
CEDAR HILLS REGIONAL LANDFILL

QUARTERLY ENVIRONMENTAL

MONITORING REPORT

First Quarter 2016



Department of Natural Resources and Parks
Solid Waste Division



Printed on recycled paper

**KING COUNTY SOLID WASTE
CEDAR HILLS REGIONAL LANDFILL
QUARTERLY ENVIRONMENTAL MONITORING REPORT**

CONTENTS

CHECKLIST FOR GROUNDWATER REPORTING	iii
CERTIFICATION	v
SUMMARY OF QUARTERLY ENVIRONMENTAL MONITORING	
RESULTS AND ANALYSIS	1
GROUNDWATER	1
STORM WATER	4
LANDFILL GAS	4
ANALYTICAL METHODS	5

FIGURES

Fig 1	GROUNDWATER MONITORING WELL LOCATIONS	9
Fig 2	STORMWATER MONITORING LOCATIONS	11
Fig 3	LEACHATE MONITORING LOCATIONS	13
Fig 4	LANDFILL GAS MIGRATION MONITORING PROBE LOCATIONS	15
Fig 5	TRILINEAR DIAGRAM UPGRADIENT AND CROSSGRADIENT REGIONAL WELLS	27
Fig 6	TRILINEAR DIAGRAM DOWNGRADIENT REGIONAL WELLS	28
Fig 7	TRILINEAR DIAGRAM EAST PERCHED ZONE WELLS	37
Fig 8	TRILINEAR DIAGRAM SSW AREA PERCHED ZONES WELLS	38

TABLES

Tab 1	SUMMARY OF CEDAR HILLS REGIONAL LANDFILL SITE WELLS	17
Tab 2	GROUNDWATER MONITORING ACTIVITIES	19
Tab 3	REGIONAL AQUIFER GROUNDWATER QUALITY STANDARD EXCEEDANCES	21
Tab 4	REGIONAL AQUIFER ION BALANCE CALCULATIONS	23
Tab 5	REGIONAL AQUIFER QUARTERLY PREDICTION LIMIT VALUES AND RESULTS	29
Tab 6	REGIONAL AQUIFER VOLATILE ORGANIC COMPOUND DETECTIONS	31
Tab 7	PERCHED ZONES GROUNDWATER QUALITY STANDARD EXCEEDANCES	33
Tab 8	PERCHED ZONES ION BALANCE CALCULATIONS	35
Tab 9	PERCHED ZONES PREDICTION LIMIT VALUES AND RESULTS	39
Tab 10	PERCHED ZONES VOLATILE ORGANIC COMPOUND DETECTIONS	41
Tab 11	SURFACE WATER MONITORING ACTIVITIES	43
Tab 12	SURFACE WATER QUALITY CRITERIA EXCEEDANCES	45
Tab 13	VOLATILE ORGANIC COMPOUND DETECTIONS IN BLANKS	47
Tab 14	GROUNDWATER QUALITY STANDARDS	49
Tab 15	STORMWATER PERMIT BENCHMARKS and EFFLUENT LIMITS	51
Tab 16	UNUSABLE DATA	53

APPENDICES

POTENIOMETRIC SURFACE MAPS & AQUIFER FLOW CALCULATIONS	App A
FIELD DATA AND ANALYTICAL TEST RESULTS	App B
GROUNDWATER	
STORM WATER	
LEACHATE	
LANDFILL GAS MONITORING	
ANALYTICAL DATA QUALIFIERS	
METEROLOGICAL DATA	App C
AREA 5 TOP DECK MONITORING REPORT	App D

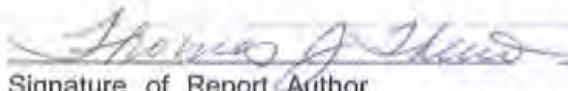


CHECKLIST FOR GROUNDWATER REPORTING
Municipal Solid Waste Landfills
WAC 173-351-415

Include a signed, completed copy of this checklist with each quarterly and annual report.

Quarterly groundwater reports shall be submitted to the jurisdictional health department and Ecology within 60 days of receipt of analytical data. Annual groundwater reports shall be submitted to the jurisdictional health department and Ecology by April 1 of each year.

1 st	2 nd	3 rd	4 th	YEAR	2016	Reference (section, subsection)	Included in this report	Location – page # or appendix #
<i>Quarterly Groundwater Reports: 173-351-415 (2) plus the referenced section</i>								
Statistical calculations and summaries								
Descriptive statistics					420, (1)	<input type="checkbox"/>		
Statistical tests					420, (2)	<input checked="" type="checkbox"/>	29	
Notification of statistical increase (if applicable)					420, (4)	<input type="checkbox"/>		
Notification of concentrations above Chapter 173-200 WAC criteria (if any)					430, (4)	<input type="checkbox"/>		
Static water level readings					415, (2)	<input checked="" type="checkbox"/>	Appendix A	
Potentiometric surface elevation maps depicting flow direction					415, (2)	<input checked="" type="checkbox"/>	Appendix A	
Flow rate – calculated					415, (2)	<input checked="" type="checkbox"/>	Appendix A	
Cation-anion balances					430, (5a)	<input checked="" type="checkbox"/>	23, 35	
Explanation of greater than 5% (or 10%) difference if needed					430, (5a)	<input type="checkbox"/>		
Trilinear diagrams					430, (5b)	<input checked="" type="checkbox"/>	27, 28, 37, 38	
Leachate analyses (if sampled and tested)					415, (2)	<input checked="" type="checkbox"/>	Appendix B	
Data entered into EIM database (date entered:)					415, (3)	<input type="checkbox"/>		
Complete copy of the lab report with chain of custody record.						<input type="checkbox"/>		
<i>Annual Groundwater Reports: 173-351-415 (1) YEAR</i>								
Summary of statistical results and trends					415, (1)	<input type="checkbox"/>		
Summary of groundwater flow rate and direction for the year					415, (1)	<input type="checkbox"/>		
Copy of all potentiometric maps for the year					415, (1)	<input type="checkbox"/>		
Summary geochemical evaluation					415, (1)	<input type="checkbox"/>		
<i>For Quarterly and Annual Reports</i>								
Stamped by a licensed professional					RCW 18.220	<input checked="" type="checkbox"/>	v	


Signature of Report Author

03/26/2016

Date

Cedar Hills Regional Landfill

Landfill

If you need this publication in an alternate format, please call the Waste 2 Resources Program at (360) 407-6900. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

CERTIFICATION

Quarterly Report Groundwater Evaluation Report Certification

I certify in accordance with the requirements of WAC 173-351-400(c) (3), that the contents of this **Cedar Hills Landfill Quarterly Environmental Monitoring Report** were prepared under my direction or supervision under a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Where applicable, some specific and related hydrogeologic portions have been duly certified by the responsible groundwater scientist. Based on my inquiry of the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Name:	Title:	Date:
Anne Holmes, P.E.	Supervising Engineer, Facility, Engineering and Science Unit	5/26/2016
Mailing Address: Solid Waste Division Department of Natural Resources & Parks 201 South Jackson Street, Suite 701 Seattle, WA 98104-3855	Telephone Number: 206-477-5226	
Signature:		



EXP. 9/21/16

Cedar Hills Regional Landfill Summary of Quarterly Environmental Monitoring First Quarter of 2016

This summary contains a discussion of quarterly environmental monitoring results for groundwater, storm water and landfill gas migration monitoring for Cedar Hills Regional Landfill (CHRLF).

Environmental samples were collected and analyzed in accordance with the *Environmental Monitoring Sampling and Analysis Plan for Cedar Hills Regional Landfill (Dec, 2013)*, (SAP); and the *Quality Assurance Project Plan for Environmental Monitoring at King County Solid Waste Facilities* (QAPP). These plans describe procedures and activities to obtain sufficient and representative quality data to adequately conduct environmental monitoring at the CHRLF and provide documentation.

1.0 Quarterly Results and Analysis

This Section discusses the monitoring results and how they compare to previously collected data at the site.

1.1 Groundwater

Groundwater monitoring well details, locations and monitoring status are presented in Table 1 and Figure 1. Monitoring activities for the first quarter are listed in Table 2.

1.11 Regional Aquifer

A refined conceptual model was developed in the *Cedar Hills Regional Landfill Site Wide Hydrogeologic Report Addendum (May, 2004)*. The model fits the site into its regional context of recharge and discharge, provides a detailed look at flow paths within the Regional Aquifer, and defines specific detection zones for each monitoring well. The model provides a thorough evaluation of the monitoring well coverage from the facility waste placement areas and indicates that CHRLF has a sufficient and effective monitoring well network in place. In addition, an alternate groundwater sampling frequency has been implemented for detection groundwater monitoring consistent with WAC 173-351-450 (see SAP, Table 1 and Figure 1).

Regional aquifer analysis results for this quarter are consistent with past results.

For discussion and graphical presentation, monitoring wells are grouped together according to the flow path analysis for the regional aquifer.

Groundwater elevations and potentiometric surfaces are within historical ranges and reflect seasonal responses to precipitation. Potentiometric Surface Map and Groundwater Flow Analysis can be found in Appendix A. Elevations measured this quarter conform to the current hydrogeologic model.

Groundwater samples were analyzed for both dissolved and total metal fractions per WAC 173-351-430(2)(b)(ii) as revised. However, only total metals results were compared to the water quality standards listed in WAC 173-351-990 Appendix I.

Implementation of the new SAP (as of January 1, 2016) resulted in a reduction in the number of wells that are monitored quarterly. This resulted in fewer exceedances overall as compared to the previous quarterly report, although in select cases higher concentrations were seen for arsenic. This does not indicate a change in water quality however, as the dissolved metals concentrations remain similar to historical values. The elevated exceedance measurements are largely attributed to the switch from reporting dissolved metals concentrations to total metals concentrations.

Exceedances of the Primary Ground Water Quality Criteria were observed for total arsenic in upgradient and crossgradient wells MW-93 and MW-68, and in downgradient wells MW-69, MW-80, and MW-87.

Secondary standards (dissolved iron and dissolved manganese) were exceeded in upgradient and crossgradient wells MW-59 and MW-68, and downgradient wells MW-69, MW-72, MW-75, MW-80, MW-87 and MW-93 (manganese only). These results are consistent with past analyses.

Primary and Secondary exceedances of regulatory standards are tabulated and presented in Table 3.

Trilinear Diagrams (Figures 5 and 6) indicate water quality type (hydrochemical facie) based on dissolved ion distribution. The diagrams are useful to recognize spatial variability, potential analytical error or change in hydrochemical facie over time. All regional samples are within the calcium-magnesium-bicarbonate hydrochemical facie. Data are consistent with previous quarters. Ion balance calculations (Table 4) indicate no analytical error in regional aquifer samples as all samples are within 10% on the ion balance.

Intra-well upper prediction limits (UPLs) are calculated annually using data collected through the end of the previous calendar year (2015). Calculated prediction limits and analytical results for Appendix I parameters are presented in Table 5. Result values greater than UPLs for Appendix I parameters this quarter include: total arsenic in MW-68; total barium in MW-59, MW-84 and MW-72; total copper in MW-68; total lead in MW-72; total vanadium in MW-68 and MW-87; and total zinc in MW-72.

The uncertainty associated with the measurement of an analyte can be greater than the degree of confidence in a UPL exceedance because of noise intrinsic to the analytical methods performed. This is especially true for results that are both close to the UPL and have a low MDL. Arsenic exceedances are an example of such a case. Results that are very close to the UPL are subject to both uncertainty within the calculation of the UPL, and the analytical noise inherent to an analyte with a low target MDL.

To note, extensive laboratory Quality Assurance/Quality Control (QA/QC) measures take place with each sample workgroup to help to limit analyte uncertainty to acceptable pre-determined levels. Post-analysis QC review of laboratory results further controls for systemic and isolated incident errors. However, regardless of these measures taken, uncertainty remains embedded in each resultant analyte value and UPL exceedances are viewed within the context of this framework.

These results will be evaluated per the re-testing protocol described in the *Environmental Monitoring Sampling and Analysis Plan for Cedar Hills Regional Landfill (Dec, 2013)*.

Volatile Organic Compound (VOC) detections in regional aquifer wells are presented in Table 6. Present are regularly occurring detections of chlorinated VOCs and their breakdown products from the upgradient Queen City Farms (QCF) Site, which include trichloroethene (TCE) in monitoring wells MW-83, and MW-94; *cis*-1,2-dichloroethene was detected in MW-59. These upgradient well detections are consistent with past data and continuing migration from QCF.

1.12 Perched Zones

The East Main Hill perched zones (EPZ) are localized areas of shallow subsurface saturation that appear laterally and vertically discontinuous, predominantly within till and lacustrine silts.

In the South Solid Waste Area perched zone (SSWA), perched groundwater occurs in pockets within variable surficial deposits comprised of local alluvium, recessional outwash, and/or weathered till (shallow perched zone) and within melt-out deposits in an overall predominately lodgment till sequence (deeper perched zone).

Groundwater elevations measured during the quarter in these zones are within historical ranges. Samples were collected from three EPZ wells (MW-30A, MW-47 and MW-62) and MW-101 near the former SSWA. Groundwater quality data for the regularly sampled perched zones wells collected during the first quarter of 2016 are consistent with previous samples.

Exceedances of regulatory standards are tabulated and presented in Table 7. All are consistent with past analyses and known impacts.

Trilinear plots for perched zones samples are all within the calcium-magnesium-bicarbonate hydrochemical facie, as in past samples (Table 8 and Figures 7 and 8). Cation/Anion balances indicate no potential analytical error (greater than 10% ion imbalance) in any perched wells.

As with the regional data, perched zone prediction limits are derived from cumulative data through the end of 2015. Calculated prediction limits for Appendix I parameters along with analytical results are presented in Table 9.

Volatile Organic Compound detections in the perched zones are presented in Table 10. All are consistent with previous analyses.

1.2 Storm Water

Cedar Hills Regional Landfill is covered by an Industrial Stormwater General Permit issued by the Washington State Department of Ecology. The permit defines discharge Benchmarks, applicable to all facilities and Effluent Limits, applicable specifically to landfills. These values are reproduced in Table 15. Stations SW-N4, SW-SL3 and SW-GS1 are the designated points for comparison to permit benchmarks and effluent limits.

Monitoring activities are listed in Table 11. Samples were obtained from designated compliance stations SW-GS1, SW-N4, and SW-SL3 this quarter. No effluent limits were exceeded, however a visible oil sheen was observed at SW-GS1 (Table 12). Presence of the oil sheen is attributed to a truck rollover accident that released fuel into the stormwater ditch upstream one month prior to sampling. Residual amounts of petroleum likely remain bound to sediment and/or vegetation near sampling location and have resulted in a persistent visible sheen.

ISWG Permit Discharge Monitoring Reports (DMRs) are included in Appendix B.

1.3 Landfill Gas

A network of compliance probes are monitored for landfill gas migration around the perimeter of the landfill. Probes are monitored by the landfill gas crew monthly to monitor system performance and quarterly for compliance. No compliance probes detected methane this quarter.

Detections above the regulatory limit in landfill gas probe GP-33C in September of 2011 prompted actions including: monitoring frequency increases, operational adjustments to increase LFG recovery rates, off-site structure monitoring and preparation of a response plan.

Operational review resulted in modifications to enhance extraction from unlined areas and under liner spaces that could potentially act as gas conveyance pathways.

The plan resulted in installation of 13 borings targeting the potential zone of LFG migration in the native sediments. Eight borings serve as LFG extraction wells and five as monitoring probes. The extraction wells and interior probes are currently monitored bimonthly. No detections of methane occurred in any of the west perimeter migration probes this quarter.

Data indicate the system has been effective in controlling LFG migration to the perimeter probes with no methane detections this quarter.

Compliance Probes, On-site Buildings and supplemental Monitoring Probe results are included in Appendix B.

2.0 Analytical Methods

Groundwater quality is evaluated by comparison of analysis results to regulatory standards, geochemical analysis and statistical evaluation. Water quality analytical results for surface water runoff discharged from the landfill site are compared to the limits set in the Industrial Stormwater General Permit. Following is a brief description of each.

2.1 Regulatory Standards

Groundwater monitoring results are compared to Washington State Groundwater Quality Criteria, WAC 173-200 (Table 14). Surface water monitoring results are compared to the *Industrial Stormwater General Permit* Benchmark Criteria or WAC 173-201A Water Quality Standards for Surface Waters of the State of Washington.

2.2 Trilinear Diagrams and Major Ion Balance

Geochemical data are presented on trilinear diagrams. Major cations and anions are plotted on individual triangles as percentages of total milliequivalents per liter (meq/L). These diagrams illustrate differences in major ion chemistry between groundwater samples and can be used to categorize water composition into identifiable groups or hydrochemical facies. These hydrochemical facies reflect distinct compositions of cation and anion concentrations. The value of the diagram lies in pointing out relationships that exist among individual samples. Trilinear Diagrams are included with ionic balance calculations in this report. Ion balance calculations are useful for determining analytical correctness and can be of value in detecting laboratory error or variation in field sampling procedures.

2.3 Prediction Limits

A Prediction Limit is a statistical test that compares an analytical result to a computed limit value. The limit value is derived from past analytical results, considered representative historical data. A value outside of this limiting value is considered evidence that the result is not drawn from the same sample population distribution.

At CHRLF, intra-well comparisons present a more conservative approach to determining if a statistically significant release has occurred and is the recommended approach for evaluation of detection monitoring data. In the intra-well approach, a threshold background value is set by determining an UPL. Prediction limits set a comparison threshold for background data with compliance well data and are used to determine if a sample is statistically elevated above background conditions.

The calculated prediction limits are based entirely on intra-well comparisons. All of the prediction limits are one-sided upper prediction limits (UPLs).

UPLs for the subsequent year's detection monitoring are calculated at the end of each year and incorporate the previous year's analytical results.

UPLs are based on a 0.05 significance level, as approved by Ecology to be protective of human health and the environment. A 0.05 significance level indicates that at most there is a 5 percent chance that a Type I error (false positive) will occur in the results.

The method for calculating the UPLs depends on both the type of distribution and the number of non-detects present in the background data set.

UPLs for background data sets with 100 percent non-detects (NDs) are equal to the highest laboratory method detection limit (MDL).

UPLs for background data sets with greater than 50 percent, but less than 100 percent non-detects are calculated based on the highest detected concentration for the respective data set. Although there are alternative methods for calculating UPLs for background data sets with greater than 90 percent, but less than 100 percent non-detects (e.g., Poisson's Method), the use of the highest detected concentration is generally considered to be the most conservative.

UPLs for background data sets with less than 50 percent non-detects are evaluated for normality, as non-parametric data sets are based on the highest detected concentration for the respective data set.

UPLs for either normally distributed or transformed data sets with 0 percent non-detects are calculated based on the following equations used to calculate parametric prediction limits with retesting (*EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance, 2009*):

Normal Distribution

$$UPL = x + \kappa s$$

or

Transformed Distribution:

$$UPL = y + \kappa s_y$$

where: x = mean of the baseline data

y = mean of the transformed data

κ = multiplier for intra-well prediction limits

s = standard deviation of baseline data

s_y = standard deviation of transformed data

Analytical results are compared to the respective UPLs on a quarterly/semi-annual basis, depending on the monitoring program, for Appendix I parameters. If there is an exceedance of the UPL, retesting of the respective analytical parameter at the respective location is required in order to determine if the exceedance is representative of a statistically significant increase over background.

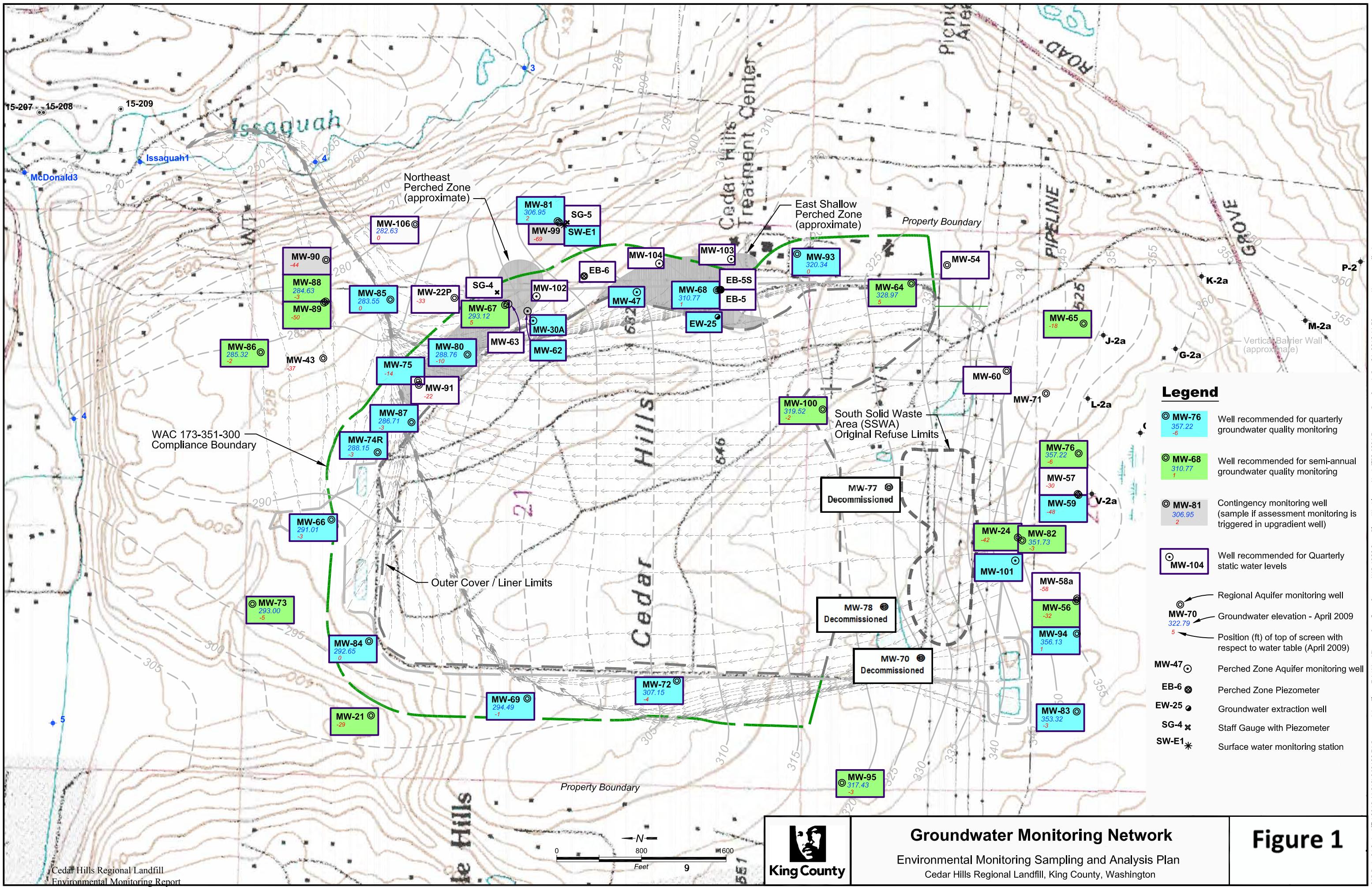
A 1-of-3 retesting plan will be used for any exceedances of the intra-well UPLs at the

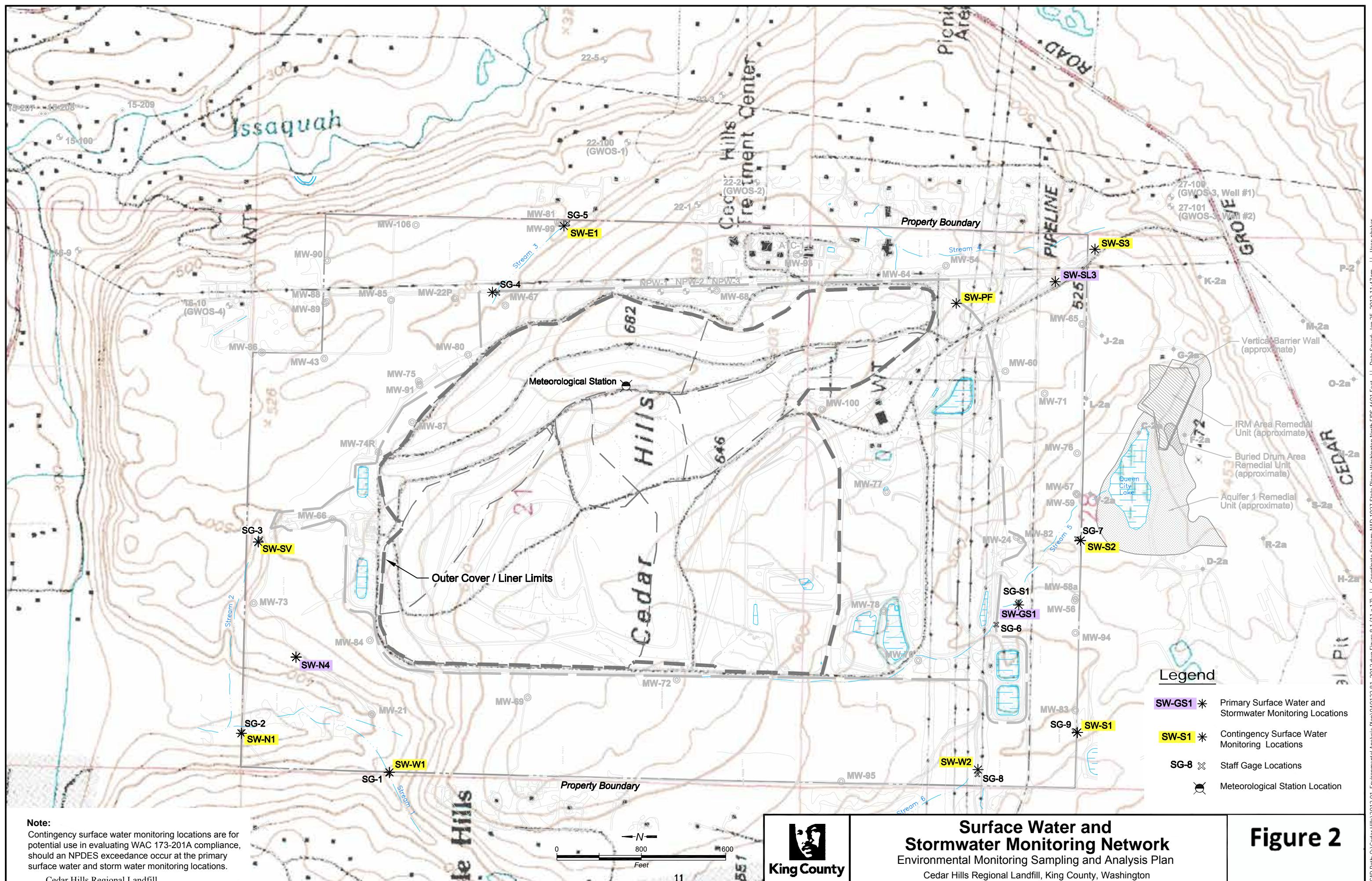
CHRLF. This retesting plan provides adequate statistical power and minimizes Type II (False Negative) errors, while providing retesting that accommodates lab turnaround time, data review, and scheduling.

This test is performed on parameters listed in WAC 173-351-990 Appendix I and is used to detect a change in the population distribution of the individual well.

2.4 Laboratory Data Quality

Laboratory analytical data is reviewed to verify meeting data quality objectives (DQOs) as defined in the QAPP. Occasionally, results identified during this process are deemed to be unsuitable for evaluation purposes. A summary of suspect results can be found in Table 16.





Note:

Contingency surface water monitoring locations are for potential use in evaluating WAC 173-201A compliance, should an NPDES exceedance occur at the primary surface water and storm water monitoring locations.

Cedar Hills Regional Landfill

Cedar Hills Regional Landfill

Environmental Monitoring Report 1st Quarter 2016

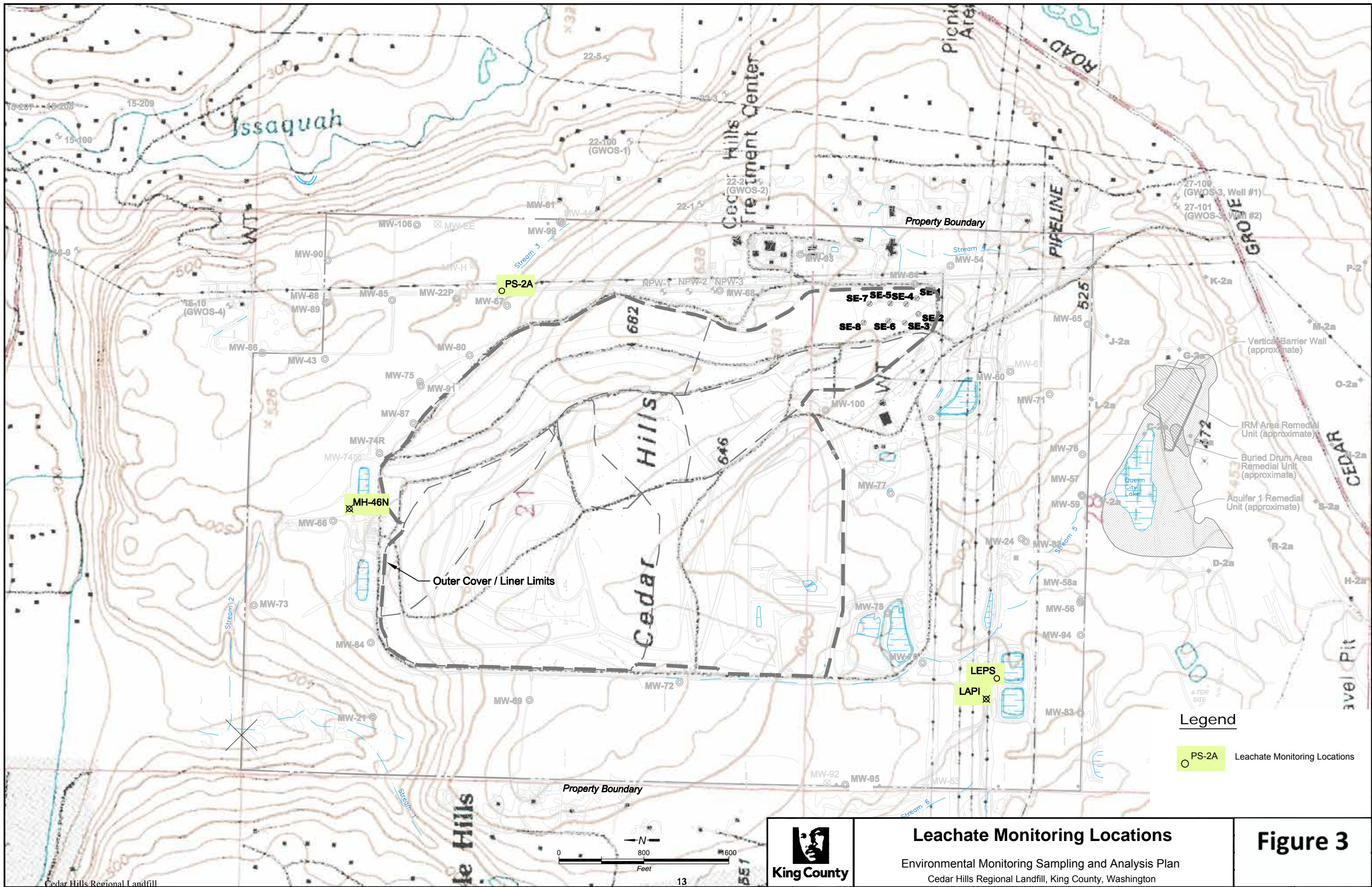


Surface Water and Stormwater Monitoring Network

Environmental Monitoring Sampling and Analysis Plan

Cedar Hills Regional Landfill, King County, Washington

Figure 2



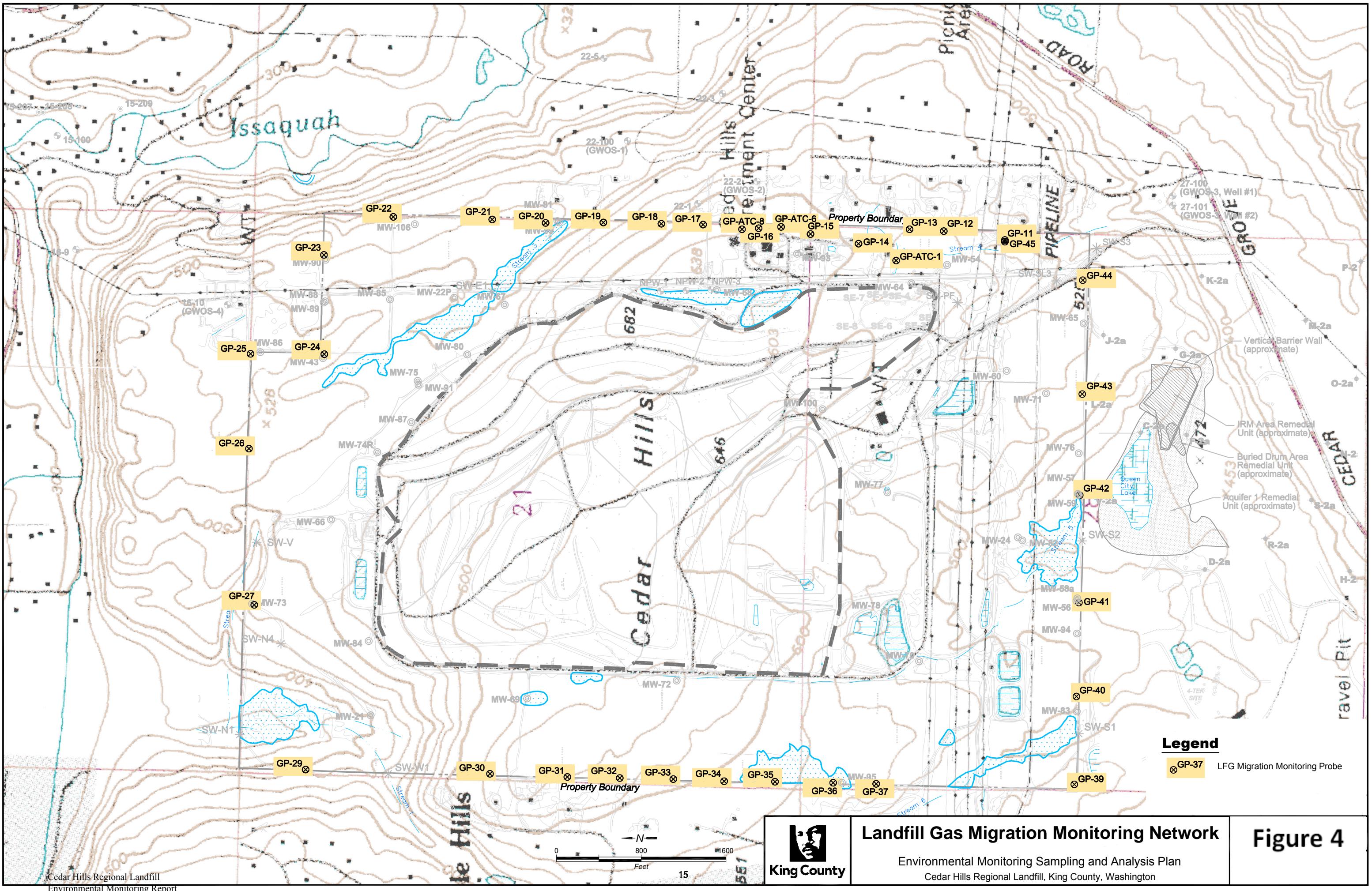


Table 1
CEDAR HILLS REGIONAL LANDFILL GROUNDWATER MONITORING WELLS

Well Name	General Condition				Recommendations				
	Casing Diameter (inches)	Well Depth (feet)	Installation Date	Water Table or Deep Zone	Well Monitoring Classification	Comments on Well Use	Static Water Level Monitoring Frequency	Water Quality Monitoring Frequency	Rationale
MW-21 (Upgradient)	6	163	5/17/83	Deep	Detection	Background	Quarterly	Semi-annual	Monitors background conditions of deep aquifer.
MW-22P (Downgradient)	2	284	5/25/83	Deep	Detection	WL only	Quarterly	None	Not effectively located for facilities or background monitoring.
MW-24 (Upgradient)	6	192	6/2/83	Deep	Detection	Background	Quarterly	Semi-annual	Twice-annual monitoring of QCF impacts in deep upgradient well. Monitor SWLs to define deeper Regional Aquifer flow paths.
MW-54 (Upgradient)	2	351	9/26/86	Deep	Detection	WL only	Quarterly	None	Not effectively located for facilities monitoring as it lies up gradient of the CHRLF facilities. Upgradient water quality monitored in other wells.
MW-56 (Upgradient)	2	166	10/12/88	Deep	Detection	Background	Quarterly	Semi-annual	Twice-annual monitoring of QCF impacts in upgradient well. Low groundwater velocities (0.014 ft/day) indicate slow movement of QCF contaminants through this area. Travel distance for 180 days
MW-57 (Upgradient)	2	144	8/22/88	Deep	Detection	WL only	Quarterly	None	Monitoring redundant with MW-59. Strong downward vertical gradients indicate impacts at MW-57 would also be detected at MW-59.
MW-58A (Upgradient)	2	219	9/26/88	Deep	Detection	WL only	Quarterly	None	Monitoring redundant with MW-56. Strong downward vertical gradients indicate impacts at MW-58A would also be detected at MW-56.
MW-59 (Upgradient)	2	180.5	8/16/88	Deep	Detection	Background	Quarterly	Quarterly	Quarterly monitoring of QCF impacts in upgradient well.
MW-60 (Upgradient)	2.5	240	9/13/91	Water Table	Detection	WL only	Quarterly	None	Upgradient flow from QCF in shallow Regional Aquifer characterized by MW-65 and MW-76. Downgradient area monitored by MW-100.
MW-64 (Upgradient)	2.5	274	3/22/93	Water Table	Detection		Quarterly	Semi-annual	Adjacent to SE Pit. Conversion from quarterly to semiannual sampling does not have significant effect on introwell statistics.
MW-65 (Upgradient)	2.5	234	3/29/93	Deep	Detection	Background	Quarterly	Semi-annual	Twice-annual monitoring of QCF impacts in upgradient well. Monitor SWLs to define deeper Regional Aquifer flow paths.
MW-66 (Upgradient)	2.5	248	4/5/93	Water Table	Detection		Quarterly	Quarterly	Monitor north end leachate detention facilities.
MW-67 (Downgradient)	2.5	230	4/28/93	Water Table	Detection		Quarterly	Semi-annual	Monitors potential EPZ contaminants infiltrating into Regional Aquifer.
MW-68 (Cross-Gradient/)	2.5	353	4/15/93	Water Table	Detection		Quarterly	Quarterly	Well is completed adjacent to unlined Main Hill where downward flow from Main Hill and impacted EPZ would be captured. Monitors Main Hill gas effected area.
MW-69 (Downgradient)	2.5	371	4/23/93	Water Table	Detection		Quarterly	Quarterly	West side flow converges in this area and well is upgradient of key downgradient wells.
MW-72 (Downgradient)	2.5	376	8/7/98	Water Table	Detection		Quarterly	Quarterly	Key water quality monitoring well for southwest landfill area.
MW-73 (Upgradient)	4	206	9/3/99	Water Table	Detection	Background	Quarterly	Semi-annual	Background water quality monitoring for northwest facility area. Downgradient flow paths from well largely by-pass facility so provides only general indication of background conditions.
MW-74R (Downgradient)	4	249	11/1/00	Water Table	Detection		Quarterly	Quarterly	Detection zone monitors north end facilities. Quarterly monitoring recommended due to elevated chloride.
MW-75 (Downgradient)	4	269	9/24/99	Deep	Detection		Quarterly	Quarterly	Key downgradient monitoring well.
MW-76 (Upgradient)	4	148	10/25/99	Water Table	Detection	Background	Quarterly	Semi-annual	Monitor QCF impacts effecting upgradient water quality in shallow portion of Regional Aquifer. Low groundwater velocities (0.014 ft/day) indicate slow movement of QCF contaminants through this
MW-80 (Downgradient)	4	259	2/27/01	Water Table	Detection		Quarterly	Quarterly	Key downgradient monitoring well for monitoring impacts from unlined Main Hill and EPZ.
MW-81 (Upgradient)	4	192	10/3/02	Water Table	Detection		Quarterly	Quarterly	Monitors ground water quality from off-site area east of facility. Retain as monitoring point to monitor for potential LFG impacts to groundwater. Key well for defining potentiometric divide on east
MW-82 (Upgradient)	4	133	11/2/00	Water Table	Detection	Background	Quarterly	Semi-annual	Twice-annual monitoring of QCF impacts in shallow Regional upgradient well. Low groundwater velocities (0.014 ft/day) indicate slow movement of QCF contaminants through this area.
MW-83 (Upgradient)	4	154	10/27/00	Water Table	Detection	Background	Quarterly	Quarterly	Quarterly monitoring of QCF impacts in shallow Regional upgradient well.
MW-84 (Upgradient)	4	246	10/20/00	Water Table	Detection	Background	Quarterly	Quarterly	Monitor background conditions in shallow regional aquifer
MW-85 (Downgradient)	4	257	12/1/00	Water Table	Detection		Quarterly	Quarterly	Key downgradient monitoring well with large detection zone underlying waste placement areas. Located in area of convergent groundwater flow and near center of high transmissivity channel.
MW-86 (Downgradient)	4	259	12/12/00	Water Table	Detection		Quarterly	Semi-annual	Provides monitoring of north end facilities. Conversion from quarterly to semiannual sampling does not have significant effect on introwell statistics.
MW-87 (Downgradient)	4	261	11/21/00	Water Table	Detection		Quarterly	Quarterly	Key downgradient monitoring well.

Table 1
CEDAR HILLS REGIONAL LANDFILL GROUNDWATER MONITORING WELLS

Well Name	General Condition				Recommendations					
	Casing Diameter (inches)	Well Depth (feet)	Installation Date	Water Table or Deep Zone	Well Monitoring Classification	Comments on Well Use	Static Water Level Monitoring Frequency	Water Quality Monitoring Frequency	Rationale	
MW-88 (Downgradient)	4	239	9/13/01	Water Table	Detection		Quarterly	Semi-annual	Provides limited monitoring of north end facilities. Conversion from quarterly to semiannual sampling does not have significant effect on introwell statistics.	
MW-89 (Downgradient)	4	291	11/12/01	Deep	Detection		Quarterly	Semi-annual	Provides limited monitoring of north end facilities in deep Regional Aquifer. Continue monitoring in place of MW-43. Conversion from quarterly to semiannual sampling does not have	
MW-90 (Downgradient)	4	274	8/14/02	Deep	Assessment		Quarterly	Contingent	Water quality monitoring redundant with MW-89. Reserve as contingency well in event assessment monitoring is triggered in MW-88,89 or 85.	
MW-91 (Downgradient)	6	289	10/26/01	Deep	Detection	WL only	Quarterly	None	Large diameter well used for testing. Redundant with well MW-75. Additional demonstration for reduction in water quality sampling frequency is presented in Appendix F.	
MW-93 (Cross Gradient)	4	320	6/24/02	Water Table	Detection		Quarterly	Quarterly	Well monitors the Main Hill gas affected area	
MW-94 (Upgradient)	4	145	7/2/02	Water Table	Detection	Background	Quarterly	Quarterly	Quarterly monitoring of QCF impacts in shallow Regional upgradient well.	
MW-95 (Cross Gradient)	4	263	7/22/02	Water Table	Detection		Quarterly	Semi-annual	Monitor off-site water quality at south end of facility. Downgradient flow paths poorly defined and may by-pass facility. Additional demonstration for reduction in water quality sampling frequency	
MW-99 (Upgradient)	4	279	8/30/02	Deep	Assessment		Quarterly	Contingent	Monitors easterly upgradient water quality from offsite. Reserve as contingency well in event assessment monitoring is triggered in MW-81. Additional demonstration for reduction in water quality	
MW-100 (Downgradient)	4	300	8/26/02	Water Table	Detection		Quarterly	Semi-annual	Well useful for flowpath and geochemical modeling. Assists in tracking QCF contaminant migration through facility. Additional demonstration for reduction in water quality sampling	
MW-106 (Cross gradient)	4	203	2/19/09	Water Table	Detection	WL only	Quarterly	None	Defines east side flow paths.	
East Main Hill Perched Zones										
EB-5	2	60	5/06/90	EPZ	Assessment	WL only	Quarterly	None	Monitor water levels to evaluate affect of extraction system shut down.	
EB-5S	2	20	6/06/90	EPZ	Assessment	WL only	Quarterly	None	Monitor water levels to evaluate affect of extraction system shut down.	
EB-6	2	30	11/28/90	EPZ	Assessment	WL only	Quarterly	None	Monitor water levels to evaluate affect of extraction system shut down. Well has limited water yield limiting ability to collect samples.	
EW-25	6	36	6/10/92	EPZ	Assessment		Quarterly	Quarterly	Key EPZ compliance well. Temporary monitoring point sampled with passive diffusion sampler.	
MW-30A	3	35	6/09/89	EPZ	Assessment		Quarterly	Quarterly	Monitor attenuating VOCs	
MW-47	2	44	5/31/85	EPZ	Assessment		Quarterly	Quarterly	Key EPZ compliance well	
MW-62	2	54	1/02/90	EPZ	Assessment		Quarterly	Quarterly	Monitor attenuating VOCs	
MW-63	2	17	12/02/90	EPZ	Assessment	WL only	Quarterly	None	Monitor water levels to evaluate affect of extraction system shut down.	
MW-102	2	50	1/27/09	EPZ	Assessment	WL only	Quarterly	None	Monitor water levels to evaluate affect of extraction system shut down.	
MW-103	2	35	1/28/09	EPZ	Assessment	WL only	Quarterly	None	Monitor water levels to evaluate affect of extraction system shut down.	
MW-104	2	32	1/29/09	EPZ	Assessment	WL only	Quarterly	None	Monitor water levels to evaluate affect of extraction system shut down.	
South Solid Waste Area Perched Zone										
MW-101	2	54	6/2/06	SSWA	Assessment		Quarterly	Quarterly	Key SSWA perched zone compliance well	

Notes:

(1) The following wells were decommissioned: MW-70, MW-77, MW-78, MW-96 and MW-97 as of 2016.

(2) Shallow wells are wells completed in the Regional Aquifer with the top screen slot within 10 ft of the water table. Deep wells are completed in the Regional Aquifer with the top screen slot greater than 10 ft below the water table.

(3) Water quality monitoring shading relates to Figure 2.

Abbreviations:

WL = Water Level

NA = Not Applicable

DZ = Detection Zone EPZ = East Perched Zone

SSWA = South Solid Waste Area QCF = Queen City Farms

TABLE 2
GROUNDWATER MONITORING ACTIVITIES 1st QUARTER 2016

Well ID	Zone	Date	Planned Activity	Sample ID	Comment
MW-21	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-22	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-24	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-25	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-27A	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-28	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-29	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-30A	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-30A	Perched	1/11/16	Quarterly Groundwater Sampling	W30A160111-	
MW-41S	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-41D	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-43	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-45	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-47	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-47	Perched	1/19/16	Quarterly Groundwater Sampling	W47-160119-	
MW-48	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-50	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-54	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-55	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-56	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-57	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-58A	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-59	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-59	Regional	1/7/16	Quarterly Groundwater Sampling	W59-160107-	
MW-60	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-62	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-62	Perched	1/19/16	Quarterly Groundwater Sampling	W62-160119-	
MW-63	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-64	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-65	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-66	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-66	Regional	1/7/16	Quarterly Groundwater Sampling	W66-160107-	
MW-67	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-68	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-68	Regional	1/22/16	Quarterly Groundwater Sampling	W68-160122-	
MW-69	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-69	Regional	1/20/16	Quarterly Groundwater Sampling	W69-160120-	
MW-72	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-72	Regional	1/8/16	Quarterly Groundwater Sampling	W72-160108-	
MW-73	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-74	Regional	1/20/16	Quarterly Groundwater Sampling	W74R160120-	
MW-74	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-75	Regional	1/15/16	Quarterly Groundwater Sampling	W75-160115-	
MW-75	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-76	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-79	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-80	Regional	1/20/16	Quarterly Groundwater Sampling	W80-160120-	Damaged
MW-80	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-81	Regional	1/20/16	Quarterly Groundwater Sampling	W81-160120-	
MW-81	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-82	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-83	Regional	1/14/16	Quarterly Groundwater Sampling	W83-160114-	
MW-83	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-84	Regional	1/14/16	Quarterly Groundwater Sampling	W84-160114-	
MW-84	Regional	1/4/16	Groundwater Elevation Measurement	NA	

TABLE 2
GROUNDWATER MONITORING ACTIVITIES 1st QUARTER 2016

Well ID	Zone	Date	Planned Activity	Sample ID	Comment
MW-85	Regional	1/15/16	Quarterly Groundwater Sampling	W85-160115-	
MW-85	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-86	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-87	Regional	1/15/16	Quarterly Groundwater Sampling	W87-160115-	
MW-87	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-88	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-89	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-90	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-91	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-93	Regional	1/11/16	Quarterly Groundwater Sampling	W93-160111-	
MW-93	Regional	1/11/16	QA/QC Sample	W93-160111D	Field Duplicate
MW-93	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-94	Regional	1/11/16	Quarterly Groundwater Sampling	W94-160111-	
MW-94	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-95	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-98	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-99	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-100	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-101	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-101	Perched	1/30/15	Quarterly Groundwater Sampling	W101160129-	
MW-102	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-103	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-104	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-105	Perched	1/4/16	Groundwater Elevation Measurement	NA	
MW-106	Regional	1/4/16	Groundwater Elevation Measurement	NA	
MW-EB6	Perched	1/4/16	Groundwater Elevation Measurement	NA	
EW-25	Perched	3/15/16	Quarterly Groundwater Sampling	EW25160315-	
WS-NPW-1	Regional	1/4/16	Groundwater Elevation Measurement	NA	
WS-NPW-3	Regional	1/4/16	Groundwater Elevation Measurement	NA	
Equipment Blank	NA	1/8/16	QA/QC Sample	WU1M160108E	
Equipment Blank	NA	1/8/16	QA/QC Sample	WU1S160108E	
Equipment Blank	NA	1/8/16	QA/QC Sample	WU1H160108E	
Field Blank	NA	1/27/15	QA/QC Sample	W75-160115F	

NA = No sample ID assigned, No sample collected.

Table 3
GROUNDWATER CONCENTRATIONS ABOVE WAC 173-200-040 CRITERIA
WATER QUALITY STANDARDS FOR GROUND WATERS OF THE STATE OF WASHINGTON

CEDAR HILLS REGIONAL LANDFILL REGIONAL AQUIFER
(Data Collected from January 1, 2016 to March 31, 2016)

Parameter	Units	Well ID	Sample Date	Sample ID	Sample Value
South, Northeast and Northwest Upgradient and Crossgradient Wells					
Arsenic (Total)	(mg/L)	MW-68	1/22/2016	W68-160122-	0.219
		MW-93	1/11/2016	W93-160111-	0.0013
Iron (Dissolved)	(mg/L)	MW-59	1/7/2016	W59-160107-	3.72
		MW-68	1/22/2016	W68-160122-	0.616
Manganese (Dissolved)	(mg/L)	MW-59	1/7/2016	W59-160107-	0.0913
		MW-68	1/22/2016	W68-160122-	0.296
Wells Downgradient to Waste Cells and North end Facilities					
Arsenic (Total)	(mg/L)	MW-69	1/20/2016	W69-160120-	0.00223
		MW-80	1/20/2016	W80-160120-	0.00753
		MW-87	1/15/2016	W87-160115-	0.0168
Iron (Dissolved)	(mg/L)	MW-69	1/20/2016	W69-160120-	0.905
		MW-72	1/8/2016	W72-160108-	1.72
		MW-75	1/15/2016	W75-160115-	1.26
		MW-80	1/20/2016	W80-160120-	1.61
		MW-87	1/15/2016	W87-160115-	4.37
Manganese (Dissolved)	(mg/L)	MW-69	1/20/2016	W69-160120-	0.216
		MW-72	1/8/2016	W72-160108-	0.315
		MW-75	1/15/2016	W75-160115-	0.129
		MW-80	1/20/2016	W80-160120-	0.291
		MW-87	1/15/2016	W87-160115-	0.469
		MW-93	1/11/2016	W93-160111-	0.18

Table 4

Ion Balance Calculations

Cedar Hills Regional Landfill Quarterly Groundwater Monitoring

Data Collected from January 1, 2016 to March 31, 2016

Site ID	MW	n	Upgradient											
			MW-59 1/7/16			MW-66 1/7/16			MW-81 1/20/16			MW-83 1/14/16		
			mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)
Cations														
Calcium	40.1	2	13.2	0.6586826	38.6	16.4	0.8183633	36.7	11.4	0.5688623	42.3	38.6	1.9261477	50.6
Magnesium	24.3	2	7.9	0.6476034	38.0	12.9	1.06151	47.6	6.2	0.5118288	38.0	17.6	1.4482617	38.0
Potassium	39.1	1	1.0	0.0246814	1.4	1.1	0.0268554	1.2	0.6	0.0164202	1.2	2.6	0.0657318	1.7
Sodium	23.0	1	5.5	0.2374969	13.9	7.4	0.3218823	14.4	5.7	0.2475014	18.4	8.4	0.3662499	9.6
Iron	55.8	2	3.72	0.1332211	7.8	0.01	0.0003581	0.0	0.01	0.0003581	0.0	0.01	0.0003581	0.0
Manganese	54.9	2	0.09	0.0033237	0.2	0.00	3.64E-05	0.0	0.00	3.64E-05	0.0	0.00	3.64E-05	0.0
Ammonia-N	14.0	1	0.01	0.0007139	0.0	0.01	0.0007139	0.0	0.01	0.0007139	0.1	0.01	0.0007139	0.0
Total Cations (meq/L)					1.7			2.2			1.3			3.8
Anions														
Alkalinity, Total			66		99		49		128					
Carbonate	60.0	2	0.03858	0.0012859	0.1	0.07143	0.0023809	0.1	0.03276	0.001092	0.1	0.06398	0.0021326	0.1
Bicarbonate	61.0	1	80.08	1.3125162	70.6	120.51	1.9753212	78.8	59.23	0.9707616	70.1	156.03	2.5574817	68.5
Chloride	35.5	1	4.5	0.1277748	6.9	6.4	0.1799566	7.2	4.9	0.137647	9.9	33.2	0.9364511	25.1
Nitrate-N	14.0	1	0.03	0.0019276	0.1	0.60	0.0428357	1.7	1.51	0.1078032	7.8	0.88	0.0625402	1.7
Sulfate	96.1	2	20.0	0.4164168	22.4	14.7	0.3060664	12.2	8.0	0.1667749	12.0	8.5	0.1763525	4.7
Total Anions (meq/L)					1.9			2.5			1.4			3.7
Total Ions (meq/L)					3.6			4.7			2.7			7.5
Cation/Anion Ratio					0.92			0.89			0.97			1.02
Percent Difference					-4.3			-5.8			-1.4			1.0
Trilinear Diagram Data														
sum (Ca, Mg, Na+K)			1.57		2.23		1.34		3.81					
Calcium				42.00		36.72		42.31				50.60		
Magnesium				41.29		47.63		38.07				38.05		
Sodium + Potassium				16.72		15.65		19.63				11.35		
												100.0		
sum (SO ₄ , Cl, HCO ₃ +CO ₃)			1.86		2.46		1.28		3.67					
Sulfate				22.412		12.423		13.067				4.802		
Chloride				6.877		7.304		10.785				25.500		
Bicarbonate + Carbonate				70.711		80.273		76.148				69.698		
												100.0		

Table 4**Ion Balance Calculations****Cedar Hills Regional Landfill Quarterly Groundwater Monitoring**

Data Collected from January 1, 2016 to March 31, 2016

Site ID	MW	n	Upgradient and Crossgradient												
			MW-84 1/14/16			MW-94 1/11/16			MW-93 1/11/16			MW-68 1/22/16			
Cations	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)
Calcium	40.1	2	12.1	0.60379242	35.3	25.3	1.26247505	49.7	30.5	1.52195609	45.7	26.9	1.34231537	43.3	
Magnesium	24.3	2	9.9	0.81217856	47.6	10.9	0.89693479	35.3	16.8	1.3824316	41.5	15.9	1.30837276	42.2	
Potassium	39.1	1	1.1	0.02736692	1.6	1.9	0.04782817	1.9	1.4	0.03555142	1.1	1.7	0.04399168	1.4	
Sodium	23.0	1	6.1	0.2635955	15.4	7.6	0.33188675	13.1	8.7	0.38016909	11.4	8.6	0.3727745	12.0	
Iron	55.8	2	0.01	0.00035812	0.0	0.01	0.00035812	0.0	0.01	0.00035812	0.0	0.62	0.02206027	0.7	
Manganese	54.9	2	0.00	3.6405E-05	0.0	0.00	3.6405E-05	0.0	0.18	0.00655284	0.2	0.30	0.01077578	0.3	
Ammonia-N	14.0	1	0.01	0.00071393	0.0	0.01	0.00071393	0.0	0.05	0.00321268	0.1	0.02	0.00122796	0.0	
Total Cations (meq/L)			1.7			2.5			3.3			3.1			
Anions															
Alkalinity, Total		66		94			121		131						
Carbonate	60.0	2	0.03701	0.00123368	0.1	0.03655537	0.00121853	0.0	0.09149954	0.00305003	0.1	0.05446926	0.00181567	0.1	
Bicarbonate	61.0	1	80.44	1.31856747	75.6	114.85	1.88249757	68.0	147.43	2.41658555	65.4	159.71	2.61778954	85.2	
Chloride	35.5	1	3.7	0.10464559	6.0	19.3	0.5443827	19.7	3.1	0.08772177	2.4	3.1	0.08659352	2.8	
Nitrate-N	14.0	1	0.21	0.0150639	0.9	1.96	0.13993003	5.1	0.03	0.001999	0.1	0.01	0.00071393	0.0	
Sulfate	96.1	2	14.6	0.30398428	17.4	9.6	0.19988007	7.2	57.0	1.18678793	32.1	17.5	0.36436471	11.9	
Total Anions (meq/L)			1.7			2.8			3.7			3.1			
Total Ions (meq/L)			3.5			5.3			7.0			6.2			
Cation/Anion Ratio			0.98			0.92			0.90			1.01			
Percent Difference			-1.0			-4.3			-5.2			0.5			
Trilinear Diagram Data															
sum (Ca, Mg, Na+K)			1.71			2.54			3.32			3.07			
Calcium			35.37			49.72			45.84			43.76			
Magnesium			47.58			35.32			41.64			42.65			
Sodium + Potassium			17.05			14.95			12.52			13.59			
sum (SO ₄ , Cl, HCO ₃ +CO ₃)			1.73			2.63			3.69			3.07			
Sulfate			17.587			7.606			32.126			11.866			
Chloride			6.054			20.715			2.375			2.820			
Bicarbonate + Carbonate			76.358			71.679			65.499			85.314			

Table 4**Ion Balance Calculations****Cedar Hills Regional Landfill Quarterly Groundwater Monitoring**

Data Collected from January 1, 2016 to March 31, 2016

Site ID	MW	n	Downgradient											
			MW-69 1/20/16			MW-72 1/8/16			MW-74 1/20/16			MW-75 1/15/16		
			mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)
Cations														
Calcium	40.1	2	28.9	1.44211577	48.4	27.1	1.35229541	43.4	43.8	2.18562874	40.1	25.3	1.26247505	37.4
Magnesium	24.3	2	13.6	1.11911129	37.6	16.0	1.31660152	42.3	32.9	2.70726188	49.7	20.2	1.66220942	49.2
Potassium	39.1	1	1.5	0.03785331	1.3	1.7	0.04271285	1.4	1.9	0.04731664	0.9	1.8	0.04706087	1.4
Sodium	23.0	1	7.8	0.33710646	11.3	7.5	0.32797196	10.5	11.6	0.50457225	9.3	8.1	0.35320058	10.5
Iron	55.8	2	0.91	0.03240998	1.1	1.72	0.06159686	2.0	0.01	0.00035812	0.0	1.26	0.04512328	1.3
Manganese	54.9	2	0.22	0.00786341	0.3	0.32	0.01146747	0.4	0.00	3.6405E-05	0.0	0.13	0.0046962	0.1
Ammonia-N	14.0	1	0.02	0.00114229	0.0	0.02	0.00118512	0.0	0.01	0.00071393	0.0	0.01	0.00071393	0.0
Total Cations (meq/L)				3.0	100.0			3.1			5.4			3.4
Anions														
Alkalinity, Total			130			121			220			106		
Carbonate	60.0	2	0.21474708	0.00715833	0.2	0.08738634	0.00291292	0.1	0.15888426	0.00529621	0.1	0.07481281	0.00249379	0.1
Bicarbonate	61.0	1	158.16	2.59245077	83.8	147.44	2.41672263	68.9	268.08	4.39404115	76.1	129.17	2.11718693	60.1
Chloride	35.5	1	4.1	0.11677432	3.8	5.8	0.16387894	4.7	25.4	0.71644149	12.4	9.7	0.27247342	7.7
Nitrate-N	14.0	1	0.01	0.00071393	0.0	0.01	0.00085671	0.0	0.37	0.02641536	0.5	0.01	0.00071393	0.0
Sulfate	96.1	2	18.0	0.37477513	12.1	44.3	0.92236325	26.3	30.5	0.63503565	11.0	54.3	1.13057166	32.1
Total Anions (meq/L)				3.1	100.0			3.5			5.8			3.5
Total Ions (meq/L)				6.1				6.6			11.2			6.9
Cation/Anion Ratio				0.96				0.89			0.94			0.96
Percent Difference				-1.9				-5.9			-3.0			-2.1
Trilinear Diagram Data														
sum (Ca, Mg, Na+K)				2.94				3.04			5.44			3.32
Calcium					49.12				44.49			40.14		37.97
Magnesium					38.11				43.32			49.72		49.99
Sodium + Potassium					12.77				12.20			10.14		12.04
					100.0									100.0
sum (SO ₄ , Cl, HCO ₃ +CO ₃)				3.09				3.51			5.75			3.52
Sulfate					12.124				26.309			11.043		32.094
Chloride					3.778				4.674			12.458		7.735
Bicarbonate + Carbonate					84.098				69.017			76.499		60.172
					100.0									

Table 4**Ion Balance Calculations****Cedar Hills Regional Landfill Quarterly Groundwater Monitoring**

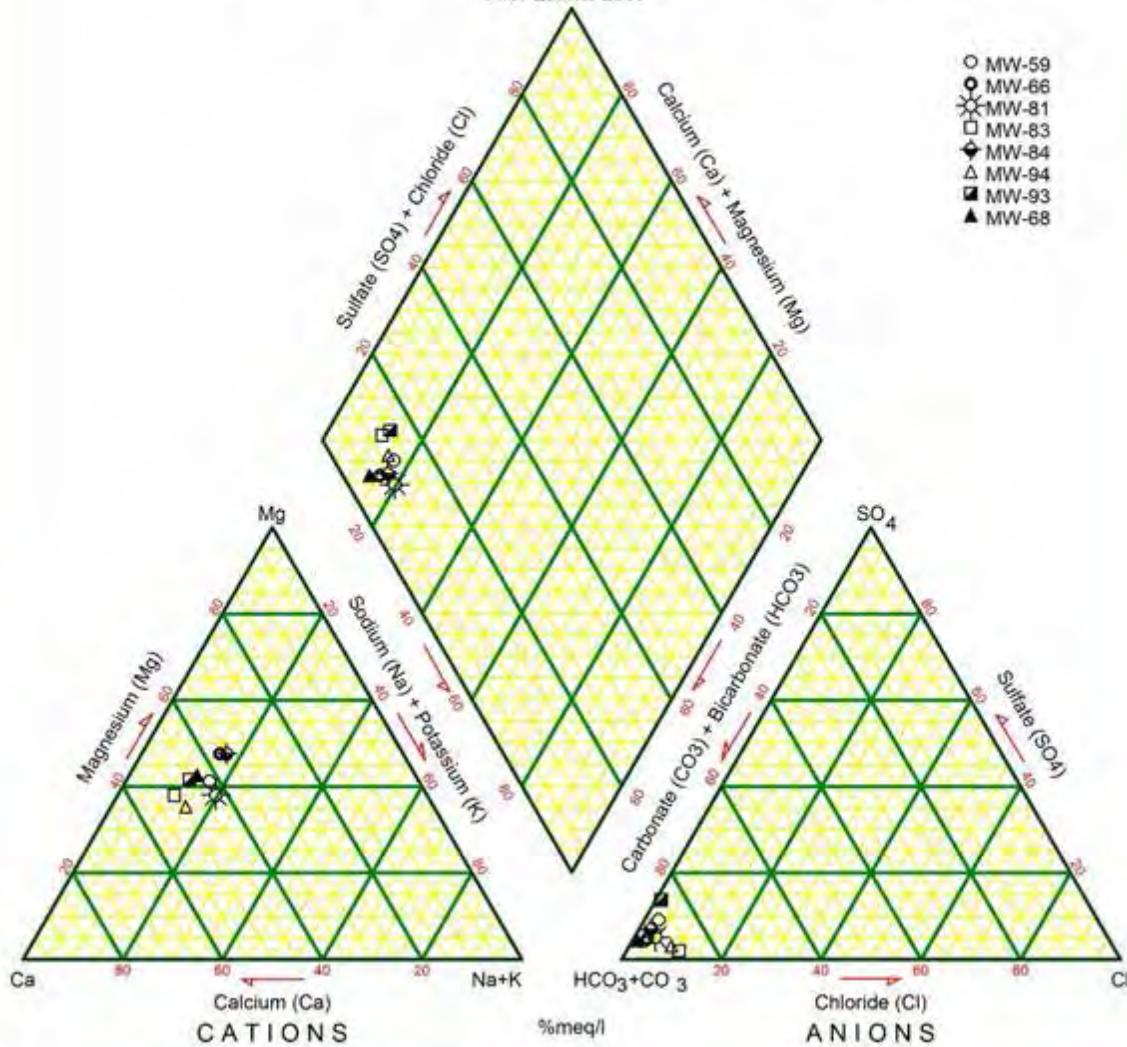
Data Collected from January 1, 2016 to March 31, 2016

Site ID	MW	n	Downgradient								
			MW-80 1/20/16			MW-85 1/15/16			MW-87 1/15/16		
			mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)
Cations											
Calcium	40.1	2	27.7	1.38223553	46.6	27.9	1.39221557	42.0	41.5	2.07085828	39.4
Magnesium	24.3	2	14.2	1.16848385	39.4	18.4	1.51409175	45.7	30.6	2.51800041	47.9
Potassium	39.1	1	1.4	0.03503989	1.2	1.6	0.0401552	1.2	2.4	0.06138374	1.2
Sodium	23.0	1	7.1	0.30883302	10.4	8.5	0.36798976	11.1	10.0	0.43323617	8.2
Iron	55.8	2	1.61	0.05765753	1.9	0.01	0.00035812	0.0	4.37	0.15649901	3.0
Manganese	54.9	2	0.29	0.01059376	0.4	0.00	3.6405E-05	0.0	0.47	0.01707379	0.3
Ammonia-N	14.0	1	0.01	0.0008353	0.0	0.01	0.00071393	0.0	0.02	0.00124938	0.0
Total Cations (meq/L)				3.0			3.3			5.3	
Anions											
Alkalinity, Total			105			111		91			
Carbonate	60.0	2	0.05128813	0.00170963	0.1	0.08016433	0.00267218	0.1	0.03365106	0.00112172	0.0
Bicarbonate	61.0	1	128.00	2.09797398	67.1	135.26	2.21699349	65.0	110.71	1.81460462	34.2
Chloride	35.5	1	5.8	0.16218656	5.2	10.4	0.29334612	8.6	9.1	0.25611373	4.8
Nitrate-N	14.0	1	0.01	0.00071393	0.0	0.11	0.00749625	0.2	0.01	0.00078532	0.0
Sulfate	96.1	2	41.6	0.86614698	27.7	42.8	0.89113199	26.1	155.0	3.22723033	60.9
Total Anions (meq/L)				3.1			3.4			5.3	
Total Ions (meq/L)				6.1			6.7			10.6	
Cation/Anion Ratio				0.95			0.97			0.99	
Percent Difference				-2.7			-1.4			-0.4	
Trilinear Diagram Data											
sum (Ca, Mg, Na+K)			2.89			3.31			5.08		
Calcium				47.75			42.00			40.74	
Magnesium				40.37			45.68			49.53	
Sodium + Potassium				11.88			12.31			9.73	
				100.0			100.0				
sum (SO ₄ , Cl, HCO ₃ +CO ₃)			3.13			3.40			5.30		
Sulfate				27.690			26.178			60.902	
Chloride				5.185			8.617			4.833	
Bicarbonate + Carbonate				67.125			65.205			34.265	

Cedar Hills Regional Landfill

Figure 5. Regional Aquifer Upgradient and Crossgradient Wells

First Quarter 2016



Cedar Hills Regional Landfill
Figure 6. Regional Aquifer Downgradient
First Quarter 2016

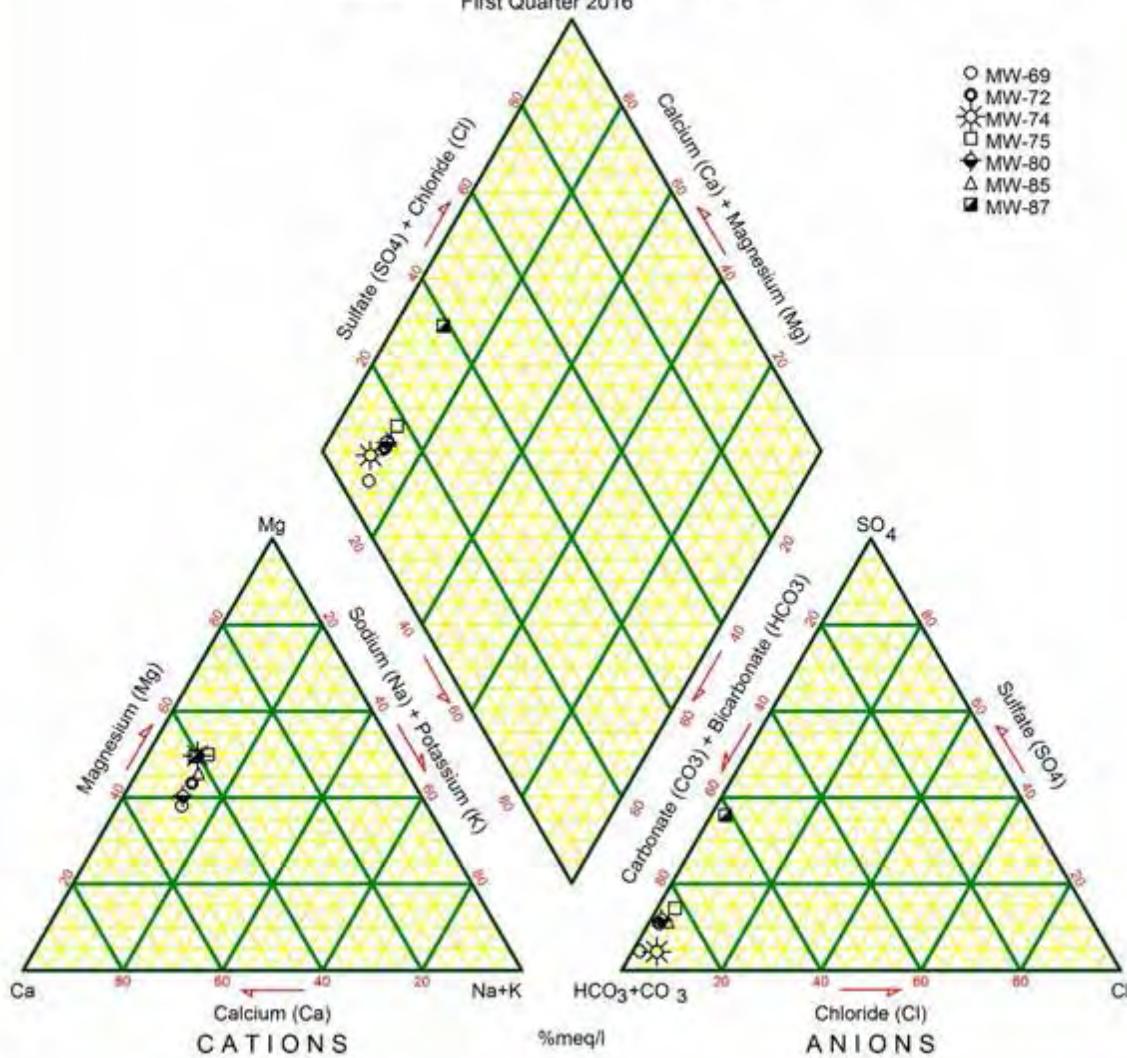


TABLE 5
CEDAR HILLS REGIONAL LANDFILL REGIONAL AQUIFER QUARTERLY MONITORING WELLS
SUMMARY OF WAC 173-351 APPENDIX I INTRAWELL PREDICTION LIMIT VALUES

(Data Collected from January 1, 2016 to March 31, 2016)

Parameter		Total Antimony	Total Arsenic	Total Barium	Total Beryllium	Total Cadmium	Total Chromium	Total Cobalt	Total Copper	Total Lead	Total Nickel	Total Selenium	Total Silver	Total Thallium	Total Vanadium	Total Zinc	Nitrate as N	cis-1,2-Dichloroethene	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride
Well	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	
Upgradient and Crossgradient Wells																					
MW-59	Limit	0.001	0.001	0.0038	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.004	0.29	1.19	0.2	0.45	0.02
	Result	< 0.001	< 0.001	0.0039	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	0.027	1.08	< 0.2	< 0.2	< 0.02
MW-66	Limit	0.001	0.001	0.0074	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.00101	0.003	0.001	0.002	0.004	0.765	0.2	0.2	0.32	0.02
	Result	< 0.001	< 0.001	0.0052	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	0.6	< 0.2	< 0.2	< 0.2	< 0.02
MW-68	Limit	0.001	0.132	0.0205	0.001	0.002	0.005	0.003	0.0048	0.001	0.01	0.001	0.003	0.001	0.0036	0.004	0.13	0.2	0.2	0.2	0.02
	Result	< 0.001	0.219	0.0169	< 0.001	< 0.002	< 0.005	< 0.003	0.0074	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	0.0037	< 0.004	< 0.01	< 0.2	< 0.2	< 0.2	< 0.02
MW-81	Limit	0.001	0.001	0.0030	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.00425	1.8	0.2	0.2	0.2	0.02
	Result	< 0.001	< 0.001	0.0027	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	0.001	< 0.003	< 0.001	< 0.002	< 0.004	1.51	< 0.2	< 0.2	< 0.2	< 0.02
MW-83	Limit	0.001	0.001	0.0095	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.004	2.22	0.2	0.2	3.17	0.02
	Result	< 0.001	< 0.001	0.0057	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	0.876	< 0.2	< 0.2	2.36	< 0.02
MW-84	Limit	0.001	0.001	0.0037	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.004	0.68	0.2	0.2	0.2	0.02
	Result	< 0.001	< 0.001	0.004	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	0.211	< 0.2	< 0.2	< 0.2	< 0.02
MW-93	Limit	0.001	0.001477	0.0098	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.0137	0.21	0.2	0.2	0.2	0.02
	Result	< 0.001	0.00132	0.0090	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	0.0100	0.028	< 0.2	< 0.2	< 0.2	< 0.02
MW-94	Limit	0.001	0.001	0.0041	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.004	2.13	0.2	0.2	5.16	0.02
	Result	< 0.001	< 0.001	0.0026	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	1.96	< 0.2	< 0.2	1.95	< 0.02
Downgradient Wells																					
MW-69	Limit	0.001	0.005	0.0153	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.0112	0.076	0.2	0.2	0.2	0.02
	Result	< 0.001	0.002	0.0116	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	< 0.01	< 0.2	< 0.2	< 0.2	< 0.02
MW-72	Limit	0.001	0.001	0.0131	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.0177	0.089	0.2	0.2	0.2	0.02
	Result	< 0.001	< 0.001	0.0149	< 0.001	< 0.002	< 0.005	< 0.003	0.0033	0.00104	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	0.0201	0.012	< 0.2	< 0.2	< 0.2	< 0.02
MW-74	Limit	0.001	0.001	0.0131	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.004	1.4	0.2	0.2	0.2	0.02
	Result	< 0.001	< 0.001	0.0123	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	0.37	< 0.2	< 0.2	< 0.2	< 0.02
MW-75	Limit	0.001	0.001	0.0131	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.004	0.11	0.26	0.2	0.2	0.07
	Result	< 0.001	< 0.001	0.0108	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	< 0.01	< 0.2	< 0.2	< 0.2	< 0.02
MW-80	Limit	0.001	0.009	0.0158	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.00457	0.028	0.2	0.2	0.2	0.02
	Result	< 0.001	0.008	0.015	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	< 0.01	< 0.2	< 0.2	< 0.2	< 0.02
MW-85	Limit	0.001	0.001	0.0068	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.00137	0.003	0.001	0.002	0.004	0.193	0.2	0.2	0.2	0.02
	Result	< 0.001	< 0.001	0.00627	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	0.00101	< 0.003	< 0.001	< 0.002	< 0.004	0.105	< 0.2	< 0.2	< 0.2	< 0.02
MW-87	Limit	0.001	0.078	0.0369	0.001	0.002	0.005	0.003	0.00347	0.001	0.01	0.001	0.003	0.001	0.002	0.004	0.24	0.2	0.2	0.2	0.08
	Result	< 0.001	0.017	0.0348	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	0.0031	< 0.004	0.011	< 0.2	< 0.2	< 0.2	< 0.02

Results greater than Limit Value in **Bold**

TABLE 6
CEDAR HILLS REGIONAL LANDFILL
VOLATILE ORGANIC COMPOUND DETECTIONS IN REGIONAL AQUIFER WELLS
(Data Collected from January 1, 2016 to March 31, 2016)

Analyte	Site ID	Date	Sample ID	ug/L
Upgradient and Crossgradient Wells				
<i>cis</i> -1,2-Dichloroethene	MW-59	1/7/2016	W59-160107-	1.08
Trichloroethene	MW-83	1/14/2016	W83-160114-	2.36
	MW-94	1/11/2016	W94-160111-	1.95
Downgradient Wells				
No Detections this Quarter				

TABLE 7
SUMMARY OF EXCEEDANCES OF WAC 173-200-040
WATER QUALITY STANDARDS FOR GROUND WATERS OF THE STATE OF WASHINGTON

CEDAR HILLS REGIONAL LANDFILL PERCHED ZONES
(Data Collected from January 1, 2016 to March 31, 2016)

Parameter	Units	Well ID	Sample Date	Sample ID	Sample Value
East Perched Zone Wells					
Manganese (Dissolved)	(mg/L)	MW-47	1/19/16	W47-160119-	1.9 D
1,1-Dichloroethane	(ug/L)	MW-30A	1/11/16	W30A160111-	1.83
		MW-62	1/19/16	W62-160119-	1.59
Total Dissolved Solids	(mg/L)	MW-47	1/19/16	W47-160119-	699
Vinyl Chloride	(ug/L)	MW-47	1/19/16	W47-160119-	5.58
South Solid Waste Area Perched Wells					
Arsenic (Total)	(mg/L)	MW-101	1/29/2016	W101160129-	0.0128
Iron (Dissolved)	(mg/L)	MW-101	1/29/2016	W101160129-	0.475
Manganese (Dissolved)	(mg/L)	MW-101	1/29/2016	W101160129-	1.25
Vinyl Chloride	(ug/L)	MW-101	1/29/2016	W101160129-	0.467

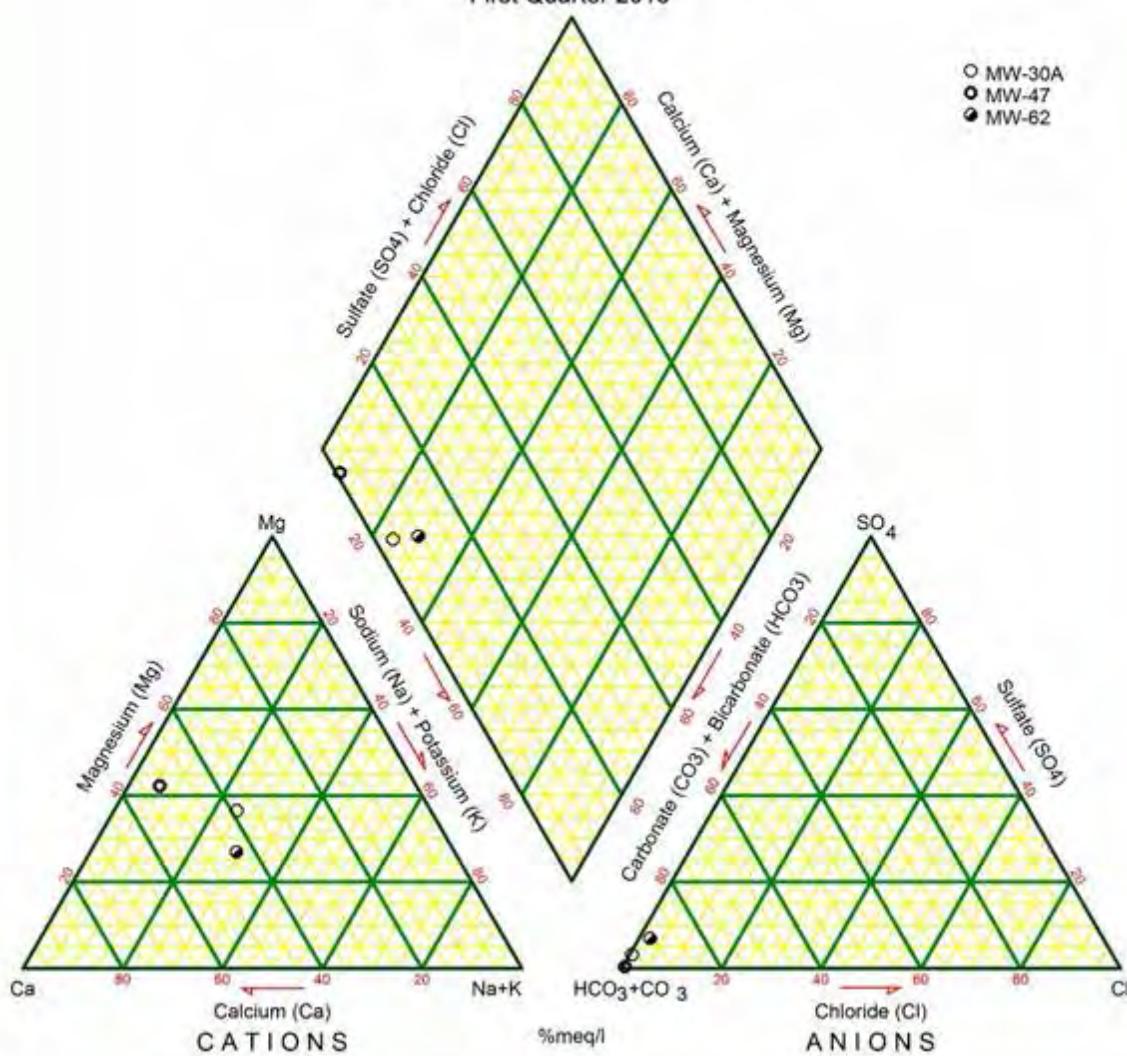
See Data Qualifier List for Qualifier Information.

Table 8**Ion Balance Calculations****Cedar Hills Landfill Perched Zones GW Monitoring Wells**

Data Collected from January 1, 2016 to March 31, 2016

Site ID Date	MW	n	East Perched Zone									SSWA		
			MW-30A 1/11/16			MW-47 1/19/16			MW-62 No Sample			MW-101 1/29/16		
			mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)	mg/L	meq/L	%(meq)
Cations														
Calcium	40.1	2	17.9	0.89321	38.9	140.0	6.98603	51.2	19.3	0.96307	43.7	55.0	2.74451	45.4
Magnesium	24.3	2	10.2	0.83933	36.5	69.7	5.73545	42.0	7.2	0.59412	27.0	30.7	2.52623	41.8
Potassium	39.1	1	1.3	0.03376	1.5	4.7	0.1197	0.9	0.9	0.02343	1.1	2.8	0.07187	1.2
Sodium	23.0	1	12.2	0.53067	23.1	16.8	0.73076	5.4	14.3	0.62202	28.2	14.6	0.63507	10.5
Iron	55.8	2	0.0	0.00036	0.0	0.3	0.00928	0.1	0.0	0.00036	0.0	0.5	0.01701	0.3
Manganese	54.9	2	0.0	3.6E-05	0.0	1.9	0.06917	0.5	0.0	3.6E-05	0.0	1.3	0.04551	0.8
Ammonia-N	14.0	1	0.0	0.00071	0.0	0.1	0.00406	0.0	0.0	0.00071	0.0	0.0	0.00104	0.0
Total Cations (meq/L)				2.3			13.7			2.2			6.0	
Anions														
Alkalinity, Total			95.4			661			78.4			319		
Carbonate	60.0	2	0.02562	0.00085	0.0	0.33039	0.01101	0.1	0.02473	0.00082	0.0	0.24684	0.00823	0.1
Bicarbonate	61.0	1	116.34	1.90686	73.9	805.75	13.207	97.4	95.60	1.56694	66.9	388.68	6.37081	96.1
Chloride	35.5	1	1.1	0.02962	1.1	6.7	0.18983	1.4	4.2	0.11706	5.0	2.9	0.08293	1.3
Nitrate-N	14.0	1	6.3	0.44906	17.4	0.0	0.00071	0.0	4.1	0.29414	12.6	0.0	0.00071	0.0
Sulfate	96.1	2	9.3	0.19426	7.5	7.0	0.14575	1.1	17.5	0.36436	15.5	7.8	0.16324	2.5
Total Anions (meq/L)				2.6			13.6			2.3			6.6	
Total Ions (meq/L)				4.9			27.2			4.5			12.7	
Cation/Anion Ratio				0.89			1.01			0.94			0.91	
Percent Difference				-5.8			0.4			-3.1			-5	
TRILINEAR DIAGRAM DATA														
sum (Ca, Mg, Na+K)			2.30			13.57			2.20			5.98		
Calcium				38.9			51.5			43.72			45.91	
Magnesium				36.5			42.3			26.97			42.26	
Sodium + Potassium				24.6			6.3			29.30			11.83	
										100.0				
sum (SO ₄ , Cl, HCO ₃ +CO ₃)			2.13			13.55			2.05			6.63		
Sulfate				9.1			1.1			17.8			2.5	
Chloride				1.4			1.4			5.7			1.3	
Bicarbonate + Carbonate				89.5			97.5			76.5			96.3	
										100.0				

Cedar Hills Regional Landfill
Figure 7. East Perched Zone Wells
First Quarter 2016



Cedar Hills Regional Landfill
Figure 8. SSWA Perched Zone Wells
First Quarter 2016

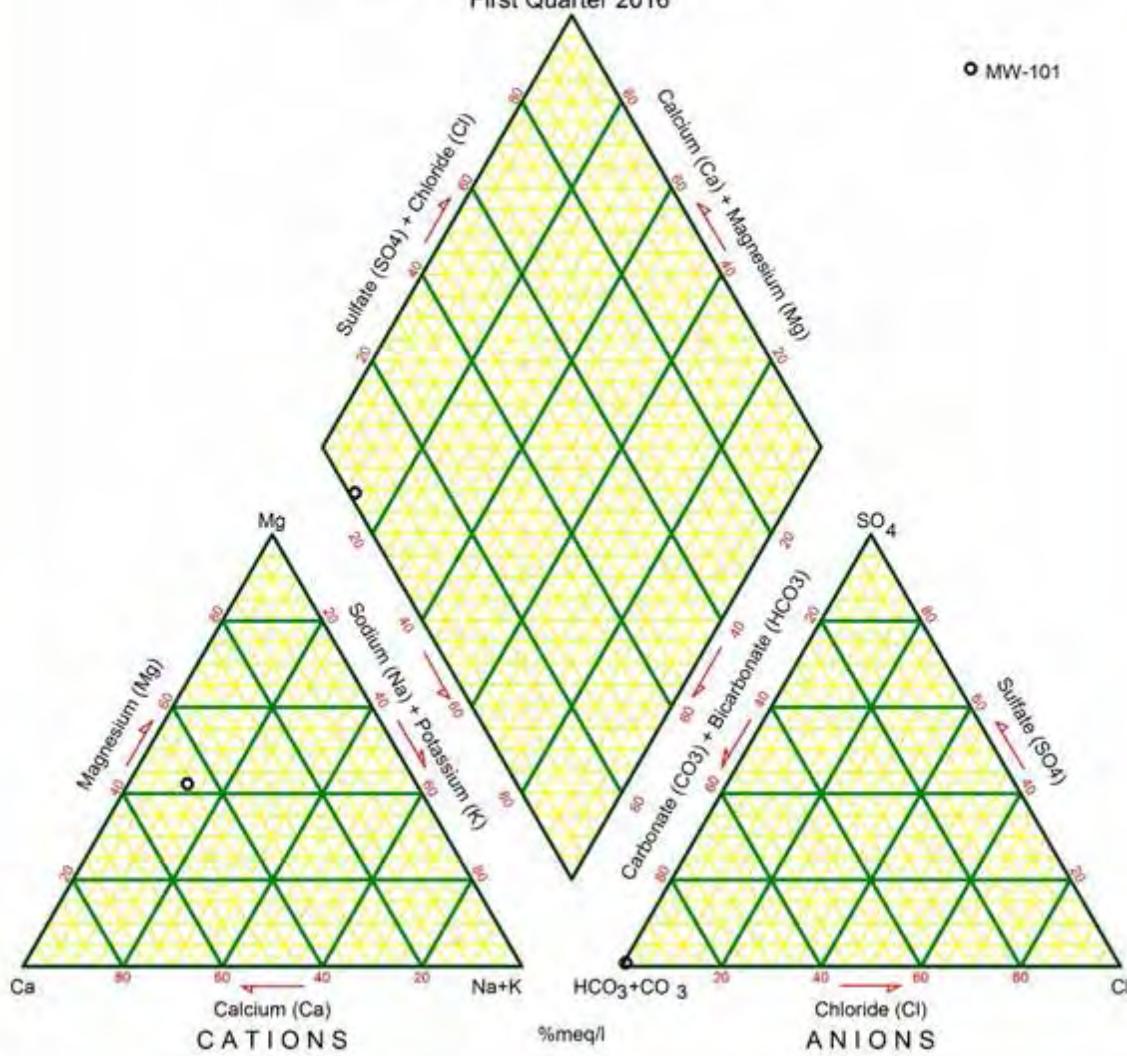


TABLE 9
CEDAR HILLS REGIONAL LANDFILL PERCHED ZONES MONITORING WELLS
SUMMARY OF WAC 173-351 APPENDIX I INTRAWELL PREDICTION LIMIT VALUES
(Data Collected from January 1, 2016 to March 31, 2016)

Parameter	Total Antimony	Total Arsenic	Total Barium	Total Beryllium	Total Cadmium	Total Chromium	Total Cobalt	Total Copper	Total Lead	Total Nickel	Total Selenium	Total Silver	Total Thallium	Total Vanadium	Total Zinc	Nitrate as N	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Trichloroethylene	Vinyl Chloride	
	Well	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		
East Perched Zone																								
MW-30A	Limit	0.001	0.001	0.0077	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.00233	0.00572	7.22384	8.2	0.2	0.34	19.84	0.45	1.73802	0.25
	Result	< 0.001	< 0.001	0.0046	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	6.29	1.83	< 0.2	< 0.2	2.63	< 0.2	0.945	< 0.02
MW-47	Limit	0.001	0.00202	0.0470	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.004	0.013	0.73679	0.2	0.2	4.1	0.2	0.2	7.96
	Result	< 0.001	< 0.001	0.0406	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	< 0.01	0.653	< 0.2	< 0.2	1.76	< 0.2	< 0.2	5.58
MW-62	Limit	0.001	0.001	0.0034	0.001	0.002	0.005	0.003	0.002	0.001	0.01	0.001	0.003	0.001	0.002	0.004	8.36329	14.1126	6.1	0.2	17.7	0.21	0.47	0.23
	Result	< 0.001	< 0.001	0.0239	< 0.001	< 0.002	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	4.12	1.59	< 0.2	< 0.2	4.16	< 0.2	< 0.2	< 0.02
South Solid Waste Area Wells																								
MW-101	Limit	0.001	0.021	0.0439	0.001	0.002	0.005	0.003	0.00416	0.00109	0.01	0.001	0.003	0.001	0.0039	0.00729	0.0593	0.21	0.2	0.22	0.21	0.2	0.2	1.00
	Result	< 0.001	0.0063	0.0264	< 0.001	< 0.001	< 0.005	< 0.003	< 0.002	< 0.001	< 0.01	< 0.001	< 0.003	< 0.001	< 0.002	< 0.004	< 0.01	< 0.2	< 0.2	< 0.2	0.23	< 0.2	< 0.2	0.47

Results greater than Limit Value in **Bold**

TABLE 10
CEDAR HILLS REGIONAL LANDFILL
VOLATILE ORGANIC COMPOUND DETECTIONS IN PERCHED ZONE WELLS
(Data Collected from January 1, 2016 to March 31, 2016)

Analyte	Site ID	Date	Sample ID	ug/L
East Perched Zone Wells				
Chloroethane	MW-47	1/19/2016	W47-160119-	0.27
1,1-Dichloroethane	MW-30A	1/11/2016	W30A160111-	1.83
	MW-47	1/19/2016	W47-160119-	0.653
	MW-62	1/19/2016	W62-160119-	1.59
cis-1,2-Dichloroethene	MW-30A	1/11/2016	W30A160111-	2.63
	MW-47	1/19/2016	W47-160119-	1.76
	MW-62	1/19/2016	W62-160119-	4.16
Dichlorodifluoromethane	MW-47	1/19/2016	W47-160119-	2.62
Trichloroethene	MW-30A	1/11/2016	W30A160111-	0.945
Vinyl Chloride	MW-47	1/19/2016	W47-160119-	5.58
South Solid Waste Area Perched Wells				
cis-1,2-Dichloroethene	MW-101	1/29/2016	W101160129-	0.23
Vinyl Chloride	MW-101	1/29/2016	W101160129-	0.467

See Data Qualifier List for Qualifier Information.

Table 11
Surface Water Monitoring Activities 1st Quarter 2016

Station ID	Date	Planned Activity	Sample ID	Comment
SW-E1	1/12/16	Quarterly Characterization Sample	SE1-160112P	
SW-GS1	2/11/16	NPDES Permit Sample	SGS1160211P	
SW-N4	1/12/16	NPDES Permit Sample	SN4-160112P	
SW-SL3	1/12/16	NPDES Permit Sample	SSL3160112P	
SW-TD1	3/8/16	Area 5 Top Deck Monitoring	STD1160308-	
SW-TD2	3/8/16	Area 5 Top Deck Monitoring	NA ¹	No Flow
SW-TD4	3/8/16	Area 5 Top Deck Monitoring	NA	No Flow
SW-TD6	3/8/16	Area 5 Top Deck Monitoring	NA	No Flow
SW-TD6	3/24/16	Area 5 Top Deck Monitoring	STD6160324-	
SW-N4	1/12/16	QA/QC Sample	SN4-160112D	Field Duplicate
Staff Gages	1/4/16	Monthly Stream Gage Levels	NA	
Staff Gages	2/10/16	Monthly Stream Gage Levels	NA	
Staff Gages	3/22/16	Monthly Stream Gage Levels	NA	

¹ No sample ID assigned, No sample collected.

TABLE 12
CEDAR HILLS LANDFILL
SUMMARY OF ISGP^{*} STORMWATER PERMIT EXCEEDANCES
(Data Collected from January 1, 2016 to March 31, 2016)

Parameter	Units	Sampling Location	Date	Value	Regulatory Limit	Type
Oil Sheen	Visibility	SW-GS1	2/11/16	Yes	None Visible	Benchmark

^{*}ISGP - Industrial General Stormwater Permit

TABLE 13
CEDAR HILLS REGIONAL LANDFILL
VOLATILE ORGANIC COMPOUND DETECTIONS IN BLANKS
(Data Collected from January 1, 2016 to March 31, 2016)

Analyte	Site ID	Date	Sample ID	ug/L
NO VOLATILE DETECTIONS THIS QUARTER				

See Data Qualifier List for Qualifier Information.

Table 14
Groundwater Quality Criteria

Analyte	CAS No.	Ground Water Quality Criteria Criterion*
I. PRIMARY AND SECONDARY CONTAMINANTS AND RADIONUCLIDES		
A. Primary Contaminants		
Barium	7440-39-3	1.0 mg/L
Cadmium	7440-43-9	0.005 mg/L
Chromium	7440-47-3	0.05 mg/L
Lead	7439-92-1	0.015 mg/L
Mercury	7439-97-6	0.002 mg/L
Selenium	7782-49-2	0.01 mg/L
Silver	7440-22-4	0.05 mg/L
Fluoride	16984-48-8	4.0 mg/L
Nitrate	14797-55-8	10.0 mg/L
Endrin	72-20-8	0.2 ug/L
Methoxychlor	72-43-5	40 ug/L
1,1,1-Trichloroethane	71-55-6	200 ug/L
2,4-D	94-75-7	70 ug/L
2,4,5-TP	93-72-1	100 ug/L
Total Coliforms		1/100 mL
B. Secondary Standards		
Copper	7440-50-8	1.0 mg/L
Iron	7439-89-6	0.3 mg/L
Manganese	7439-96-5	0.05 mg/L
Zinc	7440-66-6	5.0 mg/L
Chloride	16887-00-6	250 mg/L
Sulfate	14808-79-8	250 mg/L
Total Dissolved Solids		500 mg/L
Foaming Agents		0.5 mg/L
pH	12408-02-5	6.5-8.5 units
Corrosivity		non-corrosive
Color		15 units
Odor-Threshold		3 units
C. Radionuclides and Radioactivity		
Gross Alpha particle activity		15 pCi/L
Gross Beta particle activity		50 pCi/L
Tritium	10028-17-8	20,000 pCi/L
Strontium	7440-24-6	8 pCi/L
Radium 226 & Radium 228		5 pCi/L
Radium 226	13982-63-3	3 pCi/L
II. CARCINOGENS		
1,1-Dichloroethane	75-34-3	1 ug/L
1,2-Dichloroethane	107-06-2	0.5 ug/L
1,2-Dichloropropane	78-87-5	0.6 ug/L
1,2-Dimethylhydrazine	540-73-8	60 ug/L
1,2-Diphenylhydrazine	122-66-7	0.09 ug/L
1,3-Dichloropropene tot.	542-75-6	0.2 ug/L
1,4-Dichlorobenzene	106-46-7	4 ug/L
1,4-Dioxane	123-91-1	7 ug/L
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.0000006 ug/L
2,4,6-Trichlorophenol	88-06-2	4.0 ug/L
2,4-Dinitrotoluene	121-14-2	0.1 ug/L
2,4-Toluenediamine	95-80-7	0.002 ug/L
2,6-Dinitrotoluene	606-20-2	0.1 ug/L
2-Methoxy-5-nitroaniline	99-59-2	2.0 ug/L
2-Methylaniline	95-53-4	0.2 ug/L
2-Methylaniline hydrochloride	636-21-5	0.5 ug/L
3,3'-Dichlorobenzidine	91-94-1	0.2 ug/L
3,3'-Dimethoxybenzidine	119-90-4	6.0 ug/L
3,3-Dimethylbenzidine	119-93-7	0.007 ug/L
4,4'-Methylene bis(N,N'-dimethyl) aniline	101-61-1	2.0 ug/L
4-Chloro-2-methyl analine	95-69-2	0.1 ug/L
4-Chloro-2-methyl analine hydrochloride	3165-93-3	0.2 ug/L
Acrylamide	79-06-1	0.02 ug/L
Acrylonitrile	107-13-1	0.07 ug/L
Aldrin	309-00-2	0.005 ug/L
Aniline	62-53-3	14 ug/L
Aramite	140-57-8	3 ug/L
Arsenic	7440-38-2	0.00005 mg/L
Azobenzene	103-33-3	0.7 ug/L
Benzene	71-43-2	1 ug/L

Table 14
Groundwater Quality Criteria

Analyte	CAS No.	Ground Water Quality Criteria Criterion*	
Benzidine	92-87-5	0.0004	ug/L
Benzo(a)pyrene	50-32-8	0.008	ug/L
Benzotrichloride	98-07-7	0.007	ug/L
Benzyl chloride	100-44-7	0.5	ug/L
Bis(2-ethylhexyl)phthalate	117-81-7	6	ug/L
Bis(chloroethyl)ether	111-44-4	0.07	ug/L
Bis(chloromethyl)ether	542-88-1	0.0004	ug/L
Bromodichloromethane	75-27-4	0.3	ug/L
Bromoform	75-25-2	5	ug/L
Carbazole	86-74-8	5	ug/L
Carbon Tetrachloride	56-23-5	0.3	ug/L
Chlordane	5103-71-9	0.06	ug/L
Chlorodibromomethane	124-48-1	0.5	ug/L
Chloroform	67-66-3	7	ug/L
Chlorthalanol	1897-45-6	30	ug/L
DDT (includes DDE and DDD)	50-29-3, 72-55-9, 72-54-8	0.3	ug/L
Diallate	2303-16-4	1	ug/L
Dichlorovos	62-73-7	0.3	ug/L
Dieldrin	60-57-1	0.005	ug/L
Direct Black 38	1937-37-7	0.009	ug/L
Direct Blue 6	2602-46-2	0.009	ug/L
Direct Brown 95	16071-86-6	0.009	ug/L
Epichlorohydrin	106-89-8	8	ug/L
Ethyl acrylate	140-88-5	2	ug/L
Ethylene dibromide	106-93-4	0.001	ug/L
Ethylene thiourea	96-45-7	2	ug/L
Folpet	133-07-3	20	ug/L
Furazolidone	67-45-8	0.02	ug/L
Furium	531-82-8	0.002	ug/L
Furmecyclox	60568-05-0	3	ug/L
Heptachlor	76-44-8	0.02	ug/L
Heptachlor epoxide	1024-57-3	0.009	ug/L
Hexachlorobenzene	118-74-1	0.05	ug/L
Hexachlorocyclohexane (alpha)	319-84-6	0.001	ug/L
Hexachlorocyclohexane (technical)	608-73-1	0.05	ug/L
Hexachlorodibenzo-p-dioxin, mix	34465-46-8	0.000001	ug/L
Hydrazine/hydrazine sulfate	302-01-2/10034-93-2	0.03	ug/L
Lindane	58-89-9	0.06	ug/L
Methylene Chloride	75-09-2	5	ug/L
Mirex	2385-85-5	0.05	ug/L
Nitrofurazone	59-87-0	0.06	ug/L
N-Nitrosodiethanolamine	1116-54-7	0.03	ug/L
N-Nitrosodiethylamine	55-18-5	0.0005	ug/L
N-Nitrosodimethylamine	62-75-9	0.002	ug/L
N-Nitroso-di-n-butylamine	924-16-3	0.02	ug/L
N-Nitroso-di-n-propylamine	621-64-7	0.01	ug/L
N-Nitrosodiphenylamine	86-30-6	17.0	ug/L
N-Nitroso-N-methylethylamine	10595-95-6	0.004	ug/L
N-Nitrosopyrrolidine	930-55-2	0.04	ug/L
o-Chloronitrobenzene	88-73-3	3	ug/L
o-Phenylenediamine	95-54-5	0.005	ug/L
o-Toluidine	95-53-4	0.2	ug/L
p,a,a,a-Tetrachlorotoluene	5216-25-1	0.004	ug/L
PAHs [Benzo(a)pyrene]		0.01	ug/L
PBBs	59536-65-1	0.01	ug/L
PCBs c	27323-18-8	0.01	ug/L
p-Chloronitrobenzene	100-00-5	5	ug/L
Propylene oxide	75-56-9]	0.01	ug/L
Tetrachloroethylene	127-18-4	0.8	ug/L
Toxaphene c	8001-35-2	0.08	ug/L
Trichloroethylene (TCE)	79-01-6	3	ug/L
Trimethyl phosphate	512-56-1	2.0	ug/L
Vinyl chloride	75-01-4	0.02	ug/L

NOTES: pCi/L=picuries per liter

mg/L=milligrams per liter

ug/L=micrograms per liter

*Ground Water Quality Criteria=173-200 WAC Water Quality Standards
for Ground Waters of the State of Washington

TABLE 15
CEDAR HILLS LANDFILL
INDUSTRIAL STORMWATER GENERAL PERMIT

BENCHMARKS and EFFLUENT LIMITS

Parameter	Units	Minimum Sampling Frequency	Benchmark	Effluent Limit	
				Monthly Average	Daily Maximum
pH	Std. Units	Quarterly	5.0 to 9.0	6.0 to 9.0	
Turbidity	NTU	Quarterly	25	--	--
Oil Sheen	Yes/No	Quarterly	None Visible	--	--
Copper, Total	ug/L	Quarterly	14	--	--
Zinc, Total	ug/L	Quarterly	117	110	200
BOD	mg/L	Quarterly	--	37	140
TSS	mg/L	Quarterly	--	27	88
Ammonia-N	mg/L	Quarterly	--	4.9	10
Alpha Terpineol	ug/L	Quarterly	--	16	33
Benzoic Acid	ug/L	Quarterly	--	71	120
4-Methylphenol*	ug/L	Quarterly	--	14	25
Phenol	ug/L	Quarterly	--	15	26

* Analytical result reported as the total of 3-Methylphenol (CAS RN 108-39-4) and 4-Methylphenol (CAS RN 106-44-5)

TABLE 16
CEDAR HILLS REGIONAL LANDFILL
LABORATORY DATA REVIEW - SUSPECT DATA ALL MATRICES
(Data Collected from January 1, 2016 to March 31, 2016)

Parameter	Units	Well ID	Sample Date	Sample ID	Sample Value	Cause of Unuseability
NO UNUSABLE DATA IDENTIFIED THIS QUARTER						

APPENDIX A

Potentiometric Surface Maps and Aquifer Flow Calculations



King County

Water and Land Resources Division

Department of Natural Resources and Parks

King Street Center

201 South Jackson Street, Suite 600

Seattle, WA 98104-3855

206-477-4800 Fax 206-296-0192

TTY Relay: 711

Memorandum

April 26, 2016

TO: Tom Theno, Engineer II, Engineering Services Section, Solid Waste Division,
Department of Natural Resources and Parks (DNRP)

FM: Sevin Bilir, Environmental Scientist IV, Science and Technical Support Section,
Water and Land Resources Division, DNRP

RE: Potentiometric Groundwater Surface Maps & Groundwater Velocity Calculations
First Quarter 2016 Results
Cedar Hills Landfill, King County, Washington
Project No. 1033379 – Task 02.14.137.20

The King County Water and Land Resources Division (KCWLR Division) submits this memorandum report on groundwater conditions during the first quarter of 2016 for the Cedar Hills Landfill (landfill), in accordance with the *Proposal for Potentiometric Groundwater Surface Maps & Groundwater Velocity Calculations* (KCWLR Division, 2015). King County Solid Waste Division (KCSWD) personnel measured groundwater elevations at the landfill on January 4, 2016. These measurements were received by KCWLR Division on February 26, 2016 and were used to:

1. Evaluate the potentiometric groundwater surface elevation for the regional aquifer;
2. Determine the groundwater flow direction and horizontal gradient for the regional aquifer; and
3. Calculate the groundwater velocity of the regional aquifer.

There have been no significant changes in the interpreted groundwater conditions since the report submitted for the fourth quarter of the 2015 monitoring event.

Groundwater Elevation Data

KCSWD attempted groundwater level measurements at 41 monitoring wells during the first quarter of 2016. These wells were completed in the regional aquifer as referred to in

Potentiometric Groundwater Surface Mapping and Groundwater Velocity Calculation – Cedar Hills Landfill (Aspect, 2010).

Table 1 lists the well identifications, locations, well details, measured groundwater levels and calculated groundwater elevations for the regional aquifer. Wells with screened intervals within ten feet of the water table were used for potentiometric surface mapping purposes. A total of 23 wells with water levels within ten feet of the top of screen were selected.

Figure 1 shows well locations, groundwater elevations at the 23 selected wells, groundwater potentiometric surface contours, and interpreted groundwater flow direction in the regional aquifer for the January 4, 2016 measurement event.

Direction of Groundwater Flow

Figure 1 shows interpreted groundwater potentiometric surface contours and groundwater flow directions in the regional aquifer, based on the January 4, 2016 measurements. Groundwater elevations indicate that groundwater in the regional aquifer generally flowed north beneath the southern and central portions of the landfill with minor components of flow to the north-northwest and north-northeast. At the northern end of the landfill, groundwater generally flowed to the north and north-northeast.

Groundwater Parameters

Horizontal groundwater velocity was calculated using the following formula:

$$\text{where: } v = \frac{I}{n_{eff}} K \frac{\Delta H}{\Delta L}$$

$$\begin{aligned}v &= \text{Groundwater velocity [L/t]} \\ n_{eff} &= \text{Effective porosity [dimensionless]} \\ K &= \text{Hydraulic conductivity [L/t]} \\ \frac{\Delta H}{\Delta L} &= \text{Hydraulic gradient [L/L]}\end{aligned}$$

Horizontal groundwater velocity was calculated for the regional aquifer below the landfill. Horizontal groundwater velocity was calculated for the southern, central, and northern portions of the regional aquifer, based on spatial differences in aquifer parameters and hydraulic gradients. The hydraulic conductivity and effective porosity values were based on the range referred to in the *Potentiometric Groundwater Surface Mapping and Groundwater Velocity Calculation – Cedar Hills Landfill* (Aspect, 2010).

Table 2 presents a summary of the groundwater parameters used to calculate a groundwater velocity from the first quarter 2016 data. The hydraulic gradient was greatest under the southern portion of the landfill and smallest under the northern portion. On January 4, 2016, average horizontal groundwater velocity within the regional aquifer ranged from 0.010 feet per day (ft/d) under the southern portion of the landfill to 2.3 ft/d under the central portion of the landfill.

References

Aspect Consulting (Aspect). 2010. *Potentiometric Groundwater Surface Mapping and Groundwater Velocity Calculation – Cedar Hills Landfill*. Unpublished work. April 30.

King County Water and Land Resources Division (KCWLR Division). 2015. *Proposal for Potentiometric Groundwater Surface Maps & Groundwater Velocity Calculations*. Unpublished. December.

Thank you for the opportunity to provide hydrogeologic services to the KCSWD. If you have any questions, please feel free to contact me at 206-477-4646 or sevin.bilir@kingcounty.gov.

Sincerely,



Sevin Bilir, WA LHG
Environmental Scientist IV
King County Water and Land Resources Division

Enclosures:

Table 1: Groundwater Elevations - First Quarter 2016

Table 2: Groundwater Parameters - First Quarter 2016

Figure 1: Groundwater Potentiometric Surface Map – First Quarter 2016 – Regional Aquifer

Table 1: Groundwater Elevations – First Quarter 2016

**Cedar Hills Regional Landfill
King County, Washington**

Regional Aquifer Unit	Well Identification	X (ft)	Y (ft)	Top of Casing Elevation (ft MSL)	Top of Screen Elevation (ft)	Bottom of Screen Elevation (ft)	January 4, 2016	
							Measured Depth to Water (ft)	Groundwater Elevations (ft MSL)
Wells with water levels within 10 feet of the top of screen	MW-60	1701154.47	167873.20	567.15	334.81	325.81	224.51	342.64
	MW-64	1701980.27	168772.19	596.55	334.03	320.23	265.68	330.87
	MW-66	1699750.19	174250.32	531.28	294.39	280.59	238.43	292.85
	MW-67	1701776.69	172610.65	516.43	297.80	284.00	220.26	296.17
	MW-68	1701917.32	170609.35	647.07	311.29	292.29	331.62	315.45
	MW-69	1698061.86	172400.20	653.69	293.57	279.97	355.62	298.07
	MW-72	1698229.92	170987.71	671.87	303.63	294.03	360.99	310.88
	MW-73	1698954.95	174995.59	485.70	288.11	278.81	191	294.7
	MW-74R	1700386.85	173813.79	531.26	289.90	280.40	239.92	291.34
	MW-76	1700376.23	167193.13	491.71	351.06	341.56	130.68	361.03
	MW-81	1702568.87	172113.99	493.66	309.19	300.19	183.56	310.1
	MW-82	1699553.72	167725.31	474.85	348.88	339.38	122.27	352.58
	MW-83	1697939.89	167212.27	496.81	350.19	340.69	143.73	353.08
	MW-84	1698602.89	173894.54	530.80	292.46	282.96	235.81	294.99
	MW-85	1701828.95	173694.52	531.76	282.56	273.06	245.61	286.15
	MW-86	1701331.25	174917.90	536.04	283.43	274.63	249.41	286.63
	MW-87	1700670.27	173493.76	537.31	283.68	274.38	247.99	289.32
	MW-88	1701807.87	174303.06	513.68	281.52	272.22	227.03	286.65
	MW-93	1702259.35	169851.24	632.15	319.87	310.07	308.21	323.94
Wells with water levels greater than 10 feet above the top of screen	MW-94	1698674.21	167210.22	495.51	357.22	348.52	137.95	357.56
	MW-95	1697265.32	169426.92	571.54	314.60	305.90	251	320.54
	MW-100	1700791.72	169610.46	620.32	319.06	309.06	297.67	322.65
	MW-106	1702536.99	173461.69	475.47	280.04	270.04	190.16	285.31
	MW-21	1697901.86	173876.38	420.66	263.22	255.22	124.78	295.88
	MW-22P	1701844.34	173088.17	517.09	236.02	231.22	231.97	285.12
	MW-24	1699582.39	167767.76	475.99	286.76	281.76	144.4	331.59
	MW-43	1701274.23	174327.14	547.06	245.63	235.63	263.01	284.05
	MW-54	1702154.28	168435.53	580.43	250.25	228.25	278.53	301.9
	MW-56	1698980.77	167214.82	480.33	323.15	313.15	123.54	356.79
	MW-57	1699993.32	167201.99	456.64	326.65	311.65	96.52	360.12
	MW-58A	1699006.59	167207.16	479.27	270.05	260.05	148.31	330.96
	MW-59	1699983.91	167193.44	457.13	285.08	275.08	122.51	334.62
	MW-65	1701602.10	167146.55	545.83	317.71	308.91	208.07	337.76
	MW-75	1701059.70	173432.42	532.40	271.10	261.00	245.21	287.19
	MW-80	1701309.78	172964.99	530.41	279.17	269.67	238.7	291.71
	MW-89	1701799.57	174319.44	512.82	229.20	219.90	231.49	281.33
	MW-90	1702203.13	174300.67	502.22	235.16	226.16	220.81	281.41
	MW-91	1701023.09	173423.94	532.02	260.81	240.71	246.3	285.72
	MW-99	1702556.06	172098.73	493.64	221.77	212.77	200.05	293.59
	NPW-1	1701906.96	171138.99	646.33	299.87	284.87	332.33	314
	NPW-3	1701922.88	170663.28	645.81	284.87	276.87	330.6	315.21

Notes

1. Water level measurements made by KCSWD personnel.
2. Reference datum for XY coordinates is the North American Datum of 1927 (NAD27)
3. Elevations reported in feet above Mean Sea Level based on the National Geodetic Vertical Datum, 1929.

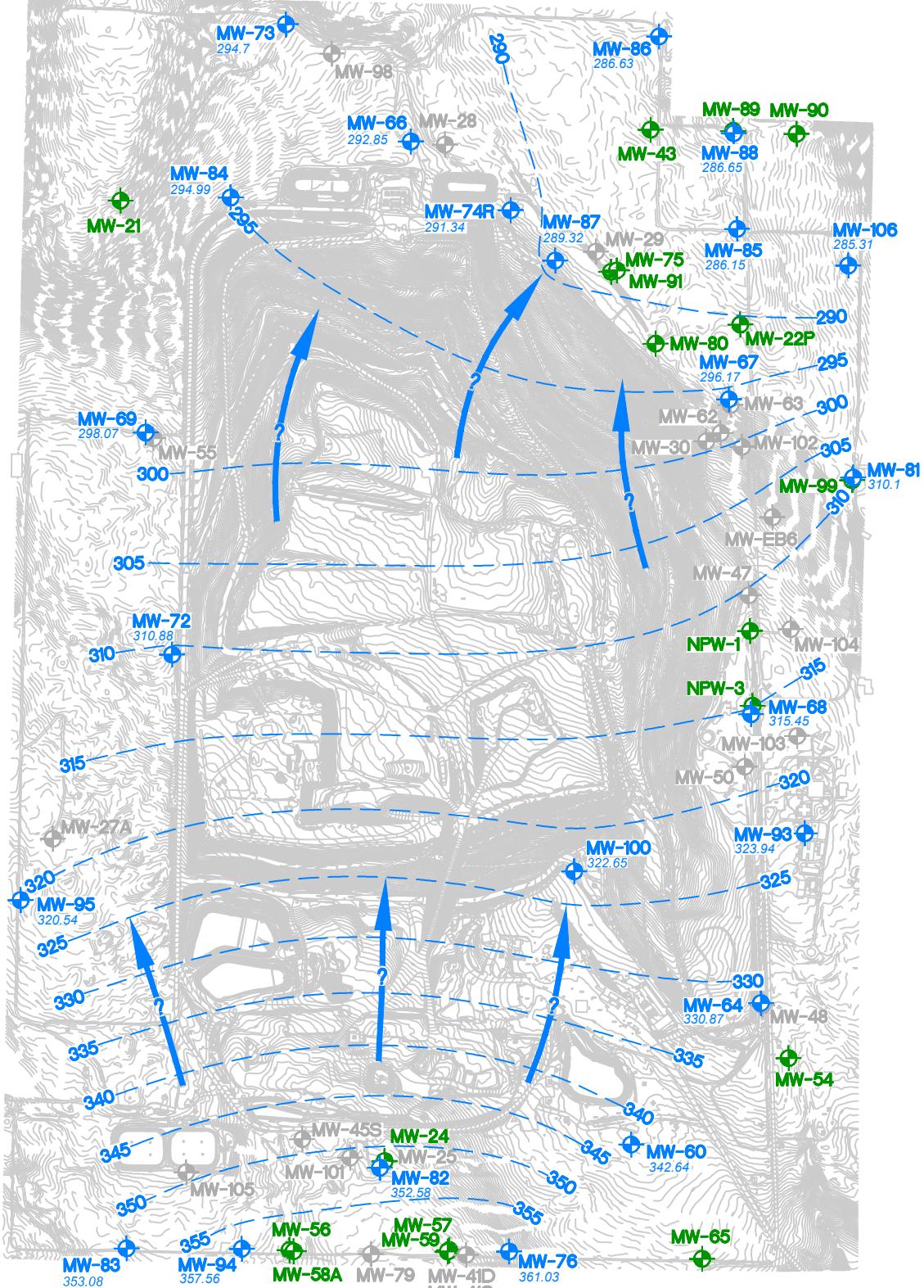
Table 2: Groundwater Parameters – First Quarter 2016

Cedar Hills Regional Landfill
King County, Washington

Regional Aquifer Zone Beneath the Landfill	Horizontal Hydraulic Conductivity (K)			Horizontal Hydraulic Gradient (DH/DL)	Effective Porosity (n_{eff})	Horizontal Groundwater Velocity (v)	General Groundwater Flow Direction
	Range	(cm/s)	(ft/d)				
Northern	Minimum	2.10E-03	6	0.006	24%	0.160	NNE, NE
	Maximum	4.20E-02	120	0.006	24%	3.20	
	Mean	2.10E-02	60	0.006	24%	1.60	
Central	Minimum	2.10E-03	6	0.009	24%	0.23	N, NNW
	Maximum	4.20E-02	120	0.009	24%	4.7	
	Mean	2.10E-02	60	0.009	24%	2.3	
Southern	Minimum	6.40E-06	0.018	0.015	26%	0.0010	N, NNE, NNW
	Maximum	6.40E-04	1.8	0.015	26%	0.10	
	Mean	6.40E-05	0.18	0.015	26%	0.010	

Notes

1. Horizontal hydraulic conductivity values and effective porosity values from *Potentiometric Groundwater Surface Mapping and Groundwater Velocity Calculation – Cedar Hills Landfill* (Aspect, 2010).
2. Hydraulic gradients measured from the potentiometric surface map shown on Figure 1.
3. Mean hydraulic conductivity values are the geometric mean of the high and low values.
4. NNE, north-northeast; NNW, north-northwest; NE, northeast; N, north



Legend

MW-X Well completed in Regional Aquifer within 10 feet of the water table
XXX.XX

MW-X Wells completed in Regional Aquifer more than 10 ft below water table

MW-X Wells screened in discontinuous Perched Zones

300 — Regional Aquifer Groundwater Elevation Contour (feet MSL).

←? Inferred Horizontal Groundwater Flow Path

Notes:

1. Groundwater measurements made on January 4, 2016.
2. Only wells completed in the Regional Aquifer within 10 feet of the water table were used for contouring.



King County

Groundwater Potentiometric Surface Map First Quarter 2016 - Regional Aquifer

Cedar Hills Landfill
King County, Washington

DATE March 2016	PROJECT NO. 1033379
DESIGNED BY: SB	
DRAWN BY: LT	
REVISED BY: SB	

1

APPENDIX B

Field and Analytical Test Results

Groundwater Analytical Data

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Groundwater Elevation Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Reference Elevation (msl)	Depth to Water (feet)	Ground-Water Elevation (msl)	Comment
MW-21	1/4/2016	420.66	124.78	295.88	
MW-22	1/4/2016	517.09	231.97	285.12	
MW-24	1/4/2016	475.99	144.4	331.59	
MW-25	1/4/2016	474.41	5.46	468.95	
MW-27A	1/4/2016	584.23	54.2	530.03	
MW-28	1/4/2016	527.75	21.83	505.92	
MW-29	1/4/2016	532.92	9.31	523.61	
MW-30A	1/4/2016	568.43	29.66	538.77	
MW-30A	1/11/2016	568.43	29.75	538.68	
MW-41D	1/4/2016	462.32	25.25	437.07	
MW-41S	1/4/2016	462.44	4.29	458.15	
MW-43	1/4/2016	547.06	263.01	284.05	
MW-45	1/4/2016	488.4	13.59	474.81	
MW-47	1/4/2016	634.6	15.64	618.96	
MW-47	1/19/2016	634.6	15.68	618.92	
MW-48	1/4/2016	594.49	42.43	552.06	
MW-50	1/4/2016	637.02	31	606.02	
MW-54	1/4/2016	580.43	278.53	301.90	
MW-55	1/4/2016	652.29	27.18	625.11	
MW-56	1/4/2016	480.33	123.54	356.79	
MW-57	1/4/2016	456.64	96.52	360.12	
MW-58A	1/4/2016	479.27	148.31	330.96	
MW-59	1/4/2016	457.13	122.51	334.62	
MW-59	1/7/2016	457.13	123.77	333.36	
MW-60	1/4/2016	567.15	224.51	342.64	
MW-62	1/4/2016	556.21	49.04	507.17	
MW-62	1/19/2016	556.21	49.36	506.85	
MW-63	1/4/2016	515.88	11.42	504.46	
MW-64	1/4/2016	596.55	265.68	330.87	
MW-65	1/4/2016	545.83	208.07	337.76	
MW-66	1/4/2016	531.28	238.43	292.85	
MW-66	1/7/2016	531.28	238.74	292.54	
MW-67	1/4/2016	516.43	220.26	296.17	
MW-68	1/4/2016	647.07	331.62	315.45	
MW-68	1/22/2016	647.07	331.75	315.32	
MW-69	1/4/2016	653.69	355.62	298.07	
MW-69	1/20/2016	653.69	356.37	297.32	
MW-72	1/4/2016	671.87	360.99	310.88	
MW-72	1/8/2016	671.87	361.35	310.52	
MW-73	1/4/2016	485.7	191	294.70	
MW-74	1/4/2016	531.26	239.92	291.34	
MW-74	1/20/2016	531.26	240.47	290.79	
MW-75	1/4/2016	532.4	245.21	287.19	
MW-75	1/15/2016	532.4	245.44	286.96	
MW-76	1/4/2016	491.71	130.68	361.03	

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Groundwater Elevation Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Reference Elevation (msl)	Depth to Water (feet)	Ground-Water Elevation (msl)	Comment
MW-79	1/4/2016	459.17			
MW-80	1/4/2016	530.41	238.7	291.71	
MW-80	1/20/2016	530.41	239.22	291.19	
MW-81	1/4/2016	493.66	183.56	310.10	
MW-81	1/20/2016	493.66	184.19	309.47	
MW-82	1/4/2016	474.85	122.27	352.58	
MW-83	1/4/2016	496.81	143.73	353.08	
MW-83	1/14/2016	496.81	143.41	353.40	
MW-84	1/4/2016	530.8	235.81	294.99	
MW-84	1/14/2016	530.8	236.21	294.59	
MW-85	1/4/2016	531.76	245.61	286.15	
MW-85	1/15/2016	531.76	245.81	285.95	
MW-86	1/4/2016	536.04	249.41	286.63	
MW-87	1/4/2016	537.31	247.99	289.32	
MW-87	1/15/2016	537.31	248.23	289.08	
MW-88	1/4/2016	513.68	227.03	286.65	
MW-89	1/4/2016	512.82	231.49	281.33	
MW-90	1/4/2016	502.22	220.81	281.41	
MW-91	1/4/2016	532.02	246.3	285.72	
MW-93	1/4/2016	632.15	308.21	323.94	
MW-93	1/11/2016	632.15	308.71	323.44	
MW-94	1/4/2016	495.51	137.95	357.56	
MW-94	1/11/2016	495.51	137.87	357.64	
MW-95	1/4/2016	571.54	251	320.54	
MW-98	1/4/2016	503.73	14.18	489.55	
MW-99	1/4/2016	493.64	200.05	293.59	
MW-100	1/4/2016	620.32	297.67	322.65	
MW-101	1/4/2016	474.72	32.21	442.51	
MW-101	1/29/2016	474.72	31.52	443.20	
MW-101	1/22/2016	474.72	31.84	442.88	
MW-102	1/4/2016	552.48	43.95	508.53	
MW-103	1/4/2016	639.08	11.65	627.43	
MW-104	1/4/2016	629.68			No Measurement, Gas monitoring
MW-105	1/4/2016	521.23	18.58	502.65	
MW-106	1/4/2016	475.47	190.16	285.31	
MW-EB6	1/4/2016	589.61	26.46	563.15	
WS-NPW-1	1/4/2016	646.33	332.33	314.00	
WS-NPW-3	1/4/2016	645.81	330.6	315.21	

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Groundwater Field Parameters

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	pH (Field)	Conductance (Field)	Temperature (°C)	Purge Volume (gal)
			(std. Units)	(umho/cm)		
MW-30A	1/11/2016	W30A160111-	6.65	215	11.7	4.05
MW-47	1/19/2016	W47-160119-	6.92	780	12.1	22.5
MW-59	1/7/2016	W59-160107-	6.99	187.5	9.53	3.5
MW-62	1/19/2016	W62-160119-	6.72	200	9.9	2.4
MW-66	1/7/2016	W66-160107-	7.08	244.6	9.62	2.75
MW-68	1/22/2016	W68-160122-	6.84	290.9	10.2	4
MW-69	1/20/2016	W69-160120-	7.44	314.9	9.24	3
MW-72	1/8/2016	W72-160108-	7.08	338.6	9.8	
MW-74	1/20/2016	W74R160120-	7.08	540.6	9.94	2
MW-75	1/15/2016	W75-160115-	7.07	336.2	9.46	
MW-80	1/20/2016	W80-160120-	6.91	310.4	9.65	3.5
MW-81	1/20/2016	W81-160120-	7.05	142.6	9.63	2
MW-83	1/14/2016	W83-160114-	6.92	379.1	10.02	2
MW-84	1/14/2016	W84-160114-	6.97	172.7	9.3	
MW-85	1/15/2016	W85-160115-	7.08	225.3	9.25	2.5
MW-87	1/15/2016	W87-160115-	6.79	360.7	10.18	3
MW-93	1/11/2016	W93-160111-	7.1	349.4	10.66	4.25
MW-94	1/11/2016	W94-160111-	6.81	276.2	9.15	2.5
MW-101	1/29/2016	W101160129-	7.11	575	9.9	

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Groundwater Conventionals Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	Alkalinity, Total (CaCO ₃) (mg/L)	Ammonia, (NH ₃) (mg/L)	Chloride (mg/L)	Nitrate-Nitrogen, (NO ₃ as N) (mg/L)	Specific Conductanc (μmho/cm)	Sulfate (SO ₄) (mg/L)	Total Dissolved Solids (mg/L)	Total Organic Carbon (mg/L)	Total Solids (mg/L)	Suspended Solids (mg/L)
MW-59	1/7/2016	W59-160107-	65.7	< 0.01 U	4.53	0.027 T	187	20	107	< 1 U	119	4.31
MW-66	1/7/2016	W66-160107-	98.9	< 0.01 U	6.38	0.6	248	14.7	139	< 1 U	171	< 1 U
MW-68	1/22/2016	W68-160122-	131	0.0172	3.07	< 0.01 U	293	17.5	310 J	< 1 U	205 J	38.4
MW-69	1/20/2016	W69-160120-	130	0.016	4.14	< 0.01 U	304	18	178	< 1 U	181	1.2
MW-72	1/8/2016	W72-160108-	121	0.0166	5.81	0.012 T	348	44.3	207	< 1 U	246	40.4
MW-74	1/20/2016	W74R160120-	220	< 0.01 U	25.4	0.37	543	30.5	194	< 1 U	207	< 1 U
MW-75	1/15/2016	W75-160115-	106	< 0.01 U	9.66	< 0.01 U	338	54.3	211	< 1 U	217	1.9
MW-80	1/20/2016	W80-160120-	105	0.0117	5.75	< 0.01 U	312	41.6	313	< 1 U	324	5.53
MW-81	1/20/2016	W81-160120-	48.6	< 0.01 U	4.88	1.51	147	8.01	95.4	< 1 U	97.3	< 1 U
MW-83	1/14/2016	W83-160114-	128	< 0.01 U	33.2	0.876	380	8.47	232	1.49	250	< 1 U
MW-84	1/14/2016	W84-160114-	66	< 0.01 U	3.71	0.211	175	14.6	110	< 1 U	111	< 1 U
MW-85	1/15/2016	W85-160115-	111	< 0.01 U	10.4	0.105	327	42.8	201	< 1 U	204	< 1 U
MW-87	1/15/2016	W87-160115-	90.8	0.0175	9.08	0.011 T	502	155	354	< 1 U	395	29.7
MW-93	1/11/2016	W93-160111-	121	0.045	3.11	0.028 T	361	57	222	< 1 U	232	< 1 U
MW-93 Duplicate	1/11/2016	W93-160111D	121	0.0427	3.11	0.027 T	362	56.2	223	< 1 U	232	< 1 U
MW-94	1/11/2016	W94-160111-	94.2	< 0.01 U	19.3	1.96	290	9.6	173	2.43	176	< 1 U
MW-30A	1/11/2016	W30A160111-	95.4	< 0.01 U	1.05	6.29	272	9.33	184	< 1 U	195	1.5
MW-47	1/19/2016	W47-160119-	661	0.0568	6.73	< 0.01 U	1150	7	699	3.36	717	22.1
MW-62	1/19/2016	W62-160119-	78.4	< 0.01 U	4.15	4.12	240	17.5	161	< 1 U	159	1.4
MW-101	1/29/2016	W101160129-	319	0.0145	2.94	< 0.01 U	595	7.84	62.7	3.87	58	3.81
EQUIPMENT BLANK	1/8/2016	WU1M160108E		< 0.01 U								
FIELD BLANK	1/15/2016	W75-160115F	< 1 U	< 0.01 U	< 0.1 U	< 0.01 U	1.6 T	< 0.1 U	< 5 U	< 1 U	< 5 U	< 1 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill ---Groundwater Metals Analytical Data

Contact Person: Sandy Jimenez (206)477-5224

Site	Date	Sample ID	Antimony, dissolved	Antimony, total	Arsenic, dissolved	Arsenic, total	Barium, dissolved	Barium, total	Beryllium, dissolved	Beryllium, total	Cadmium, dissolved	Cadmium, total	Calcium, dissolved	Calcium, total
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MW-30A	1/11/2016	W30A160111-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.0037	0.00461	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	17.9	17.7
MW-47	1/19/2016	W47-160119-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.0377	0.0406	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	140 D	134 D
MW-59	1/7/2016	W59-160107-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.00335	0.0039	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	13.2	14.2
MW-62	1/19/2016	W62-160119-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.00166	0.00239	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	19.3	19.4
MW-66	1/7/2016	W66-160107-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.00444	0.00516	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	16.4	17.9
MW-68	1/22/2016	W68-160122-	< 0.001 U	< 0.001 U	0.012	0.219	0.0116	0.0169	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	26.9	26.5
MW-69	1/20/2016	W69-160120-	< 0.001 U	< 0.001 U	0.00218	0.00223	0.0108	0.0116	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	28.9	29.2
MW-72	1/8/2016	W72-160108-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.00986	0.0149	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	27.1	29.1
MW-74	1/20/2016	W74R160120-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.0117	0.0123	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	43.8	44.5
MW-75	1/15/2016	W75-160115-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.0109	0.0108	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	25.3	23.4
MW-80	1/20/2016	W80-160120-	< 0.001 U	< 0.001 U	0.00431	0.00753	0.0136	0.015	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	27.7	28.2
MW-81	1/20/2016	W81-160120-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.0027	0.00272	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	11.4	11.3
MW-83	1/14/2016	W83-160114-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.00557	0.00566	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	38.6	36
MW-84	1/14/2016	W84-160114-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.00392	0.004	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	12.1	11.3
MW-85	1/15/2016	W85-160115-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.00614	0.00627	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	27.9	25.3
MW-87	1/15/2016	W87-160115-	< 0.001 U	< 0.001 U	< 0.001 U	0.0168	0.0247	0.0348	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	41.5	36.7
MW-93	1/11/2016	W93-160111-	< 0.001 U	< 0.001 U	0.00131	0.00132	0.00835	0.00903	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	30.5	31.8
MW-93 Duplicate	1/11/2016	W93-160111D	< 0.001 U	< 0.001 U	0.00133	0.00127	0.00856	0.00893	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	31.2	31.3
MW-94	1/11/2016	W94-160111-	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.00246	0.00257	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	25.3	24.8
MW-101	1/29/2016	W101160129-	< 0.001 U	< 0.001 U	0.0063	0.0128	0.0249	0.0264	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	55	54.1
EQUIPMENT BLANK	1/8/2016	WU1S160108E	< 0.001 U		< 0.001 U		< 0.001 U		< 0.001 U		< 0.002 U		< 0.01 U	
EQUIPMENT BLANK	1/8/2016	WU1H160108E	< 0.001 U		< 0.001 U		< 0.001 U		< 0.001 U		< 0.002 U		< 0.01 U	
FIELD BLANK	1/15/2016	W75-160115F	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 DU	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill ---Groundwater Metals Analytical Data

Contact Person: Sandy Jimenez (206)477-5224

Site	Date	Sample ID	Chromium, dissolved	Chromium, total	Cobalt, dissolved	Cobalt, total	Copper, dissolved	Copper, total	Iron, dissolved	Iron, total	Lead, dissolved	Lead, total	Magnesium, dissolved	Magnesium, total
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MW-30A	1/11/2016	W30A160111-	< 0.005 U	< 0.005 U	< 0.003 DU	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	0.104	< 0.001 U	< 0.001 U	10.2	10.3
MW-47	1/19/2016	W47-160119-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	0.259	0.725	< 0.001 U	< 0.001 U	69.7 D	67.7 D
MW-59	1/7/2016	W59-160107-	< 0.005 U	< 0.005 U	< 0.003 DU	< 0.003 U	< 0.002 U	< 0.002 U	3.72	4.09	< 0.001 U	< 0.001 U	7.87	8.89
MW-62	1/19/2016	W62-160119-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	0.155	< 0.001 U	< 0.001 U	7.22	7.55
MW-66	1/7/2016	W66-160107-	< 0.005 U	< 0.005 U	< 0.003 DU	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	0.019 T	< 0.001 U	< 0.001 U	12.9	14.7
MW-68	1/22/2016	W68-160122-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	0.00737	0.616	7.6	< 0.001 U	< 0.001 U	15.9	15.4
MW-69	1/20/2016	W69-160120-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	0.905	1.12	< 0.001 U	< 0.001 U	13.6	14
MW-72	1/8/2016	W72-160108-	< 0.005 U	< 0.005 U	< 0.003 DU	< 0.003 U	< 0.002 U	0.00331	1.72	5.06	< 0.001 U	0.00104	16	18.2
MW-74	1/20/2016	W74R160120-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	0.0729	< 0.001 U	< 0.001 U	32.9	33.7
MW-75	1/15/2016	W75-160115-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	1.26	1.05	< 0.001 U	< 0.001 U	20.2	16.6
MW-80	1/20/2016	W80-160120-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	1.61	2.87	< 0.001 U	< 0.001 U	14.2	14.7
MW-81	1/20/2016	W81-160120-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	< 0.001 U	< 0.001 U	6.22	6.11
MW-83	1/14/2016	W83-160114-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	< 0.001 U	< 0.001 U	17.6	15.2
MW-84	1/14/2016	W84-160114-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	< 0.001 U	< 0.001 U	9.87	8.78
MW-85	1/15/2016	W85-160115-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	< 0.001 U	< 0.001 U	18.4	15.5
MW-87	1/15/2016	W87-160115-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	4.37	17.8	< 0.001 U	< 0.001 U	30.6	22.4
MW-93	1/11/2016	W93-160111-	< 0.005 U	< 0.005 U	< 0.003 DU	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	0.022 T	< 0.001 U	< 0.001 U	16.8	16.2
MW-93 Duplicate	1/11/2016	W93-160111D	< 0.005 U	< 0.005 U	< 0.003 DU	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	0.023 T	< 0.001 U	< 0.001 U	16.9	15.9
MW-94	1/11/2016	W94-160111-	< 0.005 U	< 0.005 U	< 0.003 DU	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	< 0.001 U	< 0.001 U	10.9	10.4
MW-101	1/29/2016	W101160129-	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	0.475	1.68	< 0.001 U	< 0.001 U	30.7	36
EQUIPMENT BLANK	1/8/2016	WU1S160108E	< 0.005 U		< 0.003 DU		< 0.002 U		< 0.01 U		< 0.001 U		< 0.015 U	
EQUIPMENT BLANK	1/8/2016	WU1H160108E	< 0.005 U		< 0.003 DU		< 0.002 U		< 0.01 U		< 0.001 U		< 0.015 U	
FIELD BLANK	1/15/2016	W75-160115F	< 0.005 U	< 0.005 U	< 0.003 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	< 0.001 U	< 0.001 U	< 0.015 U	< 0.015 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill ---Groundwater Metals Analytical Data

Contact Person: Sandy Jimenez (206)477-5224

Site	Date	Sample ID	Manganese, dissolved	Manganese, total	Mercurv, dissolved	Mercurv, total	Nickel, dissolved	Nickel, total	Potassium, dissolved	Potassium, total	Selenium, dissolved	Selenium, total
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MW-30A	1/11/2016	W30A160111-	< 0.001 U	0.00123	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.52	1.52	< 0.001 U	< 0.001 U
MW-47	1/19/2016	W47-160119-	1.9 D	1.88 D	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	4.68	5.05	< 0.001 U	< 0.001 U
MW-59	1/7/2016	W59-160107-	0.0913	0.098	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	0.965	1.03	< 0.001 U	< 0.001 U
MW-62	1/19/2016	W62-160119-	< 0.001 U	0.00406	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	0.916	1.12	< 0.001 U	< 0.001 U
MW-66	1/7/2016	W66-160107-	< 0.001 U	0.00101	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.05	1.16	< 0.001 U	< 0.001 U
MW-68	1/22/2016	W68-160122-	0.296	0.308	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.72	1.61	< 0.001 U	< 0.001 U
MW-69	1/20/2016	W69-160120-	0.216	0.222	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.48	1.67	< 0.001 U	< 0.001 U
MW-72	1/8/2016	W72-160108-	0.315	0.392	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.67	1.81	< 0.001 U	< 0.001 U
MW-74	1/20/2016	W74R160120-	< 0.001 U	0.0019	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.85	2.06	< 0.001 U	< 0.001 U
MW-75	1/15/2016	W75-160115-	0.129	0.104	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.84	1.75	< 0.001 U	< 0.001 U
MW-80	1/20/2016	W80-160120-	0.291	0.305	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.37	1.64	< 0.001 U	< 0.001 U
MW-81	1/20/2016	W81-160120-	< 0.001 U	< 0.001 U	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	0.642	0.749	< 0.001 U	0.001
MW-83	1/14/2016	W83-160114-	< 0.001 U	< 0.001 U	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	2.57	2.51	< 0.001 U	< 0.001 U
MW-84	1/14/2016	W84-160114-	< 0.001 U	< 0.001 U	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.07	0.997	< 0.001 U	< 0.001 U
MW-85	1/15/2016	W85-160115-	< 0.001 U	< 0.001 U	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.57	1.52	< 0.001 U	0.00101
MW-87	1/15/2016	W87-160115-	0.469	0.426	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	2.4	2.22	< 0.001 U	< 0.001 U
MW-93	1/11/2016	W93-160111-	0.18	0.181	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.39	1.64	< 0.001 U	< 0.001 U
MW-93 Duplicate	1/11/2016	W93-160111D	0.175	0.178	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.39	1.61	< 0.001 U	< 0.001 U
MW-94	1/11/2016	W94-160111-	< 0.001 U	< 0.001 U	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	1.87	2.08	< 0.001 U	< 0.001 U
MW-101	1/29/2016	W101160129-	1.25	1.49 D	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	2.81	2.65	< 0.001 U	< 0.001 U
EQUIPMENT BLANK	1/8/2016	WU1S160108E	< 0.001 U		< 0.0001 U		< 0.01 U		< 0.3 U		< 0.001 U	
EQUIPMENT BLANK	1/8/2016	WU1H160108E	< 0.001 U		< 0.0001 U		< 0.01 U		< 0.3 U		< 0.001 U	
FIELD BLANK	1/15/2016	W75-160115F	< 0.001 U	< 0.001 U	< 0.0001 U	< 0.0001 U	< 0.01 U	< 0.01 U	< 0.3 U	< 0.3 U	< 0.001 U	< 0.001 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016
Cedar Hills Landfill ---Groundwater Metals Analytical Data

Contact Person: Sandy Jimenez (206)477-5224

Site	Date	Sample ID	Silver, dissolved	Silver, total	Sodium, dissolved	Sodium, total	Thallium, dissolved	Thallium, total	Vanadium, dissolved	Vanadium, total	Zinc, dissolved	Zinc, total
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
MW-30A	1/11/2016	W30A160111-	< 0.003 U	< 0.003 U	12.2	12 D	< 0.001 DU	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-47	1/19/2016	W47-160119-	< 0.003 U	< 0.003 U	16.8	16.9	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-59	1/7/2016	W59-160107-	< 0.003 U	< 0.003 U	5.46	5.62	< 0.001 DU	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-62	1/19/2016	W62-160119-	< 0.003 U	< 0.003 U	14.3	14.6	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-66	1/7/2016	W66-160107-	< 0.003 U	< 0.003 U	7.4	7.76	< 0.001 DU	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-68	1/22/2016	W68-160122-	< 0.003 U	< 0.003 U	8.57	8.22	< 0.001 U	< 0.001 U	< 0.002 U	0.0037	< 0.004 U	< 0.004 U
MW-69	1/20/2016	W69-160120-	< 0.003 U	< 0.003 U	7.75	7.85	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-72	1/8/2016	W72-160108-	< 0.003 U	< 0.003 U	7.54	7.66	< 0.001 DU	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	0.0201
MW-74	1/20/2016	W74R160120-	< 0.003 U	< 0.003 U	11.6	12	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-75	1/15/2016	W75-160115-	< 0.003 U	< 0.003 U	8.12	7.76 D	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-80	1/20/2016	W80-160120-	< 0.003 U	< 0.003 U	7.1	7.35	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-81	1/20/2016	W81-160120-	< 0.003 U	< 0.003 U	5.69	5.65	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-83	1/14/2016	W83-160114-	< 0.003 U	< 0.003 U	8.42	7.93 D	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-84	1/14/2016	W84-160114-	< 0.003 U	< 0.003 U	6.06	5.84 D	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-85	1/15/2016	W85-160115-	< 0.003 U	< 0.003 U	8.46	8.05 D	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-87	1/15/2016	W87-160115-	< 0.003 U	< 0.003 U	9.96	8.79 D	< 0.001 U	< 0.001 U	< 0.002 U	0.00309	< 0.004 U	< 0.004 U
MW-93	1/11/2016	W93-160111-	< 0.003 U	< 0.003 U	8.74	8.96 D	< 0.001 DU	< 0.001 U	< 0.002 U	< 0.002 U	0.00952	0.00999
MW-93 Duplicate	1/11/2016	W93-160111D	< 0.003 U	< 0.003 U	9.06	8.83 D	< 0.001 DU	< 0.001 U	< 0.002 U	< 0.002 U	0.0102	0.0104
MW-94	1/11/2016	W94-160111-	< 0.003 U	< 0.003 U	7.63	7.2 D	< 0.001 DU	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
MW-101	1/29/2016	W101160129-	< 0.003 U	< 0.003 U	14.6	15.3	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U
EQUIPMENT BLANK	1/8/2016	WU1S160108E	< 0.003 U		< 0.05 U		< 0.001 DU		< 0.002 U		< 0.004 U	
EQUIPMENT BLANK	1/8/2016	WU1H160108E	< 0.003 U		< 0.05 U		< 0.001 DU		< 0.002 U		< 0.004 U	
FIELD BLANK	1/15/2016	W75-160115F	< 0.003 U	< 0.003 U	< 0.05 U	< 0.05 DU	< 0.001 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016
Cedar Hills Landfill --- Groundwater VOA Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016
Cedar Hills Landfill --- Groundwater VOA Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	1,4-Dichloro-	2-Butanone	2-Hexanone	4-Methyl-2-	Acetone	Arylonitrile	Benzene	Bromochloro-	Bromodichloro-	Bromoform	Bromo-	Carbon
			benzene	(µg/L)	(µg/L)	Pentanone	(µg/L)	(µg/L)	(µg/L)	(µg/L)	methane	(µg/L)	methane	Disulfide
			106-46-7	78-93-3	591-78-6	108-10-1	67-64-1	107-13-1	71-43-2	74-97-5	75-27-4	75-25-2	74-83-9	75-15-0
EW-25	3/25/2016	EW25160315-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-30A	1/11/2016	W30A160111-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-47	1/19/2016	W47-160119-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-59	1/7/2016	W59-160107-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-62	1/19/2016	W62-160119-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-66	1/7/2016	W66-160107-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-68	1/22/2016	W68-160122-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-69	1/20/2016	W69-160120-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-72	1/8/2016	W72-160108-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-74	1/20/2016	W74R160120-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-75	1/15/2016	W75-160115-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-80	1/20/2016	W80-160120-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-81	1/20/2016	W81-160120-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-83	1/14/2016	W83-160114-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-84	1/14/2016	W84-160114-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-85	1/15/2016	W85-160115-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-87	1/15/2016	W87-160115-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-93	1/11/2016	W93-160111-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-93 Duplicate	1/11/2016	W93-160111D	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-94	1/11/2016	W94-160111-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-101	1/29/2016	W101160129-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
FIELD BLANK	1/15/2016	W75-160115F	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/4/2016	VTRP160107C	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/5/2016	VTRP160107-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/5/2016	VTRP160111-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/7/2016	VTRP160108C	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/8/2016	VTRP160111C	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/8/2016	VTRP160114C	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/14/2016	VTRP160115-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/14/2016	VTRP160115C	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/15/2016	VTRP160119C	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/19/2016	VTRP160120-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/19/2016	VTRP160120C	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/20/2016	VTRP160122-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/26/2016	VTRP160129-	< 0.2 U	< 4 U	< 4 U	< 4 U	< 4 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016
Cedar Hills Landfill --- Groundwater VOA Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	Carbon	Chloro-	Chloro-	Chloro-	Chloro-	cis-1,2-	cis-1,3-	Dibromo-	Dichloro-	Ethyl -	m, p-Xylene
			Tetrachloride	Benzene	dibromo-	ethane	form	methane	Dichloro-	Dichloro-	methane	Difluoro-	benzene
		56-23-5	108-90-7	124-48-1	75-00-3	67-66-3	74-87-3	156-59-2	10061-01-5	74-95-3	75-71-8	100-41-4	(ug/L)
EW-25	3/25/2016	EW25160315-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	0.887	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-30A	1/11/2016	W30A160111-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	2.63	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-47	1/19/2016	W47-160119-	< 0.2 U	< 0.2 U	< 0.2 U	0.27 T	< 0.2 U	1.76	< 0.2 U	< 0.2 U	2.62	< 0.2 U	< 0.2 U
MW-59	1/7/2016	W59-160107-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	1.08	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-62	1/19/2016	W62-160119-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	4.16	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-66	1/7/2016	W66-160107-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-68	1/22/2016	W68-160122-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 GU	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-69	1/20/2016	W69-160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-72	1/8/2016	W72-160108-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-74	1/20/2016	W74R160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-75	1/15/2016	W75-160115-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-80	1/20/2016	W80-160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-81	1/20/2016	W81-160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-83	1/14/2016	W83-160114-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-84	1/14/2016	W84-160114-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-85	1/15/2016	W85-160115-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-87	1/15/2016	W87-160115-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-93	1/11/2016	W93-160111-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-93 Duplicate	1/11/2016	W93-160111D	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-94	1/11/2016	W94-160111-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
MW-101	1/29/2016	W101160129-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	0.23 T	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
FIELD BLANK	1/15/2016	W75-160115F	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/4/2016	VTRP160107C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/5/2016	VTRP160107-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/5/2016	VTRP160111-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/7/2016	VTRP160108C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/8/2016	VTRP160111C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/8/2016	VTRP160114C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/14/2016	VTRP160115-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/14/2016	VTRP160115C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/15/2016	VTRP160119C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/19/2016	VTRP160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/19/2016	VTRP160120C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/20/2016	VTRP160122-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/26/2016	VTRP160129-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016
 Cedar Hills Landfill --- Groundwater VOA Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	Methyl	Methylene	o-Xylene	Styrene	Tetrachloro-	Toluene	trans-1,2-	trans-1,3-	trans-1,4-	Trichloro-	Trichloro-	Vinyl	Vinyl
			Iodide ($\mu\text{g/L}$)	Chloride ($\mu\text{g/L}$)	($\mu\text{g/L}$)	($\mu\text{g/L}$)	ethene ($\mu\text{g/L}$)	($\mu\text{g/L}$)	Dichloro- ethene ($\mu\text{g/L}$)	Dichloro- propene ($\mu\text{g/L}$)	Dichloro- butene ($\mu\text{g/L}$)	Dichloro- ethene ($\mu\text{g/L}$)	fluoro- methane ($\mu\text{g/L}$)	fluoro- methane ($\mu\text{g/L}$)	Acetate ($\mu\text{g/L}$)
			74-88-4	75-09-2	95-47-6	100-42-5	127-18-4	108-88-3	156-60-5	10061-02-6	110-57-6	79-01-6	75-69-4	108-05-4	75-01-4
EW-25	3/25/2016	EW25160315-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	0.38	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	0.911	< 0.2 U	< 0.2 U	< 0.02 U
MW-30A	1/11/2016	W30A160111-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	0.945	< 0.2 U	< 0.2 U	< 0.02 U
MW-47	1/19/2016	W47-160119-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	5.58
MW-59	1/7/2016	W59-160107-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-62	1/19/2016	W62-160119-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-66	1/7/2016	W66-160107-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-68	1/22/2016	W68-160122-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-69	1/20/2016	W69-160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-72	1/8/2016	W72-160108-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-74	1/20/2016	W74R160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-75	1/15/2016	W75-160115-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-80	1/20/2016	W80-160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-81	1/20/2016	W81-160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-83	1/14/2016	W83-160114-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	2.36	< 0.2 U	< 0.2 U	< 0.02 U
MW-84	1/14/2016	W84-160114-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-85	1/15/2016	W85-160115-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-87	1/15/2016	W87-160115-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-93	1/11/2016	W93-160111-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-93 Duplicate	1/11/2016	W93-160111D	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
MW-94	1/11/2016	W94-160111-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	1.95	< 0.2 U	< 0.2 U	< 0.02 U
MW-101	1/29/2016	W101160129-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	0.467
FIELD BLANK	1/15/2016	W75-160115F	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/4/2016	VTRP160107C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/5/2016	VTRP160107-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/5/2016	VTRP160111-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/7/2016	VTRP160108C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/8/2016	VTRP160111C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/8/2016	VTRP160114C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/14/2016	VTRP160115-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/14/2016	VTRP160115C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/15/2016	VTRP160119C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/19/2016	VTRP160120-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/19/2016	VTRP160120C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/20/2016	VTRP160122-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/26/2016	VTRP160129-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.02 U

Surface Water Analytical Data

Washington Department of Ecology Submission Cover Letter

**WQWebDMR - Permit# WAR000756 - DMR Submission Id: 1535707 -
4/12/2016 4:44:59 PM**

Report Received Dated: 4/12/2016 4:45:08 PM

Company Name	Signer Name	System Name
King County Solid Waste Division	Pamela Badger	WQWebPortal

Attachments:

Document Name of Description	Document File Name
Submitted Copy of Record for King County Solid Waste Division	Copy of Record KingCountySolidWasteDivision Tuesday April 12 2016

Attestation Agreed to at Signing:

I certify I personally signed and submitted to the Department of Ecology an Electronic Signature Agreement. I understand that use of my electronic signature account/password to submit this information is equal to my written signature. I have read and followed all the rules of use in my Electronic Signature Agreement. I believe no one but me has had access to my password and other account information.

I further certify: I had the opportunity to review the content or meaning of the submittal before signing it; and to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I intend to submit this information as part of the implementation, oversight, and enforcement of a federal environmental program. I am aware there are significant penalties for submitting false information, including possible fines and imprisonment.

**For Ecology Use Only ---
Dev**



0krk5y1Q6VSfm4q2LmXFpAfp7SmLDi2oJV92olae2WOoFPBfGDqseJMGTgNYj089vWyaxLZ81XViA7DX3Wt586XeHeXJVjyCuZXhwkUgSc=



Validation Report

Facility: CEDAR HILLS LANDFILL - Permit: WAR000756

Monitoring Period: 01/01/2016 to 03/31/2016

Validation Message Type: Warning

Outfall	Monitoring Point	Parameter	Units	Sample Date/ Statistical Base	Value Entered	Limit/Benchmark	Error Message
GS1	GS1	Oil & Grease Not Applicable	Yes/No	02/11/2016	Yes	BM: <= 0	The reported value exceeded the benchmark. You are required to take action (See Permit Condition S8).



Permit Number: WAR000756

Permittee: CEDAR HILLS LANDFILL

Facility County: King

Receiving Waterbody: Unnamed stream

Monitoring Period: 01/01/2016 - 03/31/2016

Outfall: GS1 - Discharge to unnamed stream (wetland)

Version: 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Quarterly Grab	pH Standard Units Quarterly Grab	Oil & Grease Yes/No Quarterly Visual Observation	Copper Total Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	Total BOD5 Total Milligrams/L (mg/L) Quarterly Grab	Solids (Residue) Total suspended (TSS) Milligrams/L (mg/L) Quarterly Grab	Ammonia Total Milligrams/L (mg/L) Quarterly Grab	Alpha-terpineol (3-Cyclohexene-1-methanol,,alpha,,alpha,,trimethyl-) Micrograms/L (ug/L) Quarterly Grab	Benzoic Acid Micrograms/L (ug/L) Quarterly Grab	p-Cresol (4-methylphenol) Micrograms/L (ug/L) Quarterly Grab
		GS1	GS1	GS1	GS1	GS1	GS1	GS1	GS1	GS1	GS1	GS1
	Limit Set	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
7-Th	2/11/16	11.3	6.13	Yes*	2.83	4.24	3.2	6.2	0.189	<5	<50	<10
	Minimum	6.13										
		BM: >= 5.0 (RO)										
	Average	11.3			2.83	4.24						
		BM: <= 25			BM: <= 14	BM: <= 117						
	Maximum	6.13										
		BM: <= 9.0 (RO)										
	Month 1 Average						M	M	M	M	M	M
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
	Month 2 Average						3.2	6.2	0.189	<5	<50	<10
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
	Month 3 Average						M	M	M	M	M	M
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: B - Below Detection Limit/No Detection, M - Monitoring Is Conditional/Not Req This MP

Outfall: GS1 - Discharge to unnamed stream (wetland)

Monitoring Point	Parameter	Sample Date/ Statistical Base	Value	Notes/Comment
GS1	Oil & Grease Not Applicable Yes/No	2/11/2016	Yes	Presence of oil sheen attributed to truck rollover accident that released fuel into Stormwater ditch one month prior to sampling. Spill was immediately cleaned up to the maximum extent practicable (Ecology staff onsite during cleanup). Sampling results indicate that residual amounts of petroleum remain, likely bound to sediment and/or vegetation near sampling location. The quantity of residual petroleum remaining is small and it is unlikely that additional cleanup measures would remove a meaningful quantity. Natural attenuation is the preferred method of managing residual petroleum impacts in this situation.



Week	Monitoring Point	Phenol	Zinc	pH
		Micrograms/L (µg/L) Quarterly Grab	Total Micrograms/L (µg/L) Quarterly Grab	Standard Units Quarterly Grab
		GS1	GS1	GS1
	Limit Set	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
7-Th	2/11/16	<4	4.24	6.13
	Minimum			6.13
				>= 6.0 (RO)
	Average			
	Maximum			6.13
				<= 9.0 (RO)
Month 1 Average	M	M		
	<= 15	<= 110		
Month 2 Average	<4	4.24		
	<= 15	<= 110		
Month 3 Average	M	M		
	<= 15	<= 110		



Permit Number: WAR000756

Permittee: CEDAR HILLS LANDFILL

Facility County: King

Receiving Waterbody: Unnamed stream

Monitoring Period: 01/01/2016 - 03/31/2016

Outfall: N4 - Discharge to unnamed stream (McDonald Cr)

Version: 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Quarterly Grab	pH Standard Units Quarterly Grab	Oil & Grease Yes/No Quarterly Visual Observation	Copper Total Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	Total BOD5 Total Milligrams/L (mg/L) Quarterly Grab	Solids (Residue) Total suspended (TSS) Milligrams/L (mg/L) Quarterly Grab	Ammonia Total Milligrams/L (mg/L) Quarterly Grab	Alpha-terpineol (3-Cyclohexene-1-methanol,,alpha,alpha,trinethoxy/-) Micrograms/L (ug/L) Quarterly Grab	Benzoic Acid Micrograms/L (ug/L) Quarterly Grab	p-Cresol (4-methylphenol) Micrograms/L (ug/L) Quarterly Grab
		N4	N4	N4	N4	N4	N4	N4	N4	N4	N4	N4
		ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
Limit Set		ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
3-T	1/12/16	3.05	7.52	No	10.9	24.9	<2	1	0.0262	<5	<50	<10
Minimum		7.52										
		BM: >= 5.0 (RO)										
Average		3.05			10.9	24.9						
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum		7.52										
		BM: <= 9.0 (RO)										
Month 1 Average							<2	1	0.0262	<5	<50	<10
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 2 Average							M	M	M	M	M	M
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							M	M	M	M	M	M
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: B - Below Detection Limit/No Detection, M - Monitoring Is Conditional/Not Req This MP



Week	Monitoring Point	Phenol	Zinc	pH
		Micrograms/L (ug/L) Quarterly Grab	Total Micrograms/L (ug/L) Quarterly Grab	Standard Units Quarterly Grab
		N4	N4	N4
	Limit Set	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
3-T	1/12/16	<4	24.9	7.52
Minimum				7.52
				>= 6.0 (RO)
Average				
Maximum				7.52
				<= 9.0 (RO)
Month 1 Average		<4	24.9	
		<= 15	<= 110	
Month 2 Average		M	M	
		<= 15	<= 110	
Month 3 Average		M	M	
		<= 15	<= 110	



Permit Number: WAR000756

Permittee: CEDAR HILLS LANDFILL

Facility County: King

Receiving Waterbody: Unnamed stream

Monitoring Period: 01/01/2016 - 03/31/2016

Outfall: SL3 - Discharge to unnamed stream (ditch)

Version: 1

Week	Monitoring Point	Turbidity (NTU) Measured NTU Quarterly Grab	pH Standard Units Quarterly Grab	Oil & Grease Yes/No Quarterly Visual Observation	Copper Total Micrograms/L (ug/L) Quarterly Grab	Zinc Total Micrograms/L (ug/L) Quarterly Grab	Total BOD5 Total Milligrams/L (mg/L) Quarterly Grab	Solids (Residue) Total suspended (TSS) Milligrams/L (mg/L) Quarterly Grab	Ammonia Total Milligrams/L (mg/L) Quarterly Grab	Alpha-terpineol (3-Cyclohexene-1-methanol,,alpha,,alpha,,trimethyl-) Micrograms/L (ug/L) Quarterly Grab	Benzoic Acid Micrograms/L (ug/L) Quarterly Grab	p-Cresol (4-methylphenol) Micrograms/L (ug/L) Quarterly Grab
		SL3	SL3	SL3	SL3	SL3	SL3	SL3	SL3	SL3	SL3	SL3
Limit Set		ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Western WA - 2015 Permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
3-T	1/12/16	3.56	6.55	No	3	11	<2	1.4	<0.01	<5	<50	<10
Minimum		6.55										
		BM: >= 5.0 (RO)										
Average		3.56			3	11						
		BM: <= 25			BM: <= 14	BM: <= 117						
Maximum		6.55										
		BM: <= 9.0 (RO)										
Month 1 Average							<2	1.4	<0.01	<5	<50	<10
Month 2 Average							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
Month 3 Average							M	M	M	M	M	M
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14
							M	M	M	M	M	M
							<= 37	<= 27	<= 4.9	<= 16	<= 71	<= 14

Reporting Codes Used: B - Below Detection Limit/No Detection, M - Monitoring Is Conditional/Not Req This MP

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Pamela Badger

Signature

4/12/2016 4:44:58 PM

Date



Week	Monitoring Point	Phenol	Zinc	pH
		Micrograms/L (µg/L) Quarterly Grab	Total Micrograms/L (µg/L) Quarterly Grab	Standard Units Quarterly Grab
		SL3	SL3	SL3
	Limit Set	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit	ISGP Non-Haz Waste Landfill (40CFR part 445 subpart B)- 2015 permit
3-T	1/12/16	<4	11	6.55
	Minimum			6.55
				>= 6.0 (RO)
	Average			
	Maximum			6.55
				<= 9.0 (RO)
Month 1 Average	<4	11		
	<= 15	<= 110		
Month 2 Average	M	M		
	<= 15	<= 110		
Month 3 Average	M	M		
	<= 15	<= 110		

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill ---Surface Water Elevation Data-Staff Gage Measurements

Contact Person: Sedy Jimenez (206) 477-5224

Staff Gage	Location	Date	Reference Elevation Staff Gage 0' (msl)	Reference Elevation Top of Peizo (msl)	Depth to Water (Peizometer) (feet)	Staff Gage Reading (feet)	Surface Water Elevation (msl)	Comment
SW-G1	SW-W1	1/4/2016	415.38	418.84	2.88	0.63	415.96	
SW-G1	SW-W1	2/10/2016	415.38	418.84		NA	NA	Dry. Depth to bottom = 2.85 feet.
SW-G1	SW-W1	3/22/2016	415.38	418.84	2.81	0.62	416.03	Needs moving on "wetted edge".
SW-G2	SW-N1	1/4/2016	355.68	358.21	2.76	0.73	355.45	
SW-G2	SW-N1	2/10/2016	355.68	358.21	2.87	0.61	355.34	
SW-G2	SW-N1	3/22/2016	355.68	358.21	2.77	0.72	355.44	
SW-G3	SW -V	1/4/2016	466.46	469.88	3.44	0.09	466.44	
SW-G3	SW -V	2/10/2016	466.46	469.88	3.56	0.13	466.32	
SW-G3	SW -V	3/22/2016	466.46	469.88	3.69	0.12	466.19	
SW-G4	Upstream of SW-E1	1/4/2016	502.41	505.85	3.09	0.39	502.76	
SW-G4	Upstream of SW-E1	2/10/2016	502.41	505.85	3.15	0.31	502.70	
SW-G4	Upstream of SW-E1	3/22/2016	502.41	505.85	3.1	0.37	502.75	
SW-G5	SW-E1	1/4/2016	486.92	490.34		0.65	490.34	
SW-G5	SW-E1	2/10/2016	486.92	490.34	2.83	0.62	487.51	
SW-G5	SW-E1	3/22/2016	486.92	490.34	2.78	0.66	487.56	
SW-G6	Upstream of SW-GS1	1/4/2016	490.72	494.12	2.61		491.51	
SW-G6	Upstream of SW-GS1	2/10/2016	490.72	494.12	2.71		491.41	Dry out of water.
SW-G6	Upstream of SW-GS1	3/22/2016	490.72	494.12	2.76		491.36	
SW-G7	SW-S2	1/4/2016	453.03	456.41	3.55		452.86	
SW-G7	SW-S2	2/10/2016	453.03	456.41	3.51		452.90	Out of water.
SW-G7	SW-S2	3/22/2016	453.03	456.41	3.59		452.82	Staff gauge not in water.
SW-G8	Upstream of SW-S1	1/4/2016	510.61	515.56		0.38	510.99	
SW-G8	Upstream of SW-S1	2/10/2016	510.61	515.56	4.62	0.37	510.94	
SW-G8	Upstream of SW-S1	3/22/2016	510.61	515.56	4.53	0.45	511.03	
SW-G9	SW-S1	1/4/2016	490.93	494.35		0.50	491.43	
SW-G9	SW-S1	2/10/2016	490.93	494.35	2.96	0.47	491.39	
SW-G9	SW-S1	3/22/2016	490.93	494.35	2.82	0.60	491.53	

NR = No Reading Taken

Environmental Monitoring Data

Data Collected from January 1, 2015 to March 31, 2015

Cedar Hills Landfill --- Surface Water Field Parameters

Contact Person: Sandy Jimenez (206)477-5224

Site	Date	Sample ID	pH (Field)	Conductance (Field)	Temperature (°C)	Turbidity (NTU)	Oxygen, Dissolved (mg/L)
			(std. Units)	(umho/cm)			
SW-E1	1/12/2016	SE1-160112P	7.27	48	4.9	1.52	9.5
SW-GS1	2/11/2016	SGS1160211P	6.13	185	9.7	11.3	10.79
SW-N4	1/12/2016	SN4-160112P	7.52	85	5.5	3.05	13.52
SW-SL3	1/12/2016	SSL3160112P	6.55	130	6.8	3.56	11.02
SW-TD1	3/8/2016	STD1160308-	7.67	380	9.2	0.72	12.13
SW-TD6	3/24/2016	STD6160324-	6.36	84	7.9	8.91	11.02

Environmental Monitoring Data

Data Collected from January 1, 2015 to March 31, 2015

Cedar Hills Landfill --- Surface Water Conventional Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	Alkalinity, Total (CaCO ₃) (mg/L)	Ammonia, (NH ₃) (mg/L)	Biological Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Chloride (mg/L)	Nitrate- Nitrogen, (NO ₃ as N) (mg/L)	Nitrate+Nitrite (NO ₃ +NO ₂ as N) (mg/L)	Soluble Reactive Phosphorus (mg/L)	Specific Conductance (μmho/cm)	Sulfate (SO ₄) (mg/L)	Total Dissolved Solids (mg/L)
SW-E1	1/12/2016	SE1-160112P		< 0.01 U	< 2 U								
SW-GS1	2/11/2016	SGS1160211P		0.189	3.2								
SW-N4	1/12/2016	SN4-160112P		0.0262	< 2 U								
SW-N4 Duplicate	1/12/2016	SN4-160112D		0.0254	< 2 U								
SW-SL3	1/12/2016	SSL3160112P		< 0.01 U	< 2 U								
SW-TD1	3/8/2016	STD1160308-	164			24.6	1.19					31.4	
SW-TD6	3/24/2016	STD6160324-	37.7			20 T	0.942					2.1	
EQUIPMENT BLANK	1/8/2016	WU1M160108E		< 0.01 U				< 0.01 U		< 0.01 U			

Environmental Monitoring Data

Data Collected from January 1, 2015 to March 31, 2015

Cedar Hills Landfill --- Surface Water Conventional Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	Total Organic Carbon (mg/L)	Total Solids (mg/L)	Suspended Solids (mg/L)
SW-E1	1/12/2016	SE1-160112P			< 1 U
SW-GS1	2/11/2016	SGS1160211P			6.2
SW-N4	1/12/2016	SN4-160112P			1
SW-N4 Duplicate	1/12/2016	SN4-160112D			< 1 U
SW-SL3	1/12/2016	SSL3160112P			1.4
SW-TD1	3/8/2016	STD1160308-	8.48		
SW-TD6	3/24/2016	STD6160324-	5.96		
EQUIPMENT BLANK	1/8/2016	WU1M160108E			

Environmental Monitoring Data

Data Collected from January 1, 2015 to March 31, 2015

Cedar Hills Landfill --- Surface Water Metal Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	Copper, total	Iron, dissolved	Iron, total	Zinc, total
			(mg/L)	(mg/L)	(mg/L)	(mg/L)
SW-E1	1/12/2016	SE1-160112P	< 0.002 U			< 0.004 U
SW-GS1	2/11/2016	SGS1160211P	0.00283			0.00424
SW-N4	1/12/2016	SN4-160112P	0.0109			0.0249
SW-N4 Duplicate	1/12/2016	SN4-160112D	0.00932			0.0209
SW-SL3	1/12/2016	SSL3160112P	0.003			0.011
SW-TD1	3/8/2016	STD1160308-		0.011 T	0.031 T	
SW-TD6	3/24/2016	STD6160324-		0.236	0.467	

Environmental Monitoring Data

Data Collected from January 1, 2015 to March 31, 2015

Cedar Hills Landfill --- Surface Water Pesticide/Herbicide Analytical Data

Contact Person: Sendy Jimenez (206) 477-5224

Site	Date	Sample ID	4-Methyl-	alpha	Benzoic	Phenol
			106-44-5 (ug/L)	98-55-5 (ug/L)	65-85-0 (ug/L)	108-95-2 (ug/L)
SW-E1	1/12/2016	SE1-160112P	< 10 U	< 5 U	< 50 U	< 4 U
SW-GS1	2/11/2016	SGS1160211P	< 10 U	< 5 U	< 50 U	< 4 U
SW-N4	1/12/2016	SN4-160112P	< 10 U	< 5 U	< 50 U	< 4 U
SW-N4 Duplicate	1/12/2016	SN4-160112D	< 10 U	< 5 U	< 50 U	< 4 U
SW-SL3	1/12/2016	SSL3160112P	< 10 U	< 5 U	< 50 U	< 4 U

Leachate Analytical Data

Leachate Monitoring Activities 1st Quarter 2016

Station ID	Date	Activity	Sample ID	Comment
API	1/14/16	Monthly Characterization Sample	LAPI160114M	
API	2/10/16	Monthly Characterization Sample	LAPI160210M	
API	3/9/16	Monthly Characterization Sample	LAPI160309M	
LEPS	1/13/16	Monthly Characterization Sample	LEPS160112M	
LEPS	1/13/16	Permit Sample	LEPS160112P	
LEPS	2/9/16	Monthly Characterization Sample	LEPS160209M	
LEPS	2/9/16	Permit Sample	LEPS160209P	
LEPS	3/8/16	Monthly Characterization Sample	LEPS160308M	
LEPS	3/8/16	Permit Sample	LEPS160308P	
MH46N	1/13/16	Monthly Characterization Sample	L46N160113M	
MH46N	2/10/16	Monthly Characterization Sample	L46N160210M	
MH46N	3/9/16	Monthly Characterization Sample	L46N160309M	
PS2A	1/13/16	Monthly Characterization Sample	LP2A160113M	
PS2A	2/10/16	Monthly Characterization Sample	LP2A160210M	
PS2A	2/10/16	QA/QC Sample	LP2A160210D	Field Duplicate
PS2A	3/9/16	Monthly Characterization Sample	LP2A160309M	

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate Field Parameters

Contact Person --- Senty Jimenez (206) 477-5224

Site	Date	Sample ID	pH (Field)	Conductance (Field)	Temperature
			(std. Units)	(umho/cm)	(o C)
LS-API	1/14/2016	LAPI160114M	7.89	2400	16.6
LS-API	2/10/2016	LAPI160210M	7.96	5600	18.5
LS-API	3/9/2016	LAPI160309M	7.69	2000	12.4
LS-LEPS	1/12/2016	LEPS160112M	8.33	5500	9.1
LS-LEPS	1/13/2016	LEPS160112P	8.33	5500	9.1
LS-LEPS	2/10/2016	LEPS160209M	8.22	4450	12.5
LS-LEPS	2/10/2016	LEPS160209P	8.22	4450	12.5
LS-LEPS	3/9/2016	LEPS160308M	8.15	3750	11.7
LS-LEPS	3/9/2016	LEPS160308P	8.15	3750	11.7
LS-MH46N	1/13/2016	L46N160113M	7.27	5500	23.9
LS-MH46N	3/9/2016	L46N160309M	7.25	5850	24.8
LS-MH46N	2/10/2016	L46N160210M	7.14	8500	24.3
LS-PS2A	1/13/2016	LP2A160113M	6.71	325	9.3
LS-PS2A	2/10/2016	LP2A160210M	6.69	260	9.8
LS-PS2A	3/9/2016	LP2A160309M	6.98	190	10.3

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate Conventional Analytical Data

Contact Person --- SAndy Jimenez (206) 477-5224

Site	Date	Sample ID	Alkalinity,	Ammonia,	Biological	Chemical	Chloride	Coliforms,	Coliforms,	Cyanide	Fluoride	Nitrate+Nitrite	Phosphorus,
			Total (CaCO ₃)	(NH ₃ as N)	Oxygen Demand	Oxygen Demand	(mg/L)	(mg/L)	Fecal	Total	(mg/L)	(mg/L)	(NO ₃ +NO ₂ as N)
LS-API	1/14/2016	LAPI160114M	1380	302	435	1090	323	16000 C	180000	< 0.02 SU	< 0.1 U	0.354	2.45
LS-API	2/10/2016	LAPI160210M	4380	886	1190	2780 S	1080	150000 C	300000	< 0.02 SU	< 0.1 U	0.295	7.06
LS-API	3/9/2016	LAPI160309M	2030	390	531	1460	473	33000	150000	< 0.02 SU	< 0.1 U	0.33 T	3
LS-LEPS	1/12/2016	LEPS160112M	2360	412	141	2320	583	24000	280000	< 0.02 SU	< 0.1 U	0.054 T	4.05
LS-LEPS	2/9/2016	LEPS160209M	1800	304	149	812	415	9900	41000	< 0.02 SU	< 0.1 U	0.037 T	2.58
LS-LEPS	3/9/2016	LEPS160308M	1550	239	193	796	330	23000	150000	< 0.02 SU	< 0.1 U	0.03 T	2.44
LS-MH46N	1/13/2016	L46N160113M	3140	834 J	72.6	1610 S	1550	< 1 U	< 1 U	< 0.02 SU	< 0.1 U	0.329	4.05
LS-MH46N	2/9/2016	L46N160210M	2860	551	89.1	1530 S	1490	< 1 U	< 1 U	< 0.02 SU	< 0.1 U	0.071 T	3.94
LS-MH46N	3/9/2016	L46N160309M	2710	534	73.8	1350	1340	< 1 U	< 1 U	< 0.02 SU	< 0.1 U	0.14 T	3.62
LS-PS2A	1/13/2016	LP2A160113M	134	14.1	15.09 G	55.1	17.8	< 1 U	80	< 0.02 U	< 0.1 U	1.55	< 0.1
LS-PS2A	2/9/2016	LP2A160210M	71.7	7.3	3.52	30.6	15.5	< 1 U	80	< 0.02 U	< 0.1 U	1.74	< 0.1
LS-PS2A Duplicate	2/9/2016	LP2A160210D	72	8.1 T	3.08 L	29.5	15.5	< 1 U	40 C	< 0.02 U	< 0.1 U	1.72	< 0.1
LS-PS2A	3/9/2016	LP2A160309M	73.8	5.26	2.97 L	29.3	8.45	< 1 U	14	< 0.02 U	< 0.1 U	0.763	< 0.1

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate Conventional Analytical Data

Contact Person --- Sandy Jimenez (206) 477-5224

Site	Date	Sample ID	Phosphorus,	Specific	Sulfate	Sulfide	Total	Total	Total	Total	Volatile
			Sol. Reactive	Conductance	(SO4)	Total	Fats, Oils	Kjeldahl	Organic	Suspended	Suspended
			(mg/L)	(μmho/cm)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
LS-API	1/14/2016	LAPI160114M	0.929	3800	43.2	0.73 T	5.4 B	262	229	196	790
LS-API	2/10/2016	LAPI160210M	4.35	9050	31.8	1.7 T	9.6	921 S	671 S	46	2010
LS-API	3/9/2016	LAPI160309M	1.62	5240	20.1	< 0.01 U	3.3 T	396	397	51	1390
LS-LEPS	1/12/2016	LEPS160112M	0.0983	6120	54.7	0.41 T	3.9 BT	458	174	200	1810
LS-LEPS	2/9/2016	LEPS160209M	0.0695	4480	34.1	< 0.01 U	4.1 T	316	149	140	1080
LS-LEPS	3/9/2016	LEPS160308M	0.0271	3750	43.8	0.17 T	< 2 U	264	201	90.7	832
LS-MH46N	1/13/2016	L46N160113M	3.04	10300	5.25	0.73 T	< 2 U	607 JS	382 S	2.2	1950
LS-MH46N	2/9/2016	L46N160210M	2.8	8520	3.1 T	0.82 T	7.6	553 S	427	1.63	1260
LS-MH46N	3/9/2016	L46N160309M	2.69	8780	< 5 U	0.522	3.6 T	609	423 S	6.06	1320
LS-PS2A	1/13/2016	LP2A160113M	< 0.01 U	396	11.9	0.03 T	4.6 BT	13.6	16.2	3.87	166
LS-PS2A	2/9/2016	LP2A160210M	0.0143	213	12.9	0.011 T	< 2 U	8.16	9.96	1.4	70.7
LS-PS2A Duplicate	2/9/2016	LP2A160210D	0.0139	207	12.9	< 0.01 U	2.7 T	7.95	9.88	1.2	80
LS-PS2A	3/9/2016	LP2A160309M	0.0133	212	10.3	< 0.01 U	< 2 U	5.89	12.3	2.8	87.3
											2

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate Metal Analytical Data

Contact Person --- Sandy Jimenez (206) 477-5224

Site	Date	Sample ID	Aluminum,	Antimony,	Arsenic,	Barium,	Beryllium,	Cadmium,	Calcium,	Chromium,	Cobalt,	Copper,	Iron,	Lead,
			total	total	total	total	total	total	total	total	total	total	total	total
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
LS-API	1/14/2016	LAPI160114M	8.31	< 0.001 U	0.037 T	0.121	< 0.001 U	< 0.002 U	64.4	0.0515	0.0171	0.0246	11.7	< 0.001 U
LS-API	2/10/2016	LAPI160210M	0.783	< 0.001 U	0.127	0.18	< 0.001 U	< 0.002 U	91.5	0.137	0.0323	0.012 T	9.51	< 0.001 U
LS-API	3/9/2016	LAPI160309M	0.884	< 0.001 U	0.071 T	0.0954	< 0.001 U	< 0.002 U	60.7	0.0599	0.0159	0.01 T	7.05	< 0.001 U
LS-LEPS	1/12/2016	LEPS160113P							< 0.002 U		0.0832	0.017 T		< 0.001 U
LS-LEPS	1/12/2016	LEPS160112M	2.94	< 0.001 U	0.082 T	0.127	< 0.001 U	< 0.002 U	81.2	0.0765	0.0201	0.013 T	10.4	< 0.001 U
LS-LEPS	2/9/2016	LEPS160209M	2.6	< 0.001 U	0.063 T	0.102	< 0.001 U	< 0.002 U	59.6	0.0544	0.013 T	0.012 T	7.09	< 0.001 U
LS-LEPS	3/8/2016	LEPS160308P							< 0.002 U		0.0512	0.01 T		< 0.001 U
LS-LEPS	3/9/2016	LEPS160308M	2.56	< 0.001 U	0.074 T	0.0921	< 0.001 U	< 0.002 U	78.5	0.0509	0.014 T	0.01 T	8.62	< 0.001 U
LS-MH46N	1/13/2016	L46N160113M	< 0.02 U	< 0.001 U	0.089 T	0.367	< 0.001 U	< 0.002 U	67.5	0.0972	0.0303	< 0.002 U	2.04	< 0.001 U
LS-MH46N	3/9/2016	L46N160309M	< 0.02 U	< 0.001 U	0.09 T	0.301	< 0.001 U	< 0.002 U	69.9	0.0814	0.0281	< 0.002 U	1.98	< 0.001 U
LS-PS2A	1/13/2016	LP2A160113M	< 0.02 U	< 0.001 U	< 0.001 U	0.0272	< 0.001 U	< 0.002 U	25.9	< 0.005 U	< 0.003 U	0.014 T	3.66	< 0.001 U
LS-MH46N	2/9/2016	L46N160210M	< 0.02 U	< 0.001 U	0.064 T	0.344	< 0.001 U	< 0.002 U	70.7	0.0891	0.0312	< 0.002 U	2.06	< 0.001 U
LS-PS2A	2/9/2016	LP2A160210M	< 0.02 U	< 0.001 U	< 0.001 U	0.0117	< 0.001 U	< 0.002 U	14.8	< 0.005 U	< 0.003 U	0.019 T	0.743	< 0.001 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 0.02 U	< 0.001 U	< 0.001 U	0.012	< 0.001 U	< 0.002 U	15.1	< 0.005 U	< 0.003 U	0.02 T	0.798	< 0.001 U
LS-PS2A	3/9/2016	LP2A160309M	0.16 T	< 0.001 U	< 0.001 U	0.0125	< 0.001 U	< 0.002 U	16.3	< 0.005 U	< 0.003 U	0.0273	1.66	< 0.001 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate Metal Analytical Data

Contact Person --- SAndy Jimenez (206) 477-5224

Site	Date	Sample ID	Magnesium,	Manganese,	Mercury,	Nickel,	Potassium,	Selenium,	Silver,	Sodium,	Thallium,	Tin,	Vanadium,	Zinc,
			total	total	total	total	total	total	total	total	total	total	total	total
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
LS-API	1/14/2016	LAPI160114M	29.1	1.03	< 0.0001 U	0.0607	121	< 0.001 U	< 0.003 U	321	< 0.001 U	< 0.01 U	0.028 T	0.221
LS-API	2/10/2016	LAPI160210M	65.9	1.29	< 0.0001 U	0.153	369	< 0.001 U	< 0.003 U	1020	< 0.001 U	0.035 T	0.041 T	0.363
LS-API	3/9/2016	LAPI160309M	35.5	0.72	< 0.0001 U	0.0721	181	< 0.001 U	< 0.003 U	484	< 0.001 U	< 0.01 U	0.022 T	0.322
LS-LEPS	1/12/2016	LEPS160113P				0.0889								0.414
LS-LEPS	1/12/2016	LEPS160112M	39.6	1.09	< 0.0001 U	0.0898	209	< 0.001 U	< 0.003 U	559	< 0.001 U	< 0.01 U	0.032 T	0.414
LS-LEPS	2/9/2016	LEPS160209M	31.7	0.939	< 0.0001 U	0.0635	151	< 0.001 U	< 0.003 U	398	< 0.001 U	< 0.01 U	0.025 T	0.193
LS-LEPS	3/8/2016	LEPS160308P			0.0588									0.29
LS-LEPS	3/9/2016	LEPS160308M	29.5	1.61	< 0.0001 U	0.0603	130	< 0.001 U	< 0.003 U	338	< 0.001 U	< 0.01 U	0.019 T	0.304
LS-MH46N	1/13/2016	L46N160113M	44.6	0.4	< 0.0001 U	0.13	345	< 0.001 U	< 0.003 U	1140	< 0.001 U	< 0.01 U	0.125	0.021 T
LS-MH46N	3/9/2016	L46N160309M	43.6	0.407	< 0.0001 U	0.117	302	< 0.001 U	< 0.003 U	985	< 0.001 U	< 0.01 U	0.0923	0.019 T
LS-PS2A	1/13/2016	LP2A160113M	7.19	0.131	< 0.0001 U	< 0.01 U	9.26	< 0.001 U	< 0.003 U	16.1	< 0.001 U	< 0.01 U	< 0.002 U	0.01 T
LS-MH46N	2/9/2016	L46N160210M	46.5	0.431	< 0.0001 U	0.128	315	< 0.001 U	< 0.003 U	1050	< 0.001 U	< 0.01 U	0.107	0.0077 T
LS-PS2A	2/9/2016	LP2A160210M	5.12	0.0873	< 0.0001 U	0.012 T	5.13	< 0.001 U	< 0.003 U	12.8	< 0.001 U	< 0.01 U	< 0.002 U	0.011 T
LS-PS2A Duplicate	2/9/2016	LP2A160210D	5.23	0.0896	< 0.0001 U	0.01 T	5.17	< 0.001 U	< 0.003 U	13	< 0.001 U	< 0.01 U	< 0.002 U	0.012 T
LS-PS2A	3/9/2016	LP2A160309M	4.89	0.0891	< 0.0001 U	0.014 T	4.56	< 0.001 U	< 0.003 U	8.11	< 0.001 U	< 0.01 U	< 0.002 U	0.015 T

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate VOA Analytical Data

Contact Person --- Senny Jimenez (206) 477-5224

Site	Date	Sample ID	1,1,1,2-Tetrachloroethane 630-20-6 (ug/L)	1,1,1-Trichloroethane 71-55-6 (ug/L)	1,1,2,2-Tetrachloroethane 79-34-5 (ug/L)	1,1,2-Trichloroethane 79-00-5 (ug/L)	1,1-Dichloroethane 75-34-3 (ug/L)	1,1-Dichloroethene 75-35-4 (ug/L)	1,1-Dichloropropene 563-58-6 (ug/L)	1,2,3-Trichloropropane 96-18-4 (ug/L)	1,2-Dibromo-3-Chloropropan 96-12-8 (ug/L)	1,2-Dibromoethane 106-93-4 (ug/L)	1,2-Dichlorobenzene 95-50-1 (ug/L)	1,2-Dichloroethane 107-06-2 (ug/L)
LS-API	1/14/2016	LAPI160114M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-API	2/10/2016	LAPI160210M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	3.3 T
LS-API	3/9/2016	LAPI160309M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	2 T
LS-LEPS	1/12/2016	LEPS160112M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-LEPS	2/9/2016	LEPS160209M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-LEPS	3/9/2016	LEPS160308M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-MH46N	1/13/2016	L46N160113M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	2.2 T	< 0.2 U
LS-MH46N	2/9/2016	L46N160210M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-MH46N	3/9/2016	L46N160309M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	2.1 T
LS-PS2A	2/9/2016	LP2A160210M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A	1/13/2016	LP2A160113M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A	3/9/2016	LP2A160309M	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	2/8/2016	VTRP160210C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	2/9/2016	VTRP160209-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	3/9/2016	VTRP160309C	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	3/9/2016	VTRP160308-	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 1 U	< 0.2 U	< 0.2 U	< 0.2 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate VOA Analytical Data

Contact Person --- Senny Jimenez (206) 477-5224

Site	Date	Sample ID	1,2-Dichloro-propane (ug/L)	1,3 Dichloro-benzene (ug/L)	1,3-Dichloro-propane (ug/L)	1,4-Dichloro-benzene (ug/L)	2,2-Dichloro-propane (ug/L)	2-Butanone (ug/L)	2-Hexanone (ug/L)	2-Methyl-1-propanol (ug/L)	3-Chloro-propene (ug/L)	4-Methyl-2-Pentanone (ug/L)	Acetone (ug/L)	Acetonitrile (ug/L)
			78-87-5	541-73-1	142-28-9	106-46-7	594-20-7	78-93-3	591-78-6	78-83-1	107-05-1	108-10-1	67-64-1	75-05-8
LS-API	1/14/2016	LAPI160114M	< 0.2 U	749	< 4 U	< 100 U	< 10 U	< 4 U	625	< 100 U				
LS-API	2/10/2016	LAPI160210M	< 0.2 U	< 0.2 U	< 0.2 U	2.1 T	< 0.2 U	2440 D	< 4 U	< 100 U	< 10 U	30 T	2840 D	< 100 U
LS-API	3/9/2016	LAPI160309M	< 0.2 U	< 0.2 U	< 0.2 U	2 T	< 0.2 U	1980 D	< 4 U	< 100 U	< 10 U	23 T	2310 D	< 100 U
LS-LEPS	1/12/2016	LEPS160112M	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	64 T	< 100 U				
LS-LEPS	2/9/2016	LEPS160209M	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
LS-LEPS	3/9/2016	LEPS160308M	< 0.2 U	< 0.2 U	< 0.2 U	49 T	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U
LS-MH46N	1/13/2016	L46N160113M	< 0.2 U	< 0.2 U	< 0.2 U	9.33	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U
LS-MH46N	2/9/2016	L46N160210M	< 0.2 U	< 0.2 U	< 0.2 U	7.21	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U
LS-MH46N	3/9/2016	L46N160309M	< 0.2 U	< 0.2 U	< 0.2 U	7.93	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U
LS-PS2A	2/9/2016	LP2A160210M	< 0.2 U	25 T	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
LS-PS2A	1/13/2016	LP2A160113M	< 0.2 U	< 0.2 U	< 0.2 U	4 T	< 0.2 U	889	< 4 U	< 100 U	< 10 U	< 4 U	886	< 100 U
LS-PS2A	3/9/2016	LP2A160309M	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
VOA TRIP BLANK	2/8/2016	VTRP160210C	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
VOA TRIP BLANK	2/9/2016	VTRP160209-	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
VOA TRIP BLANK	3/9/2016	VTRP160309C	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				
VOA TRIP BLANK	3/9/2016	VTRP160308-	< 0.2 U	< 4 U	< 4 U	< 100 U	< 10 U	< 4 U	< 4 U	< 100 U				

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate VOA Analytical Data

Contact Person --- Senny Jimenez (206) 477-5224

Site	Date	Sample ID	Acrolein ($\mu\text{g/L}$)	Acrylonitrile ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Bromochloro-methane ($\mu\text{g/L}$)	Bromodichloro-methane ($\mu\text{g/L}$)	Bromoform ($\mu\text{g/L}$)	Bromo-methane ($\mu\text{g/L}$)	Carbon Disulfide ($\mu\text{g/L}$)	Carbon Tetrachloride ($\mu\text{g/L}$)	Chlorobenzene ($\mu\text{g/L}$)	Chloro-dibromo-methane ($\mu\text{g/L}$)
			107-02-8	107-13-1	71-43-2	74-97-5	75-27-4	75-25-2	74-83-9	75-15-0	56-23-5	108-90-7	124-48-1
LS-API	1/14/2016	LAPI160114M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-API	2/10/2016	LAPI160210M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-API	3/9/2016	LAPI160309M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-LEPS	1/12/2016	LEPS160112M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-LEPS	2/9/2016	LEPS160209M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-LEPS	3/9/2016	LEPS160308M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-MH46N	1/13/2016	L46N160113M	< 10 U	< 0.07 U	3.3 T	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-MH46N	2/9/2016	L46N160210M	< 10 U	< 0.07 U	2.3 T	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-MH46N	3/9/2016	L46N160309M	< 10 U	< 0.07 U	3.1 T	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A	2/9/2016	LP2A160210M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A	1/13/2016	LP2A160113M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A	3/9/2016	LP2A160309M	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	2/8/2016	VTRP160210C	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	2/9/2016	VTRP160209-	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	3/9/2016	VTRP160309C	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	3/9/2016	VTRP160308-	< 10 U	< 0.07 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate VOA Analytical Data

Contact Person --- Sandy Jimenez (206) 477-5224

Site	Date	Sample ID	Chloroethane ($\mu\text{g/L}$)	Chloroform ($\mu\text{g/L}$)	Chloro-methane ($\mu\text{g/L}$)	Chloroprene ($\mu\text{g/L}$)	cis-1,2-Dichloro-ethene ($\mu\text{g/L}$)	cis-1,3-Dichloro-propene ($\mu\text{g/L}$)	Dibromo-methane ($\mu\text{g/L}$)	Dichloro-difluoro-methane ($\mu\text{g/L}$)	Ethylbenzene ($\mu\text{g/L}$)	m & p Xylenes ($\mu\text{g/L}$)	Methyl Iodide ($\mu\text{g/L}$)
			75-00-3	67-66-3	74-87-3	126-99-8	156-59-2	10061-01-5	74-95-3	75-71-8	100-41-4	mpx	74-88-4
LS-API	1/14/2016	LAPI160114M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	3.3 T	< 0.2 U	
LS-API	2/10/2016	LAPI160210M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	2.4 T	< 0.2 U	< 0.2 U	< 0.2 U	4.2	10.7	< 0.2 U
LS-API	3/9/2016	LAPI160309M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	3.5 T	8.51	< 0.2 U
LS-LEPS	1/12/2016	LEPS160112M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-LEPS	2/9/2016	LEPS160209M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-LEPS	3/9/2016	LEPS160308M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-MH46N	1/13/2016	L46N160113M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	2.1 T	< 0.2 U	< 0.2 U	< 0.2 U	42.4	55.4	< 0.2 U
LS-MH46N	2/9/2016	L46N160210M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	32.8	43.6	< 0.2 U
LS-MH46N	3/9/2016	L46N160309M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	35.2	45.2	< 0.2 U
LS-PS2A	2/9/2016	LP2A160210M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
LS-PS2A	1/13/2016	LP2A160113M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	9.3	16.8	< 0.2 U
LS-PS2A	3/9/2016	LP2A160309M	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	2/8/2016	VTRP160210C	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	2/9/2016	VTRP160209-	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	3/9/2016	VTRP160309C	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
VOA TRIP BLANK	3/9/2016	VTRP160308-	< 0.2 U	< 0.2 U	< 0.2 U	< 20 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate VOA Analytical Data

Contact Person --- Sandy Jimenez (206) 477-5224

Site	Date	Sample ID	Methyl Methacrylate	Methylacrylo- nitrile	Methylene Chloride	o-Xylene	Propriionitrile	Styrene	Tetrachloro- ethene	Toluene	trans-1,2- Dichloro- ethene	trans-1,3- Dichloro- propene	trans-1,4- Dichloro-2- butene	Trichloro- ethene
			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
			80-62-6	126-98-7	75-09-2	95-47-6	107-12-0	100-42-5	127-18-4	108-88-3	156-60-5	10061-02-6	110-57-6	79-01-6
LS-API	1/14/2016	LAPI160114M	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	7.47	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-API	2/10/2016	LAPI160210M	< 2 U	< 5 U	< 0.2 U	5.14	< 60 U	< 0.2 U	< 0.2 U	19.7	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-API	3/9/2016	LAPI160309M	< 2 U	< 5 U	< 0.2 U	4 T	< 60 U	< 0.2 U	< 0.2 U	13.8	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-LEPS	1/12/2016	LEPS160112M	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-LEPS	2/9/2016	LEPS160209M	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-LEPS	3/9/2016	LEPS160308M	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-MH46N	1/13/2016	L46N160113M	< 2 U	< 5 U	< 0.2 U	3.6 T	< 60 U	< 0.2 U	< 0.2 U	3.6 T	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-MH46N	2/9/2016	L46N160210M	< 2 U	< 5 U	< 0.2 U	2.2 T	< 60 U	< 0.2 U	< 0.2 U	2.8 T	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-MH46N	3/9/2016	L46N160309M	< 2 U	< 5 U	< 0.2 U	2.3 T	< 60 U	< 0.2 U	< 0.2 U	3.2 T	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-PS2A	2/9/2016	LP2A160210M	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-PS2A	1/13/2016	LP2A160113M	< 2 U	< 5 U	< 0.2 U	6.98	< 60 U	< 0.2 U	< 0.2 U	18.5	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
LS-PS2A	3/9/2016	LP2A160309M	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
VOA TRIP BLANK	2/8/2016	VTRP160210C	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
VOA TRIP BLANK	2/9/2016	VTRP160209-	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
VOA TRIP BLANK	3/9/2016	VTRP160309C	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U
VOA TRIP BLANK	3/9/2016	VTRP160308-	< 2 U	< 5 U	< 0.2 U	< 0.2 U	< 60 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 100 U	< 0.2 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate VOA Analytical Data

Contact Person --- SAndy Jimenez (206) 477-5224

Site	Date	Sample ID	Trichloro-	Vinyl	Vinyl
			fluoro-	Acetate	Chloride
			methane		
			75-69-4 (ug/L)	108-05-4 (ug/L)	75-01-4 (ug/L)
LS-API	1/14/2016	LAPI160114M	< 0.2 U	< 0.2 U	0.11 T
LS-API	2/10/2016	LAPI160210M	< 0.2 U	< 0.2 U	0.365
LS-API	3/9/2016	LAPI160309M	< 0.2 U	< 0.2 U	8.54 D
LS-LEPS	1/12/2016	LEPS160112M	< 0.2 U	< 0.2 U	< 0.02 U
LS-LEPS	2/9/2016	LEPS160209M	< 0.2 U	< 0.2 U	< 0.02 U
LS-LEPS	3/9/2016	LEPS160308M	< 0.2 U	< 0.2 U	< 0.02 U
LS-MH46N	1/13/2016	L46N160113M	< 0.2 U	< 0.2 U	6.7
LS-MH46N	2/9/2016	L46N160210M	< 0.2 U	< 0.2 U	< 0.02 U
LS-MH46N	3/9/2016	L46N160309M	< 0.2 U	< 0.2 U	< 0.02 U
LS-PS2A	2/9/2016	LP2A160210M	< 0.2 U	< 0.2 U	< 0.02 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 0.2 U	< 0.2 U	< 0.02 U
LS-PS2A	1/13/2016	LP2A160113M	< 0.2 U	< 0.2 U	0.244
LS-PS2A	3/9/2016	LP2A160309M	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/12/2016	VTRP160112-	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	1/12/2016	VTRP160113C	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	2/8/2016	VTRP160210C	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	2/9/2016	VTRP160209-	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	3/9/2016	VTRP160309C	< 0.2 U	< 0.2 U	< 0.02 U
VOA TRIP BLANK	3/9/2016	VTRP160308-	< 0.2 U	< 0.2 U	< 0.02 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate Pesticide/Herbicide Analytical Data

Contact Person --- Senny Jimenez (206) 477-5224

Site	Date	Sample ID	2,4,5-T	2,4,5-TP	2,4-D	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	Alpha BHC	Alpha Chlordane	Aroclor 1016	Aroclor 1221	Aroclor 1232
			93-76-5 (ug/L)	93-72-1 (ug/L)	94-75-7 (ug/L)	72-54-8 (ug/L)	72-55-9 (ug/L)	50-29-3 (ug/L)	309-00-2 (ug/L)	319-84-6 (ug/L)	57-74-9 (ug/L)	12674-11-2 (ug/L)	11104-28-2 (ug/L)	11141-16-5 (ug/L)
LS-API	1/14/2016	LAPI160114M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-API	2/10/2016	LAPI160210M	< 2 U	< 1 JU	< 5 JU	< 0.1 U	< 0.1 GU	< 0.1 GU	< 0.025 GU	< 0.025 GU	< 0.025 GU	< 0.01 U	< 0.01 U	< 0.01 U
LS-API	3/9/2016	LAPI160309M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-LEPS	1/12/2016	LEPS160112M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-LEPS	2/9/2016	LEPS160209M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 GU	< 0.025 GU	< 0.025 GU	< 0.025 GU	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-LEPS	3/9/2016	LEPS160308M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-MH46N	1/13/2016	L46N160113M	< 2 U	< 1 U	6.04	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-MH46N	2/9/2016	L46N160210M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 GU	< 0.025 GU	< 0.025 GU	< 0.025 GU	< 0.01 U	0.095 JT	< 0.01 U	< 0.01 U
LS-MH46N	3/9/2016	L46N160309M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-PS2A	1/13/2016	LP2A160113M	< 2 GU	< 1 GU	< 5 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-PS2A	2/9/2016	LP2A160210M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
LS-PS2A	3/9/2016	LP2A160309M	< 2 U	< 1 U	< 5 U	< 0.1 U	< 0.1 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U

Environmental Monitoring Data

Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate Pesticide/Herbicide Analytical Data

Contact Person --- Senny Jimenez (206) 477-5224

Site	Date	Sample ID	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Beta BHC	Delta BHC	Dieldrin	Dinoseb	Endo- sulfan I	Endo- sulfan II	Endo- sulfan Sulfate	Endrin
			53469-21-9 (ug/L)	12672-29-6 (ug/L)	11097-69-1 (ug/L)	11096-82-5 (ug/L)	319-85-7 (ug/L)	319-86-8 (ug/L)	60-57-1 (ug/L)	88-85-7 (ug/L)	959-98-8 (ug/L)	33213-65-9 (ug/L)	1031-07-8 (ug/L)	72-20-8 (ug/L)
LS-API	1/14/2016	LAPI160114M	0.096 T	< 0.01 U	0.044 JT	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-API	2/10/2016	LAPI160210M	0.16 T	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-API	3/9/2016	LAPI160309M	0.088 T	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-LEPS	1/12/2016	LEPS160112M	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-LEPS	2/9/2016	LEPS160209M	0.067 T	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-LEPS	3/9/2016	LEPS160308M	0.047 T	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-MH46N	1/13/2016	L46N160113M	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-MH46N	2/9/2016	L46N160210M	0.14 JT	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-MH46N	3/9/2016	L46N160309M	0.155	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-PS2A	1/13/2016	LP2A160113M	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-PS2A	2/9/2016	LP2A160210M	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U
LS-PS2A	3/9/2016	LP2A160309M	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.025 U	< 0.1 U	< 0.1 U	< 1 U	< 0.1 U	< 0.1 U	< 0.5 U	< 0.1 U

Environmental Monitoring Data

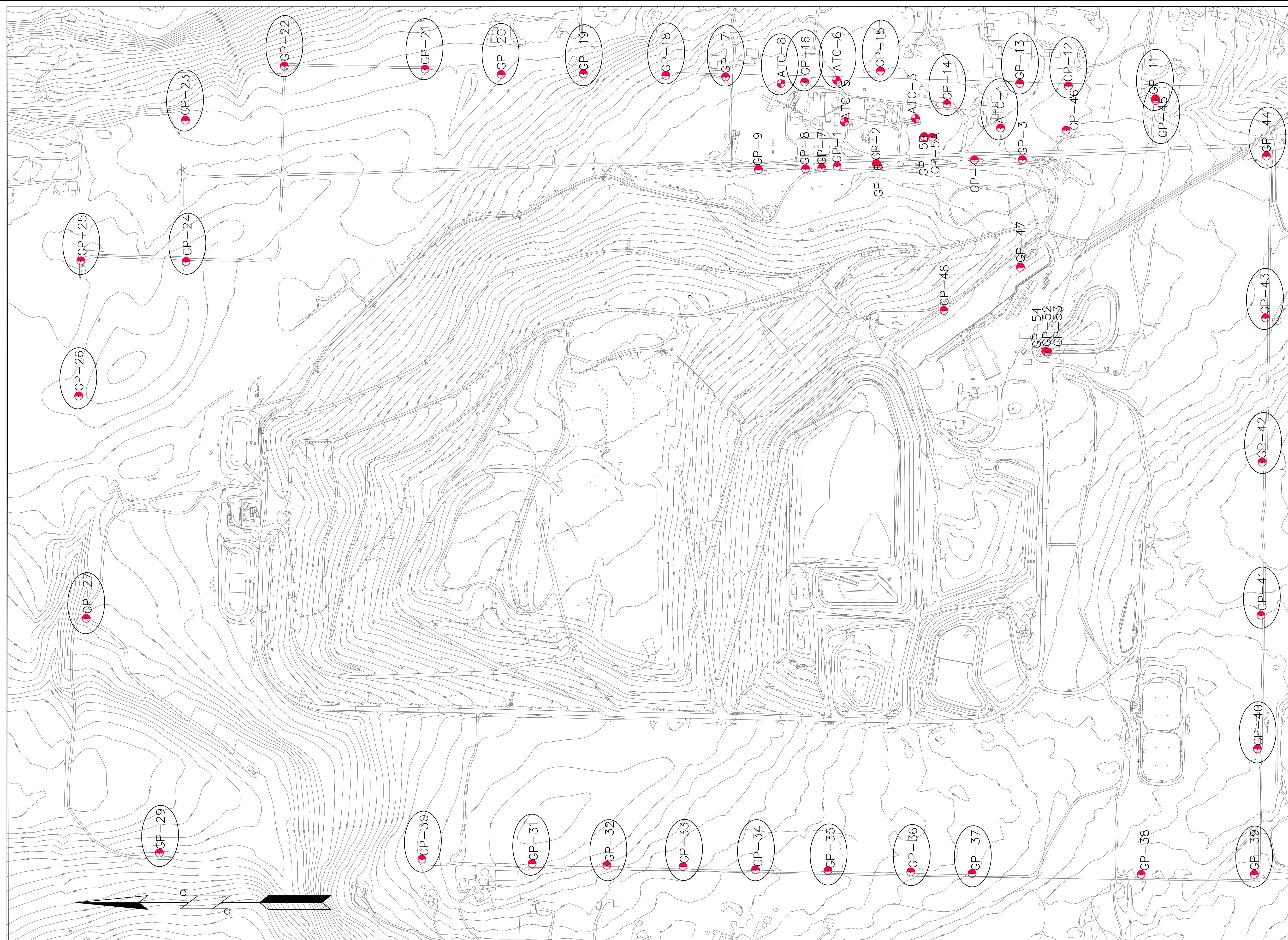
Data Collected from January 1, 2016 to March 31, 2016

Cedar Hills Landfill --- Leachate Pesticide/Herbicide Analytical Data

Contact Person --- SAndy Jimenez (206) 477-5224

Site	Date	Sample ID	Endrin	Heptachlor	Heptachlor	Isodrin	Lindane	Methoxy-	Toxaphene
			Aldehyde (ug/L)	Epoxide (ug/L)	7421-93-4 (ug/L)	76-44-8 (ug/L)	1024-57-3 (ug/L)	465-73-6 (ug/L)	58-89-9 (ug/L)
LS-API	1/14/2016	LAPI160114M	< 0.2 U	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-API	2/10/2016	LAPI160210M	< 0.2 GU	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-API	3/9/2016	LAPI160309M	< 0.2 GU	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-LEPS	1/12/2016	LEPS160112M	< 0.2 U	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-LEPS	2/9/2016	LEPS160209M	< 0.2 GU	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-LEPS	3/9/2016	LEPS160308M	< 0.2 GU	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-MH46N	1/13/2016	L46N160113M	< 0.2 U	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-MH46N	2/9/2016	L46N160210M	< 0.2 GU	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-MH46N	3/9/2016	L46N160309M	< 0.2 U	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-PS2A	1/13/2016	LP2A160113M	< 0.2 U	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-PS2A	2/9/2016	LP2A160210M	< 0.2 U	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-PS2A Duplicate	2/9/2016	LP2A160210D	< 0.2 U	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U
LS-PS2A	3/9/2016	LP2A160309M	< 0.2 U	< 0.025 U	< 0.025 U	< 10 U	< 0.025 U	< 2 U	< 2.5 U

Landfill Gas Monitoring Data



Northing	Easting	Elev	Description	Inst. Date
170,000.33	1,701,942.93	640.02	GP-1 CASE EL	1985/86
169,740.00	1,701,960.00	622.00	GP-2 CASE EL	1985/86
168,758.11	1,701,985.28	594.21	GP-3 CASE EL	1985/86
169,058.18	1,701,972.94	606.19	GP-4 CASE EL	1985/86
169,370.19	1,702,134.95	616.23	GP-5A GRND EL	1988
169,422.02	1,702,138.87	619.63	GP-5B CASE EL	1988
169,731.73	1,701,946.48	635.59	GP-6 CASE EL	1988
170,101.22	1,701,930.58	640.66	GP-7 CASE EL	1988
170,208.37	1,701,925.10	642.67	GP-8 CASE EL	1988
170,519.95	1,701,919.34	645.27	GP-9 CASE EL	1988
			GP-10 NOT INSTALLED	1988
167,890.09	1,702,389.27	567.15	GP-11 CASE EL	1988
168,466.64	1,702,473.27	568.08	GP-12 CASE EL	1988
168,790.03	1,702,490.84	588.15	GP-13 CASE EL	1988
169,271.56	1,702,354.75	613.32	GP-14 CASE EL	1988
169,724.93	1,702,446.19	618.75	GP-15 CASE EL	1988
170,214.28	1,702,500.56	630.19	GP-16 CASE EL	1988
170,738.83	1,702,535.09	625.18	GP-17 CASE EL	1988
171,132.85	1,702,543.29	600.83	GP-18 CASE EL	1988
171,634.52	1,702,554.91	544.15	GP-19 CASE EL	1988
172,224.83	1,702,550.70	496.61	GP-20 CASE EL	1988
172,729.15	1,702,584.65	489.79	GP-21 CASE EL	1988
173,662.40	1,702,607.81	374.84	GP-22 CASE EL	1988
174,317.16	1,702,248.74	501.77	GP-23 CASE EL	1988
174,313.44	1,701,311.74	544.72	GP-24 CASE EL	1988
175,011.63	1,701,324.89	533.88	GP-25 CASE EL	1988
175,043.82	1,700,364.55	541.69	GP-26 CASE EL	1988
174,983.78	1,698,935.68	484.75	GP-27 CASE EL	1988
			GP-28 NOT INSTALLED	1988
174,455.39	1,697,385.67	431.05	GP-29 CASE EL	1988
172,787.40	1,697,339.61	644.62	GP-30 CASE EL	1988
172,013.96	1,697,321.72	673.37	GP-31 CASE EL	1988
171,524.28	1,697,308.08	647.57	GP-32 CASE EL	1988
171,017.18	1,697,293.36	625.03	GP-33 CASE EL	1988
170,537.12	1,697,287.04	604.93	GP-34 CASE EL	1988
170,083.32	1,697,286.32	596.28	GP-35 CASE EL	1988
169,510.89	1,697,265.94	574.92	GP-36 CASE EL	1988
169,049.03	1,697,252.08	557.38	GP-37 CASE EL	1988
167,909.72	1,697,243.54	523.57	GP-38 CASE EL	1988
167,239.45	1,697,232.41	541.03	GP-39 CASE EL	1988
167,205.68	1,698,100.32	502.77	GP-40 CASE EL	1988
167,191.96	1,698,965.50	482.97	GP-41 CASE EL	1988
167,183.37	1,699,979.90	457.95	GP-42 CASE EL	1988
167,160.00	1,700,961.11	536.86	GP-43 CASE EL	1988
167,135.28	1,702,007.20	529.11	GP-44 CASE EL	1994
167,888.74	1,702,378.77	567.47	GP-45 CASE EL	1994
168,482.15	1,702,182.52	589.79	GP-46 CASE EL	1994
168,783.75	1,701,272.71	600.07	GP-47 CASE EL	1994
169,289.65	1,700,985.98	616.56	GP-48 CASE EL	1994
168,612.91	1,700,710.62	561.13	GP-52 GRND EL	2001
168,601.99	1,700,711.34	561.02	GP-53 GRND EL	2001
168,617.89	1,700,717.53	561.20	GP-54 GRND EL	2001
168,916.92	1,702,195.87	591.29	GP-ATC-1 GRND EL	1985/86
169,479.79	1,702,259.97	616.25	GP-ATC-3 GRND EL	1985/86
			GP-ATC-4 ABANDONED/REMOVED	
169,950.42	1,702,235.30	625.65	GP-ATC-5 GRND EL	1985/86
170,002.70	1,702,512.99	620.16	GP-ATC-6 GRND EL	1985/86
170,371.26	1,702,490.56	629.94	GP-ATC-8 GRND EL	1985/86



KING COUNTY DEPARTMENT OF
NATURAL RESOURCES AND PARKS
King County
SOLID WASTE DIVISION

CEDAR HILLS REGIONAL LANDFILL
LANDFILL GAS MIGRATION MONITORING PLAN

APPROVED	VICTOR O. OKEREKE	DATE	03-19-07
RECOMMENDED	TOM THENO	DATE	09-28-07
DESIGNED	N/A	DRAWN	PHAM / McEWEN
PROJECT NO.	SURVEY NO.	SHEET 1 OF 1	

S:\CAD\Cedarhill\gss-probs\loc\all-lfg-to2006_GasProbeOnly.dwg

LEGEND

INTERIOR LGF MONITORING PROBES

LFG MIGRATION MONITORING PROBES

DATE	REVISION	BY

CEDAR HILLS REGIONAL LANDFILL

Landfill Gas Compliance Probes

January 2016 Monitoring

Probe ID	Date/Time	CH4 %vol	CO2 %vol	O2 %vol	Lower Explosive Limit %LEL	Static Pressure in INWC	Comments
ATC-01D	1/20/2016 9:02	0.0	0.0	0.0	0	-4.24	
ATC-01S	1/20/2016 9:00	0.0	0.1	21.0	0	-9.09	
ATC-06D	1/20/2016 10:23	0.0	0.9	5.2	0	4.42	
ATC-06S	1/20/2016 10:21	0.0	0.0	0.0	0	-7.34	
ATC-08D	1/20/2016 10:37	0.0	0.4	14.8	0	-4.24	
ATC-08S	1/20/2016 10:35	0.0	0.1	20.2	0	4.13	
GP-11A	1/20/2016 8:41	0.0	0.7	19.0	0	-0.07	
GP-11B	1/20/2016 8:43	0.0	0.1	21.0	0	-1.4	
GP-11C	1/20/2016 8:45	0.0	0.1	21.0	0	-1.59	
GP-11D	1/20/2016 8:46	0.0	0.1	21.0	0	-0.08	
GP-12A	1/20/2016 9:09	0.0	0.1	21.0	0	-1.01	
GP-12B	1/20/2016 9:11	0.0	0.1	21.0	0	-1.33	
GP-12C	1/20/2016 9:13	0.0	0.1	19.2	0	1.1	
GP-12D	1/20/2016 9:15	0.0	0.4	16.4	0	-3.48	
GP-13A	1/20/2016 9:20	0.0	0.1	21.0	0	-0.13	
GP-13B	1/20/2016 9:22	0.0	0.1	21.0	0	-0.11	
GP-13C	1/20/2016 9:24	0.0	0.1	21.0	0	-0.14	
GP-13D	1/20/2016 9:27	0.0	0.1	20.9	0	-3.89	
GP-14A	1/20/2016 9:34	0.0	0.1	20.9	0	-1.4	
GP-14B	1/20/2016 9:37	0.0	0.1	20.9	0	-1.56	
GP-15A	1/20/2016 10:08	0.0	0.0	0.0	0	-5.55	No Reading Water
GP-15C	1/20/2016 10:10	0.0	1.3	13.3	0	-0.06	
GP-15D	1/20/2016 10:12	0.0	0.2	19.9	0	-12.18	
GP-16A	1/20/2016 10:28	0.0	0.0	0.0	0	-1.13	No Reading Water
GP-16B	1/20/2016 10:30	0.0	0.2	19.2	0	-2.21	
GP-16C	1/20/2016 10:32	0.0	0.1	20.2	0	-4.65	
GP-17A	1/20/2016 14:03	0.0	0.0	0.0	0	0.13	No Reading Water
GP-17B	1/20/2016 14:04	0.0	0.8	17.0	0	0.14	
GP-17C	1/20/2016 14:06	0.0	0.1	21.0	0	-3.61	
GP-18A	1/20/2016 14:09	0.0	0.0	0.0	0	-0.76	No Reading Water
GP-18B	1/20/2016 14:11	0.0	0.4	11.1	0	0.12	
GP-18C	1/20/2016 14:12	0.0	0.1	20.7	0	-3.66	
GP-19A	1/20/2016 14:16	0.0	0.0	21.0	0	0.03	
GP-19B	1/20/2016 14:18	0.0	0.7	15.9	0	-0.03	
GP-19C	1/20/2016 14:20	0.0	0.1	21.0	0	0.02	
GP-20A	1/20/2016 14:24	0.0	0.1	21.0	0	0.08	
GP-20B	1/20/2016 14:25	0.0	0.2	15.4	0	0.13	
GP-20C	1/20/2016 14:27	0.0	0.2	5.3	0	0.11	
GP-21A	1/20/2016 14:31	0.0	0.1	21.0	0	0.01	
GP-21B	1/20/2016 14:32	0.0	0.1	11.3	0	-0.86	
GP-21C	1/20/2016 14:34	0.0	0.0	0.0	0	-1.15	No Reading Water
GP-22A	1/20/2016 14:38	0.0	0.3	21.0	0	3.85	
GP-22C	1/20/2016 14:40	0.0	1.4	4.4	0	-2.55	
GP-23A	1/20/2016 14:46	0.0	0.1	21.0	0	0.11	
GP-23B	1/20/2016 14:49	0.0	0.1	21.0	0	0.98	
GP-23C	1/20/2016 14:51	0.0	0.0	21.0	0	0.14	
GP-24A	1/20/2016 14:55	0.0	4.1	9.2	0	0.1	
GP-24B	1/20/2016 14:57	0.0	2.4	12.2	0	0.15	
GP-25	1/20/2016 15:02	0.0	2.3	12.8	0	0.15	
GP-26	1/20/2016 15:11	0.0	0.8	18.6	0	0.08	
GP-27	1/20/2016 15:18	0.0	5.5	11.0	0	0.18	
GP-29A	1/20/2016 15:24	0.0	0.5	19.4	0	0.21	
GP-29B	1/20/2016 15:26	0.0	0.6	19.5	0	-0.07	
GP-30A	1/20/2016 15:37	0.0	1.8	16.7	0	0.99	
GP-30B	1/20/2016 15:39	0.0	0.6	19.0	0	-0.33	
GP-31A	1/20/2016 15:42	0.0	0.6	18.9	0	4.08	
GP-31B	1/20/2016 15:44	0.0	0.3	14.0	0	-0.36	
GP-31C	1/20/2016 15:46	0.0	0.0	0.0	0	1.08	No Reading Water
GP-32A	1/20/2016 15:54	0.0	0.5	18.9	0	0.32	
GP-32B	1/20/2016 15:56	0.0	0.1	19.7	0	0.31	
GP-32C	1/20/2016 15:57	0.0	0.5	19.2	0	0.35	
GP-33A	1/20/2016 16:01	0.0	0.2	19.7	0	0.34	
GP-33B	1/20/2016 16:02	0.0	0.0	20.1	0	0.14	
GP-33C	1/20/2016 16:04	0.0	0.0	20.2	0	-1.19	

CEDAR HILLS REGIONAL LANDFILL

Landfill Gas Compliance Probes

January 2016 Monitoring

Probe ID	Date/Time	CH4 %vol	CO2 %vol	O2 %vol	Lower Explosive Limit %LEL	Static Pressure in INWC	Comments
GP-34A	1/20/2016 16:06	0.0	0.0	0.0	0	44.35	No Reading Water
GP-34B	1/20/2016 16:09	0.0	0.0	20.6	0	0.28	
GP-34C	1/20/2016 16:11	0.0	0.0	20.5	0	-2.56	
GP-35A	1/20/2016 16:14	0.0	0.1	20.6	0	0.32	
GP-35B	1/20/2016 16:16	0.0	0.0	21.0	0	0.29	
GP-35C	1/20/2016 16:18	0.0	0.0	20.9	0	0.23	
GP-36A	1/20/2016 16:22	0.0	0.3	5.4	0	-2.85	
GP-36B	1/20/2016 16:24	0.0	0.0	0.0	0	0.29	No Reading Water
GP-36C	1/20/2016 16:26	0.0	0.2	13.5	0	-1.15	
GP-37A	1/20/2016 16:29	0.0	0.0	0.0	0	-10.64	No Reading Water
GP-37B	1/20/2016 16:30	0.0	0.1	20.2	0	0.3	
GP-37C	1/20/2016 16:32	0.0	0.5	4.6	0	-2.21	
GP-39	1/20/2016 16:38	0.0	0.9	18.0	0	1.04	
GP-40	1/20/2016 16:42	0.0	0.0	19.5	0	0.29	
GP-41A	1/20/2016 16:46	0.0	0.0	20.6	0	0.29	
GP-41B	1/20/2016 16:48	0.0	0.0	20.5	0	0.34	
GP-41C	1/20/2016 16:49	0.0	0.0	0.0	0	0.29	No Reading Water
GP-42A	1/20/2016 16:53	0.0	0.0	0.0	0	0.28	No Reading Water
GP-42B	1/20/2016 16:57	0.0	0.1	20.3	0	-0.64	
GP-43A	1/20/2016 17:00	0.0	0.0	0.0	0	0.34	No Reading Water
GP-43B	1/20/2016 17:02	0.0	0.0	20.8	0	0.24	
GP-43C	1/20/2016 17:03	0.0	0.0	20.9	0	0.2	
GP-44A	1/20/2016 17:08	0.0	0.1	21.0	0	3.67	
GP-44B	1/20/2016 17:09	0.0	1.3	7.9	0	-2.54	
GP-44C	1/20/2016 17:11	0.0	0.1	21.0	0	0.18	
GP-45D	1/20/2016 8:53	0.0	0.1	21.0	0	-1.97	
GP-45I	1/20/2016 8:51	0.0	0.1	21.0	0	-0.1	
GP-45S	1/20/2016 8:50	0.0	0.1	21.0	0	-0.05	

CEDAR HILLS REGIONAL LANDFILL

Landfill Gas Compliance Probes

February 2016 Monitoring

Probe ID	Date/Time	CH4 %vol	CO2 %vol	O2 %vol	Lower Explosive Limit %LEL	Static Pressure in INWC	Comments
ATC-01D	2/17/2016 10:01	0.0	0.1	20.6	0	0.05	
ATC-01S	2/17/2016 10:00	0.0	0.1	20.6	0	0.06	
ATC-06D	2/17/2016 11:07	0.0	0.9	6.3	0	15.21	
ATC-06S	2/17/2016 11:05	0.0	0.1	20.8	0	1.03	
ATC-08D	2/17/2016 10:54	0.0	0.2	18.1	0	3.72	
ATC-08S	2/17/2016 10:52	0.0	0.1	20.8	0	-2.9	
GP-11A	2/17/2016 9:41	0.0	0.1	20.4	0	0.02	
GP-11B	2/17/2016 9:43	0.0	0.9	10.0	0	2.44	
GP-11C	2/17/2016 9:44	0.0	0.2	7.9	0	2.66	
GP-11D	2/17/2016 9:46	0.0	0.1	20.4	0	0.1	
GP-12A	2/17/2016 10:07	0.0	0.1	20.6	0	0.02	
GP-12B	2/17/2016 10:08	0.0	0.1	20.7	0	0.21	
GP-12C	2/17/2016 10:10	0.0	0.1	20.2	0	-3.07	
GP-12D	2/17/2016 10:11	0.0	0.8	6.9	0	5.42	
GP-13A	2/17/2016 10:15	0.0	0.1	20.5	0	0.06	
GP-13B	2/17/2016 10:17	0.0	0.1	20.7	0	0.07	
GP-13C	2/17/2016 10:19	0.0	0.2	14.9	0	0.04	
GP-13D	2/17/2016 10:21	0.0	0.1	19.2	0	6.9	
GP-14A	2/17/2016 10:25	0.0	0.2	18.1	0	2.71	
GP-14B	2/17/2016 10:27	0.0	0.3	18.9	0	2.53	
GP-15A	2/17/2016 10:44	0.0	0.1	20.9	0	0.06	
GP-15C	2/17/2016 10:40	0.0	0.5	18.6	0	0.06	
GP-15D	2/17/2016 10:42	0.0	0.1	20.8	0	-0.74	
GP-16A	2/17/2016 11:00	0.0	0.1	20.7	0	0.06	
GP-16B	2/17/2016 10:57	0.0	0.3	19.0	0	1.18	
GP-16C	2/17/2016 10:59	0.0	1.2	14.3	0	8.87	
GP-17A	2/17/2016 14:14	0.0	0.1	21.1	0	-0.21	
GP-17B	2/17/2016 14:11	0.0	0.5	19.0	0	-0.09	
GP-17C	2/17/2016 14:12	0.0	0.1	20.8	0	8.12	
GP-18A	2/17/2016 14:18	0.0	0.1	21.0	0	0.09	
GP-18B	2/17/2016 14:19	0.0	0.2	16.1	0	-0.06	
GP-18C	2/17/2016 14:20	0.0	0.3	15.0	0	7.57	
GP-19A	2/17/2016 14:24	0.0	0.1	21.0	0	-0.1	
GP-19B	2/17/2016 14:26	0.0	0.5	17.7	0	-0.09	
GP-19C	2/17/2016 14:27	0.0	0.1	21.0	0	0.53	
GP-20A	2/17/2016 14:31	0.0	0.1	21.0	0	-0.1	
GP-20B	2/17/2016 14:33	0.0	0.2	16.8	0	-0.12	
GP-20C	2/17/2016 14:34	0.0	0.2	12.4	0	-0.06	
GP-21A	2/17/2016 14:41	0.0	0.2	20.9	0	-0.12	
GP-21B	2/17/2016 14:42	0.0	0.1	12.1	0	-0.49	
GP-21C	2/17/2016 14:43	0.0	0.1	21.0	0	-0.1	
GP-22A	2/17/2016 14:47	0.0	0.1	21.0	0	-0.18	
GP-22C	2/17/2016 14:48	0.0	1.5	4.7	0	10.31	
GP-23A	2/17/2016 15:02	0.0	0.1	20.9	0	-0.11	
GP-23B	2/17/2016 15:03	0.0	0.1	21.0	0	-0.06	
GP-23C	2/17/2016 15:05	0.0	0.1	21.0	0	-0.1	
GP-24A	2/17/2016 15:09	0.0	0.1	21.0	0	-0.1	
GP-24B	2/17/2016 15:10	0.0	2.6	12.9	0	-0.11	
GP-25	2/17/2016 15:16	0.0	1.8	15.6	0	-0.11	
GP-26	2/17/2016 15:19	0.0	0.7	19.2	0	-0.09	
GP-27	2/17/2016 15:23	0.0	3.9	12.8	0	-0.11	
GP-29A	2/17/2016 15:29	0.0	0.8	20.0	0	-0.12	
GP-29B	2/17/2016 15:30	0.0	0.6	20.6	0	-0.02	
GP-30A	2/17/2016 7:32	0.0	2.1	17.2	0	-0.01	
GP-30B	2/17/2016 7:33	0.0	1.5	18.3	0	2.51	
GP-31A	2/17/2016 7:37	0.0	0.4	19.7	0	1.1	
GP-31B	2/17/2016 7:39	0.0	0.4	14.8	0	6.18	
GP-31C	2/17/2016 7:41	0.0	0.9	17.5	0	-0.02	
GP-32A	2/17/2016 7:43	0.0	0.6	19.1	0	-0.01	
GP-32B	2/17/2016 7:45	0.0	0.1	20.4	0	-0.01	
GP-32C	2/17/2016 7:47	0.0	0.1	20.4	0	-0.01	
GP-33A	2/17/2016 7:53	0.0	0.1	20.4	0	-0.02	
GP-33B	2/17/2016 7:55	0.0	0.1	20.5	0	-0.02	
GP-33C	2/17/2016 7:57	0.0	1.3	16.8	0	2.46	

CEDAR HILLS REGIONAL LANDFILL

Landfill Gas Compliance Probes

February 2016 Monitoring

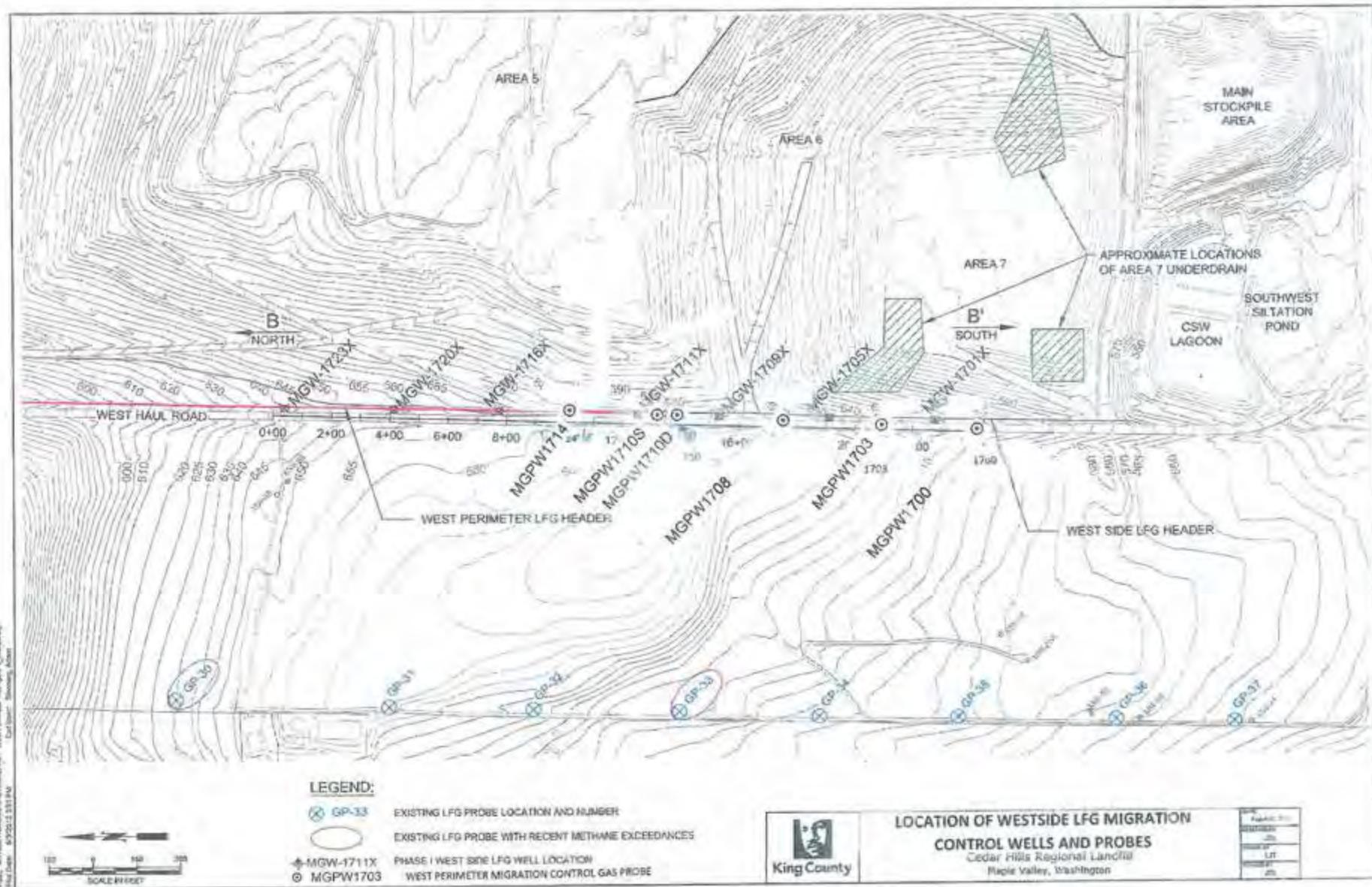
Probe ID	Date/Time	CH4 %vol	CO2 %vol	O2 %vol	Lower	Static Pressure in INWC	Comments
					Explosive Limit %LEL		
GP-34A	2/17/2016 7:59	0.0	0.0	0.0	0	52.87	No Reading Water
GP-34B	2/17/2016 8:01	0.0	0.3	14.5	0	0.05	
GP-34C	2/17/2016 8:03	0.0	0.2	2.5	0	6.93	
GP-35A	2/17/2016 8:09	0.0	0.1	20.4	0	-0.02	
GP-35B	2/17/2016 8:11	0.0	0.1	20.5	0	-0.02	
GP-35C	2/17/2016 8:12	0.0	0.1	20.2	0	-0.1	
GP-36A	2/17/2016 8:16	0.0	0.3	12.0	0	0.65	
GP-36B	2/17/2016 8:17	0.0	0.1	20.8	0	-0.04	
GP-36C	2/17/2016 8:18	0.0	0.2	15.3	0	1.69	
GP-37A	2/17/2016 8:22	0.0	0.1	20.8	0	-0.08	
GP-37B	2/17/2016 8:24	0.0	0.1	20.9	0	-0.03	
GP-37C	2/17/2016 8:25	0.0	0.7	3.1	0	5.55	
GP-39	2/17/2016 8:31	0.0	0.1	20.5	0	0.07	
GP-40	2/17/2016 8:35	0.0	0.1	19.5	0	-0.01	
GP-41A	2/17/2016 8:39	0.0	0.1	20.9	0	-0.01	
GP-41B	2/17/2016 8:40	0.0	0.1	20.9	0	-0.02	
GP-41C	2/17/2016 8:42	0.0	0.1	20.9	0	-0.04	
GP-42A	2/17/2016 8:49	0.0	0.1	20.8	0	0	
GP-42B	2/17/2016 8:50	0.0	0.3	16.3	0	4.41	
GP-43A	2/17/2016 8:54	0.0	0.1	20.6	0	0.01	
GP-43B	2/17/2016 8:56	0.0	0.1	20.6	0	-0.01	
GP-43C	2/17/2016 8:57	0.0	0.2	17.4	0	0.09	
GP-44A	2/17/2016 9:01	0.0	0.1	20.6	0	0.01	
GP-44B	2/17/2016 9:02	0.0	1.3	7.3	0	21.59	
GP-44C	2/17/2016 9:04	0.0	0.1	18.5	0	-0.03	
GP-45D	2/17/2016 9:52	0.0	0.1	18.7	0	3.53	
GP-45I	2/17/2016 9:51	0.0	0.1	14.9	0	0.17	
GP-45S	2/17/2016 9:49	0.0	0.1	20.4	0	0.06	

CEDAR HILLS REGIONAL LANDFILL
Landfill Gas Compliance Probes
March 2016 Monitoring

Probe ID	Date/Time	CH4 %vol	CO2 %vol	O2 %vol	Lower Explosive Limit %LEL	Static Pressure in INWC	Comments
ATC-01D	3/17/2016 12:13	0.0	0.2	20.3	0	0.23	
ATC-01S	3/17/2016 12:12	0.0	0.1	20.4	0	-0.29	
ATC-06D	3/17/2016 13:54	0.0	0.9	4.1	0	1.59	
ATC-06S	3/17/2016 13:52	0.0	0.2	19.7	0	-4.38	
ATC-08D	3/17/2016 14:05	0.0	0.1	19.3	0	-2.73	
ATC-08S	3/17/2016 14:03	0.0	0.9	14.5	0	0.02	
GP-11A	3/17/2016 11:47	0.0	0.1	20.3	0	1.09	
GP-11B	3/17/2016 11:49	0.0	0.1	20.4	0	-0.12	
GP-11C	3/17/2016 11:50	0.0	0.1	20.4	0	-0.08	
GP-11D	3/17/2016 11:52	0.0	0.1	20.4	0	0.05	
GP-12A	3/17/2016 12:26	0.0	0.1	20.4	0	-0.25	
GP-12B	3/17/2016 12:28	0.0	0.1	20.3	0	0.01	
GP-12C	3/17/2016 12:30	0.0	0.2	15.2	0	-15.57	
GP-12D	3/17/2016 12:31	0.0	0.1	20.2	0	-4.58	
GP-13A	3/17/2016 12:18	0.0	0.1	20.4	0	0.02	
GP-13B	3/17/2016 12:20	0.0	0.1	20.3	0	0.03	
GP-13C	3/17/2016 12:21	0.0	0.1	20.5	0	0.04	
GP-13D	3/17/2016 12:23	0.0	0.1	20.5	0	-3.15	
GP-14A	3/17/2016 12:37	0.0	0.1	20.4	0	-1.13	
GP-14B	3/17/2016 12:39	0.0	0.1	20.5	0	-1.14	
GP-15A	3/17/2016 13:41	0.0	0.0	0.0	0	0	No Reading Water
GP-15C	3/17/2016 13:42	0.0	0.8	16.4	0	0.02	
GP-15D	3/17/2016 13:44	0.0	0.1	19.8	0	-0.71	
GP-16A	3/17/2016 13:58	0.0	0.2	19.5	0	-2.49	
GP-16B	3/17/2016 13:59	0.0	0.1	19.9	0	-3.98	
GP-16C	3/17/2016 14:01	0.0	0.1	20.0	0	-3.93	
GP-17A	3/17/2016 14:41	0.0	0.0	0.0	0	0	No Reading Water
GP-17B	3/17/2016 14:42	0.0	0.8	17.1	0	0	
GP-17C	3/17/2016 14:44	0.0	0.1	20.0	0	-3.34	
GP-18A	3/17/2016 14:45	0.0	0.1	19.9	0	-3.11	
GP-18B	3/17/2016 14:47	0.0	0.3	11.4	0	0.06	
GP-18C	3/17/2016 14:49	0.0	0.1	19.9	0	-3.65	
GP-19A	3/17/2016 14:51	0.0	0.1	20.1	0	-0.1	
GP-19B	3/17/2016 14:53	0.0	0.6	15.1	0	-0.04	
GP-19C	3/17/2016 14:55	0.0	0.1	20.1	0	-0.32	
GP-20A	3/17/2016 14:58	0.0	0.1	20.3	0	0.05	
GP-20B	3/17/2016 14:59	0.0	0.2	19.4	0	-0.05	
GP-20C	3/17/2016 15:01	0.0	0.2	5.7	0	0.24	
GP-21A	3/17/2016 15:03	0.0	0.3	19.9	0	-0.05	
GP-21B	3/17/2016 15:05	0.0	0.1	10.4	0	-0.12	
GP-21C	3/17/2016 15:07	0.0	0.7	17.9	0	-0.42	
GP-22A	3/17/2016 15:11	0.0	0.3	20.3	0	-6.65	
GP-22C	3/17/2016 15:12	0.0	1.4	4.0	0	-4	
GP-23A	3/17/2016 15:16	0.0	0.1	20.3	0	0.03	
GP-23B	3/17/2016 15:17	0.0	0.1	20.4	0	-0.89	
GP-23C	3/17/2016 15:19	0.0	0.1	20.4	0	-0.41	
GP-24A	3/17/2016 15:23	0.0	4.8	7.6	0	0.01	
GP-24B	3/17/2016 15:25	0.0	1.1	15.8	0	-0.01	
GP-25	3/17/2016 15:27	0.0	2.5	13.1	0	0.05	
GP-26	3/17/2016 15:30	0.0	0.5	19.6	0	0.03	
GP-27	3/17/2016 15:41	0.0	5.9	11.1	0	0.02	
GP-29A	3/17/2016 15:45	0.0	1.2	18.7	0	0.01	
GP-29B	3/17/2016 15:46	0.0	0.9	20.1	0	0.01	
GP-30A	3/17/2016 15:59	0.0	2.2	12.0	0	0.11	
GP-30B	3/17/2016 16:01	0.0	0.5	19.5	0	0.31	
GP-31A	3/17/2016 16:03	0.0	0.0	0.0	0	0	No Reading Water
GP-31B	3/17/2016 16:04	0.0	0.2	18.5	0	1.6	
GP-31C	3/17/2016 16:06	0.0	1.5	16.4	0	0.01	
GP-32A	3/17/2016 16:08	0.0	0.7	18.3	0	0.04	
GP-32B	3/17/2016 16:09	0.0	0.2	20.2	0	0	
GP-32C	3/17/2016 16:11	0.0	0.3	20.4	0	0.05	
GP-33A	3/17/2016 16:14	0.0	0.1	20.5	0	0.03	
GP-33B	3/17/2016 16:15	0.0	0.1	20.7	0	0.05	
GP-33C	3/17/2016 16:17	0.0	0.1	20.7	0	-0.55	
GP-34A	3/17/2016 16:20	0.0	0.0	0.0	0	0	No Reading Water

CEDAR HILLS REGIONAL LANDFILL
Landfill Gas Compliance Probes
March 2016 Monitoring

Probe ID	Date/Time	CH4 %vol	CO2 %vol	O2 %vol	Lower Explosive Limit %LEL	Static Pressure in INWC	Comments
GP-34B	3/17/2016 16:21	0.0	0.1	20.4	0	0.14	
GP-34C	3/17/2016 16:23	0.0	0.1	20.8	0	-2.34	
GP-35A	3/17/2016 16:25	0.0	0.1	20.8	0	0.04	
GP-35B	3/17/2016 16:27	0.0	0.1	20.7	0	0.03	
GP-35C	3/17/2016 16:28	0.0	0.1	20.2	0	0.02	
GP-36A	3/17/2016 16:32	0.0	0.3	4.9	0	0.35	
GP-36B	3/17/2016 16:33	0.0	0.0	0.0	0	0	No Reading Water
GP-36C	3/17/2016 16:34	0.0	0.2	17.8	0	-1.91	
GP-37A	3/17/2016 16:37	0.0	0.0	0.0	0	0	No Reading Water
GP-37B	3/17/2016 16:38	0.0	0.1	18.3	0	0.33	
GP-37C	3/17/2016 16:40	0.0	0.5	12.7	0	-2.18	
GP-39	3/17/2016 11:07	0.0	0.8	19.6	0	0.66	
GP-40	3/17/2016 11:10	0.0	0.1	18.3	0	-0.04	
GP-41A	3/17/2016 11:13	0.0	0.1	20.5	0	0	
GP-41B	3/17/2016 11:15	0.0	0.1	20.4	0	0	
GP-41C	3/17/2016 11:17	0.0	0.1	20.4	0	0.01	
GP-42A	3/17/2016 11:19	0.0	0.0	0.0	0	0	No Reading Water
GP-42B	3/17/2016 11:21	0.0	0.1	20.2	0	-1.08	
GP-43A	3/17/2016 11:26	0.0	0.3	20.0	0	-0.11	
GP-43B	3/17/2016 11:28	0.0	0.1	20.1	0	0.03	
GP-43C	3/17/2016 11:30	0.0	0.1	20.1	0	-0.04	
GP-44A	3/17/2016 11:34	0.0	0.1	20.1	0	0.03	
GP-44B	3/17/2016 11:36	0.0	1.1	7.8	0	-2	
GP-44C	3/17/2016 11:38	0.0	0.1	20.1	0	0.03	
GP-45D	3/17/2016 11:45	0.0	0.1	20.3	0	-0.68	
GP-45I	3/17/2016 11:44	0.0	0.1	20.2	0	-0.01	
GP-45S	3/17/2016 11:42	0.0	0.1	20.2	0	0.02	



CEDAR HILLS REGIONAL LANDFILL
West Perimeter Landfill Gas Migration Control Probes
First Quarter 2016 Monitoring

Probe ID	Date	Time	Barometric				Static Pressure in INWC
			Pressure in Hg	CH4 %vol	CO2 %vol	O2 %vol	
MGPW 1700	1/28/2016	3:30pm	29.97	0.0	0.0	20.9	0
MGPW 1700	2/9/2016	1:47pm	30.05	0.0	0.1	20.0	0
MGPW 1700	2/23/2016	12:32pm	30.2	0.0	0.1	20.6	-0.01
MGPW 1700	3/7/2016	12:07pm	29.82	0.0	0.0	21.0	-4.2
MGPW 1700	3/24/2016	9:38am	30.1	0.0	0.1	21.0	0.1
MGPW 1708	1/28/2016	3:14pm	29.97	0.0	0.0	20.9	-1.83
MGPW 1708	2/9/2016	1:51pm	30.05	0.0	0.1	20.4	-0.1
MGPW 1708	2/23/2016	12:35pm	30.2	0.0	0.1	20.5	0.04
MGPW 1708	3/7/2016	12:07pm	29.82	0.0	0.0	21.0	-4.2
MGPW 1708	3/24/2016	9:35am	30.1	0.0	0.1	21.0	-2.2
MGPW 1710S	1/28/2016	3:08pm	29.97	0.0	0.0	20.8	-1.54
MGPW 1710S	2/9/2016	1:54pm	30.05	0.0	0.1	20.4	0.10
MGPW 1710S	2/23/2016	12:38pm	30.20	0.0	0.1	20.5	0.14
MGPW 1710S	3/7/2016	12:14pm	29.82	0.0	0.2	21.0	-3.60
MGPW 1710S	3/24/2016	9:30am	30.10	0.0	0.1	21.0	-2
MGPW 1710D	1/28/2016	3:10pm	29.97	0.0	0.0	21.0	-1.71
MGPW 1710D	2/9/2016	1:57pm	30.05	0.0	0.1	20.4	0.1
MGPW 1710D	2/23/2016	12:41pm	30.2	0.0	0.1	20.6	0.24
MGPW 1710D	3/7/2016	12:17pm	29.82	0.0	0.1	21.0	-3.9
MGPW 1710D	3/24/2016	9:32am	30.1	0.0	0.1	21.0	-2
MGPW 1714	1/28/2016	3:03pm	29.97	0.0	0.0	20.8	-1.51
MGPW 1714	2/9/2016	2:00pm	30.05	0.0	0.1	20.5	0.1
MGPW 1714	2/23/2016	12:44pm	30.20	0.0	0.1	20.6	0.4
MGPW 1714	3/7/2016	12:23pm	29.82	0.0	0.2	21.0	-3.6
MGPW 1714	3/24/2016	9:28am	30.10	0.0	0.2	21.0	-1.8

KING COUNTY SOLID WASTE DIVISION
QUALIFIER INFORMATION
(Effective 8/27/2015)

QUAL	QUALIFIER DESCRIPTION
U	Undetected; Analyte Concentration Less than Method Detection Limit (< MDL)
T	Estimated; Less than Reporting Detection Limit (<RDL) but Greater than Method Detection Limit (> MDL)
J	Reported Value is an Estimate
B	Matrix Target Analyte Present in Blank, AND, Sample Result Less than or Equal to 10x Blank Detection
C	Confluent Growth
E	Estimated; Outside Expected Accuracy
H	Exceeds Holding Time
R	Data Rejected
S	Sample Handling Errors
X	Too Numerous to Count
D	Re-analysis Due to Dilution
P	PASS – Qualitative Result Acceptable
F	FAIL – Qualitative Result is not Acceptable
G	Estimated with Low Bias (Coliform; BOD; All Other Chemistry Parameters)
L	Estimated with High Bias (BOD; All Other Chemistry Parameters)

APPENDIX C

Meteorological Data

**NO METEROLOGICAL DATA AVAILABLE
1st QUARTER OF 2016**

(WILL SUBMIT SEPARATELY IF DATA BECOMES AVAILABLE IN THE FUTURE)

APPENDIX D

Area 5 Top Deck Report

CEDAR HILLS REGIONAL LANDFILL AREA 5 TOP DECK MONITORING REPORT

First Quarter 2016



Department of Natural Resources and Parks
Solid Waste Division

May 2016
Printed on recycled paper

Contents

I.	REPORT OVERVIEW.....	2
II.	LEACHATE MONITORING	2
III.	SURFACE MONITORING.....	4
III.	STORMWATER SAMPLING.....	8
A.	RESULTS DISCUSSION	9
B.	RESULTS COMPARISON	11
IV.	CONCLUSION	13

Tables and Figures

Table 1	Cedar Hills Regional Landfill Leachate Production for 1 st Quarter of 2016.....	3
Table 2	Cedar Hills Regional Landfill Survey Data for 1 st Quarter of 2016.....	6
Table 3	Cedar Hills Regional Landfill Area 5 Settlement for 1 st Quarter of 2016.....	7
Table 4	Water Quality Criteria & Benchmarks	9
Table 5	Area 5 Top Deck – 1Q2016 Stormwater Monitoring Results	12
Table 6	SW-S1 – 2015 Stormwater Comparison Monitoring Results.....	12
Table 7	Leachate Pond Inflow – 1Q2016 Monitoring Results	12
Figure 1	Area 5 Settlement Monitoring Locations	Figures
Figure 2	Area 5 Top Deck Stormwater Monitoring Locations.....	Figures

Appendices

Inspection Reports	Appendix A
Gas Monitoring Reports.....	Appendix B

AREA 5 TOP DECK MONITORING QUARTERLY REPORT

FIRST QUARTER 2016

I. REPORT OVERVIEW

This report provides the quarterly performance analysis of the interim soil cover system over Area 5 in the Cedar Hills Regional Landfill (CHRLF). The intent of the report is to demonstrate that the top deck cover system is functioning to limit infiltration of rainwater, protect surface water quality, and control landfill gas emissions. Monitoring of surface emissions, leachate quantity, and stormwater quality is conducted, and results are presented in this report.

II. LEACHATE MONITORING

Leachate monitoring is performed to demonstrate that the landfill cover system is effectively limiting rainwater infiltration and therefore leachate production.

King County Solid Waste Division (KCSWD) is currently experiencing technical issues with the leachate volume monitoring system for Area 5. Work is underway to resolve these issues and the logged data will be reported as it becomes available in subsequent Top Deck Monitoring Reports.

In the interim, KCSWD staff continues to evaluate leachate volumes collected throughout the landfill. Table 1 presents a historical account of leachate generation at the site since 1986. The evaluation accounts for variations in rainfall by normalizing the leachate flows in terms of gallons discharged per inch of rainfall. The flow has also been normalized relative to pounds of waste in-place. These normalized values for the entire site are included in Table 1.

TABLE 1								
CEDAR HILLS REGIONAL LANDFILL LEACHATE PRODUCTION for 1st QUARTER of 2016								
Year	Leachate	Surface Area of Refuse	Refuse In Place	Precipitation	Flow			
					(gal/Acre/yr)	(gal/Acre/in)	(gal/lb/yr)	(gal/lb/in)
1986	163.03	138.5	11,328,841,100	54.79	1,177,112	21,484	0.0144	0.00026
1987	139.53	138.5	12,927,926,300	39.6	1,007,422	25,440	0.0108	0.00027
1988	169.67	161.9	14,525,504,000	48.63	1,048,009	21,551	0.0117	0.00024
1989	176	161.9	16,203,204,000	44.12	1,087,110	24,640	0.0109	0.00025
1990	294.75	161.9	17,965,254,000	71.6	1,820,594	25,427	0.0164	0.00023
1991	224.27	221.4	19,778,412,000	45.85	1,012,967	22,093	0.0113	0.00025
1992	156.46	221.4	21,454,600,000	38.64	706,694	18,289	0.0073	0.00019
1993	150.83	221.4	23,051,348,000	35.01	681,264	19,459	0.0065	0.00019
1994	159.8	221.4	24,657,528,000	38.55	721,764	18,723	0.0065	0.00017
1995	201.11	221.4	26,294,654,000	48.4	908,376	18,768	0.0076	0.00016
1996	243.03	221.4	27,946,704,000	57.08	1,097,714	19,231	0.0087	0.00015
1997	239.23	221.4	29,665,380,000	57.24	1,080,511	18,877	0.0081	0.00014
1998	202.8	221.4	31,432,828,000	42.82	916,006	21,392	0.0065	0.00015
1999	219.15	283.42	33,273,828,000	45.9	773,229	16,848	0.0066	0.00014
2000	148.82	283.42	35,167,828,000	33.15	525,102	15,840	0.0042	0.00013
2001	174.08	283.42	37,041,828,000	47.28	614,194	12,991	0.0047	0.0001
2002	133.4	283.42	38,919,828,000	35.13	470,690	13,399	0.0034	0.0001
2003	181.6	283.42	40,877,828,000	46.39	640,761	13,812	0.0044	0.0001
2004	185.72	328.72	42,889,828,000	34.08	564,983	16,578	0.0043	0.00013
2005	175.31	328.72	44,867,538,000	40.75	533,313	13,087	0.0039	0.0001
2006	264.95	328.72	46,820,938,000	52.94	806,009	15,225	0.0057	0.00011
2007	161.48	328.72	47,129,756,000	38.68	491,239	16,143	0.0034	0.000112
2008	126.02	328.72	48,990,990,000	42.32	383,366	9,059	0.0026	0.00006
2009	172.16	328.72	49,414,219,997	42.42	523,741	12,347	0.0035	0.00008
2010	199.4	335.72	51,076,043,997	49.25	593,959	12,060	0.0039	0.00008
2011	180.2	353.12*	52,701,411,694	51.05	510,308	9,996	0.0034	0.00007
2012	202.3	353.12*	54,315,239,773	58.16	572,972	9,852	0.0037	0.00006
2013	156.4	353.12*	55,933,569,773	47.77	442,923	9,272	0.0028	0.00006
2014	189.14	353.12*	57,638,062,970	64.07	535,631	8,360	0.0033	0.00005
2015	176.26	353.12*	59,401,111,988	51.39	499,159	9,713	0.0030	0.00006
2016	75.38	353.12*	60,002,809,988	20.07	213,466	10,636	0.0013	0.00006

2016: Precipitation, leachate and refuse in place through 1st Quarter of 2016

* The 353.12 acre value was a plan view area calculated by AUTOCAD, using the area inquiry feature of a closed polyline.

III. SURFACE MONITORING

KCSWD's plan for monitoring the surface of the Area 5 Top Deck is comprised of three components:

1. Landfill gas inspections and surface emissions monitoring;
2. Top Deck Surface Inspections; and,
3. Settlement monitoring.

The purpose of this monitoring is to detect any conditions affecting the cover system that may permit landfill gas emissions, leachate seeps, or excessive or differential settlement.

Landfill Gas Inspections

Each quarter, monthly inspections of the gas system, stormwater system, and cover system of Area 5 are performed by the Solid Waste Operations (SWO) staff. All internal inspection reports showed satisfactory conditions this quarter. These inspection reports are included in Appendix A: Inspection Reports.

Also throughout the 1st Quarter of 2016, Facility Engineering and Science Unit (FESU) staff performed monthly Landfill Facility Site Inspections. These inspections are also included in Appendix A: Inspection Reports.

In addition to KCSWD inspections, one inspection was performed by Public Health – Seattle & King County (PHSKC) during the 1st Quarter of 2016. The date of the inspection was January 21st, 2016. The inspection resulted in a satisfactory review of the landfill.

Air Quality Criteria

Each quarter, serpentine walks are conducted across the Area 5 Top Deck and its side slopes to verify that methane gas emissions are below regulatory criteria.. The results from the 1st Quarter 2016 Serpentine Surface Monitoring Data walk that was conducted from March 13th to the 23rd, 2016 can be found in Appendix B: Gas Monitoring Reports, along with a plot of GPS generated track lines.

For the 1st Quarter of 2016, there were no exceedances of regulatory criteria.

Top Deck Surface Inspections

Visual inspections for indications of leachate seeps are conducted each quarter by KCSWD personnel in conjunction with the surface emissions monitoring and monthly inspections. No indications of leachate seeps were recorded during the 1st Quarter of 2016 by KCSWD staff, or by PHSKC personnel.

Settlement Monitoring

Settlement of Area 5 is evaluated both through visual inspections and through topographic surveys at control points on the top deck. A site map showing the settlement monitoring points is included as Figure 1. Visual inspections are completed by both operations and engineering staff. No evidence of any erosion was found during inspection.

The most recent settlement levels for Area 5 were measured on February 3rd, 2016. The survey data is given in Table 2, and the settlement at each point is given in Table 3. As noted in Table 3, the average refuse settlement rate (measured in feet/month) for Area 5 decreased over the previous measurement range. For the approximate three month interval of October 27th to February 3rd, 2016, the average rate was calculated to be 0.09 feet/month, versus 0.10 feet/month from the previous time period. This is approximately a 10% decrease in the settlement rate.

Future plans for Area 5 are to complete the final lift, followed by application of final cover.

TABLE 2
CEDAR HILLS REGIONAL LANDFILL AREA 5 SURFACE SURVEY DATA for 1st QUARTER of 2016

A5SM-1 ^a		A5SM-2		A5SM-3 ^b		PMX20074 ^c	
Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation
10/4/2005	699.18	10/4/2005	785.17	2/14/2007	786.4	8/16/2007	781.56
2/1/2006	697.7	2/1/2006	782.52	4/20/2007	786.25	2/29/2008	780.1
6/27/2006	696.51	6/27/2006	780.48	7/24/2007	785.68	7/29/2008	779.13
2/14/2007	694.53	4/20/2007	776.95	2/29/2008	784.87	11/24/2008	778.21
7/24/2007	693.34	7/24/2007	775.63	7/29/2008	784.31	4/6/2009	777.41
2/29/2008	691.77	2/29/2008	773.44	11/24/2008	783.76	7/9/2009	776.99
7/29/2008	691.26	7/29/2008	772.2	4/6/2009	783.35	12/22/2009	776.1
11/24/2008	690.61	11/24/2008	771.29	7/9/2009	783.05	3/1/2010	775.81
4/6/2009	690.16	4/6/2009	770.35	12/22/2009	782.44	8/2/2010	775.29
7/9/2009	689.77	7/9/2009	769.79	3/1/2010	782.08	12/21/2010	774.79
12/22/2009	689.13	12/22/2009	768.6	8/2/2010	781.78	4/6/2011	774.42
3/1/2010	688.77	3/1/2010	768.05	12/21/2010	781.25	8/8/2011	774.19
8/2/2010	688.6	8/2/2010	767.28	4/6/2011	780.94	1/23/2012	773.79
12/21/2010	688.1	12/21/2010	766.53	8/8/2011	780.66	5/18/2012	773.41
4/6/2011	687.83	4/6/2011	765.86	1/23/2012	780.26	7/12/2012	773.26
8/8/2011	687.46	8/8/2011	765.34	5/18/2012	779.9	--	--
1/23/2012	687.19	1/23/2012	764.53	7/12/2012	779.69	--	--
5/18/2012	686.78	5/18/2012	763.99	11/2/2012	779.56	--	--
7/12/2012	686.69	7/12/2012	763.83	5/22/2013	779.09	--	--
11/2/2012	686.55	11/6/2012	763.35	9/5/2013	779.66	--	--
5/22/2013	686.09	5/22/2013	762.77	2/19/2014	777.68	--	--
--	--	8/8/2013	762.53	2/9/2015	777.63	--	--
--	--	2/19/2014	762.06	4/6/2015	777.51	--	--
--	--	2/9/2015	761.09	7/2/2015	777.38	--	--
--	--	4/6/2015	761.11	10/27/2015	777.12	--	--
--	--	7/2/2015	760.96	2/3/2016	776.83	--	--
--	--	10/27/2015	760.62			--	--
--	--	2/3/2016	760.35			--	--

^a A5SM-1 was destroyed by filling Area 7 during Lift 4.

^b A5SM-3 NEW as of 2/14/2007.

^c PMX20074 was destroyed during Phase 3 of Area 6.

TABLE 3**CEDAR HILLS REGIONAL LANDFILL AREA 5 SETTLEMENT for 1st QUARTER of 2016**

Settlement Monitoring Locations	Units	SETTLEMENT DATE RANGE (MM/YYYY)										
		06/2006 - 07/2007	07/2007 - 07/2008	07/2008 - 07/2009	07/2009 - 08/2010	08/2010 - 08/2011	08/2011 - 07/2012	07/2012-05/2013	05/2013-02/2014	02/2014-02/2015	02/2015-07/2015	07/2015-10/2015
A5SM-1	Feet	3.17	2.08	1.49	1.17	1.14	0.77	0.60	N/A	N/A	N/A	N/A
A5SM-2	Feet	4.85	3.43	2.41	2.51	1.94	1.51	1.06	0.71	0.97	0.13	0.34
A5SM-3	Feet	N/A	1.37	1.26	1.27	1.12	0.97	0.60	1.41	0.05	0.25	0.26
PMX2007-4	Feet	N/A	2.43	2.14	1.7	1.1	0.93	N/A	N/A	N/A	N/A	N/A
Average Settlement for Area 5	Feet/Date Range	4.01	2.33	1.83	1.66	1.33	1.05	0.75	1.06	0.51	0.19	0.30
	Feet/Month	0.31	0.19	0.15	0.13	0.11	0.1	0.19	0.11	0.04	0.03	0.10
												0.09

III. STORMWATER SAMPLING

Collection of Samples

Area 5 top deck stormwater samples were collected during the 1st Quarter of 2016 at two of the four designated sites, including SW-TD1 and SW-TD6. Comparison leachate samples were taken at location LS-API on January 14th, February 10th, and March 9th, 2016.

1st Quarter 2016 comparison stormwater samples were not taken, as monthly monitoring of surface water sites was discontinued as of January 1st, 2016 per the new Sampling & Analysis Plan (SAP) for the CHRLF. To address this lack of comparative data, the decision was made that the previous year's data from surface water site SW-S1 would be averaged for all of 2015 and used as the comparison basis.

All samples were collected and analyzed in accordance with the Area 5 Top Deck Stormwater Runoff Monitoring Plan. Figure 2 shows the locations of the Area 5 sampling stations.

Stormwater Sample Evaluation

Stormwater runoff monitoring locations, field measurements, and laboratory analyses evaluated in this report are intended to assess whether the stormwater runoff from the top deck has been contaminated by the underlying waste. Stormwater was collected either during or following significant storm events from four locations on or near the top deck of Area 5. These data are compared to stormwater data collected from a location upstream of any waste placement (2015 averaged sampling data from monitoring location SW-S1).

Stormwater quality is also compared to the leachate quality as collected from the inflow into the aeration ponds, LAPI.

The analytes for the top deck stormwater runoff are iron, sulfate, chemical oxygen demand, total organic carbon, alkalinity, and chloride. The stormwater quality results are screened against existing surface water quality criteria (WAC 173-201A) and Benchmarks for the Washington State Industrial Stormwater General Permit. Applicable criteria/benchmarks are listed in Table 4.

TABLE 4
Water Quality Criteria/Benchmarks For Applicable Parameters

Parameter	Numerical Criterion	Source
pH	6.5 to 8.5	WAC 173-201A-200
	5 to 9	Industrial Stormwater General Permit
Turbidity	Less than 10 NTU above background if background turbidity is 50 NTU or less, or a 10% increase in turbidity when the background is > 50 NTU.	WAC 173-201A-200
	25 NTU	Industrial Stormwater General Permit
Temperature	20°C	WAC 173-201A-200
Iron	1.0 mg/L	EPA 440/5-86-001 Quality Criteria for Water 1986

A. RESULTS DISCUSSION

Field measurements and analytical results from the stormwater sampling and analyses performed as part of this monitoring plan are summarized in Tables 5 and 6. Leachate results are presented in Table 7.

The following is a parameter by parameter discussion of the top deck monitoring results. For each parameter, its importance in evaluating surface water, comparison to other onsite surface water, and comparison to representative leachate is discussed.

pH - pH levels in surface water can be affected by many factors, especially photosynthetic activity and the respiration of waterborne flora. This process can potentially decrease the night-time pH level to 4.5 and during peak daytime activity can drive the pH levels above 10.

The benchmark range for pH is 6.5 to 8.5 standard pH Units.

- pH results for all locations were within the acceptable range per the applicable water quality criteria.

Specific Conductance - Specific Conductance is the ability of water to conduct electrical current. This property is related to dissolved ion concentration, charge, ion mobility, and water temperature. Specific conductance measurements can provide indications of water contamination by a non-specific measure of increased ionic solute load.

There are no benchmarks or criteria for specific conductance.

Temperature - Water temperature criteria are established for the protection of aquatic life, and vary between bodies of water based on use categories designated.

Temperature criteria are established for the protection of aquatic life, and vary between bodies of water based on use categories designated, per WAC 173-201A-200.

- Temperature results for all locations were below the designated limit per the applicable water quality criteria.

Turbidity - Turbidity is one of the indicators used to assess the environmental health of water bodies. Turbidity is caused by the presence of suspended and dissolved matter, such as clay, silt, finely divided organic matter, plankton and other microscopic organisms.

Turbidity criteria are established for the protection of aquatic life, and vary between bodies of water based on use categories designated, per WAC 173-201A-200.

The Industrial Stormwater General Permit (ISWGP) benchmark for turbidity is 25 NTU.

- All location results were below the designated limit for turbidity per the applicable water quality criteria.

Chemical Oxygen Demand - Chemical Oxygen Demand (COD) is used to indirectly measure the amount of organic compounds in water.

There are no benchmarks or criteria for COD.

Total Organic Carbon - Total organic carbon (TOC) is the amount of carbon bound in an organic compound and is often used as a non-specific indicator of water quality. While COD is the measurement of all substances in the water that can be oxidized, TOC is the measurement of organically bound carbon.

There are no benchmarks or criteria for TOC.

Alkalinity - Alkalinity is the measure of the capacity of water to neutralize acids, or its buffer capacity. The alkalinity of natural waters is controlled primarily by the equilibria of the carbonate system. It is produced by dissolved CO₂ acting upon alkaline materials in the soil to produce bicarbonate (HCO₃⁻) and carbonate (CO₃²⁻). The source of CO₂ can be atmospheric, from respiration of water borne organisms or decay of organic matter, or can be a contribution from landfill gas (LFG).

There are no benchmarks or criteria for alkalinity.

Chloride - Chloride is a conservative anion; that is, processes of adsorption, ion exchange, or biological uptake do generally not retard transport of chloride. Chloride is the best indicator for determining impacts from leachate. Chloride is one of the major anions to be found in water and sewage. Potable water should not exceed 250 mg/L of chloride.

There are no benchmarks or criteria for chloride.

Sulfate - Sulfate (SO_4^{2-}) can be found in almost all natural water and is one of the major dissolved components of rain. It is formed by the oxidation of sulfite ores and is a component in industrial and domestic waste waters. There are few elements that will form insoluble salts with sulfate, thus; once in solution, it remains so unless it is anaerobically reduced to sulfide.

There are no benchmarks or criteria for sulfate.

Iron - Iron is the fourth most abundant element in the earth's crust and the most abundant heavy metal. It is present in the environment mainly as Fe(II) or Fe(III). Iron is more soluble in the reduced state than it is in the oxidized state, where it often occurs as an iron oxide mineral (Fe_2O_3). At a pH above 7, iron exists mostly as insoluble salts which settle out or are adsorbed onto surfaces. The concentration of iron in well-aerated waters is seldom high. Under reducing conditions, which are most commonly caused by oxidation reactions involving organic matter, water will have higher concentrations of dissolved iron.

- All location results were below the designated limit for iron (total and dissolved) per the applicable water quality criteria.

B. RESULTS COMPARISON

The Top Deck stormwater runoff exhibits higher values than the surface water samples for conductivity, turbidity, alkalinity, COD, sulfate, and TOC. However, the chloride concentration in the Top Deck stormwater runoff is lower than the concentration in surface water samples. This indicates that leachate has not contributed to the increases in the other parameters.

The mildly elevated alkalinity measured at TD1 (versus surface water) may indicate a landfill gas contribution from dissolution of carbon dioxide in water.

Elevated concentrations of other parameters compared to surface water are not attributed to landfill gas or leachate contributions. These are most likely simply due to differences in the surficial soils composition of contributing areas to sampling locations.

TABLE 5**Area 5 Top Deck - 1Q2016 Stormwater Monitoring Results**

Location	Date	Sample ID	Specific Conductance	pH units	Temp	Turbidity	Alkalinity	Chemical Oxygen Demand	Chloride	Dissolved Iron	Total Iron	Sulfate	Total Organic Carbon
			µmhos/cm	pH units	deg °C	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SW-TD1	3/8/2016	STD1160308-	380	7.67	9.2	0.72	164	24.6	1.19	0.011	0.031	31.4	8.48
SW-TD6	3/24/2016	STD6160324-	84	6.36	7.9	8.91	37.7	20	0.942	0.236	0.467	2.1	5.96
Average Value =			232	7.02	8.55	4.82	100.9	22.3	1.1	0.12	0.25	16.8	7.22
U = UNDETECTED, ANALYTE CONCENTRATION <MDL													

TABLE 6**SW-S1 - 2015 Stormwater Comparison Monitoring Results**

Location	Date	Sample ID	Specific Conductance (Field)	pH units (Field)	Temp (Field)	Turbidity (Field)	Alkalinity	Chemical Oxygen Demand	Chloride	Dissolved Iron	Total Iron	Sulfate	Total Organic Carbon
			µmhos/cm	pH units	deg °C	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SW-S1	1/20/2015	SSI-150120Q	55	7.32	6.7	1.07	11.3	5	2.28	0.012	0.02	2.15	3.27
SW-S1	2/23/2015	SSI-150223M	52	7.31	5.4	0.6	13.4	6.1	2.32	0.01	0.023	2.24	2.2
SW-S1	3/16/2015	SSI-150316M	49	7.13	8.8	2.14	11.9	8.4	1.7	0.027	0.05	1.86	3
SW-S1	4/22/2015	SSI-150422Q	49	6.83	9.4	3.16	17.5	5.7	2.18	0.014	0.029	1.85	2.78
SW-S1	5/19/2015	SSI-150519M	53	6.71	12.4	2.08	19.7	5.5	2.2	0.036	0.0582	0.919	3.34
SW-S1	11/18/2015	SSI-151118Q	65	6.44	8.1	0.42	8.11	9.2	2.69	0.014	0.018	3.32	4.47
SW-S1	12/14/2015	SSI-151214M	53	6.47	7	0.58	7.44	8.6	2.6	0.012	0.017	2.43	3.74
Average Value =			59	6.46	7.6	0.50	7.8	8.9	2.6	0.013	0.0175	3.32	4.11
U = UNDETECTED, ANALYTE CONCENTRATION <MDL													

TABLE 7**Leachate Pond Inflow - 1Q2016 Monitoring Results**

Location	Date	Sample ID	Specific Conductance (Field)	pH units (Field)	Temp (Field)	Turbidity (Field)	Alkalinity	Chemical Oxygen Demand	Chloride	Dissolved Iron	Total Iron	Sulfate	Total Organic Carbon
			µmhos/cm	pH units	deg °C	NTU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
LS-API	1/14/2016	LAPII160114M	2400	7.89	16.6	NA	1380	1090	323	NA	11.7	43.2	229
LS-API	2/10/2016	LAPII160210M	5600	7.96	18.5	NA	4380	2780	1080	NA	9.51	31.8	671
LS-API	3/9/2016	LAPII160309M	2000	7.69	12.4	NA	2030	1460	473	NA	7.05	20.1	397
Average Value =			3333	7.85	15.8	NA	2597	1777	625	NA	9.42	31.7	562
S = INDICATES A SAMPLE HANDLING OR HOLD TIME ERROR													
NOTE: LEACHATE IS NOT ANALYZED (NA) FOR TURBIDITY OR DISSOLVED IRON													

IV. CONCLUSION

Stormwater samples for the Area 5 Top Deck were collected at monitoring locations SW-TD1 and TD6 during the 1st Quarter of 2016. There were no water quality exceedances with respect to applicable water quality criteria or benchmarks. When results were compared to 2015 averaged surface water sampling data at SW-S1, and leachate effluent samples from LS-API, the Top Deck sample results exhibited a stronger resemblance to the surface water results, versus the leachate results, although the runoff may have been exposed to trace amounts of landfill gas.

Also to note, inspection reports showed no issues with the interim cover system for Area 5. The Area 5 settlement rate decreased by approximately ten (10) percent versus the previous monitoring period. Additionally, there were no indications of major differential settling, nor signs of surficial erosion.

This report demonstrates that the interim cover is functioning effectively, in erosion control, limiting stormwater infiltration, preventing leachate seeps, and limiting landfill gas emissions.

Figures



LEGEND:

○ ACTIVE MONITORING STATION

AERIAL FLOWN SEPTEMBER 2014



KING COUNTY DEPARTMENT OF
NATURAL RESOURCES AND PARKS
SOLID WASTE DIVISION

CEDAR HILLS REGIONAL LANDFILL
SETTLEMENT MONITORING LOCATIONS

DATE	REVISION	BY

APPROVED: VDO DATE Feb 2014
RECOMMENDED _____ DATE _____
DESIGNED _____ DRAWN _____
PROJECT NO. _____ SURVEY NO. _____ SHEET 1 OF 1
E:\\CAD\\2007\\Public\\CedarHills\\Monitoring\\Settlement\\Final\\SettMonLocs.dwg

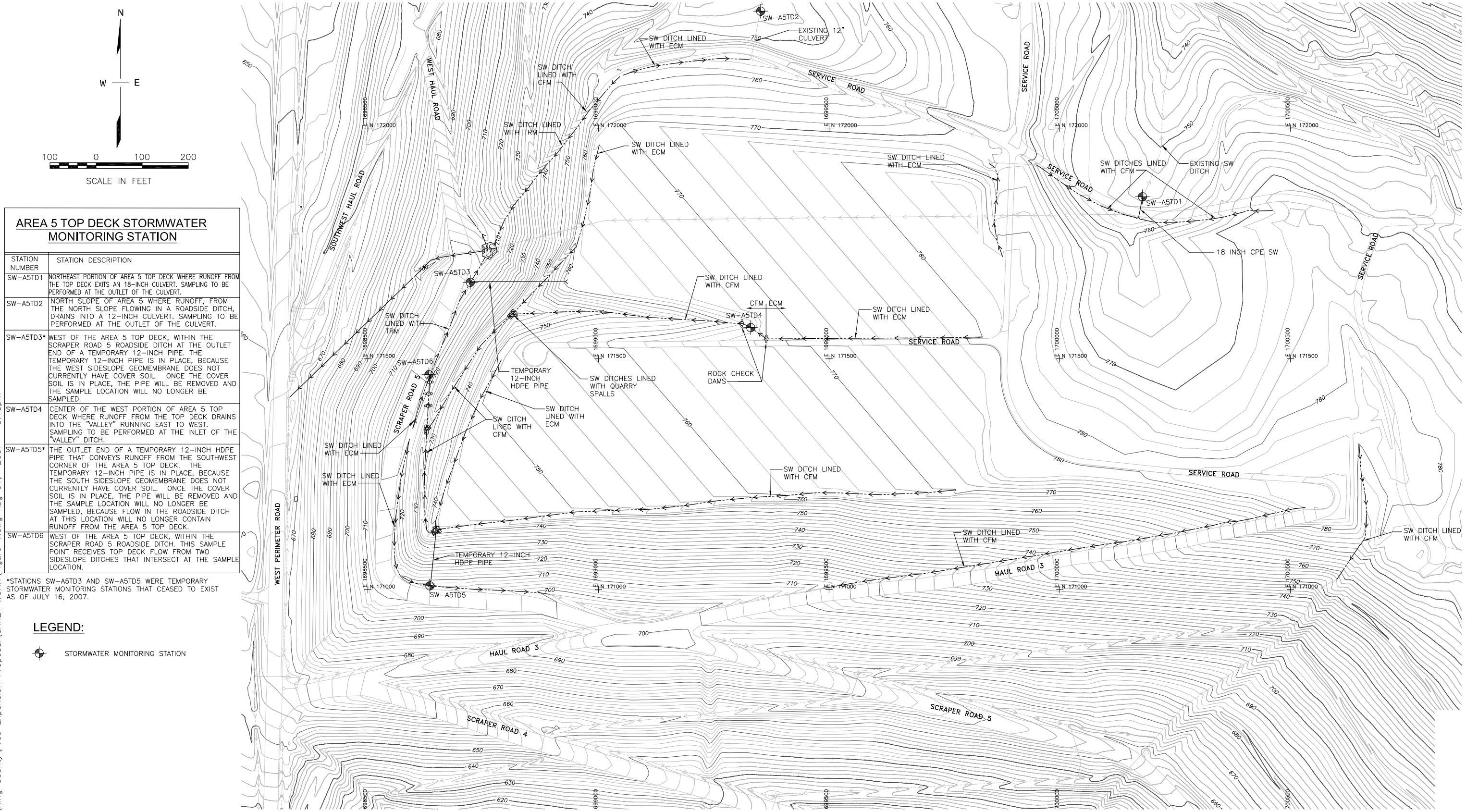


Figure 1
Area 5 Top Deck
Stormwater Monitoring Stations

Cedar Hills Regional Landfill
Area 5 Stage 4 Final Closure
King County, Washington

Appendix A:

Inspection Reports

SOLID WASTE DIVISION

Landfill Facility Site Inspections

Type – Permit Compliance

Inspected By: Stevn Larry

Date: 1-28-2016

Location: Cedar Hills Ambient Temperature (°F) 40 Weather Condition: Heavy rains +1"

ACTION CODES

A. Gas System	OK	Not OK	B. Leachate System	OK	Not OK	C. Landfill Operations	OK	Not OK
1. Pipe Penetrations	X		1. Pump Stations	X		1. Fueling Stations	X	
2. Collection Piping	X		2. Aeration Lagoons / Basins	X		2. Vehicle Wash Stations	X	
3. Gas Extraction Wells	X		3. Aerators	X		3. Equipment	X	
4. Valve Stations	X		4. Weeps (strip drains)	X		4. Perimeter Fences	X	
5. Odor	X		5. Collection System	X		5. Vegetation	X	
6. Flare Stations	X		a. Collection Pipes	X		6. Landfill Cover	X	
7. Air Compressors	X		b. Force mains	X		7. Drain Rock	X	
8. Noise Control	X		c. Manholes	X		9. Air Quality	X	
			d. Cleanouts	X				
D. Stormwater System			6. Generators	X		11. Vectors	X	
1. Ponds	X		7. Extraction Wells	X		12. Litter		
2. CB / Control Structures	X		8. Valve / Cleanout	X		13. Dust control	X	
3. Pipes / Culverts	X		9. Groundwater Extraction Wells	X		14. Other	X	
4. Trash Racks	X							
5. Ditches			E. Roadway System			Cover System / ESC		
6. Runoff Control Berms	X		1. Road Sweeping	X		F. Vegetation	X	
7. Discharge Points	X		2. Access Roads	X		1. Refuse	X	
8. General	X		3. Road Erosion	X		2. Cover Erosion	X	
			4. Road Pavement	X		3. Silt Fences/Filter Fabric	X	
G. Operations			5. Lane Striping	X				
1. Records Obtain / Review								

Item No.	Action Code(s) (See below or over for map) Area Map	Status	State Reason if "Fair or Poor"			Date Corrective Action Implemented
			G	F	P	
1	D5	H(3&4)				The stormwater ditch along the new haul road by the aeration needs rock. The flows are cutting into the ditch channel and

AREA CODES (for Cedar Hills)

East Main Hill = EMH

Southwest Main Hill = SWMH

Southeast Pit Area = SEPA

Central Pit = CP

G = Good

Area 2/3 = A2/3

Area 4 = A4

Stockpile = SP

F = Fair

Aeration Ponds = AP

So. Solid Waste Area = SSWA

North Flare Station = NFS

P = Poor

Area 5 = A5

Area 6 = A6

Area 7 = A7

State the needs of the repairs in the suggested remedy box.

1. *Regulatory Priority* - permit, regulations & code & compliance driven.
2. *Safety Priority* – potential to adversely affect the safety of workers or the related environment.
3. *Maintenance Priority* – Ensures continuation of existing level of facility operations to ensure proper efficiency without interruption. This priority has the following four potential levels
 - a. *Emergency* - stops the continuing operation of the facility
 - b. *Urgent* – While not completely prohibiting continuing use of the facility, may threaten use of entire facility or continuing use may result in significant & extensive repair of facility.
 - c. *Routine* – need to be completed & not necessarily. May be completed under existing operations preventative programs.
 - d. *Deferred* – desirable but not required to maintain status quo operations (e.g., planting or wild life enhancement projects etc.)

Overall site description day of site inspection: The site appears clean and maintained. The road surfaces are clean and free of mud and rock, no blowing litter or accumulated litter in the conveyance ditches
In another location (along the new haul road drainage ditch by the Pump Station), surface water flows have created small scarfs along the hills sides that will require correcting.
There are eroded surface water channels by the aeration ponds that are adding additional loading of silt to surface flows. This channel needs additional road added to the jute cover.

Category number:	Action to be Completed. Suggested Remedy:
Category number:	Action to be Completed. Suggested Remedy:
Category number:	Action to be Completed. Suggested Remedy:
Category number:	Action to be Completed. Suggested Remedy:

SWPPP Modifications Necessary? (circle Y or N)

If Y, log changes in Appendix I of SWPPP.

Potential Pollutant Sources Y / N

Site Map Y / N

INSPECTION REPORT SIGNATURE PAGE

INSPECTOR / QUALIFIED PERSONNEL

Based on professional judgment, which of the following statements is true: (select one)

- The site is in compliance with the terms and conditions of the SWPPP and the ISGP.*
- The site is NOT in compliance with the terms and conditions of the SWPPP and the ISGP*. * Immediately notify Environmental Compliance Coordinator*

I certify that this report is true, accurate and complete, to the best of my knowledge and belief.

Printed name: Stevn Larry, Engineer II

Signature: _____ Date: _____

DULY AUTHORIZED REPRESENTATIVE

Based on professional judgment, which of the following statements is true: (select one)

- The site is in compliance with the terms and conditions of the SWPPP and the ISGP.*
- The site is NOT in compliance with the terms and conditions of the SWPPP and the ISGP*. * Immediately notify Environmental Compliance Coordinator*

I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed name: Bill Berni, Operations Manager

Signature: Bill Berni Date: 1/21/2016

1 | 2 | 3 | 4 | 5 | 6 | 7

A

B

C

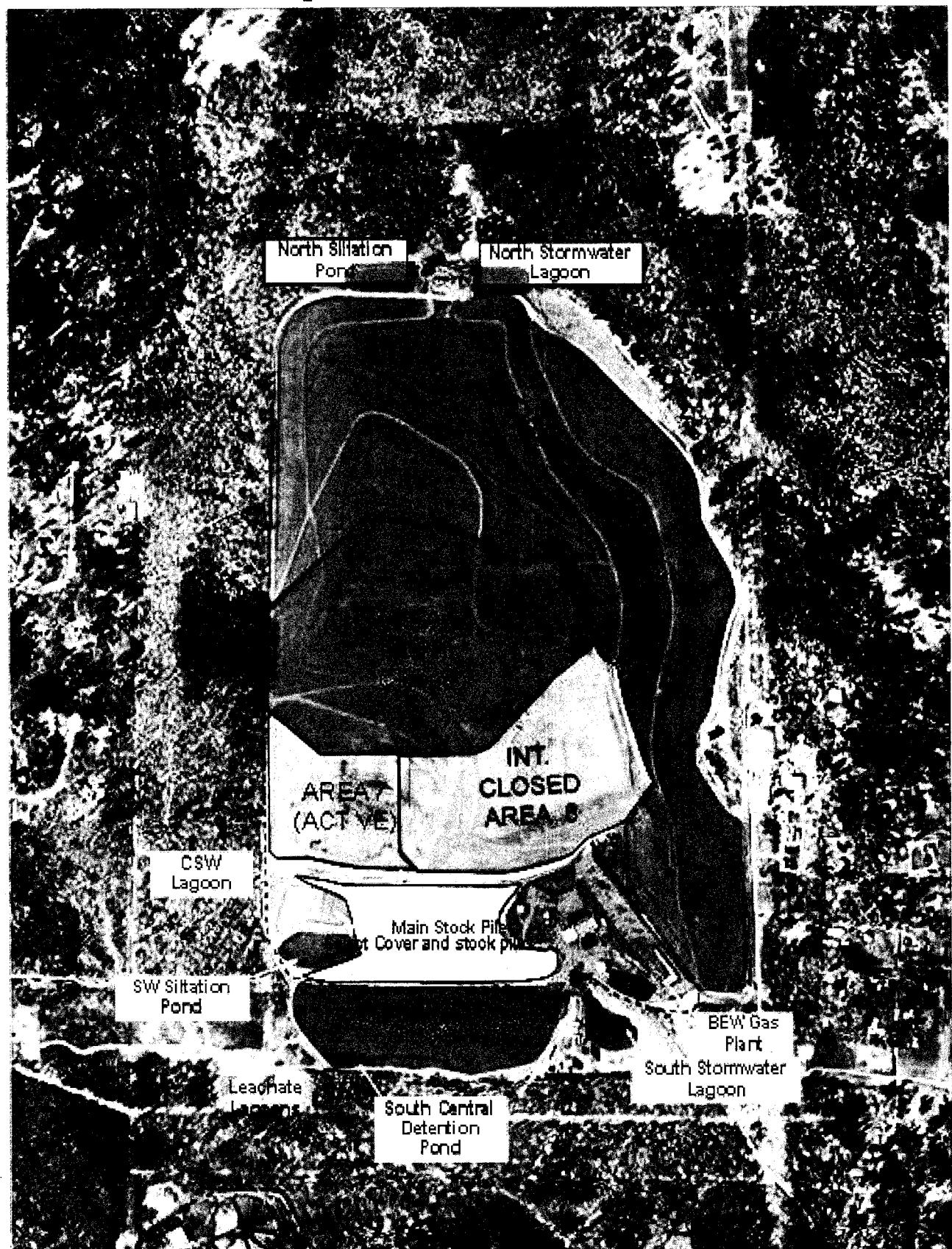
D

E

F

G

H



SOLID WASTE DIVISION

Landfill Facility Site Inspections

Type – Permit Compliance

Inspected By: Stevn Larry Date: 2-24-2016
 Location: Cedar Hills Ambient Temperature (°F) 40 Weather Condition: Heavy rains +1"

ACTION CODES

A. Gas System	OK	Not OK	B. Leachate System	OK	Not OK	C. Landfill Operations	OK	Not OK
1. Pipe Penetrations	X		1. Pump Stations	X		1. Fueling Stations	X	
2. Collection Piping	X		2. Aeration Lagoons / Basins	X		2. Vehicle Wash Stations	X	
3. Gas Extraction Wells	X		3. Aerators	X		3. Equipment	X	
4. Valve Stations	X		4. Weeps (strip drains)	X		4. Perimeter Fences	X	
5. Odor	X		5. Collection System	X		5. Vegetation	X	
6. Flare Stations	X		a. Collection Pipes	X		6. Landfill Cover	X	
7. Air Compressors	X		b. Force mains	X		7. Drain Rock	X	
8. Noise Control	X		c. Manholes	X		9. Air Quality	X	
			d. Cleanouts	X				
D. Stormwater System			6. Generators	X		11. Vectors	X	
1. Ponds			7. Extraction Wells	X		12. Litter		
2. CB / Control Structures	X		8. Valve / Cleanout	X		13. Dust control	X	
3. Pipes / Culverts	X		9. Groundwater Extraction Wells	X		14. Other	X	
4. Trash Racks	X							
5. Ditches			E. Roadway System			Cover System / ESC		
6. Runoff Control Berms	X		1. Road Sweeping	X		F. Vegetation	X	
7. Discharge Points	X		2. Access Roads	X		1. Refuse	X	
8. General	X		3. Road Erosion	X		2. Cover Erosion	X	
			4. Road Pavement	X		3. Silt Fences/Filter Fabric	X	
G. Operations			5. Lane Striping	X				
1. Records Obtain / Review								

Item No.	Action Code(s)	Area Code(s) (See below or over for map) Area Map	Status			State Reason if "Fair or Poor"	Date Corrective Action Implemented
			G	F	P		
1	D5	H(3&4)				The stormwater ditch along the new haul road by the aeration needs rock. The flows are cutting into the ditch channel and are adding to silt loading.	
2	C12	D(2&3)				The is some small accumulation of blowing litter that is beginning to collect in the stormwater ditch just behind the berm on Area 5. (See photo for specific site locations).	
3	D1	G2				The cement pond needs mud removed, when pond is dry.	

4	F2	F5				The soil stock pile around the Equipment Operators trailer needs re-covering.	

AREA CODES (for Cedar Hills)

East Main Hill = EMH

Southwest Main Hill = SWMH

Southeast Pit Area = SEPA

Central Pit = CP

G = Good

Area 2/3 = A2/3

Area 4 = A4

Stockpile = SP

F = Fair

Aeration Ponds = AP

So. Solid Waste Area = SSWA

North Flare Station = NFS

P = Poor

Area 5 = A5

Area 6 = A6

Area 7 = A7

Define site needs of the regulatory and enforcement priority levels

1. *Regulatory Priority* - permit, regulations & code & compliance driven.
2. *Safety Priority* – potential to adversely affect the safety of workers or the related environment.
3. *Maintenance Priority* – Ensures continuation of existing level of facility operations to ensure proper efficiency without interruption. This priority has the following four potential levels
 - a. *Emergency* - stops the continuing operation of the facility
 - b. *Urgent* – While not completely prohibiting continuing use of the facility, may threaten use of entire facility or continuing use may result in significant & extensive repair of facility.
 - c. *Routine* – need to be completed & not necessarily. May be completed under existing operations preventative programs.
 - d. *Deferred* – desirable but not required to maintain status quo operations (e.g., planting or wild life enhancement projects etc.)

Overall site description the day of site inspection: The site appears clean and maintained. Minor maintenance improvements needed. The cement pond needs mud accumulation removed to improve discharge water quality into the wetlands at the compliance point. (Will schedule and coordinate the removal to occur as soon as water levels and weather forecast will allow).

There is some litter accumulating behind the berm in the stormwater ditch of Area 5. The soil stockpile located by the Equipment Operators trailer needs re-covering.

<i>Category number:</i>	Action to be Completed. Suggested Remedy:
<i>Category number:</i>	Action to be Completed. Suggested Remedy:
<i>Category number:</i>	Action to be Completed. Suggested Remedy:
<i>Category number:</i>	Action to be Completed. Suggested Remedy:

SWPPP Modifications Necessary? (circle Y or N)

If Y, log changes in Appendix I of SWPPP.

Potential Pollutant Sources Y / N

Site Map Y / N

INSPECTION REPORT SIGNATURE PAGE

INSPECTOR / QUALIFIED PERSONNEL

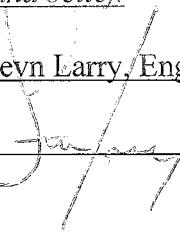
Based on professional judgment, which of the following statements is true: (select one)

- The site is in compliance with the terms and conditions of the SWPPP and the ISGP.*
 The site is NOT in compliance with the terms and conditions of the SWPPP and the ISGP.*

* Immediately notify Environmental Compliance Coordinator

I certify that this report is true, accurate and complete, to the best of my knowledge and belief.

Printed name: Stevn Larry, Engineer II

Signature:  Date: 3/1/2016

DULY AUTHORIZED REPRESENTATIVE

Based on professional judgment, which of the following statements is true: (select one)

- The site is in compliance with the terms and conditions of the SWPPP and the ISGP.*
 The site is NOT in compliance with the terms and conditions of the SWPPP and the ISGP.*

* Immediately notify Environmental Compliance Coordinator

I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed name: Bill Berni, Operations Manager

Signature:  Date: 3/1/2016

1 | 2 | 3 | 4 | 5 | 6 | 7

A

B

C

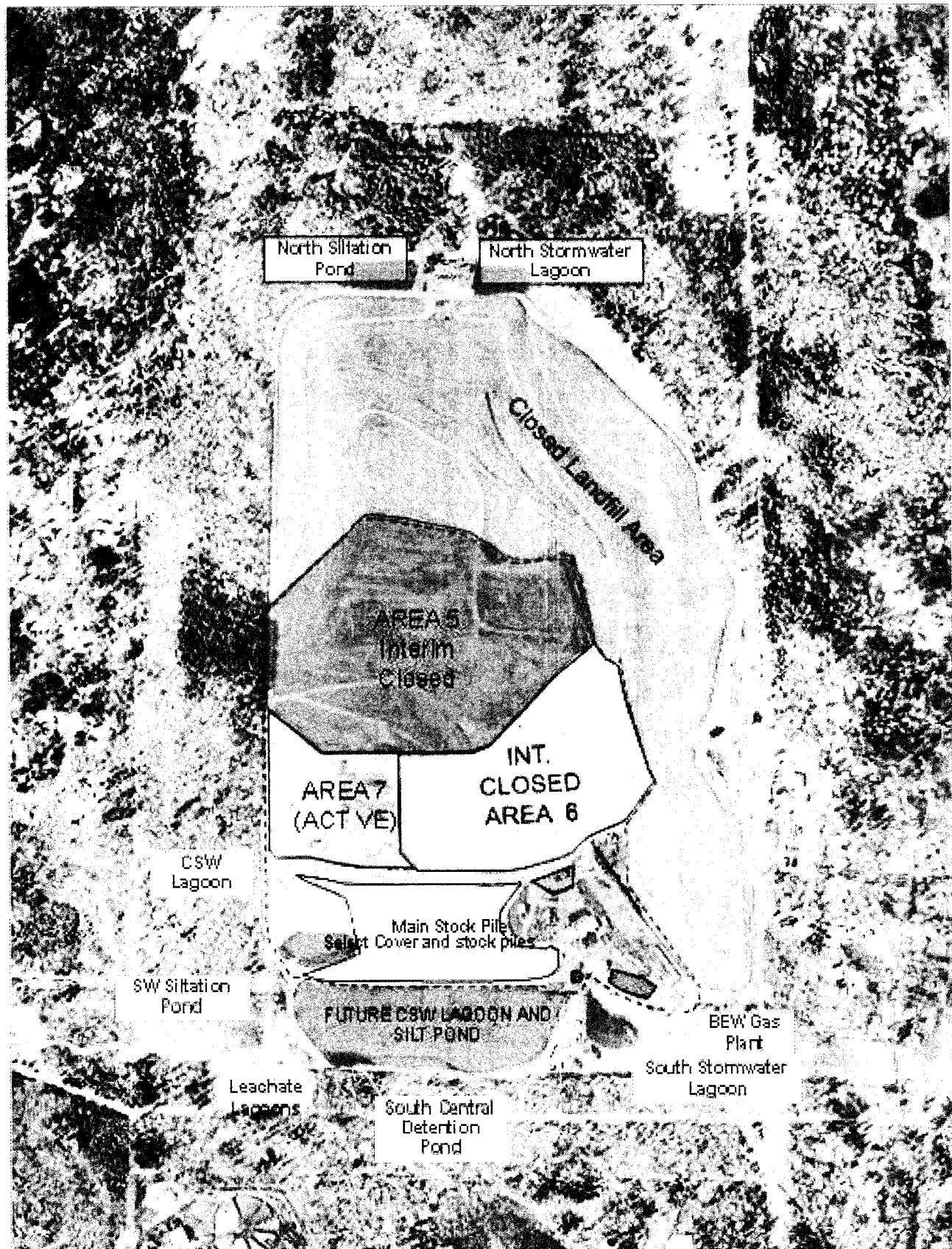
D

E

F

G

H



SOLID WASTE DIVISION

Landfill Facility Site Inspections

Type – Permit Compliance

 Inspected By: Stevn Larry

 Date: 3-29-2016

 Location: Cedar Hills

 Ambient Temperature (°F) 40 Weather Condition: Clear

ACTION CODES

A. Gas System	OK	Not OK	B. Leachate System	OK	Not OK	C. Landfill Operations	OK	Not OK
1. Pipe Penetrations	X		1. Pump Stations	X		1. Fueling Stations	X	
2. Collection Piping	X		2. Aeration Lagoons / Basins	X		2. Vehicle Wash Stations	X	
3. Gas Extraction Wells	X		3. Aerators	X		3. Equipment	X	
4. Valve Stations	X		4. Weeps (strip drains)	X		4. Perimeter Fences	X	
5. Odor	X		5. Collection System	X		5. Vegetation	X	
6. Flare Stations	X		a. Collection Pipes	X		6. Landfill Cover	X	
7. Air Compressors	X		b. Force mains	X		7. Drain Rock	X	
8. Noise Control	X		c. Manholes	X		9. Air Quality	X	
			d. Cleanouts	X				
D. Stormwater System			6. Generators	X		11. Vectors	X	
1. Ponds	X		7. Extraction Wells	X		12. Litter	X	
2. CB / Control Structures	X		8. Valve / Cleanout	X		13. Dust control	X	
3. Pipes / Culverts	X		9. Groundwater Extraction Wells	X		14. Other	X	
4. Trash Racks	X							
5. Ditches	X	X	E. Roadway System			Cover System / ESC		
6. Runoff Control Berms	X		1. Road Sweeping	X		F. Vegetation	X	
7. Discharge Points	X		2. Access Roads	X		1. Refuse	X	
8. General	X		3. Road Erosion	X		2. Cover Erosion	X	
			4. Road Pavement	X		3. Silt Fences/Filter Fabric	X	
G. Operations			5. Lane Striping	X				
1. Records Obtain / Review								

Item No.	Action Code(s)	Area Code(s) (See below or over for map) Area Map	Status			State Reason if "Fair or Poor"	Date Corrective Action Implemented
			G	F	P		
1	E1	H6		X		There is a little bit of outbound soil tracking at the access gate used for the Factoria Soils import project.	
2	D5	F4			X	There is an industrial sized fuel storage tank, located just south of the outdoor weld shop, that is placed next to a stormwater ditch that must be stored, covered and placed on a spill containment pad away from the stormwater ditch.	
3	D5	D4		X		Small areas of access roadside rilling.	

4	F2	D(4&5)			X	Ponding on top of Area-5 in several locations.	
5	C6	F5			X	Soil stock pile located by the Equipment Operators trailers, needs covering.	
6	D2	H3			X	There are several barrels of well cuttings that may contain Hazmat. Covering and accident/crash protection are required.	

AREA CODES (for Cedar Hills)

East Main Hill = EMH

Southwest Main Hill = SWMH

Southeast Pit Area = SEPA

Central Pit = CP

G = Good

Area 2/3 = A2/3

Area 4 = A4

Stockpile = SP

F = Fair

Aeration Ponds = AP

So. Solid Waste Area = SSWA

North Flare Station = NFS

P = Poor

Area 5 = A5

Area 6 = A6

Area 7 = A7

State the needs of the repairs in the suggested remedy box.

1. *Regulatory Priority* - permit, regulations & code & compliance driven.
2. *Safety Priority* – potential to adversely affect the safety of workers or the related environment.
3. *Maintenance Priority* – Ensures continuation of existing level of facility operations to ensure proper efficiency without interruption. This priority has the following four potential levels
 - a. *Emergency* - stops the continuing operation of the facility
 - b. *Urgent* – While not completely prohibiting continuing use of the facility, may threaten use of entire facility or continuing use may result in significant & extensive repair of facility.
 - c. *Routine* – need to be completed & not necessarily. May be completed under existing operations preventative programs.
 - d. *Deferred* – desirable but not required to maintain status quo operations (e.g., planting or wild life enhancement projects etc.)

Overall site description the day of site inspection: The site appears clean and maintained. Minor maintenance improvements needed.

- 1) Soil outbound tracking at the Factorial Soils access gate onto 228th.
- 2) An industrial sized fuel tank must be moved away from the stormwater ditch, covered and set on a spill collection pad.
- 3) There are some small areas of “access road” rilling that will require filling (NE side of Area-5).
- 4) Ponding on top of Area-5.
- 5) Soil stockpile, located next to the Equipment Operators trailer needs re-covering.
- 6) Area 8 drill cuttings need covering/accident/crash protection.

Photos taken during the site inspection can be seen at:

P:\SWPublic\CHL_Public\CH Monthly Site Inspections\SW Inspections\SW Inspection 16\3 Mar

<i>Category number:</i>	Action to be Completed. Suggested Remedy:
<i>Category number:</i>	Action to be Completed. Suggested Remedy:
<i>Category number:</i>	Action to be Completed. Suggested Remedy:
<i>Category number:</i>	Action to be Completed. Suggested Remedy:

SWPPP Modifications Necessary? (circle Y or N)

If Y, log changes in Appendix I of SWPPP.

Potential Pollutant Sources Y / N

Site Map Y / N

INSPECTION REPORT SIGNATURE PAGE

INSPECTOR / QUALIFIED PERSONNEL

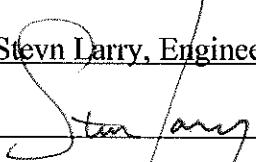
Based on professional judgment, which of the following statements is true: (select one)

- The site is in compliance with the terms and conditions of the SWPPP and the ISGP.*
 The site is NOT in compliance with the terms and conditions of the SWPPP and the ISGP.*

* Immediately notify Environmental Compliance Coordinator

I certify that this report is true, accurate and complete, to the best of my knowledge and belief.

Printed name: Stevn Larry, Engineer II

Signature:  Date: 3/31/2016

DULY AUTHORIZED REPRESENTATIVE

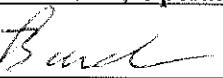
Based on professional judgment, which of the following statements is true: (select one)

- The site is in compliance with the terms and conditions of the SWPPP and the ISGP.*
 The site is NOT in compliance with the terms and conditions of the SWPPP and the ISGP.*

* Immediately notify Environmental Compliance Coordinator

I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed name: Bill Berni, Operations Manager

Signature:  Date: 3/31/16

1 | 2 | 3 | 4 | 5 | 6 | 7

A

B

C

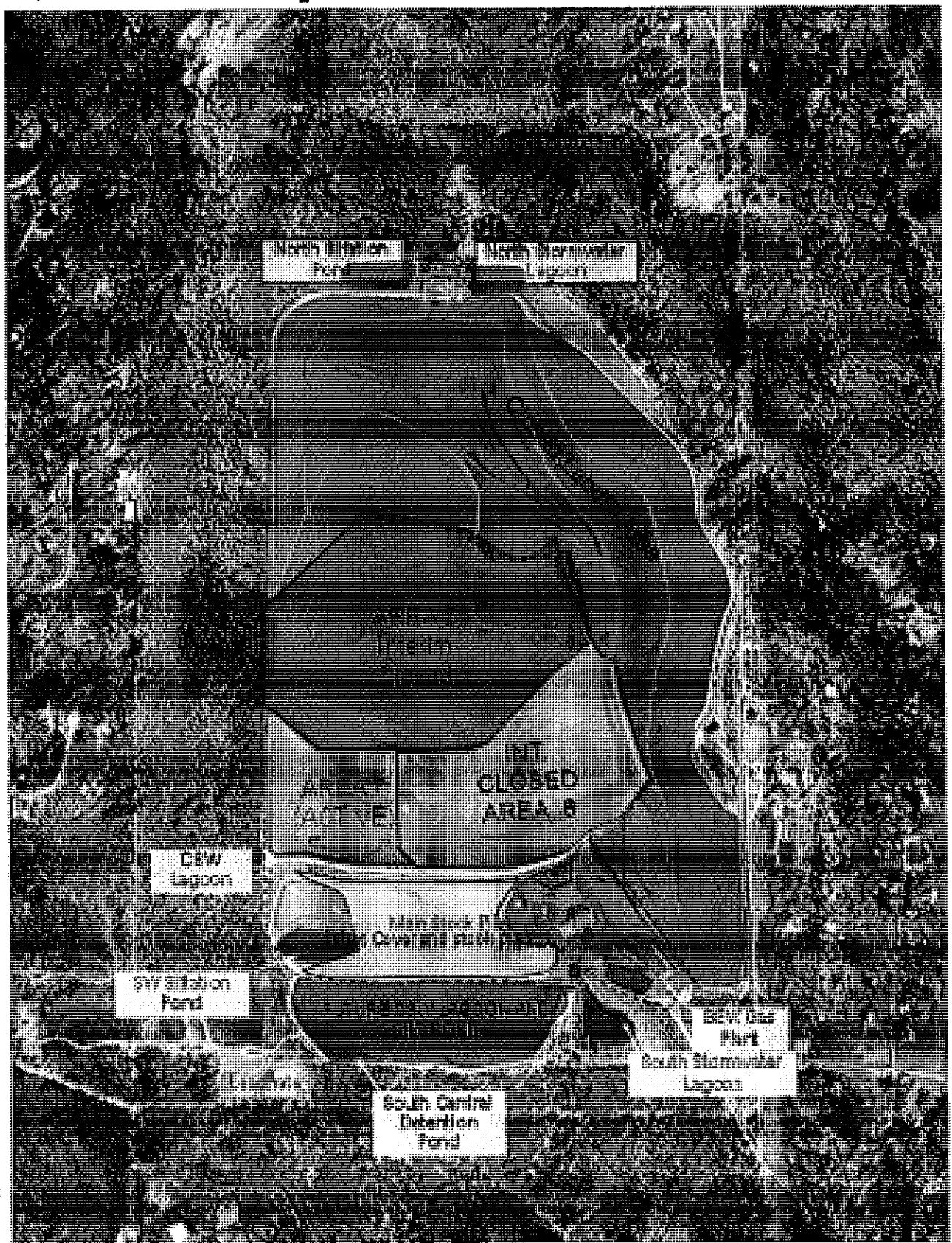
D

E

F

G

H



SOLID WASTE INSPECTION REPORT

PUBLIC HEALTH - SEATTLE & KING COUNTY Downtown Office 401 - 5th Ave., Ste 1100 Seattle, WA 98104 206-263-9566	PURPOSE OF VISIT: Routine Inspection/Field Review of a Municipal Landfill establishment (PE=1006)
ESTABLISHMENT INFORMATION: CEDAR HILLS SANITARY LAND CEDAR HILLS SANITARY LAND 16645 228TH AV SE MAPLE VALLEY, WA 98038 206-296-4385 Program Record: PR0015736	INSPECTION INFORMATION: Date of Inspection: Thursday, January 21, 2016 Time In: 1:30 pm Time Out: 2:20 pm Inspector: Darshan Dhillon Result: SATISFACTORY

VIOLATIONS OBSERVED (if any)

OVERALL INSPECTION COMMENTS:

No bubbling gas through puddles of water.

Landfill cover acceptable

Monitoring wells are locked.

Inspection records are kept up-to-date.

* A barrel of black landfill mud was found to be stored on the landfill #6 by a pile of black LFG gas pipes. According to Wally Grant LFG lead the contents of the drum was dug out of the land fill. Therefore, it needs to be removed and disposed of in the landfill.



Darshan Dhillon

H&EI III

PIC Phone #: 206-263-1042

Email: scott.barden@kingcounty.gov

The following items are evaluated during inspections.

Violations cited as out of compliance during this inspection are highlighted below.

Out=out of compliance

OUT

Additional Operating Criteria WAC 173-351-220(1)

- 0837-Road dust must be controlled
- 0838-Litter must be controlled
- 0839-Scavenging must be prohibited
- 0840-Staffing must be a minimum 2 personnel on site with one at the active portion when open
- 0841-Certification of operators of solid waste landfills must be current
- 0842-Reserve operational equipment must be available and adequate
- 0843-Active area boundaries must be clearly marked
- 0844-Must compact solid waste before succeeding layers are added per WAC
- 0845-Maintain monitoring systems for groundwater, explosive gas and other monitoring per permit
- 0846-Provide orderly and sanitary recycling methods to general public unless alternatives provided
- 0847-Prohibit disposal of dangerous waste unless DWR are met
- 0848-Must allow inspections by public health

Annual Report

- 0828-Annual report due April 1st

Closure and post-closure care WAC 173-351-500

- 0856-Final cover installed to minimize, infiltration and erosion per design
- 0857-Closure plan followed for areas of the MSWLF unit within 30 days of final receipt of wastes
- 0858-For closed areas, closure activities must be completed within 180 days
- 0859-For closed areas post closure care must be conducted per post- closure plan and WAC
- 0860-Final cover for closed areas must be maintained (vegetation, settlement, erosion,# run on/off)
- 0861-Leachate collection systems maintained and operated per post-closure plan and WAC 173-351-300
- 0862-Gas monitoring systems maintained and operated per post-closure plan and WAC 173-351-200

Design Criteria New MSWLF expansion 173-351-300

- 0849-New MSWLF units and expansions have approved liner & leachate collection system construction

Groundwater sampling and analysis requirements WAC 173-351-4

- 0853-Roundwater monitoring must be accordance with an approved sampling / analysis document

Liquids Restrictions

- 0825-Bulk or non-containerized liquid waste may not be placed in MSWLF unit unless exceptions allow
- 0826-Containers holding liquid waste may not be placed in a MSWLF unit unless meet 200 (9)(b)(i-iii)

MSLF Groundwater reporting WAC 173-351-415

- 0854-Annual groundwater report due by April 1st
- 0855-Quarterly groundwater monitoring reports submitted

MSLF Leachate Managementfor Surface Impoundments WAC 173-

OUT

Design Standards - Surface Impoundments

- 0740-Embankments and slopes must be maintained and be in good condition
- 0741-Freeboard for the surface impoundment is > 18 inches or as specified per the permit

Ground Water monitoring requirements for surface impoundments and tanks

- 0766-Surface impoundments not equipped with a leak detection layer must meet WAC 173-350-500
- 0767-Surface impoundments w/a leak detection layer are subject to WAC 173-350-040 (5),173-350-330(b)

Operating standards - Surface Impoundments and tanks

- 0750-Must prevent overfilling and maintain required freeboard = 18 inches from wave action/precip
- 0751-Must control access to the site
- 0752-Must control nuisance odors for wastes or liquids
- 0753-Must control birds at impoundments storing wastes capable of attracting birds
- 0754-Records kept of weekly inspections and liner inspections at least every 5 years
- 0755-Daily records kept on-site of the quantity and type of wastes removed for at least 5 years

Operating Criteria WAC 173-351-200

Access Restriction

- 0818-Access must be controlled (public /animal/vehicle). Barriers must be maintained.
- 0819-Lockable gate at each entry must be maintained and in good condition

Air Criteria

- 0816-MSWLF units must meet all applicable air standards
- 0817-Open burning of garbage is prohibited. Other types of burning only under appropriate permit

Cover Material Requirements

- 0806-Approved cover material must be applied at a depth of 6 in# at the end of the day or as needed
- 0807-Only approved alternative cover materials are in use and are applied at an approved depth

Disease Vectors Controlled

- 0808-Procedures must be in place to control disease vectors e g. (rodents, flies, mosquitoes, other)

Explosive Gases Control

- 0809-Methane gas must not exceed 25% of lower explosive limit for facility structures
- 0810-Methane gas concentration must not exceed lower explosive limit at the property boundary-beyond
- 0811-Methane gas concentration must not exceed 100ppm/volume of methane in offsite structures
- 0812-Explosive gases must be controlled and a routine methane monitoring program in place
- 0813-Monitoring for explosive gas occurs quarterly at a minimum
- 0814-Required measures must be taken if methane gas levels exceed limits (notify, monitor, evacuate)
- 0815-Must have procedures for methane gas level exceedance (gas levels, interim steps, remediation)

Incoming Waste Management

- 0800-Procedures must be in place for excluding the receipt of prohibited waste
- 0801-Random inspections must be conducted for incoming loads to prevent receipts of prohibited waste
- 0802-Record must be kept of random inspections of incoming loads to prevent prohibited waste
- 0803-Facility personnel must be trained to recognize prohibited wastes and training logs kept
- 0804-Immediate notification to Public Health and Ecology for any prohibited waste discovered

Performance Standards

- 0290-Must not pose a threat to human health or environment
- 0291-Protects from ground water contamination
- 0292-The facility must conform to the approved local comprehensive solid waste management plan
- 0293-Complies with RCW 70.94 Emission or ambient air quality standards
- 0294-Complies with all other local/state/federal laws and regulations

Performance Standards for groundwater monitoring System Design

- 0850-All groundwater monitoring system must be designed and maintained per WAC 173-351-405
- 0851-All wells must be clearly labeled, capped and locked
- 0852-Equipment used for groundwater monitoring is maintained

Permit Requirements

- 0863-Permit Required

Plan of Operation

- 0829-Plan of operation is current, complete and a hard copy present at the permit approved location
- 0830-Operators handle solid waste as described in plan of operations
- 0831-Operators conducting inspections per plan of operation
- 0832-Plan of operation procedures followed for fire or explosion
- 0833-Plan of operation procedures followed for actions to take for sudden releases of gas, leachate
- 0834-Maintain and operate leachate and gas collection equipment per plan of operation
- 0835-Safety equipment listed in plan of operation must be on-site and working (shower, eyewash)
- 0836-Any additional requirements by Public Health are followed as outlined on the plan of operation

Record Keeping

- 0827-Operating record is available at the approved location and is complete for all required records

Run-on/runoff Control Systems

- 0820-Prevent run-on to the active portion of the landfill during the peak discharge from 25yr storm
- 0821-Must provide runoff control for active portions to collect & control water vol. 24hr/25yr storm
- 0822-Runoff from active portion of the landfill must be handled in accordance w. WAC 173-351-200(8)

Surface Water Requirements

- 0823-MSWLF units must not discharge pollutants into waters of the state
- 0824-Must not cause the discharge of a nonpoint source pollution to waters of the state

Cedar Hills Area 5 Maintenance

for the period 01/01/2016 *to* 03/31/2016

Click the blue 'Y' to see notes

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
------	----------	-------------------	-------------------	----------------	-----------------	----------------------

Area 5

CHAREA5	0000015722	CLOSED	Monthly Gas System PM	01/05/2016	N
CHAREA5	0000015722	CLOSED	Monthly Stormwater PM	01/05/2016	N
CHAREA5	0000015722	CLOSED	Monthly Cover System PM	01/05/2016	N
CHAREA5	0000015855	CLOSED	Monthly Gas System PM	02/12/2016	N
CHAREA5	0000015855	CLOSED	Monthly Stormwater PM	02/12/2016	N
CHAREA5	0000015855	CLOSED	Monthly Cover System PM	02/12/2016	N
CHAREA5	0000015997	CLOSED	Monthly Gas System PM	03/10/2016	N
CHAREA5	0000015997	CLOSED	Monthly Stormwater PM	03/10/2016	N
CHAREA5	0000015997	CLOSED	Monthly Cover System PM	03/10/2016	N
CHAREA5E	0000015655	CLOSED	Monthly Header PM	01/20/2016	N
CHAREA5E	0000015789	CLOSED	Monthly Header PM	02/09/2016	N
CHAREA5E	0000015930	CLOSED	Monthly Header PM	03/14/2016	N
CHAREA5W	0000015656	CLOSED	Monthly Header PM	01/20/2016	N
CHAREA5W	0000015788	CLOSED	Monthly Header PM	02/09/2016	N
CHAREA5W	0000015929	CLOSED	Monthly Header PM	03/14/2016	N

Cedar Hills Landfill Storm Water Pollution Prevention Plan Maintenance

for the period 01/01/2016 to 03/31/2016

Click the blue 'Y' to see notes

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
Catch Basins						
	Cedar Hills	0000030934	CLOSED	PMM	01/06/2016	Y
	Cedar Hills	0000031295	CLOSED	PMM	02/04/2016	N
	Cedar Hills	0000031589	CLOSED	PMM	03/01/2016	Y
Control Structures						
	Cedar Hills	0000031489	CLOSED	PMS	02/12/2016	N
Trash Racks						
	Cedar Hills	0000031005	CLOSED	PMW	01/06/2016	N
	Cedar Hills	0000031104	CLOSED	PMW	01/15/2016	N
	Cedar Hills	0000031146	CLOSED	PMW	01/14/2016	Y
	Cedar Hills	0000031173	CLOSED	PMW	01/20/2016	N
	Cedar Hills	0000031229	CLOSED	PMW	01/25/2016	Y
	Cedar Hills	0000031263	CLOSED	PMW	02/04/2016	N
	Cedar Hills	0000031416	CLOSED	PMW	02/11/2016	N
	Cedar Hills	0000031487	CLOSED	PMW	02/18/2016	N
	Cedar Hills	0000031552	CLOSED	PMW	02/26/2016	N
	Cedar Hills	0000031667	CLOSED	PMW	02/29/2016	Y
	Cedar Hills	0000031689	CLOSED	PMW	03/08/2016	Y
	Cedar Hills	0000031794	CLOSED	PMW	03/16/2016	N
	Cedar Hills	0000031862	CLOSED	PMW	03/22/2016	N
	Cedar Hills	0000031937	CLOSED	PMW	03/29/2016	N
Ditches						
	Cedar Hills	0000030934	CLOSED	PMM	01/06/2016	Y
	Cedar Hills	0000030935	CLOSED	PMQ	01/06/2016	N
	Cedar Hills	0000031005	CLOSED	PMW	01/06/2016	N
	Cedar Hills	0000031104	CLOSED	PMW	01/15/2016	N
	Cedar Hills	0000031146	CLOSED	PMW	01/14/2016	Y
	Cedar Hills	0000031173	CLOSED	PMW	01/20/2016	N

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
	Cedar Hills	0000031229	CLOSED	PMW	01/25/2016	Y
	Cedar Hills	0000031263	CLOSED	PMW	02/04/2016	N
	Cedar Hills	0000031295	CLOSED	PMM	02/04/2016	N
	Cedar Hills	0000031416	CLOSED	PMW	02/11/2016	N
	Cedar Hills	0000031487	CLOSED	PMW	02/18/2016	N
	Cedar Hills	0000031488	CLOSED	PMI	02/12/2016	N
	Cedar Hills	0000031552	CLOSED	PMW	02/26/2016	N
	Cedar Hills	0000031589	CLOSED	PMM	03/01/2016	Y
	Cedar Hills	0000031667	CLOSED	PMW	02/29/2016	Y
	Cedar Hills	0000031689	CLOSED	PMW	03/08/2016	Y
	Cedar Hills	0000031794	CLOSED	PMW	03/16/2016	N
	Cedar Hills	0000031862	CLOSED	PMW	03/22/2016	N
	Cedar Hills	0000031937	CLOSED	PMW	03/29/2016	N
<hr/>						
Pipes/Culverts						
	Cedar Hills	0000030935	CLOSED	PMQ	01/06/2016	N
	Cedar Hills	0000031488	CLOSED	PMI	02/12/2016	N
<hr/>						
Ponds/Lagoons						
	Cedar Hills	0000030935	CLOSED	PMQ	01/06/2016	N
	Cedar Hills	0000031005	CLOSED	PMW	01/06/2016	N
	Cedar Hills	0000031104	CLOSED	PMW	01/15/2016	N
	Cedar Hills	0000031146	CLOSED	PMW	01/14/2016	Y
	Cedar Hills	0000031173	CLOSED	PMW	01/20/2016	N
	Cedar Hills	0000031229	CLOSED	PMW	01/25/2016	Y
	Cedar Hills	0000031263	CLOSED	PMW	02/04/2016	N
	Cedar Hills	0000031416	CLOSED	PMW	02/11/2016	N
	Cedar Hills	0000031487	CLOSED	PMW	02/18/2016	N
	Cedar Hills	0000031488	CLOSED	PMI	02/12/2016	N
	Cedar Hills	0000031489	CLOSED	PMS	02/12/2016	N
	Cedar Hills	0000031552	CLOSED	PMW	02/26/2016	N
	Cedar Hills	0000031667	CLOSED	PMW	02/29/2016	Y
	Cedar Hills	0000031689	CLOSED	PMW	03/08/2016	Y
	Cedar Hills	0000031794	CLOSED	PMW	03/16/2016	N
	Cedar Hills	0000031862	CLOSED	PMW	03/22/2016	N

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
	Cedar Hills	0000031937	CLOSED	PMW	03/29/2016	N
General						
	Cedar Hills	0000030935	CLOSED	PMQ	01/06/2016	N
	Cedar Hills	0000031005	CLOSED	PMW	01/06/2016	N
	Cedar Hills	0000031104	CLOSED	PMW	01/15/2016	N
	Cedar Hills	0000031146	CLOSED	PMW	01/14/2016	Y
	Cedar Hills	0000031173	CLOSED	PMW	01/20/2016	N
	Cedar Hills	0000031229	CLOSED	PMW	01/25/2016	Y
	Cedar Hills	0000031263	CLOSED	PMW	02/04/2016	N
	Cedar Hills	0000031416	CLOSED	PMW	02/11/2016	N
	Cedar Hills	0000031487	CLOSED	PMW	02/18/2016	N
	Cedar Hills	0000031552	CLOSED	PMW	02/26/2016	N
	Cedar Hills	0000031667	CLOSED	PMW	02/29/2016	Y
	Cedar Hills	0000031689	CLOSED	PMW	03/08/2016	Y
	Cedar Hills	0000031794	CLOSED	PMW	03/16/2016	N
	Cedar Hills	0000031862	CLOSED	PMW	03/22/2016	N
	Cedar Hills	0000031937	CLOSED	PMW	03/29/2016	N
Leachate System						
	Cedar Hills	0000030935	CLOSED	PMQ	01/06/2016	N
	CHPS1	0000030982	CLOSED	PMW	01/05/2016	N
	CHPS1	0000031084	CLOSED	PMW	01/12/2016	N
	CHPS1	0000031160	CLOSED	PMW	01/18/2016	N
	CHPS1	0000031188	CLOSED	PMW	01/26/2016	N
	CHPS1	0000031280	CLOSED	PMW	02/02/2016	N
	CHPS1	0000031389	CLOSED	PMW	02/09/2016	N
	CHPS1	0000031464	CLOSED	PMW	02/16/2016	N
	CHPS1	0000031521	CLOSED	PMW	02/23/2016	N
	CHPS1	0000031648	CLOSED	PMW	03/01/2016	N
	CHPS1	0000031704	CLOSED	PMW	03/08/2016	N
	CHPS1	0000031779	CLOSED	PMW	03/15/2016	N
	CHPS1	0000031842	CLOSED	PMW	03/22/2016	N
	CHPS1	0000031906	CLOSED	PMW	03/29/2016	N

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
	CHPS2	0000030981	CLOSED	PMW	01/05/2016	N
	CHPS2	0000031083	CLOSED	PMW	01/12/2016	N
	CHPS2	0000031161	CLOSED	PMW	01/18/2016	N
	CHPS2	0000031189	CLOSED	PMW	01/26/2016	N
	CHPS2	0000031279	CLOSED	PMW	02/02/2016	N
	CHPS2	0000031388	CLOSED	PMW	02/09/2016	N
	CHPS2	0000031465	CLOSED	PMW	02/16/2016	N
	CHPS2	0000031522	CLOSED	PMW	02/23/2016	N
	CHPS2	0000031646	CLOSED	PMW	03/01/2016	N
	CHPS2	0000031703	CLOSED	PMW	03/08/2016	N
	CHPS2	0000031780	CLOSED	PMW	03/15/2016	N
	CHPS2	0000031843	CLOSED	PMW	03/22/2016	N
	CHPS2	0000031907	CLOSED	PMW	03/29/2016	N
	CHPS3	0000030980	CLOSED	PMW	01/05/2016	N
	CHPS3	0000031082	CLOSED	PMW	01/12/2016	N
	CHPS3	0000031162	CLOSED	PMW	01/18/2016	N
	CHPS3	0000031191	CLOSED	PMW	01/26/2016	N
	CHPS3	0000031278	CLOSED	PMW	02/02/2016	N
	CHPS3	0000031387	CLOSED	PMW	02/09/2016	N
	CHPS3	0000031466	CLOSED	PMW	02/16/2016	N
	CHPS3	0000031524	CLOSED	PMW	02/23/2016	N
	CHPS3	0000031645	CLOSED	PMW	03/01/2016	N
	CHPS3	0000031702	CLOSED	PMW	03/08/2016	N
	CHPS3	0000031781	CLOSED	PMW	03/15/2016	N
	CHPS3	0000031844	CLOSED	PMW	03/22/2016	N
	CHPS3	0000031908	CLOSED	PMW	03/29/2016	N
	CHPS4	0000030979	CLOSED	PMW	01/05/2016	N
	CHPS4	0000031081	CLOSED	PMW	01/12/2016	N
	CHPS4	0000031163	CLOSED	PMW	01/18/2016	N
	CHPS4	0000031192	CLOSED	PMW	01/26/2016	N
	CHPS4	0000031277	CLOSED	PMW	02/02/2016	N
	CHPS4	0000031385	CLOSED	PMW	02/09/2016	N
	CHPS4	0000031467	CLOSED	PMW	02/16/2016	Y
	CHPS4	0000031523	CLOSED	PMW	02/23/2016	N
	CHPS4	0000031644	CLOSED	PMW	03/01/2016	N

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
	CHPS4	0000031701	CLOSED	PMW	03/08/2016	N
	CHPS4	0000031782	CLOSED	PMW	03/15/2016	N
	CHPS4	0000031845	CLOSED	PMW	03/22/2016	N
	CHPS4	0000031909	CLOSED	PMW	03/29/2016	N
	LEPS	0000030922	CLOSED	PMM	01/05/2016	Y
	LEPS	0000030922	CLOSED	PMM	01/05/2016	Y
	LEPS	0000030975	CLOSED	PMW	01/05/2016	N
	LEPS	0000031089	CLOSED	PMW	01/12/2016	N
	LEPS	0000031158	CLOSED	PMW	01/18/2016	N
	LEPS	0000031183	CLOSED	PMW	01/26/2016	N
	LEPS	0000031285	CLOSED	PMW	02/02/2016	N
	LEPS	0000031302	CLOSED	PMM	02/02/2016	Y
	LEPS	0000031393	CLOSED	PMW	02/09/2016	N
	LEPS	0000031460	CLOSED	PMW	02/16/2016	N
	LEPS	0000031527	CLOSED	PMW	02/24/2016	N
	LEPS	0000031603	CLOSED	PMM	03/01/2016	Y
	LEPS	0000031603	CLOSED	PMM	03/01/2016	Y
	LEPS	0000031640	CLOSED	PMW	03/01/2016	N
	LEPS	0000031708	CLOSED	PMW	03/15/2016	N
	LEPS	0000031840	CLOSED	PMW	03/22/2016	N
	LEPS	0000031913	CLOSED	PMW	03/29/2016	N

Landfill Cover

CHAPONDS	0000015720	CLOSED	PMV	01/05/2016	N
CHAPONDS	0000015853	CLOSED	PMV	02/12/2016	N
CHAPONDS	0000015995	CLOSED	PMV	03/10/2016	N
CHAREA4	0000015721	CLOSED	PMV	01/05/2016	N
CHAREA4	0000015854	CLOSED	PMV	02/12/2016	N
CHAREA4	0000015996	CLOSED	PMV	03/10/2016	N
CHAREA5	0000015722	CLOSED	PMV	01/05/2016	N
CHAREA5	0000015855	CLOSED	PMV	02/12/2016	N
CHAREA5	0000015997	CLOSED	PMV	03/10/2016	N
CHAREA6	0000015723	CLOSED	PMV	01/05/2016	N
CHAREA6	0000015856	CLOSED	PMV	02/12/2016	N
CHAREA6	0000015998	CLOSED	PMV	03/10/2016	N

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
	CHAREAS23	0000015725	CLOSED	PMV	01/05/2016	N
	CHAREAS23	0000015858	CLOSED	PMV	02/12/2016	N
	CHAREAS23	0000016000	CLOSED	PMV	03/10/2016	N
	CHCENTRALPIT	0000015726	CLOSED	PMV	01/05/2016	N
	CHCENTRALPIT	0000015859	CLOSED	PMV	02/12/2016	N
	CHCENTRALPIT	0000016001	CLOSED	PMV	03/10/2016	N
	CHEMH	0000015727	CLOSED	PMV	01/05/2016	N
	CHEMH	0000015860	CLOSED	PMV	02/12/2016	N
	CHEMH	0000016002	CLOSED	PMV	03/10/2016	N
	CHNFLARESTN	0000015731	CLOSED	PMV	01/05/2016	N
	CHNFLARESTN	0000015864	CLOSED	PMV	02/12/2016	N
	CHNFLARESTN	0000016006	CLOSED	PMV	03/10/2016	N
	CHSEPA	0000015728	CLOSED	PMV	01/05/2016	N
	CHSEPA	0000015861	CLOSED	PMV	02/12/2016	N
	CHSEPA	0000016003	CLOSED	PMV	03/10/2016	N
	CHSSWA	0000015729	CLOSED	PMV	01/05/2016	N
	CHSSWA	0000015862	CLOSED	PMV	02/12/2016	N
	CHSSWA	0000016004	CLOSED	PMV	03/10/2016	N
	CHSTOCKPILE	0000015719	CLOSED	PMV	01/05/2016	N
	CHSTOCKPILE	0000015852	CLOSED	PMV	02/12/2016	N
	CHSTOCKPILE	0000015994	CLOSED	PMV	03/10/2016	N
	CHSWMH	0000015730	CLOSED	PMV	01/05/2016	N
	CHSWMH	0000015863	CLOSED	PMV	02/12/2016	N
	CHSWMH	0000016005	CLOSED	PMV	03/10/2016	N

Landfill Gas

CHAREA5E	0000015650	CLOSED	PMW	01/08/2016	N
CHAREA5E	0000015699	CLOSED	PMW	01/20/2016	N
CHAREA5E	0000015783	CLOSED	PMW	02/09/2016	N
CHAREA5E	0000015832	CLOSED	PMW	02/23/2016	N
CHAREA5E	0000015924	CLOSED	PMW	03/07/2016	N
CHAREA5E	0000015974	CLOSED	PMW	03/23/2016	N
CHAREA5W	0000015651	CLOSED	PMW	01/08/2016	N
CHAREA5W	0000015700	CLOSED	PMW	01/21/2016	N
CHAREA5W	0000015784	CLOSED	PMW	02/09/2016	N

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
	CHAREA5W	0000015833	CLOSED	PMW	02/23/2016	N
	CHAREA5W	0000015925	CLOSED	PMW	03/07/2016	N
	CHAREA5W	0000015975	CLOSED	PMW	03/23/2016	N
	CHAREA6	0000015652	CLOSED	PMW	01/05/2016	N
	CHAREA6	0000015701	CLOSED	PMW	01/22/2016	N
	CHAREA6	0000015785	CLOSED	PMW	02/02/2016	N
	CHAREA6	0000015834	CLOSED	PMW	02/25/2016	N
	CHAREA6	0000015926	CLOSED	PMW	03/03/2016	N
	CHAREA6	0000015976	CLOSED	PMW	03/23/2016	N
	CHAREAS23	0000015604	CLOSED	PMW	01/11/2016	N
	CHAREAS23	0000015669	CLOSED	PMW	01/26/2016	N
	CHAREAS23	0000015736	CLOSED	PMW	02/10/2016	N
	CHAREAS23	0000015802	CLOSED	PMW	02/24/2016	N
	CHAREAS23	0000015878	CLOSED	PMW	03/09/2016	N
	CHAREAS23	0000015943	CLOSED	PMW	03/23/2016	N
	CHCMH	0000015627	CLOSED	PMW	01/08/2016	N
	CHCMH	0000015682	CLOSED	PMW	01/20/2016	N
	CHCMH	0000015760	CLOSED	PMW	02/03/2016	N
	CHCMH	0000015815	CLOSED	PMW	02/24/2016	N
	CHCMH	0000015889	CLOSED	PMW	03/08/2016	N
	CHCMH	0000015957	CLOSED	PMW	03/21/2016	N
	CHCMH	0000015957	CLOSED	PMW	03/28/2016	N
	CHEMH	0000015615	CLOSED	PMW	01/05/2016	N
	CHEMH	0000015674	CLOSED	PMW	01/25/2016	N
	CHEMH	0000015748	CLOSED	PMW	02/03/2016	N
	CHEMH	0000015807	CLOSED	PMW	02/18/2016	N
	CHEMH	0000015911	CLOSED	PMW	03/08/2016	N
	CHEMH	0000015949	CLOSED	PMW	03/29/2016	N
	CHSEPA	0000015616	CLOSED	PMW	01/04/2016	N
	CHSEPA	0000015675	CLOSED	PMW	01/19/2016	N
	CHSEPA	0000015749	CLOSED	PMW	02/01/2016	N
	CHSEPA	0000015808	CLOSED	PMW	02/16/2016	N
	CHSEPA	0000015912	CLOSED	PMW	03/02/2016	N
	CHSEPA	0000015950	CLOSED	PMW	03/16/2016	N

Item	Location	Work Order Number	Work Order Status	PM/Repair Type	Completion Date	Work Order Has Notes
------	----------	-------------------	-------------------	----------------	-----------------	----------------------

Landfill Roads

CHACTIVEAREA	0000015710	CLOSED	PMR	01/05/2016	N
CHACTIVEAREA	0000015843	CLOSED	PMR	02/12/2016	N
CHACTIVEAREA	0000015985	CLOSED	PMR	03/10/2016	N
CHMAINGATE	0000015711	CLOSED	PMR	01/05/2016	N
CHMAINGATE	0000015844	CLOSED	PMR	02/12/2016	N
CHMAINGATE	0000015986	CLOSED	PMR	03/10/2016	N
CHPSR	0000015712	CLOSED	PMR	01/05/2016	N
CHPSR	0000015845	CLOSED	PMR	02/12/2016	N
CHPSR	0000015987	CLOSED	PMR	03/10/2016	N
CHSTOCKPILE	0000015719	CLOSED	PMR	01/05/2016	N
CHSTOCKPILE	0000015852	CLOSED	PMR	02/12/2016	N
CHSTOCKPILE	0000015994	CLOSED	PMR	03/10/2016	N

Landfill Roads

Sweeper	0	see Equipment Operator Spreadsheet	NA	0	N
---------	---	------------------------------------	----	---	---

Equipment

Click the word 'Equipment' to see Work Order Numbers

Appendix B:

Gas Monitoring Reports

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills

Date: 3/13/16

Cal. Time: 7:25 am

Technician: RB

Surveyor PJ

Calibration :

Test Instrument used: TVA 1000

Cal. Gas Lot No: 20328

Cal Gas Used:

CH_4 496 ppm

O₂ ~~O₂~~ zero gas

Barometric Pressure	Time
Start 30.15	7:20 am
Stop 30.19	12:15 pm

90% response time in seconds:

1 5 seconds

$$2 \frac{4}{1} \text{ seconds}$$

$$3 \frac{4}{5} \text{ seconds}$$

avg. 4 seconds

Weather Conditions: Mostly cloudy

Wind Speed &

Direction (out of): 6 mph, SE

Northing (UTM #)

Easting (10 T #)

Time

Comments

A graph on grid paper showing a downward-sloping line labeled "No Exceedances". The line starts at the top left and ends at the bottom right, representing a constraint or boundary.

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills

Date: 3/15/16

Cal. Time: 12:18 pm

Technician: R.B

Surveyor P J

Calibration :

Test Instrument used: TVA 1000

Cal. Gas Lot No: 20328

Cal Gas Used:

CH₄ 496 ppm CH₄

O₂ zero Gas

Barometric Pressure	Time
Start 30.19	12:15 pm
Stop 30.18	5:08 pm

90% response time in seconds:

1 5 seconds

$$2 \frac{5}{\text{seconds}}$$

$$3 \frac{4}{5} \text{ seconds}$$

avg. 5 seconds

Weather Conditions: Mostly cloudy

Wind Speed &

Direction (out of): 8 mph, SE

Northing (UTM #)

Easting (10 T #)

Time

Comments

A graph on lined paper featuring a grid of horizontal and vertical lines. A single, solid black line is drawn from the top-left corner towards the bottom-right corner, representing a linear function. In the upper-middle portion of the grid, the words "No Exceedances" are handwritten in cursive.

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills

Date: 3-16-16

Cal. Time: 10:20 am

Technician: R.B.

Surveyor PJ

Calibration :

Test Instrument used: Tva 1000

Cal. Gas Lot No: 20328

Cal Gas Used:

CH_4 496 ppm CH_4

O₂ zero gas

Barometric Pressure	Time
Start 30.27	10:17 am
Stop 30.26	2:12 pm

90% response time in seconds:

1 5 seconds

2 4 seconds

$$3 \frac{4}{7} \text{ seconds}$$

avg. 4 seconds

Weather Conditions: Partly cloudy

Wind Speed &

Direction (out of): 5 mph, N

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills

Date: 3-16-16

Cal. Time: 2:15 pm

Technician: KB

Surveyor PJ

Calibration :

Test Instrument used: TVA 1000

Cal. Gas Lot No: 20324

Cal Gas Used:

CH_4 496 ppm

O₂ Zero Gas

Barometric Pressure	Time
Start 30.26	2:12 pm
Stop 30.25	5:15 pm

90% response time in seconds:

1 4 seconds

$$2 \frac{4}{1} \text{ seconds}$$

3 4 seconds

avg. 4 seconds

Weather Conditions: Partly Cloudy

Wind Speed &

Direction (out of): 5 mph, NW

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills

Date: 3/17/16

Cal. Time: 7:45 am

Technician: RB

Surveyor P J

Calibration :

Test Instrument used: TVA 1000

Cal. Gas Lot No: 20328

Cal Gas Used:

CH_4 496 ppm

O₂ zero Gas

Barometric Pressure	Time
Start 30.25	7:40am
Stop 30.021	12:36pm

90% response time in seconds:

1 4 seconds

2 4 seconds

3 5 seconds

avg. 4 seconds

Weather Conditions: Sunny

Wind Speed &

Direction (out of): Gumph, NE

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills

Date: 3/12/16

Cal. Time: 12:37 pm

Technician: R.B.

Surveyor PJ

Calibration :

Test Instrument used: TVA 1000

Cal. Gas Lot No: 20324

Cal Gas Used:

CH_4 496 ppm

O₂ zero gas

Barometric Pressure	Time
Start 30.21	12:36 pm
Stop 30.17	5:04 pm

90% response time in seconds:

$$1 \frac{4}{7} \text{ seconds}$$

2 4 seconds

3 4 seconds

avg. 4 seconds

Weather Conditions: Sunny

Wind Speed &

Direction (out of): 8 mph, NE

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills

Date: 3-18-16

Cal. Time: 7:35 am

Technician: RB

Surveyor PJ

Calibration :

Test Instrument used: TVA 1000

Cal. Gas Lot No: 20328

Cal Gas Used:

CH_4 49½ ppm

O₂ zero gas

Barometric Pressure	Time
Start 30.04	7:30 am
Stop 30.02	12:18 pm

90% response time in seconds:

1 5 seconds

$$2 \frac{4}{1} \text{ seconds}$$

3 5 seconds

avg. 5 seconds

Weather Conditions: Sunny

Wind Speed &

Direction (out of): 11 mph, SE

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills Landfill

Date: 3/22/15

Cal. Time: 900 am

Technician: J. Parker

Surveyor P. J.

Calibration :

Test Instrument used: TVA 1000

Cal. Gas Lot No: 20328

Cal Gas Used:

CH₄ 196 ppm

O₂ D_{gas}

Barometric Pressure	Time
Start 29.98	900 AM
Stop 29.98	1230 PM

90% response time in seconds:

1 4 seconds

$$\frac{2}{4} \text{ seconds}$$

3 4 seconds

avg. 4 seconds

Weather Conditions: Mostly Cloudy

Wind Speed &

Direction (out of): 5 mph SW

Northing (UTM #)

Easting (10 T #)

Time

Comments

A graph on lined paper showing a straight line with a positive slope. The line intersects the vertical axis at a negative value and the horizontal axis at a positive value. Handwritten text "No existence" is written along the line near its intersection with the vertical axis.

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills Landfill

Date: 3/22/16

Cal. Time: 12:30pm

Technician: J. Parker

Surveyor P.V

Calibration :

Test Instrument used: TVA 100C

Cal. Gas Lot No: 2032%

Cal Gas Used:

CH₄ 496 ppm

O₂ zero Gas

Barometric Pressure	Time
Start 29.98	1230 pm
Stop 30.08	500 pm

90% response time in seconds:

1 4 seconds

2 4 seconds

3 4 seconds

avg. 4 seconds

Weather Conditions: mostly cloudy

Wind Speed &

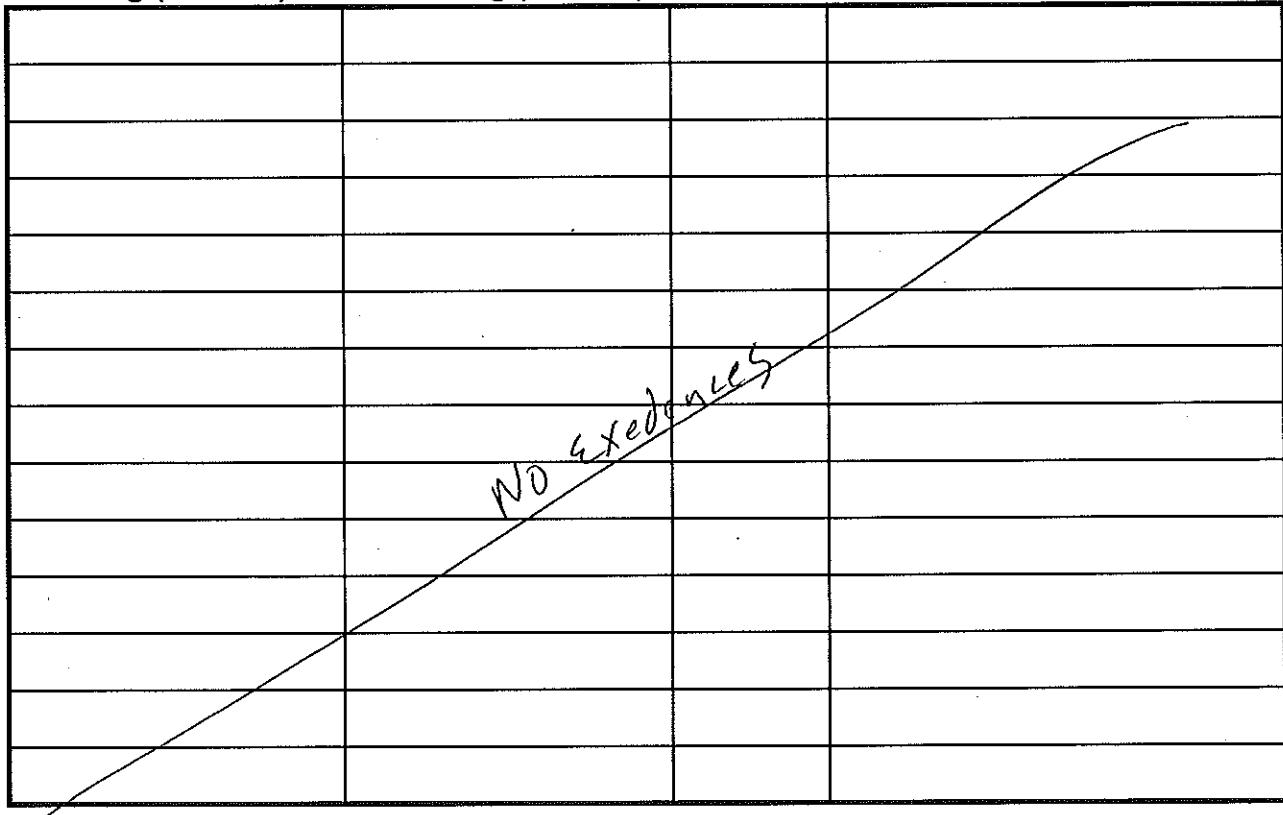
Direction (out of): Bmph S, SW

Northing (UTM #)

Easting (10 T #)

Time

Comments



DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills Landfill

Date: 3/23/14

Cal. Time: 7:00 AM

Technician: J. Parker

Surveyor P. J.

Calibration :

Test Instrument used: TV91000

Cal. Gas Lot No: 20328

Cal Gas Used:

CH₄ 496 ppm

O₂ zero gas

Barometric Pressure	Time
Start 30.70	700 AM
Stop 30.18	100 PM

90% response time in seconds:

1 4 seconds

2 4 seconds

$$3 \frac{1}{4} \text{ seconds}$$

avg. 4 seconds

Weather Conditions: Overcast, Drizzle

Wind Speed &

Direction (out of): Umpah SE

Nothing (UTM #)

Easting (10 T #)

Time

Comments

A graph on grid paper showing a straight line with a positive slope. The line starts at the bottom-left and ends at the top-right. Handwritten text "NO Extremes" is written along the line.

DNRP / King County Solid Waste Serpentine Surface Monitoring Data

Landfill Site: Cedar Hills Landfill

Date: 3/23/11

Cal. Time: 100 fm

Technician: J. Parker

Surveyor P. J.

Calibration :

Test Instrument used: TVA 1000

Cal. Gas Lot No: 20328

Cal Gas Used:

CH₄ 496 ppm

O₂ Zero gas

Barometric Pressure	Time
Start 30.18	100pm
Stop 30.18	230pm

90% response time in seconds:

1 4 seconds

2 4 seconds

3 4 seconds

avg. 4 seconds

Weather Conditions: Overcast, Rain

Wind Speed &

Direction (out of): 4 mph SW

Work Order Report - WO# 0000015865

2/26/2016 12:37:58 PM

WO Company: Gas King County Landfill Gas
 WO Department: 7572 Waste Water, LF Gas
 WO Shop: Gas Landfill Gas

Equipment: CEDAR HILLS License: na

Location: 20 Color:
 Year: 2006 Serial: na
 Make: UD Engine:
 Model: UD
 Class: ZZZZZZZGS: Landfill Gas - not classified

TECHNICIAN COPY

**WO#: 0000015865**

Date In: 02/26/2016 12:36

Date Promised: 02/27/2016 12:36

Date Out: 00:00

WO Status: A Last WO#: 0000015842

WO Priority: Last WO Date: 01/26/2016

Track DownTime: Y Operator: WG

Tire Size 1:	GVW:	0
Tire Size 2:	EAC:	24
Transmission:	Department:	7572:Waste Water, LF Gas
Fuel Type1:	Company:	Gas King County Landfill Gas
Fuel Type2:	Site:	20:20- Cedar Hills
Fuel Type3:	Monitor Group:	
Oil Capacity: 0.000	Comments:	
Fuel Cap1: 0.000	Cedar Hills	
Fuel Cap2: 0.000		

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
I	A - SET AN ANNUAL DATE	07/07/2016	Annual Inspection
Q	0 - MONTHS	03/06/2016	Quarterly Inspection
S	0 - MONTHS	07/01/2016	Scheduled Inspection
X	0 - MONTHS	03/10/2016	Prohibited Activities

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMQ BS	PM Service PMQ per list Billable Scheduled, Target	0	75D	0.00000	
PMQ BS	PM Service PMQ per list Billable Scheduled, Target	0	763	0.00000	

NOTES

Work Order Task List

Repair Code: PMQ BS
 Equipment: CEDAR HILLS
 Work Order: 0000015865

Complete?	Step	Tasks	OK	Adjust	Repair	Replace	Comments
	1	Gas- Ck liner integrity- Serpentine walk	/				
	1	Gas- Ck liner integrity- Serpentine walk	/				

Day 1 - 3/15/16 - 10 hrs RB

Day 2 - 3/16/16 - 7 hrs RB

Day 3 - 3/17/16 - 10 hrs RB

Day 4 - 3/18/16 - 5 hrs RB

Day 1 - 3/22/16 - 8 hrs

Day 2 - 3/23/16 - 8 hrs

WO Company: Gas King County Landfill Gas
 WO Department: 7572 Waste Water, LF Gas
 WO Shop: Gas Landfill Gas

Equipment: CHAREAS License: na

Location: 20 Color:
 Year: 2006 Serial: na
 Make: UD Engine:
 Model: UD
 Class: ZZZZZZZGS: Landfill Gas - not classified

TECHNICIAN COPY

**WO#: 0000015722**

Date In: 12/17/2015 13:48

Date Promised: 12/18/2015 13:48

Date Out: 00:00

WO Status: A Last WO#:0000015576
 WO Priority: Last WO Date: 11/25/2015
 Track Downtime: Y Operator: WG

Tire Size 1:	GVW:	0
Tire Size 2:	EAC:	24
Transmission:	Department:	7572:Waste Water, LF Gas
Fuel Type1:	Company:	Gas King County Landfill Gas
Fuel Type2:	Site:	20:20- Cedar Hills
Fuel Type3:	Monitor Group:	
Oil Capacity: 0.000	Comments:	
Fuel Cap1: 0.000	CH Area 5	
Fuel Cap2: 0.000		

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
G	0 - MONTHS	01/10/2016	Gas System
T	0 - MONTHS	01/10/2016	Stormwater
V	0 - MONTHS	01/10/2016	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMG BS	PM Service PM Gas System Billable Scheduled, Target	0	762 JD	0.00000	Gas
PMT BS	PM Service PM Stormwater Billable Scheduled, Target	0	762 JD	0.00000	Gas
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	762 JD	0.00000	Gas

NOTES

For CHAREA4, CHAREA5, CHAREA6, CHAREA7, CHAREAS23,
CHCENTRALPIT, CHEMH, CHSEPA, CHSSWA, CHSWMH (10)

PMG BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect collection system	✓				
Gas Visually inspect disposal system	✓				
Gas Verify daily odor log is current	✓				
Gas Note any deficiencies	✓				

PMT BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect ponds	✓				
Gas Visually inspect lagoons	✓				
Gas Visually inspect catch basins	✓				
Gas Visually inspect control structures	✓				
Gas Visually inspect conveyance pipes	✓				
Gas Note any deficiencies	✓				

PMV BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect vegetation	✓				
Gas Visually inspect refuse	✓				
Gas Visually inspect cover	✓				
Gas Visually inspect erosion	✓				
Gas Note any deficiencies	✓				

DATE: 1-5-16

WO Company: Gas King County Landfill Gas
 WO Department: 7572 Waste Water, LF Gas
 WO Shop: Gas Landfill Gas

Equipment: CHAREAS License: na

Location: 20 Color:
 Year: 2006 Serial: na
 Make: UD Engine:
 Model: UD
 Class: ZZZZZZZGS: Landfill Gas - not classified

TECHNICIAN COPY



WO#: 0000015855

Date In: 01/26/2016 14:27

Date Promised: 01/27/2016 14:27

Date Out: 00:00

WO Status: A Last WO#: 0000015722
 WO Priority: Last WO Date: 12/17/2015
 Track Downtime: Y Operator: WG

Tire Size 1:	GVW:	0
Tire Size 2:	EAC:	24
Transmission:	Department:	7572:Waste Water, LF Gas
Fuel Type1:	Company:	Gas King County Landfill Gas
Fuel Type2:	Site:	2D:20- Cedar Hills
Fuel Type3:	Monitor Group:	
Oil Capacity: 0.000	Comments:	
Fuel Cap1: 0.000	CH Area 5	
Fuel Cap2: 0.000		

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
G	0 - MONTHS	02/10/2016	Gas System
T	0 - MONTHS	02/10/2016	Stormwater
V	0 - MONTHS	02/10/2016	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMG BS	PM Service PM Gas System Billable Scheduled, Target	0	763	0.00000	Gas
PMT BS	PM Service PM Stormwater Billable Scheduled, Target	0	763	0.00000	Gas
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	763	0.00000	Gas

NOTES

For CHAREA4, CHAREA5, CHAREA6, CHAREA7, CHAREAS23,
CHCENTRALPIT, CHEMH, CHSEPA, CHSSWA, CHSWMH (10)

PMG BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect collection system	/				
Gas Visually inspect disposal system	/				
Gas Verify daily odor log is current	/				
Gas Note any deficiencies					

PMT BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect ponds	/				
Gas Visually inspect lagoons	/				
Gas Visually inspect catch basins	/				
Gas Visually inspect control structures	/				
Gas Visually inspect conveyance pipes	/				
Gas Note any deficiencies					

PMV BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect vegetation	/				
Gas Visually inspect refuse	/				
Gas Visually inspect cover	/				
Gas Visually inspect erosion	/				
Gas Note any deficiencies					

DATE: 2/2/14

WO Company: Gas King County Landfill Gas

WO Department: 7572 Waste Water, LF Gas

WO Shop: Gas Landfill Gas

Equipment: CHAREA5 License: na

Location: 20 Color:
 Year: 2006 Serial: na
 Make: UD Engine:
 Model: UD
 Class: ZZZZZZZGS: Landfill Gas - not classified

TECHNICIAN COPY



WO#: 0000015997

Date In: 02/29/2016 12:36

Date Promised: 03/01/2016 12:36

Date Out: 00:00

WO Status: A Last WO#: 0000015855

WO Priority: Last WO Date: 01/26/2016

Track DownTime: Y Operator: WG

Tire Size 1:	GVW: 0
Tire Size 2:	EAC: 24
Transmission:	Department: 7572:Waste Water, LF Gas
Fuel Type1:	Company: Gas King County Landfill Gas
Fuel Type2:	Site: 20:20- Cedar Hills
Fuel Type3:	Monitor Group:
Oil Capacity: 0.000	Comments:
Fuel Cap1: 0.000	CH Area 5
Fuel Cap2: 0.000	

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
G	0 - MONTHS	03/10/2016	Gas System
T	0 - MONTHS	03/10/2016	Stormwater
V	0 - MONTHS	03/10/2016	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMG BS	PM Service PM Gas System Billable Scheduled, Target	0	750	0.00000	Gas
PMT BS	PM Service PM Stormwater Billable Scheduled, Target	0	750	0.00000	Gas
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	750	0.00000	Gas

NOTES

For CHAREA4, CHAREA5, CHAREA6, CHAREA7, CHAREAS23,
CHCENTRALPIT, CHEMH, CHSEPA, CHSSWA, CHSWMH (10)

PMG BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect collection system	/				
Gas Visually inspect disposal system	/				
Gas Verify daily odor log is current	/				
Gas Note any deficiencies	/				

PMT BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect ponds					
Gas Visually inspect lagoons					
Gas Visually inspect catch basins	/				
Gas Visually inspect control structures	/				
Gas Visually inspect conveyance pipes	/				
Gas Note any deficiencies	/				

PMV BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect vegetation	/				
Gas Visually inspect refuse					
Gas Visually inspect cover					
Gas Visually inspect erosion	/				
Gas Note any deficiencies	/				

DATE: 3/10/16

WO Company: Gas King County Landfill Gas
 WO Department: 7572 Waste Water, LF Gas
 WO Shop: Gas Landfill Gas

Equipment: CHAREA6 License: na

Location: 20 Color:
 Year: 2006 Serial: na
 Make: UD Engine:
 Model: UD
 Class: ZZZZZZZGS: Landfill Gas - not classified

TECHNICIAN COPY

**WO#: 0000015723**

Date In: 12/17/2015 13:49

Date Promised: 12/18/2015 13:49

Date Out: 00:00

WO Status: A Last WO#: 0000015701
 WO Priority: Last WO Date: 12/17/2015
 Track DownTime: Y Operator: WG

Tire Size 1: GVW: 0
 Tire Size 2: EAC: 24
 Transmission: Department: 7572: Waste Water, LF Gas
 Fuel Type1: Company: Gas King County Landfill Gas
 Fuel Type2: Site: 20:20- Cedar Hills
 Fuel Type3: Monitor Group:
 Oil Capacity: 0.000 Comments:
 Fuel Cap1: 0.000 CH Area 6
 Fuel Cap2: 0.000

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTO
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
G	0 - MONTHS	01/10/2016	Gas System
S	0 - MONTHS	12/28/2015	Scheduled Inspection
T	0 - MONTHS	01/10/2016	Stormwater
V	0 - MONTHS	01/10/2016	Cover System
W	W - WEEKS	12/20/2015	Weekly Inspection

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMG BS	PM Service PM Gas System Billable Scheduled, Target	0	762 JD	0.00000	Gas
PMT BS	PM Service PM Stormwater Billable Scheduled, Target	0	762 JD	0.00000	Gas
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	762 JD	0.00000	Gas

NOTES

**For CHAREA4, CHAREA5, CHAREA6, CHAREA7, CHAREAS23,
CHCENTRALPIT, CHEMH, CHSEPA, CHSSWA, CHSWMH (10)**

PMG BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect collection system	✓				
Gas Visually inspect disposal system	✓				
Gas Verify daily odor log is current	✓				
Gas Note any deficiencies	✓				

PMT BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect ponds	✓				
Gas Visually inspect lagoons	✓				
Gas Visually inspect catch basins	✓				
Gas Visually inspect control structures	✓				
Gas Visually inspect conveyance pipes	✓				
Gas Note any deficiencies	✓				

PMV BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect vegetation	✓				
Gas Visually inspect refuse	✓				
Gas Visually inspect cover	✓				
Gas Visually inspect erosion	✓				
Gas Note any deficiencies	✓				

DATE: 1-5-14

WO Company: Gas King County Landfill Gas

WO Department: 7572 Waste Water, LF Gas

WO Shop: Gas Landfill Gas

Equipment: CHAREA6 License: na

Location: 20	Color:
Year: 2006	Serial: na
Make: UD	Engine:
Model: UD	
Class: ZZZZZZZGS: Landfill Gas - not classified	

TECHNICIAN COPY

**WO#: 0000015856**

Date In: 01/26/2016 14:28

Date Promised: 01/27/2016 14:28

Date Out: 00:00

WO Status: A Last WO#:0000015834

WO Priority: Last WO Date: 01/26/2016

Track DownTime: Y Operator: WG

Tire Size 1:	GVW: 0
Tire Size 2:	EAC: 24
Transmission:	Department: 7572:Waste Water, LF Gas
Fuel Type1:	Company: Gas King County Landfill Gas
Fuel Type2:	Site: 20:20- Cedar Hills
Fuel Type3:	Monitor Group:
Oil Capacity: 0.000	Comments:
Fuel Cap1: 0.000	CH Area 6
Fuel Cap2: 0.000	

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
G	0 - MONTHS	02/10/2016	Gas System
S	0 - MONTHS	02/28/2016	Scheduled Inspection
T	0 - MONTHS	02/10/2016	Stormwater
V	0 - MONTHS	02/10/2016	Cover System
W	W - WEEKS	01/17/2016	Weekly Inspection

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMG BS	PM Service PM Gas System Billable Scheduled, Target	0	763	0.00000	Gas
PMT BS	PM Service PM Stormwater Billable Scheduled, Target	0	763	0.00000	Gas
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	763	0.00000	Gas

NOTES

For CHAREA4, CHAREA5, CHAREA6, CHAREA7, CHAREAS23,
CHCENTRALPIT, CHEMH, CHSEPA, CHSSWA, CHSWMH (10)

PMG BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect collection system	/				
Gas Visually inspect disposal system	/				
Gas Verify daily odor log is current	/				
Gas Note any deficiencies					

PMT BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect ponds	/				
Gas Visually inspect lagoons	/				
Gas Visually inspect catch basins	/				
Gas Visually inspect control structures	/				
Gas Visually inspect conveyance pipes	/				
Gas Note any deficiencies					

PMV BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect vegetation	/				
Gas Visually inspect refuse	/				
Gas Visually inspect cover	/				
Gas Visually inspect erosion	/				
Gas Note any deficiencies					

DATE: 2/2/04

WO Company: Gas King County Landfill Gas
 WO Department: 7572 Waste Water, LF Gas
 WO Shop: Gas Landfill Gas

Equipment: CHAREA6 License: na

Location: 20 Color:
 Year: 2006 Serial: na
 Make: UD Engine:
 Model: UD
 Class: ZZZZZZZGS: Landfill Gas - not classified

TECHNICIAN COPY



WO#: 0000015998

Date In: 02/29/2016 12:37

Date Promised: 03/01/2016 12:37

Date Out: 00:00

WO Status: A Last WO#: 0000015976

WO Priority: Last WO Date: 02/29/2016

Track DownTime: Y Operator: WG

Tire Size 1:	GVW: 0
Tire Size 2:	EAC: 24
Transmission:	Department: 7572:Waste Water, LF Gas
Fuel Type1:	Company: Gas King County Landfill Gas
Fuel Type2:	Site: 20:20- Cedar Hills
Fuel Type3:	Monitor Group:
Oil Capacity: 0.000	Comments:
Fuel Cap1: 0.000	CH Area 6
Fuel Cap2: 0.000	

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
G	0 - MONTHS	03/10/2016	Gas System
S	0 - MONTHS	03/28/2016	Scheduled Inspection
T	0 - MONTHS	03/10/2016	Stormwater
V	0 - MONTHS	03/10/2016	Cover System
W	W - WEEKS	03/17/2016	Weekly Inspection

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMG BS	PM Service PM Gas System Billable Scheduled, Target	0	750	0.00000	Gas
PMT BS	PM Service PM Stormwater Billable Scheduled, Target	0	750	0.00000	Gas
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	750	0.00000	Gas

NOTES

For CHAREA4, CHAREA5, CHAREA6, CHAREA7, CHAREAS23,
CHCENTRALPIT, CHEMH, CHSEPA, CHSSWA, CHSWMH (10)

PMG BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect collection system	/				
Gas Visually inspect disposal system	/				
Gas Verify daily odor log is current	/				
Gas Note any deficiencies	/				

PMT BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect ponds					
Gas Visually inspect lagoons					
Gas Visually inspect catch basins	/				
Gas Visually inspect control structures	/				
Gas Visually inspect conveyance pipes	/				
Gas Note any deficiencies	/				

PMV BS

Task	OK	Adjust	Repair	Replace	Comments
Gas Visually inspect vegetation	/				
Gas Visually inspect refuse					
Gas Visually inspect cover	/				
Gas Visually inspect erosion	/				
Gas Note any deficiencies					

DATE: 3/10/16

WO Company: Gas King County Landfill Gas
 WO Department: 7572 Waste Water, LF Gas
 WO Shop: Gas Landfill Gas

Equipment: CHAREA5TD License: na

Location: 20 Color:
 Year: 2010 Serial: na
 Make: UD Engine:
 Model: UD
 Class: ZZZZZZGS: Landfill Gas - not classified

TECHNICIAN COPY

**WO#: 0000015762**

Date In: 01/26/2016 10:15

Date Promised: 01/27/2016 10:15

Date Out: 00:00

WO Status: A Last WO#: 0000015629

WO Priority: Last WO Date: 12/17/2015

Track DownTime: Y Operator: WG

Tire Size 1:	GVW:	0
Tire Size 2:	EAC:	24
Transmission:	Department:	7572:Waste Water, LF Gas
Fuel Type1:	Company:	Gas King County Landfill Gas
Fuel Type2:	Site:	20:20- Cedar Hills
Fuel Type3:	Monitor Group:	
Oil Capacity: 0.000	Comments:	
Fuel Cap1: 0.000		CH Area 5
Fuel Cap2: 0.000		

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
V	0 - MONTHS	02/10/2016	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MIO	Est. Labor	Shop
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	7610	0.00000	Gas

NOTES

Work Order Task List

Repair Code: PMV BS

Equipment: CHAREASTD

Work Order: 0000015762

Complete?	Step	Tasks	OK	Adjust	Repair	Replace	Comments
	1	Gas- Visually inspect Header	/				
	2	Gas- Ck for damage @ flare station inlet	/				
	3	Gas- Ck collection field pipe integrity	/				
	4	Gas- Ck collection field pipe alignment	/				
	5	Gas- Ck for damage @ possible stress pts	/				
	6	Gas- Ck for damage at vertical pipes	/				
	7	Gas- Ck for damage at well heads	/				
	8	Gas- Ck for gas leaks with TVA 1000	/				
	9	Gas- Ck for settlement/ponding	/				
	10	Gas- Ck surface water conveyance system	/				
	11	Gas- Ck and open vault covers	/				
	12	Gas- Exercise field and header valves	/				
	13	Gas- Ck flex hoses and connections	/				
	14	Gas- Ck for erosion	/				
	15	Gas- Ck for vegetation	/				
	16	Gas- Ck cover system	/				
	17	Gas- Ck for refuse/litter	/				
	18	Gas- Note any deficiencies	/				

2-10-16

1.5 Hr

WO Company: Gas King County Landfill Gas

WO Department: 7572 Waste Water, LF Gas

WO Shop: Gas Landfill Gas

Equipment: CHAREA5TD License: na

Location: 20	Color:
Year: 2010	Serial: na
Make: UD	Engine:
Model: UD	
Class: ZZZZZZZGS: Landfill Gas - not classified	

TECHNICIAN COPY

**WO#: 0000015629**

Date In: 12/17/2015 11:52

Date Promised: 12/18/2015 11:52

Date Out: 00:00

WO Status: A Last WO#:0000015520

WO Priority: Last WO Date: 11/25/2015

Track Downtime: Y Operator: WG

Tire Size 1:	GVW: 0
Tire Size 2:	EAC: 24
Transmission:	Department: 7572:Waste Water, LF Gas
Fuel Type1:	Company: Gas King County Landfill Gas
Fuel Type2:	Site: 20:20- Cedar Hills
Fuel Type3:	Monitor Group:
Oil Capacity: 0.000	Comments:
Fuel Cap1: 0.000	CH Area 5
Fuel Cap2: 0.000	

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
V	0 - MONTHS	12/10/2015	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	750	0.00000	Gas

NOTES

Work Order Task List

Repair Code: PMV BS

Equipment: CHAREASTD

Work Order: 0000015629

Complete?	Step	Tasks	OK	Adjust	Repair	Replace	Comments
	1	Gas- Visually inspect Header	/				
	2	Gas- Ck for damage @ flare station inlet	/				
	3	Gas- Ck collection field pipe integrity	/				
	4	Gas- Ck collection field pipe alignment	/				
	5	Gas- Ck for damage @ possible stress pts	/				
	6	Gas- Ck for damage at vertical pipes	/				
	7	Gas- Ck for damage at well heads	/				
	8	Gas- Ck for gas leaks with TVA 1000	/				
	9	Gas- Ck for settlement/ponding	/				
	10	Gas- Ck surface water conveyance system	/				
	11	Gas- Ck and open vault covers	/				
	12	Gas- Exercise field and header valves	/				
	13	Gas- Ck flex hoses and connections	/				
	14	Gas- Ck for erosion	/				
	15	Gas- Ck for vegetation	/				
	16	Gas- Ck cover system	/				
	17	Gas- Ck for refuse/litter	/				
	18	Gas- Note any deficiencies	/				

1/29/16

45 min.

WO Company: Gas King County Landfill Gas

WO Department: 7572 Waste Water, LF Gas

WO Shop: Gas Landfill Gas

Equipment: CHARE5TD License: na

Location: 20	Color:
Year: 2010	Serial: na
Make: UD	Engine:
Model: UD	
Class: ZZZZZZZGS: Landfill Gas - not classified	

TECHNICIAN COPY

**WO#: 0000015891**

Date In: 02/29/2016 10:16

Date Promised: 03/01/2016 10:16

Date Out: 00:00

WO Status: A Last WO#: 0000015762

WO Priority: Last WO Date: 01/26/2016

Track DownTime: Y Operator: WG

Tire Size 1:	GVW: 0
Tire Size 2:	EAC: 24
Transmission:	Department: 7572: Waste Water, LF Gas
Fuel Type1:	Company: Gas King County Landfill Gas
Fuel Type2:	Site: 20:20- Cedar Hills
Fuel Type3:	Monitor Group:
Oil Capacity: 0.000	Comments:
Fuel Cap1: 0.000	CH Area 5
Fuel Cap2: 0.000	

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
V	0 - MONTHS	04/10/2016	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	762 JD	0.00000	Gas

NOTES

Work Order Task List

Repair Code: PMV BS

Equipment: CHAREA5TD

Work Order: 0000015891

Complete?	Step	Tasks	OK	Adjust	Repair	Replace	Comments
	1	Gas- Visually inspect Header	✓				
	2	Gas- Ck for damage @ flare station inlet	✓				
	3	Gas- Ck collection field pipe integrity	✓				
	4	Gas- Ck collection field pipe alignment	✓				
	5	Gas- Ck for damage @ possible stress pts	✓				
	6	Gas- Ck for damage at vertical pipes	✓				
	7	Gas- Ck for damage at well heads	✓				
3/28	8	Gas- Ck for gas leaks with TVA 1000	✓				
	9	Gas- Ck for settlement/ponding	✓				
	10	Gas- Ck surface water conveyance system	✓				
	11	Gas- Ck and open vault covers	✓				
	12	Gas- Exercise field and header valves	✓				
	13	Gas- Ck flex hoses and connections	✓				
	14	Gas- Ck for erosion	✓				
	15	Gas- Ck for vegetation	✓				
	16	Gas- Ck cover system	✓				
	17	Gas- Ck for refuse/litter	✓				
	18	Gas- Note any deficiencies	✓				

3-28-16 1 hr

3-28-16 1 hr

WO Company: Gas King County Landfill Gas

WO Department: 7572 Waste Water, LF Gas

WO Shop: Gas Landfill Gas

Equipment: CHAREA6TD License: na

Location: 20 Color:
 Year: 2010 Serial: na
 Make: UD Engine:
 Model: UD
 Class: ZZZZZZZGS: Landfill Gas - not classified

TECHNICIAN COPY

**WO#: 0000015657**

Date In: 12/17/2015 12:38

Date Promised: 12/18/2015 12:38

Date Out: 00:00

WO Status: A Last WO#: 0000015387

WO Priority: Last WO Date: 10/30/2015

Track DownTime: Y Operator: WG

Tire Size 1:	GVW:	0
Tire Size 2:	EAC:	24
Transmission:	Department:	7572:Waste Water, LF Gas
Fuel Type1:	Company:	Gas King County Landfill Gas
Fuel Type2:	Site:	20:20- Cedar Hills
Fuel Type3:	Monitor Group:	
Oil Capacity: 0.000	Comments:	
Fuel Cap1: 0.000	CM Area 6	
Fuel Cap2: 0.000		

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
V	0 - MONTHS	12/10/2015	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	763	<i>NN</i>	0.00000 Gas

NOTES

Work Order Task List

Repair Code: PMV BS

Equipment: CHAREA6TD

Work Order: 0000015657

Complete?	Step	Tasks	OK	Adjust	Repair	Replace	Comments
	1	Gas- Visually inspect Header	/				
	2	Gas- Ck for damage @ flare station inlet	/				
	3	Gas- Ck collection field pipe integrity	/				
	4	Gas- Ck collection field pipe alignment	/				
	5	Gas- Ck for damage @ possible stress pts	/				
	6	Gas- Ck for damage at vertical pipes	/				
	7	Gas- Ck for damage at well heads	/				
	8	Gas- Ck for gas leaks with TVA 1000	/				
	9	Gas- Ck for settlement/ponding	/				
	10	Gas- Ck surface water conveyance system	/				
	11	Gas- Ck and open vault covers	/				
	12	Gas- Exercise field and header valves	/				
	13	Gas- Ck flex hoses and connections	/				
	14	Gas- Ck for erosion	/				
	15	Gas- Ck for vegetation	/				
	16	Gas- Ck cover system	/				
	17	Gas- Ck for refuse/litter	/				
	18	Gas- Note any deficiencies	/				

35m

Work Order Report - WO# 0000015790

Field walk

1/26/2016 1:09:16 PM

WO Company: Gas King County Landfill Gas

WO Department: 7572 Waste Water, LF Gas

WO Shop: Gas Landfill Gas

Equipment: CHAREA6TD License: na

Location:	20	Color:
Year:	2010	Serial: na
Make:	UD	Engine:
Model:	UD	
Class:	ZZZZZZZGS: Landfill Gas - not classified	

TECHNICIAN COPY

**WO#: 0000015790**

Date In: 01/26/2016 13:08

Date Promised: 01/27/2016 13:08

Date Out: 00:00

WO Status: A Last WO#: 0000015657

WO Priority: Last WO Date: 12/17/2015

Track DownTime: Y Operator: WG

Tire Size 1:	GVW:	0
Tire Size 2:	EAC:	24
Transmission:	Department:	7572:Waste Water, LF Gas
Fuel Type1:	Company:	Gas King County Landfill Gas
Fuel Type2:	Site:	20:20- Cedar Hills
Fuel Type3:	Monitor Group:	
Oil Capacity:	Comments:	
Fuel Cap1:		CH Area 6
Fuel Cap2:		

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
V	0 - MONTHS	12/10/2015	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	MID	Est. Labor	Shop
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	750 RB	0.00000	Gas

NOTES

Work Order Task List

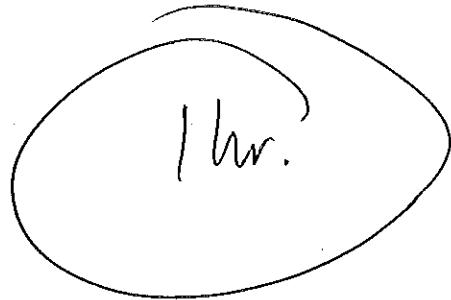
Repair Code: PMV BS

Equipment: CHAREA6TD

Work Order: 0000015790

Complete?	Step	Tasks	OK	Adjust	Repair	Replace	Comments
	1	Gas- Visually inspect Header	/				
	2	Gas- Ck for damage @ flare station inlet	/				
	3	Gas- Ck collection field pipe integrity	/				
	4	Gas- Ck collection field pipe alignment	/				
	5	Gas- Ck for damage @ possible stress pts	/				
	6	Gas- Ck for damage at vertical pipes	/				
	7	Gas- Ck for damage at well heads	/				
	8	Gas- Ck for gas leaks with TVA 1000	/				
	9	Gas- Ck for settlement/ponding	/				
	10	Gas- Ck surface water conveyance system	/				
	11	Gas- Ck and open vault covers	/				
	12	Gas- Exercise field and header valves	/				
	13	Gas- Ck flex hoses and connections	/				
	14	Gas- Ck for erosion	/				
	15	Gas- Ck for vegetation	/				
	16	Gas- Ck cover system	/				
	17	Gas- Ck for refuse/litter	/				
	18	Gas- Note any deficiencies	/				

2/25/16



WO Company: Gas King County Landfill Gas

WO Department: 7572 Waste Water, LF Gas

WO Shop: Gas Landfill Gas

Equipment: CHAREA6TD License: na

Location: 20	Color:
Year: 2010	Serial: na
Make: UD	Engine:
Model: UD	
Class: ZZZZZZZGGS: Landfill Gas - not classified	

TECHNICIAN COPY

**WO#: 0000015931**

Date In: 02/29/2016 11:17

Date Promised: 03/01/2016 11:17

Date Out: 00:00

WO Status: A Last WO#: 0000015790

WO Priority: Last WO Date: 01/26/2016

Track DownTime: Y Operator: WG

Tire Size 1:	GVW: 0
Tire Size 2:	EAC: 24
Transmission:	Department: 7572: Waste Water, LF Gas
Fuel Type1:	Company: Gas King County Landfill Gas
Fuel Type2:	Site: 20:20- Cedar Hills
Fuel Type3:	Monitor Group:
Oil Capacity: 0.000	Comments:
Fuel Cap1: 0.000	CH Area 6
Fuel Cap2: 0.000	

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
----------	---------	-----------	----------	--------	-----

PM SERVICE

Type	Cycle	Next Due	Description
V	0 - MONTHS	03/10/2016	Cover System

WARRANTY INFORMATION

Type	Cycle	Date Expires	Description
------	-------	--------------	-------------

REPAIRS

RTY	Description	Status	HID	Est. Labor	Shop
PMV BS	PM Service PM Cover System Billable Scheduled, Target	0	761	0.00000	Gas

NOTES

Work Order Task List

Repair Code: PMV BS

Equipment: CHAREA6TD

Work Order: 0000015931

Complete?	Step	Tasks	OK	Adjust	Repair	Replace	Comments
	1	Gas- Visually inspect Header	/				
	2	Gas- Ck for damage @ flare station inlet	/				
	3	Gas- Ck collection field pipe integrity	/				
	4	Gas- Ck collection field pipe alignment	/				
	5	Gas- Ck for damage @ possible stress pts	/				
	6	Gas- Ck for damage at vertical pipes	/				
	7	Gas- Ck for damage at well heads	/				
	8	Gas- Ck for gas leaks with TVA 1000	/				
	9	Gas- Ck for settlement/ponding	/				
	10	Gas- Ck surface water conveyance system	/				
	11	Gas- Ck and open vault covers	/				
	12	Gas- Exercise field and header valves	/				
	13	Gas- Ck flex hoses and connections	/				
	14	Gas- Ck for erosion	/				
	15	Gas- Ck for vegetation	/				
	16	Gas- Ck cover system	/				
	17	Gas- Ck for refuse/litter	/				
	18	Gas- Note any deficiencies	/				

3-17-16

JH/K