Water] Sampled: Mar-21-14 16:30						
Anions						
Alkalinity, Total as CaCO3	**160**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**160**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**30.8**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.09**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**132**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	**25**	5	mg/L	N/A	Mar-25-14	
Conductivity (EC)	**705**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**9.57**	0.005	mg/L	N/A	Mar-28-14	
Nitrogen, Nitrate+Nitrite as N	**0.01**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**9.77**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.45**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**268**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
VPHw	< 100	100	ug/L	N/A	N/A	
LEPHw	< 100	100	ug/L	N/A	N/A	
HEPHw	< 100	100	ug/L	N/A	N/A	
Total PAH	**0.05**	0.05	ug/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**212**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.01**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**9.79**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Antimony, dissolved	**0.0002**	0.0001	mg/L	N/A	Mar-25-14	
Arsenic, dissolved	**0.0080**	0.0005	mg/L	N/A	Mar-25-14	
Barium, dissolved	**0.162**	0.005	mg/L	N/A	Mar-25-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Boron, dissolved	**0.211**	0.004	mg/L	N/A	Mar-25-14	
Cadmium, dissolved	**0.00006**	0.00001	mg/L	N/A	Mar-25-14	
Calcium, dissolved	**68.5**	0.2	mg/L	N/A	Mar-25-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Cobalt, dissolved	**0.00293**	0.00005	mg/L	N/A	Mar-25-14	
Copper, dissolved	**0.0005**	0.0002	mg/L	N/A	Mar-25-14	
Iron, dissolved	**54.5**	0.010	mg/L	N/A	Mar-25-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Lithium, dissolved	**0.0001**	0.0001	mg/L	N/A	Mar-25-14	
Magnesium, dissolved	**9.92**	0.01	mg/L	N/A	Mar-25-14	
Manganese, dissolved	**3.00**	0.0002	mg/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S-REP (4031173-05) [Water] Sampled: Mar-21-14 16:30, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Molybdenum, dissolved	**0.0050**	0.0001	mg/L	N/A	Mar-25-14	
Nickel, dissolved	**0.0010**	0.0002	mg/L	N/A	Mar-25-14	
Phosphorus, dissolved	**0.03**	0.02	mg/L	N/A	Mar-25-14	
Potassium, dissolved	**14.1**	0.02	mg/L	N/A	Mar-25-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Silicon, dissolved	**10.2**	0.5	mg/L	N/A	Mar-25-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-25-14	
Sodium, dissolved	**20.7**	0.02	mg/L	N/A	Mar-25-14	
Strontium, dissolved	**0.365**	0.001	mg/L	N/A	Mar-25-14	
Sulfur, dissolved	**38**	1	mg/L	N/A	Mar-25-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Uranium, dissolved	**0.00012**	0.00002	mg/L	N/A	Mar-25-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-25-14	
Zinc, dissolved	**0.013**	0.004	mg/L	N/A	Mar-25-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	ug/L	N/A	Mar-25-14	
EPHw (10-19)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
EPHw (19-32)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acenaphthylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acridine	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) pyrene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (b) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (k) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Chrysene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluorene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Naphthalene	**0.05**	0.05	ug/L	Mar-24-14	Mar-24-14	
Phenanthrene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Quinoline	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Surrogate: Naphthalene-d8	*73 %*	*40-96*		*Mar-24-14*	*Mar-24-14*	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4031173
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S-REP (4031173-05) [Water] Sampled: Mar-21-14 16:30, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*77 %*	*45-92*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Phenanthrene-d10	*85 %*	*48-90*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Chrysene-d12	*79 %*	*41-96*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Perylene-d12	*74 %*	*47-104*		*Mar-24-14*	*Mar-24-14*	
Volatile Organic Compounds (VOC)						
Acetone	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Benzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
Bromodichloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromoform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromomethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
2-Butanone (MEK)	< 5.0	5.0	ug/L	N/A	Mar-25-14	
Carbon tetrachloride	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloroethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Chloroform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloromethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Dibromochloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Dibromomethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichlorobenzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
1,3-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,4-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloropropane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methylene chloride	< 3.0	3.0	ug/L	N/A	Mar-25-14	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Styrene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Tetrachloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Toluene	**2.0**	1.0	ug/L	N/A	Mar-25-14	
1,1,1-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichlorofluoromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Vinyl chloride	< 2.0	2.0	ug/L	N/A	Mar-25-14	
m,p-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
o-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S-REP (4031173-05) [Water] Sampled: Mar-21-14 16:30, Continued						
Volatile Organic Compounds (VOC), Continued						
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Surrogate: Toluene-d8	*99 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 4-Bromofluorobenzene	*95 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*89 %*	*70-130*		*N/A*	*Mar-25-14*	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4031173
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (4031173-06) [Water] Sampled: Mar-18-14 15:10						
Anions						
Alkalinity, Total as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	< 0.10	0.10	mg/L	N/A	Mar-26-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	< 1.0	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	N/A	Mar-25-14	
Conductivity (EC)	< 2	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L	N/A	Mar-28-14	
Nitrogen, Nitrate+Nitrite as N	**0.006**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**5.63**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	< 2	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
VPHw	< 100	100	ug/L	N/A	N/A	
LEPHw	< 100	100	ug/L	N/A	N/A	
HEPHw	< 100	100	ug/L	N/A	N/A	
Total PAH	< 0.05	0.05	ug/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	< 0.50	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	< 0.01	0.01	mg/L	N/A	N/A	
Nitrogen, Total	< 0.05	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Mar-27-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-27-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-27-14	
Barium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-27-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-27-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-27-14	
Boron, dissolved	< 0.004	0.004	mg/L	N/A	Mar-27-14	
Cadmium, dissolved	< 0.00001	0.00001	mg/L	N/A	Mar-27-14	
Calcium, dissolved	< 0.2	0.2	mg/L	N/A	Mar-27-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-27-14	
Cobalt, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-27-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-27-14	
Iron, dissolved	< 0.010	0.010	mg/L	N/A	Mar-27-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-27-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-27-14	
Magnesium, dissolved	< 0.01	0.01	mg/L	N/A	Mar-27-14	
Manganese, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-27-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (4031173-06) [Water] Sampled: Mar-18-14 15:10, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-27-14	
Molybdenum, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-27-14	
Nickel, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-27-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Mar-27-14	
Potassium, dissolved	< 0.02	0.02	mg/L	N/A	Mar-27-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-27-14	
Silicon, dissolved	< 0.5	0.5	mg/L	N/A	Mar-27-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-27-14	
Sodium, dissolved	< 0.02	0.02	mg/L	N/A	Mar-27-14	
Strontium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-27-14	
Sulfur, dissolved	< 1	1	mg/L	N/A	Mar-27-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-27-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-27-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-27-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-27-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-27-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-27-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-27-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Mar-27-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-27-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	ug/L	N/A	Mar-25-14	
EPHw (10-19)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
EPHw (19-32)	< 100	100	ug/L	Mar-24-14	Mar-24-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acenaphthylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Acridine	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (a) pyrene	< 0.01	0.01	ug/L	Mar-24-14	Mar-24-14	
Benzo (b) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Benzo (k) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Chrysene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Fluorene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Naphthalene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Phenanthrene	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-24-14	
Quinoline	< 0.05	0.05	ug/L	Mar-24-14	Mar-24-14	
Surrogate: Naphthalene-d8	*80 %*	*40-96*		*Mar-24-14*	*Mar-24-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (4031173-06) [Water] Sampled: Mar-18-14 15:10, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*81 %*	*45-92*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Phenanthrene-d10	*87 %*	*48-90*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Chrysene-d12	*92 %*	*41-96*		*Mar-24-14*	*Mar-24-14*	
Surrogate: Perylene-d12	*85 %*	*47-104*		*Mar-24-14*	*Mar-24-14*	
Volatile Organic Compounds (VOC)						
Acetone	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Benzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
Bromodichloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromoform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Bromomethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
2-Butanone (MEK)	< 5.0	5.0	ug/L	N/A	Mar-25-14	
Carbon tetrachloride	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloroethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Chloroform	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Chloromethane	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Dibromochloromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Dibromomethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichlorobenzene	< 0.5	0.5	ug/L	N/A	Mar-25-14	
1,3-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,4-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,2-Dichloropropane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Methylene chloride	**5.2**	3.0	ug/L	N/A	Mar-25-14	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	ug/L	N/A	Mar-25-14	
Styrene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Tetrachloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Toluene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,1-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
1,1,2-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichloroethene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Trichlorofluoromethane	< 1.0	1.0	ug/L	N/A	Mar-25-14	
Vinyl chloride	< 2.0	2.0	ug/L	N/A	Mar-25-14	
m,p-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	
o-Xylene	< 1.0	1.0	ug/L	N/A	Mar-25-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4031173
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: TRIP BLANK (4031173-06) [Water] Sampled: Mar-18-14 15:10, Continued						
Volatile Organic Compounds (VOC), Continued						
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Mar-25-14	
Surrogate: Toluene-d8	*101 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 4-Bromofluorobenzene	*97 %*	*70-130*		*N/A*	*Mar-25-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*90 %*	*70-130*		*N/A*	*Mar-25-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: LM (4031173-07) [Water] Sampled: Mar-21-14 14:30						
Anions						
Alkalinity, Total as CaCO3	**66**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**66**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**2.91**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.06**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**58.8**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	**41**	5	mg/L	N/A	Mar-25-14	
Conductivity (EC)	**407**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**0.042**	0.005	mg/L	N/A	Mar-28-14	
Nitrogen, Nitrate+Nitrite as N	**17.1**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**1.80**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.19**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	< 2	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
VPHw	< 100	100	ug/L	N/A	N/A	
LEPHw	< 100	100	ug/L	N/A	N/A	
HEPHw	**116**	100	ug/L	N/A	N/A	
Total PAH	< 0.05	0.05	ug/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**171**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**17.1**	0.12	mg/L	N/A	N/A	
Nitrogen, Total	**18.9**	0.12	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.041**	0.005	mg/L	N/A	Mar-25-14	
Antimony, dissolved	**0.0002**	0.0001	mg/L	N/A	Mar-25-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Barium, dissolved	**0.023**	0.005	mg/L	N/A	Mar-25-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Boron, dissolved	**0.028**	0.004	mg/L	N/A	Mar-25-14	
Cadmium, dissolved	**0.00007**	0.00001	mg/L	N/A	Mar-25-14	
Calcium, dissolved	**59.3**	0.2	mg/L	N/A	Mar-25-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Cobalt, dissolved	**0.00047**	0.00005	mg/L	N/A	Mar-25-14	
Copper, dissolved	**0.0339**	0.0002	mg/L	N/A	Mar-25-14	
Iron, dissolved	**0.055**	0.010	mg/L	N/A	Mar-25-14	
Lead, dissolved	**0.0002**	0.0001	mg/L	N/A	Mar-25-14	
Lithium, dissolved	**0.0004**	0.0001	mg/L	N/A	Mar-25-14	
Magnesium, dissolved	**5.60**	0.01	mg/L	N/A	Mar-25-14	
Manganese, dissolved	**0.0574**	0.0002	mg/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: LM (4031173-07) [Water] Sampled: Mar-21-14 14:30, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Molybdenum, dissolved	**0.0003**	0.0001	mg/L	N/A	Mar-25-14	
Nickel, dissolved	**0.0012**	0.0002	mg/L	N/A	Mar-25-14	
Phosphorus, dissolved	**0.20**	0.02	mg/L	N/A	Mar-25-14	
Potassium, dissolved	**2.96**	0.02	mg/L	N/A	Mar-25-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Silicon, dissolved	**8.6**	0.5	mg/L	N/A	Mar-25-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-25-14	
Sodium, dissolved	**7.32**	0.02	mg/L	N/A	Mar-25-14	
Strontium, dissolved	**0.206**	0.001	mg/L	N/A	Mar-25-14	
Sulfur, dissolved	**14**	1	mg/L	N/A	Mar-25-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Uranium, dissolved	**0.00003**	0.00002	mg/L	N/A	Mar-25-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-25-14	
Zinc, dissolved	**0.035**	0.004	mg/L	N/A	Mar-25-14	
Zirconium, dissolved	**0.0001**	0.0001	mg/L	N/A	Mar-25-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	ug/L	N/A	Mar-26-14	
EPHw (10-19)	< 100	100	ug/L	Mar-24-14	Mar-25-14	
EPHw (19-32)	**116**	100	ug/L	Mar-24-14	Mar-25-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Acenaphthylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Acridine	< 0.05	0.05	ug/L	Mar-24-14	Mar-25-14	
Anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-25-14	
Benzo (a) anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-25-14	
Benzo (a) pyrene	< 0.01	0.01	ug/L	Mar-24-14	Mar-25-14	
Benzo (b) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Benzo (k) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Chrysene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Fluorene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Naphthalene	< 0.05	0.05	ug/L	Mar-24-14	Mar-25-14	
Phenanthrene	< 0.05	0.05	ug/L	Mar-24-14	Mar-25-14	
Pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Quinoline	< 0.05	0.05	ug/L	Mar-24-14	Mar-25-14	
Surrogate: Naphthalene-d8	*76 %*	*40-96*		*Mar-24-14*	*Mar-25-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: LM (4031173-07) [Water] Sampled: Mar-21-14 14:30, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*75 %*	*45-92*		*Mar-24-14*	*Mar-25-14*	
Surrogate: Phenanthrene-d10	*85 %*	*48-90*		*Mar-24-14*	*Mar-25-14*	
Surrogate: Chrysene-d12	*85 %*	*41-96*		*Mar-24-14*	*Mar-25-14*	
Surrogate: Perylene-d12	*78 %*	*47-104*		*Mar-24-14*	*Mar-25-14*	
Volatile Organic Compounds (VOC)						
Acetone	< 10.0	10.0	ug/L	N/A	Mar-26-14	
Benzene	< 0.5	0.5	ug/L	N/A	Mar-26-14	
Bromodichloromethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Bromoform	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Bromomethane	< 2.0	2.0	ug/L	N/A	Mar-26-14	
2-Butanone (MEK)	< 5.0	5.0	ug/L	N/A	Mar-26-14	
Carbon tetrachloride	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Chlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Chloroethane	< 2.0	2.0	ug/L	N/A	Mar-26-14	
Chloroform	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Chloromethane	< 2.0	2.0	ug/L	N/A	Mar-26-14	
Dibromochloromethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Dibromomethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,2-Dichlorobenzene	< 0.5	0.5	ug/L	N/A	Mar-26-14	
1,3-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,4-Dichlorobenzene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,1-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,2-Dichloroethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,1-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
cis-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
trans-1,2-Dichloroethene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,2-Dichloropropane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Methylene chloride	< 3.0	3.0	ug/L	N/A	Mar-26-14	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	ug/L	N/A	Mar-26-14	
Styrene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Tetrachloroethene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Toluene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,1,1-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
1,1,2-Trichloroethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Trichloroethene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Trichlorofluoromethane	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Vinyl chloride	< 2.0	2.0	ug/L	N/A	Mar-26-14	
m,p-Xylene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
o-Xylene	< 1.0	1.0	ug/L	N/A	Mar-26-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4031173
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: LM (4031173-07) [Water] Sampled: Mar-21-14 14:30, Continued						
Volatile Organic Compounds (VOC), Continued						
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Mar-26-14	
Surrogate: Toluene-d8	*101 %*	*70-130*		*N/A*	*Mar-26-14*	
Surrogate: 4-Bromofluorobenzene	*98 %*	*70-130*		*N/A*	*Mar-26-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*92 %*	*70-130*		*N/A*	*Mar-26-14*	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: Pump MH (4031173-08) [Water] Sampled: Mar-21-14 14:00						CT1
Anions						
Alkalinity, Total as CaCO3	**111**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**111**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**50.7**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.12**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**408**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	**12**	5	mg/L	Mar-24-14	Mar-27-14	
Conductivity (EC)	**1060**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**1.25**	0.005	mg/L	N/A	Mar-28-14	
Nitrogen, Nitrate+Nitrite as N	**0.63**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**1.61**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.00**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**26**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
LEPHw	< 100	100	ug/L	N/A	N/A	
HEPHw	< 100	100	ug/L	N/A	N/A	
Total PAH	**0.84**	0.05	ug/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**444**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.63**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**2.24**	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.016**	0.005	mg/L	N/A	Mar-25-14	
Antimony, dissolved	**0.0001**	0.0001	mg/L	N/A	Mar-25-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Barium, dissolved	**0.117**	0.005	mg/L	N/A	Mar-25-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Boron, dissolved	**0.282**	0.004	mg/L	N/A	Mar-25-14	
Cadmium, dissolved	**0.00006**	0.00001	mg/L	N/A	Mar-25-14	
Calcium, dissolved	**146**	0.2	mg/L	N/A	Mar-25-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Cobalt, dissolved	**0.0138**	0.00005	mg/L	N/A	Mar-25-14	
Copper, dissolved	**0.0005**	0.0002	mg/L	N/A	Mar-25-14	
Iron, dissolved	**18.2**	0.010	mg/L	N/A	Mar-25-14	
Lead, dissolved	**0.0001**	0.0001	mg/L	N/A	Mar-25-14	
Lithium, dissolved	**0.0009**	0.0001	mg/L	N/A	Mar-25-14	
Magnesium, dissolved	**19.0**	0.01	mg/L	N/A	Mar-25-14	
Manganese, dissolved	**3.94**	0.0002	mg/L	N/A	Mar-25-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: Pump MH (4031173-08) [Water] Sampled: Mar-21-14 14:00, Continued						CT1
Dissolved Metals, Continued						
Molybdenum, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Nickel, dissolved	**0.0077**	0.0002	mg/L	N/A	Mar-25-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Mar-25-14	
Potassium, dissolved	**6.99**	0.02	mg/L	N/A	Mar-25-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Mar-25-14	
Silicon, dissolved	**10.3**	0.5	mg/L	N/A	Mar-25-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Mar-25-14	
Sodium, dissolved	**38.2**	0.02	mg/L	N/A	Mar-25-14	
Strontium, dissolved	**0.955**	0.001	mg/L	N/A	Mar-25-14	
Sulfur, dissolved	**135**	1	mg/L	N/A	Mar-25-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Mar-25-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Mar-25-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Mar-25-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Mar-25-14	
Zinc, dissolved	**0.177**	0.004	mg/L	N/A	Mar-25-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Mar-25-14	
Aggregate Organic Parameters						
EPHw (10-19)	< 100	100	ug/L	Mar-24-14	Mar-25-14	
EPHw (19-32)	< 100	100	ug/L	Mar-24-14	Mar-25-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	**0.46**	0.02	ug/L	Mar-24-14	Mar-25-14	
Acenaphthylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Acridine	< 0.05	0.05	ug/L	Mar-24-14	Mar-25-14	
Anthracene	**0.02**	0.01	ug/L	Mar-24-14	Mar-25-14	
Benzo (a) anthracene	< 0.01	0.01	ug/L	Mar-24-14	Mar-25-14	
Benzo (a) pyrene	< 0.01	0.01	ug/L	Mar-24-14	Mar-25-14	
Benzo (b) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Benzo (k) fluoranthene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Chrysene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Fluoranthene	**0.11**	0.02	ug/L	Mar-24-14	Mar-25-14	
Fluorene	**0.19**	0.02	ug/L	Mar-24-14	Mar-25-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L	Mar-24-14	Mar-25-14	
Naphthalene	< 0.05	0.05	ug/L	Mar-24-14	Mar-25-14	
Phenanthrene	< 0.05	0.05	ug/L	Mar-24-14	Mar-25-14	
Pyrene	**0.06**	0.02	ug/L	Mar-24-14	Mar-25-14	
Quinoline	< 0.05	0.05	ug/L	Mar-24-14	Mar-25-14	
Surrogate: Naphthalene-d8	*70 %*	*40-96*		*Mar-24-14*	*Mar-25-14*	
Surrogate: Acenaphthene-d10	*73 %*	*45-92*		*Mar-24-14*	*Mar-25-14*	
Surrogate: Phenanthrene-d10	*81 %*	*48-90*		*Mar-24-14*	*Mar-25-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: Pump MH (4031173-08) [Water] Sampled: Mar-21-14 14:00, Continued						CT1
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Chrysene-d12	*80 %*	*41-96*		*Mar-24-14*	*Mar-25-14*	
Surrogate: Perylene-d12	*76 %*	*47-104*		*Mar-24-14*	*Mar-25-14*	
Volatile Organic Compounds (VOC)						A-01, CT1
Benzene	< 0.5	0.5	ug/L	N/A	Mar-26-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Toluene	< 1.0	1.0	ug/L	N/A	Mar-26-14	
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Mar-26-14	
Surrogate: Toluene-d8	*94 %*	*70-130*		*N/A*	*Mar-26-14*	
Surrogate: 4-Bromofluorobenzene	*92 %*	*70-130*		*N/A*	*Mar-26-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 4B (4031173-09) [Water] Sampled: Mar-21-14 11:00						
Anions						
Alkalinity, Total as CaCO3	**26**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**26**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**20.1**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.08**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**57.2**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Mar-24-14	Mar-27-14	
Conductivity (EC)	**256**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**0.006**	0.005	mg/L	N/A	Mar-22-14	
Nitrogen, Nitrate+Nitrite as N	**0.32**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**0.24**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.98**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**6**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**85.9**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.32**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.56**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.973**	0.005	mg/L	Mar-24-14	Mar-25-14	
Antimony, total	**0.0001**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Barium, total	**0.028**	0.005	mg/L	Mar-24-14	Mar-25-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Boron, total	**0.039**	0.004	mg/L	Mar-24-14	Mar-25-14	
Cadmium, total	**0.00005**	0.00001	mg/L	Mar-24-14	Mar-25-14	
Calcium, total	**28.6**	0.2	mg/L	Mar-24-14	Mar-25-14	
Chromium, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Cobalt, total	**0.00418**	0.00005	mg/L	Mar-24-14	Mar-25-14	
Copper, total	**0.0156**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Iron, total	**1.64**	0.01	mg/L	Mar-24-14	Mar-25-14	
Lead, total	**0.0001**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Lithium, total	**0.0007**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Magnesium, total	**3.48**	0.01	mg/L	Mar-24-14	Mar-25-14	
Manganese, total	**0.393**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Mercury, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Molybdenum, total	**0.0011**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Nickel, total	**0.0015**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Phosphorus, total	< 0.020	0.020	mg/L	Mar-24-14	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 4B (4031173-09) [Water] Sampled: Mar-21-14 11:00, Continued						
Total Recoverable Metals, Continued						
Potassium, total	**2.06**	0.02	mg/L	Mar-24-14	Mar-25-14	
Selenium, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Silicon, total	**5.7**	0.5	mg/L	Mar-24-14	Mar-25-14	
Silver, total	< 0.00005	0.00005	mg/L	Mar-24-14	Mar-25-14	
Sodium, total	**14.4**	0.02	mg/L	Mar-24-14	Mar-25-14	
Strontium, total	**0.195**	0.001	mg/L	Mar-24-14	Mar-25-14	
Sulfur, total	**16**	1	mg/L	Mar-24-14	Mar-25-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Thallium, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Thorium, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Tin, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Titanium, total	**0.008**	0.005	mg/L	Mar-24-14	Mar-25-14	
Uranium, total	**0.00006**	0.00002	mg/L	Mar-24-14	Mar-25-14	
Vanadium, total	< 0.001	0.001	mg/L	Mar-24-14	Mar-25-14	
Zinc, total	**0.010**	0.004	mg/L	Mar-24-14	Mar-25-14	
Zirconium, total	**0.0002**	0.0001	mg/L	Mar-24-14	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (4031173-10) [Water] Sampled: Mar-21-14 11:30						F2
Anions						
Alkalinity, Total as CaCO3	**38**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**38**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**22.8**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.08**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**95.8**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	**5**	5	mg/L	Mar-24-14	Mar-27-14	
Conductivity (EC)	**373**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**0.380**	0.005	mg/L	N/A	Mar-22-14	
Nitrogen, Nitrate+Nitrite as N	**1.78**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**0.63**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.13**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**20**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**126**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**1.78**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**2.41**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**3.18**	0.005	mg/L	Mar-24-14	Mar-25-14	
Antimony, total	**0.0001**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Barium, total	**0.044**	0.005	mg/L	Mar-24-14	Mar-25-14	
Beryllium, total	**0.0001**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Boron, total	**0.032**	0.004	mg/L	Mar-24-14	Mar-25-14	
Cadmium, total	**0.00016**	0.00001	mg/L	Mar-24-14	Mar-25-14	
Calcium, total	**43.0**	0.2	mg/L	Mar-24-14	Mar-25-14	
Chromium, total	**0.0005**	0.0005	mg/L	Mar-24-14	Mar-25-14	
Cobalt, total	**0.0146**	0.00005	mg/L	Mar-24-14	Mar-25-14	
Copper, total	**0.0647**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Iron, total	**5.48**	0.01	mg/L	Mar-24-14	Mar-25-14	
Lead, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Lithium, total	**0.0010**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Magnesium, total	**4.51**	0.01	mg/L	Mar-24-14	Mar-25-14	
Manganese, total	**0.695**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Mercury, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Molybdenum, total	**0.0034**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Nickel, total	**0.0058**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Phosphorus, total	**0.107**	0.020	mg/L	Mar-24-14	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (4031173-10) [Water] Sampled: Mar-21-14 11:30, Continued						F2
Total Recoverable Metals, Continued						
Potassium, total	**3.80**	0.02	mg/L	Mar-24-14	Mar-25-14	
Selenium, total	**0.0010**	0.0005	mg/L	Mar-24-14	Mar-25-14	
Silicon, total	**3.8**	0.5	mg/L	Mar-24-14	Mar-25-14	
Silver, total	< 0.00005	0.00005	mg/L	Mar-24-14	Mar-25-14	
Sodium, total	**15.2**	0.02	mg/L	Mar-24-14	Mar-25-14	
Strontium, total	**0.214**	0.001	mg/L	Mar-24-14	Mar-25-14	
Sulfur, total	**26**	1	mg/L	Mar-24-14	Mar-25-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Thallium, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Thorium, total	**0.0004**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Tin, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Titanium, total	< 0.005	0.005	mg/L	Mar-24-14	Mar-25-14	
Uranium, total	**0.00026**	0.00002	mg/L	Mar-24-14	Mar-25-14	
Vanadium, total	< 0.001	0.001	mg/L	Mar-24-14	Mar-25-14	
Zinc, total	**0.022**	0.004	mg/L	Mar-24-14	Mar-25-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2B (4031173-11) [Water] Sampled: Mar-21-14 11:30						F2
Anions						
Alkalinity, Total as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**7.86**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.31**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	**0.02**	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**332**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	**22**	5	mg/L	Mar-24-14	Mar-27-14	
Conductivity (EC)	**588**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**0.696**	0.005	mg/L	N/A	Mar-22-14	
Nitrogen, Nitrate+Nitrite as N	**9.79**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**1.87**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**3.79**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**66**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**192**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**9.76**	0.05	mg/L	N/A	N/A	
Nitrogen, Total	**11.7**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**12.5**	0.005	mg/L	Mar-24-14	Mar-25-14	
Antimony, total	**0.0002**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Arsenic, total	**0.0016**	0.0005	mg/L	Mar-24-14	Mar-25-14	
Barium, total	**0.035**	0.005	mg/L	Mar-24-14	Mar-25-14	
Beryllium, total	**0.0005**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Boron, total	**0.031**	0.004	mg/L	Mar-24-14	Mar-25-14	
Cadmium, total	**0.00081**	0.00001	mg/L	Mar-24-14	Mar-25-14	
Calcium, total	**60.0**	0.2	mg/L	Mar-24-14	Mar-25-14	
Chromium, total	**0.0027**	0.0005	mg/L	Mar-24-14	Mar-25-14	
Cobalt, total	**0.0690**	0.00005	mg/L	Mar-24-14	Mar-25-14	
Copper, total	**0.308**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Iron, total	**29.9**	0.01	mg/L	Mar-24-14	Mar-25-14	
Lead, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Lithium, total	**0.0042**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Magnesium, total	**10.1**	0.01	mg/L	Mar-24-14	Mar-25-14	
Manganese, total	**2.07**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Mercury, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Molybdenum, total	**0.0003**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Nickel, total	**0.0316**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Phosphorus, total	**0.519**	0.020	mg/L	Mar-24-14	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2B (4031173-11) [Water] Sampled: Mar-21-14 11:30, Continued						F2
Total Recoverable Metals, Continued						
Potassium, total	**4.14**	0.02	mg/L	Mar-24-14	Mar-25-14	
Selenium, total	**0.0055**	0.0005	mg/L	Mar-24-14	Mar-25-14	
Silicon, total	**7.7**	0.5	mg/L	Mar-24-14	Mar-25-14	
Silver, total	< 0.00005	0.00005	mg/L	Mar-24-14	Mar-25-14	
Sodium, total	**9.29**	0.02	mg/L	Mar-24-14	Mar-25-14	
Strontium, total	**0.209**	0.001	mg/L	Mar-24-14	Mar-25-14	
Sulfur, total	**78**	1	mg/L	Mar-24-14	Mar-25-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Thallium, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Thorium, total	**0.0033**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Tin, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Titanium, total	**0.005**	0.005	mg/L	Mar-24-14	Mar-25-14	
Uranium, total	**0.00112**	0.00002	mg/L	Mar-24-14	Mar-25-14	
Vanadium, total	< 0.001	0.001	mg/L	Mar-24-14	Mar-25-14	
Zinc, total	**0.095**	0.004	mg/L	Mar-24-14	Mar-25-14	
Zirconium, total	**0.0001**	0.0001	mg/L	Mar-24-14	Mar-25-14	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3 (4031173-12) [Water] Sampled: Mar-21-14 13:30						F2
Anions						
Alkalinity, Total as CaCO3	**32**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**32**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**33.4**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.06**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**24.7**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Mar-24-14	Mar-27-14	
Conductivity (EC)	**240**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**0.042**	0.005	mg/L	N/A	Mar-22-14	
Nitrogen, Nitrate+Nitrite as N	**0.28**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**0.27**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**6.87**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	**22**	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**58.4**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.28**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.56**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**1.74**	0.005	mg/L	Mar-24-14	Mar-25-14	
Antimony, total	**0.0001**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Barium, total	**0.039**	0.005	mg/L	Mar-24-14	Mar-25-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Boron, total	**0.015**	0.004	mg/L	Mar-24-14	Mar-25-14	
Cadmium, total	**0.00005**	0.00001	mg/L	Mar-24-14	Mar-25-14	
Calcium, total	**18.8**	0.2	mg/L	Mar-24-14	Mar-25-14	
Chromium, total	**0.0014**	0.0005	mg/L	Mar-24-14	Mar-25-14	
Cobalt, total	**0.00126**	0.00005	mg/L	Mar-24-14	Mar-25-14	
Copper, total	**0.0149**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Iron, total	**1.92**	0.01	mg/L	Mar-24-14	Mar-25-14	
Lead, total	**0.0009**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Lithium, total	**0.0007**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Magnesium, total	**2.76**	0.01	mg/L	Mar-24-14	Mar-25-14	
Manganese, total	**0.0629**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Mercury, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Molybdenum, total	**0.0018**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Nickel, total	**0.0006**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Phosphorus, total	**0.063**	0.020	mg/L	Mar-24-14	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3 (4031173-12) [Water] Sampled: Mar-21-14 13:30, Continued						F2
Total Recoverable Metals, Continued						
Potassium, total	**1.90**	0.02	mg/L	Mar-24-14	Mar-25-14	
Selenium, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Silicon, total	**7.7**	0.5	mg/L	Mar-24-14	Mar-25-14	
Silver, total	< 0.00005	0.00005	mg/L	Mar-24-14	Mar-25-14	
Sodium, total	**24.0**	0.02	mg/L	Mar-24-14	Mar-25-14	
Strontium, total	**0.138**	0.001	mg/L	Mar-24-14	Mar-25-14	
Sulfur, total	**3**	1	mg/L	Mar-24-14	Mar-25-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Thallium, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Thorium, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Tin, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Titanium, total	**0.064**	0.005	mg/L	Mar-24-14	Mar-25-14	
Uranium, total	**0.00007**	0.00002	mg/L	Mar-24-14	Mar-25-14	
Vanadium, total	**0.004**	0.001	mg/L	Mar-24-14	Mar-25-14	
Zinc, total	**0.013**	0.004	mg/L	Mar-24-14	Mar-25-14	
Zirconium, total	**0.0005**	0.0001	mg/L	Mar-24-14	Mar-25-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 11 (4031173-13) [Water] Sampled: Mar-21-14 13:30						F2
Anions						
Alkalinity, Total as CaCO3	**19**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Bicarbonate as CaCO3	**19**	2	mg/L	N/A	Mar-25-14	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L	N/A	Mar-25-14	
Bromide	< 0.1	0.1	mg/L	N/A	Mar-26-14	
Chloride	**5.76**	0.10	mg/L	N/A	Mar-26-14	
Fluoride	**0.05**	0.01	mg/L	N/A	Mar-26-14	
Nitrogen, Nitrite as N	< 0.01	0.001	mg/L	N/A	Mar-28-14	
Sulfate	**8.2**	1.0	mg/L	N/A	Mar-26-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Mar-24-14	Mar-27-14	
Conductivity (EC)	**78**	2	uS/cm	N/A	Mar-24-14	
Nitrogen, Ammonia as N, Total	**0.015**	0.005	mg/L	N/A	Mar-22-14	
Nitrogen, Nitrate+Nitrite as N	**0.29**	0.005	mg/L	N/A	Mar-25-14	
Nitrogen, Total Kjeldahl	**0.13**	0.05	mg/L	Mar-22-14	Mar-26-14	
pH	**7.01**	0.01	pH units	N/A	Mar-24-14	
Solids, Total Suspended	< 2	2	mg/L	Mar-24-14	Mar-26-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**21.6**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.29**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.42**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.496**	0.005	mg/L	Mar-24-14	Mar-25-14	
Antimony, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Barium, total	**0.011**	0.005	mg/L	Mar-24-14	Mar-25-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Boron, total	**0.007**	0.004	mg/L	Mar-24-14	Mar-25-14	
Cadmium, total	**0.00001**	0.00001	mg/L	Mar-24-14	Mar-25-14	
Calcium, total	**6.6**	0.2	mg/L	Mar-24-14	Mar-25-14	
Chromium, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Cobalt, total	**0.00014**	0.00005	mg/L	Mar-24-14	Mar-25-14	
Copper, total	**0.0035**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Iron, total	**0.29**	0.01	mg/L	Mar-24-14	Mar-25-14	
Lead, total	**0.0002**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Lithium, total	**0.0005**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Magnesium, total	**1.21**	0.01	mg/L	Mar-24-14	Mar-25-14	
Manganese, total	**0.0071**	0.0002	mg/L	Mar-24-14	Mar-25-14	
Mercury, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Molybdenum, total	**0.0003**	0.0001	mg/L	Mar-24-14	Mar-25-14	
Nickel, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Phosphorus, total	< 0.020	0.020	mg/L	Mar-24-14	Mar-25-14	

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Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 11 (4031173-13) [Water] Sampled: Mar-21-14 13:30, Continued						F2
Total Recoverable Metals, Continued						
Potassium, total	**0.51**	0.02	mg/L	Mar-24-14	Mar-25-14	
Selenium, total	< 0.0005	0.0005	mg/L	Mar-24-14	Mar-25-14	
Silicon, total	**6.5**	0.5	mg/L	Mar-24-14	Mar-25-14	
Silver, total	< 0.00005	0.00005	mg/L	Mar-24-14	Mar-25-14	
Sodium, total	**6.23**	0.02	mg/L	Mar-24-14	Mar-25-14	
Strontium, total	**0.072**	0.001	mg/L	Mar-24-14	Mar-25-14	
Sulfur, total	< 1	1	mg/L	Mar-24-14	Mar-25-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Thallium, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Thorium, total	< 0.0001	0.0001	mg/L	Mar-24-14	Mar-25-14	
Tin, total	< 0.0002	0.0002	mg/L	Mar-24-14	Mar-25-14	
Titanium, total	**0.017**	0.005	mg/L	Mar-24-14	Mar-25-14	
Uranium, total	< 0.00002	0.00002	mg/L	Mar-24-14	Mar-25-14	
Vanadium, total	< 0.001	0.001	mg/L	Mar-24-14	Mar-25-14	
Zinc, total	< 0.004	0.004	mg/L	Mar-24-14	Mar-25-14	
Zirconium, total	**0.0004**	0.0001	mg/L	Mar-24-14	Mar-25-14	

Sample / Analysis Qualifiers:

A-01	Headspace present in neck of sample bottle.
CT1	Incorrect Container(s) supplied for BTEX in water analysis
CT1a	Incorrect Container(s) supplied for PAH analysis
F2	The sample was not field-preserved with HNO3 and was therefore preserved in the laboratory and held for at least 16 hours prior to analysis for total metals.

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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in “batches” and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method’s precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method’s accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Aggregate Organic Parameters, Batch B4C0925										
Blank (B4C0925-BLK1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
EPHw (10-19)	< 100	100	ug/L							
EPHw (19-32)	< 100	100	ug/L							
LCS (B4C0925-BS2)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
EPHw (10-19)	2750	100	ug/L	3470		79	63-123			
EPHw (19-32)	3790	100	ug/L	4970		76	51-102			
Aggregate Organic Parameters, Batch B4C0974										
Blank (B4C0974-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
VHw (6-10)	< 100	100	ug/L							
LCS (B4C0974-BS2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
VHw (6-10)	1990	100	ug/L	2930		68	57-107			
Anions, Batch B4C0993										
Blank (B4C0993-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Alkalinity, Total as CaCO3	< 2	2	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 2	2	mg/L							
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L							
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L							
Blank (B4C0993-BLK2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Alkalinity, Total as CaCO3	< 2	2	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 2	2	mg/L							
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L							
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Anions, Batch B4C0993, Continued										
Duplicate (B4C0993-DUP2)	**Source: 4031173-02**			Prepared: Mar-25-14, Analyzed: Mar-25-14						
Alkalinity, Total as CaCO3	251	2	mg/L		282			12	12	
Alkalinity, Phenolphthalein as CaCO3	< 2	2	mg/L		< 2				12	
Alkalinity, Bicarbonate as CaCO3	251	2	mg/L		282			12	12	
Alkalinity, Carbonate as CaCO3	< 2	2	mg/L		< 2				12	
Alkalinity, Hydroxide as CaCO3	< 2	2	mg/L		< 2				12	
Anions, Batch B4C0999										
Blank (B4C0999-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
Blank (B4C0999-BLK2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
LCS (B4C0999-BS1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Alkalinity, Total as CaCO3	99	1	mg/L	100		99	96-108			
LCS (B4C0999-BS2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Alkalinity, Total as CaCO3	99	1	mg/L	100		99	96-108			
Anions, Batch B4C1007										
Blank (B4C1007-BLK1)				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 0.5	1.0	mg/L							
Blank (B4C1007-BLK2)				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 0.5	1.0	mg/L							
Blank (B4C1007-BLK3)				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 0.5	1.0	mg/L							
Blank (B4C1007-BLK4)				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 0.5	1.0	mg/L							
LCS (B4C1007-BS1)				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	4.0	0.1	mg/L	4.00		99	85-115			

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Anions, Batch B4C1007, Continued										
LCS (B4C1007-BS1), Continued				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Chloride	15.8	0.10	mg/L	16.0		99	85-115			
Fluoride	3.88	0.01	mg/L	4.00		97	85-115			
Sulfate	15.6	1.0	mg/L	16.0		98	85-115			
LCS (B4C1007-BS2)				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	4.0	0.1	mg/L	4.00		99	85-115			
Chloride	15.9	0.10	mg/L	16.0		99	85-115			
Fluoride	3.99	0.01	mg/L	4.00		100	85-115			
Sulfate	15.9	1.0	mg/L	16.0		99	85-115			
LCS (B4C1007-BS3)				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	4.0	0.1	mg/L	4.00		100	85-115			
Chloride	15.9	0.10	mg/L	16.0		99	85-115			
Fluoride	3.96	0.01	mg/L	4.00		99	85-115			
Sulfate	15.6	1.0	mg/L	16.0		97	85-115			
LCS (B4C1007-BS4)				Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	4.0	0.1	mg/L	4.00		100	85-115			
Chloride	15.8	0.10	mg/L	16.0		99	85-115			
Fluoride	3.83	0.01	mg/L	4.00		96	85-115			
Sulfate	15.6	1.0	mg/L	16.0		98	85-115			
Duplicate (B4C1007-DUP1)			**Source: 4031173-01**	Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	< 0.1	0.1	mg/L		< 0.1				10	
Chloride	21.7	0.10	mg/L		21.7			< 1	10	
Fluoride	0.06	0.01	mg/L		0.06			2	10	
Sulfate	61.5	1.0	mg/L		61.6			< 1	10	
Duplicate (B4C1007-DUP2)			**Source: 4031173-11**	Prepared: Mar-26-14, Analyzed: Mar-26-14						
Bromide	< 0.1	0.1	mg/L		< 0.1				10	
Chloride	7.94	0.10	mg/L		7.86			< 1	10	
Fluoride	0.31	0.01	mg/L		0.31			1	10	
Sulfate	333	1.0	mg/L		332			< 1	10	
Anions, Batch B4C1120										
Blank (B4C1120-BLK1)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L							
Blank (B4C1120-BLK2)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L							
Blank (B4C1120-BLK3)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L							
LCS (B4C1120-BS1)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Nitrite as N	0.04	0.001	mg/L	0.0400		98	80-120			
LCS (B4C1120-BS2)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Nitrite as N	0.04	0.001	mg/L	0.0400		98	80-120			
LCS (B4C1120-BS3)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Nitrite as N	0.04	0.001	mg/L	0.0400		97	80-120			
Duplicate (B4C1120-DUP1)			**Source: 4031173-01**	Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Nitrite as N	0.004	0.001	mg/L		< 0.01				18	

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Anions, Batch B4C1120, Continued										
Duplicate (B4C1120-DUP2)		**Source: 4031173-11**		Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Nitrite as N	0.02	0.001	mg/L		0.02			< 1	18	
Dissolved Metals, Batch B4C0892										
Blank (B4C0892-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Blank (B4C0892-BLK2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4C0892, Continued										
Blank (B4C0892-BLK2), Continued				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Duplicate (B4C0892-DUP2)		**Source: 4031173-04**		Prepared: Mar-25-14, Analyzed: Mar-25-14						
Aluminum, dissolved	0.076	0.005	mg/L		0.073			4	11	
Antimony, dissolved	< 0.0001	0.0001	mg/L		0.0002				44	
Arsenic, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				8	
Barium, dissolved	0.068	0.005	mg/L		0.066			3	7	
Beryllium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				20	
Boron, dissolved	0.007	0.004	mg/L		0.007				13	
Cadmium, dissolved	0.00037	0.00001	mg/L		0.00038			2	27	
Calcium, dissolved	16.4	0.2	mg/L		16.3			< 1	8	
Chromium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				14	
Cobalt, dissolved	0.0150	0.00005	mg/L		0.0150			< 1	10	
Copper, dissolved	0.0074	0.0002	mg/L		0.0073			1	28	
Iron, dissolved	2.08	0.010	mg/L		2.06			1	14	
Lead, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				26	
Lithium, dissolved	0.0003	0.0001	mg/L		0.0003				14	
Magnesium, dissolved	3.47	0.01	mg/L		3.39			2	6	
Manganese, dissolved	2.22	0.0002	mg/L		2.19			1	9	
Molybdenum, dissolved	0.0007	0.0001	mg/L		0.0007			3	19	
Nickel, dissolved	0.0026	0.0002	mg/L		0.0026			1	21	
Phosphorus, dissolved	< 0.02	0.02	mg/L		< 0.02				14	
Potassium, dissolved	2.87	0.02	mg/L		2.83			1	8	
Selenium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				36	
Silicon, dissolved	6.9	0.5	mg/L		6.9			< 1	12	
Silver, dissolved	< 0.00005	0.00005	mg/L		< 0.00005				20	
Sodium, dissolved	16.5	0.02	mg/L		16.2			2	6	
Strontium, dissolved	0.123	0.001	mg/L		0.122			< 1	6	
Sulfur, dissolved	13	1	mg/L		8			49	26	RPD
Tellurium, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				20	
Thallium, dissolved	0.00013	0.00002	mg/L		0.00013			4	13	
Thorium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				30	
Tin, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				6	
Titanium, dissolved	< 0.005	0.005	mg/L		< 0.005				20	

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WORK ORDER 4031173
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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4C0892, Continued										
Duplicate (B4C0892-DUP2), Continued		**Source: 4031173-04**		Prepared: Mar-25-14, Analyzed: Mar-25-14						
Uranium, dissolved	< 0.00002	0.00002	mg/L		< 0.00002				14	
Vanadium, dissolved	< 0.001	0.001	mg/L		< 0.001				20	
Zinc, dissolved	0.008	0.004	mg/L		0.008				11	
Zirconium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				36	
Matrix Spike (B4C0892-MS2)		**Source: 4031173-05**		Prepared: Mar-25-14, Analyzed: Mar-25-14						
Antimony, dissolved	0.397	0.0001	mg/L	0.400	0.0002	99	76-114			
Arsenic, dissolved	0.194	0.0005	mg/L	0.200	0.0080	93	81-115			
Barium, dissolved	1.12	0.005	mg/L	1.00	0.162	96	80-113			
Beryllium, dissolved	0.0992	0.0001	mg/L	0.100	< 0.0001	99	69-109			
Cadmium, dissolved	0.0982	0.00001	mg/L	0.100	0.00006	98	83-110			
Chromium, dissolved	0.384	0.0005	mg/L	0.400	< 0.0005	96	85-115			
Cobalt, dissolved	0.397	0.00005	mg/L	0.400	0.00293	98	86-114			
Copper, dissolved	0.391	0.0002	mg/L	0.400	0.0005	98	82-119			
Iron, dissolved	54.1	0.010	mg/L	2.00	54.5	NR	80-116			SPK1
Lead, dissolved	0.196	0.0001	mg/L	0.200	< 0.0001	98	83-112			
Manganese, dissolved	3.26	0.0002	mg/L	0.400	3.00	64	62-131			
Nickel, dissolved	0.389	0.0002	mg/L	0.400	0.0010	97	81-115			
Selenium, dissolved	0.0966	0.0005	mg/L	0.100	< 0.0005	97	79-115			
Silver, dissolved	0.0883	0.00005	mg/L	0.100	< 0.00005	88	69-121			
Thallium, dissolved	0.0989	0.00002	mg/L	0.100	< 0.00002	99	84-115			
Vanadium, dissolved	0.380	0.001	mg/L	0.400	< 0.001	95	83-113			
Zinc, dissolved	0.983	0.004	mg/L	1.00	0.013	97	82-115			
Reference (B4C0892-SRM1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Aluminum, dissolved	0.246	0.005	mg/L	0.233		106	58-142			
Antimony, dissolved	0.0499	0.0001	mg/L	0.0430		116	75-125			
Arsenic, dissolved	0.431	0.0005	mg/L	0.438		98	81-119			
Barium, dissolved	3.43	0.005	mg/L	3.35		102	83-117			
Beryllium, dissolved	0.229	0.0001	mg/L	0.213		107	80-120			
Boron, dissolved	1.87	0.004	mg/L	1.74		107	74-117			
Cadmium, dissolved	0.227	0.00001	mg/L	0.224		101	83-117			
Calcium, dissolved	8.1	0.2	mg/L	7.69		105	76-124			
Chromium, dissolved	0.439	0.0005	mg/L	0.437		100	81-119			
Cobalt, dissolved	0.133	0.00005	mg/L	0.128		104	76-124			
Copper, dissolved	0.884	0.0002	mg/L	0.844		105	84-116			
Iron, dissolved	1.33	0.010	mg/L	1.29		103	74-126			
Lead, dissolved	0.115	0.0001	mg/L	0.112		103	72-128			
Lithium, dissolved	0.118	0.0001	mg/L	0.104		113	60-140			
Magnesium, dissolved	7.27	0.01	mg/L	6.92		105	81-119			
Manganese, dissolved	0.352	0.0002	mg/L	0.345		102	84-116			
Molybdenum, dissolved	0.431	0.0001	mg/L	0.426		101	83-117			
Nickel, dissolved	0.872	0.0002	mg/L	0.840		104	74-126			
Phosphorus, dissolved	0.51	0.02	mg/L	0.495		104	68-132			
Potassium, dissolved	3.22	0.02	mg/L	3.19		101	74-126			
Selenium, dissolved	0.0314	0.0005	mg/L	0.0331		95	70-130			
Sodium, dissolved	20.2	0.02	mg/L	19.1		106	72-128			
Strontium, dissolved	0.905	0.001	mg/L	0.916		99	84-113			
Thallium, dissolved	0.0403	0.00002	mg/L	0.0393		102	57-143			
Uranium, dissolved	0.267	0.00002	mg/L	0.266		100	85-115			
Vanadium, dissolved	0.858	0.001	mg/L	0.869		99	87-113			
Zinc, dissolved	0.900	0.004	mg/L	0.881		102	72-128			
Reference (B4C0892-SRM2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Aluminum, dissolved	0.238	0.005	mg/L	0.233		102	58-142			
Antimony, dissolved	0.0510	0.0001	mg/L	0.0430		119	75-125			
Arsenic, dissolved	0.434	0.0005	mg/L	0.438		99	81-119			

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4C0892, Continued										
Reference (B4C0892-SRM2), Continued				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Barium, dissolved	3.50	0.005	mg/L	3.35		104	83-117			
Beryllium, dissolved	0.226	0.0001	mg/L	0.213		106	80-120			
Boron, dissolved	1.86	0.004	mg/L	1.74		107	74-117			
Cadmium, dissolved	0.230	0.00001	mg/L	0.224		103	83-117			
Calcium, dissolved	8.3	0.2	mg/L	7.69		109	76-124			
Chromium, dissolved	0.444	0.0005	mg/L	0.437		102	81-119			
Cobalt, dissolved	0.135	0.00005	mg/L	0.128		106	76-124			
Copper, dissolved	0.896	0.0002	mg/L	0.844		106	84-116			
Iron, dissolved	1.35	0.010	mg/L	1.29		104	74-126			
Lead, dissolved	0.119	0.0001	mg/L	0.112		107	72-128			
Lithium, dissolved	0.117	0.0001	mg/L	0.104		112	60-140			
Magnesium, dissolved	7.23	0.01	mg/L	6.92		105	81-119			
Manganese, dissolved	0.354	0.0002	mg/L	0.345		103	84-116			
Molybdenum, dissolved	0.441	0.0001	mg/L	0.426		104	83-117			
Nickel, dissolved	0.884	0.0002	mg/L	0.840		105	74-126			
Phosphorus, dissolved	0.49	0.02	mg/L	0.495		98	68-132			
Potassium, dissolved	3.18	0.02	mg/L	3.19		100	74-126			
Selenium, dissolved	0.0317	0.0005	mg/L	0.0331		96	70-130			
Sodium, dissolved	20.0	0.02	mg/L	19.1		105	72-128			
Strontium, dissolved	0.915	0.001	mg/L	0.916		100	84-113			
Thallium, dissolved	0.0416	0.00002	mg/L	0.0393		106	57-143			
Uranium, dissolved	0.277	0.00002	mg/L	0.266		104	85-115			
Vanadium, dissolved	0.869	0.001	mg/L	0.869		100	87-113			
Zinc, dissolved	0.907	0.004	mg/L	0.881		103	72-128			
General Parameters, Batch B4C0954										
Duplicate (B4C0954-DUP1)		**Source: 4031173-10**		Prepared: Mar-24-14, Analyzed: Mar-24-14						
pH	6.17	0.01	pH units		6.13			< 1	4	
Duplicate (B4C0954-DUP2)		**Source: 4031173-03**		Prepared: Mar-24-14, Analyzed: Mar-24-14						
pH	6.44	0.01	pH units		6.46			< 1	4	
Reference (B4C0954-SRM1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
pH	6.99	0.01	pH units	7.00		100	98-102			
Reference (B4C0954-SRM2)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
pH	6.97	0.01	pH units	7.00		100	98-102			
General Parameters, Batch B4C0956										
Blank (B4C0956-BLK1)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B4C0956-BLK2)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B4C0956-BLK3)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B4C0956-BLK4)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
LCS (B4C0956-BS1)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	10.6	0.05	mg/L	10.0		106	89-116			

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General Parameters, Batch B4C0956, Continued										
LCS (B4C0956-BS2)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	10.3	0.05	mg/L	10.0		103	89-116			
LCS (B4C0956-BS3)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	10.5	0.05	mg/L	10.0		105	89-116			
LCS (B4C0956-BS4)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	10.5	0.05	mg/L	10.0		105	89-116			
Duplicate (B4C0956-DUP2)		**Source: 4031173-08**		Prepared: Mar-24-14, Analyzed: Mar-26-14						
Nitrogen, Total Kjeldahl	1.65	0.05	mg/L		1.61			2	15	
General Parameters, Batch B4C0961										
Blank (B4C0961-BLK1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	< 2	2	uS/cm							
LCS (B4C0961-BS2)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	1410	2	uS/cm	1410		100	93-104			
Duplicate (B4C0961-DUP1)		**Source: 4031173-04**		Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	225	2	uS/cm		222			1	5	
pH	6.56	0.01	pH units		6.53			< 1	5	
Reference (B4C0961-SRM1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
pH	7.00	0.01	pH units	7.00		100	98-102			
General Parameters, Batch B4C0965										
Blank (B4C0965-BLK1)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Solids, Total Suspended	< 2	2	mg/L							
Blank (B4C0965-BLK2)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Solids, Total Suspended	< 2	2	mg/L							
LCS (B4C0965-BS1)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Solids, Total Suspended	47	2	mg/L	48.8		96	83-107			
LCS (B4C0965-BS2)				Prepared: Mar-24-14, Analyzed: Mar-26-14						
Solids, Total Suspended	48	2	mg/L	50.2		95	83-107			
General Parameters, Batch B4C0967										
Blank (B4C0967-BLK1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	< 2	2	uS/cm							
Blank (B4C0967-BLK2)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	< 2	2	uS/cm							
LCS (B4C0967-BS1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	150	2	uS/cm	147		102	88-112			
LCS (B4C0967-BS2)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	148	2	uS/cm	147		101	88-112			
Duplicate (B4C0967-DUP1)		**Source: 4031173-03**		Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	642	2	uS/cm		641			< 1	7	

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
General Parameters, Batch B4C0967, Continued										
Reference (B4C0967-SRM1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	500	2	uS/cm	500		100	90-110			
Reference (B4C0967-SRM2)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Conductivity (EC)	502	2	uS/cm	500		100	90-110			
General Parameters, Batch B4C0972										
Blank (B4C0972-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Chemical Oxygen Demand	< 5	5	mg/L							
Blank (B4C0972-BLK2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Chemical Oxygen Demand	< 5	5	mg/L							
LCS (B4C0972-BS1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Chemical Oxygen Demand	51	5	mg/L	50.0		102	82-119			
LCS (B4C0972-BS2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Chemical Oxygen Demand	52	5	mg/L	50.0		105	82-119			
General Parameters, Batch B4C0986										
Blank (B4C0986-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Solids, Total Suspended	< 1	1	mg/L							
Blank (B4C0986-BLK2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Solids, Total Suspended	< 1	1	mg/L							
LCS (B4C0986-BS1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Solids, Total Suspended	51	1	mg/L	50.0		101	85-110			
Reference (B4C0986-SRM1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Solids, Total Suspended	204	1	mg/L	199		103	80-120			
General Parameters, Batch B4C1005										
Blank (B4C1005-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4C1005-BLK2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4C1005-BLK3)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4C1005-BLK4)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4C1005-BLK5)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
LCS (B4C1005-BS1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	10.1	0.005	mg/L	10.0		101	86-111			
LCS (B4C1005-BS2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	10.1	0.005	mg/L	10.0		101	86-111			

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
General Parameters, Batch B4C1005, Continued										
LCS (B4C1005-BS3)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	9.93	0.005	mg/L	10.0		99	86-111			
LCS (B4C1005-BS4)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L	10.0			86-111			
LCS (B4C1005-BS5)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L	10.0			86-111			
General Parameters, Batch B4C1010										
Blank (B4C1010-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Nitrate+Nitrite as N	< 0.005	0.005	mg/L							
Blank (B4C1010-BLK2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Nitrate+Nitrite as N	< 0.005	0.005	mg/L							
LCS (B4C1010-BS1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Nitrate+Nitrite as N	102	0.005	mg/L	100		102	91-108			
LCS (B4C1010-BS2)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Nitrate+Nitrite as N	100	0.005	mg/L	100		100	91-108			
Duplicate (B4C1010-DUP1)		**Source: 4031173-01**		Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Nitrate+Nitrite as N	0.01	0.005	mg/L		0.01				15	
Duplicate (B4C1010-DUP2)		**Source: 4031173-13**		Prepared: Mar-25-14, Analyzed: Mar-25-14						
Nitrogen, Nitrate+Nitrite as N	0.30	0.005	mg/L		0.29			2	15	
General Parameters, Batch B4C1061										
Blank (B4C1061-BLK1)				Prepared: Mar-27-14, Analyzed: Mar-27-14						
Chemical Oxygen Demand	< 5	5	mg/L							
Blank (B4C1061-BLK2)				Prepared: Mar-27-14, Analyzed: Mar-27-14						
Chemical Oxygen Demand	< 5	5	mg/L							
LCS (B4C1061-BS1)				Prepared: Mar-27-14, Analyzed: Mar-27-14						
Chemical Oxygen Demand	50	5	mg/L	50.0		99	82-119			
LCS (B4C1061-BS2)				Prepared: Mar-27-14, Analyzed: Mar-27-14						
Chemical Oxygen Demand	49	5	mg/L	50.0		97	82-119			
General Parameters, Batch B4C1163										
Blank (B4C1163-BLK1)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4C1163-BLK2)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4C1163-BLK3)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4C1163-BLK4)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
General Parameters, Batch B4C1163, Continued										
LCS (B4C1163-BS1)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	9.80	0.005	mg/L	10.0		98	86-111			
LCS (B4C1163-BS2)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L	10.0			86-111			
LCS (B4C1163-BS3)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L	10.0			86-111			
LCS (B4C1163-BS4)				Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L	10.0			86-111			
Duplicate (B4C1163-DUP1)		**Source: 4031173-01**		Prepared: Mar-28-14, Analyzed: Mar-28-14						
Nitrogen, Ammonia as N, Total	0.881	0.005	mg/L		0.874			< 1	15	
Polycyclic Aromatic Hydrocarbons (PAH), Batch B4C0925										
Blank (B4C0925-BLK1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Acenaphthene	< 0.02	0.02	ug/L							
Acenaphthylene	< 0.02	0.02	ug/L							
Acridine	< 0.05	0.05	ug/L							
Anthracene	< 0.01	0.01	ug/L							
Benzo (a) anthracene	< 0.01	0.01	ug/L							
Benzo (a) pyrene	< 0.01	0.01	ug/L							
Benzo (b) fluoranthene	< 0.02	0.02	ug/L							
Benzo (g,h,i) perylene	< 0.02	0.02	ug/L							
Benzo (k) fluoranthene	< 0.02	0.02	ug/L							
Chrysene	< 0.02	0.02	ug/L							
Dibenz (a,h) anthracene	< 0.02	0.02	ug/L							
Fluoranthene	< 0.02	0.02	ug/L							
Fluorene	< 0.02	0.02	ug/L							
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	ug/L							
Naphthalene	< 0.05	0.05	ug/L							
Phenanthrene	< 0.05	0.05	ug/L							
Pyrene	< 0.02	0.02	ug/L							
Quinoline	< 0.05	0.05	ug/L							
Surrogate: Naphthalene-d8	*0.812*		*ug/L*	*1.02*		*80*	*40-96*			
Surrogate: Acenaphthene-d10	*0.833*		*ug/L*	*0.995*		*84*	*45-92*			
Surrogate: Phenanthrene-d10	*0.864*		*ug/L*	*0.970*		*89*	*48-90*			
Surrogate: Chrysene-d12	*0.820*		*ug/L*	*0.950*		*86*	*41-96*			
Surrogate: Perylene-d12	*0.776*		*ug/L*	*0.990*		*78*	*47-104*			
LCS (B4C0925-BS1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Acenaphthene	0.76	0.02	ug/L	1.00		76	54-92			
Acenaphthylene	0.82	0.02	ug/L	1.00		82	54-95			
Acridine	0.75	0.05	ug/L	1.00		75	49-87			
Anthracene	0.84	0.01	ug/L	1.00		84	53-94			
Benzo (a) anthracene	0.77	0.01	ug/L	1.00		77	52-95			
Benzo (a) pyrene	0.77	0.01	ug/L	1.00		77	52-103			
Benzo (b) fluoranthene	0.71	0.02	ug/L	1.00		71	49-94			
Benzo (g,h,i) perylene	0.79	0.02	ug/L	1.00		79	51-98			
Benzo (k) fluoranthene	0.77	0.02	ug/L	1.00		77	49-105			
Chrysene	0.86	0.02	ug/L	1.00		86	50-104			
Dibenz (a,h) anthracene	0.77	0.02	ug/L	1.00		77	49-96			
Fluoranthene	0.90	0.02	ug/L	1.00		90	53-102			
Fluorene	0.82	0.02	ug/L	1.00		82	54-91			
Indeno (1,2,3-cd) pyrene	0.75	0.02	ug/L	1.00		75	51-99			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Polycyclic Aromatic Hydrocarbons (PAH), Batch B4C0925, Continued										
LCS (B4C0925-BS1), Continued				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Naphthalene	0.74	0.05	ug/L	1.00		74	51-91			
Phenanthrene	0.81	0.05	ug/L	1.00		81	56-96			
Pyrene	0.86	0.02	ug/L	1.00		86	51-105			
Quinoline	0.72	0.05	ug/L	1.00		72	48-126			
Surrogate: Naphthalene-d8	*0.803*		*ug/L*	*1.02*		*79*	*40-96*			
Surrogate: Acenaphthene-d10	*0.802*		*ug/L*	*0.995*		*81*	*45-92*			
Surrogate: Phenanthrene-d10	*0.871*		*ug/L*	*0.970*		*90*	*48-90*			
Surrogate: Chrysene-d12	*0.869*		*ug/L*	*0.950*		*91*	*41-96*			
Surrogate: Perylene-d12	*0.796*		*ug/L*	*0.990*		*80*	*47-104*			
LCS Dup (B4C0925-BSD1)				Prepared: Mar-24-14, Analyzed: Mar-24-14						
Acenaphthene	0.72	0.02	ug/L	1.00		72	54-92	5	20	
Acenaphthylene	0.79	0.02	ug/L	1.00		79	54-95	4	20	
Acridine	0.72	0.05	ug/L	1.00		72	49-87	4	20	
Anthracene	0.79	0.01	ug/L	1.00		79	53-94	6	20	
Benzo (a) anthracene	0.73	0.01	ug/L	1.00		73	52-95	5	20	
Benzo (a) pyrene	0.77	0.01	ug/L	1.00		77	52-103	< 1	20	
Benzo (b) fluoranthene	0.68	0.02	ug/L	1.00		68	49-94	4	20	
Benzo (g,h,i) perylene	0.77	0.02	ug/L	1.00		77	51-98	4	20	
Benzo (k) fluoranthene	0.71	0.02	ug/L	1.00		71	49-105	8	20	
Chrysene	0.83	0.02	ug/L	1.00		83	50-104	3	20	
Dibenz (a,h) anthracene	0.75	0.02	ug/L	1.00		75	49-96	3	20	
Fluoranthene	0.84	0.02	ug/L	1.00		84	53-102	7	20	
Fluorene	0.78	0.02	ug/L	1.00		78	54-91	5	20	
Indeno (1,2,3-cd) pyrene	0.79	0.02	ug/L	1.00		79	51-99	5	20	
Naphthalene	0.69	0.05	ug/L	1.00		69	51-91	6	20	
Phenanthrene	0.76	0.05	ug/L	1.00		76	56-96	6	20	
Pyrene	0.81	0.02	ug/L	1.00		81	51-105	6	20	
Quinoline	0.69	0.05	ug/L	1.00		69	48-126	5	20	
Surrogate: Naphthalene-d8	*0.758*		*ug/L*	*1.02*		*74*	*40-96*			
Surrogate: Acenaphthene-d10	*0.772*		*ug/L*	*0.995*		*78*	*45-92*			
Surrogate: Phenanthrene-d10	*0.854*		*ug/L*	*0.970*		*88*	*48-90*			
Surrogate: Chrysene-d12	*0.863*		*ug/L*	*0.950*		*91*	*41-96*			
Surrogate: Perylene-d12	*0.808*		*ug/L*	*0.990*		*82*	*47-104*			
Total Recoverable Metals, Batch B4C0955										
Blank (B4C0955-BLK1)				Prepared: Mar-24-14, Analyzed: Mar-25-14						
Aluminum, total	< 0.005	0.005	mg/L							
Antimony, total	< 0.0001	0.0001	mg/L							
Arsenic, total	< 0.0005	0.0005	mg/L							
Barium, total	< 0.005	0.005	mg/L							
Beryllium, total	< 0.0001	0.0001	mg/L							
Bismuth, total	< 0.0001	0.0001	mg/L							
Boron, total	< 0.004	0.004	mg/L							
Cadmium, total	< 0.00001	0.00001	mg/L							
Calcium, total	< 0.2	0.2	mg/L							
Chromium, total	< 0.0005	0.0005	mg/L							
Cobalt, total	< 0.00005	0.00005	mg/L							
Copper, total	< 0.0002	0.0002	mg/L							
Iron, total	< 0.01	0.01	mg/L							
Lead, total	< 0.0001	0.0001	mg/L							
Lithium, total	< 0.0001	0.0001	mg/L							
Magnesium, total	< 0.01	0.01	mg/L							
Manganese, total	< 0.0002	0.0002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B4C0955, Continued										
Blank (B4C0955-BLK1), Continued				Prepared: Mar-24-14, Analyzed: Mar-25-14						
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.020	0.020	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.004	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Duplicate (B4C0955-DUP1)		**Source: 4031173-10**		Prepared: Mar-24-14, Analyzed: Mar-25-14						
Aluminum, total	3.23	0.005	mg/L		3.18			1	29	
Antimony, total	< 0.0001	0.0001	mg/L		0.0001				31	
Arsenic, total	< 0.0005	0.0005	mg/L		< 0.0005				15	
Barium, total	0.048	0.005	mg/L		0.044			7	9	
Beryllium, total	0.0001	0.0001	mg/L		0.0001				16	
Bismuth, total	< 0.0001	0.0001	mg/L		< 0.0001				20	
Boron, total	0.026	0.004	mg/L		0.032			22	29	
Cadmium, total	0.00018	0.00001	mg/L		0.00016			9	33	
Calcium, total	41.8	0.2	mg/L		43.0			3	12	
Chromium, total	0.0006	0.0005	mg/L		0.0005				12	
Cobalt, total	0.0149	0.00005	mg/L		0.0146			2	13	
Copper, total	0.0662	0.0002	mg/L		0.0647			2	37	
Iron, total	5.87	0.01	mg/L		5.48			7	18	
Lead, total	< 0.0001	0.0001	mg/L		< 0.0001				23	
Lithium, total	0.0010	0.0001	mg/L		0.0010			4	19	
Magnesium, total	4.42	0.01	mg/L		4.51			2	10	
Manganese, total	0.684	0.0002	mg/L		0.695			2	13	
Mercury, total	< 0.00002	0.00002	mg/L		< 0.00002				24	
Molybdenum, total	0.0033	0.0001	mg/L		0.0034			3	20	
Nickel, total	0.0062	0.0002	mg/L		0.0058			8	28	
Phosphorus, total	0.132	0.020	mg/L		0.107			21	24	
Potassium, total	3.65	0.02	mg/L		3.80			4	13	
Selenium, total	0.0012	0.0005	mg/L		0.0010				24	
Silicon, total	3.8	0.5	mg/L		3.8			2	11	
Silver, total	< 0.00005	0.00005	mg/L		< 0.00005				18	
Sodium, total	14.8	0.02	mg/L		15.2			3	10	
Strontium, total	0.207	0.001	mg/L		0.214			3	9	
Sulfur, total	25	1	mg/L		26			4	24	
Tellurium, total	< 0.0002	0.0002	mg/L		< 0.0002				20	
Thallium, total	< 0.00002	0.00002	mg/L		< 0.00002				24	
Thorium, total	0.0005	0.0001	mg/L		0.0004			9	18	
Tin, total	< 0.0002	0.0002	mg/L		< 0.0002				18	
Titanium, total	< 0.005	0.005	mg/L		< 0.005				32	
Uranium, total	0.00026	0.00002	mg/L		0.00026			< 1	14	
Vanadium, total	< 0.001	0.001	mg/L		< 0.001				17	
Zinc, total	0.028	0.004	mg/L		0.022			25	8	RPD
Zirconium, total	< 0.0001	0.0001	mg/L		< 0.0001				60	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4031173
REPORTED Mar-31-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B4C0955, Continued										
Matrix Spike (B4C0955-MS1)	**Source: 4031173-11**			Prepared: Mar-24-14, Analyzed: Mar-25-14						
Antimony, total	0.392	0.0001	mg/L	0.400	0.0002	98	84-125			
Arsenic, total	0.175	0.0005	mg/L	0.200	0.0016	87	85-116			
Barium, total	0.975	0.005	mg/L	1.00	0.035	94	87-114			
Beryllium, total	0.0979	0.0001	mg/L	0.100	0.0005	97	72-116			
Cadmium, total	0.0965	0.00001	mg/L	0.100	0.00081	96	90-112			
Chromium, total	0.368	0.0005	mg/L	0.400	0.0027	91	89-120			
Cobalt, total	0.447	0.00005	mg/L	0.400	0.0690	95	88-120			
Copper, total	0.673	0.0002	mg/L	0.400	0.308	91	88-125			
Iron, total	29.4	0.01	mg/L	2.00	29.9	NR	88-119			SPK1
Lead, total	0.203	0.0001	mg/L	0.200	0.0001	101	89-118			
Manganese, total	2.26	0.0002	mg/L	0.400	2.07	49	84-120			SPK1
Nickel, total	0.406	0.0002	mg/L	0.400	0.0316	94	87-119			
Selenium, total	0.0905	0.0005	mg/L	0.100	0.0055	85	85-113			
Silver, total	0.0986	0.00005	mg/L	0.100	< 0.00005	99	89-119			
Thallium, total	0.103	0.00002	mg/L	0.100	< 0.00002	103	92-119			
Vanadium, total	0.360	0.001	mg/L	0.400	< 0.001	90	87-117			
Zinc, total	1.02	0.004	mg/L	1.00	0.095	92	85-116			
Reference (B4C0955-SRM1)				Prepared: Mar-24-14, Analyzed: Mar-25-14						
Aluminum, total	0.272	0.005	mg/L	0.296		92	81-129			
Antimony, total	0.0478	0.0001	mg/L	0.0505		95	88-114			
Arsenic, total	0.112	0.0005	mg/L	0.122		92	88-114			
Barium, total	0.726	0.005	mg/L	0.777		93	72-104			
Beryllium, total	0.0454	0.0001	mg/L	0.0488		93	76-131			
Boron, total	3.37	0.004	mg/L	3.40		99	75-121			
Cadmium, total	0.0471	0.00001	mg/L	0.0490		96	89-111			
Calcium, total	9.9	0.2	mg/L	10.2		97	86-121			
Chromium, total	0.225	0.0005	mg/L	0.242		93	89-114			
Cobalt, total	0.0366	0.00005	mg/L	0.0366		100	91-113			
Copper, total	0.478	0.0002	mg/L	0.487		98	91-115			
Iron, total	0.46	0.01	mg/L	0.469		98	77-124			
Lead, total	0.193	0.0001	mg/L	0.193		100	92-113			
Lithium, total	0.378	0.0001	mg/L	0.390		97	85-115			
Magnesium, total	3.16	0.01	mg/L	3.31		96	78-120			
Manganese, total	0.101	0.0002	mg/L	0.109		93	90-114			
Molybdenum, total	0.189	0.0001	mg/L	0.197		96	90-111			
Nickel, total	0.235	0.0002	mg/L	0.242		97	90-111			
Phosphorus, total	0.209	0.020	mg/L	0.233		90	85-115			
Potassium, total	5.56	0.02	mg/L	5.93		94	84-113			
Selenium, total	0.106	0.0005	mg/L	0.115		92	85-115			
Sodium, total	7.43	0.02	mg/L	7.64		97	82-123			
Strontium, total	0.341	0.001	mg/L	0.363		94	88-112			
Thallium, total	0.0796	0.00002	mg/L	0.0794		100	91-114			
Uranium, total	0.0193	0.00002	mg/L	0.0192		101	85-120			
Vanadium, total	0.339	0.001	mg/L	0.376		90	86-111			
Zinc, total	2.27	0.004	mg/L	2.42		94	85-111			
Volatile Organic Compounds (VOC), Batch B4C0974										
Blank (B4C0974-BLK1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Acetone	< 10.0	10.0	ug/L							
Benzene	< 0.5	0.5	ug/L							
Bromodichloromethane	< 1.0	1.0	ug/L							
Bromoform	< 1.0	1.0	ug/L							
Bromomethane	< 2.0	2.0	ug/L							
2-Butanone (MEK)	< 5.0	5.0	ug/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B4C0974, Continued										
Blank (B4C0974-BLK1), Continued				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Carbon tetrachloride	< 1.0	1.0	ug/L							
Chlorobenzene	< 1.0	1.0	ug/L							
Chloroethane	< 2.0	2.0	ug/L							
Chloroform	< 1.0	1.0	ug/L							
Chloromethane	< 2.0	2.0	ug/L							
Dibromochloromethane	< 1.0	1.0	ug/L							
Dibromomethane	< 1.0	1.0	ug/L							
1,2-Dichlorobenzene	< 0.5	0.5	ug/L							
1,3-Dichlorobenzene	< 1.0	1.0	ug/L							
1,4-Dichlorobenzene	< 1.0	1.0	ug/L							
1,1-Dichloroethane	< 1.0	1.0	ug/L							
1,2-Dichloroethane	< 1.0	1.0	ug/L							
1,1-Dichloroethene	< 1.0	1.0	ug/L							
cis-1,2-Dichloroethene	< 1.0	1.0	ug/L							
trans-1,2-Dichloroethene	< 1.0	1.0	ug/L							
1,2-Dichloropropane	< 1.0	1.0	ug/L							
cis-1,3-Dichloropropene	< 1.0	1.0	ug/L							
trans-1,3-Dichloropropene	< 1.0	1.0	ug/L							
Ethylbenzene	< 1.0	1.0	ug/L							
Methyl tert-butyl ether	< 1.0	1.0	ug/L							
Methylene chloride	< 3.0	3.0	ug/L							
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	ug/L							
Styrene	< 1.0	1.0	ug/L							
1,1,1,2-Tetrachloroethane	< 1.0	1.0	ug/L							
1,1,2,2-Tetrachloroethane	< 1.0	1.0	ug/L							
Tetrachloroethene	< 1.0	1.0	ug/L							
Toluene	< 1.0	1.0	ug/L							
1,1,1-Trichloroethane	< 1.0	1.0	ug/L							
1,1,2-Trichloroethane	< 1.0	1.0	ug/L							
Trichloroethene	< 1.0	1.0	ug/L							
Trichlorofluoromethane	< 1.0	1.0	ug/L							
Vinyl chloride	< 2.0	2.0	ug/L							
m,p-Xylene	< 1.0	1.0	ug/L							
o-Xylene	< 1.0	1.0	ug/L							
Xylenes (total)	< 2.0	2.0	ug/L							
Surrogate: Toluene-d8	*24.3*		*ug/L*	*25.0*		*97*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*23.0*		*ug/L*	*25.0*		*92*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*21.7*		*ug/L*	*25.0*		*87*	*70-130*			
LCS (B4C0974-BS1)				Prepared: Mar-25-14, Analyzed: Mar-25-14						
Acetone	19.4	10.0	ug/L	20.0		97	70-130			
Benzene	21.8	0.5	ug/L	20.0		109	70-130			
Bromodichloromethane	21.2	1.0	ug/L	20.0		106	70-130			
Bromoform	20.7	1.0	ug/L	20.0		103	70-130			
Bromomethane	22.9	2.0	ug/L	20.0		115	70-130			
2-Butanone (MEK)	19.0	5.0	ug/L	20.0		95	70-130			
Carbon tetrachloride	22.7	1.0	ug/L	20.0		113	70-130			
Chlorobenzene	21.2	1.0	ug/L	20.0		106	70-130			
Chloroethane	21.0	2.0	ug/L	20.0		105	70-130			
Chloroform	21.9	1.0	ug/L	20.0		110	70-130			
Chloromethane	25.0	2.0	ug/L	20.0		125	70-130			
Dibromochloromethane	19.9	1.0	ug/L	20.0		100	70-130			
Dibromomethane	21.3	1.0	ug/L	20.0		106	70-130			
1,2-Dichlorobenzene	21.9	0.5	ug/L	20.0		109	70-130			
1,3-Dichlorobenzene	21.6	1.0	ug/L	20.0		108	70-130			
1,4-Dichlorobenzene	21.5	1.0	ug/L	20.0		108	70-130			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

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REPORTED Mar-31-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B4C0974, Continued										
LCS (B4C0974-BS1), Continued				Prepared: Mar-25-14, Analyzed: Mar-25-14						
1,1-Dichloroethane	22.1	1.0	ug/L	20.0		110	70-130			
1,2-Dichloroethane	22.1	1.0	ug/L	20.0		111	70-130			
1,1-Dichloroethene	25.0	1.0	ug/L	20.0		125	70-130			
cis-1,2-Dichloroethene	19.8	1.0	ug/L	20.0		99	70-130			
trans-1,2-Dichloroethene	21.2	1.0	ug/L	20.0		106	70-130			
1,2-Dichloropropane	20.5	1.0	ug/L	20.0		103	70-130			
cis-1,3-Dichloropropene	18.4	1.0	ug/L	20.0		92	70-130			
trans-1,3-Dichloropropene	18.8	1.0	ug/L	20.0		94	70-130			
Ethylbenzene	21.3	1.0	ug/L	20.0		106	70-130			
Methyl tert-butyl ether	18.8	1.0	ug/L	20.0		94	70-130			
Methylene chloride	20.7	3.0	ug/L	20.0		104	70-130			
4-Methyl-2-Pentanone (MIBK)	19.4	10.0	ug/L	20.0		97	70-130			
Styrene	21.0	1.0	ug/L	20.0		105	70-130			
1,1,1,2-Tetrachloroethane	20.6	1.0	ug/L	20.0		103	70-130			
1,1,2,2-Tetrachloroethane	21.2	1.0	ug/L	20.0		106	70-130			
Tetrachloroethene	23.5	1.0	ug/L	20.0		118	70-130			
Toluene	22.9	1.0	ug/L	20.0		114	70-130			
1,1,1-Trichloroethane	22.4	1.0	ug/L	20.0		112	70-130			
1,1,2-Trichloroethane	21.8	1.0	ug/L	20.0		109	70-130			
Trichloroethene	24.5	1.0	ug/L	20.0		123	70-130			
Trichlorofluoromethane	24.9	1.0	ug/L	20.0		125	70-130			
Vinyl chloride	21.9	2.0	ug/L	20.0		110	70-130			
m,p-Xylene	45.0	1.0	ug/L	40.0		112	70-130			
o-Xylene	20.7	1.0	ug/L	20.0		104	70-130			
Xylenes (total)	65.6	2.0	ug/L	60.0		109	70-130			
Surrogate: Toluene-d8	*27.7*		*ug/L*	*25.0*		*111*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*28.0*		*ug/L*	*25.0*		*112*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*30.3*		*ug/L*	*25.0*		*121*	*70-130*			

QC Qualifiers:

RPD Relative percent difference (RPD) of duplicate analysis are outside of control limits for unknown reason(s).

SPK1 The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

CERTIFICATE OF ANALYSIS

REPORTED TO	Morrison Hershfield Limited 310 - 4321 Still Creek Drive Burnaby, BC V5C 6S7	**TEL** **FAX**	(604) 454-0402 (604) 454-0403
ATTENTION	Kevin Coulter	**WORK ORDER**	4061808
PO NUMBER		**RECEIVED / TEMP**	Jun-26-14 10:01 / - 1°C
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14
PROJECT INFO	5104016	**COC NUMBER**	B23953

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Issued By: **Jennifer Shanko, AScT For Brent Coates, BSc**
Business Manager, Richmond

Please contact CARO if more information is needed or to provide feedback on our services.

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ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4061808
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14

Analysis Description	Method Reference (* = modified from) Preparation	Analysis	Location
Alkalinity, speciated	N/A	APHA 2320 B	Kelowna
Ammonia-N, total colorimetric	N/A	APHA 4500-NH3 G	Kelowna
Bromide in Water by IC	N/A	APHA 4110 B	Kelowna
BTEX in Water	EPA 5030B / 5021A	EPA 8260B (1996)	Richmond
Chemical Oxygen Demand (low level)	N/A	APHA 5220 D	Kelowna
Chloride in Water by IC	N/A	APHA 4110 B	Kelowna
Conductivity in Water	N/A	APHA 2510 B	Kelowna
Dissolved Metals	APHA 3030 B	APHA 3125 B	Richmond
Fluoride in Water by IC	N/A	APHA 4110 B	Kelowna
Hardness as CaCO3 (CALC)	N/A	APHA 2340 B	Richmond
Nitrate+Nitrite-N in Water	N/A	APHA 4500-NO3- F	Kelowna
Nitrate-N in Water by IC	N/A	APHA 4110 B	Kelowna
Nitrite-N in Water by IC	N/A	APHA 4110 B	Kelowna
Nitrite-N in Water, colorimetric	N/A	APHA 4500-NO2 B	Kelowna
Orthophosphate as P by IC	N/A	APHA 4110 B	Kelowna
pH in Water	N/A	APHA 4500-H+ B	Kelowna
Potability, IH Comprehensive Pkg	N/A	APHA 1030 E	Kelowna
Sulfate in Water by IC	N/A	APHA 4110 B	Kelowna
Total Kjeldahl Nitrogen	N/A	EPA 351.2 (1993) *	Kelowna
Total Recoverable Metals	APHA 3030E *	APHA 3125 B	Richmond
Total Suspended Solids	N/A	APHA 2540 D	Kelowna

Note: The numbers in brackets represent the year that the method was published/approved

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, American Public Health Association
EPA	United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
MAC	Maximum acceptable concentration (health-related guideline)
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
ug/L	Micrograms per litre
uS/cm	Microsiemens per centimeter

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4061808-01) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**127**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**127**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**27.8**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.08**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.010**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L	N/A	Jun-27-14	
Sulfate	**54.4**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	**9**	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**444**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.02**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**2.67**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.35**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**178**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**124**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.02**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**2.69**	0.10	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.009**	0.005	mg/L	N/A	Jul-03-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Arsenic, dissolved	**0.0031**	0.0005	mg/L	N/A	Jul-03-14	
Barium, dissolved	**0.143**	0.005	mg/L	N/A	Jul-03-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Boron, dissolved	**0.079**	0.004	mg/L	N/A	Jul-03-14	
Cadmium, dissolved	**0.00018**	0.00001	mg/L	N/A	Jul-03-14	
Calcium, dissolved	**39.1**	0.2	mg/L	N/A	Jul-03-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Cobalt, dissolved	**0.0302**	0.00005	mg/L	N/A	Jul-03-14	
Copper, dissolved	**0.0011**	0.0002	mg/L	N/A	Jul-03-14	
Iron, dissolved	**41.4**	0.010	mg/L	N/A	Jul-03-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Lithium, dissolved	**0.0002**	0.0001	mg/L	N/A	Jul-03-14	
Magnesium, dissolved	**6.51**	0.01	mg/L	N/A	Jul-03-14	
Manganese, dissolved	**2.79**	0.0002	mg/L	N/A	Jul-03-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Molybdenum, dissolved	**0.0118**	0.0001	mg/L	N/A	Jul-03-14	
Nickel, dissolved	**0.0034**	0.0002	mg/L	N/A	Jul-03-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4061808-01) [Water] Sampled: Jun-25-14, Continued						
Dissolved Metals, Continued						
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Jul-03-14	
Potassium, dissolved	**5.95**	0.02	mg/L	N/A	Jul-03-14	
Selenium, dissolved	**0.0007**	0.0005	mg/L	N/A	Jul-03-14	
Silicon, dissolved	**10.0**	0.5	mg/L	N/A	Jul-03-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Jul-03-14	
Sodium, dissolved	**19.8**	0.02	mg/L	N/A	Jul-03-14	
Strontium, dissolved	**0.242**	0.001	mg/L	N/A	Jul-03-14	
Sulfur, dissolved	**17**	1	mg/L	N/A	Jul-03-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Jul-03-14	
Uranium, dissolved	**0.00014**	0.00002	mg/L	N/A	Jul-03-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Jul-03-14	
Zinc, dissolved	**0.005**	0.004	mg/L	N/A	Jul-03-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4061808-02) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**121**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**121**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**17.2**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.11**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.014**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**94.1**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	**15**	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**472**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.02**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**8.67**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.47**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**532**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**147**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.02**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**8.68**	0.25	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Jul-03-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Arsenic, dissolved	**0.0051**	0.0005	mg/L	N/A	Jul-03-14	
Barium, dissolved	**0.098**	0.005	mg/L	N/A	Jul-03-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Boron, dissolved	**0.175**	0.004	mg/L	N/A	Jul-03-14	
Cadmium, dissolved	< 0.00001	0.00001	mg/L	N/A	Jul-03-14	
Calcium, dissolved	**46.9**	0.2	mg/L	N/A	Jul-03-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Cobalt, dissolved	**0.00179**	0.00005	mg/L	N/A	Jul-03-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Iron, dissolved	**33.5**	0.010	mg/L	N/A	Jul-03-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Magnesium, dissolved	**7.37**	0.01	mg/L	N/A	Jul-03-14	
Manganese, dissolved	**2.15**	0.0002	mg/L	N/A	Jul-03-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Molybdenum, dissolved	**0.0043**	0.0001	mg/L	N/A	Jul-03-14	
Nickel, dissolved	**0.0011**	0.0002	mg/L	N/A	Jul-03-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Jul-03-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4061808
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4061808-02) [Water] Sampled: Jun-25-14, Continued						
Dissolved Metals, Continued						
Potassium, dissolved	**10.6**	0.02	mg/L	N/A	Jul-03-14	
Selenium, dissolved	**0.0006**	0.0005	mg/L	N/A	Jul-03-14	
Silicon, dissolved	**9.2**	0.5	mg/L	N/A	Jul-03-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Jul-03-14	
Sodium, dissolved	**12.8**	0.02	mg/L	N/A	Jul-03-14	
Strontium, dissolved	**0.250**	0.001	mg/L	N/A	Jul-03-14	
Sulfur, dissolved	**28**	1	mg/L	N/A	Jul-03-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Jul-03-14	
Uranium, dissolved	**0.00006**	0.00002	mg/L	N/A	Jul-03-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Jul-03-14	
Zinc, dissolved	**0.005**	0.004	mg/L	N/A	Jul-03-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4061808-03) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**252**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**252**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**43.7**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.10**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L	N/A	Jun-27-14	
Sulfate	**397**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	**27**	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**1290**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.03**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**19.0**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.50**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**369**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**514**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.03**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**19.1**	1.00	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Jul-03-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Arsenic, dissolved	**0.0132**	0.0005	mg/L	N/A	Jul-03-14	
Barium, dissolved	**0.029**	0.005	mg/L	N/A	Jul-03-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Boron, dissolved	**0.368**	0.004	mg/L	N/A	Jul-03-14	
Cadmium, dissolved	< 0.00001	0.00001	mg/L	N/A	Jul-03-14	
Calcium, dissolved	**172**	0.2	mg/L	N/A	Jul-03-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Cobalt, dissolved	**0.0149**	0.00005	mg/L	N/A	Jul-03-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Iron, dissolved	**62.5**	0.010	mg/L	N/A	Jul-03-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Magnesium, dissolved	**20.6**	0.01	mg/L	N/A	Jul-03-14	
Manganese, dissolved	**2.93**	0.0002	mg/L	N/A	Jul-03-14	
Mercury, dissolved	**0.00003**	0.00002	mg/L	N/A	Jul-03-14	
Molybdenum, dissolved	**0.0168**	0.0001	mg/L	N/A	Jul-03-14	
Nickel, dissolved	**0.0029**	0.0002	mg/L	N/A	Jul-03-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Jul-03-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4061808
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4061808-03) [Water] Sampled: Jun-25-14, Continued						
Dissolved Metals, Continued						
Potassium, dissolved	**21.2**	0.02	mg/L	N/A	Jul-03-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Silicon, dissolved	**14.3**	0.5	mg/L	N/A	Jul-03-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Jul-03-14	
Sodium, dissolved	**32.8**	0.02	mg/L	N/A	Jul-03-14	
Strontium, dissolved	**0.653**	0.001	mg/L	N/A	Jul-03-14	
Sulfur, dissolved	**119**	1	mg/L	N/A	Jul-03-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Jul-03-14	
Uranium, dissolved	**0.00027**	0.00002	mg/L	N/A	Jul-03-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Jul-03-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Jul-03-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4061808-04) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**36**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**36**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**8.24**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.06**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.034**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**20.7**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**148**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.05**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**0.27**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.35**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**17**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**39.5**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.05**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.32**	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.009**	0.005	mg/L	N/A	Jul-03-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Barium, dissolved	**0.048**	0.005	mg/L	N/A	Jul-03-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Boron, dissolved	**0.021**	0.004	mg/L	N/A	Jul-03-14	
Cadmium, dissolved	**0.00010**	0.00001	mg/L	N/A	Jul-03-14	
Calcium, dissolved	**12.5**	0.2	mg/L	N/A	Jul-03-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Cobalt, dissolved	**0.00177**	0.00005	mg/L	N/A	Jul-03-14	
Copper, dissolved	**0.0016**	0.0002	mg/L	N/A	Jul-03-14	
Iron, dissolved	**0.091**	0.010	mg/L	N/A	Jul-03-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Lithium, dissolved	**0.0001**	0.0001	mg/L	N/A	Jul-03-14	
Magnesium, dissolved	**2.01**	0.01	mg/L	N/A	Jul-03-14	
Manganese, dissolved	**0.782**	0.0002	mg/L	N/A	Jul-03-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Molybdenum, dissolved	**0.0012**	0.0001	mg/L	N/A	Jul-03-14	
Nickel, dissolved	**0.0004**	0.0002	mg/L	N/A	Jul-03-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Jul-03-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4061808-04) [Water] Sampled: Jun-25-14, Continued						
Dissolved Metals, Continued						
Potassium, dissolved	**2.66**	0.02	mg/L	N/A	Jul-03-14	
Selenium, dissolved	**0.0006**	0.0005	mg/L	N/A	Jul-03-14	
Silicon, dissolved	**7.2**	0.5	mg/L	N/A	Jul-03-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Jul-03-14	
Sodium, dissolved	**9.85**	0.02	mg/L	N/A	Jul-03-14	
Strontium, dissolved	**0.115**	0.001	mg/L	N/A	Jul-03-14	
Sulfur, dissolved	**6**	1	mg/L	N/A	Jul-03-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Thallium, dissolved	**0.00003**	0.00002	mg/L	N/A	Jul-03-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Jul-03-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Jul-03-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Jul-03-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (4061808-05) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**9**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**9**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**182**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.11**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.031**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**105**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	**14**	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**891**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.06**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**1.40**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**5.60**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**2270**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**173**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.06**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**1.46**	0.10	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.104**	0.005	mg/L	N/A	Jul-03-14	
Antimony, dissolved	**0.0005**	0.0001	mg/L	N/A	Jul-03-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Barium, dissolved	**0.057**	0.005	mg/L	N/A	Jul-03-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Boron, dissolved	**0.018**	0.004	mg/L	N/A	Jul-03-14	
Cadmium, dissolved	**0.00033**	0.00001	mg/L	N/A	Jul-03-14	
Calcium, dissolved	**56.2**	0.2	mg/L	N/A	Jul-03-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Cobalt, dissolved	**0.00844**	0.00005	mg/L	N/A	Jul-03-14	
Copper, dissolved	**0.0024**	0.0002	mg/L	N/A	Jul-03-14	
Iron, dissolved	**2.36**	0.010	mg/L	N/A	Jul-03-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Lithium, dissolved	**0.0001**	0.0001	mg/L	N/A	Jul-03-14	
Magnesium, dissolved	**8.01**	0.01	mg/L	N/A	Jul-03-14	
Manganese, dissolved	**0.816**	0.0002	mg/L	N/A	Jul-03-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Molybdenum, dissolved	**0.0002**	0.0001	mg/L	N/A	Jul-03-14	
Nickel, dissolved	**0.0022**	0.0002	mg/L	N/A	Jul-03-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Jul-03-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4061808
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (4061808-05) [Water] Sampled: Jun-25-14, Continued						
Dissolved Metals, Continued						
Potassium, dissolved	**4.51**	0.02	mg/L	N/A	Jul-03-14	
Selenium, dissolved	**0.0007**	0.0005	mg/L	N/A	Jul-03-14	
Silicon, dissolved	**8.2**	0.5	mg/L	N/A	Jul-03-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Jul-03-14	
Sodium, dissolved	**89.8**	0.02	mg/L	N/A	Jul-03-14	
Strontium, dissolved	**0.658**	0.001	mg/L	N/A	Jul-03-14	
Sulfur, dissolved	**33**	1	mg/L	N/A	Jul-03-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Thallium, dissolved	**0.00008**	0.00002	mg/L	N/A	Jul-03-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Jul-03-14	
Uranium, dissolved	**0.00004**	0.00002	mg/L	N/A	Jul-03-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Jul-03-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Jul-03-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: PUMP STATION (4061808-06) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**121**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**121**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**68.2**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.09**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**166**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	**14**	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**773**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Ammonia as N, Total	**0.947**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.02**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**1.56**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.30**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**46**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**255**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.02**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**1.58**	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.012**	0.005	mg/L	N/A	Jul-03-14	
Antimony, dissolved	**0.0004**	0.0001	mg/L	N/A	Jul-03-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Barium, dissolved	**0.076**	0.005	mg/L	N/A	Jul-03-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Boron, dissolved	**0.169**	0.004	mg/L	N/A	Jul-03-14	
Cadmium, dissolved	< 0.00001	0.00001	mg/L	N/A	Jul-03-14	
Calcium, dissolved	**85.5**	0.2	mg/L	N/A	Jul-03-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Cobalt, dissolved	**0.00291**	0.00005	mg/L	N/A	Jul-03-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Iron, dissolved	**19.0**	0.010	mg/L	N/A	Jul-03-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Lithium, dissolved	**0.0003**	0.0001	mg/L	N/A	Jul-03-14	
Magnesium, dissolved	**10.0**	0.01	mg/L	N/A	Jul-03-14	
Manganese, dissolved	**2.95**	0.0002	mg/L	N/A	Jul-03-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Molybdenum, dissolved	**0.0002**	0.0001	mg/L	N/A	Jul-03-14	
Nickel, dissolved	**0.0014**	0.0002	mg/L	N/A	Jul-03-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Jul-03-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4061808
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: PUMP STATION (4061808-06) [Water] Sampled: Jun-25-14, Continued						
Dissolved Metals, Continued						
Potassium, dissolved	**6.35**	0.02	mg/L	N/A	Jul-03-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Jul-03-14	
Silicon, dissolved	**8.6**	0.5	mg/L	N/A	Jul-03-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Jul-03-14	
Sodium, dissolved	**43.4**	0.02	mg/L	N/A	Jul-03-14	
Strontium, dissolved	**0.595**	0.001	mg/L	N/A	Jul-03-14	
Sulfur, dissolved	**52**	1	mg/L	N/A	Jul-03-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Jul-03-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Jul-03-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Jul-03-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Jul-03-14	
Zinc, dissolved	**0.031**	0.004	mg/L	N/A	Jul-03-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Jul-03-14	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	0.5	ug/L	N/A	Jun-30-14	
Ethylbenzene	< 1.0	1.0	ug/L	N/A	Jun-30-14	
Methyl tert-butyl ether	< 1.0	1.0	ug/L	N/A	Jun-30-14	
Toluene	< 1.0	1.0	ug/L	N/A	Jun-30-14	
Xylenes (total)	< 2.0	2.0	ug/L	N/A	Jun-30-14	
Surrogate: Toluene-d8	*93 %*	*70-130*		*N/A*	*Jun-30-14*	
Surrogate: 4-Bromofluorobenzene	*85 %*	*70-130*		*N/A*	*Jun-30-14*	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (4061808-07) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**71**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**71**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**15.8**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.07**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.249**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**63.6**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**334**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.28**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**1.14**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.42**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**6**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**126**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.28**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**1.42**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.722**	0.005	mg/L	Jun-30-14	Jul-01-14	
Antimony, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Barium, total	**0.067**	0.005	mg/L	Jun-30-14	Jul-01-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Boron, total	**0.091**	0.004	mg/L	Jun-30-14	Jul-01-14	
Cadmium, total	**0.00009**	0.00001	mg/L	Jun-30-14	Jul-01-14	
Calcium, total	**42.2**	0.2	mg/L	Jun-30-14	Jul-01-14	
Chromium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Cobalt, total	**0.00950**	0.00005	mg/L	Jun-30-14	Jul-01-14	
Copper, total	**0.0120**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Iron, total	**5.71**	0.01	mg/L	Jun-30-14	Jul-01-14	
Lead, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Lithium, total	**0.0005**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Magnesium, total	**4.86**	0.01	mg/L	Jun-30-14	Jul-01-14	
Manganese, total	**2.42**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Mercury, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Molybdenum, total	**0.0025**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Nickel, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Phosphorus, total	< 0.020	0.020	mg/L	Jun-30-14	Jul-01-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (4061808-07) [Water] Sampled: Jun-25-14, Continued						
Total Recoverable Metals, Continued						
Potassium, total	**4.40**	0.02	mg/L	Jun-30-14	Jul-01-14	
Selenium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Silicon, total	**5.6**	0.5	mg/L	Jun-30-14	Jul-01-14	
Silver, total	**0.00009**	0.00005	mg/L	Jun-30-14	Jul-01-14	
Sodium, total	**14.7**	0.02	mg/L	Jun-30-14	Jul-01-14	
Strontium, total	**0.266**	0.001	mg/L	Jun-30-14	Jul-01-14	
Sulfur, total	**21**	1	mg/L	Jun-30-14	Jul-01-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Thallium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Thorium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Tin, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Titanium, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Uranium, total	**0.00005**	0.00002	mg/L	Jun-30-14	Jul-01-14	
Vanadium, total	< 0.001	0.001	mg/L	Jun-30-14	Jul-01-14	
Zinc, total	**0.009**	0.004	mg/L	Jun-30-14	Jul-01-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2B (4061808-08) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**20.8**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.40**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.085**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**795**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	**15**	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**984**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.06**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**2.78**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**3.71**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**34**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**328**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.06**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**2.84**	0.10	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**11.0**	0.005	mg/L	Jun-30-14	Jul-01-14	
Antimony, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Arsenic, total	**0.0007**	0.0005	mg/L	Jun-30-14	Jul-01-14	
Barium, total	**0.062**	0.005	mg/L	Jun-30-14	Jul-01-14	
Beryllium, total	**0.0005**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Boron, total	**0.050**	0.004	mg/L	Jun-30-14	Jul-01-14	
Cadmium, total	**0.00035**	0.00001	mg/L	Jun-30-14	Jul-01-14	
Calcium, total	**91.1**	0.2	mg/L	Jun-30-14	Jul-01-14	
Chromium, total	**0.0008**	0.0005	mg/L	Jun-30-14	Jul-01-14	
Cobalt, total	**0.0871**	0.00005	mg/L	Jun-30-14	Jul-01-14	
Copper, total	**0.143**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Iron, total	**57.9**	0.01	mg/L	Jun-30-14	Jul-01-14	
Lead, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Lithium, total	**0.0055**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Magnesium, total	**24.2**	0.01	mg/L	Jun-30-14	Jul-01-14	
Manganese, total	**9.77**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Mercury, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Molybdenum, total	**0.0004**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Nickel, total	**0.0244**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Phosphorus, total	< 0.020	0.020	mg/L	Jun-30-14	Jul-01-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4061808
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2B (4061808-08) [Water] Sampled: Jun-25-14, Continued						
Total Recoverable Metals, Continued						
Potassium, total	**4.96**	0.02	mg/L	Jun-30-14	Jul-01-14	
Selenium, total	**0.0019**	0.0005	mg/L	Jun-30-14	Jul-01-14	
Silicon, total	**12.1**	0.5	mg/L	Jun-30-14	Jul-01-14	
Silver, total	**0.00006**	0.00005	mg/L	Jun-30-14	Jul-01-14	
Sodium, total	**17.4**	0.02	mg/L	Jun-30-14	Jul-01-14	
Strontium, total	**0.501**	0.001	mg/L	Jun-30-14	Jul-01-14	
Sulfur, total	**160**	1	mg/L	Jun-30-14	Jul-01-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Thallium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Thorium, total	**0.0009**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Tin, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Titanium, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Uranium, total	**0.00055**	0.00002	mg/L	Jun-30-14	Jul-01-14	
Vanadium, total	< 0.001	0.001	mg/L	Jun-30-14	Jul-01-14	
Zinc, total	**0.045**	0.004	mg/L	Jun-30-14	Jul-01-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 4B (4061808-09) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**38**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**38**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**29.8**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.08**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.313**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**55.5**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**304**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.31**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**0.24**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.36**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**1**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**111**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.31**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.55**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.026**	0.005	mg/L	Jun-30-14	Jul-01-14	
Antimony, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Barium, total	**0.026**	0.005	mg/L	Jun-30-14	Jul-01-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Boron, total	**0.063**	0.004	mg/L	Jun-30-14	Jul-01-14	
Cadmium, total	**0.00002**	0.00001	mg/L	Jun-30-14	Jul-01-14	
Calcium, total	**37.5**	0.2	mg/L	Jun-30-14	Jul-01-14	
Chromium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Cobalt, total	**0.00029**	0.00005	mg/L	Jun-30-14	Jul-01-14	
Copper, total	**0.0012**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Iron, total	**0.16**	0.01	mg/L	Jun-30-14	Jul-01-14	
Lead, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Lithium, total	**0.0006**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Magnesium, total	**4.24**	0.01	mg/L	Jun-30-14	Jul-01-14	
Manganese, total	**0.131**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Mercury, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Molybdenum, total	**0.0004**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Nickel, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Phosphorus, total	< 0.020	0.020	mg/L	Jun-30-14	Jul-01-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4061808
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 4B (4061808-09) [Water] Sampled: Jun-25-14, Continued						
Total Recoverable Metals, Continued						
Potassium, total	**2.33**	0.02	mg/L	Jun-30-14	Jul-01-14	
Selenium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Silicon, total	**7.6**	0.5	mg/L	Jun-30-14	Jul-01-14	
Silver, total	< 0.00005	0.00005	mg/L	Jun-30-14	Jul-01-14	
Sodium, total	**17.2**	0.02	mg/L	Jun-30-14	Jul-01-14	
Strontium, total	**0.361**	0.001	mg/L	Jun-30-14	Jul-01-14	
Sulfur, total	**16**	1	mg/L	Jun-30-14	Jul-01-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Thallium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Thorium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Tin, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Titanium, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Uranium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Vanadium, total	< 0.001	0.001	mg/L	Jun-30-14	Jul-01-14	
Zinc, total	< 0.004	0.004	mg/L	Jun-30-14	Jul-01-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3 (4061808-10) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**31**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**31**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**14.7**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.07**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.106**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**17.0**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**154**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.11**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**0.12**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.44**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**3**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**45.2**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.11**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.23**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.039**	0.005	mg/L	Jun-30-14	Jul-01-14	
Antimony, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Barium, total	**0.016**	0.005	mg/L	Jun-30-14	Jul-01-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Boron, total	**0.020**	0.004	mg/L	Jun-30-14	Jul-01-14	
Cadmium, total	**0.00002**	0.00001	mg/L	Jun-30-14	Jul-01-14	
Calcium, total	**14.7**	0.2	mg/L	Jun-30-14	Jul-01-14	
Chromium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Cobalt, total	**0.00015**	0.00005	mg/L	Jun-30-14	Jul-01-14	
Copper, total	**0.0011**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Iron, total	**0.23**	0.01	mg/L	Jun-30-14	Jul-01-14	
Lead, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Lithium, total	**0.0005**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Magnesium, total	**2.07**	0.01	mg/L	Jun-30-14	Jul-01-14	
Manganese, total	**0.0236**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Mercury, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Molybdenum, total	**0.0003**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Nickel, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Phosphorus, total	< 0.020	0.020	mg/L	Jun-30-14	Jul-01-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4061808
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3 (4061808-10) [Water] Sampled: Jun-25-14, Continued						
Total Recoverable Metals, Continued						
Potassium, total	**0.92**	0.02	mg/L	Jun-30-14	Jul-01-14	
Selenium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Silicon, total	**9.3**	0.5	mg/L	Jun-30-14	Jul-01-14	
Silver, total	< 0.00005	0.00005	mg/L	Jun-30-14	Jul-01-14	
Sodium, total	**13.2**	0.02	mg/L	Jun-30-14	Jul-01-14	
Strontium, total	**0.156**	0.001	mg/L	Jun-30-14	Jul-01-14	
Sulfur, total	**4**	1	mg/L	Jun-30-14	Jul-01-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Thallium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Thorium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Tin, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Titanium, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Uranium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Vanadium, total	< 0.001	0.001	mg/L	Jun-30-14	Jul-01-14	
Zinc, total	< 0.004	0.004	mg/L	Jun-30-14	Jul-01-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3-REDP (4061808-11) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**32**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**32**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**14.9**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	**0.07**	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.103**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	**16.8**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**154**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.11**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**0.15**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.45**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	**18**	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**44.4**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.11**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.26**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.067**	0.005	mg/L	Jun-30-14	Jul-01-14	
Antimony, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Barium, total	**0.015**	0.005	mg/L	Jun-30-14	Jul-01-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Boron, total	**0.016**	0.004	mg/L	Jun-30-14	Jul-01-14	
Cadmium, total	**0.00002**	0.00001	mg/L	Jun-30-14	Jul-01-14	
Calcium, total	**14.4**	0.2	mg/L	Jun-30-14	Jul-01-14	
Chromium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Cobalt, total	**0.00019**	0.00005	mg/L	Jun-30-14	Jul-01-14	
Copper, total	**0.0014**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Iron, total	**0.42**	0.01	mg/L	Jun-30-14	Jul-01-14	
Lead, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Lithium, total	**0.0005**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Magnesium, total	**2.04**	0.01	mg/L	Jun-30-14	Jul-01-14	
Manganese, total	**0.0275**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Mercury, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Molybdenum, total	**0.0003**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Nickel, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Phosphorus, total	< 0.020	0.020	mg/L	Jun-30-14	Jul-01-14	

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Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3-REDP (4061808-11) [Water] Sampled: Jun-25-14, Continued						
Total Recoverable Metals, Continued						
Potassium, total	**0.90**	0.02	mg/L	Jun-30-14	Jul-01-14	
Selenium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Silicon, total	**9.2**	0.5	mg/L	Jun-30-14	Jul-01-14	
Silver, total	< 0.00005	0.00005	mg/L	Jun-30-14	Jul-01-14	
Sodium, total	**12.8**	0.02	mg/L	Jun-30-14	Jul-01-14	
Strontium, total	**0.153**	0.001	mg/L	Jun-30-14	Jul-01-14	
Sulfur, total	**4**	1	mg/L	Jun-30-14	Jul-01-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Thallium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Thorium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Tin, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Titanium, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Uranium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Vanadium, total	< 0.001	0.001	mg/L	Jun-30-14	Jul-01-14	
Zinc, total	< 0.004	0.004	mg/L	Jun-30-14	Jul-01-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	

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Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 11 (4061808-12) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	**29**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	**29**	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	**11.1**	0.10	mg/L	N/A	Jun-27-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	**0.118**	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L	N/A	Jun-27-14	
Sulfate	**12.4**	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	**127**	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	**0.14**	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	**0.08**	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**6.42**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	< 1	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**43.4**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.14**	0.01	mg/L	N/A	N/A	
Nitrogen, Total	**0.22**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.028**	0.005	mg/L	Jun-30-14	Jul-01-14	
Antimony, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Barium, total	**0.011**	0.005	mg/L	Jun-30-14	Jul-01-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Boron, total	**0.015**	0.004	mg/L	Jun-30-14	Jul-01-14	
Cadmium, total	**0.00003**	0.00001	mg/L	Jun-30-14	Jul-01-14	
Calcium, total	**13.9**	0.2	mg/L	Jun-30-14	Jul-01-14	
Chromium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Cobalt, total	< 0.00005	0.00005	mg/L	Jun-30-14	Jul-01-14	
Copper, total	**0.0015**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Iron, total	**0.03**	0.01	mg/L	Jun-30-14	Jul-01-14	
Lead, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Lithium, total	**0.0006**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Magnesium, total	**2.10**	0.01	mg/L	Jun-30-14	Jul-01-14	
Manganese, total	**0.0062**	0.0002	mg/L	Jun-30-14	Jul-01-14	
Mercury, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Molybdenum, total	**0.0002**	0.0001	mg/L	Jun-30-14	Jul-01-14	
Nickel, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Phosphorus, total	< 0.020	0.020	mg/L	Jun-30-14	Jul-01-14	

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Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 11 (4061808-12) [Water] Sampled: Jun-25-14, Continued						
Total Recoverable Metals, Continued						
Potassium, total	**0.64**	0.02	mg/L	Jun-30-14	Jul-01-14	
Selenium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Silicon, total	**10.1**	0.5	mg/L	Jun-30-14	Jul-01-14	
Silver, total	< 0.00005	0.00005	mg/L	Jun-30-14	Jul-01-14	
Sodium, total	**7.72**	0.02	mg/L	Jun-30-14	Jul-01-14	
Strontium, total	**0.169**	0.001	mg/L	Jun-30-14	Jul-01-14	
Sulfur, total	**2**	1	mg/L	Jun-30-14	Jul-01-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Thallium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Thorium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Tin, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Titanium, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Uranium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Vanadium, total	< 0.001	0.001	mg/L	Jun-30-14	Jul-01-14	
Zinc, total	< 0.004	0.004	mg/L	Jun-30-14	Jul-01-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	

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Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: FIELD BLANK (4061808-13) [Water] Sampled: Jun-25-14						
Anions						
Alkalinity, Total as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Jun-27-14	
Bromide	< 0.1	0.1	mg/L	N/A	Jun-27-14	
Chloride	< 0.10	0.10	mg/L	N/A	Jun-27-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L	N/A	Jun-27-14	
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L	N/A	Jun-26-14	
Sulfate	< 1.0	1.0	mg/L	N/A	Jun-27-14	
General Parameters						
Chemical Oxygen Demand	< 5	5	mg/L	Jun-26-14	Jun-30-14	
Conductivity (EC)	< 2	2	uS/cm	N/A	Jun-27-14	
Nitrogen, Nitrate+Nitrite as N	< 0.005	0.005	mg/L	N/A	Jun-27-14	
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L	Jun-26-14	Jul-02-14	
pH	**5.64**	0.01	pH units	N/A	Jun-27-14	
Solids, Total Suspended	< 1	1	mg/L	N/A	Jun-30-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	< 0.50	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	< 0.01	0.01	mg/L	N/A	N/A	
Nitrogen, Total	< 0.05	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Antimony, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Barium, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Boron, total	< 0.004	0.004	mg/L	Jun-30-14	Jul-01-14	
Cadmium, total	< 0.00001	0.00001	mg/L	Jun-30-14	Jul-01-14	
Calcium, total	< 0.2	0.2	mg/L	Jun-30-14	Jul-01-14	
Chromium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Cobalt, total	< 0.00005	0.00005	mg/L	Jun-30-14	Jul-01-14	
Copper, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Iron, total	**0.01**	0.01	mg/L	Jun-30-14	Jul-01-14	
Lead, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Lithium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Magnesium, total	< 0.01	0.01	mg/L	Jun-30-14	Jul-01-14	
Manganese, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Mercury, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Molybdenum, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Nickel, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Phosphorus, total	< 0.020	0.020	mg/L	Jun-30-14	Jul-01-14	

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Analyte	Result / *Recovery*	MRL / *Limit*	Units	Prepared	Analyzed	Notes
Sample ID: FIELD BLANK (4061808-13) [Water] Sampled: Jun-25-14, Continued						
Total Recoverable Metals, Continued						
Potassium, total	< 0.02	0.02	mg/L	Jun-30-14	Jul-01-14	
Selenium, total	< 0.0005	0.0005	mg/L	Jun-30-14	Jul-01-14	
Silicon, total	< 0.5	0.5	mg/L	Jun-30-14	Jul-01-14	
Silver, total	< 0.00005	0.00005	mg/L	Jun-30-14	Jul-01-14	
Sodium, total	< 0.02	0.02	mg/L	Jun-30-14	Jul-01-14	
Strontium, total	< 0.001	0.001	mg/L	Jun-30-14	Jul-01-14	
Sulfur, total	< 1	1	mg/L	Jun-30-14	Jul-01-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Thallium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Thorium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	
Tin, total	< 0.0002	0.0002	mg/L	Jun-30-14	Jul-01-14	
Titanium, total	< 0.005	0.005	mg/L	Jun-30-14	Jul-01-14	
Uranium, total	< 0.00002	0.00002	mg/L	Jun-30-14	Jul-01-14	
Vanadium, total	< 0.001	0.001	mg/L	Jun-30-14	Jul-01-14	
Zinc, total	< 0.004	0.004	mg/L	Jun-30-14	Jul-01-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Jun-30-14	Jul-01-14	

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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in “batches” and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method’s precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method’s accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Anions, Batch B4F1235										
Blank (B4F1235-BLK1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
Blank (B4F1235-BLK2)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
Blank (B4F1235-BLK3)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
LCS (B4F1235-BS1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Alkalinity, Total as CaCO3	101	1	mg/L	100		101	96-108			
LCS (B4F1235-BS2)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Alkalinity, Total as CaCO3	101	1	mg/L	100		101	96-108			
LCS (B4F1235-BS3)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Alkalinity, Total as CaCO3	104	1	mg/L	100		104	96-108			
Anions, Batch B4F1249										

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Anions, Batch B4F1249, Continued										
Blank (B4F1249-BLK1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L							
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B4F1249-BLK2)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L							
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B4F1249-BLK3)				Prepared: Jun-28-14, Analyzed: Jun-28-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Nitrogen, Nitrate as N	< 0.010	0.010	mg/L							
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B4F1249-BS1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Bromide	3.9	0.1	mg/L	4.00		97	85-115			
Chloride	15.9	0.10	mg/L	16.0		99	85-115			
Fluoride	4.10	0.01	mg/L	4.00		102	85-115			
Nitrogen, Nitrate as N	4.01	0.010	mg/L	4.00		100	85-115			
Nitrogen, Nitrite as N	1.88	0.010	mg/L	2.00		94	85-115			
Sulfate	15.9	1.0	mg/L	16.0		99	85-115			
LCS (B4F1249-BS2)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Bromide	3.9	0.1	mg/L	4.00		97	85-115			
Chloride	15.6	0.10	mg/L	16.0		97	85-115			
Fluoride	3.95	0.01	mg/L	4.00		99	85-115			
Nitrogen, Nitrate as N	4.06	0.010	mg/L	4.00		101	85-115			
Nitrogen, Nitrite as N	1.86	0.010	mg/L	2.00		93	85-115			
Sulfate	15.7	1.0	mg/L	16.0		98	85-115			
LCS (B4F1249-BS3)				Prepared: Jun-28-14, Analyzed: Jun-28-14						
Bromide	3.9	0.1	mg/L	4.00		97	85-115			
Chloride	15.7	0.10	mg/L	16.0		98	85-115			
Fluoride	4.04	0.01	mg/L	4.00		101	85-115			
Nitrogen, Nitrate as N	4.10	0.010	mg/L	4.00		103	85-115			
Nitrogen, Nitrite as N	1.85	0.010	mg/L	2.00		92	85-115			
Sulfate	15.6	1.0	mg/L	16.0		97	85-115			
Duplicate (B4F1249-DUP2)		**Source: 4061808-12**		Prepared: Jun-27-14, Analyzed: Jun-27-14						
Bromide	< 0.1	0.1	mg/L		< 0.1				10	
Chloride	10.9	0.10	mg/L		11.1			1	10	
Fluoride	0.05	0.01	mg/L		0.05			2	10	
Nitrogen, Nitrate as N	0.118	0.010	mg/L		0.118			< 1	10	
Nitrogen, Nitrite as N	< 0.010	0.010	mg/L		< 0.010				10	
Sulfate	12.3	1.0	mg/L		12.4			< 1	10	
Anions, Batch B4G0081										

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Anions, Batch B4G0081, Continued										
Blank (B4G0081-BLK1)				Prepared: Jun-26-14, Analyzed: Jun-26-14						
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L							
LCS (B4G0081-BS1)				Prepared: Jun-26-14, Analyzed: Jun-26-14						
Nitrogen, Nitrite as N	0.04	0.01	mg/L	0.0400		99	80-120			
Duplicate (B4G0081-DUP1)		**Source: 4061808-03**		Prepared: Jun-26-14, Analyzed: Jun-26-14						
Nitrogen, Nitrite as N	< 0.01	0.01	mg/L		< 0.01				18	
Dissolved Metals, Batch B4F1282										
Blank (B4F1282-BLK1)				Prepared: Jul-03-14, Analyzed: Jul-03-14						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Blank (B4F1282-BLK2)				Prepared: Jul-03-14, Analyzed: Jul-03-14						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4F1282, Continued										
Blank (B4F1282-BLK2), Continued				Prepared: Jul-03-14, Analyzed: Jul-03-14						
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Reference (B4F1282-SRM1)				Prepared: Jul-03-14, Analyzed: Jul-03-14						
Aluminum, dissolved	0.217	0.005	mg/L	0.233		93	58-142			
Antimony, dissolved	0.0438	0.0001	mg/L	0.0430		102	75-125			
Arsenic, dissolved	0.402	0.0005	mg/L	0.438		92	81-119			
Barium, dissolved	3.35	0.005	mg/L	3.35		100	83-117			
Beryllium, dissolved	0.214	0.0001	mg/L	0.213		100	80-120			
Boron, dissolved	1.79	0.004	mg/L	1.74		103	74-117			
Cadmium, dissolved	0.209	0.00001	mg/L	0.224		93	83-117			
Calcium, dissolved	7.7	0.2	mg/L	7.69		100	76-124			
Chromium, dissolved	0.423	0.0005	mg/L	0.437		97	81-119			
Cobalt, dissolved	0.122	0.00005	mg/L	0.128		95	76-124			
Copper, dissolved	0.840	0.0002	mg/L	0.844		100	84-116			
Iron, dissolved	1.25	0.010	mg/L	1.29		97	74-126			
Lead, dissolved	0.108	0.0001	mg/L	0.112		96	72-128			
Lithium, dissolved	0.111	0.0001	mg/L	0.104		106	60-140			
Magnesium, dissolved	6.72	0.01	mg/L	6.92		97	81-119			
Manganese, dissolved	0.321	0.0002	mg/L	0.345		93	84-116			
Molybdenum, dissolved	0.410	0.0001	mg/L	0.426		96	83-117			
Nickel, dissolved	0.827	0.0002	mg/L	0.840		98	74-126			
Phosphorus, dissolved	0.49	0.02	mg/L	0.495		99	68-132			
Potassium, dissolved	3.12	0.02	mg/L	3.19		98	74-126			
Selenium, dissolved	0.0305	0.0005	mg/L	0.0331		92	70-130			
Sodium, dissolved	18.5	0.02	mg/L	19.1		97	72-128			
Strontium, dissolved	0.886	0.001	mg/L	0.916		97	84-113			
Thallium, dissolved	0.0364	0.00002	mg/L	0.0393		93	57-143			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4F1282, Continued										
Reference (B4F1282-SRM1), Continued				Prepared: Jul-03-14, Analyzed: Jul-03-14						
Uranium, dissolved	0.258	0.00002	mg/L	0.266		97	85-115			
Vanadium, dissolved	0.826	0.001	mg/L	0.869		95	87-113			
Zinc, dissolved	0.814	0.004	mg/L	0.881		92	72-128			
Reference (B4F1282-SRM2)				Prepared: Jul-03-14, Analyzed: Jul-03-14						
Aluminum, dissolved	0.205	0.005	mg/L	0.233		88	58-142			
Antimony, dissolved	0.0420	0.0001	mg/L	0.0430		98	75-125			
Arsenic, dissolved	0.388	0.0005	mg/L	0.438		89	81-119			
Barium, dissolved	3.24	0.005	mg/L	3.35		97	83-117			
Beryllium, dissolved	0.201	0.0001	mg/L	0.213		94	80-120			
Boron, dissolved	1.68	0.004	mg/L	1.74		97	74-117			
Cadmium, dissolved	0.201	0.00001	mg/L	0.224		90	83-117			
Calcium, dissolved	7.5	0.2	mg/L	7.69		97	76-124			
Chromium, dissolved	0.410	0.0005	mg/L	0.437		94	81-119			
Cobalt, dissolved	0.118	0.00005	mg/L	0.128		92	76-124			
Copper, dissolved	0.816	0.0002	mg/L	0.844		97	84-116			
Iron, dissolved	1.21	0.010	mg/L	1.29		94	74-126			
Lead, dissolved	0.106	0.0001	mg/L	0.112		94	72-128			
Lithium, dissolved	0.105	0.0001	mg/L	0.104		101	60-140			
Magnesium, dissolved	6.44	0.01	mg/L	6.92		93	81-119			
Manganese, dissolved	0.311	0.0002	mg/L	0.345		90	84-116			
Molybdenum, dissolved	0.395	0.0001	mg/L	0.426		93	83-117			
Nickel, dissolved	0.806	0.0002	mg/L	0.840		96	74-126			
Phosphorus, dissolved	0.45	0.02	mg/L	0.495		91	68-132			
Potassium, dissolved	3.00	0.02	mg/L	3.19		94	74-126			
Selenium, dissolved	0.0288	0.0005	mg/L	0.0331		87	70-130			
Sodium, dissolved	17.7	0.02	mg/L	19.1		93	72-128			
Strontium, dissolved	0.857	0.001	mg/L	0.916		94	84-113			
Thallium, dissolved	0.0353	0.00002	mg/L	0.0393		90	57-143			
Uranium, dissolved	0.253	0.00002	mg/L	0.266		95	85-115			
Vanadium, dissolved	0.797	0.001	mg/L	0.869		92	87-113			
Zinc, dissolved	0.784	0.004	mg/L	0.881		89	72-128			
General Parameters, Batch B4F1197										
Blank (B4F1197-BLK1)				Prepared: Jun-26-14, Analyzed: Jul-02-14						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B4F1197-BLK2)				Prepared: Jun-26-14, Analyzed: Jul-02-14						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
LCS (B4F1197-BS1)				Prepared: Jun-26-14, Analyzed: Jul-02-14						
Nitrogen, Total Kjeldahl	10.8	0.05	mg/L	10.0		108	89-116			
LCS (B4F1197-BS2)				Prepared: Jun-26-14, Analyzed: Jul-02-14						
Nitrogen, Total Kjeldahl	10.6	0.05	mg/L	10.0		106	89-116			
General Parameters, Batch B4F1217										
Blank (B4F1217-BLK1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Nitrogen, Nitrate+Nitrite as N	< 0.005	0.005	mg/L							
LCS (B4F1217-BS1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Nitrogen, Nitrate+Nitrite as N	100	0.005	mg/L	100		100	91-108			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
General Parameters, Batch B4F1217, Continued										
Duplicate (B4F1217-DUP1)		**Source: 4061808-02**		Prepared: Jun-27-14, Analyzed: Jun-27-14						
Nitrogen, Nitrate+Nitrite as N	0.02	0.005	mg/L		0.02				15	
General Parameters, Batch B4F1235										
Blank (B4F1235-BLK1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Conductivity (EC)	< 2	2	uS/cm							
Blank (B4F1235-BLK2)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Conductivity (EC)	< 2	2	uS/cm							
Blank (B4F1235-BLK3)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Conductivity (EC)	< 2	2	uS/cm							
LCS (B4F1235-BS4)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Conductivity (EC)	1410	2	uS/cm	1410		100	93-104			
LCS (B4F1235-BS5)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Conductivity (EC)	1410	2	uS/cm	1410		100	93-104			
LCS (B4F1235-BS6)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Conductivity (EC)	1410	2	uS/cm	1410		100	93-104			
Reference (B4F1235-SRM1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
pH	7.00	0.01	pH units	7.00		100	98-102			
Reference (B4F1235-SRM2)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
pH	7.00	0.01	pH units	7.00		100	98-102			
Reference (B4F1235-SRM3)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
pH	6.97	0.01	pH units	7.00		100	98-102			
General Parameters, Batch B4F1237										
Blank (B4F1237-BLK1)				Prepared: Jun-30-14, Analyzed: Jun-30-14						
Solids, Total Suspended	< 1	1	mg/L							
Blank (B4F1237-BLK2)				Prepared: Jun-30-14, Analyzed: Jun-30-14						
Solids, Total Suspended	< 1	1	mg/L							
LCS (B4F1237-BS1)				Prepared: Jun-30-14, Analyzed: Jun-30-14						
Solids, Total Suspended	50	1	mg/L	50.0		100	85-110			
LCS (B4F1237-BS2)				Prepared: Jun-30-14, Analyzed: Jun-30-14						
Solids, Total Suspended	51	1	mg/L	50.0		103	85-110			
General Parameters, Batch B4F1259										
Blank (B4F1259-BLK1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
LCS (B4F1259-BS1)				Prepared: Jun-27-14, Analyzed: Jun-27-14						
Nitrogen, Ammonia as N, Total	9.94	0.005	mg/L	10.0		99	86-111			
General Parameters, Batch B4F1327										

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
General Parameters, Batch B4F1327, Continued										
Blank (B4F1327-BLK1)				Prepared: Jun-30-14, Analyzed: Jun-30-14						
Chemical Oxygen Demand	< 5	5	mg/L							
LCS (B4F1327-BS1)				Prepared: Jun-30-14, Analyzed: Jun-30-14						
Chemical Oxygen Demand	49	5	mg/L	50.0		97	82-119			
Total Recoverable Metals, Batch B4F1288										
Blank (B4F1288-BLK1)				Prepared: Jun-30-14, Analyzed: Jul-01-14						
Aluminum, total	< 0.005	0.005	mg/L							
Antimony, total	< 0.0001	0.0001	mg/L							
Arsenic, total	< 0.0005	0.0005	mg/L							
Barium, total	< 0.005	0.005	mg/L							
Beryllium, total	< 0.0001	0.0001	mg/L							
Bismuth, total	< 0.0001	0.0001	mg/L							
Boron, total	< 0.004	0.004	mg/L							
Cadmium, total	< 0.00001	0.00001	mg/L							
Calcium, total	< 0.2	0.2	mg/L							
Chromium, total	< 0.0005	0.0005	mg/L							
Cobalt, total	< 0.00005	0.00005	mg/L							
Copper, total	< 0.0002	0.0002	mg/L							
Iron, total	< 0.01	0.01	mg/L							
Lead, total	< 0.0001	0.0001	mg/L							
Lithium, total	< 0.0001	0.0001	mg/L							
Magnesium, total	< 0.01	0.01	mg/L							
Manganese, total	< 0.0002	0.0002	mg/L							
Mercury, total	< 0.00002	0.00002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.020	0.020	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.004	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Duplicate (B4F1288-DUP1)		**Source: 4061808-08**		Prepared: Jun-30-14, Analyzed: Jul-01-14						
Aluminum, total	11.0	0.005	mg/L		11.0			< 1	29	
Antimony, total	< 0.0001	0.0001	mg/L		< 0.0001				31	
Arsenic, total	0.0007	0.0005	mg/L		0.0007				15	
Barium, total	0.061	0.005	mg/L		0.062			1	9	
Beryllium, total	0.0004	0.0001	mg/L		0.0005			8	16	
Bismuth, total	< 0.0001	0.0001	mg/L		< 0.0001				20	
Boron, total	0.029	0.004	mg/L		0.050			54	29	RPD
Cadmium, total	0.00034	0.00001	mg/L		0.00035			< 1	33	
Calcium, total	90.4	0.2	mg/L		91.1			< 1	12	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B4F1288, Continued										
Duplicate (B4F1288-DUP1), Continued		**Source: 4061808-08**		Prepared: Jun-30-14, Analyzed: Jul-01-14						
Chromium, total	0.0008	0.0005	mg/L		0.0008				12	
Cobalt, total	0.0864	0.00005	mg/L		0.0871			< 1	13	
Copper, total	0.142	0.0002	mg/L		0.143			< 1	37	
Iron, total	57.2	0.01	mg/L		57.9			1	18	
Lead, total	< 0.0001	0.0001	mg/L		< 0.0001				23	
Lithium, total	0.0054	0.0001	mg/L		0.0055			1	19	
Magnesium, total	24.2	0.01	mg/L		24.2			< 1	10	
Manganese, total	9.62	0.0002	mg/L		9.77			2	13	
Mercury, total	< 0.00002	0.00002	mg/L		< 0.00002				24	
Molybdenum, total	0.0004	0.0001	mg/L		0.0004				20	
Nickel, total	0.0245	0.0002	mg/L		0.0244			< 1	28	
Phosphorus, total	< 0.020	0.020	mg/L		< 0.020				24	
Potassium, total	4.90	0.02	mg/L		4.96			1	13	
Selenium, total	0.0018	0.0005	mg/L		0.0019				24	
Silicon, total	12.2	0.5	mg/L		12.1			< 1	11	
Silver, total	< 0.00005	0.00005	mg/L		0.00006				18	
Sodium, total	17.3	0.02	mg/L		17.4			< 1	10	
Strontium, total	0.494	0.001	mg/L		0.501			1	9	
Sulfur, total	150	1	mg/L		160			< 1	24	
Tellurium, total	< 0.0002	0.0002	mg/L		< 0.0002				20	
Thallium, total	< 0.00002	0.00002	mg/L		< 0.00002				24	
Thorium, total	0.0009	0.0001	mg/L		0.0009			3	18	
Tin, total	< 0.0002	0.0002	mg/L		< 0.0002				18	
Titanium, total	< 0.005	0.005	mg/L		< 0.005				32	
Uranium, total	0.00055	0.00002	mg/L		0.00055			< 1	14	
Vanadium, total	< 0.001	0.001	mg/L		< 0.001				17	
Zinc, total	0.046	0.004	mg/L		0.045			2	8	
Zirconium, total	0.0001	0.0001	mg/L		< 0.0001				60	
Matrix Spike (B4F1288-MS1)		**Source: 4061808-09**		Prepared: Jun-30-14, Analyzed: Jul-01-14						
Antimony, total	0.443	0.0001	mg/L	0.400	< 0.0001	111	84-125			
Arsenic, total	0.189	0.0005	mg/L	0.200	< 0.0005	95	85-116			
Barium, total	1.04	0.005	mg/L	1.00	0.026	101	87-114			
Beryllium, total	0.105	0.0001	mg/L	0.100	< 0.0001	105	72-116			
Cadmium, total	0.102	0.00001	mg/L	0.100	0.00002	102	90-112			
Chromium, total	0.417	0.0005	mg/L	0.400	< 0.0005	104	89-120			
Cobalt, total	0.423	0.00005	mg/L	0.400	0.00029	106	88-120			
Copper, total	0.435	0.0002	mg/L	0.400	0.0012	108	88-125			
Iron, total	2.29	0.01	mg/L	2.00	0.16	107	88-119			
Lead, total	0.217	0.0001	mg/L	0.200	< 0.0001	108	89-118			
Manganese, total	0.550	0.0002	mg/L	0.400	0.131	105	84-120			
Nickel, total	0.390	0.0002	mg/L	0.400	< 0.0002	98	87-119			
Selenium, total	0.0969	0.0005	mg/L	0.100	< 0.0005	97	85-113			
Silver, total	0.103	0.00005	mg/L	0.100	0.00005	103	89-119			
Thallium, total	0.109	0.00002	mg/L	0.100	< 0.00002	109	92-119			
Vanadium, total	0.413	0.001	mg/L	0.400	< 0.001	103	87-117			
Zinc, total	0.985	0.004	mg/L	1.00	0.004	98	85-116			
Reference (B4F1288-SRM1)				Prepared: Jun-30-14, Analyzed: Jul-01-14						
Aluminum, total	0.296	0.005	mg/L	0.296		100	81-129			
Antimony, total	0.0524	0.0001	mg/L	0.0505		104	88-114			
Arsenic, total	0.119	0.0005	mg/L	0.122		98	88-114			
Barium, total	0.759	0.005	mg/L	0.777		98	72-104			
Beryllium, total	0.0508	0.0001	mg/L	0.0488		104	76-131			
Boron, total	3.63	0.004	mg/L	3.40		107	75-121			
Cadmium, total	0.0503	0.00001	mg/L	0.0490		103	89-111			
Calcium, total	10.8	0.2	mg/L	10.2		106	86-121			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4061808
REPORTED Jul-04-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B4F1288, Continued										
Reference (B4F1288-SRM1), Continued				Prepared: Jun-30-14, Analyzed: Jul-01-14						
Chromium, total	0.240	0.0005	mg/L	0.242		99	89-114			
Cobalt, total	0.0379	0.00005	mg/L	0.0366		104	91-113			
Copper, total	0.533	0.0002	mg/L	0.487		109	91-115			
Iron, total	0.51	0.01	mg/L	0.469		109	77-124			
Lead, total	0.210	0.0001	mg/L	0.193		109	92-113			
Lithium, total	0.436	0.0001	mg/L	0.390		112	85-115			
Magnesium, total	3.65	0.01	mg/L	3.31		110	78-120			
Manganese, total	0.109	0.0002	mg/L	0.109		100	90-114			
Mercury, total	0.00448	0.00002	mg/L	0.00456		98	50-150			
Molybdenum, total	0.203	0.0001	mg/L	0.197		103	90-111			
Nickel, total	0.243	0.0002	mg/L	0.242		100	90-111			
Phosphorus, total	0.204	0.020	mg/L	0.233		88	85-115			
Potassium, total	6.50	0.02	mg/L	5.93		110	84-113			
Selenium, total	0.114	0.0005	mg/L	0.115		99	85-115			
Sodium, total	8.12	0.02	mg/L	7.64		106	82-123			
Strontium, total	0.406	0.001	mg/L	0.363		112	88-112			
Thallium, total	0.0866	0.00002	mg/L	0.0794		109	91-114			
Uranium, total	0.0193	0.00002	mg/L	0.0192		101	85-120			
Vanadium, total	0.393	0.001	mg/L	0.376		104	86-111			
Zinc, total	2.57	0.004	mg/L	2.42		106	85-111			
Volatile Organic Compounds (VOC), Batch B4F1268										
Blank (B4F1268-BLK1)				Prepared: Jun-29-14, Analyzed: Jun-29-14						
Benzene	< 0.5	0.5	ug/L							
Ethylbenzene	< 1.0	1.0	ug/L							
Methyl tert-butyl ether	< 1.0	1.0	ug/L							
Toluene	< 1.0	1.0	ug/L							
Xylenes (total)	< 2.0	2.0	ug/L							
Surrogate: Toluene-d8	*27.0*		*ug/L*	*25.0*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.5*		*ug/L*	*25.0*		*102*	*70-130*			
LCS (B4F1268-BS1)				Prepared: Jun-29-14, Analyzed: Jun-29-14						
Benzene	21.2	0.5	ug/L	20.0		106	70-130			
Ethylbenzene	20.5	1.0	ug/L	20.0		102	70-130			
Methyl tert-butyl ether	21.8	1.0	ug/L	20.0		109	70-130			
Toluene	21.8	1.0	ug/L	20.0		109	70-130			
Xylenes (total)	63.4	2.0	ug/L	60.0		106	70-130			
Surrogate: Toluene-d8	*26.9*		*ug/L*	*25.0*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.1*		*ug/L*	*25.0*		*100*	*70-130*			

QC Qualifiers:

RPD Relative percent difference (RPD) of duplicate analysis are outside of control limits for unknown reason(s).

CERTIFICATE OF ANALYSIS

REPORTED TO	Morrison Hershfield Limited 310 - 4321 Still Creek Drive Burnaby, BC V5C 6S7	**TEL** **FAX**	(604) 454-0402 (604) 454-0403
ATTENTION	Josie Gilson	**WORK ORDER**	4100929
PO NUMBER		**RECEIVED / TEMP**	Oct-15-14 10:50 / 7°C
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14
PROJECT INFO	5104016-RMOW	**COC NUMBER**	B21618

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Issued By: **Jennifer Shanko, AScT For Brent Coates, BSc**
Business Manager, Richmond

Please contact CARO if more information is needed or to provide feedback on our services.

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www.caro.ca

ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analysis Description	Method Reference	Technique	Location
Alkalinity (Speciated)	APHA 2320 B	Titration with H2SO4 to pH 4.5	Kelowna
Anions in Water by IC	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Chemical Oxygen Demand (low level)	APHA 5220 D	Closed Reflux, Colorimetry	Kelowna
Conductivity in Water	APHA 2510 B	Conductivity Meter	Kelowna
Dissolved Metals	APHA 3030 B / APHA 3125 B	0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
EPH in Water	EPA 3510C * / BCMOE EPHw	Liquid-Liquid Extraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness (as CaCO3)	APHA 2340 B	Calculation	N/A
L/HEPH	BCMOE L/HEPH	Calculation	N/A
Nitrate+Nitrite-N in Water	APHA 4500-NO3- F	Automated Colorimetry (Cadmium Reduction)	Kelowna
Nitrite-N in Water, colorimetric	APHA 4500-NO2 B	Colorimetry	Kelowna
PAH in Water (Low Level)	EPA 3510C * / EPA 8270D	Liquid-Liquid Extraction (Base/Neutral) / GC-MSD (SIM)	Richmond
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Total Ammonia-N in Water	APHA 4500-NH3 G	Automated Colorimetry (Phenate)	Kelowna
Total Kjeldahl Nitrogen in Water	EPA 351.2 *	Sulfuric Acid Digestion, Automated Colorimetry	Kelowna
Total Recoverable Metals	APHA 3030E * / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
Total Suspended Solids	APHA 2540 D	Gravimetry (Dried at 103-105C)	Kelowna
VH in Water	EPA 5030B/5021A / BCMOE VHw	Purge&Trap or Headspace / Gas Chromatography (GC-FID)	Richmond
VOC in Water	EPA 5030B/5021A / EPA 8260B	Purge&Trap or Headspace / GC-MS (SIM)	Richmond
VPHw	BCMOE VPH	Calculation	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
BCMOE	British Columbia Environmental Laboratory Manual, 2013, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre
µS/cm	Microsiemens per centimetre

SAMPLE ANALYTICAL DATA

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4100929-01) [Water] Sampled: Oct-14-14						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**41.5**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	**0.12**	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**359**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**273**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**273**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	**24**	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**1240**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**15.8**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.05**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**16.2**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.84**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**603**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
VPHw	< 100	100	µg/L	N/A	N/A	
LEPHw	< 100	100	µg/L	N/A	N/A	
HEPHw	< 100	100	µg/L	N/A	N/A	
Total PAH	< 0.05	0.05	µg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**483**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.05**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**16.2**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Oct-17-14	
Antimony, dissolved	**0.0002**	0.0001	mg/L	N/A	Oct-17-14	
Arsenic, dissolved	**0.0148**	0.0005	mg/L	N/A	Oct-17-14	
Barium, dissolved	**0.029**	0.005	mg/L	N/A	Oct-17-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Boron, dissolved	**0.302**	0.004	mg/L	N/A	Oct-17-14	
Cadmium, dissolved	**0.00001**	0.00001	mg/L	N/A	Oct-17-14	
Calcium, dissolved	**161**	0.2	mg/L	N/A	Oct-17-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Cobalt, dissolved	**0.0147**	0.00005	mg/L	N/A	Oct-17-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Iron, dissolved	**63.1**	0.010	mg/L	N/A	Oct-17-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Lithium, dissolved	**0.0001**	0.0001	mg/L	N/A	Oct-17-14	
Magnesium, dissolved	**19.8**	0.01	mg/L	N/A	Oct-17-14	
Manganese, dissolved	**3.35**	0.0002	mg/L	N/A	Oct-17-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4100929-01) [Water] Sampled: Oct-14-14, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-17-14	
Molybdenum, dissolved	**0.0165**	0.0001	mg/L	N/A	Oct-17-14	
Nickel, dissolved	**0.0031**	0.0002	mg/L	N/A	Oct-17-14	
Phosphorus, dissolved	**0.13**	0.02	mg/L	N/A	Oct-17-14	
Potassium, dissolved	**21.9**	0.02	mg/L	N/A	Oct-17-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Silicon, dissolved	**15.6**	0.5	mg/L	N/A	Oct-17-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Oct-17-14	
Sodium, dissolved	**33.7**	0.02	mg/L	N/A	Oct-17-14	
Strontium, dissolved	**0.627**	0.001	mg/L	N/A	Oct-17-14	
Sulfur, dissolved	**118**	1	mg/L	N/A	Oct-17-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-17-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Oct-17-14	
Uranium, dissolved	**0.00026**	0.00002	mg/L	N/A	Oct-17-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Oct-17-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Oct-17-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	µg/L	N/A	Oct-16-14	
EPHw (10-19)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
EPHw (19-32)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acenaphthylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acridine	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) pyrene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (b) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (g,h,i) perylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (k) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Chrysene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Dibenz (a,h) anthracene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluorene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Naphthalene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Phenanthrene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Quinoline	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Surrogate: Naphthalene-d8	*79 %*	*40-96*		*Oct-17-14*	*Oct-18-14*	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4100929-01) [Water] Sampled: Oct-14-14, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*80 %*	*45-92*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Phenanthrene-d10	*77 %*	*48-90*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Chrysene-d12	*78 %*	*41-96*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Perylene-d12	*74 %*	*47-104*		*Oct-17-14*	*Oct-18-14*	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
Bromodichloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Bromoform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Carbon tetrachloride	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chlorobenzene	< 2.0	1.0	µg/L	N/A	Oct-16-14	RA1
Chloroethane	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Chloroform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Dibromochloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dibromoethane	< 0.3	0.3	µg/L	N/A	Oct-16-14	
Dibromomethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloropropane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Ethylbenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methylene chloride	< 3.0	3.0	µg/L	N/A	Oct-16-14	
Styrene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Tetrachloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Toluene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichlorofluoromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Vinyl chloride	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Xylenes (total)	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Surrogate: Toluene-d8	*98 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 4-Bromofluorobenzene	*102 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*93 %*	*70-130*		*N/A*	*Oct-16-14*	
Sample ID: MW2S (4100929-02) [Water] Sampled: Oct-14-14						

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4100929-02) [Water] Sampled: Oct-14-14, Continued						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**12.6**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	**0.10**	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	**0.001**	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**96.9**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**142**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**142**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	**15**	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**522**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**6.00**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.05**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**6.63**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.86**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**579**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
VPHw	< 100	100	µg/L	N/A	N/A	
LEPHw	< 100	100	µg/L	N/A	N/A	
HEPHw	**106**	100	µg/L	N/A	N/A	
Total PAH	< 0.05	0.05	µg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**161**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.05**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**6.68**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Oct-17-14	
Antimony, dissolved	**0.0002**	0.0001	mg/L	N/A	Oct-17-14	
Arsenic, dissolved	**0.0078**	0.0005	mg/L	N/A	Oct-17-14	
Barium, dissolved	**0.099**	0.005	mg/L	N/A	Oct-17-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Boron, dissolved	**0.148**	0.004	mg/L	N/A	Oct-17-14	
Cadmium, dissolved	< 0.00001	0.00001	mg/L	N/A	Oct-17-14	
Calcium, dissolved	**49.0**	0.2	mg/L	N/A	Oct-17-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Cobalt, dissolved	**0.00362**	0.00005	mg/L	N/A	Oct-17-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Iron, dissolved	**47.3**	0.010	mg/L	N/A	Oct-17-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Magnesium, dissolved	**9.42**	0.01	mg/L	N/A	Oct-17-14	
Manganese, dissolved	**2.37**	0.0002	mg/L	N/A	Oct-17-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4100929-02) [Water] Sampled: Oct-14-14, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-17-14	
Molybdenum, dissolved	**0.0066**	0.0001	mg/L	N/A	Oct-17-14	
Nickel, dissolved	**0.0365**	0.0002	mg/L	N/A	Oct-17-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Oct-17-14	
Potassium, dissolved	**13.3**	0.02	mg/L	N/A	Oct-17-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Silicon, dissolved	**10.8**	0.5	mg/L	N/A	Oct-17-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Oct-17-14	
Sodium, dissolved	**12.4**	0.02	mg/L	N/A	Oct-17-14	
Strontium, dissolved	**0.286**	0.001	mg/L	N/A	Oct-17-14	
Sulfur, dissolved	**31**	1	mg/L	N/A	Oct-17-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-17-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Oct-17-14	
Uranium, dissolved	**0.00007**	0.00002	mg/L	N/A	Oct-17-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Oct-17-14	
Zinc, dissolved	**0.008**	0.004	mg/L	N/A	Oct-17-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	µg/L	N/A	Oct-16-14	
EPHw (10-19)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
EPHw (19-32)	**106**	100	µg/L	Oct-17-14	Oct-18-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acenaphthylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acridine	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) pyrene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (b) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (g,h,i) perylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (k) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Chrysene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Dibenz (a,h) anthracene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluorene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Naphthalene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Phenanthrene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Quinoline	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Surrogate: Naphthalene-d8	*79 %*	*40-96*		*Oct-17-14*	*Oct-18-14*	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4100929-02) [Water] Sampled: Oct-14-14, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*73 %*	*45-92*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Phenanthrene-d10	*77 %*	*48-90*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Chrysene-d12	*78 %*	*41-96*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Perylene-d12	*70 %*	*47-104*		*Oct-17-14*	*Oct-18-14*	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
Bromodichloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Bromoform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Carbon tetrachloride	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chloroethane	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Chloroform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Dibromochloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dibromoethane	< 0.3	0.3	µg/L	N/A	Oct-16-14	
Dibromomethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloropropane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Ethylbenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methylene chloride	< 3.0	3.0	µg/L	N/A	Oct-16-14	
Styrene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Tetrachloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Toluene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichlorofluoromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Vinyl chloride	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Xylenes (total)	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Surrogate: Toluene-d8	*95 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 4-Bromofluorobenzene	*97 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*86 %*	*70-130*		*N/A*	*Oct-16-14*	
Sample ID: MW3 (4100929-03) [Water] Sampled: Oct-14-14						

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4100929-03) [Water] Sampled: Oct-14-14, Continued						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**12.4**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**32.1**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**35**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**35**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	< 5	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**186**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**0.426**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.007**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**0.43**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.61**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**18**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
VPHw	< 100	100	µg/L	N/A	N/A	
LEPHw	< 100	100	µg/L	N/A	N/A	
HEPHw	< 100	100	µg/L	N/A	N/A	
Total PAH	< 0.05	0.05	µg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**50.5**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.007**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.44**	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.012**	0.005	mg/L	N/A	Oct-17-14	
Antimony, dissolved	**0.0001**	0.0001	mg/L	N/A	Oct-17-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Barium, dissolved	**0.071**	0.005	mg/L	N/A	Oct-17-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Boron, dissolved	**0.014**	0.004	mg/L	N/A	Oct-17-14	
Cadmium, dissolved	**0.00017**	0.00001	mg/L	N/A	Oct-17-14	
Calcium, dissolved	**15.1**	0.2	mg/L	N/A	Oct-17-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Cobalt, dissolved	**0.00575**	0.00005	mg/L	N/A	Oct-17-14	
Copper, dissolved	**0.0018**	0.0002	mg/L	N/A	Oct-17-14	
Iron, dissolved	**0.202**	0.010	mg/L	N/A	Oct-17-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Magnesium, dissolved	**3.14**	0.01	mg/L	N/A	Oct-17-14	
Manganese, dissolved	**2.38**	0.0002	mg/L	N/A	Oct-17-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4100929-03) [Water] Sampled: Oct-14-14, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-17-14	
Molybdenum, dissolved	**0.0013**	0.0001	mg/L	N/A	Oct-17-14	
Nickel, dissolved	**0.0018**	0.0002	mg/L	N/A	Oct-17-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Oct-17-14	
Potassium, dissolved	**3.84**	0.02	mg/L	N/A	Oct-17-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Silicon, dissolved	**9.2**	0.5	mg/L	N/A	Oct-17-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Oct-17-14	
Sodium, dissolved	**14.5**	0.02	mg/L	N/A	Oct-17-14	
Strontium, dissolved	**0.166**	0.001	mg/L	N/A	Oct-17-14	
Sulfur, dissolved	**9**	1	mg/L	N/A	Oct-17-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Thallium, dissolved	**0.00006**	0.00002	mg/L	N/A	Oct-17-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Oct-17-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-17-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Oct-17-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Oct-17-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	µg/L	N/A	Oct-16-14	
EPHw (10-19)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
EPHw (19-32)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acenaphthylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acridine	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) pyrene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (b) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (g,h,i) perylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (k) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Chrysene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Dibenz (a,h) anthracene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluorene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Naphthalene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Phenanthrene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Quinoline	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Surrogate: Naphthalene-d8	*74 %*	*40-96*		*Oct-17-14*	*Oct-18-14*	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4100929-03) [Water] Sampled: Oct-14-14, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*73 %*	*45-92*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Phenanthrene-d10	*68 %*	*48-90*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Chrysene-d12	*86 %*	*41-96*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Perylene-d12	*72 %*	*47-104*		*Oct-17-14*	*Oct-18-14*	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
Bromodichloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Bromoform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Carbon tetrachloride	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chloroethane	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Chloroform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Dibromochloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dibromoethane	< 0.3	0.3	µg/L	N/A	Oct-16-14	
Dibromomethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloropropane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Ethylbenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methylene chloride	< 3.0	3.0	µg/L	N/A	Oct-16-14	
Styrene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Tetrachloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Toluene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichlorofluoromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Vinyl chloride	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Xylenes (total)	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Surrogate: Toluene-d8	*93 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 4-Bromofluorobenzene	*92 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*82 %*	*70-130*		*N/A*	*Oct-16-14*	
Sample ID: MW4 (4100929-04) [Water] Sampled: Oct-14-14						F1

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4100929-04) [Water] Sampled: Oct-14-14, Continued						F1
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**12.5**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	**0.15**	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	**0.001**	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**39.2**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**64**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**64**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	**10**	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**258**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**0.846**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.04**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**1.57**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.79**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**275**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
VPHw	< 100	100	µg/L	N/A	N/A	
LEPHw	< 100	100	µg/L	N/A	N/A	
HEPHw	< 100	100	µg/L	N/A	N/A	
Total PAH	< 0.05	0.05	µg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**70.9**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.04**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.61**	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.676**	0.005	mg/L	N/A	Oct-17-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Arsenic, dissolved	**0.0018**	0.0005	mg/L	N/A	Oct-17-14	
Barium, dissolved	**0.082**	0.005	mg/L	N/A	Oct-17-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Boron, dissolved	**0.034**	0.004	mg/L	N/A	Oct-17-14	
Cadmium, dissolved	**0.00024**	0.00001	mg/L	N/A	Oct-17-14	
Calcium, dissolved	**23.0**	0.2	mg/L	N/A	Oct-17-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Cobalt, dissolved	**0.0158**	0.00005	mg/L	N/A	Oct-17-14	
Copper, dissolved	**0.0031**	0.0002	mg/L	N/A	Oct-17-14	
Iron, dissolved	**8.73**	0.010	mg/L	N/A	Oct-17-14	
Lead, dissolved	**0.0003**	0.0001	mg/L	N/A	Oct-17-14	
Lithium, dissolved	**0.0004**	0.0001	mg/L	N/A	Oct-17-14	
Magnesium, dissolved	**3.25**	0.01	mg/L	N/A	Oct-17-14	
Manganese, dissolved	**1.37**	0.0002	mg/L	N/A	Oct-17-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4100929-04) [Water] Sampled: Oct-14-14, Continued						F1
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-17-14	
Molybdenum, dissolved	**0.0098**	0.0001	mg/L	N/A	Oct-17-14	
Nickel, dissolved	**0.0045**	0.0002	mg/L	N/A	Oct-17-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Oct-17-14	
Potassium, dissolved	**4.84**	0.02	mg/L	N/A	Oct-17-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Silicon, dissolved	**12.0**	0.5	mg/L	N/A	Oct-17-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Oct-17-14	
Sodium, dissolved	**21.2**	0.02	mg/L	N/A	Oct-17-14	
Strontium, dissolved	**0.161**	0.001	mg/L	N/A	Oct-17-14	
Sulfur, dissolved	**14**	1	mg/L	N/A	Oct-17-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Thallium, dissolved	**0.00003**	0.00002	mg/L	N/A	Oct-17-14	
Thorium, dissolved	**0.0002**	0.0001	mg/L	N/A	Oct-17-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Titanium, dissolved	**0.007**	0.005	mg/L	N/A	Oct-17-14	
Uranium, dissolved	**0.00015**	0.00002	mg/L	N/A	Oct-17-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Oct-17-14	
Zinc, dissolved	**0.004**	0.004	mg/L	N/A	Oct-17-14	
Zirconium, dissolved	**0.0006**	0.0001	mg/L	N/A	Oct-17-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	µg/L	N/A	Oct-16-14	
EPHw (10-19)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
EPHw (19-32)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acenaphthylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acridine	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) pyrene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (b) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (g,h,i) perylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (k) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Chrysene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Dibenz (a,h) anthracene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluorene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Naphthalene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Phenanthrene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Quinoline	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Surrogate: Naphthalene-d8	*68 %*	*40-96*		*Oct-17-14*	*Oct-18-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4100929-04) [Water] Sampled: Oct-14-14, Continued						F1
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*67 %*	*45-92*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Phenanthrene-d10	*70 %*	*48-90*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Chrysene-d12	*74 %*	*41-96*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Perylene-d12	*73 %*	*47-104*		*Oct-17-14*	*Oct-18-14*	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
Bromodichloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Bromoform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Carbon tetrachloride	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chloroethane	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Chloroform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Dibromochloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dibromoethane	< 0.3	0.3	µg/L	N/A	Oct-16-14	
Dibromomethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloropropane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Ethylbenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methylene chloride	< 3.0	3.0	µg/L	N/A	Oct-16-14	
Styrene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Tetrachloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Toluene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichlorofluoromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Vinyl chloride	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Xylenes (total)	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Surrogate: Toluene-d8	*96 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 4-Bromofluorobenzene	*96 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*85 %*	*70-130*		*N/A*	*Oct-16-14*	
Sample ID: MW6 (4100929-05) [Water] Sampled: Oct-14-14						

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (4100929-05) [Water] Sampled: Oct-14-14, Continued						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**80.0**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	**0.11**	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	**0.03**	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**133**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**25**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**25**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	**5**	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**626**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**0.082**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.76**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**0.87**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.29**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**1730**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
VPHw	< 100	100	µg/L	N/A	N/A	
LEPHw	< 100	100	µg/L	N/A	N/A	
HEPHw	< 100	100	µg/L	N/A	N/A	
Total PAH	< 0.05	0.05	µg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**113**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.73**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.63**	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.076**	0.005	mg/L	N/A	Oct-17-14	
Antimony, dissolved	**0.0001**	0.0001	mg/L	N/A	Oct-17-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Barium, dissolved	**0.037**	0.005	mg/L	N/A	Oct-17-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Boron, dissolved	**0.009**	0.004	mg/L	N/A	Oct-17-14	
Cadmium, dissolved	**0.00021**	0.00001	mg/L	N/A	Oct-17-14	
Calcium, dissolved	**36.3**	0.2	mg/L	N/A	Oct-17-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Cobalt, dissolved	**0.00182**	0.00005	mg/L	N/A	Oct-17-14	
Copper, dissolved	**0.0044**	0.0002	mg/L	N/A	Oct-17-14	
Iron, dissolved	**0.043**	0.010	mg/L	N/A	Oct-17-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Lithium, dissolved	**0.0001**	0.0001	mg/L	N/A	Oct-17-14	
Magnesium, dissolved	**5.46**	0.01	mg/L	N/A	Oct-17-14	
Manganese, dissolved	**0.499**	0.0002	mg/L	N/A	Oct-17-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (4100929-05) [Water] Sampled: Oct-14-14, Continued						
Dissolved Metals, Continued						
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-17-14	
Molybdenum, dissolved	**0.0002**	0.0001	mg/L	N/A	Oct-17-14	
Nickel, dissolved	**0.0016**	0.0002	mg/L	N/A	Oct-17-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Oct-17-14	
Potassium, dissolved	**4.52**	0.02	mg/L	N/A	Oct-17-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-17-14	
Silicon, dissolved	**9.3**	0.5	mg/L	N/A	Oct-17-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Oct-17-14	
Sodium, dissolved	**82.1**	0.02	mg/L	N/A	Oct-17-14	
Strontium, dissolved	**0.482**	0.001	mg/L	N/A	Oct-17-14	
Sulfur, dissolved	**46**	1	mg/L	N/A	Oct-17-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Thallium, dissolved	**0.00005**	0.00002	mg/L	N/A	Oct-17-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-17-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Oct-17-14	
Uranium, dissolved	**0.00004**	0.00002	mg/L	N/A	Oct-17-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Oct-17-14	
Zinc, dissolved	**0.005**	0.004	mg/L	N/A	Oct-17-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-17-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	µg/L	N/A	Oct-16-14	
EPHw (10-19)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
EPHw (19-32)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acenaphthylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acridine	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) pyrene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (b) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (g,h,i) perylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (k) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Chrysene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Dibenz (a,h) anthracene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluorene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Naphthalene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Phenanthrene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Quinoline	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Surrogate: Naphthalene-d8	*72 %*	*40-96*		*Oct-17-14*	*Oct-18-14*	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (4100929-05) [Water] Sampled: Oct-14-14, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Surrogate: Acenaphthene-d10	*69 %*	*45-92*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Phenanthrene-d10	*70 %*	*48-90*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Chrysene-d12	*78 %*	*41-96*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Perylene-d12	*70 %*	*47-104*		*Oct-17-14*	*Oct-18-14*	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
Bromodichloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Bromoform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Carbon tetrachloride	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chloroethane	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Chloroform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Dibromochloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dibromoethane	< 0.3	0.3	µg/L	N/A	Oct-16-14	
Dibromomethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloropropane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Ethylbenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methylene chloride	< 3.0	3.0	µg/L	N/A	Oct-16-14	
Styrene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Tetrachloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Toluene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichlorofluoromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Vinyl chloride	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Xylenes (total)	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Surrogate: Toluene-d8	*97 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 4-Bromofluorobenzene	*97 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*86 %*	*70-130*		*N/A*	*Oct-16-14*	
Sample ID: SFC2 (4100929-06) [Water] Sampled: Oct-14-14						

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC2 (4100929-06) [Water] Sampled: Oct-14-14, Continued						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**16.9**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	**0.10**	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	**0.002**	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**101**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**44**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**44**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	< 5	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**377**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**0.592**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.34**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**0.82**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.78**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**26**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**160**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.34**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.16**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**2.02**	0.005	mg/L	Oct-16-14	Oct-20-14	
Antimony, total	**0.0002**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Barium, total	**0.071**	0.005	mg/L	Oct-16-14	Oct-20-14	
Beryllium, total	**0.0001**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Boron, total	**0.084**	0.004	mg/L	Oct-16-14	Oct-20-14	
Cadmium, total	**0.00021**	0.00001	mg/L	Oct-16-14	Oct-20-14	
Calcium, total	**53.0**	0.2	mg/L	Oct-16-14	Oct-20-14	
Chromium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Cobalt, total	**0.0199**	0.00005	mg/L	Oct-16-14	Oct-20-14	
Copper, total	**0.0314**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Iron, total	**6.51**	0.01	mg/L	Oct-16-14	Oct-20-14	
Lead, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Lithium, total	**0.0019**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Magnesium, total	**6.78**	0.01	mg/L	Oct-16-14	Oct-20-14	
Manganese, total	**3.36**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Mercury, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Molybdenum, total	**0.0026**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Nickel, total	**0.0082**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Phosphorus, total	< 0.020	0.020	mg/L	Oct-16-14	Oct-20-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC2 (4100929-06) [Water] Sampled: Oct-14-14, Continued						
Total Recoverable Metals, Continued						
Potassium, total	**4.19**	0.02	mg/L	Oct-16-14	Oct-20-14	
Selenium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Silicon, total	**7.1**	0.5	mg/L	Oct-16-14	Oct-20-14	
Silver, total	< 0.00005	0.00005	mg/L	Oct-16-14	Oct-20-14	
Sodium, total	**14.1**	0.02	mg/L	Oct-16-14	Oct-20-14	
Strontium, total	**0.304**	0.001	mg/L	Oct-16-14	Oct-20-14	
Sulfur, total	**31**	1	mg/L	Oct-16-14	Oct-20-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Thallium, total	**0.00004**	0.00002	mg/L	Oct-16-14	Oct-20-14	
Thorium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Tin, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Titanium, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Uranium, total	**0.00014**	0.00002	mg/L	Oct-16-14	Oct-20-14	
Vanadium, total	< 0.001	0.001	mg/L	Oct-16-14	Oct-20-14	
Zinc, total	**0.030**	0.004	mg/L	Oct-16-14	Oct-20-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Sample ID: SFC2B (4100929-07) [Water] Sampled: Oct-14-14						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**22.6**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	**0.14**	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	**0.004**	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**676**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	**15**	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**1140**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**3.39**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.26**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**3.39**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**3.67**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**28**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**454**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.26**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**3.65**	0.10	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**10.9**	0.005	mg/L	Oct-16-14	Oct-20-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC2B (4100929-07) [Water] Sampled: Oct-14-14, Continued						
Total Recoverable Metals, Continued						
Antimony, total	**0.0001**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Arsenic, total	**0.0007**	0.0005	mg/L	Oct-16-14	Oct-20-14	
Barium, total	**0.075**	0.005	mg/L	Oct-16-14	Oct-20-14	
Beryllium, total	**0.0005**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Boron, total	**0.059**	0.004	mg/L	Oct-16-14	Oct-20-14	
Cadmium, total	**0.00068**	0.00001	mg/L	Oct-16-14	Oct-20-14	
Calcium, total	**134**	0.2	mg/L	Oct-16-14	Oct-20-14	
Chromium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Cobalt, total	**0.103**	0.00005	mg/L	Oct-16-14	Oct-20-14	
Copper, total	**0.163**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Iron, total	**30.9**	0.01	mg/L	Oct-16-14	Oct-20-14	
Lead, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Lithium, total	**0.0067**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Magnesium, total	**28.6**	0.01	mg/L	Oct-16-14	Oct-20-14	
Manganese, total	**11.0**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Mercury, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Molybdenum, total	**0.0001**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Nickel, total	**0.0343**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Phosphorus, total	< 0.020	0.020	mg/L	Oct-16-14	Oct-20-14	
Potassium, total	**11.7**	0.02	mg/L	Oct-16-14	Oct-20-14	
Selenium, total	**0.0021**	0.0005	mg/L	Oct-16-14	Oct-20-14	
Silicon, total	**10.4**	0.5	mg/L	Oct-16-14	Oct-20-14	
Silver, total	< 0.00005	0.00005	mg/L	Oct-16-14	Oct-20-14	
Sodium, total	**18.2**	0.02	mg/L	Oct-16-14	Oct-20-14	
Strontium, total	**0.689**	0.001	mg/L	Oct-16-14	Oct-20-14	
Sulfur, total	**170**	1	mg/L	Oct-16-14	Oct-20-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Thallium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Thorium, total	**0.0002**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Tin, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Titanium, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Uranium, total	**0.00039**	0.00002	mg/L	Oct-16-14	Oct-20-14	
Vanadium, total	< 0.001	0.001	mg/L	Oct-16-14	Oct-20-14	
Zinc, total	**0.080**	0.004	mg/L	Oct-16-14	Oct-20-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Sample ID: SFC4B (4100929-08) [Water] Sampled: Oct-14-14						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**26.3**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	**0.002**	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**39.6**	1.0	mg/L	N/A	Oct-16-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC4B (4100929-08) [Water] Sampled: Oct-14-14, Continued						
General Parameters						
Alkalinity, Total as CaCO3	**22**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**22**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	**25**	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**221**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**0.018**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.65**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**0.30**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.84**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	< 1	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**87.2**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.65**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.94**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.055**	0.005	mg/L	Oct-16-14	Oct-20-14	
Antimony, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Barium, total	**0.020**	0.005	mg/L	Oct-16-14	Oct-20-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Boron, total	**0.036**	0.004	mg/L	Oct-16-14	Oct-20-14	
Cadmium, total	**0.00001**	0.00001	mg/L	Oct-16-14	Oct-20-14	
Calcium, total	**30.6**	0.2	mg/L	Oct-16-14	Oct-20-14	
Chromium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Cobalt, total	**0.00024**	0.00005	mg/L	Oct-16-14	Oct-20-14	
Copper, total	**0.0019**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Iron, total	**0.18**	0.01	mg/L	Oct-16-14	Oct-20-14	
Lead, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Lithium, total	**0.0005**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Magnesium, total	**2.61**	0.01	mg/L	Oct-16-14	Oct-20-14	
Manganese, total	**0.106**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Mercury, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Molybdenum, total	**0.0004**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Nickel, total	**0.0004**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Phosphorus, total	**0.038**	0.020	mg/L	Oct-16-14	Oct-20-14	
Potassium, total	**1.82**	0.02	mg/L	Oct-16-14	Oct-20-14	
Selenium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Silicon, total	**5.6**	0.5	mg/L	Oct-16-14	Oct-20-14	
Silver, total	**0.00030**	0.00005	mg/L	Oct-16-14	Oct-20-14	
Sodium, total	**11.8**	0.02	mg/L	Oct-16-14	Oct-20-14	
Strontium, total	**0.302**	0.001	mg/L	Oct-16-14	Oct-20-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC4B (4100929-08) [Water] Sampled: Oct-14-14, Continued						
Total Recoverable Metals, Continued						
Sulfur, total	**8**	1	mg/L	Oct-16-14	Oct-20-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Thallium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Thorium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Tin, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Titanium, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Uranium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Vanadium, total	< 0.001	0.001	mg/L	Oct-16-14	Oct-20-14	
Zinc, total	**0.004**	0.004	mg/L	Oct-16-14	Oct-20-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Sample ID: SFC4B Rep (4100929-09) [Water] Sampled: Oct-14-14						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**26.2**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	**0.002**	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**39.1**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**24**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**24**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	**7**	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**221**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**0.017**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.65**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**0.38**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.95**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**1**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**81.5**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.65**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**1.03**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.050**	0.005	mg/L	Oct-16-14	Oct-20-14	
Antimony, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Barium, total	**0.019**	0.005	mg/L	Oct-16-14	Oct-20-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Boron, total	**0.035**	0.004	mg/L	Oct-16-14	Oct-20-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC4B Rep (4100929-09) [Water] Sampled: Oct-14-14, Continued						
Total Recoverable Metals, Continued						
Cadmium, total	< 0.00001	0.00001	mg/L	Oct-16-14	Oct-20-14	
Calcium, total	**28.6**	0.2	mg/L	Oct-16-14	Oct-20-14	
Chromium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Cobalt, total	**0.00023**	0.00005	mg/L	Oct-16-14	Oct-20-14	
Copper, total	**0.0017**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Iron, total	**0.17**	0.01	mg/L	Oct-16-14	Oct-20-14	
Lead, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Lithium, total	**0.0005**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Magnesium, total	**2.45**	0.01	mg/L	Oct-16-14	Oct-20-14	
Manganese, total	**0.102**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Mercury, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Molybdenum, total	**0.0004**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Nickel, total	**0.0004**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Phosphorus, total	**0.021**	0.020	mg/L	Oct-16-14	Oct-20-14	
Potassium, total	**1.71**	0.02	mg/L	Oct-16-14	Oct-20-14	
Selenium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Silicon, total	**5.3**	0.5	mg/L	Oct-16-14	Oct-20-14	
Silver, total	**0.00015**	0.00005	mg/L	Oct-16-14	Oct-20-14	
Sodium, total	**11.1**	0.02	mg/L	Oct-16-14	Oct-20-14	
Strontium, total	**0.284**	0.001	mg/L	Oct-16-14	Oct-20-14	
Sulfur, total	**7**	1	mg/L	Oct-16-14	Oct-20-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Thallium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Thorium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Tin, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Titanium, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Uranium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Vanadium, total	< 0.001	0.001	mg/L	Oct-16-14	Oct-20-14	
Zinc, total	**0.006**	0.004	mg/L	Oct-16-14	Oct-20-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Sample ID: SFC3 (4100929-10) [Water] Sampled: Oct-14-14						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**34.4**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	**0.08**	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	**0.005**	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**105**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**14**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**14**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC3 (4100929-10) [Water] Sampled: Oct-14-14, Continued						
General Parameters, Continued						
Chemical Oxygen Demand	< 5	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**406**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**0.022**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.69**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**0.24**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.57**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	**14**	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**178**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.68**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.93**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**1.06**	0.005	mg/L	Oct-16-14	Oct-20-14	
Antimony, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Barium, total	**0.082**	0.005	mg/L	Oct-16-14	Oct-20-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Boron, total	**0.020**	0.004	mg/L	Oct-16-14	Oct-20-14	
Cadmium, total	**0.00026**	0.00001	mg/L	Oct-16-14	Oct-20-14	
Calcium, total	**63.3**	0.2	mg/L	Oct-16-14	Oct-20-14	
Chromium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Cobalt, total	**0.0187**	0.00005	mg/L	Oct-16-14	Oct-20-14	
Copper, total	**0.0289**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Iron, total	**2.19**	0.01	mg/L	Oct-16-14	Oct-20-14	
Lead, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Lithium, total	**0.0010**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Magnesium, total	**4.80**	0.01	mg/L	Oct-16-14	Oct-20-14	
Manganese, total	**0.533**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Mercury, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Molybdenum, total	**0.0005**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Nickel, total	**0.0070**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Phosphorus, total	< 0.020	0.020	mg/L	Oct-16-14	Oct-20-14	
Potassium, total	**3.03**	0.02	mg/L	Oct-16-14	Oct-20-14	
Selenium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Silicon, total	**8.8**	0.5	mg/L	Oct-16-14	Oct-20-14	
Silver, total	< 0.00005	0.00005	mg/L	Oct-16-14	Oct-20-14	
Sodium, total	**22.4**	0.02	mg/L	Oct-16-14	Oct-20-14	
Strontium, total	**0.431**	0.001	mg/L	Oct-16-14	Oct-20-14	
Sulfur, total	**34**	1	mg/L	Oct-16-14	Oct-20-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Thallium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Thorium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Tin, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC3 (4100929-10) [Water] Sampled: Oct-14-14, Continued						
Total Recoverable Metals, Continued						
Titanium, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Uranium, total	**0.00008**	0.00002	mg/L	Oct-16-14	Oct-20-14	
Vanadium, total	< 0.001	0.001	mg/L	Oct-16-14	Oct-20-14	
Zinc, total	**0.030**	0.004	mg/L	Oct-16-14	Oct-20-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Sample ID: SFC11 (4100929-11) [Water] Sampled: Oct-14-14						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	**12.7**	0.10	mg/L	N/A	Oct-16-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L	N/A	Oct-21-14	
Sulfate	**15.5**	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	**31**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Bicarbonate as CaCO3	**31**	1	mg/L	N/A	Oct-16-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	
Chemical Oxygen Demand	< 5	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	**144**	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	**0.008**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	**0.19**	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	**0.16**	0.05	mg/L	Oct-15-14	Oct-23-14	
pH	**6.99**	0.01	pH units	N/A	Oct-16-14	
Solids, Total Suspended	< 1	1	mg/L	Oct-17-14	Oct-17-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**55.4**	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	**0.19**	0.005	mg/L	N/A	N/A	
Nitrogen, Total	**0.35**	0.05	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.029**	0.005	mg/L	Oct-16-14	Oct-20-14	
Antimony, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Barium, total	**0.013**	0.005	mg/L	Oct-16-14	Oct-20-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Boron, total	**0.014**	0.004	mg/L	Oct-16-14	Oct-20-14	
Cadmium, total	**0.00002**	0.00001	mg/L	Oct-16-14	Oct-20-14	
Calcium, total	**18.6**	0.2	mg/L	Oct-16-14	Oct-20-14	
Chromium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Cobalt, total	**0.00005**	0.00005	mg/L	Oct-16-14	Oct-20-14	
Copper, total	**0.0005**	0.0002	mg/L	Oct-16-14	Oct-20-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC11 (4100929-11) [Water] Sampled: Oct-14-14, Continued						
Total Recoverable Metals, Continued						
Iron, total	**0.08**	0.01	mg/L	Oct-16-14	Oct-20-14	
Lead, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Lithium, total	**0.0007**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Magnesium, total	**2.19**	0.01	mg/L	Oct-16-14	Oct-20-14	
Manganese, total	**0.0100**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Mercury, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Molybdenum, total	**0.0002**	0.0001	mg/L	Oct-16-14	Oct-20-14	
Nickel, total	**0.0002**	0.0002	mg/L	Oct-16-14	Oct-20-14	
Phosphorus, total	< 0.020	0.020	mg/L	Oct-16-14	Oct-20-14	
Potassium, total	**0.72**	0.02	mg/L	Oct-16-14	Oct-20-14	
Selenium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Silicon, total	**10.1**	0.5	mg/L	Oct-16-14	Oct-20-14	
Silver, total	< 0.00005	0.00005	mg/L	Oct-16-14	Oct-20-14	
Sodium, total	**8.01**	0.02	mg/L	Oct-16-14	Oct-20-14	
Strontium, total	**0.210**	0.001	mg/L	Oct-16-14	Oct-20-14	
Sulfur, total	< 1	1	mg/L	Oct-16-14	Oct-20-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Thallium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Thorium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Tin, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Titanium, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Uranium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Vanadium, total	< 0.001	0.001	mg/L	Oct-16-14	Oct-20-14	
Zinc, total	**0.006**	0.004	mg/L	Oct-16-14	Oct-20-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Sample ID: Trip Blank (4100929-12) [Water] Sampled: Sep-22-14						
Anions						
Bromide	< 0.1	0.1	mg/L	N/A	Oct-16-14	
Chloride	< 0.10	0.10	mg/L	N/A	Oct-16-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Oct-16-14	
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L	N/A	Oct-21-14	HT
Sulfate	< 1.0	1.0	mg/L	N/A	Oct-16-14	
General Parameters						
Alkalinity, Total as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	HT
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	HT
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	HT
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	HT
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Oct-16-14	HT
Chemical Oxygen Demand	< 5	5	mg/L	Oct-15-14	Oct-20-14	
Conductivity (EC)	< 2	2	µS/cm	N/A	Oct-16-14	
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Nitrate+Nitrite as N	< 0.005	0.005	mg/L	N/A	Oct-17-14	
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L	Oct-15-14	Oct-23-14	HT

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Trip Blank (4100929-12) [Water] Sampled: Sep-22-14, Continued						
General Parameters, Continued						
pH	**5.41**	0.01	pH units	N/A	Oct-16-14	HT
Solids, Total Suspended	< 1	1	mg/L	Oct-17-14	Oct-17-14	HT
Calculated Parameters						
VPHw	< 100	100	µg/L	N/A	N/A	
LEPHw	< 100	100	µg/L	N/A	N/A	
HEPHw	< 100	100	µg/L	N/A	N/A	
Total PAH	< 0.05	0.05	µg/L	N/A	N/A	
Hardness, Total (Total as CaCO3)	< 0.50	0.50	mg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	< 0.50	0.50	mg/L	N/A	N/A	
Nitrogen, Nitrate as N	< 0.005	0.005	mg/L	N/A	N/A	
Nitrogen, Total	< 0.05	0.05	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Oct-21-14	
Antimony, dissolved	**0.0006**	0.0001	mg/L	N/A	Oct-21-14	
Arsenic, dissolved	**0.0009**	0.0005	mg/L	N/A	Oct-21-14	
Barium, dissolved	< 0.005	0.005	mg/L	N/A	Oct-21-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-21-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-21-14	
Boron, dissolved	**0.009**	0.004	mg/L	N/A	Oct-21-14	
Cadmium, dissolved	**0.00002**	0.00001	mg/L	N/A	Oct-21-14	
Calcium, dissolved	< 0.2	0.2	mg/L	N/A	Oct-21-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-21-14	
Cobalt, dissolved	< 0.00005	0.00005	mg/L	N/A	Oct-21-14	
Copper, dissolved	**0.0003**	0.0002	mg/L	N/A	Oct-21-14	
Iron, dissolved	< 0.010	0.010	mg/L	N/A	Oct-21-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-21-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-21-14	
Magnesium, dissolved	< 0.01	0.01	mg/L	N/A	Oct-21-14	
Manganese, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-21-14	
Mercury, dissolved	**0.00090**	0.00002	mg/L	N/A	Oct-21-14	
Molybdenum, dissolved	**0.0005**	0.0001	mg/L	N/A	Oct-21-14	
Nickel, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-21-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Oct-21-14	
Potassium, dissolved	< 0.02	0.02	mg/L	N/A	Oct-21-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Oct-21-14	
Silicon, dissolved	< 0.5	0.5	mg/L	N/A	Oct-21-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Oct-21-14	
Sodium, dissolved	< 0.02	0.02	mg/L	N/A	Oct-21-14	
Strontium, dissolved	< 0.001	0.001	mg/L	N/A	Oct-21-14	
Sulfur, dissolved	< 1	1	mg/L	N/A	Oct-21-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-21-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-21-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-21-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Oct-21-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Trip Blank (4100929-12) [Water] Sampled: Sep-22-14, Continued						
Dissolved Metals, Continued						
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Oct-21-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Oct-21-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Oct-21-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Oct-21-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Oct-21-14	
Total Recoverable Metals						
Aluminum, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Antimony, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Barium, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Boron, total	< 0.004	0.004	mg/L	Oct-16-14	Oct-20-14	
Cadmium, total	< 0.00001	0.00001	mg/L	Oct-16-14	Oct-20-14	
Calcium, total	< 0.2	0.2	mg/L	Oct-16-14	Oct-20-14	
Chromium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Cobalt, total	< 0.00005	0.00005	mg/L	Oct-16-14	Oct-20-14	
Copper, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Iron, total	< 0.01	0.01	mg/L	Oct-16-14	Oct-20-14	
Lead, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Lithium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Magnesium, total	< 0.01	0.01	mg/L	Oct-16-14	Oct-20-14	
Manganese, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Mercury, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Molybdenum, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Nickel, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Phosphorus, total	< 0.020	0.020	mg/L	Oct-16-14	Oct-20-14	
Potassium, total	< 0.02	0.02	mg/L	Oct-16-14	Oct-20-14	
Selenium, total	< 0.0005	0.0005	mg/L	Oct-16-14	Oct-20-14	
Silicon, total	< 0.5	0.5	mg/L	Oct-16-14	Oct-20-14	
Silver, total	< 0.00005	0.00005	mg/L	Oct-16-14	Oct-20-14	
Sodium, total	< 0.02	0.02	mg/L	Oct-16-14	Oct-20-14	
Strontium, total	< 0.001	0.001	mg/L	Oct-16-14	Oct-20-14	
Sulfur, total	< 1	1	mg/L	Oct-16-14	Oct-20-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Thallium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Thorium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Tin, total	< 0.0002	0.0002	mg/L	Oct-16-14	Oct-20-14	
Titanium, total	< 0.005	0.005	mg/L	Oct-16-14	Oct-20-14	
Uranium, total	< 0.00002	0.00002	mg/L	Oct-16-14	Oct-20-14	
Vanadium, total	< 0.001	0.001	mg/L	Oct-16-14	Oct-20-14	
Zinc, total	< 0.004	0.004	mg/L	Oct-16-14	Oct-20-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Oct-16-14	Oct-20-14	
Aggregate Organic Parameters						HT

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

WORK ORDER 4100929
REPORTED Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Trip Blank (4100929-12) [Water] Sampled: Sep-22-14, Continued						
Aggregate Organic Parameters, Continued						HT
VHw (6-10)	< 100	100	µg/L	N/A	Oct-16-14	
EPHw (10-19)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
EPHw (19-32)	< 100	100	µg/L	Oct-17-14	Oct-18-14	
Polycyclic Aromatic Hydrocarbons (PAH)						HT
Acenaphthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acenaphthylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Acridine	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) anthracene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (a) pyrene	< 0.01	0.01	µg/L	Oct-17-14	Oct-18-14	
Benzo (b) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (g,h,i) perylene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Benzo (k) fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Chrysene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Dibenz (a,h) anthracene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluoranthene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Fluorene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Naphthalene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Phenanthrene	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Pyrene	< 0.02	0.02	µg/L	Oct-17-14	Oct-18-14	
Quinoline	< 0.05	0.05	µg/L	Oct-17-14	Oct-18-14	
Surrogate: Naphthalene-d8	*74 %*	*40-96*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Acenaphthene-d10	*75 %*	*45-92*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Phenanthrene-d10	*72 %*	*48-90*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Chrysene-d12	*91 %*	*41-96*		*Oct-17-14*	*Oct-18-14*	
Surrogate: Perylene-d12	*78 %*	*47-104*		*Oct-17-14*	*Oct-18-14*	
Volatile Organic Compounds (VOC)						HT
Benzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
Bromodichloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Bromoform	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Carbon tetrachloride	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Chloroethane	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Chloroform	**10.9**	1.0	µg/L	N/A	Oct-16-14	CST2
Dibromochloromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dibromoethane	< 0.3	0.3	µg/L	N/A	Oct-16-14	
Dibromomethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	N/A	Oct-16-14	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: Trip Blank (4100929-12) [Water] Sampled: Sep-22-14, Continued						
Volatile Organic Compounds (VOC), Continued						HT
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,2-Dichloropropane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Ethylbenzene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Methylene chloride	< 3.0	3.0	µg/L	N/A	Oct-16-14	
Styrene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Tetrachloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Toluene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichloroethene	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Trichlorofluoromethane	< 1.0	1.0	µg/L	N/A	Oct-16-14	
Vinyl chloride	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Xylenes (total)	< 2.0	2.0	µg/L	N/A	Oct-16-14	
Surrogate: Toluene-d8	*96 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 4-Bromofluorobenzene	*95 %*	*70-130*		*N/A*	*Oct-16-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*83 %*	*70-130*		*N/A*	*Oct-16-14*	

Sample / Analysis Qualifiers:

CST2	Analyte present above the RDL. Suspect contamination from lab prior to being sent to the client.
F1	The sample was not field-filtered and was therefore filtered through a 0.45 µm membrane in the laboratory and preserved with HNO3 prior to analysis for dissolved metals.
HT	The sample was prepared / analyzed past the recommended holding time.
RA1	Reported Detection Limit (RDL) for this analyte has been raised due to matrix interference.

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4100929
PROJECT	Whistler Landfill - Spring/Fall	**REPORTED**	Oct-27-14

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Aggregate Organic Parameters, Batch B4J0708										
Blank (B4J0708-BLK1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
VHw (6-10)	< 100	100	µg/L							
LCS (B4J0708-BS2)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
VHw (6-10)	2000	100	µg/L	2520		79	57-107			
Duplicate (B4J0708-DUP1)		**Source: 4100929-01**		Prepared: Oct-16-14, Analyzed: Oct-16-14						
VHw (6-10)	< 100	100	µg/L		< 100				27	
Aggregate Organic Parameters, Batch B4J0766										
Blank (B4J0766-BLK1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
EPHw (10-19)	< 100	100	µg/L							
EPHw (19-32)	< 100	100	µg/L							
LCS (B4J0766-BS2)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
EPHw (10-19)	2920	100	µg/L	3470		84	63-123			
EPHw (19-32)	3940	100	µg/L	4970		79	51-102			
Anions, Batch B4J0737										
Blank (B4J0737-BLK1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B4J0737-BLK2)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Anions, Batch B4J0737, Continued										
Blank (B4J0737-BLK3)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Bromide	< 0.1	0.1	mg/L							
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B4J0737-BS1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Bromide	4.1	0.1	mg/L	4.00		101	85-115			
Chloride	16.3	0.10	mg/L	16.0		102	85-115			
Fluoride	4.00	0.01	mg/L	4.00		100	85-115			
Sulfate	16.4	1.0	mg/L	16.0		102	85-115			
LCS (B4J0737-BS2)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Bromide	4.0	0.1	mg/L	4.00		101	85-115			
Chloride	16.1	0.10	mg/L	16.0		101	85-115			
Fluoride	4.07	0.01	mg/L	4.00		102	85-115			
Sulfate	16.2	1.0	mg/L	16.0		101	85-115			
LCS (B4J0737-BS3)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Bromide	4.0	0.1	mg/L	4.00		101	85-115			
Chloride	16.3	0.10	mg/L	16.0		102	85-115			
Fluoride	4.00	0.01	mg/L	4.00		100	85-115			
Sulfate	16.1	1.0	mg/L	16.0		101	85-115			
Duplicate (B4J0737-DUP1)		**Source: 4100929-01**		Prepared: Oct-16-14, Analyzed: Oct-16-14						
Bromide	< 0.1	0.1	mg/L		< 0.1				10	
Chloride	41.0	0.10	mg/L		41.5			1	10	
Fluoride	0.12	0.01	mg/L		0.12			2	10	
Sulfate	360	1.0	mg/L		359			< 1	10	
Anions, Batch B4J0953										
Blank (B4J0953-BLK1)				Prepared: Oct-21-14, Analyzed: Oct-21-14						
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L							
LCS (B4J0953-BS1)				Prepared: Oct-21-14, Analyzed: Oct-21-14						
Nitrogen, Nitrite as N	0.04	0.001	mg/L	0.0400		100	80-120			
Duplicate (B4J0953-DUP1)		**Source: 4100929-01**		Prepared: Oct-21-14, Analyzed: Oct-21-14						
Nitrogen, Nitrite as N	< 0.001	0.001	mg/L		< 0.001				18	
Dissolved Metals, Batch B4J0718										
Blank (B4J0718-BLK1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4J0718, Continued										
Blank (B4J0718-BLK1), Continued				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Duplicate (B4J0718-DUP1)		**Source: 4100929-01**		Prepared: Oct-16-14, Analyzed: Oct-16-14						
Aluminum, dissolved	< 0.005	0.005	mg/L		< 0.005				11	
Antimony, dissolved	< 0.0001	0.0001	mg/L		0.0002				44	
Arsenic, dissolved	0.0144	0.0005	mg/L		0.0148			3	8	
Barium, dissolved	0.031	0.005	mg/L		0.029			3	7	
Beryllium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				20	
Boron, dissolved	0.384	0.004	mg/L		0.302			24	13	RPD
Cadmium, dissolved	< 0.00001	0.00001	mg/L		0.00001				27	
Calcium, dissolved	181	0.2	mg/L		161			12	8	RPD
Chromium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				14	
Cobalt, dissolved	0.0147	0.00005	mg/L		0.0147			< 1	10	
Copper, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				28	
Iron, dissolved	63.2	0.010	mg/L		63.1			< 1	14	
Lead, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				26	
Lithium, dissolved	< 0.0001	0.0001	mg/L		0.0001				14	
Magnesium, dissolved	20.1	0.01	mg/L		19.8			2	6	
Manganese, dissolved	3.38	0.0002	mg/L		3.35			1	9	
Mercury, dissolved	< 0.00002	0.00002	mg/L		< 0.00002				19	
Molybdenum, dissolved	0.0164	0.0001	mg/L		0.0165			< 1	19	
Nickel, dissolved	0.0030	0.0002	mg/L		0.0031			2	21	
Phosphorus, dissolved	0.13	0.02	mg/L		0.13			3	14	
Potassium, dissolved	21.6	0.02	mg/L		21.9			1	8	
Selenium, dissolved	< 0.0005	0.0005	mg/L		< 0.0005				36	
Silicon, dissolved	15.9	0.5	mg/L		15.6			2	12	
Silver, dissolved	< 0.00005	0.00005	mg/L		< 0.00005				20	
Sodium, dissolved	33.9	0.02	mg/L		33.7			< 1	6	
Strontium, dissolved	0.633	0.001	mg/L		0.627			< 1	6	
Sulfur, dissolved	118	1	mg/L		118			< 1	26	
Tellurium, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				20	
Thallium, dissolved	< 0.00002	0.00002	mg/L		< 0.00002				13	
Thorium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				30	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Spring/Fall

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4J0718, Continued										
Duplicate (B4J0718-DUP1), Continued		**Source: 4100929-01**		Prepared: Oct-16-14, Analyzed: Oct-16-14						
Tin, dissolved	< 0.0002	0.0002	mg/L		< 0.0002				6	
Titanium, dissolved	< 0.005	0.005	mg/L		< 0.005				20	
Uranium, dissolved	0.00028	0.00002	mg/L		0.00026			9	14	
Vanadium, dissolved	< 0.001	0.001	mg/L		< 0.001				20	
Zinc, dissolved	< 0.004	0.004	mg/L		< 0.004				11	
Zirconium, dissolved	< 0.0001	0.0001	mg/L		< 0.0001				36	
Matrix Spike (B4J0718-MS1)		**Source: 4100929-02**		Prepared: Oct-16-14, Analyzed: Oct-16-14						
Antimony, dissolved	0.379	0.0001	mg/L	0.400	0.0002	95	76-114			
Arsenic, dissolved	0.195	0.0005	mg/L	0.200	0.0078	94	81-115			
Barium, dissolved	1.05	0.005	mg/L	1.00	0.099	95	80-113			
Beryllium, dissolved	0.0916	0.0001	mg/L	0.100	< 0.0001	92	69-109			
Cadmium, dissolved	0.0898	0.00001	mg/L	0.100	< 0.00001	90	83-110			
Chromium, dissolved	0.389	0.0005	mg/L	0.400	< 0.0005	97	85-115			
Cobalt, dissolved	0.395	0.00005	mg/L	0.400	0.00362	98	86-114			
Copper, dissolved	0.390	0.0002	mg/L	0.400	< 0.0002	97	82-119			
Iron, dissolved	45.3	0.010	mg/L	2.00	47.3	NR	80-116			SPK1
Lead, dissolved	0.193	0.0001	mg/L	0.200	< 0.0001	97	83-112			
Manganese, dissolved	2.57	0.0002	mg/L	0.400	2.37	49	62-131			SPK1
Nickel, dissolved	0.430	0.0002	mg/L	0.400	0.0365	98	81-115			
Selenium, dissolved	0.0936	0.0005	mg/L	0.100	< 0.0005	93	79-115			
Silver, dissolved	0.0957	0.00005	mg/L	0.100	< 0.00005	96	69-121			
Thallium, dissolved	0.0970	0.00002	mg/L	0.100	< 0.00002	97	84-115			
Vanadium, dissolved	0.389	0.001	mg/L	0.400	< 0.001	97	83-113			
Zinc, dissolved	0.964	0.004	mg/L	1.00	0.008	96	82-115			
Reference (B4J0718-SRM1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Aluminum, dissolved	0.241	0.005	mg/L	0.233		103	58-142			
Antimony, dissolved	0.0493	0.0001	mg/L	0.0430		115	75-125			
Arsenic, dissolved	0.451	0.0005	mg/L	0.438		103	81-119			
Barium, dissolved	3.37	0.005	mg/L	3.35		101	83-117			
Beryllium, dissolved	0.206	0.0001	mg/L	0.213		97	80-120			
Boron, dissolved	1.66	0.004	mg/L	1.74		95	74-117			
Cadmium, dissolved	0.217	0.00001	mg/L	0.224		97	83-117			
Calcium, dissolved	8.1	0.2	mg/L	7.69		105	76-124			
Chromium, dissolved	0.464	0.0005	mg/L	0.437		106	81-119			
Cobalt, dissolved	0.139	0.00005	mg/L	0.128		108	76-124			
Copper, dissolved	0.908	0.0002	mg/L	0.844		108	84-116			
Iron, dissolved	1.36	0.010	mg/L	1.29		106	74-126			
Lead, dissolved	0.113	0.0001	mg/L	0.112		101	72-128			
Lithium, dissolved	0.0985	0.0001	mg/L	0.104		95	60-140			
Magnesium, dissolved	7.22	0.01	mg/L	6.92		104	81-119			
Manganese, dissolved	0.371	0.0002	mg/L	0.345		108	84-116			
Molybdenum, dissolved	0.442	0.0001	mg/L	0.426		104	83-117			
Nickel, dissolved	0.901	0.0002	mg/L	0.840		107	74-126			
Phosphorus, dissolved	0.52	0.02	mg/L	0.495		105	68-132			
Potassium, dissolved	3.43	0.02	mg/L	3.19		107	74-126			
Selenium, dissolved	0.0335	0.0005	mg/L	0.0331		101	70-130			
Sodium, dissolved	19.9	0.02	mg/L	19.1		104	72-128			
Strontium, dissolved	0.947	0.001	mg/L	0.916		103	84-113			
Thallium, dissolved	0.0394	0.00002	mg/L	0.0393		100	57-143			
Uranium, dissolved	0.264	0.00002	mg/L	0.266		99	85-115			
Vanadium, dissolved	0.913	0.001	mg/L	0.869		105	87-113			
Zinc, dissolved	0.916	0.004	mg/L	0.881		104	72-128			

Dissolved Metals, Batch B4J0838

REPORTED TO Morrison Hershfield Limited
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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4J0838, Continued										
Blank (B4J0838-BLK1)				Prepared: Oct-21-14, Analyzed: Oct-21-14						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Reference (B4J0838-SRM1)				Prepared: Oct-21-14, Analyzed: Oct-21-14						
Aluminum, dissolved	0.221	0.005	mg/L	0.233		95	58-142			
Antimony, dissolved	0.0531	0.0001	mg/L	0.0430		123	75-125			
Arsenic, dissolved	0.395	0.0005	mg/L	0.438		90	81-119			
Barium, dissolved	3.34	0.005	mg/L	3.35		100	83-117			
Beryllium, dissolved	0.216	0.0001	mg/L	0.213		101	80-120			
Boron, dissolved	1.73	0.004	mg/L	1.74		100	74-117			
Cadmium, dissolved	0.221	0.00001	mg/L	0.224		99	83-117			
Calcium, dissolved	7.8	0.2	mg/L	7.69		102	76-124			
Chromium, dissolved	0.436	0.0005	mg/L	0.437		100	81-119			
Cobalt, dissolved	0.130	0.00005	mg/L	0.128		102	76-124			
Copper, dissolved	0.863	0.0002	mg/L	0.844		102	84-116			
Iron, dissolved	1.26	0.010	mg/L	1.29		98	74-126			
Lead, dissolved	0.112	0.0001	mg/L	0.112		100	72-128			
Lithium, dissolved	0.109	0.0001	mg/L	0.104		105	60-140			
Magnesium, dissolved	6.80	0.01	mg/L	6.92		98	81-119			
Manganese, dissolved	0.338	0.0002	mg/L	0.345		98	84-116			
Molybdenum, dissolved	0.417	0.0001	mg/L	0.426		98	83-117			
Nickel, dissolved	0.849	0.0002	mg/L	0.840		101	74-126			

REPORTED TO Morrison Hershfield Limited
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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Dissolved Metals, Batch B4J0838, Continued										
Reference (B4J0838-SRM1), Continued				Prepared: Oct-21-14, Analyzed: Oct-21-14						
Phosphorus, dissolved	0.48	0.02	mg/L	0.495		97	68-132			
Potassium, dissolved	3.02	0.02	mg/L	3.19		95	74-126			
Selenium, dissolved	0.0291	0.0005	mg/L	0.0331		88	70-130			
Sodium, dissolved	18.5	0.02	mg/L	19.1		97	72-128			
Strontium, dissolved	0.875	0.001	mg/L	0.916		96	84-113			
Thallium, dissolved	0.0382	0.00002	mg/L	0.0393		97	57-143			
Uranium, dissolved	0.261	0.00002	mg/L	0.266		98	85-115			
Vanadium, dissolved	0.835	0.001	mg/L	0.869		96	87-113			
Zinc, dissolved	0.863	0.004	mg/L	0.881		98	72-128			
General Parameters, Batch B4J0749										
Blank (B4J0749-BLK1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 0.5	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 0.5	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 0.5	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 0.5	1	mg/L							
Conductivity (EC)	< 1	2	µS/cm							
Blank (B4J0749-BLK2)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 0.5	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 0.5	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 0.5	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 0.5	1	mg/L							
Conductivity (EC)	< 1	2	µS/cm							
Blank (B4J0749-BLK3)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 0.5	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 0.5	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 0.5	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 0.5	1	mg/L							
Conductivity (EC)	< 1	2	µS/cm							
LCS (B4J0749-BS1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Alkalinity, Total as CaCO3	99	1	mg/L	100		99	96-108			
LCS (B4J0749-BS2)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Alkalinity, Total as CaCO3	99	1	mg/L	100		99	96-108			
LCS (B4J0749-BS3)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Alkalinity, Total as CaCO3	101	1	mg/L	100		101	96-108			
LCS (B4J0749-BS4)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Conductivity (EC)	1400	2	µS/cm	1410		99	93-104			
LCS (B4J0749-BS5)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Conductivity (EC)	1400	2	µS/cm	1410		100	93-104			
LCS (B4J0749-BS6)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Conductivity (EC)	1410	2	µS/cm	1410		100	93-104			
Duplicate (B4J0749-DUP1)		**Source: 4100929-01**		Prepared: Oct-16-14, Analyzed: Oct-16-14						
Alkalinity, Total as CaCO3	270	1	mg/L		273			1	10	
Alkalinity, Phenolphthalein as CaCO3	< 0.5	1	mg/L		< 1				10	

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
General Parameters, Batch B4J0749, Continued										
Duplicate (B4J0749-DUP1), Continued	**Source: 4100929-01**			Prepared: Oct-16-14, Analyzed: Oct-16-14						
Alkalinity, Bicarbonate as CaCO3	270	1	mg/L		273			1	10	
Alkalinity, Carbonate as CaCO3	< 0.5	1	mg/L		< 1				10	
Alkalinity, Hydroxide as CaCO3	< 0.5	1	mg/L		< 1				10	
Conductivity (EC)	1240	2	µS/cm		1240			< 1	5	
pH	6.87	0.01	pH units		6.84			< 1	5	
Reference (B4J0749-SRM1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
pH	6.98	0.01	pH units	7.00		100	98-102			
Reference (B4J0749-SRM2)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
pH	6.98	0.01	pH units	7.00		100	98-102			
Reference (B4J0749-SRM3)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
pH	6.98	0.01	pH units	7.00		100	98-102			
General Parameters, Batch B4J0765										
Blank (B4J0765-BLK1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Solids, Total Suspended	< 1	1	mg/L							
Blank (B4J0765-BLK2)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Solids, Total Suspended	< 1	1	mg/L							
LCS (B4J0765-BS1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Solids, Total Suspended	48	1	mg/L	50.0		95	85-110			
LCS (B4J0765-BS2)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Solids, Total Suspended	51	1	mg/L	50.0		102	85-110			
General Parameters, Batch B4J0783										
Blank (B4J0783-BLK1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Nitrate+Nitrite as N	< 0.005	0.005	mg/L							
LCS (B4J0783-BS1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Nitrate+Nitrite as N	102	0.005	mg/L	100		102	91-108			
Duplicate (B4J0783-DUP1)	**Source: 4100929-01**			Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Nitrate+Nitrite as N	0.05	0.005	mg/L		0.05			2	15	
General Parameters, Batch B4J0804										
Blank (B4J0804-BLK1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4J0804-BLK2)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
Blank (B4J0804-BLK3)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Ammonia as N, Total	< 0.005	0.005	mg/L							
LCS (B4J0804-BS1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Ammonia as N, Total	9.96	0.005	mg/L	10.0		100	86-111			
LCS (B4J0804-BS2)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Ammonia as N, Total	10.0	0.005	mg/L	10.0		100	86-111			

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
General Parameters, Batch B4J0804, Continued										
LCS (B4J0804-BS3)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Ammonia as N, Total	9.93	0.005	mg/L	10.0		99	86-111			
Duplicate (B4J0804-DUP1)		**Source: 4100929-01**		Prepared: Oct-17-14, Analyzed: Oct-17-14						
Nitrogen, Ammonia as N, Total	15.9	0.005	mg/L		15.8			< 1	15	
General Parameters, Batch B4J0864										
Blank (B4J0864-BLK1)				Prepared: Oct-20-14, Analyzed: Oct-20-14						
Chemical Oxygen Demand	< 5	5	mg/L							
LCS (B4J0864-BS1)				Prepared: Oct-20-14, Analyzed: Oct-20-14						
Chemical Oxygen Demand	55	5	mg/L	50.0		110	82-119			
General Parameters, Batch B4J1048										
Blank (B4J1048-BLK1)				Prepared: Oct-15-14, Analyzed: Oct-23-14						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
Blank (B4J1048-BLK2)				Prepared: Oct-15-14, Analyzed: Oct-23-14						
Nitrogen, Total Kjeldahl	< 0.05	0.05	mg/L							
LCS (B4J1048-BS1)				Prepared: Oct-15-14, Analyzed: Oct-23-14						
Nitrogen, Total Kjeldahl	9.24	0.05	mg/L	10.0		92	89-116			
LCS (B4J1048-BS2)				Prepared: Oct-15-14, Analyzed: Oct-23-14						
Nitrogen, Total Kjeldahl	9.52	0.05	mg/L	10.0		95	89-116			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B4J0766										
Blank (B4J0766-BLK1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Acenaphthene	< 0.02	0.02	µg/L							
Acenaphthylene	< 0.02	0.02	µg/L							
Acridine	< 0.05	0.05	µg/L							
Anthracene	< 0.01	0.01	µg/L							
Benzo (a) anthracene	< 0.01	0.01	µg/L							
Benzo (a) pyrene	< 0.01	0.01	µg/L							
Benzo (b) fluoranthene	< 0.02	0.02	µg/L							
Benzo (g,h,i) perylene	< 0.02	0.02	µg/L							
Benzo (k) fluoranthene	< 0.02	0.02	µg/L							
Chrysene	< 0.02	0.02	µg/L							
Dibenz (a,h) anthracene	< 0.02	0.02	µg/L							
Fluoranthene	< 0.02	0.02	µg/L							
Fluorene	< 0.02	0.02	µg/L							
Indeno (1,2,3-cd) pyrene	< 0.02	0.02	µg/L							
Naphthalene	< 0.05	0.05	µg/L							
Phenanthrene	< 0.05	0.05	µg/L							
Pyrene	< 0.02	0.02	µg/L							
Quinoline	< 0.05	0.05	µg/L							
Surrogate: Naphthalene-d8	*0.706*		*µg/L*	*0.930*		*76*	*40-96*			
Surrogate: Acenaphthene-d10	*0.724*		*µg/L*	*0.930*		*78*	*45-92*			
Surrogate: Phenanthrene-d10	*0.614*		*µg/L*	*0.925*		*66*	*48-90*			
Surrogate: Chrysene-d12	*0.874*		*µg/L*	*0.940*		*93*	*41-96*			
Surrogate: Perylene-d12	*0.816*		*µg/L*	*1.09*		*75*	*47-104*			
LCS (B4J0766-BS1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Acenaphthene	0.70	0.02	µg/L	1.00		70	54-92			

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Polycyclic Aromatic Hydrocarbons (PAH), Batch B4J0766, Continued										
LCS (B4J0766-BS1), Continued				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Acenaphthylene	0.77	0.02	µg/L	1.00		77	54-95			
Acridine	0.80	0.05	µg/L	1.00		80	49-87			
Anthracene	0.67	0.01	µg/L	1.00		67	53-94			
Benzo (a) anthracene	0.69	0.01	µg/L	1.00		69	52-95			
Benzo (a) pyrene	0.82	0.01	µg/L	1.00		82	52-103			
Benzo (b) fluoranthene	0.69	0.02	µg/L	1.00		69	49-94			
Benzo (g,h,i) perylene	0.82	0.02	µg/L	1.00		82	51-98			
Benzo (k) fluoranthene	0.86	0.02	µg/L	1.00		86	49-105			
Chrysene	1.01	0.02	µg/L	1.00		101	50-104			
Dibenz (a,h) anthracene	0.81	0.02	µg/L	1.00		81	49-96			
Fluoranthene	0.82	0.02	µg/L	1.00		82	53-102			
Fluorene	0.72	0.02	µg/L	1.00		72	54-91			
Indeno (1,2,3-cd) pyrene	0.86	0.02	µg/L	1.00		86	51-99			
Naphthalene	0.67	0.05	µg/L	1.00		67	51-91			
Phenanthrene	0.70	0.05	µg/L	1.00		70	56-96			
Pyrene	0.79	0.02	µg/L	1.00		79	51-105			
Quinoline	0.83	0.05	µg/L	1.00		83	48-126			
Surrogate: Naphthalene-d8	*0.720*		*µg/L*	*0.930*		*77*	*40-96*			
Surrogate: Acenaphthene-d10	*0.704*		*µg/L*	*0.930*		*76*	*45-92*			
Surrogate: Phenanthrene-d10	*0.697*		*µg/L*	*0.925*		*75*	*48-90*			
Surrogate: Chrysene-d12	*0.821*		*µg/L*	*0.940*		*87*	*41-96*			
Surrogate: Perylene-d12	*0.856*		*µg/L*	*1.09*		*79*	*47-104*			
LCS Dup (B4J0766-BSD1)				Prepared: Oct-17-14, Analyzed: Oct-17-14						
Acenaphthene	0.70	0.02	µg/L	1.00		70	54-92	< 1	20	
Acenaphthylene	0.75	0.02	µg/L	1.00		75	54-95	3	20	
Acridine	0.78	0.05	µg/L	1.00		78	49-87	3	20	
Anthracene	0.66	0.01	µg/L	1.00		66	53-94	< 1	20	
Benzo (a) anthracene	0.63	0.01	µg/L	1.00		63	52-95	9	20	
Benzo (a) pyrene	0.78	0.01	µg/L	1.00		78	52-103	5	20	
Benzo (b) fluoranthene	0.64	0.02	µg/L	1.00		64	49-94	7	20	
Benzo (g,h,i) perylene	0.77	0.02	µg/L	1.00		77	51-98	6	20	
Benzo (k) fluoranthene	0.83	0.02	µg/L	1.00		83	49-105	5	20	
Chrysene	0.97	0.02	µg/L	1.00		97	50-104	4	20	
Dibenz (a,h) anthracene	0.77	0.02	µg/L	1.00		77	49-96	6	20	
Fluoranthene	0.80	0.02	µg/L	1.00		80	53-102	2	20	
Fluorene	0.71	0.02	µg/L	1.00		71	54-91	< 1	20	
Indeno (1,2,3-cd) pyrene	0.82	0.02	µg/L	1.00		82	51-99	5	20	
Naphthalene	0.67	0.05	µg/L	1.00		67	51-91	< 1	20	
Phenanthrene	0.69	0.05	µg/L	1.00		69	56-96	< 1	20	
Pyrene	0.77	0.02	µg/L	1.00		77	51-105	3	20	
Quinoline	0.82	0.05	µg/L	1.00		82	48-126	1	20	
Surrogate: Naphthalene-d8	*0.743*		*µg/L*	*0.930*		*80*	*40-96*			
Surrogate: Acenaphthene-d10	*0.717*		*µg/L*	*0.930*		*77*	*45-92*			
Surrogate: Phenanthrene-d10	*0.680*		*µg/L*	*0.925*		*73*	*48-90*			
Surrogate: Chrysene-d12	*0.768*		*µg/L*	*0.940*		*82*	*41-96*			
Surrogate: Perylene-d12	*0.784*		*µg/L*	*1.09*		*72*	*47-104*			
Total Recoverable Metals, Batch B4J0723										
Blank (B4J0723-BLK1)				Prepared: Oct-16-14, Analyzed: Oct-20-14						
Aluminum, total	< 0.005	0.005	mg/L							
Antimony, total	< 0.0001	0.0001	mg/L							
Arsenic, total	< 0.0005	0.0005	mg/L							
Barium, total	< 0.005	0.005	mg/L							
Beryllium, total	< 0.0001	0.0001	mg/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B4J0723, Continued										
Blank (B4J0723-BLK1), Continued				Prepared: Oct-16-14, Analyzed: Oct-20-14						
Bismuth, total	< 0.0001	0.0001	mg/L							
Boron, total	< 0.004	0.004	mg/L							
Cadmium, total	< 0.00001	0.00001	mg/L							
Calcium, total	< 0.2	0.2	mg/L							
Chromium, total	< 0.0005	0.0005	mg/L							
Cobalt, total	< 0.00005	0.00005	mg/L							
Copper, total	< 0.0002	0.0002	mg/L							
Iron, total	< 0.01	0.01	mg/L							
Lead, total	< 0.0001	0.0001	mg/L							
Lithium, total	< 0.0001	0.0001	mg/L							
Magnesium, total	< 0.01	0.01	mg/L							
Manganese, total	< 0.0002	0.0002	mg/L							
Mercury, total	< 0.00002	0.00002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.020	0.020	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.004	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Duplicate (B4J0723-DUP1)		**Source: 4100929-08**		Prepared: Oct-16-14, Analyzed: Oct-20-14						
Aluminum, total	0.056	0.005	mg/L		0.055			3	29	
Antimony, total	< 0.0001	0.0001	mg/L		< 0.0001				31	
Arsenic, total	< 0.0005	0.0005	mg/L		< 0.0005				15	
Barium, total	0.020	0.005	mg/L		0.020				9	
Beryllium, total	< 0.0001	0.0001	mg/L		< 0.0001				16	
Bismuth, total	< 0.0001	0.0001	mg/L		< 0.0001				20	
Boron, total	0.036	0.004	mg/L		0.036			< 1	29	
Cadmium, total	< 0.00001	0.00001	mg/L		0.00001				33	
Calcium, total	30.2	0.2	mg/L		30.6			1	12	
Chromium, total	< 0.0005	0.0005	mg/L		< 0.0005				12	
Cobalt, total	0.00025	0.00005	mg/L		0.00024			3	13	
Copper, total	0.0020	0.0002	mg/L		0.0019			2	37	
Iron, total	0.18	0.01	mg/L		0.18			1	18	
Lead, total	< 0.0001	0.0001	mg/L		< 0.0001				23	
Lithium, total	0.0005	0.0001	mg/L		0.0005			2	19	
Magnesium, total	2.69	0.01	mg/L		2.61			3	10	
Manganese, total	0.107	0.0002	mg/L		0.106			1	13	
Mercury, total	< 0.00002	0.00002	mg/L		< 0.00002				24	
Molybdenum, total	0.0004	0.0001	mg/L		0.0004				20	
Nickel, total	0.0004	0.0002	mg/L		0.0004				28	
Phosphorus, total	< 0.020	0.020	mg/L		0.038				24	
Potassium, total	1.88	0.02	mg/L		1.82			4	13	
Selenium, total	< 0.0005	0.0005	mg/L		< 0.0005				24	

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B4J0723, Continued										
Duplicate (B4J0723-DUP1), Continued		**Source: 4100929-08**		Prepared: Oct-16-14, Analyzed: Oct-20-14						
Silicon, total	5.7	0.5	mg/L		5.6			2	11	
Silver, total	0.00031	0.00005	mg/L		0.00030			3	18	
Sodium, total	12.1	0.02	mg/L		11.8			3	10	
Strontium, total	0.304	0.001	mg/L		0.302			< 1	9	
Sulfur, total	10	1	mg/L		8			20	24	
Tellurium, total	< 0.0002	0.0002	mg/L		< 0.0002				20	
Thallium, total	< 0.00002	0.00002	mg/L		< 0.00002				24	
Thorium, total	< 0.0001	0.0001	mg/L		< 0.0001				18	
Tin, total	< 0.0002	0.0002	mg/L		< 0.0002				18	
Titanium, total	< 0.005	0.005	mg/L		< 0.005				32	
Uranium, total	< 0.00002	0.00002	mg/L		< 0.00002				14	
Vanadium, total	< 0.001	0.001	mg/L		< 0.001				17	
Zinc, total	0.006	0.004	mg/L		0.004				8	
Zirconium, total	< 0.0001	0.0001	mg/L		< 0.0001				60	
Matrix Spike (B4J0723-MS1)		**Source: 4100929-12**		Prepared: Oct-16-14, Analyzed: Oct-20-14						
Antimony, total	0.489	0.0001	mg/L	0.400	< 0.0001	122	84-125			
Arsenic, total	0.196	0.0005	mg/L	0.200	< 0.0005	98	85-116			
Barium, total	1.12	0.005	mg/L	1.00	< 0.005	112	87-114			
Beryllium, total	0.109	0.0001	mg/L	0.100	< 0.0001	109	72-116			
Cadmium, total	0.104	0.00001	mg/L	0.100	< 0.00001	104	90-112			
Chromium, total	0.429	0.0005	mg/L	0.400	< 0.0005	107	89-120			
Cobalt, total	0.433	0.00005	mg/L	0.400	< 0.00005	108	88-120			
Copper, total	0.452	0.0002	mg/L	0.400	< 0.0002	113	88-125			
Iron, total	2.11	0.01	mg/L	2.00	< 0.01	106	88-119			
Lead, total	0.216	0.0001	mg/L	0.200	< 0.0001	108	89-118			
Manganese, total	0.422	0.0002	mg/L	0.400	< 0.0002	105	84-120			
Nickel, total	0.409	0.0002	mg/L	0.400	< 0.0002	102	87-119			
Selenium, total	0.100	0.0005	mg/L	0.100	< 0.0005	100	85-113			
Silver, total	0.113	0.00005	mg/L	0.100	< 0.00005	113	89-119			
Thallium, total	0.115	0.00002	mg/L	0.100	< 0.00002	115	92-119			
Vanadium, total	0.418	0.001	mg/L	0.400	< 0.001	105	87-117			
Zinc, total	1.00	0.004	mg/L	1.00	< 0.004	100	85-116			
Reference (B4J0723-SRM1)				Prepared: Oct-16-14, Analyzed: Oct-20-14						
Aluminum, total	0.275	0.005	mg/L	0.296		93	81-129			
Antimony, total	0.0570	0.0001	mg/L	0.0505		113	88-114			
Arsenic, total	0.123	0.0005	mg/L	0.122		101	88-114			
Barium, total	0.736	0.005	mg/L	0.777		95	72-104			
Beryllium, total	0.0540	0.0001	mg/L	0.0488		111	76-131			
Boron, total	3.98	0.004	mg/L	3.40		117	75-121			
Cadmium, total	0.0516	0.00001	mg/L	0.0490		105	89-111			
Calcium, total	11.8	0.2	mg/L	10.2		116	86-121			
Chromium, total	0.262	0.0005	mg/L	0.242		108	89-114			
Cobalt, total	0.0388	0.00005	mg/L	0.0366		106	91-113			
Copper, total	0.552	0.0002	mg/L	0.487		113	91-115			
Iron, total	0.51	0.01	mg/L	0.469		109	77-124			
Lead, total	0.210	0.0001	mg/L	0.193		109	92-113			
Lithium, total	0.443	0.0001	mg/L	0.390		114	85-115			
Magnesium, total	3.36	0.01	mg/L	3.31		102	78-120			
Manganese, total	0.108	0.0002	mg/L	0.109		99	90-114			
Mercury, total	0.00456	0.00002	mg/L	0.00456		100	50-150			
Molybdenum, total	0.214	0.0001	mg/L	0.197		109	90-111			
Nickel, total	0.251	0.0002	mg/L	0.242		104	90-111			
Phosphorus, total	0.211	0.020	mg/L	0.233		91	85-115			
Potassium, total	6.28	0.02	mg/L	5.93		106	84-113			
Selenium, total	0.117	0.0005	mg/L	0.115		102	85-115			

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B4J0723, Continued										
Reference (B4J0723-SRM1), Continued				Prepared: Oct-16-14, Analyzed: Oct-20-14						
Sodium, total	7.88	0.02	mg/L	7.64		103	82-123			
Strontium, total	0.403	0.001	mg/L	0.363		111	88-112			
Thallium, total	0.0900	0.00002	mg/L	0.0794		113	91-114			
Uranium, total	0.0195	0.00002	mg/L	0.0192		102	85-120			
Vanadium, total	0.395	0.001	mg/L	0.376		105	86-111			
Zinc, total	2.65	0.004	mg/L	2.42		109	85-111			
Volatile Organic Compounds (VOC), Batch B4J0708										
Blank (B4J0708-BLK1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Benzene	< 0.5	0.5	µg/L							
Bromodichloromethane	< 1.0	1.0	µg/L							
Bromoform	< 1.0	1.0	µg/L							
Bromomethane	< 2.0	2.0	µg/L							
Carbon tetrachloride	< 1.0	1.0	µg/L							
Chlorobenzene	< 1.0	1.0	µg/L							
Chloroethane	< 2.0	2.0	µg/L							
Chloroform	< 1.0	1.0	µg/L							
Chloromethane	< 2.0	2.0	µg/L							
Dibromochloromethane	< 1.0	1.0	µg/L							
Dibromomethane	< 1.0	1.0	µg/L							
1,2-Dichlorobenzene	< 0.5	0.5	µg/L							
1,3-Dichlorobenzene	< 1.0	1.0	µg/L							
1,4-Dichlorobenzene	< 1.0	1.0	µg/L							
1,1-Dichloroethane	< 1.0	1.0	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
1,1-Dichloroethene	< 1.0	1.0	µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L							
1,2-Dichloropropane	< 1.0	1.0	µg/L							
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L							
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Methylene chloride	< 3.0	3.0	µg/L							
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
1,1,1,2-Tetrachloroethane	< 1.0	1.0	µg/L							
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L							
Tetrachloroethene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
1,1,2-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethene	< 1.0	1.0	µg/L							
Trichlorofluoromethane	< 1.0	1.0	µg/L							
Vinyl chloride	< 2.0	2.0	µg/L							
m,p-Xylene	< 1.0	1.0	µg/L							
o-Xylene	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
Surrogate: Toluene-d8	*26.8*		*µg/L*	*25.0*		*107*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*28.2*		*µg/L*	*25.0*		*113*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*25.7*		*µg/L*	*26.0*		*99*	*70-130*			
LCS (B4J0708-BS1)				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Benzene	19.9	0.5	µg/L	20.0		99	70-130			
Bromodichloromethane	21.6	1.0	µg/L	20.0		108	70-130			

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B4J0708, Continued										
LCS (B4J0708-BS1), Continued				Prepared: Oct-16-14, Analyzed: Oct-16-14						
Bromoform	20.1	1.0	µg/L	20.0		100	70-130			
Bromomethane	22.9	2.0	µg/L	20.0		115	70-130			
Carbon tetrachloride	23.1	1.0	µg/L	20.0		115	70-130			
Chlorobenzene	19.6	1.0	µg/L	20.0		98	70-130			
Chloroethane	21.5	2.0	µg/L	20.0		108	70-130			
Chloroform	22.7	1.0	µg/L	20.0		113	70-130			
Chloromethane	18.7	2.0	µg/L	20.0		93	70-130			
Dibromochloromethane	19.9	1.0	µg/L	20.0		99	70-130			
Dibromomethane	19.8	1.0	µg/L	20.0		99	70-130			
1,2-Dichlorobenzene	20.3	0.5	µg/L	20.0		102	70-130			
1,3-Dichlorobenzene	20.1	1.0	µg/L	20.0		100	70-130			
1,4-Dichlorobenzene	19.9	1.0	µg/L	20.0		100	70-130			
1,1-Dichloroethane	21.0	1.0	µg/L	20.0		105	70-130			
1,2-Dichloroethane	23.7	1.0	µg/L	20.0		119	70-130			
1,1-Dichloroethene	25.2	1.0	µg/L	20.0		126	70-130			
cis-1,2-Dichloroethene	19.8	1.0	µg/L	20.0		99	70-130			
trans-1,2-Dichloroethene	19.6	1.0	µg/L	20.0		98	70-130			
1,2-Dichloropropane	18.6	1.0	µg/L	20.0		93	70-130			
cis-1,3-Dichloropropene	19.0	1.0	µg/L	20.0		95	70-130			
trans-1,3-Dichloropropene	19.9	1.0	µg/L	20.0		99	70-130			
Ethylbenzene	20.2	1.0	µg/L	20.0		101	70-130			
Methyl tert-butyl ether	20.1	1.0	µg/L	20.0		101	70-130			
Methylene chloride	18.5	3.0	µg/L	20.0		92	70-130			
4-Methyl-2-Pentanone (MIBK)	17.7	10.0	µg/L	20.0		89	70-130			
Styrene	18.9	1.0	µg/L	20.0		95	70-130			
1,1,1,2-Tetrachloroethane	20.1	1.0	µg/L	20.0		100	70-130			
1,1,2,2-Tetrachloroethane	17.8	1.0	µg/L	20.0		89	70-130			
Tetrachloroethene	20.5	1.0	µg/L	20.0		102	70-130			
Toluene	19.8	1.0	µg/L	20.0		99	70-130			
1,1,1-Trichloroethane	23.9	1.0	µg/L	20.0		119	70-130			
1,1,2-Trichloroethane	19.6	1.0	µg/L	20.0		98	70-130			
Trichloroethene	22.2	1.0	µg/L	20.0		111	70-130			
Trichlorofluoromethane	28.0	1.0	µg/L	20.0		140	70-130			SPK1
Vinyl chloride	20.1	2.0	µg/L	20.0		100	70-130			
m,p-Xylene	44.0	1.0	µg/L	40.0		110	70-130			
o-Xylene	20.3	1.0	µg/L	20.0		102	70-130			
Xylenes (total)	64.3	2.0	µg/L	60.0		107	70-130			
Surrogate: Toluene-d8	*24.0*		*µg/L*	*25.0*		*96*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.0*		*µg/L*	*25.0*		*100*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*26.5*		*µg/L*	*26.0*		*102*	*70-130*			
Duplicate (B4J0708-DUP1)		**Source: 4100929-01**		Prepared: Oct-16-14, Analyzed: Oct-16-14						
Benzene	< 0.5	0.5	µg/L		< 0.5				20	
Bromodichloromethane	< 1.0	1.0	µg/L		< 1.0				20	
Bromoform	< 1.0	1.0	µg/L		< 1.0				20	
Bromomethane	< 2.0	2.0	µg/L		< 2.0				20	
Carbon tetrachloride	< 1.0	1.0	µg/L		< 1.0				20	
Chlorobenzene	< 1.5	1.0	µg/L		< 2.0				20	RA1
Chloroethane	< 2.0	2.0	µg/L		< 2.0				20	
Chloroform	< 1.0	1.0	µg/L		< 1.0				20	
Chloromethane	< 2.0	2.0	µg/L		< 2.0				20	
Dibromochloromethane	< 1.0	1.0	µg/L		< 1.0				20	
Dibromomethane	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L		< 0.5				20	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L		< 1.0				20	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L		< 1.0				20	

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B4J0708, Continued										
Duplicate (B4J0708-DUP1), Continued		**Source: 4100929-01**		Prepared: Oct-16-14, Analyzed: Oct-16-14						
1,1-Dichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,1-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
1,2-Dichloropropane	< 1.0	1.0	µg/L		< 1.0				20	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L		< 1.0				20	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L		< 1.0				20	
Ethylbenzene	< 1.0	1.0	µg/L		< 1.0				20	
Methyl tert-butyl ether	< 1.0	1.0	µg/L		< 1.0				20	
Methylene chloride	< 3.0	3.0	µg/L		< 3.0				20	
4-Methyl-2-Pentanone (MIBK)	< 10.0	10.0	µg/L		< 10.0				20	
Styrene	< 1.0	1.0	µg/L		< 1.0				20	
1,1,1,2-Tetrachloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L		< 1.0				20	
Tetrachloroethene	< 1.0	1.0	µg/L		< 1.0				20	
Toluene	< 1.0	1.0	µg/L		< 1.0				20	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L		< 1.0				20	
Trichloroethene	< 1.0	1.0	µg/L		< 1.0				20	
Trichlorofluoromethane	< 1.0	1.0	µg/L		< 1.0				20	
Vinyl chloride	< 2.0	2.0	µg/L		< 2.0				20	
m,p-Xylene	< 1.0	1.0	µg/L		< 1.0				20	
o-Xylene	< 1.0	1.0	µg/L		< 1.0				20	
Xylenes (total)	< 2.0	2.0	µg/L		< 2.0				20	
Surrogate: Toluene-d8	*23.8*		*µg/L*	*25.0*		*95*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.6*		*µg/L*	*25.0*		*98*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*22.8*		*µg/L*	*26.0*		*88*	*70-130*			

QC Qualifiers:

RA1	Reported Detection Limit (RDL) for this analyte has been raised due to matrix interference.
RPD	Relative percent difference (RPD) of duplicate analysis are outside of control limits for unknown reason(s).
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

CERTIFICATE OF ANALYSIS

REPORTED TO	Morrison Hershfield Limited 310 - 4321 Still Creek Drive Burnaby, BC V5C 6S7	**TEL** **FAX**	(604) 454-0402 (604) 454-0403
ATTENTION	Josie Gilson		

WORK ORDER	4121202		
PO NUMBER		**RECEIVED / TEMP**	Dec-19-14 09:30 / 2°C
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14
PROJECT INFO	5104016-RMOLO	**COC NUMBER**	B21560

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Issued By: **Jennifer Shanko, AScT For Brent Coates, BSc**
Business Manager, Richmond

Please contact CARO if more information is needed or to provide feedback on our services.

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ANALYSIS INFORMATION

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analysis Description	Method Reference	Technique	Location
Alkalinity (Speciated)	APHA 2320 B	Titration with H2SO4 to pH 4.5	Kelowna
Anions in Water by IC	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Chemical Oxygen Demand (low level)	APHA 5220 D	Closed Reflux, Colorimetry	Kelowna
Dissolved Metals	APHA 3030 B / APHA 3125 B	0.45 µm Filtration / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
EPH in Water	EPA 3510C * / BCMOE EPHw	Liquid-Liquid Extraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness (as CaCO3)	APHA 2340 B	Calculation	N/A
L/HEPH	BCMOE L/HEPH	Calculation	N/A
PAH in Water	EPA 3510C * / EPA 8270D	Liquid-Liquid Extraction (Base/Neutral) / GC-MSD (SIM)	Richmond
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna
Total Recoverable Metals	APHA 3030E * / APHA 3125 B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma Mass Spectrometry (ICP-MS)	Richmond
VH in Water	EPA 5030B/5021A / BCMOE VHw	Purge&Trap or Headspace / Gas Chromatography (GC-FID)	Richmond
VOC in Water	EPA 5030B/5021A / EPA 8260B	Purge&Trap or Headspace / GC-MS (SIM)	Richmond
VPHw	BCMOE VPH	Calculation	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA	Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health Association/American Water Works Association/Water Environment Federation
BCMOE	British Columbia Environmental Laboratory Manual, 2013, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

Glossary of Terms:

MRL	Method Reporting Limit
<	Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such as dilutions, limited sample volume, high moisture, or interferences
mg/L	Milligrams per litre
pH units	pH < 7 = acidic, ph > 7 = basic
µg/L	Micrograms per litre

SAMPLE ANALYTICAL DATA

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4121202-01) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**41.7**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.12**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**368**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**271**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**271**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**24**	5	mg/L	N/A	Dec-23-14	
pH	**6.88**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**524**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Arsenic, dissolved	**0.0147**	0.0005	mg/L	N/A	Dec-24-14	
Barium, dissolved	**0.033**	0.005	mg/L	N/A	Dec-24-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Boron, dissolved	**0.425**	0.004	mg/L	N/A	Dec-24-14	
Cadmium, dissolved	< 0.00001	0.00001	mg/L	N/A	Dec-24-14	
Calcium, dissolved	**176**	0.2	mg/L	N/A	Dec-24-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Cobalt, dissolved	**0.0163**	0.00005	mg/L	N/A	Dec-24-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Iron, dissolved	**65.7**	0.010	mg/L	N/A	Dec-24-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Magnesium, dissolved	**20.6**	0.01	mg/L	N/A	Dec-24-14	
Manganese, dissolved	**3.33**	0.0002	mg/L	N/A	Dec-24-14	
Mercury, dissolved	**0.00002**	0.00002	mg/L	N/A	Dec-24-14	
Molybdenum, dissolved	**0.0183**	0.0001	mg/L	N/A	Dec-24-14	
Nickel, dissolved	**0.0032**	0.0002	mg/L	N/A	Dec-24-14	
Phosphorus, dissolved	**0.11**	0.02	mg/L	N/A	Dec-24-14	
Potassium, dissolved	**21.9**	0.02	mg/L	N/A	Dec-24-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Silicon, dissolved	**16.4**	0.5	mg/L	N/A	Dec-24-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Dec-24-14	
Sodium, dissolved	**34.1**	0.02	mg/L	N/A	Dec-24-14	
Strontium, dissolved	**0.683**	0.001	mg/L	N/A	Dec-24-14	
Sulfur, dissolved	**124**	1	mg/L	N/A	Dec-24-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2D (4121202-01) [Water] Sampled: Dec-18-14, Continued						
Dissolved Metals, Continued						
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-24-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Uranium, dissolved	**0.00031**	0.00002	mg/L	N/A	Dec-24-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Dec-24-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Dec-24-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Sample ID: MW2S (4121202-02) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**24.1**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.11**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**115**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**188**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**188**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**16**	5	mg/L	N/A	Dec-23-14	
pH	**6.85**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**224**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Arsenic, dissolved	**0.0093**	0.0005	mg/L	N/A	Dec-24-14	
Barium, dissolved	**0.154**	0.005	mg/L	N/A	Dec-24-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Boron, dissolved	**0.223**	0.004	mg/L	N/A	Dec-24-14	
Cadmium, dissolved	< 0.00001	0.00001	mg/L	N/A	Dec-24-14	
Calcium, dissolved	**71.6**	0.2	mg/L	N/A	Dec-24-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Cobalt, dissolved	**0.00301**	0.00005	mg/L	N/A	Dec-24-14	
Copper, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Iron, dissolved	**61.3**	0.010	mg/L	N/A	Dec-24-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW2S (4121202-02) [Water] Sampled: Dec-18-14, Continued						
Dissolved Metals, Continued						
Magnesium, dissolved	**10.9**	0.01	mg/L	N/A	Dec-24-14	
Manganese, dissolved	**3.50**	0.0002	mg/L	N/A	Dec-24-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-29-14	
Molybdenum, dissolved	**0.0048**	0.0001	mg/L	N/A	Dec-24-14	
Nickel, dissolved	**0.0015**	0.0002	mg/L	N/A	Dec-24-14	
Phosphorus, dissolved	**0.05**	0.02	mg/L	N/A	Dec-24-14	
Potassium, dissolved	**14.0**	0.02	mg/L	N/A	Dec-24-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Silicon, dissolved	**12.4**	0.5	mg/L	N/A	Dec-24-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Dec-24-14	
Sodium, dissolved	**27.6**	0.02	mg/L	N/A	Dec-24-14	
Strontium, dissolved	**0.408**	0.001	mg/L	N/A	Dec-24-14	
Sulfur, dissolved	**42**	1	mg/L	N/A	Dec-24-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-24-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Uranium, dissolved	**0.00011**	0.00002	mg/L	N/A	Dec-24-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Dec-24-14	
Zinc, dissolved	< 0.004	0.004	mg/L	N/A	Dec-24-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Sample ID: MW3 (4121202-03) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**14.8**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.08**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**34.7**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**33**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**33**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	< 5	5	mg/L	N/A	Dec-23-14	
pH	**6.43**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**44.4**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.019**	0.005	mg/L	N/A	Dec-24-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4121202
REPORTED Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW3 (4121202-03) [Water] Sampled: Dec-18-14, Continued						
Dissolved Metals, Continued						
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Barium, dissolved	**0.066**	0.005	mg/L	N/A	Dec-24-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Boron, dissolved	**0.013**	0.004	mg/L	N/A	Dec-24-14	
Cadmium, dissolved	**0.00027**	0.00001	mg/L	N/A	Dec-24-14	
Calcium, dissolved	**13.2**	0.2	mg/L	N/A	Dec-24-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Cobalt, dissolved	**0.00642**	0.00005	mg/L	N/A	Dec-24-14	
Copper, dissolved	**0.0035**	0.0002	mg/L	N/A	Dec-24-14	
Iron, dissolved	**0.635**	0.010	mg/L	N/A	Dec-24-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Lithium, dissolved	**0.0002**	0.0001	mg/L	N/A	Dec-24-14	
Magnesium, dissolved	**2.80**	0.01	mg/L	N/A	Dec-24-14	
Manganese, dissolved	**1.99**	0.0002	mg/L	N/A	Dec-24-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-29-14	
Molybdenum, dissolved	**0.0007**	0.0001	mg/L	N/A	Dec-24-14	
Nickel, dissolved	**0.0015**	0.0002	mg/L	N/A	Dec-24-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Dec-24-14	
Potassium, dissolved	**3.08**	0.02	mg/L	N/A	Dec-24-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Silicon, dissolved	**8.2**	0.5	mg/L	N/A	Dec-24-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Dec-24-14	
Sodium, dissolved	**11.7**	0.02	mg/L	N/A	Dec-24-14	
Strontium, dissolved	**0.118**	0.001	mg/L	N/A	Dec-24-14	
Sulfur, dissolved	**8**	1	mg/L	N/A	Dec-24-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Thallium, dissolved	**0.00012**	0.00002	mg/L	N/A	Dec-24-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-24-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Dec-24-14	
Zinc, dissolved	**0.005**	0.004	mg/L	N/A	Dec-24-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Sample ID: MW4 (4121202-04) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**24.3**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.07**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**57.1**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4121202-04) [Water] Sampled: Dec-18-14, Continued						
General Parameters, Continued						
Alkalinity, Total as CaCO3	**117**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**117**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**13**	5	mg/L	N/A	Dec-29-14	
pH	**6.61**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**150**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.008**	0.005	mg/L	N/A	Dec-24-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Arsenic, dissolved	**0.0024**	0.0005	mg/L	N/A	Dec-24-14	
Barium, dissolved	**0.152**	0.005	mg/L	N/A	Dec-24-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Boron, dissolved	**0.070**	0.004	mg/L	N/A	Dec-24-14	
Cadmium, dissolved	**0.00051**	0.00001	mg/L	N/A	Dec-24-14	
Calcium, dissolved	**46.9**	0.2	mg/L	N/A	Dec-24-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Cobalt, dissolved	**0.0367**	0.00005	mg/L	N/A	Dec-24-14	
Copper, dissolved	**0.0023**	0.0002	mg/L	N/A	Dec-24-14	
Iron, dissolved	**29.5**	0.010	mg/L	N/A	Dec-24-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Lithium, dissolved	**0.0002**	0.0001	mg/L	N/A	Dec-24-14	
Magnesium, dissolved	**8.09**	0.01	mg/L	N/A	Dec-24-14	
Manganese, dissolved	**3.02**	0.0002	mg/L	N/A	Dec-24-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-29-14	
Molybdenum, dissolved	**0.0063**	0.0001	mg/L	N/A	Dec-24-14	
Nickel, dissolved	**0.0055**	0.0002	mg/L	N/A	Dec-24-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Dec-24-14	
Potassium, dissolved	**6.32**	0.02	mg/L	N/A	Dec-24-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Silicon, dissolved	**12.6**	0.5	mg/L	N/A	Dec-24-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Dec-24-14	
Sodium, dissolved	**21.5**	0.02	mg/L	N/A	Dec-24-14	
Strontium, dissolved	**0.314**	0.001	mg/L	N/A	Dec-24-14	
Sulfur, dissolved	**18**	1	mg/L	N/A	Dec-24-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Thallium, dissolved	**0.00004**	0.00002	mg/L	N/A	Dec-24-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Uranium, dissolved	**0.00017**	0.00002	mg/L	N/A	Dec-24-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4121202
REPORTED Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4 (4121202-04) [Water] Sampled: Dec-18-14, Continued						
Dissolved Metals, Continued						
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Dec-24-14	
Zinc, dissolved	**0.009**	0.004	mg/L	N/A	Dec-24-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Sample ID: MW6 (4121202-05) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**100**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.22**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	**0.056**	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**146**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**11**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**11**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**8**	5	mg/L	N/A	Dec-23-14	
pH	**6.02**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**135**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.162**	0.005	mg/L	N/A	Dec-24-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Barium, dissolved	**0.055**	0.005	mg/L	N/A	Dec-24-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Boron, dissolved	**0.012**	0.004	mg/L	N/A	Dec-24-14	
Cadmium, dissolved	**0.00033**	0.00001	mg/L	N/A	Dec-24-14	
Calcium, dissolved	**43.4**	0.2	mg/L	N/A	Dec-24-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Cobalt, dissolved	**0.00135**	0.00005	mg/L	N/A	Dec-24-14	
Copper, dissolved	**0.0036**	0.0002	mg/L	N/A	Dec-24-14	
Iron, dissolved	**0.014**	0.010	mg/L	N/A	Dec-24-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Lithium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Magnesium, dissolved	**6.35**	0.01	mg/L	N/A	Dec-24-14	
Manganese, dissolved	**0.530**	0.0002	mg/L	N/A	Dec-24-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-29-14	
Molybdenum, dissolved	**0.0002**	0.0001	mg/L	N/A	Dec-24-14	
Nickel, dissolved	**0.0023**	0.0002	mg/L	N/A	Dec-24-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Dec-24-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW6 (4121202-05) [Water] Sampled: Dec-18-14, Continued						
Dissolved Metals, Continued						
Potassium, dissolved	**4.21**	0.02	mg/L	N/A	Dec-24-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Silicon, dissolved	**10.4**	0.5	mg/L	N/A	Dec-24-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Dec-24-14	
Sodium, dissolved	**90.3**	0.02	mg/L	N/A	Dec-24-14	
Strontium, dissolved	**0.618**	0.001	mg/L	N/A	Dec-24-14	
Sulfur, dissolved	**53**	1	mg/L	N/A	Dec-24-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Thallium, dissolved	**0.00005**	0.00002	mg/L	N/A	Dec-24-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Uranium, dissolved	**0.00003**	0.00002	mg/L	N/A	Dec-24-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Dec-24-14	
Zinc, dissolved	**0.004**	0.004	mg/L	N/A	Dec-24-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Sample ID: GW Inter. (4121202-06) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**51.6**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.16**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**480**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**123**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**123**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**24**	5	mg/L	N/A	Dec-23-14	
pH	**6.55**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
VPHw	< 100	100	µg/L	N/A	N/A	
LEPHw	< 100	100	µg/L	N/A	N/A	
HEPHw	< 100	100	µg/L	N/A	N/A	
Total PAH	**1.67**	0.30	µg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**543**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.006**	0.005	mg/L	N/A	Dec-24-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Barium, dissolved	**0.126**	0.005	mg/L	N/A	Dec-24-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Inter. (4121202-06) [Water] Sampled: Dec-18-14, Continued						
Dissolved Metals, Continued						
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Boron, dissolved	**0.376**	0.004	mg/L	N/A	Dec-24-14	
Cadmium, dissolved	**0.00004**	0.00001	mg/L	N/A	Dec-24-14	
Calcium, dissolved	**184**	0.2	mg/L	N/A	Dec-24-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Cobalt, dissolved	**0.0222**	0.00005	mg/L	N/A	Dec-24-14	
Copper, dissolved	**0.0004**	0.0002	mg/L	N/A	Dec-24-14	
Iron, dissolved	**11.0**	0.010	mg/L	N/A	Dec-24-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Lithium, dissolved	**0.0009**	0.0001	mg/L	N/A	Dec-24-14	
Magnesium, dissolved	**20.0**	0.01	mg/L	N/A	Dec-24-14	
Manganese, dissolved	**5.12**	0.0002	mg/L	N/A	Dec-24-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-29-14	
Molybdenum, dissolved	**0.0002**	0.0001	mg/L	N/A	Dec-24-14	
Nickel, dissolved	**0.0102**	0.0002	mg/L	N/A	Dec-24-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Dec-24-14	
Potassium, dissolved	**9.04**	0.02	mg/L	N/A	Dec-24-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Silicon, dissolved	**11.8**	0.5	mg/L	N/A	Dec-24-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Dec-24-14	
Sodium, dissolved	**47.0**	0.02	mg/L	N/A	Dec-24-14	
Strontium, dissolved	**1.20**	0.001	mg/L	N/A	Dec-24-14	
Sulfur, dissolved	**163**	1	mg/L	N/A	Dec-24-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-24-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Uranium, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-24-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Dec-24-14	
Zinc, dissolved	**0.107**	0.004	mg/L	N/A	Dec-24-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	µg/L	N/A	Dec-20-14	
EPHw (10-19)	< 100	100	µg/L	Dec-20-14	Dec-22-14	
EPHw (19-32)	< 100	100	µg/L	Dec-20-14	Dec-22-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	**1.01**	0.05	µg/L	Dec-20-14	Dec-22-14	
Acenaphthylene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Acridine	< 0.10	0.10	µg/L	Dec-20-14	Dec-22-14	
Anthracene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Benzo (a) anthracene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Benzo (a) pyrene	< 0.01	0.01	µg/L	Dec-20-14	Dec-22-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Inter. (4121202-06) [Water] Sampled: Dec-18-14, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Benzo (b) fluoranthene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Benzo (g,h,i) perylene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Benzo (k) fluoranthene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Chrysene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Dibenz (a,h) anthracene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Fluoranthene	**0.15**	0.05	µg/L	Dec-20-14	Dec-22-14	
Fluorene	**0.50**	0.05	µg/L	Dec-20-14	Dec-22-14	
Indeno (1,2,3-cd) pyrene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Naphthalene	< 0.30	0.30	µg/L	Dec-20-14	Dec-22-14	
Phenanthrene	< 0.10	0.10	µg/L	Dec-20-14	Dec-22-14	
Pyrene	< 0.10	0.10	µg/L	Dec-20-14	Dec-22-14	
Quinoline	< 0.10	0.10	µg/L	Dec-20-14	Dec-22-14	
Surrogate: Naphthalene-d8	*96 %*	*40-96*		*Dec-20-14*	*Dec-22-14*	
Surrogate: Acenaphthene-d10	*92 %*	*45-92*		*Dec-20-14*	*Dec-22-14*	
Surrogate: Phenanthrene-d10	*90 %*	*48-90*		*Dec-20-14*	*Dec-22-14*	
Surrogate: Chrysene-d12	*96 %*	*41-96*		*Dec-20-14*	*Dec-22-14*	
Surrogate: Perylene-d12	*86 %*	*47-104*		*Dec-20-14*	*Dec-22-14*	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	0.5	µg/L	N/A	Dec-20-14	
Bromodichloromethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Bromoform	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Carbon tetrachloride	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Chlorobenzene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Chloroethane	< 2.0	2.0	µg/L	N/A	Dec-20-14	
Chloroform	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Dibromochloromethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,2-Dibromoethane	< 0.3	0.3	µg/L	N/A	Dec-20-14	
Dibromomethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	N/A	Dec-20-14	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1-Dichloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,2-Dichloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1-Dichloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,2-Dichloropropane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Ethylbenzene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Methylene chloride	< 3.0	3.0	µg/L	N/A	Dec-20-14	
Styrene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Tetrachloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: GW Inter. (4121202-06) [Water] Sampled: Dec-18-14, Continued						
Volatile Organic Compounds (VOC), Continued						
Toluene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Trichloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Trichlorofluoromethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Vinyl chloride	< 2.0	2.0	µg/L	N/A	Dec-20-14	
Xylenes (total)	< 2.0	2.0	µg/L	N/A	Dec-20-14	
Surrogate: Toluene-d8	*88 %*	*70-130*		*N/A*	*Dec-20-14*	
Surrogate: 4-Bromofluorobenzene	*106 %*	*70-130*		*N/A*	*Dec-20-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*94 %*	*70-130*		*N/A*	*Dec-20-14*	
Sample ID: LM (4121202-07) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**6.19**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.07**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	**4.47**	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**84.4**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**89**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**89**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**30**	5	mg/L	N/A	Dec-23-14	
pH	**6.75**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
VPHw	< 100	100	µg/L	N/A	N/A	
LEPHw	< 100	100	µg/L	N/A	N/A	
HEPHw	< 100	100	µg/L	N/A	N/A	
Total PAH	< 0.30	0.30	µg/L	N/A	N/A	
Hardness, Total (Diss. as CaCO3)	**208**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.034**	0.005	mg/L	N/A	Dec-24-14	
Antimony, dissolved	**0.0001**	0.0001	mg/L	N/A	Dec-24-14	
Arsenic, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Barium, dissolved	**0.039**	0.005	mg/L	N/A	Dec-24-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Boron, dissolved	**0.046**	0.004	mg/L	N/A	Dec-24-14	
Cadmium, dissolved	**0.00006**	0.00001	mg/L	N/A	Dec-24-14	
Calcium, dissolved	**72.2**	0.2	mg/L	N/A	Dec-24-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: LM (4121202-07) [Water] Sampled: Dec-18-14, Continued						
Dissolved Metals, Continued						
Cobalt, dissolved	**0.00049**	0.00005	mg/L	N/A	Dec-24-14	
Copper, dissolved	**0.0267**	0.0002	mg/L	N/A	Dec-24-14	
Iron, dissolved	**0.034**	0.010	mg/L	N/A	Dec-24-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Lithium, dissolved	**0.0003**	0.0001	mg/L	N/A	Dec-24-14	
Magnesium, dissolved	**6.70**	0.01	mg/L	N/A	Dec-24-14	
Manganese, dissolved	**0.0772**	0.0002	mg/L	N/A	Dec-24-14	
Mercury, dissolved	**0.00002**	0.00002	mg/L	N/A	Dec-29-14	
Molybdenum, dissolved	**0.0005**	0.0001	mg/L	N/A	Dec-24-14	
Nickel, dissolved	**0.0025**	0.0002	mg/L	N/A	Dec-24-14	
Phosphorus, dissolved	**0.29**	0.02	mg/L	N/A	Dec-24-14	
Potassium, dissolved	**4.70**	0.02	mg/L	N/A	Dec-24-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Silicon, dissolved	**10.3**	0.5	mg/L	N/A	Dec-24-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Dec-24-14	
Sodium, dissolved	**12.0**	0.02	mg/L	N/A	Dec-24-14	
Strontium, dissolved	**0.284**	0.001	mg/L	N/A	Dec-24-14	
Sulfur, dissolved	**30**	1	mg/L	N/A	Dec-24-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Thallium, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-24-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Uranium, dissolved	**0.00002**	0.00002	mg/L	N/A	Dec-24-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Dec-24-14	
Zinc, dissolved	**0.031**	0.004	mg/L	N/A	Dec-24-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Aggregate Organic Parameters						
VHw (6-10)	< 100	100	µg/L	N/A	Dec-20-14	
EPHw (10-19)	< 100	100	µg/L	Dec-20-14	Dec-22-14	
EPHw (19-32)	< 100	100	µg/L	Dec-20-14	Dec-22-14	
Polycyclic Aromatic Hydrocarbons (PAH)						
Acenaphthene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Acenaphthylene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Acridine	< 0.10	0.10	µg/L	Dec-20-14	Dec-22-14	
Anthracene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Benzo (a) anthracene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Benzo (a) pyrene	< 0.01	0.01	µg/L	Dec-20-14	Dec-22-14	
Benzo (b) fluoranthene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Benzo (g,h,i) perylene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Benzo (k) fluoranthene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Chrysene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Dibenz (a,h) anthracene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Fluoranthene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: LM (4121202-07) [Water] Sampled: Dec-18-14, Continued						
Polycyclic Aromatic Hydrocarbons (PAH), Continued						
Fluorene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Indeno (1,2,3-cd) pyrene	< 0.05	0.05	µg/L	Dec-20-14	Dec-22-14	
Naphthalene	< 0.30	0.30	µg/L	Dec-20-14	Dec-22-14	
Phenanthrene	< 0.10	0.10	µg/L	Dec-20-14	Dec-22-14	
Pyrene	< 0.10	0.10	µg/L	Dec-20-14	Dec-22-14	
Quinoline	< 0.10	0.10	µg/L	Dec-20-14	Dec-22-14	
Surrogate: Naphthalene-d8	*93 %*	*40-96*		*Dec-20-14*	*Dec-22-14*	
Surrogate: Acenaphthene-d10	*89 %*	*45-92*		*Dec-20-14*	*Dec-22-14*	
Surrogate: Phenanthrene-d10	*87 %*	*48-90*		*Dec-20-14*	*Dec-22-14*	
Surrogate: Chrysene-d12	*88 %*	*41-96*		*Dec-20-14*	*Dec-22-14*	
Surrogate: Perylene-d12	*88 %*	*47-104*		*Dec-20-14*	*Dec-22-14*	
Volatile Organic Compounds (VOC)						
Benzene	< 0.5	0.5	µg/L	N/A	Dec-20-14	
Bromodichloromethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Bromoform	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Carbon tetrachloride	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Chlorobenzene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Chloroethane	< 2.0	2.0	µg/L	N/A	Dec-20-14	
Chloroform	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Dibromochloromethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,2-Dibromoethane	< 0.3	0.3	µg/L	N/A	Dec-20-14	
Dibromomethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,2-Dichlorobenzene	< 0.5	0.5	µg/L	N/A	Dec-20-14	
1,3-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,4-Dichlorobenzene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1-Dichloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,2-Dichloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1-Dichloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,2-Dichloropropane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Ethylbenzene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Methylene chloride	< 3.0	3.0	µg/L	N/A	Dec-20-14	
Styrene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Tetrachloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Toluene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
1,1,2-Trichloroethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Trichloroethene	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Trichlorofluoromethane	< 1.0	1.0	µg/L	N/A	Dec-20-14	
Vinyl chloride	< 2.0	2.0	µg/L	N/A	Dec-20-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4121202
REPORTED Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: LM (4121202-07) [Water] Sampled: Dec-18-14, Continued						
Volatile Organic Compounds (VOC), Continued						
Xylenes (total)	< 2.0	2.0	µg/L	N/A	Dec-20-14	
Surrogate: Toluene-d8	*91 %*	*70-130*		*N/A*	*Dec-20-14*	
Surrogate: 4-Bromofluorobenzene	*109 %*	*70-130*		*N/A*	*Dec-20-14*	
Surrogate: 1,4-Dichlorobenzene-d4	*97 %*	*70-130*		*N/A*	*Dec-20-14*	
Sample ID: SFC 2 (4121202-08) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**13.3**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.09**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	**0.637**	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**86.3**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**46**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**46**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**8**	5	mg/L	N/A	Dec-23-14	
pH	**6.94**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**115**	0.50	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**1.93**	0.005	mg/L	Dec-22-14	Dec-23-14	
Antimony, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Barium, total	**0.052**	0.005	mg/L	Dec-22-14	Dec-23-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Boron, total	**0.031**	0.004	mg/L	Dec-22-14	Dec-23-14	
Cadmium, total	**0.00011**	0.00001	mg/L	Dec-22-14	Dec-23-14	
Calcium, total	**38.9**	0.2	mg/L	Dec-22-14	Dec-23-14	
Chromium, total	**0.0009**	0.0005	mg/L	Dec-22-14	Dec-23-14	
Cobalt, total	**0.0103**	0.00005	mg/L	Dec-22-14	Dec-23-14	
Copper, total	**0.0379**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Iron, total	**4.38**	0.01	mg/L	Dec-22-14	Dec-23-14	
Lead, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Lithium, total	**0.0007**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Magnesium, total	**4.33**	0.01	mg/L	Dec-22-14	Dec-23-14	
Manganese, total	**0.882**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Mercury, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Molybdenum, total	**0.0041**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Nickel, total	**0.0047**	0.0002	mg/L	Dec-22-14	Dec-23-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2 (4121202-08) [Water] Sampled: Dec-18-14, Continued						
Total Recoverable Metals, Continued						
Phosphorus, total	**0.056**	0.020	mg/L	Dec-22-14	Dec-23-14	
Potassium, total	**4.03**	0.02	mg/L	Dec-22-14	Dec-23-14	
Selenium, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Silicon, total	**5.2**	0.5	mg/L	Dec-22-14	Dec-23-14	
Silver, total	< 0.00005	0.00005	mg/L	Dec-22-14	Dec-23-14	
Sodium, total	**13.9**	0.02	mg/L	Dec-22-14	Dec-23-14	
Strontium, total	**0.231**	0.001	mg/L	Dec-22-14	Dec-23-14	
Sulfur, total	**27**	1	mg/L	Dec-22-14	Dec-23-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Thallium, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Thorium, total	**0.0002**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Tin, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Titanium, total	< 0.005	0.005	mg/L	Dec-22-14	Dec-23-14	
Uranium, total	**0.00016**	0.00002	mg/L	Dec-22-14	Dec-23-14	
Vanadium, total	< 0.001	0.001	mg/L	Dec-22-14	Dec-23-14	
Zinc, total	**0.016**	0.004	mg/L	Dec-22-14	Dec-23-14	
Zirconium, total	**0.0001**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Sample ID: SFC 2B (4121202-09) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**9.15**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.36**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	**4.28**	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	**0.017**	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**516**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**17**	5	mg/L	N/A	Dec-23-14	
pH	**4.44**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**208**	0.50	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**11.7**	0.005	mg/L	Dec-22-14	Dec-23-14	
Antimony, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Arsenic, total	**0.0010**	0.0005	mg/L	Dec-22-14	Dec-23-14	
Barium, total	**0.051**	0.005	mg/L	Dec-22-14	Dec-23-14	
Beryllium, total	**0.0004**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Boron, total	**0.050**	0.004	mg/L	Dec-22-14	Dec-23-14	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4121202
REPORTED Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 2B (4121202-09) [Water] Sampled: Dec-18-14, Continued						
Total Recoverable Metals, Continued						
Cadmium, total	**0.00068**	0.00001	mg/L	Dec-22-14	Dec-23-14	
Calcium, total	**64.2**	0.2	mg/L	Dec-22-14	Dec-23-14	
Chromium, total	**0.0023**	0.0005	mg/L	Dec-22-14	Dec-23-14	
Cobalt, total	**0.0654**	0.00005	mg/L	Dec-22-14	Dec-23-14	
Copper, total	**0.248**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Iron, total	**30.5**	0.01	mg/L	Dec-22-14	Dec-23-14	
Lead, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Lithium, total	**0.0041**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Magnesium, total	**11.4**	0.01	mg/L	Dec-22-14	Dec-23-14	
Manganese, total	**3.54**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Mercury, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Molybdenum, total	**0.0004**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Nickel, total	**0.0313**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Phosphorus, total	**0.257**	0.020	mg/L	Dec-22-14	Dec-23-14	
Potassium, total	**5.79**	0.02	mg/L	Dec-22-14	Dec-23-14	
Selenium, total	**0.0024**	0.0005	mg/L	Dec-22-14	Dec-23-14	
Silicon, total	**10.9**	0.5	mg/L	Dec-22-14	Dec-23-14	
Silver, total	< 0.00005	0.00005	mg/L	Dec-22-14	Dec-23-14	
Sodium, total	**11.3**	0.02	mg/L	Dec-22-14	Dec-23-14	
Strontium, total	**0.297**	0.001	mg/L	Dec-22-14	Dec-23-14	
Sulfur, total	**93**	1	mg/L	Dec-22-14	Dec-23-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Thallium, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Thorium, total	**0.0023**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Tin, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Titanium, total	< 0.005	0.005	mg/L	Dec-22-14	Dec-23-14	
Uranium, total	**0.00073**	0.00002	mg/L	Dec-22-14	Dec-23-14	
Vanadium, total	< 0.001	0.001	mg/L	Dec-22-14	Dec-23-14	
Zinc, total	**0.090**	0.004	mg/L	Dec-22-14	Dec-23-14	
Zirconium, total	**0.0002**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Sample ID: SFC 3 (4121202-10) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**29.1**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.07**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	**0.219**	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**32.9**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**29**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**29**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 3 (4121202-10) [Water] Sampled: Dec-18-14, Continued						
General Parameters, Continued						
Chemical Oxygen Demand	**5**	5	mg/L	N/A	Dec-23-14	
pH	**6.93**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**50.3**	0.50	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.100**	0.005	mg/L	Dec-22-14	Dec-23-14	
Antimony, total	**0.0001**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Barium, total	**0.024**	0.005	mg/L	Dec-22-14	Dec-23-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Boron, total	**0.014**	0.004	mg/L	Dec-22-14	Dec-23-14	
Cadmium, total	**0.00002**	0.00001	mg/L	Dec-22-14	Dec-23-14	
Calcium, total	**17.0**	0.2	mg/L	Dec-22-14	Dec-23-14	
Chromium, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Cobalt, total	**0.00030**	0.00005	mg/L	Dec-22-14	Dec-23-14	
Copper, total	**0.0028**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Iron, total	**0.14**	0.01	mg/L	Dec-22-14	Dec-23-14	
Lead, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Lithium, total	**0.0003**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Magnesium, total	**1.89**	0.01	mg/L	Dec-22-14	Dec-23-14	
Manganese, total	**0.0239**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Mercury, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Molybdenum, total	**0.0005**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Nickel, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Phosphorus, total	< 0.020	0.020	mg/L	Dec-22-14	Dec-23-14	
Potassium, total	**1.52**	0.02	mg/L	Dec-22-14	Dec-23-14	
Selenium, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Silicon, total	**6.9**	0.5	mg/L	Dec-22-14	Dec-23-14	
Silver, total	< 0.00005	0.00005	mg/L	Dec-22-14	Dec-23-14	
Sodium, total	**21.3**	0.02	mg/L	Dec-22-14	Dec-23-14	
Strontium, total	**0.134**	0.001	mg/L	Dec-22-14	Dec-23-14	
Sulfur, total	**6**	1	mg/L	Dec-22-14	Dec-23-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Thallium, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Thorium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Tin, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Titanium, total	< 0.005	0.005	mg/L	Dec-22-14	Dec-23-14	
Uranium, total	**0.00002**	0.00002	mg/L	Dec-22-14	Dec-23-14	
Vanadium, total	< 0.001	0.001	mg/L	Dec-22-14	Dec-23-14	
Zinc, total	**0.007**	0.004	mg/L	Dec-22-14	Dec-23-14	
Zirconium, total	**0.0001**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Sample ID: SFC 11 (4121202-11) [Water] Sampled: Dec-18-14						

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 11 (4121202-11) [Water] Sampled: Dec-18-14, Continued						
Anions						
Chloride	**4.31**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.05**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	**0.198**	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**12.6**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**20**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**20**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	< 5	5	mg/L	N/A	Dec-23-14	
pH	**7.06**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**27.1**	0.50	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.211**	0.005	mg/L	Dec-22-14	Dec-23-14	
Antimony, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Barium, total	**0.011**	0.005	mg/L	Dec-22-14	Dec-23-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Boron, total	**0.005**	0.004	mg/L	Dec-22-14	Dec-23-14	
Cadmium, total	**0.00002**	0.00001	mg/L	Dec-22-14	Dec-23-14	
Calcium, total	**8.4**	0.2	mg/L	Dec-22-14	Dec-23-14	
Chromium, total	**0.0008**	0.0005	mg/L	Dec-22-14	Dec-23-14	
Cobalt, total	**0.00006**	0.00005	mg/L	Dec-22-14	Dec-23-14	
Copper, total	**0.0019**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Iron, total	**0.12**	0.01	mg/L	Dec-22-14	Dec-23-14	
Lead, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Lithium, total	**0.0004**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Magnesium, total	**1.49**	0.01	mg/L	Dec-22-14	Dec-23-14	
Manganese, total	**0.0034**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Mercury, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Molybdenum, total	**0.0005**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Nickel, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Phosphorus, total	< 0.020	0.020	mg/L	Dec-22-14	Dec-23-14	
Potassium, total	**0.60**	0.02	mg/L	Dec-22-14	Dec-23-14	
Selenium, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Silicon, total	**8.1**	0.5	mg/L	Dec-22-14	Dec-23-14	
Silver, total	< 0.00005	0.00005	mg/L	Dec-22-14	Dec-23-14	
Sodium, total	**5.27**	0.02	mg/L	Dec-22-14	Dec-23-14	
Strontium, total	**0.101**	0.001	mg/L	Dec-22-14	Dec-23-14	
Sulfur, total	**1**	1	mg/L	Dec-22-14	Dec-23-14	

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Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 11 (4121202-11) [Water] Sampled: Dec-18-14, Continued						
Total Recoverable Metals, Continued						
Tellurium, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Thallium, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Thorium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Tin, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Titanium, total	**0.007**	0.005	mg/L	Dec-22-14	Dec-23-14	
Uranium, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Vanadium, total	**0.001**	0.001	mg/L	Dec-22-14	Dec-23-14	
Zinc, total	< 0.004	0.004	mg/L	Dec-22-14	Dec-23-14	
Zirconium, total	**0.0002**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Sample ID: SFC 4B (4121202-12) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**18.1**	0.10	mg/L	N/A	Dec-20-14	
Fluoride	**0.06**	0.01	mg/L	N/A	Dec-20-14	
Nitrate as N	**0.325**	0.010	mg/L	N/A	Dec-20-14	
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-20-14	
Sulfate	**89.1**	1.0	mg/L	N/A	Dec-20-14	
General Parameters						
Alkalinity, Total as CaCO3	**34**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Bicarbonate as CaCO3	**34**	1	mg/L	N/A	Dec-20-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-20-14	
Chemical Oxygen Demand	**6**	5	mg/L	N/A	Dec-23-14	
pH	**7.26**	0.01	pH units	N/A	Dec-20-14	
Calculated Parameters						
Hardness, Total (Total as CaCO3)	**114**	0.50	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	**0.504**	0.005	mg/L	Dec-22-14	Dec-23-14	
Antimony, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Barium, total	**0.038**	0.005	mg/L	Dec-22-14	Dec-23-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Boron, total	**0.050**	0.004	mg/L	Dec-22-14	Dec-23-14	
Cadmium, total	**0.00005**	0.00001	mg/L	Dec-22-14	Dec-23-14	
Calcium, total	**37.7**	0.2	mg/L	Dec-22-14	Dec-23-14	
Chromium, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Cobalt, total	**0.00500**	0.00005	mg/L	Dec-22-14	Dec-23-14	
Copper, total	**0.0091**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Iron, total	**1.91**	0.01	mg/L	Dec-22-14	Dec-23-14	
Lead, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Lithium, total	**0.0005**	0.0001	mg/L	Dec-22-14	Dec-23-14	

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Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SFC 4B (4121202-12) [Water] Sampled: Dec-18-14, Continued						
Total Recoverable Metals, Continued						
Magnesium, total	**4.76**	0.01	mg/L	Dec-22-14	Dec-23-14	
Manganese, total	**0.749**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Mercury, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Molybdenum, total	**0.0011**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Nickel, total	**0.0022**	0.0002	mg/L	Dec-22-14	Dec-23-14	
Phosphorus, total	**0.036**	0.020	mg/L	Dec-22-14	Dec-23-14	
Potassium, total	**2.74**	0.02	mg/L	Dec-22-14	Dec-23-14	
Selenium, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Silicon, total	**7.6**	0.5	mg/L	Dec-22-14	Dec-23-14	
Silver, total	< 0.00005	0.00005	mg/L	Dec-22-14	Dec-23-14	
Sodium, total	**14.7**	0.02	mg/L	Dec-22-14	Dec-23-14	
Strontium, total	**0.300**	0.001	mg/L	Dec-22-14	Dec-23-14	
Sulfur, total	**29**	1	mg/L	Dec-22-14	Dec-23-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Thallium, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Thorium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Tin, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Titanium, total	< 0.005	0.005	mg/L	Dec-22-14	Dec-23-14	
Uranium, total	**0.00004**	0.00002	mg/L	Dec-22-14	Dec-23-14	
Vanadium, total	< 0.001	0.001	mg/L	Dec-22-14	Dec-23-14	
Zinc, total	**0.014**	0.004	mg/L	Dec-22-14	Dec-23-14	
Zirconium, total	**0.0001**	0.0001	mg/L	Dec-22-14	Dec-23-14	
Sample ID: MW4-REP (4121202-13) [Water] Sampled: Dec-18-14						
Anions						
Chloride	**26.9**	0.10	mg/L	N/A	Dec-23-14	
Fluoride	**0.08**	0.01	mg/L	N/A	Dec-23-14	
Nitrate as N	< 0.010	0.010	mg/L	N/A	Dec-23-14	HT
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-23-14	HT
Sulfate	**60.7**	1.0	mg/L	N/A	Dec-23-14	
General Parameters						
Alkalinity, Total as CaCO3	**108**	1	mg/L	N/A	Dec-23-14	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-23-14	
Alkalinity, Bicarbonate as CaCO3	**108**	1	mg/L	N/A	Dec-23-14	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-23-14	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-23-14	
Chemical Oxygen Demand	**15**	5	mg/L	N/A	Dec-29-14	
pH	**6.63**	0.01	pH units	N/A	Dec-23-14	HT
Calculated Parameters						
Hardness, Total (Diss. as CaCO3)	**146**	0.50	mg/L	N/A	N/A	
Dissolved Metals						
Aluminum, dissolved	**0.010**	0.005	mg/L	N/A	Dec-24-14	
Antimony, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	

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Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: MW4-REP (4121202-13) [Water] Sampled: Dec-18-14, Continued						
Dissolved Metals, Continued						
Arsenic, dissolved	**0.0025**	0.0005	mg/L	N/A	Dec-24-14	
Barium, dissolved	**0.152**	0.005	mg/L	N/A	Dec-24-14	
Beryllium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Bismuth, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Boron, dissolved	**0.068**	0.004	mg/L	N/A	Dec-24-14	
Cadmium, dissolved	**0.00050**	0.00001	mg/L	N/A	Dec-24-14	
Calcium, dissolved	**45.1**	0.2	mg/L	N/A	Dec-24-14	
Chromium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Cobalt, dissolved	**0.0366**	0.00005	mg/L	N/A	Dec-24-14	
Copper, dissolved	**0.0027**	0.0002	mg/L	N/A	Dec-24-14	
Iron, dissolved	**29.9**	0.010	mg/L	N/A	Dec-24-14	
Lead, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Lithium, dissolved	**0.0002**	0.0001	mg/L	N/A	Dec-24-14	
Magnesium, dissolved	**7.99**	0.01	mg/L	N/A	Dec-24-14	
Manganese, dissolved	**3.03**	0.0002	mg/L	N/A	Dec-24-14	
Mercury, dissolved	< 0.00002	0.00002	mg/L	N/A	Dec-29-14	
Molybdenum, dissolved	**0.0064**	0.0001	mg/L	N/A	Dec-24-14	
Nickel, dissolved	**0.0055**	0.0002	mg/L	N/A	Dec-24-14	
Phosphorus, dissolved	< 0.02	0.02	mg/L	N/A	Dec-24-14	
Potassium, dissolved	**6.35**	0.02	mg/L	N/A	Dec-24-14	
Selenium, dissolved	< 0.0005	0.0005	mg/L	N/A	Dec-24-14	
Silicon, dissolved	**12.7**	0.5	mg/L	N/A	Dec-24-14	
Silver, dissolved	< 0.00005	0.00005	mg/L	N/A	Dec-24-14	
Sodium, dissolved	**21.7**	0.02	mg/L	N/A	Dec-24-14	
Strontium, dissolved	**0.315**	0.001	mg/L	N/A	Dec-24-14	
Sulfur, dissolved	**18**	1	mg/L	N/A	Dec-24-14	
Tellurium, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Thallium, dissolved	**0.00003**	0.00002	mg/L	N/A	Dec-24-14	
Thorium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Tin, dissolved	< 0.0002	0.0002	mg/L	N/A	Dec-24-14	
Titanium, dissolved	< 0.005	0.005	mg/L	N/A	Dec-24-14	
Uranium, dissolved	**0.00017**	0.00002	mg/L	N/A	Dec-24-14	
Vanadium, dissolved	< 0.001	0.001	mg/L	N/A	Dec-24-14	
Zinc, dissolved	**0.011**	0.004	mg/L	N/A	Dec-24-14	
Zirconium, dissolved	< 0.0001	0.0001	mg/L	N/A	Dec-24-14	
Sample ID: SW Blank (4121202-14) [Water] Sampled: Dec-05-14 08:45						
Anions						
Chloride	< 0.10	0.10	mg/L	N/A	Dec-23-14	
Fluoride	< 0.05	0.01	mg/L	N/A	Dec-23-14	
Nitrate as N	< 0.010	0.010	mg/L	N/A	Dec-23-14	HT
Nitrite as N	< 0.010	0.010	mg/L	N/A	Dec-23-14	HT
Sulfate	< 1.0	1.0	mg/L	N/A	Dec-23-14	
General Parameters						

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Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SW Blank (4121202-14) [Water] Sampled: Dec-05-14 08:45, Continued						
General Parameters, Continued						
Alkalinity, Total as CaCO3	< 1	1	mg/L	N/A	Dec-23-14	HT
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L	N/A	Dec-23-14	HT
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L	N/A	Dec-23-14	HT
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L	N/A	Dec-23-14	HT
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L	N/A	Dec-23-14	HT
Chemical Oxygen Demand	< 5	5	mg/L	N/A	Dec-23-14	
pH	**5.80**	0.01	pH units	N/A	Dec-23-14	HT
Calculated Parameters						
Hardness, Total (Total as CaCO3)	< 0.50	0.50	mg/L	N/A	N/A	
Total Recoverable Metals						
Aluminum, total	< 0.005	0.005	mg/L	Dec-22-14	Dec-23-14	
Antimony, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Arsenic, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Barium, total	< 0.005	0.005	mg/L	Dec-22-14	Dec-23-14	
Beryllium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Bismuth, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Boron, total	< 0.004	0.004	mg/L	Dec-22-14	Dec-23-14	
Cadmium, total	< 0.00001	0.00001	mg/L	Dec-22-14	Dec-23-14	
Calcium, total	< 0.2	0.2	mg/L	Dec-22-14	Dec-23-14	
Chromium, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Cobalt, total	< 0.00005	0.00005	mg/L	Dec-22-14	Dec-23-14	
Copper, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Iron, total	< 0.01	0.01	mg/L	Dec-22-14	Dec-23-14	
Lead, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Lithium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Magnesium, total	< 0.01	0.01	mg/L	Dec-22-14	Dec-23-14	
Manganese, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Mercury, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Molybdenum, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Nickel, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Phosphorus, total	< 0.020	0.020	mg/L	Dec-22-14	Dec-23-14	
Potassium, total	< 0.02	0.02	mg/L	Dec-22-14	Dec-23-14	
Selenium, total	< 0.0005	0.0005	mg/L	Dec-22-14	Dec-23-14	
Silicon, total	< 0.5	0.5	mg/L	Dec-22-14	Dec-23-14	
Silver, total	< 0.00005	0.00005	mg/L	Dec-22-14	Dec-23-14	
Sodium, total	< 0.02	0.02	mg/L	Dec-22-14	Dec-23-14	
Strontium, total	< 0.001	0.001	mg/L	Dec-22-14	Dec-23-14	
Sulfur, total	< 1	1	mg/L	Dec-22-14	Dec-23-14	
Tellurium, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Thallium, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	
Thorium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	
Tin, total	< 0.0002	0.0002	mg/L	Dec-22-14	Dec-23-14	
Titanium, total	< 0.005	0.005	mg/L	Dec-22-14	Dec-23-14	
Uranium, total	< 0.00002	0.00002	mg/L	Dec-22-14	Dec-23-14	

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PROJECT	Whistler Landfill - Summer/Winter	**REPORTED**	Dec-30-14

Analyte	Result / *Recovery*	MRL / *Limits*	Units	Prepared	Analyzed	Notes
Sample ID: SW Blank (4121202-14) [Water] Sampled: Dec-05-14 08:45, Continued						
Total Recoverable Metals, Continued						
Vanadium, total	< 0.001	0.001	mg/L	Dec-22-14	Dec-23-14	
Zinc, total	< 0.004	0.004	mg/L	Dec-22-14	Dec-23-14	
Zirconium, total	< 0.0001	0.0001	mg/L	Dec-22-14	Dec-23-14	

Sample / Analysis Qualifiers:

HT The sample was prepared / analyzed past the recommended holding time.

REPORTED TO	Morrison Hershfield Limited	**WORK ORDER**	4121202
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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- **Blank Spike (BS)**: A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- **Standard Reference Material (SRM)**: A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Aggregate Organic Parameters, Batch B4L1033										
Blank (B4L1033-BLK1)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
VHw (6-10)	< 100	100	µg/L							
LCS (B4L1033-BS2)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
VHw (6-10)	1790	100	µg/L	2520		71	57-107			
Duplicate (B4L1033-DUP1)		**Source: 4121202-07**		Prepared: Dec-20-14, Analyzed: Dec-20-14						
VHw (6-10)	< 100	100	µg/L		< 100				27	
Aggregate Organic Parameters, Batch B4L1036										
Blank (B4L1036-BLK1)				Prepared: Dec-20-14, Analyzed: Dec-21-14						
EPHw (10-19)	< 400	100	µg/L							
EPHw (19-32)	< 400	100	µg/L							
LCS (B4L1036-BS2)				Prepared: Dec-20-14, Analyzed: Dec-21-14						
EPHw (10-19)	11700	100	µg/L	13900		84	63-123			
EPHw (19-32)	14700	100	µg/L	19900		74	51-102			
Anions, Batch B4L1054										
Blank (B4L1054-BLK1)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Nitrate as N	< 0.010	0.010	mg/L							
Nitrite as N	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
Blank (B4L1054-BLK2)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Nitrate as N	< 0.010	0.010	mg/L							
Nitrite as N	< 0.010	0.010	mg/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Anions, Batch B4L1054, Continued										
Blank (B4L1054-BLK2), Continued				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Sulfate	< 1.0	1.0	mg/L							
LCS (B4L1054-BS1)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Chloride	16.6	0.10	mg/L	16.0		103	85-115			
Fluoride	3.92	0.01	mg/L	4.00		98	85-115			
Nitrate as N	3.92	0.010	mg/L	4.00		98	85-115			
Nitrite as N	2.15	0.010	mg/L	2.00		107	85-115			
Sulfate	15.9	1.0	mg/L	16.0		100	85-115			
LCS (B4L1054-BS2)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Chloride	16.3	0.10	mg/L	16.0		102	85-115			
Fluoride	4.02	0.01	mg/L	4.00		100	85-115			
Nitrate as N	3.95	0.010	mg/L	4.00		99	85-115			
Nitrite as N	2.17	0.010	mg/L	2.00		108	85-115			
Sulfate	15.8	1.0	mg/L	16.0		99	85-115			
Duplicate (B4L1054-DUP2)		**Source: 4121202-11**		Prepared: Dec-20-14, Analyzed: Dec-20-14						
Chloride	4.29	0.10	mg/L		4.31			< 1	10	
Fluoride	0.05	0.01	mg/L		0.05			4	10	
Nitrate as N	0.197	0.010	mg/L		0.198			< 1	10	
Nitrite as N	< 0.010	0.010	mg/L		< 0.010				10	
Sulfate	12.6	1.0	mg/L		12.6			< 1	10	
Anions, Batch B4L1143										
Blank (B4L1143-BLK1)				Prepared: Dec-23-14, Analyzed: Dec-23-14						
Chloride	< 0.10	0.10	mg/L							
Fluoride	< 0.01	0.01	mg/L							
Nitrate as N	< 0.010	0.010	mg/L							
Nitrite as N	< 0.010	0.010	mg/L							
Sulfate	< 1.0	1.0	mg/L							
LCS (B4L1143-BS1)				Prepared: Dec-23-14, Analyzed: Dec-23-14						
Chloride	16.5	0.10	mg/L	16.0		103	85-115			
Fluoride	3.96	0.01	mg/L	4.00		99	85-115			
Nitrate as N	3.94	0.010	mg/L	4.00		99	85-115			
Nitrite as N	2.12	0.010	mg/L	2.00		106	85-115			
Sulfate	15.9	1.0	mg/L	16.0		99	85-115			
Duplicate (B4L1143-DUP1)		**Source: 4121202-13**		Prepared: Dec-23-14, Analyzed: Dec-23-14						
Chloride	26.6	0.10	mg/L		26.9			1	10	
Fluoride	0.08	0.01	mg/L		0.08			< 1	10	
Nitrate as N	< 0.010	0.010	mg/L		< 0.010				10	
Nitrite as N	< 0.010	0.010	mg/L		< 0.010				10	
Sulfate	59.6	1.0	mg/L		60.7			2	10	
Dissolved Metals, Batch B4L1072										
Blank (B4L1072-BLK1)				Prepared: Dec-24-14, Analyzed: Dec-24-14						
Aluminum, dissolved	< 0.005	0.005	mg/L							
Antimony, dissolved	< 0.0001	0.0001	mg/L							
Arsenic, dissolved	< 0.0005	0.0005	mg/L							
Barium, dissolved	< 0.005	0.005	mg/L							
Beryllium, dissolved	< 0.0001	0.0001	mg/L							
Bismuth, dissolved	< 0.0001	0.0001	mg/L							
Boron, dissolved	< 0.004	0.004	mg/L							

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Dissolved Metals, Batch B4L1072, Continued										
Blank (B4L1072-BLK1), Continued				Prepared: Dec-24-14, Analyzed: Dec-24-14						
Cadmium, dissolved	< 0.00001	0.00001	mg/L							
Calcium, dissolved	< 0.2	0.2	mg/L							
Chromium, dissolved	< 0.0005	0.0005	mg/L							
Cobalt, dissolved	< 0.00005	0.00005	mg/L							
Copper, dissolved	< 0.0002	0.0002	mg/L							
Iron, dissolved	< 0.010	0.010	mg/L							
Lead, dissolved	< 0.0001	0.0001	mg/L							
Lithium, dissolved	< 0.0001	0.0001	mg/L							
Magnesium, dissolved	< 0.01	0.01	mg/L							
Manganese, dissolved	< 0.0002	0.0002	mg/L							
Mercury, dissolved	< 0.00002	0.00002	mg/L							
Molybdenum, dissolved	< 0.0001	0.0001	mg/L							
Nickel, dissolved	< 0.0002	0.0002	mg/L							
Phosphorus, dissolved	< 0.02	0.02	mg/L							
Potassium, dissolved	< 0.02	0.02	mg/L							
Selenium, dissolved	< 0.0005	0.0005	mg/L							
Silicon, dissolved	< 0.5	0.5	mg/L							
Silver, dissolved	< 0.00005	0.00005	mg/L							
Sodium, dissolved	< 0.02	0.02	mg/L							
Strontium, dissolved	< 0.001	0.001	mg/L							
Sulfur, dissolved	< 1	1	mg/L							
Tellurium, dissolved	< 0.0002	0.0002	mg/L							
Thallium, dissolved	< 0.00002	0.00002	mg/L							
Thorium, dissolved	< 0.0001	0.0001	mg/L							
Tin, dissolved	< 0.0002	0.0002	mg/L							
Titanium, dissolved	< 0.005	0.005	mg/L							
Uranium, dissolved	< 0.00002	0.00002	mg/L							
Vanadium, dissolved	< 0.001	0.001	mg/L							
Zinc, dissolved	< 0.004	0.004	mg/L							
Zirconium, dissolved	< 0.0001	0.0001	mg/L							
Reference (B4L1072-SRM1)				Prepared: Dec-24-14, Analyzed: Dec-24-14						
Aluminum, dissolved	0.230	0.005	mg/L	0.233		99	81-129			
Antimony, dissolved	0.0439	0.0001	mg/L	0.0430		102	75-125			
Arsenic, dissolved	0.423	0.0005	mg/L	0.438		97	88-114			
Barium, dissolved	3.33	0.005	mg/L	3.35		99	83-117			
Beryllium, dissolved	0.232	0.0001	mg/L	0.213		109	76-131			
Boron, dissolved	2.11	0.004	mg/L	1.74		121	75-121			
Cadmium, dissolved	0.227	0.00001	mg/L	0.224		101	89-111			
Calcium, dissolved	8.4	0.2	mg/L	7.69		109	86-121			
Chromium, dissolved	0.447	0.0005	mg/L	0.437		102	89-114			
Cobalt, dissolved	0.138	0.00005	mg/L	0.128		108	91-113			
Copper, dissolved	0.901	0.0002	mg/L	0.844		107	91-115			
Iron, dissolved	1.30	0.010	mg/L	1.29		101	77-124			
Lead, dissolved	0.126	0.0001	mg/L	0.112		113	92-113			
Lithium, dissolved	0.116	0.0001	mg/L	0.104		111	85-115			
Magnesium, dissolved	6.95	0.01	mg/L	6.92		101	78-120			
Manganese, dissolved	0.355	0.0002	mg/L	0.345		103	90-114			
Molybdenum, dissolved	0.457	0.0001	mg/L	0.426		107	83-117			
Nickel, dissolved	0.888	0.0002	mg/L	0.840		106	90-111			
Phosphorus, dissolved	0.49	0.02	mg/L	0.495		99	85-115			
Potassium, dissolved	3.16	0.02	mg/L	3.19		99	84-113			
Selenium, dissolved	0.0324	0.0005	mg/L	0.0331		98	85-115			
Sodium, dissolved	19.1	0.02	mg/L	19.1		100	82-123			
Strontium, dissolved	0.923	0.001	mg/L	0.916		101	88-112			
Thallium, dissolved	0.0431	0.00002	mg/L	0.0393		110	91-114			
Uranium, dissolved	0.307	0.00002	mg/L	0.266		115	85-120			

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Dissolved Metals, Batch B4L1072, Continued										
Reference (B4L1072-SRM1), Continued				Prepared: Dec-24-14, Analyzed: Dec-24-14						
Vanadium, dissolved	0.862	0.001	mg/L	0.869		99	86-111			
Zinc, dissolved	0.865	0.004	mg/L	0.881		98	85-111			
General Parameters, Batch B4L1037										
Blank (B4L1037-BLK1)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
Blank (B4L1037-BLK2)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
LCS (B4L1037-BS1)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Alkalinity, Total as CaCO3	103	1	mg/L	100		103	96-108			
LCS (B4L1037-BS2)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Alkalinity, Total as CaCO3	100	1	mg/L	100		100	96-108			
Duplicate (B4L1037-DUP2)		**Source: 4121202-11**		Prepared: Dec-20-14, Analyzed: Dec-20-14						
Alkalinity, Total as CaCO3	20	1	mg/L		20			1	10	
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L		< 1				10	
Alkalinity, Bicarbonate as CaCO3	20	1	mg/L		20			1	10	
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L		< 1				10	
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L		< 1				10	
pH	7.12	0.01	pH units		7.06			< 1	5	
Reference (B4L1037-SRM1)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
pH	6.97	0.01	pH units	7.00		100	98-102			
Reference (B4L1037-SRM2)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
pH	6.96	0.01	pH units	7.00		99	98-102			
General Parameters, Batch B4L1114										
Blank (B4L1114-BLK1)				Prepared: Dec-23-14, Analyzed: Dec-23-14						
Chemical Oxygen Demand	< 5	5	mg/L							
LCS (B4L1114-BS1)				Prepared: Dec-23-14, Analyzed: Dec-23-14						
Chemical Oxygen Demand	51	5	mg/L	50.0		101	82-119			
General Parameters, Batch B4L1162										
Blank (B4L1162-BLK1)				Prepared: Dec-23-14, Analyzed: Dec-23-14						
Alkalinity, Total as CaCO3	< 1	1	mg/L							
Alkalinity, Phenolphthalein as CaCO3	< 1	1	mg/L							
Alkalinity, Bicarbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Carbonate as CaCO3	< 1	1	mg/L							
Alkalinity, Hydroxide as CaCO3	< 1	1	mg/L							
pH	< 0.01	0.01	pH units							

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General Parameters, Batch B4L1162, Continued										
LCS (B4L1162-BS1)				Prepared: Dec-23-14, Analyzed: Dec-23-14						
Alkalinity, Total as CaCO3	102	1	mg/L	100		102	96-108			
Reference (B4L1162-SRM1)				Prepared: Dec-23-14, Analyzed: Dec-23-14						
pH	6.97	0.01	pH units	7.00		100	98-102			
General Parameters, Batch B4L1214										
Blank (B4L1214-BLK1)				Prepared: Dec-29-14, Analyzed: Dec-29-14						
Chemical Oxygen Demand	< 5	5	mg/L							
LCS (B4L1214-BS1)				Prepared: Dec-29-14, Analyzed: Dec-29-14						
Chemical Oxygen Demand	48	5	mg/L	50.0		96	82-119			
Duplicate (B4L1214-DUP1)		**Source: 4121202-04**		Prepared: Dec-29-14, Analyzed: Dec-29-14						
Chemical Oxygen Demand	14	5	mg/L		13				20	
Polycyclic Aromatic Hydrocarbons (PAH), Batch B4L1036										
Blank (B4L1036-BLK1)				Prepared: Dec-20-14, Analyzed: Dec-21-14						
Acenaphthene	< 0.20	0.05	µg/L							
Acenaphthylene	< 0.20	0.05	µg/L							
Acridine	< 0.40	0.10	µg/L							
Anthracene	< 0.20	0.05	µg/L							
Benzo (a) anthracene	< 0.20	0.05	µg/L							
Benzo (a) pyrene	< 0.04	0.01	µg/L							
Benzo (b) fluoranthene	< 0.20	0.05	µg/L							
Benzo (g,h,i) perylene	< 0.20	0.05	µg/L							
Benzo (k) fluoranthene	< 0.20	0.05	µg/L							
Chrysene	< 0.20	0.05	µg/L							
Dibenz (a,h) anthracene	< 0.20	0.05	µg/L							
Fluoranthene	< 0.20	0.05	µg/L							
Fluorene	< 0.20	0.05	µg/L							
Indeno (1,2,3-cd) pyrene	< 0.20	0.05	µg/L							
Naphthalene	< 1.20	0.30	µg/L							
Phenanthrene	< 0.40	0.10	µg/L							
Pyrene	< 0.40	0.10	µg/L							
Quinoline	< 0.40	0.10	µg/L							
Surrogate: Naphthalene-d8	*3.51*		*µg/L*	*3.72*		*94*	*40-96*			
Surrogate: Acenaphthene-d10	*3.37*		*µg/L*	*3.72*		*91*	*45-92*			
Surrogate: Phenanthrene-d10	*3.11*		*µg/L*	*3.70*		*84*	*48-90*			
Surrogate: Chrysene-d12	*3.61*		*µg/L*	*3.76*		*96*	*41-96*			
Surrogate: Perylene-d12	*3.87*		*µg/L*	*4.36*		*89*	*47-104*			
LCS (B4L1036-BS1)				Prepared: Dec-20-14, Analyzed: Dec-21-14						
Acenaphthene	3.50	0.05	µg/L	4.00		88	54-92			
Acenaphthylene	3.66	0.05	µg/L	4.00		92	54-95			
Acridine	3.32	0.10	µg/L	4.00		83	49-87			
Anthracene	3.57	0.05	µg/L	4.00		89	53-94			
Benzo (a) anthracene	3.73	0.05	µg/L	4.00		93	52-95			
Benzo (a) pyrene	4.05	0.01	µg/L	4.00		101	52-103			
Benzo (b) fluoranthene	3.58	0.05	µg/L	4.00		90	49-94			
Benzo (g,h,i) perylene	3.46	0.05	µg/L	4.00		86	51-98			
Benzo (k) fluoranthene	3.42	0.05	µg/L	4.00		85	49-105			
Chrysene	3.85	0.05	µg/L	4.00		96	50-104			
Dibenz (a,h) anthracene	3.01	0.05	µg/L	4.00		75	49-96			
Fluoranthene	3.59	0.05	µg/L	4.00		90	53-102			

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Polycyclic Aromatic Hydrocarbons (PAH), Batch B4L1036, Continued										
LCS (B4L1036-BS1), Continued				Prepared: Dec-20-14, Analyzed: Dec-21-14						
Fluorene	3.56	0.05	µg/L	4.00		89	54-91			
Indeno (1,2,3-cd) pyrene	3.32	0.05	µg/L	4.00		83	51-99			
Naphthalene	3.42	0.30	µg/L	4.00		86	51-91			
Phenanthrene	3.70	0.10	µg/L	4.00		92	56-96			
Pyrene	3.90	0.10	µg/L	4.00		98	51-105			
Quinoline	4.07	0.10	µg/L	4.00		102	48-126			
Surrogate: Naphthalene-d8	*3.58*		*µg/L*	*3.72*		*96*	*40-96*			
Surrogate: Acenaphthene-d10	*3.34*		*µg/L*	*3.72*		*90*	*45-92*			
Surrogate: Phenanthrene-d10	*3.27*		*µg/L*	*3.70*		*88*	*48-90*			
Surrogate: Chrysene-d12	*3.53*		*µg/L*	*3.76*		*94*	*41-96*			
Surrogate: Perylene-d12	*3.95*		*µg/L*	*4.36*		*91*	*47-104*			
LCS Dup (B4L1036-BSD1)				Prepared: Dec-20-14, Analyzed: Dec-21-14						
Acenaphthene	3.62	0.05	µg/L	4.00		91	54-92	3	20	
Acenaphthylene	3.58	0.05	µg/L	4.00		90	54-95	2	20	
Acridine	3.30	0.10	µg/L	4.00		82	49-87	< 1	20	
Anthracene	3.31	0.05	µg/L	4.00		83	53-94	8	20	
Benzo (a) anthracene	3.25	0.05	µg/L	4.00		81	52-95	14	20	
Benzo (a) pyrene	3.38	0.01	µg/L	4.00		85	52-103	18	20	
Benzo (b) fluoranthene	3.09	0.05	µg/L	4.00		77	49-94	15	20	
Benzo (g,h,i) perylene	2.99	0.05	µg/L	4.00		75	51-98	15	20	
Benzo (k) fluoranthene	3.40	0.05	µg/L	4.00		85	49-105	< 1	20	
Chrysene	3.16	0.05	µg/L	4.00		79	50-104	20	20	
Dibenz (a,h) anthracene	2.85	0.05	µg/L	4.00		71	49-96	5	20	
Fluoranthene	3.65	0.05	µg/L	4.00		91	53-102	2	20	
Fluorene	3.65	0.05	µg/L	4.00		91	54-91	2	20	
Indeno (1,2,3-cd) pyrene	3.00	0.05	µg/L	4.00		75	51-99	10	20	
Naphthalene	3.64	0.30	µg/L	4.00		91	51-91	6	20	
Phenanthrene	3.73	0.10	µg/L	4.00		93	56-96	1	20	
Pyrene	3.69	0.10	µg/L	4.00		92	51-105	6	20	
Quinoline	3.48	0.10	µg/L	4.00		87	48-126	16	20	
Surrogate: Naphthalene-d8	*3.41*		*µg/L*	*3.72*		*92*	*40-96*			
Surrogate: Acenaphthene-d10	*3.28*		*µg/L*	*3.72*		*88*	*45-92*			
Surrogate: Phenanthrene-d10	*3.26*		*µg/L*	*3.70*		*88*	*48-90*			
Surrogate: Chrysene-d12	*3.35*		*µg/L*	*3.76*		*89*	*41-96*			
Surrogate: Perylene-d12	*3.69*		*µg/L*	*4.36*		*85*	*47-104*			

Total Recoverable Metals, Batch B4L1075

Blank (B4L1075-BLK1)				Prepared: Dec-22-14, Analyzed: Dec-23-14
Aluminum, total	< 0.005	0.005	mg/L	
Antimony, total	< 0.0001	0.0001	mg/L	
Arsenic, total	< 0.0005	0.0005	mg/L	
Barium, total	< 0.005	0.005	mg/L	
Beryllium, total	< 0.0001	0.0001	mg/L	
Bismuth, total	< 0.0001	0.0001	mg/L	
Boron, total	< 0.004	0.004	mg/L	
Cadmium, total	< 0.00001	0.00001	mg/L	
Calcium, total	< 0.2	0.2	mg/L	
Chromium, total	< 0.0005	0.0005	mg/L	
Cobalt, total	< 0.00005	0.00005	mg/L	
Copper, total	< 0.0002	0.0002	mg/L	
Iron, total	< 0.01	0.01	mg/L	
Lead, total	< 0.0001	0.0001	mg/L	
Lithium, total	< 0.0001	0.0001	mg/L	
Magnesium, total	< 0.01	0.01	mg/L	

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4121202
REPORTED Dec-30-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Total Recoverable Metals, Batch B4L1075, Continued										
Blank (B4L1075-BLK1), Continued				Prepared: Dec-22-14, Analyzed: Dec-23-14						
Manganese, total	< 0.0002	0.0002	mg/L							
Mercury, total	< 0.00002	0.00002	mg/L							
Molybdenum, total	< 0.0001	0.0001	mg/L							
Nickel, total	< 0.0002	0.0002	mg/L							
Phosphorus, total	< 0.020	0.020	mg/L							
Potassium, total	< 0.02	0.02	mg/L							
Selenium, total	< 0.0005	0.0005	mg/L							
Silicon, total	< 0.5	0.5	mg/L							
Silver, total	< 0.00005	0.00005	mg/L							
Sodium, total	< 0.02	0.02	mg/L							
Strontium, total	< 0.001	0.001	mg/L							
Sulfur, total	< 1	1	mg/L							
Tellurium, total	< 0.0002	0.0002	mg/L							
Thallium, total	< 0.00002	0.00002	mg/L							
Thorium, total	< 0.0001	0.0001	mg/L							
Tin, total	< 0.0002	0.0002	mg/L							
Titanium, total	< 0.005	0.005	mg/L							
Uranium, total	< 0.00002	0.00002	mg/L							
Vanadium, total	< 0.001	0.001	mg/L							
Zinc, total	< 0.004	0.004	mg/L							
Zirconium, total	< 0.0001	0.0001	mg/L							
Reference (B4L1075-SRM1)				Prepared: Dec-22-14, Analyzed: Dec-23-14						
Aluminum, total	0.277	0.005	mg/L	0.296		94	81-129			
Antimony, total	0.0525	0.0001	mg/L	0.0505		104	88-114			
Arsenic, total	0.118	0.0005	mg/L	0.122		97	88-114			
Barium, total	0.739	0.005	mg/L	0.777		95	72-104			
Beryllium, total	0.0511	0.0001	mg/L	0.0488		105	76-131			
Boron, total	4.01	0.004	mg/L	3.40		118	75-121			
Cadmium, total	0.0507	0.00001	mg/L	0.0490		103	89-111			
Calcium, total	10.9	0.2	mg/L	10.2		107	86-121			
Chromium, total	0.245	0.0005	mg/L	0.242		101	89-114			
Cobalt, total	0.0376	0.00005	mg/L	0.0366		103	91-113			
Copper, total	0.519	0.0002	mg/L	0.487		107	91-115			
Iron, total	0.47	0.01	mg/L	0.469		101	77-124			
Lead, total	0.218	0.0001	mg/L	0.193		113	92-113			
Lithium, total	0.427	0.0001	mg/L	0.390		110	85-115			
Magnesium, total	3.28	0.01	mg/L	3.31		99	78-120			
Manganese, total	0.104	0.0002	mg/L	0.109		96	90-114			
Mercury, total	0.00499	0.00002	mg/L	0.00456		109	50-150			
Molybdenum, total	0.199	0.0001	mg/L	0.197		101	90-111			
Nickel, total	0.242	0.0002	mg/L	0.242		100	90-111			
Phosphorus, total	0.201	0.020	mg/L	0.233		86	85-115			
Potassium, total	5.84	0.02	mg/L	5.93		98	84-113			
Selenium, total	0.107	0.0005	mg/L	0.115		93	85-115			
Sodium, total	7.17	0.02	mg/L	7.64		94	82-123			
Strontium, total	0.385	0.001	mg/L	0.363		106	88-112			
Thallium, total	0.0892	0.00002	mg/L	0.0794		112	91-114			
Uranium, total	0.0229	0.00002	mg/L	0.0192		119	85-120			
Vanadium, total	0.372	0.001	mg/L	0.376		99	86-111			
Zinc, total	2.41	0.004	mg/L	2.42		99	85-111			
Volatile Organic Compounds (VOC), Batch B4L1033										
Blank (B4L1033-BLK1)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Benzene	< 0.5	0.5	µg/L							

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4121202
REPORTED Dec-30-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B4L1033, Continued										
Blank (B4L1033-BLK1), Continued				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Bromodichloromethane	< 1.0	1.0	µg/L							
Bromoform	< 1.0	1.0	µg/L							
Carbon tetrachloride	< 1.0	1.0	µg/L							
Chlorobenzene	< 1.0	1.0	µg/L							
Chloroethane	< 2.0	2.0	µg/L							
Chloroform	< 1.0	1.0	µg/L							
Dibromochloromethane	< 1.0	1.0	µg/L							
1,2-Dibromoethane	< 0.3	0.3	µg/L							
Dibromomethane	< 1.0	1.0	µg/L							
1,2-Dichlorobenzene	< 0.5	0.5	µg/L							
1,3-Dichlorobenzene	< 1.0	1.0	µg/L							
1,4-Dichlorobenzene	< 1.0	1.0	µg/L							
1,1-Dichloroethane	< 1.0	1.0	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
1,1-Dichloroethene	< 1.0	1.0	µg/L							
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L							
1,2-Dichloropropane	< 1.0	1.0	µg/L							
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L							
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Methylene chloride	< 3.0	3.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L							
Tetrachloroethene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
1,1,2-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethene	< 1.0	1.0	µg/L							
Trichlorofluoromethane	< 1.0	1.0	µg/L							
Vinyl chloride	< 2.0	2.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
Surrogate: Toluene-d8	*24.0*		*µg/L*	*25.0*		*96*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*29.2*		*µg/L*	*25.0*		*117*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*26.7*		*µg/L*	*26.0*		*103*	*70-130*			
LCS (B4L1033-BS1)				Prepared: Dec-20-14, Analyzed: Dec-20-14						
Benzene	20.5	0.5	µg/L	20.0		103	70-130			
Bromodichloromethane	20.4	1.0	µg/L	20.0		102	70-130			
Bromoform	21.4	1.0	µg/L	20.0		107	70-130			
Carbon tetrachloride	19.2	1.0	µg/L	20.0		96	70-130			
Chlorobenzene	22.2	1.0	µg/L	20.0		111	70-130			
Chloroethane	20.3	2.0	µg/L	20.0		101	70-130			
Chloroform	21.4	1.0	µg/L	20.0		107	70-130			
Dibromochloromethane	20.7	1.0	µg/L	20.0		104	70-130			
1,2-Dibromoethane	19.9	0.3	µg/L	20.0		100	70-130			
Dibromomethane	20.3	1.0	µg/L	20.0		101	70-130			
1,2-Dichlorobenzene	23.2	0.5	µg/L	20.0		116	70-130			
1,3-Dichlorobenzene	22.6	1.0	µg/L	20.0		113	70-130			
1,4-Dichlorobenzene	22.4	1.0	µg/L	20.0		112	70-130			
1,1-Dichloroethane	20.6	1.0	µg/L	20.0		103	70-130			
1,2-Dichloroethane	20.6	1.0	µg/L	20.0		103	70-130			
1,1-Dichloroethene	21.1	1.0	µg/L	20.0		105	70-130			
cis-1,2-Dichloroethene	19.9	1.0	µg/L	20.0		99	70-130			
trans-1,2-Dichloroethene	20.2	1.0	µg/L	20.0		101	70-130			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4121202
REPORTED Dec-30-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B4L1033, Continued										
LCS (B4L1033-BS1), Continued				Prepared: Dec-20-14, Analyzed: Dec-20-14						
1,2-Dichloropropane	19.9	1.0	µg/L	20.0		99	70-130			
cis-1,3-Dichloropropene	20.4	1.0	µg/L	20.0		102	70-130			
trans-1,3-Dichloropropene	20.7	1.0	µg/L	20.0		104	70-130			
Ethylbenzene	22.1	1.0	µg/L	20.0		110	70-130			
Methyl tert-butyl ether	19.9	1.0	µg/L	20.0		100	70-130			
Methylene chloride	20.4	3.0	µg/L	20.0		102	70-130			
Styrene	21.7	1.0	µg/L	20.0		108	70-130			
1,1,2,2-Tetrachloroethane	21.7	1.0	µg/L	20.0		108	70-130			
Tetrachloroethene	20.8	1.0	µg/L	20.0		104	70-130			
Toluene	20.9	1.0	µg/L	20.0		104	70-130			
1,1,1-Trichloroethane	20.4	1.0	µg/L	20.0		102	70-130			
1,1,2-Trichloroethane	20.6	1.0	µg/L	20.0		103	70-130			
Trichloroethene	21.2	1.0	µg/L	20.0		106	70-130			
Trichlorofluoromethane	22.1	1.0	µg/L	20.0		111	70-130			
Vinyl chloride	18.9	2.0	µg/L	20.0		95	70-130			
Xylenes (total)	68.4	2.0	µg/L	60.0		114	70-130			
Surrogate: Toluene-d8	*24.4*		*µg/L*	*25.0*		*97*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*29.7*		*µg/L*	*25.0*		*119*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*30.7*		*µg/L*	*26.0*		*118*	*70-130*			
Duplicate (B4L1033-DUP1)	**Source: 4121202-07**			Prepared: Dec-20-14, Analyzed: Dec-20-14						
Benzene	< 0.5	0.5	µg/L		< 0.5					20
Bromodichloromethane	< 1.0	1.0	µg/L		< 1.0					20
Bromoform	< 1.0	1.0	µg/L		< 1.0					20
Carbon tetrachloride	< 1.0	1.0	µg/L		< 1.0					20
Chlorobenzene	< 1.0	1.0	µg/L		< 1.0					20
Chloroethane	< 2.0	2.0	µg/L		< 2.0					20
Chloroform	< 1.0	1.0	µg/L		< 1.0					20
Dibromochloromethane	< 1.0	1.0	µg/L		< 1.0					20
1,2-Dibromoethane	< 0.3	0.3	µg/L		< 0.3					20
Dibromomethane	< 1.0	1.0	µg/L		< 1.0					20
1,2-Dichlorobenzene	< 0.5	0.5	µg/L		< 0.5					20
1,3-Dichlorobenzene	< 1.0	1.0	µg/L		< 1.0					20
1,4-Dichlorobenzene	< 1.0	1.0	µg/L		< 1.0					20
1,1-Dichloroethane	< 1.0	1.0	µg/L		< 1.0					20
1,2-Dichloroethane	< 1.0	1.0	µg/L		< 1.0					20
1,1-Dichloroethene	< 1.0	1.0	µg/L		< 1.0					20
cis-1,2-Dichloroethene	< 1.0	1.0	µg/L		< 1.0					20
trans-1,2-Dichloroethene	< 1.0	1.0	µg/L		< 1.0					20
1,2-Dichloropropane	< 1.0	1.0	µg/L		< 1.0					20
cis-1,3-Dichloropropene	< 1.0	1.0	µg/L		< 1.0					20
trans-1,3-Dichloropropene	< 1.0	1.0	µg/L		< 1.0					20
Ethylbenzene	< 1.0	1.0	µg/L		< 1.0					20
Methyl tert-butyl ether	< 1.0	1.0	µg/L		< 1.0					20
Methylene chloride	< 3.0	3.0	µg/L		< 3.0					20
Styrene	< 1.0	1.0	µg/L		< 1.0					20
1,1,2,2-Tetrachloroethane	< 1.0	1.0	µg/L		< 1.0					20
Tetrachloroethene	< 1.0	1.0	µg/L		< 1.0					20
Toluene	< 1.0	1.0	µg/L		< 1.0					20
1,1,1-Trichloroethane	< 1.0	1.0	µg/L		< 1.0					20
1,1,2-Trichloroethane	< 1.0	1.0	µg/L		< 1.0					20
Trichloroethene	< 1.0	1.0	µg/L		< 1.0					20
Trichlorofluoromethane	< 1.0	1.0	µg/L		< 1.0					20
Vinyl chloride	< 2.0	2.0	µg/L		< 2.0					20
Xylenes (total)	< 2.0	2.0	µg/L		< 2.0					20
Surrogate: Toluene-d8	*22.9*		*µg/L*	*25.0*		*91*	*70-130*			

REPORTED TO Morrison Hershfield Limited
PROJECT Whistler Landfill - Summer/Winter

WORK ORDER 4121202
REPORTED Dec-30-14

Analyte	Result	MRL	Units	Spike Level	Source Result	% REC	REC Limit	RPD	RPD Limit	Notes
Volatile Organic Compounds (VOC), Batch B4L1033, Continued										
Duplicate (B4L1033-DUP1), Continued		**Source: 4121202-07**		Prepared: Dec-20-14, Analyzed: Dec-20-14						
Surrogate: 4-Bromofluorobenzene	*27.6*		*µg/L*	*25.0*		*110*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*25.5*		*µg/L*	*26.0*		*98*	*70-130*			

APPENDIX B: Field Data Collection Results for Leachate, Groundwater, and Surface Water Monitoring

Well ID	Date	Groundwater Levels				Water Quality					Comments
		Ground Surface elevation	Top of Well Riser Elevation	Depth to Water	Static Water Level Elevation	Temp	Conductivi	D.O.	pH	ORP	
		mASML	mASML	m below top of well riser	mASL	C	uS/cm	mg/l			
MW2D	QI - March 21, 2014	603.84	604.9	6.04	598.86	7.7	1.39		6.39	-638.4	D.O. value of 385.2 was recorded in field notes; mg/L value unavailable
MW2S		603.84	604.94	6	598.94	7.4	0.741	13.9	6.17	-787	
MW3		600.61	601.47	1.36	600.11	7.37	0.233	7.11	6.26	-704.2	
MW4		596.54	677.54	3.98	673.56	6.91	0.532	9.02	5.55	-773.3	
MW6		610.88	610.88	X	X	X	X	X	X	X	Could not access moniroing well cap due to ice in sampling port
SFC2						5.87	0.372	10.47	5.17	-655.9	
SFC2B						3.72	0.609	11.95	4.03	-741.6	
SFC3						3.84	0.233	13.8	5.88	-883.1	
SFC11						3.34	0.082	13.05	5.95	-875.3	
SFC4B						3.54	0.253	24.5	6.34	-1080.3	
Leachate Manhole						4.21	0.404	7.77	6.04	-490.5	
GW Interceptor						9.02	1.046	4.07	5.59	-546.2	Ground Water Interceptor Pump Manhole
MW2D	Q2 - June 25, 2014	603.84	604.9	6.56	598.34	8.03	747	22.22	6.18	-68.2	Rented YSI Metre - Calibrated @ Maxim
MW2S		603.84	604.94	6.52	598.42	9.41	217	25.04	6.27	-87.5	
MW3		600.61	601.47	1.68	599.79	11.45	2	15.75	6.3	120.7	
MW4		596.54	677.54	4.06	673.48	8.3	390	24.4	6.17	-37.8	
MW6		610.88	610.88	5.34	605.54	7.1	595	7.13	5.74	136.8	
SFC2						8.52	115	14.04	6.16	17.6	
SFC2B						12.59	732	7.76	3.46	359.4	
SFC3						8.4	112	10.99	6.11	57.9	
SFC3 Rep						8.4	111	10.77	6.12	55.9	
SFC11						7.15	84	10.93	6.24	90.3	
SFC4B						9.31	225	11.82	7.36	-7.5	
GW Interceptor						9.23	585	81.4	5.79	-0.5	Ground Water Interceptor Pump Manhole
MW2D	Q3 - Oct. 14, 2014	603.84	604.9	6.94	597.96	6.78	871	3.42	6.19	10.4	Rented YSI Metre - Calibrated @ Maxim
MW2S		603.84	604.94	6.89	598.05	7.13	379	3.53	6.29	62.1	
MW3		600.61	601.47	1.76	599.71	8.45	148	4.27	5.34	155.7	
MW4		596.54	677.54	4.14	673.4	6.43	232	5.21	6.01	22.9	
MW6		610.88	610.88	5.93	604.95	7.1	431	5.67	5.11	194.5	
SFC2						8.19	266	8.05	5.68	112.4	
SFC2B						8	761	4.42	3.46	481.6	
SFC3						7.22	270	9.17	5.59	187.6	
SFC11						5.47	87	8.69	5.93	137.5	
SFC4B						7.25	230	10.78	6.19	103.6	
Leachate Manhole											Not enough flow to collect for a sample this round.
MW2D	Q4 - Dec. 18, 2014	603.84	604.9	5.84	599.06	7.65	897	3.51	6.28	3.5	
MW2S		603.84	604.94	6.1	598.84	6.43	535	3.44	6.38	4.6	
MW3		600.61	601.47	1.42	600.05	8.97	138	4.33	5.52	163.7	
MW4		596.54	677.54	3.92	673.62	7.69	341	6.46	5.41	90.4	
MW6		610.88	610.88	4.7	606.18	7.14	462	7.67	5.35	244.1	
SFC2						7.43	229	13.45	5.02	185	
SFC2B						4.21	340	8.25	3.5	371	
SFC3						4.9	109	12.38	5.53	217.3	
SFC11						4.77	56	15.01	5.13	258.4	
SFC4B						5.01	205	14.4	5.85	130	
GW Interceptor						9.1	859	6.65	5.91	92.4	Ground Water Interceptor Pump Manhole - tested for everything
Leachate Manhole						7.26	307	7.5	5.56	198	Samples this quarter since there was not enough water to sample in Q3. Tested for everything + VOCs, L/HEPH

APPENDIX C: Analytical Parameters Associated with Leachate / Groundwater/ Surface Water Quality Monitoring

ANALYTICAL SERVICES CAPABILITIES

PREPARED FOR Morrison Hershfield Limited **DATE** May-06-15

Packages and their Respective Analyses:

Package: **BTEX/VH/VPH in Water Pkg** TAT (Days): 5
Container(s): 2 x 40 mL AG - NaHSO4 HT (Days): 14

Calculated Analyte(s) Included: VPHw

Analyses Included:

BTEX in Water	VH in Water

Package: **Dissolved Metals by ICPMS (low) Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - Filtered + HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Diss. as CaCO3)

Analyses Included:

Aluminum, dissolved by ICPMS (low)	Antimony, dissolved by ICPMS (low)	Arsenic, dissolved by ICPMS (low)
Barium, dissolved by ICPMS (low)	Beryllium, dissolved by ICPMS (low)	Bismuth, dissolved by ICPMS (low)
Boron, dissolved by ICPMS (low)	Cadmium, dissolved by ICPMS (low)	Calcium, dissolved by ICPMS (low)
Chromium, dissolved by ICPMS (low)	Cobalt, dissolved by ICPMS (low)	Copper, dissolved by ICPMS (low)
Iron, dissolved by ICPMS (low)	Lead, dissolved by ICPMS (low)	Lithium, dissolved by ICPMS (low)
Magnesium, dissolved by ICPMS (low)	Manganese, dissolved by ICPMS (low)	Molybdenum, dissolved by ICPMS (low)
Nickel, dissolved by ICPMS (low)	Phosphorus, dissolved by ICPMS (low)	Potassium, dissolved by ICPMS (low)
Selenium, dissolved by ICPMS (low)	Silicon, dissolved by ICPMS (low)	Silver, dissolved by ICPMS (low)
Sodium, dissolved by ICPMS (low)	Strontium, dissolved by ICPMS (low)	Sulfur, dissolved by ICPMS (low)
Tellurium, dissolved by ICPMS (low)	Thallium, dissolved by ICPMS (low)	Thorium, dissolved by ICPMS (low)
Tin, dissolved by ICPMS (low)	Titanium, dissolved by ICPMS (low)	Uranium, dissolved by ICPMS (low)
Vanadium, dissolved by ICPMS (low)	Zinc, dissolved by ICPMS (low)	Zirconium, dissolved by ICPMS (low)

Package: **Dissolved Metals by ICPMS (ultra low) Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - Filtered + HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Diss. as CaCO3)

Analyses Included:

Aluminum, dissolved by ICPMS (ultra low)	Antimony, dissolved by ICPMS (ultra low)	Arsenic, dissolved by ICPMS (ultra low)
Barium, dissolved by ICPMS (ultra low)	Beryllium, dissolved by ICPMS (ultra low)	Bismuth, dissolved by ICPMS (ultra low)
Boron, dissolved by ICPMS (ultra low)	Cadmium, dissolved by ICPMS (ultra low)	Calcium, dissolved by ICPMS (ultra low)
Chromium, dissolved by ICPMS (ultra low)	Cobalt, dissolved by ICPMS (ultra low)	Copper, dissolved by ICPMS (ultra low)
Iron, dissolved by ICPMS (ultra low)	Lead, dissolved by ICPMS (ultra low)	Lithium, dissolved by ICPMS (ultra low)
Magnesium, dissolved by ICPMS (ultra low)	Manganese, dissolved by ICPMS (ultra low)	Molybdenum, dissolved by ICPMS (ultra low)
Nickel, dissolved by ICPMS (ultra low)	Phosphorus, dissolved by ICPMS (ultra low)	Potassium, dissolved by ICPMS (ultra low)
Selenium, dissolved by ICPMS (ultra low)	Silicon, dissolved by ICPMS (ultra low)	Silver, dissolved by ICPMS (ultra low)
Sodium, dissolved by ICPMS (ultra low)	Strontium, dissolved by ICPMS (ultra low)	Sulfur, dissolved by ICPMS (ultra low)
Tellurium, dissolved by ICPMS (ultra low)	Thallium, dissolved by ICPMS (ultra low)	Thorium, dissolved by ICPMS (ultra low)
Tin, dissolved by ICPMS (ultra low)	Titanium, dissolved by ICPMS (ultra low)	Uranium, dissolved by ICPMS (ultra low)
Vanadium, dissolved by ICPMS (ultra low)	Zinc, dissolved by ICPMS (ultra low)	Zirconium, dissolved by ICPMS (ultra low)

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Packages and their Respective Analyses:

Package: **Dissolved Metals by ICPMS Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - Filtered + HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Diss. as CaCO3)

Analyses Included:

Aluminum, dissolved by ICPMS	Antimony, dissolved by ICPMS	Arsenic, dissolved by ICPMS
Barium, dissolved by ICPMS	Beryllium, dissolved by ICPMS	Bismuth, dissolved by ICPMS
Boron, dissolved by ICPMS	Cadmium, dissolved by ICPMS	Calcium, dissolved by ICPMS
Chromium, dissolved by ICPMS	Cobalt, dissolved by ICPMS	Copper, dissolved by ICPMS
Iron, dissolved by ICPMS	Lead, dissolved by ICPMS	Lithium, dissolved by ICPMS
Magnesium, dissolved by ICPMS	Manganese, dissolved by ICPMS	Molybdenum, dissolved by ICPMS
Nickel, dissolved by ICPMS	Phosphorus, dissolved by ICPMS	Potassium, dissolved by ICPMS
Selenium, dissolved by ICPMS	Silicon, dissolved by ICPMS	Silver, dissolved by ICPMS
Sodium, dissolved by ICPMS	Strontium, dissolved by ICPMS	Sulfur, dissolved by ICPMS
Tellurium, dissolved by ICPMS	Thallium, dissolved by ICPMS	Thorium, dissolved by ICPMS
Tin, dissolved by ICPMS	Titanium, dissolved by ICPMS	Uranium, dissolved by ICPMS
Vanadium, dissolved by ICPMS	Zinc, dissolved by ICPMS	Zirconium, dissolved by ICPMS

Package: **L/HEPH in Water Pkg** TAT (Days): 5
Container(s): 1 L AG - NaHSO4 HT (Days): 14

Calculated Analyte(s) Included: LEPHw; HEPHw; Total PAH

Analyses Included:

EPH in Water	PAH in Water

Package: **Total Nitrogen in Water Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - H2SO4 500 mL HDPE - Unpreserved HT (Days): 3

Analyses Included:

Nitrate+Nitrite-N in Water	Nitrite-N in Water, colorimetric	Total Kjeldahl Nitrogen

Package: **Total Recoverable Metals by ICPMS (low) Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Total as CaCO3)

Analyses Included:

Aluminum, total by ICPMS (low)	Antimony, total by ICPMS (low)	Arsenic, total by ICPMS (low)
Barium, total by ICPMS (low)	Beryllium, total by ICPMS (low)	Bismuth, total by ICPMS (low)
Boron, total by ICPMS (low)	Cadmium, total by ICPMS (low)	Calcium, total by ICPMS (low)
Chromium, total by ICPMS (low)	Cobalt, total by ICPMS (low)	Copper, total by ICPMS (low)
Iron, total by ICPMS (low)	Lead, total by ICPMS (low)	Lithium, total by ICPMS (low)
Magnesium, total by ICPMS (low)	Manganese, total by ICPMS (low)	Molybedenum, total by ICPMS (low)
Nickel, total by ICPMS (low)	Phosphorus, total by ICPMS (low)	Potassium, total by ICPMS (low)
Selenium, total by ICPMS (low)	Silicon, total by ICPMS (low)	Silver, total by ICPMS (low)
Sodium, total by ICPMS (low)	Strontium, total by ICPMS (low)	Sulfur, total by ICPMS (low)
Tellurium, total by ICPMS (low)	Thallium, total by ICPMS (low)	Thorium, total by ICPMS (low)
Tin, total by ICPMS (low)	Titanium, total by ICPMS (low)	Uranium, total by ICPMS (low)
Vanadium, total by ICPMS (low)	Zinc, total by ICPMS (low)	Zirconium, total by ICPMS (low)

ANALYTICAL SERVICES CAPABILITIES

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Packages and their Respective Analyses:

Package: **Total Recoverable Metals by ICPMS (ultra low) Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Total as CaCO3)

Analyses Included:

Aluminum, total by ICPMS (ultra low)	Antimony, total by ICPMS (ultra low)	Arsenic, total by ICPMS (ultra low)
Barium, total by ICPMS (ultra low)	Beryllium, total by ICPMS (ultra low)	Bismuth, total by ICPMS (ultra low)
Boron, total by ICPMS (ultra low)	Cadmium, total by ICPMS (ultra low)	Calcium, total by ICPMS (ultra low)
Chromium, total by ICPMS (ultra low)	Cobalt, total by ICPMS (ultra low)	Copper, total by ICPMS (ultra low)
Iron, total by ICPMS (ultra low)	Lead, total by ICPMS (ultra low)	Lithium, total by ICPMS (ultra low)
Magnesium, total by ICPMS (ultra low)	Manganese, total by ICPMS (ultra low)	Molybedenum, total by ICPMS (Ultra low)
Nickel, total by ICPMS (ultra low)	Phosphorus, total by ICPMS (ultra low)	Potassium, total by ICPMS (ultra low)
Selenium, total by ICPMS (ultra low)	Silicon, total by ICPMS (ultra low)	Silver, total by ICPMS (ultra low)
Sodium, total by ICPMS (ultra low)	Strontium, total by ICPMS (ultra low)	Sulfur, total by ICPMS (ultra low)
Tellurium, total by ICPMS (ultra low)	Thallium, total by ICPMS (ultra low)	Thorium, total by ICPMS (ultra low)
Tin, total by ICPMS (ultra low)	Titanium, total by ICPMS (ultra low)	Uranium, total by ICPMS (ultra low)
Vanadium, total by ICPMS (ultra low)	Zinc, total by ICPMS (ultra low)	Zirconium, total by ICPMS (ultra low)

Package: **Total Recoverable Metals by ICPMS Pkg** TAT (Days): 5
Container(s): 125 mL HDPE - HNO3 HT (Days): 180

Calculated Analyte(s) Included: Hardness, Total (Total as CaCO3)

Analyses Included:

Aluminum, total by ICPMS	Antimony, total by ICPMS	Arsenic, total by ICPMS
Barium, total by ICPMS	Beryllium, total by ICPMS	Bismuth, total by ICPMS
Boron, total by ICPMS	Cadmium, total by ICPMS	Calcium, total by ICPMS
Chromium, total by ICPMS	Cobalt, total by ICPMS	Copper, total by ICPMS
Iron, total by ICPMS	Lead, total by ICPMS	Lithium, total by ICPMS
Magnesium, total by ICPMS	Manganese, total by ICPMS	Molybedenum, total by ICPMS
Nickel, total by ICPMS	Phosphorus, total by ICPMS	Potassium, total by ICPMS
Selenium, total by ICPMS	Silicon, total by ICPMS	Silver, total by ICPMS
Sodium, total by ICPMS	Strontium, total by ICPMS	Sulfur, total by ICPMS
Tellurium, total by ICPMS	Thallium, total by ICPMS	Thorium, total by ICPMS
Tin, total by ICPMS	Titanium, total by ICPMS	Uranium, total by ICPMS
Vanadium, total by ICPMS	Zinc, total by ICPMS	Zirconium, total by ICPMS

Package: **VOC/VH/VPH in Water Pkg** TAT (Days): 5
Container(s): 2 x 40 mL AG - NaHSO4 HT (Days): 14

Calculated Analyte(s) Included: VPHw

Analyses Included:

VH in Water	VOC in Water

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Analysis Details:

Analysis: Bromide in Water by IC | Matrix: Water | TAT (Days): 5
Version: Default | Units: mg/L | Location: Kelowna | HT (Days): 28
Analysis Ref: APHA 4110 B | Prep Ref: KEL | Container: 500 mL HDPE - Unpreserved

Analyte / Default RDL:	
Bromide	0.05

Analysis: BTEX in Water | Matrix: Water | TAT (Days): 5
Version: Default | Units: ug/L | Location: Richmond | HT (Days): 14
Analysis Ref: EPA 8260B | Prep Ref: N/A | Container: 2 x 40 mL AG - NaHSO4

Analyte / Default RDL:					
Benzene	0.5	Ethylbenzene	0.5	Methyl tert-butyl ether	0.5
Styrene	0.5	Toluene	0.5	Xylenes (total)	1

Analysis: Chemical Oxygen Demand | Matrix: Water | TAT (Days): 5
Version: Default | Units: mg/L | Location: Kelowna | HT (Days): 28
Analysis Ref: APHA 5220 D | Prep Ref: N/A | Container: 125 mL HDPE - H2SO4

Analyte / Default RDL:	
Chemical Oxygen Demand	20

Analysis: Chloride in Water by IC | Matrix: Water | TAT (Days): 5
Version: Default | Units: mg/L | Location: Kelowna | HT (Days): 28
Analysis Ref: APHA 4110 B | Prep Ref: KEL | Container: 500 mL HDPE - Unpreserved

Analyte / Default RDL:	
Chloride	0.05

Analysis: Conductivity in Water | Matrix: Water | TAT (Days): 5
Version: Default | Units: uS/cm | Location: Richmond | HT (Days): 28
Analysis Ref: APHA 2510 B | Prep Ref: N/A | Container: 1 L HDPE - Unpreserved

Analyte / Default RDL:	
Conductivity (EC)	1

Analysis: Dissolved Metals by ICPMS | Matrix: Water | TAT (Days): 5
Version: Default | Units: mg/L | Location: Richmond | HT (Days): 180
Analysis Ref: APHA 3125 B | Prep Ref: N/A | Container: 125 mL HDPE - Filtered + HNO3

Analyte / Default RDL:					
Aluminum, dissolved	0.05	Antimony, dissolved	0.001	Arsenic, dissolved	0.005
Barium, dissolved	0.05	Beryllium, dissolved	0.001	Bismuth, dissolved	0.001
Boron, dissolved	0.04	Cadmium, dissolved	0.0001	Calcium, dissolved	2
Chromium, dissolved	0.005	Cobalt, dissolved	0.0005	Copper, dissolved	0.002
Iron, dissolved	0.1	Lead, dissolved	0.001	Lithium, dissolved	0.001
Magnesium, dissolved	0.1	Manganese, dissolved	0.002	Molybdenum, dissolved	0.001
Nickel, dissolved	0.002	Phosphorus, dissolved	0.2	Potassium, dissolved	0.2
Selenium, dissolved	0.005	Silicon, dissolved	5	Silver, dissolved	0.0005
Sodium, dissolved	0.2	Strontium, dissolved	0.01	Tellurium, dissolved	0.002
Thallium, dissolved	0.0002	Thorium, dissolved	0.001	Tin, dissolved	0.002
Titanium, dissolved	0.05	Uranium, dissolved	0.0002	Vanadium, dissolved	0.01
Zinc, dissolved	0.04	Zirconium, dissolved	0.001		

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Analysis Details:

Analysis:	**Dissolved Metals by ICPMS (Low)**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: mg/L	Location:	Richmond	HT (Days): 180
Analysis Ref:	APHA 3125 B	Prep Ref: N/A	Container:	125 mL HDPE - Filtered + HNO3	

Analyte / Default RDL:					
Aluminum, dissolved	0.005	Antimony, dissolved	0.0001	Arsenic, dissolved	0.0005
Barium, dissolved	0.005	Beryllium, dissolved	0.0001	Bismuth, dissolved	0.0001
Boron, dissolved	0.004	Cadmium, dissolved	0.00001	Calcium, dissolved	0.2
Chromium, dissolved	0.0005	Cobalt, dissolved	0.00005	Copper, dissolved	0.0002
Iron, dissolved	0.01	Lead, dissolved	0.0001	Lithium, dissolved	0.0001
Magnesium, dissolved	0.01	Manganese, dissolved	0.0002	Molybdenum, dissolved	0.0001
Nickel, dissolved	0.0002	Phosphorus, dissolved	0.02	Potassium, dissolved	0.02
Selenium, dissolved	0.0005	Silicon, dissolved	0.5	Silver, dissolved	0.00005
Sodium, dissolved	0.02	Strontium, dissolved	0.001	Sulfur, dissolved	1
Tellurium, dissolved	0.0002	Thallium, dissolved	0.00002	Thorium, dissolved	0.0001
Tin, dissolved	0.0002	Titanium, dissolved	0.005	Uranium, dissolved	0.00002
Vanadium, dissolved	0.001	Zinc, dissolved	0.004	Zirconium, dissolved	0.0001

Analysis:	**Dissolved Metals by ICPMS (Ultra Low)**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: ug/L	Location:	Richmond	HT (Days): 180
Analysis Ref:	APHA 3125 B	Prep Ref: N/A	Container:	125 mL HDPE - Filtered + HNO3	

Analyte / Default RDL:					
Aluminum, dissolved	1	Antimony, dissolved	0.05	Arsenic, dissolved	0.05
Barium, dissolved	0.1	Beryllium, dissolved	0.01	Bismuth, dissolved	0.01
Boron, dissolved	1	Cadmium, dissolved	0.002	Calcium, dissolved	40
Chromium, dissolved	0.1	Cobalt, dissolved	0.005	Copper, dissolved	0.1
Iron, dissolved	2	Lead, dissolved	0.05	Lithium, dissolved	0.05
Magnesium, dissolved	5	Manganese, dissolved	0.05	Molybdenum, dissolved	0.01
Nickel, dissolved	0.02	Phosphorus, dissolved	10	Potassium, dissolved	10
Selenium, dissolved	0.1	Silicon, dissolved	50	Silver, dissolved	0.01
Sodium, dissolved	10	Strontium, dissolved	0.1	Sulfur, dissolved	500
Tellurium, dissolved	0.05	Thallium, dissolved	0.004	Thorium, dissolved	0.01
Tin, dissolved	0.05	Titanium, dissolved	0.2	Uranium, dissolved	0.001
Vanadium, dissolved	0.2	Zinc, dissolved	1	Zirconium, dissolved	0.01

Analysis:	**EPH in Water**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: ug/L	Location:	Richmond	HT (Days): 14
Analysis Ref:	BCMOE EPHw	Prep Ref: Base/Neutral	Container:	1 L AG - NaHSO4	

Analyte / Default RDL:			
EPHw (10-19)	50	EPHw (19-32)	50

Analysis:	**Fluoride in Water by IC**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: mg/L	Location:	Kelowna	HT (Days): 28
Analysis Ref:	APHA 4110 B	Prep Ref: KEL	Container:	500 mL HDPE - Unpreserved	

Analyte / Default RDL:	
Fluoride	0.05

Analysis:	**Nitrate+Nitrite-N in Water**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: mg/L	Location:	Kelowna	HT (Days): 28
Analysis Ref:	APHA 4500-NO3- F	Prep Ref: N/A	Container:	125 mL HDPE - H2SO4	

Analyte / Default RDL:	
Nitrate+Nitrite as N	0.002

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Analysis Details:

Analysis:	**Nitrite-N in Water, colorimetric**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Kelowna	HT (Days):	3
Analysis Ref:	APHA 4500-NO2 B	Prep Ref:	N/A	Container:	500 mL HDPE - Unpreserved		

Analyte / Default RDL:	
Nitrite as N	0.002

Analysis:	**PAH in Water**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: ug/L	Location:	Richmond	HT (Days):	14
Analysis Ref:	EPA 8270D	Prep Ref:	Base/Neutral	Container:	1 L AG - NaHSO4		

Analyte / Default RDL:					
Acenaphthene	0.05	Acenaphthylene	0.05	Acridine	0.05
Anthracene	0.05	Benz (a) anthracene	0.05	Benzo (a) pyrene	0.01
Benzo (b) fluoranthene	0.05	Benzo (g,h,i) perylene	0.05	Benzo (k) fluoranthene	0.05
Chrysene	0.05	Dibenz (a,h) anthracene	0.05	Fluoranthene	0.05
Fluorene	0.05	Indeno (1,2,3-cd) pyrene	0.05	Naphthalene	0.3
Phenanthrene	0.1	Pyrene	0.02	Quinoline	0.1

Analysis:	**pH in Water**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: pH units	Location:	Richmond	HT (Days):	0.01
Analysis Ref:	APHA 4500-H+ B	Prep Ref:	N/A	Container:	1 L HDPE - Unpreserved		

Analyte / Default RDL:	
pH	0.01

Analysis:	**Phosphorus, Total (persulfate)**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Kelowna	HT (Days):	28
Analysis Ref:	APHA 4500-P H	Prep Ref:	N/A	Container:	125 mL HDPE - H2SO4		

Analyte / Default RDL:	
Phosphorus, Total as P	0.001

Analysis:	**Sulfate in Water by IC**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Kelowna	HT (Days):	28
Analysis Ref:	APHA 4110 B	Prep Ref:	KEL	Container:	500 mL HDPE - Unpreserved		

Analyte / Default RDL:	
Sulfate	0.2

Analysis:	**Total Recoverable Metals by ICPMS**			Matrix:	Water	TAT (Days):	5
Version:	Default		Units: mg/L	Location:	Richmond	HT (Days):	180
Analysis Ref:	APHA 3125 B	Prep Ref:	N/A	Container:	125 mL HDPE - HNO3		

Analyte / Default RDL:					
Aluminum, total	0.05	Antimony, total	0.001	Arsenic, total	0.005
Barium, total	0.05	Beryllium, total	0.001	Bismuth, total	0.001
Boron, total	0.04	Cadmium, total	0.0001	Calcium, total	2
Chromium, total	0.005	Cobalt, total	0.0005	Copper, total	0.002
Iron, total	0.1	Lead, total	0.001	Lithium, total	0.001
Magnesium, total	0.1	Manganese, total	0.002	Molybdenum, total	0.001
Nickel, total	0.002	Phosphorus, total	0.2	Potassium, total	0.2
Selenium, total	0.005	Silicon, total	5	Silver, total	0.0005
Sodium, total	0.2	Strontium, total	0.01	Sulfur, total	10
Tellurium, total	0.002	Thallium, total	0.0002	Thorium, total	0.001
Tin, total	0.002	Titanium, total	0.05	Uranium, total	0.0002
Vanadium, total	0.01	Zinc, total	0.04	Zirconium, total	0.001

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Analysis Details:

Analysis:	**Total Recoverable Metals by ICPMS (Low)**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: mg/L	Location:	Richmond	HT (Days): 180
Analysis Ref:	APHA 3125 B	Prep Ref: N/A	Container:	125 mL HDPE - HNO3	

Analyte / Default RDL:

Aluminum, total	0.005	Antimony, total	0.0001	Arsenic, total	0.0005
Barium, total	0.005	Beryllium, total	0.0001	Bismuth, total	0.0001
Boron, total	0.004	Cadmium, total	0.00001	Calcium, total	0.2
Chromium, total	0.0005	Cobalt, total	0.00005	Copper, total	0.0002
Iron, total	0.01	Lead, total	0.0001	Lithium, total	0.0001
Magnesium, total	0.01	Manganese, total	0.0002	Molybdenum, total	0.0001
Nickel, total	0.0002	Phosphorus, total	0.02	Potassium, total	0.02
Selenium, total	0.0005	Silicon, total	0.5	Silver, total	0.00005
Sodium, total	0.02	Strontium, total	0.001	Sulfur, total	1
Tellurium, total	0.0002	Thallium, total	0.00002	Thorium, total	0.0001
Tin, total	0.0002	Titanium, total	0.005	Uranium, total	0.00002
Vanadium, total	0.001	Zinc, total	0.004	Zirconium, total	0.0001

Analysis:	**Total Recoverable Metals by ICPMS (Ultra Low)**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: ug/L	Location:	Richmond	HT (Days): 180
Analysis Ref:	APHA 3125 B	Prep Ref: N/A	Container:	125 mL HDPE - HNO3	

Analyte / Default RDL:

Aluminum, total	1	Antimony, total	0.05	Arsenic, total	0.05
Barium, total	0.1	Beryllium, total	0.01	Bismuth, total	0.01
Boron, total	1	Cadmium, total	0.002	Calcium, total	40
Chromium, total	0.1	Cobalt, total	0.005	Copper, total	0.1
Iron, total	2	Lead, total	0.05	Lithium, total	0.05
Magnesium, total	5	Manganese, total	0.05	Molybdenum, total	0.01
Nickel, total	0.02	Phosphorus, total	10	Potassium, total	10
Selenium, total	0.1	Silicon, total	50	Silver, total	0.01
Sodium, total	10	Strontium, total	0.1	Sulfur, total	500
Tellurium, total	0.05	Thallium, total	0.004	Thorium, total	0.01
Tin, total	0.05	Titanium, total	0.2	Uranium, total	0.001
Vanadium, total	0.2	Zinc, total	1	Zirconium, total	0.01

Analysis:	**Total Suspended Solids**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: mg/L	Location:	Edmonton	HT (Days): 7
Analysis Ref:	APHA 2540 D*	Prep Ref: N/A	Container:	1 L HDPE - Unpreserved	

Analyte / Default RDL:

Solids, Total Suspended	1

Analysis:	**VH in Water**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: ug/L	Location:	Richmond	HT (Days): 14
Analysis Ref:	BCMOE VHw	Prep Ref: N/A	Container:	2 x 40 mL AG - NaHSO4	

Analyte / Default RDL:

VHw (6-10)	100

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Analysis Details:

Analysis:	**VOC in Water**		Matrix:	Water	TAT (Days): 5
Version:	Default	Units: ug/L	Location:	Richmond	HT (Days): 14
Analysis Ref:	EPA 8260B	Prep Ref: N/A	Container:	2 x 40 mL AG - NaHSO4	

Analyte / Default RDL:					
Benzene	0.5	Bromodichloromethane	0.5	Bromoform	0.5
Carbon tetrachloride	0.5	Chlorobenzene	0.5	Chloroethane	1
Chloroform	0.5	Dibromochloromethane	0.5	1,2-Dibromoethane	0.3
Dibromomethane	1	1,2-Dichlorobenzene	0.5	1,3-Dichlorobenzene	0.5
1,4-Dichlorobenzene	0.5	1,1-Dichloroethane	0.5	1,2-Dichloroethane	0.5
1,1-Dichloroethene	1	cis-1,2-Dichloroethene	0.5	trans-1,2-Dichloroethene	0.5
1,2-Dichloropropane	0.5	cis-1,3-Dichloropropene	0.5	trans-1,3-Dichloropropene	0.5
Ethylbenzene	0.5	Methyl tert-butyl ether	0.5	Methylene chloride	1
Styrene	0.5	1,1,2,2-Tetrachloroethane	0.5	Tetrachloroethene	0.5
Toluene	0.5	1,1,1-Trichloroethane	0.5	1,1,2-Trichloroethane	0.5
Trichloroethene	0.5	Trichlorofluoromethane	1	Vinyl chloride	1
Xylenes (total)	1				

* in Analysis/Prep Ref indicates that modifications have been made from the reference method

APPENDIX D: Groundwater Interceptor Technical Memo – Water Quality Review and Recommendations

MORRISON HERSHFIELD

December 31, 2014

James Hallisey, P.Eng.
Manager of Transportation and Waste Management
Resort Municipality of Whistler
4325 Blackcomb Way
Whistler, BC V0N1B4

Dear James,

Re: Whistler Landfill Groundwater Interceptor – Water Quality Review and Recommendations

The purpose of this brief letter report is to document and discuss water quality results obtained from the "groundwater interceptor" between 2012 and 2014. The groundwater interceptor (described in further detail below) is located at the southwest corner of the closed landfill. Water obtained from the interceptor is currently captured within the leachate collection system and treated at the RMOW Wastewater Treatment Plant.

Introduction

A "groundwater interceptor" or "french drain" is located adjacent to the existing leachate pump station in the southwest area of the closed landfill. Figure 1 highlights the general location of the interceptor while Figure 2 provides pipe details and orientation. The interceptor consists of 24 metres of perforated HDPE pipe (60 cm diameter). A new leachate collection wet well and pump station were constructed in 2009 in close proximity to the groundwater interceptor. Intercepted groundwater is piped to the new leachate pump station wet well where it is pumped, along with landfill leachate, to the RMOW Wastewater Treatment Plant (WWTP) for treatment.

The interceptor is located downgradient from the unlined Construction and Demolition (C&D) waste cell and was (presumedly) installed to minimize the potential for off-site impacts associated with groundwater influenced by the C&D waste cell.

Water quality data have been collected from the groundwater interceptor on a quarterly basis since 2012. The purpose of the data collection program is to determine if the groundwater intercepted in the french drain continues to require treatment at the WWTP.

This letter report includes the entire groundwater interceptor data collected since 2012 and incorporates a discussion of the data with specific reference to groundwater quality standards defined in the 2006 Whistler Landfill Closure Plan (B.C. Contaminated Sites Regulation Schedule 6, column II - Generic Numerical Water Standards for Fresh Water Aquatic Life) and the B.C. Ministry of Environment Ambient Working and Approved Water Quality Guidelines (for aquatic life protection).

Groundwater Interceptor Water Quality Results

Results of water quality samples collected from the groundwater interceptor between January, 2012 and June, 2014 are presented in Attachment 1. For comparison purposes, a statistical summary of background groundwater quality (MW06) and leachate water quality (L1) data obtained during the same time period are also presented (these data are drawn from the RMOW Landfill Annual Monitoring

Reports). As discussed earlier, the site groundwater quality standards as defined in the approved 2009 Whistler Landfill Closure Plan are derived from Schedule 6 of the BC Contaminated Site Regulation (BC-CSR AW). Relevant BC receiving water criteria are also listed in Attachment 1 for reference purposes.

The following groundwater interceptor quality observations are apparent from a review of the data summarized in Attachment 1.

- Water hardness is generally hard, with median hardness (as $CaCO_3$) of 326 mg/L and near neutral pH, with values that range from 6 to 7.02.
- Measured groundwater quality at this location indicates influences of landfill leachate based on the following landfill leachate indicator parameters: conductivity, hardness, ammonia, sulphate and iron. A summary of the indicator parameters is provided in Table 1 below.
- Despite indications of leachate influence, no site groundwater standards were exceeded in any of the groundwater interceptor water quality analyses between 2012 and 2014.
- All ammonia concentrations were well below the applicable BC-CSR standard. Some groundwater ammonia concentrations exceeded the most restrictive (30-day average) receiving water quality guidelines.
- Iron concentrations were at least an order of magnitude higher than background water quality as observed in MW-06. While there is no site-specific groundwater standard for iron, the receiving water quality guideline for dissolved iron (0.35 mg/L) was exceeded in most groundwater samples. Background groundwater quality (as measured at MW-06) also consistently exceeds this receiving water quality guideline (median concentration is over 4 times greater than the guideline).
- Manganese concentrations were elevated compared to background water quality as observed in MW-06. While there is no site-specific groundwater standard for manganese, the receiving water quality guideline for manganese was slightly exceeded in 2 of 8 groundwater samples.
- Cadmium concentrations were all lower than the site-specific standard and most results were below analytical detection limits. One of 9 sampling results exceeded the respective BC receiving water guideline. It is worth noting that the median concentration observed at the background well location also exceeded the receiving water guideline.
- Zinc concentrations were all lower than the site-specific standard. One of 9 sampling results exceeded the respective BC receiving water guideline.
- All hydrocarbon compounds (including Volatile Organic Compounds) were below respective BC-CSR AW standards. Most compounds were below analytical detection limits.
- A few PAH (polycyclic aromatic hydrocarbon) compounds were consistently detected including: acenaphthene, fluoranthene, fluorene, and pyrene. All measured values were below respective BC-CSR AW standards. Pyrene concentrations in groundwater exceeded the receiving water guideline.

Table 1: Median values of water quality indicator parameters for background, groundwater interceptor and leachate water quality (2012 – 2014).

	BC-CSR AW	Background Groundwater (MW06)	Groundwater Interceptor (LM)	Leachate Samples (L1)
Conductivity (µS/cm)		597	859	2120
Hardness (as $CaCO_3$) (mg/L)		124	326	491
Ammonia (mg/L)	18.4[1]	0.0368	1.48	66.2
Chloride (mg/L)		95	68.2	137
Sulfate (mg/L)		134.5	236	140
Iron (mg/L)		1.52	11.6	0.085
Chemical Oxygen Demand (mg/L)		50	24.5	160.5

Note: all values are the median of all quarterly samples collected between January, 2012 and June, 2014.
1. BC-CSR AW standards for ammonia are conservatively based on waters with pH of less than 7.0.

Discussion of Results: Implications for Site Groundwater Management

The RMOW is exploring the feasibility of discontinuing interception and treatment of groundwater from the southwest portion of the closed landfill site to reduce maintenance and operating costs of the leachate pump station. Groundwater quality is a key factor to be considered in the feasibility analysis.

The groundwater quality standards for the site, outlined in British Columbia's *Contaminated Site Regulation*, are established to protect aquatic life and generally assume that groundwater will receive dilution (at least 10:1) and/or attenuation prior to contributing to surface water flows. Quarterly groundwater interceptor quality data obtained since 2012 confirm that groundwater at this location consistently meets the BC-CSR quality standards for the site. As a result it is unlikely that groundwater from this location would impair surface water quality if it was no longer intercepted and treated. However, further consideration of potential downstream impacts is merited since groundwater at this location exhibits indications of leachate influence and some groundwater quality parameters occasionally exceed BC receiving water guidelines (ammonia, iron, manganese, cadmium, zinc, pyrene).

Based on topography (illustrated by contour in Figure 1), it is expected that un-intercepted groundwater from the monitored location will flow west, eventually reporting to a stream originating 25 metres west of the leachate pump station. This stream flows west, crosses Janes Lake Road and then flows north into the Cheakamus River. An approximate estimate of the groundwater travel time between the leachate pump station and the receiving stream ranges between 2 weeks and 5 months.

Routine monitoring of the receiving stream is conducted 200 metres downstream of the leachate pump station where the stream crosses Janes Lake Road (sampling station SFC-4B). Water quality at SFC-4B is generally good (2012 and 2013 RMOW Landfill Annual Monitoring Reports): all BC CSR AW standards were met between 2012 and 2014; total iron exceeded the BC receiving water guideline on one occasion in each year and total copper exceeded the respective guideline once in 2012.

The ratio of measured groundwater quality to the respective BC Ambient Working and Approved Water Quality Guidelines provides an indication of the relative dilution and/or attenuation required to ensure receiving water quality does not become impaired. These ratios (based on median concentrations observed) for the compounds that occasionally exceeded guidelines in groundwater samples are listed below:

- Iron: 33 : 1

- Manganese: 0.9 : 1
- Ammonia: 0.8 : 1
- Cadmium: 0.8 : 1 (assuming the median concentration is at the detection limit)
- Zinc: 0.2 : 1
- Pyrene: 3.3 : 1

As detailed above, iron is the element most likely to result in impaired surface water quality based on the ratio of measured groundwater concentrations to receiving water guidelines. Iron will rapidly convert to its highly insoluble oxidized state when exposed to the atmosphere, often resulting in the formation of bright orange iron precipitates. Depending on the location of where the groundwater reports to surface, the iron may result in more of an aesthetic impact than an impact to aquatic life.

Conclusions and Recommendations

Groundwater down-gradient of the south-west area of the closed landfill is currently intercepted at the leachate pump station and treated, along with landfill leachate, at the RMOW Wastewater Treatment Plant. Groundwater quality at this location, measured between 2012 and 2014, met all site –specific standards specified in the Approved Whistler Landfill Closure Plan (BC-CSR standards). However, the groundwater at this location exhibits indications of leachate influence and some groundwater quality parameters occasionally exceed BC receiving water guidelines (ammonia, iron, manganese, cadmium, zinc, pyrene).

It is unlikely that receiving water quality would be impaired if the groundwater was no longer intercepted at the leachate pump station. However, groundwater dissolved iron levels are relatively high (over 30 times higher than receiving water guidelines and over 10 times higher than background groundwater concentrations). It is quite possible that visible orange staining/discolouration would occur on the ground surface and/or in a receiving stream (west of the leachate pump station) as a result of iron precipitates if the groundwater interceptor is disconnected from the leachate pump station.

The following recommendations are provided based on the conclusions reached in this letter report:

- Continue quarterly monitoring of groundwater at the leachate pump station location. Routine monitoring should include physical parameters, anions and nutrients, and dissolved metals. PAHs should be analyzed twice per year, consistent with the schedule for the groundwater monitors at the site. Incorporate results in annual monitoring reporting.
- Consider disconnecting the groundwater interceptor from the leachate pump station after the monitoring program confirms that leachate influences are declining in groundwater. Based on experience at other closed landfills, it should be expected that it will take at least 5 years (and possibly longer) before sufficient improvement in water quality at the groundwater interceptor location is observed.
- If a decision is made to disconnect the groundwater interceptor from the leachate pump station, a monitoring program should be implemented down-gradient/ down-stream from the leachate pump station. A more intensive program, within six months of disconnecting the groundwater interceptor, should include routine monitoring for groundwater seeps and additional surface water quality monitoring. The groundwater interceptor should be reconnected to the leachate pump station if unacceptable aesthetic or aquatic impacts are indicated or predicted based on the monitoring program.

Don’t hesitate to contact the undersigned if you have any questions regarding the contents of this letter report.

Yours truly,
Morrison Hershfield Limited

Don McCallum, M.A.Sc., P.Eng
Senior Environmental Engineer / Vice President

Attachments:

Attachment 1 - Whistler Landfill groundwater interceptor historical water quality, 2012 to 2014.
Figure 1 – Highlighted location of Groundwater interceptor
Figure 2 – Groundwater Interceptor Details and Orientation

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Attachment 1. Whistler Landfill groundwater interceptor historical water quality.

MORRISON HERSHFIELD

Analyte	Units	LOR	BC-CSR AW Standards	BC Approved Water Quality Guidelines (Criteria) (mg/L)	Leachate Chemistry (L1)			Background Groundwater (MW06)	Groundwater Interceptor Statistical Overview			Groundwater Interceptor[1] Monitoring Events						
					2012 - 2014			2012 - 2014	2012 - 2014			Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q3 2013	Q1 2014	Q2 2014
					Min	Median	Max	Median	Min	Median	Max	26/01/2012	24/5/2012	26/09/2012	12/12/2012	19/03/2013	9/10/2013	21/03/2014	22/06/2014
Physical Parameters																			
Conductivity	uS/cm	2	-	-	407	2120	3870	597	682	859	1210	882	859	682	1000	1210	838	1046	773
Hardness (as $CaCO_3$)	mg/L	0.5	-	-	171	491	1430	124	228	326	519	316	313	228	428	519	326	444	255
pH	pH	0.1	-	-	6.19	7.42	7.77	6.48	6	6.75	7.02	6.96	7.02	6.81	6.75	6.66	6.78	6	6.3
Alkalinity, Bicarbonate (as $CaCO_3$)	mg/L	1	-	-	66	883.5	1430	14.2	111	129	160	156	129	143	143	160	129	111	121
Alkalinity, Carbonate (as $CaCO_3$)	mg/L		-	-		<DL		<DL	0	<DL	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<1
Alkalinity, Hydroxide (as $CaCO_3$)	mg/L	1	-	-		<DL		<DL	0	<DL	0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2	<1
Alkalinity, Total (as $CaCO_3$)	mg/L	1	-	-	66	804	1430	17.95	111	129	160	156	129	143	143	160	129	111	121
Anions and Nutrients																			
Ammonia, Total (as N)	mg/L	0.005	18.5 @ pH 7.0 - < 7.5 18.4 @ pH < 7.0	**Ave (30-d) Criteria** 1.77 (pH 7, T=15c)	0.042	66.2	157	0.0368	0.947	1.48	2.23	1.74	1.48	1.98	2.18	2.23	1.41	1.25	0.947
Bromide (Br)	mg/L	0.05	-	-	0.083	0.9915	1.9	<DL	<0.1	<0.5	<0.5	<0.50 *	<0.50	<0.25 *	<0.50 *	<0.50 *	<0.50 *	<0.1	<0.1
Chloride (Cl)	mg/L	0.5	1500	150	2.91	137	382	95	49.9	68.2	84.2	72.6	84.2	76.5	61.2	70.2	49.9	50.7	68.2
Fluoride (F)	mg/L	0.02	2	0.4	0.06	0.06	0.06	0.101	0.09	0.21	0.24	<0.20 *	<0.20	<0.10 *	<0.20 *	0.24	0.21	0.12	0.09
Nitrate (as N)	mg/L	0.005	400	32.8	1.7	11.3	24.5	0.06	0.02	0.079	0.63	<0.050 *	<0.050	0.079	<0.050 *	<0.050 *	<0.050 *	0.63	0.02
Nitrite (as N)	mg/L	0.001	0.2	0.06	0.018	0.0875	0.516	0.0031	0.0058	0.0058	0.0058	<0.010 *	<0.010	0.0058	<0.010 *	<0.010 *	<0.010 *	<0.01	<0.01
Total Kjeldahl Nitrogen	mg/L	0.05	-	-	0.977	76	232	1.31	1.56	1.64	2.75	1.81	1.64	2.24	2.75	2.46	1.6	1.61	1.56
Total Nitrogen	mg/L	0.05	-	-	12.8	84.7	286	1.46	1.43	1.81	2.75	1.81	1.64	2.33	2.75	2.46	1.46	2.243	1.58
Phosphorus (P)-Total	mg/L	0.002	-	-	0.01	0.4595	25.6	3.6	0.014	0.027	0.062	0.0183	0.034	0.027	0.062	0.031	0.014	Not Sampled	Not Sampled
Sulfate (SO4)	mg/L	0.5	1000	429 (H= 181-250)	58.8	140	162	134.5	101	236	408	214	197	101	321	407	236	408	166
Dissolved Metals																			
Aluminum (Al)-Dissolved	mg/L	0.01	-	Maximum 0.1 (pH ≥ 6.5)	0.02	0.027	0.041	0.08	0.012	0.014	0.016	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	0.012
Antimony (Sb)-Dissolved	mg/L	0.0005	0.2	0.02	2E-04	0.0002	0.0002	0.0005	0.0001	0.00025	0.0004	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0001	0.0004
Arsenic (As)-Dissolved	mg/L	0.001	0.05	0.005 (for total metals)		<DL		<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0005	<0.0005
Barium (Ba)-Dissolved	mg/L	0.02	10	1	0.023	0.073	0.526	0.044	0.076	0.094	0.117	0.099	0.094	0.081	0.113	0.114	0.088	0.117	0.076
Beryllium (Be)-Dissolved	mg/L	0.005	0.053	-		<DL		<DL	<0.0050	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0001	<0.0001
Bismuth (Bi)-Dissolved	mg/L	0.2	-	-		<DL		<DL	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.0001	<0.0001
Boron (B)-Dissolved	mg/L	0.1	50	1.2	0.028	2.25	3.64	0.018	0.169	0.21	0.38	0.22	0.19	0.18	0.31	0.38	0.21	0.282	0.169
Cadmium (Cd)-Dissolved	mg/L	0.00005	0.0006 @ H = 150 - < 210	0.00006 (H= 210) (for total metals)	7E-05	0.000213	0.000227	0.000302	<0.00001	<0.00005	0.000066	<0.000050	<0.000050	<0.000050	<0.000050	0.000066	<0.000050	0.00006	<0.00001
Calcium (Ca)-Dissolved	mg/L	0.1	-	-	59.3	131	479	40.25	77.6	111	179	108	108	77.6	148	179	111	146	85.5
Chromium (Cr)-Dissolved	mg/L	0.0005	0.01	0.001	0.002	0.00186	0.0019	<DL	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0005	<0.0005
Cobalt (Co)-Dissolved	mg/L	0.0005	0.04	0.11	5E-04	0.003855	0.00712	0.01012	0.00065	0.0047	0.0209	0.00287	0.00265	0.00065	0.00884	0.0209	0.006	0.0138	0.00291
Copper (Cu)-Dissolved	mg/L	0.001	0.09 @ H ≥ 200	0.02 @ H=200 (for total metals)	0.007	0.01525	0.0339	0.00305	<0.0002	<0.001	0.0012	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	0.0005	<0.0002
Iron (Fe)-Dissolved	mg/L	0.03	-	0.35	0.032	0.085	**0.352**	**1.52**	<0.0030	**11.6**	**19**	**11.8**	**17.3**	**4.39**	**3.56**	**11.4**	<0.030	**18.2**	**19**
Lead (Pb)-Dissolved	mg/L	0.001	0.11 @ H = 200 - < 300 0.16 @ H ≥ 300	0.003	2E-04	0.0002	0.0002	<DL	<0.0001	<0.001	0.0001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0001	<0.0001
Lithium (Li)-Dissolved	mg/L	0.05	-	0.014	4E-04	0.0004	0.0004	0.0001	<0.05	<0.05	0.0009	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.0009	0.0003
Magnesium (Mg)-Dissolved	mg/L	0.1	-	-	5.6	18.35	56.4	5.725	8.39	11.9	19	11.2	10.6	8.39	14.4	17.7	11.9	19	10
Manganese (Mn)-Dissolved	mg/L	0.01	-	3.8 (H = 300) (for total metals)	0.057	2.64	9.6	0.9025	2.94	3.52	**3.99**	3.17	3.21	2.94	**3.82**	**3.99**	3.56	3.94	2.95
Mercury (Hg)-Dissolved	mg/L	0.0002	0.001	0.000001		<DL		<DL	<0.00002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00002	<0.00002
Molybdenum (Mo)-Dissolved	mg/L	0.001	10	1	3E-04	0.0023	0.0023	0.0002	<0.0001	<0.001	0.0002	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0001	0.0002
Nickel (Ni)-Dissolved	mg/L	0.005	1.5 @ H ≥ 180	0.025	0.001	0.0079	0.009	0.0022	<0.005	<0.005	0.0119	<0.0050	<0.0050	<0.0050	<0.0050	0.0119	<0.0050	0.0077	0.0014
Phosphorus (P)-Dissolved	mg/L	0.3	-	-	0.2	0.2	0.2	<DL	<0.3	<0.3	<0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.02	<0.02
Potassium (K)-Dissolved	mg/L	2	-	373	2.96	46.7	164	3.7	6.35	7.1	9.9	7.3	6.9	7.4	8.9	9.9	6.8	6.99	6.35
Selenium (Se)-Dissolved	mg/L	0.001	0.01	0.002		<DL		0.0007	<0.0005	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0005	<0.0005
Silicon (Si)-Dissolved	mg/L	0.05	-	-	8.04	8.69	11.4	8.155	7.89	8.09	10.3	8.01	8.09	7.98	8.37	9.15	7.89	10.3	8.6
Silver (Ag)-Dissolved	mg/L	0.00005	0.015 @ H > 100	0.00005		<DL		<DL	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.00005	<0.00005
Sodium (Na)-Dissolved	mg/L	2	-	-	7.32	88.6	395	72.8	38.2	43.2	46.7	43	45.8	46.3	46.7	43.2	38.6	38.2	43.4
Strontium (Sr)-Dissolved	mg/L	0.005	-	-	0.206	0.6305	3.47	0.4155	0.58	0.73	1.05	0.722	0.718	0.58	0.909	1.05	0.73	0.955	0.595
Thallium (Tl)-Dissolved	mg/L	0.0002	0.003	0.0003		<DL		0.00008	<0.00002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00002	<0.00002
Tin (Sn)-Dissolved	mg/L	0.03	-	-		<DL		<DL	<0.0002	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.0002	<0.0002
Titanium (Ti)-Dissolved	mg/L	0.05	1	2		<DL		<DL	<0.005	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.005	<0.005
Uranium (U)-Dissolved	mg/L	0.0002	3	0.3	3E-05	0.00026	0.00028	0.00004	<0.00002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00002	<0.00002
Vanadium (V)-Dissolved	mg/L	0.03	-	0.006		<DL		<DL	<0.001	<0.03	<0.03	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.001	<0.001
Zinc (Zn)-Dissolved	mg/L	0.005	2.4 @ H = 300 - < 400	0.190 (H@300)	0.018	0.0315	0.0975	0.0068	0.0128	0.0355	0.321	0.0225	0.0128	0.0197	0.0355	0.321	0.0502	0.177	0.031
COD	mg/L	20	-	-	34	160	180	50	12	24.5	38	<20	22	27	38	31	<20	12	14

Attachment 1. Whistler Landfill groundwater interceptor historical water quality.

MORRISON HERSHFIELD

Analyte	Units	LOR	BC-CSR AW Standards	BC Approved Water Quality Guidelines (Criteria) (mg/L)	Leachate Chemistry (L1)			Background Groundwater (MW06)	Groundwater Interceptor Statistical Overview			Groundwater Interceptor[1] Monitoring Events						
					2012 - 2014			2012 - 2014	2012 - 2014			Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q3 2013	Q1 2014	Q2 2014
					Min	Median	Max	Median	Min	Median	Max	26/01/2012	24/5/2012	26/09/2012	12/12/2012	19/03/2013	9/10/2013	21/03/2014	22/06/2014
Hydrocarbons and PAHs																			
Acetone	mg/L	0.01	-	-				<DL	<0.001	<0.01	<0.02	<0.0010	<0.020	<0.020	<0.010	<0.010	<0.010	Not Sampled	Not Sampled
Benzene	mg/L	0.0005	4	0.04				<DL	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0005	<0.0005
Bromodichloromethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Bromoform	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Bromomethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,3-Butadiene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Carbon Disulfide	mg/L	0.005	-	-				<DL	<0.005	<0.005	<0.005	Not Sampled	Not Sampled	Not Sampled	<0.0050	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Carbon Tetrachloride	mg/L	0.0005	0.13	0.0133				<DL	<0.0005	<0.0005	<0.0005	<0.00050	Not Sampled	<0.00050	<0.00050	<0.00050	<0.00050	Not Sampled	Not Sampled
Chlorobenzene	mg/L	0.001	0.013	0.0013				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Dibromochloromethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Chloroethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Chloroform	mg/L	0.001	0.02	0.0018				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Chloromethane	mg/L	0.005	-	-				<DL	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	Not Sampled	Not Sampled
2-Chlorotoluene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
4-Chlorotoluene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Decane (nC10)	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
1,2-Dibromoethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Dibromomethane	mg/L	0.001	-	-				<DL	<0.0007	<0.0007	<0.0007	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,2-Dichlorobenzene	mg/L	0.0007	0.007	0.0007				<DL	<0.001	<0.001	<0.001	<0.00070	<0.00070	<0.00070	<0.00070	<0.00070	<0.00070	Not Sampled	Not Sampled
1,3-Dichlorobenzene	mg/L	0.001	1.5	0.15				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,4-Dichlorobenzene	mg/L	0.001	0.26	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,1-Dichloroethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,2-Dichloroethane	mg/L	0.001	1	0.1				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,1-Dichloroethylene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
cis-1,2-Dichloroethylene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
trans-1,2-Dichloroethylene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,3-Dichloropropene (cis & trans)	mg/L	0.0014	-	-				<DL	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	Not Sampled	Not Sampled
Dichloromethane	mg/L	0.005	0.98	-				<DL	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	Not Sampled	Not Sampled
1,2-Dichloropropane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
cis-1,3-Dichloropropylene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
trans-1,3-Dichloropropylene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Ethylbenzene	mg/L	0.0005	2	0.2				<DL	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0001	<0.0001
n-Heptane (nC7)	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
n-Hexane (nC6)	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
2-Hexanone	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Isopropylbenzene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
4-Isopropyltoluene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Methyl ethyl ketone (MEK)	mg/L	0.01	-	-				<DL	<0.005	<0.002	<0.01	<0.010	<0.0050	<0.0050	<0.010	<0.0020	<0.010	Not Sampled	Not Sampled
Methyl isobutyl ketone (MIBK)	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Methylcyclohexane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Methyl t-butyl ether (MTBE)	mg/L	0.0005	34	-				<DL	<0.0001	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0001	<0.0001
Naphthalene	mg/L	0.001	0.01	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
n-Octane (nC8)	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
n-Propylbenzene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Styrene	mg/L	0.0005	0.72	0.072				<DL	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	Not Sampled	Not Sampled
1,1,1,2-Tetrachloroethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,1,2,2-Tetrachloroethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Tetrachloroethylene	mg/L	0.001	1.1	0.111				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Toluene	mg/L	0.0005	0.39	0.0005				<DL	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0001	<0.0001
1,1,1-Trichloroethane	mg/L	0.001	-	11.1				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,1,2-Trichloroethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Trichloroethylene	mg/L	0.001	0.2	0.021				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
Trichlorofluoromethane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
1,2,3-Trichloropropane	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
1,2,4-Trimethylbenzene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
1,3,5-Trimethylbenzene	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	Not Sampled	Not Sampled	Not Sampled	<0.0010	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Vinyl Chloride	mg/L	0.001	-	-				<DL	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	Not Sampled	Not Sampled
ortho-Xylene	mg/L	0.0005	-	0.03				<DL	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	Not Sampled	Not Sampled
meta- & para-Xylene	mg/L	0.0005	-	0.03				<DL	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	Not Sampled	Not Sampled
Xylenes	mg/L	0.00075	-	0.03				<DL	<0.00075	<0.00075	<0.002	<0.00075	<0.00075	<0.00075	<0.00075	<0.00075	<0.00075	<0.002	<0.002
EPH10-19	mg/L	0.25	5	-				0.96	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	Not Sampled	Not Sampled
EPH19-32	mg/L	0.25	-	-				1.2	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	Not Sampled	Not Sampled
LEPH	mg/L	0.25	0.5	-				0.96	<0.25	<0.25	<0.1	<0.25	<0.25	<0.25	<0.25	<0.25	Not Sampled	<0.1	Not Sampled
HEPH	mg/L	0.25	-	-				1.2	<0.25	<0.25	<0.1	<0.25	<0.25	<0.25	<0.25	<0.25	Not Sampled	<0.1	Not Sampled

Attachment 1. Whistler Landfill groundwater interceptor historical water quality.

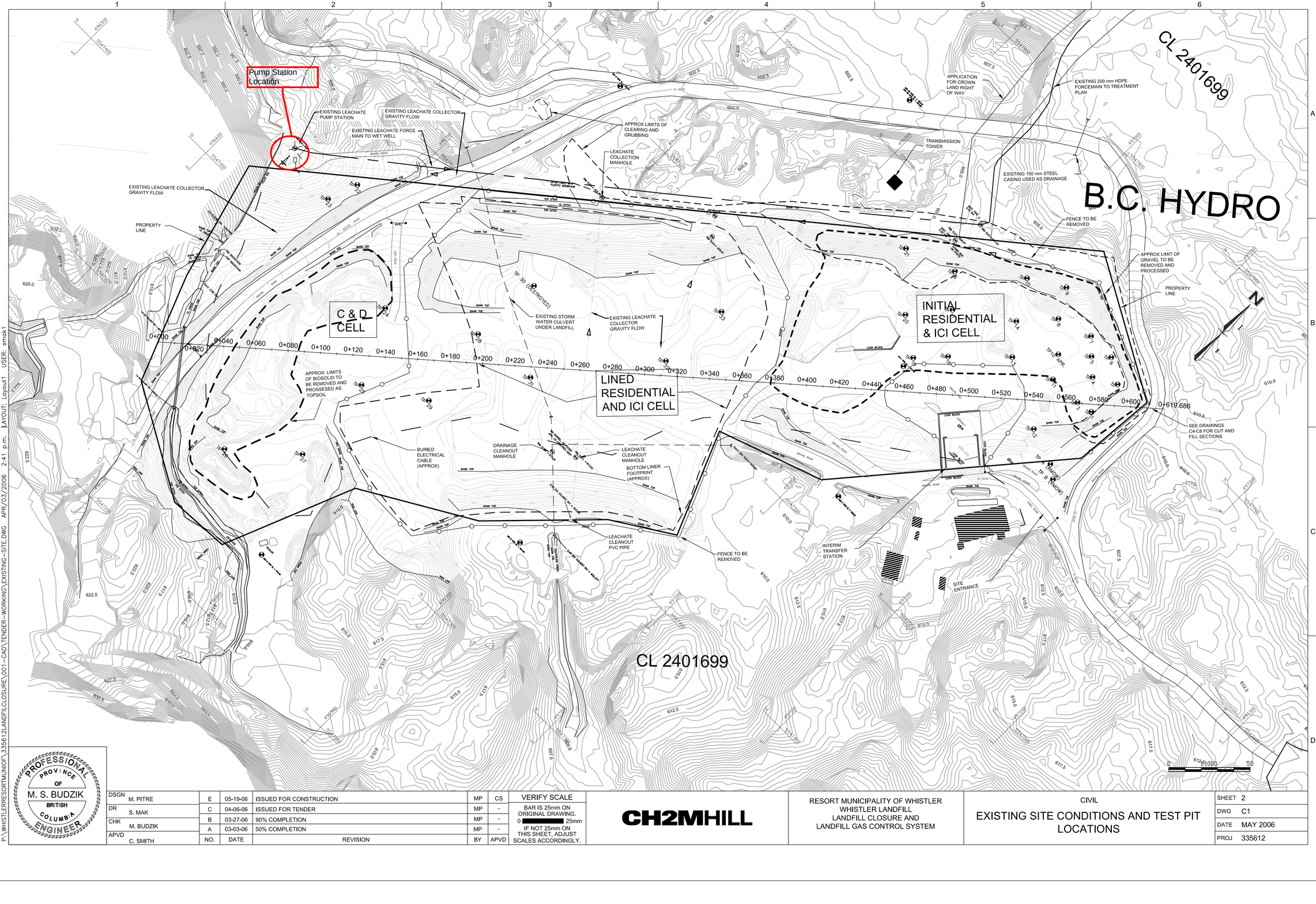
MORRISON HERSHFIELD

Analyte	Units	LOR	BC-CSR AW Standards	BC Approved Water Quality Guidelines (Criteria) (mg/L)	Leachate Chemistry (L1)			Background Groundwater (MW06)	Groundwater Interceptor Statistical Overview			Groundwater Interceptor[1] Monitoring Events						
					2012 - 2014			2012 - 2014	2012 - 2014			Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q3 2013	Q1 2014	Q2 2014
					Min	Median	Max	Median	Min	Median	Max	26/01/2012	24/5/2012	26/09/2012	12/12/2012	19/03/2013	9/10/2013	21/03/2014	22/06/2014
Volatile Hydrocarbons (VH6-10)	mg/L	0.1	15	-				<DL	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	Not Sampled	Not Sampled
VPH (C6-C10)	mg/L	0.1	1.5	-				<DL	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	Not Sampled	Not Sampled
Acenaphthene	mg/L	0.00005	0.06	0.006				<DL	0.00046	0.000805	0.00089	0.000785	0.00089	0.00089	0.000805	0.000829	Not Sampled	0.00046	Not Sampled
Acenaphthylene	mg/L	0.00005	-	-				<DL	<0.00002	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00002	Not Sampled
Acridine	mg/L	0.00005	0.0005	0.00005				<DL	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00005	Not Sampled
Anthracene	mg/L	0.00005	0.001	0.0001				<DL	<0.00005	<0.00005	0.00002	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	0.00002	Not Sampled
Benz(a)anthracene	mg/L	0.00005	0.001	0.0001				<DL	<0.00001	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00001	Not Sampled
Benzo(a)pyrene	mg/L	0.00001	0.0001	0.00001				<DL	<0.00001	<0.00001	<0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	Not Sampled	<0.00001	Not Sampled
Benzo(b)fluoranthene	mg/L	0.00005	-	1				<DL	<0.00002	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00002	Not Sampled
Benzo(g,h,i)perylene	mg/L	0.00005	-	1				<DL	<0.00002	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00002	Not Sampled
Benzo(k)fluoranthene	mg/L	0.00005	-	1				<DL	<0.00002	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00002	Not Sampled
Chrysene	mg/L	0.00005	0.001	-				<DL	<0.00002	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00002	Not Sampled
Dibenz(a,h)anthracene	mg/L	0.00005	-	1				<DL	<0.00002	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00002	Not Sampled
Fluoranthene	mg/L	0.00005	0.002	0.0002				<DL	0.000105	0.000115	0.000136	0.000114	0.000136	0.000136	0.000115	0.000105	Not Sampled	0.00011	Not Sampled
Fluorene	mg/L	0.00005	0.12	0.012				<DL	0.00019	0.000249	0.00034	0.000249	0.000223	0.000223	0.000331	0.00034	Not Sampled	0.00019	Not Sampled
Indeno(1,2,3-c,d)pyrene	mg/L	0.00005	-	-				<DL	<0.00002	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00002	Not Sampled
Naphthalene	mg/L	0.00005	0.01	0.001				<DL	<0.00005	<0.00005	0.000104	<0.000050	<0.000050	<0.000050	<0.000050	0.000104	Not Sampled	<0.00005	Not Sampled
Phenanthrene	mg/L	0.00005	0.003	0.0003				<DL	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00005	Not Sampled
Pyrene	mg/L	0.00005	0.0002	0.00002				<DL	0.000057	0.000066	0.000072	0.000059	0.000066	0.000066	0.000072	0.000057	Not Sampled	0.00006	Not Sampled
Quinoline	mg/L	0.00005	0.034	0.0034				<DL	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	Not Sampled	<0.00005	Not Sampled

Notes:

1. Laboratory analytical reports, including groundwater interceptor sampling results, are appended to the 2012 and 2013 RMOW Landfill Annual Monitoring Reports. Sample results are identified by either "Wet well", "Leachate Pump Station Manhole" or "LM".
2. **Red bold** text indicates values that exceed the BC Approved & Working Water Quality guidelines.
3. **Bold** text indicates values that exceed the BC-CSR AW standard.

Figure 1: Highlighted location of Groundwater Interceptor



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P:\WHISTLERRESORTMUNIOF\335612\LANDFILCLOSURE\001-CAD\TENDER-WORKING\EXISTING-SITE.DWG APR/03/2006 2:41 p.m. LAYOUT: Layout1 USER: smak1

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
M. S. BUDZIK

DSGN	M. PITRE	E	05-19-06	ISSUED FOR CONSTRUCTION	MP	CS
DR	S. MAK	C	04-06-06	ISSUED FOR TENDER	MP	..
CHK	M. BUDZIK	B	03-27-06	90% COMPLETION	MP	..
APVD	C. SMITH	A	03-03-06	50% COMPLETION	MP	..
		NO.	DATE	REVISION	BY	APVD

VERIFY SCALE
BAR IS 25mm ON ORIGINAL DRAWING.
0 25mm
IF NOT 25mm ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

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CIVIL

EXISTING SITE CONDITIONS AND TEST PIT LOCATIONS

SHEET	2
DWG	C1
DATE	MAY 2006
PROJ	335612

Figure 2: Groundwater Interceptor Details and Orientation