OPERATION AND MAINTENANCE ANNUAL REPORT
JULY 2016 THROUGH JUNE 2017

REFUSE HIDEAWAY LANDFILL
7562 U.S. HIGHWAY 14
MIDDLETON, WISCONSIN 53562

Prepared For:

Wisconsin Department of Natural Resources

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1.0 INTRODUCTION

The following Operation and Maintenance (O&M) Annual Report was prepared by Leggette, Brashears & Graham, Inc. (LBG) on behalf of the Wisconsin Department of Natural Resources (WDNR) for the Refuse Hideaway Landfill (RHL) located at 7562 U.S. Highway 14 in Middleton, Wisconsin (Site). This O&M Annual Report summarizes activities conducted by LBG during the July 2016 through June 2017 contract period. The report includes project background information, a summary of leachate recovery system operational data, a synopsis of landfill gas (LFG) extraction and combustion system operations, landfill perimeter gas probe monitoring results, and an evaluation of landfill surface cover and drainage way conditions. Recommendations for future Site activities are also presented.

The 23-acre RHL, located in the Town of Middleton, Dane County, Wisconsin, was filled with approximately 1.3 million cubic yards of municipal, commercial, and industrial waste. A site map is included as **Figure 1**. The landfill was closed in May 1988 and covered in October 1988 with a minimum of 2 feet of clay, 18 inches of general soil, and 6 inches of topsoil. The State of Wisconsin, through the Environmental Repair Program, constructed an active gas extraction and combustion system and a leachate recovery system, which became operational on September 1, 1991. System O&M activities and landfill surface inspections have been conducted since operation began.

The LFG recovery system consists of a blower/flare station, a LFG collection network, and gas monitoring locations. The blower/flare station includes one centrifugal LFG blower, an enclosed flare (currently off-line), a pedestal flare (previously used as a backup combustion unit but put into service in July 2013 in lieu of the enclosed flare), and associated controls and appurtenances. The LFG collection network consists of 13 extraction wells, 4 drip legs, and associated gas header piping. Eleven monitoring wells are located throughout the Site and an ambient air monitoring location has been designated within a nearby Speedway building. The

LFG recovery system withdraws gas from the landfill to control surface emissions and subsurface migration. Odors and emissions are controlled by combusting the gas at the flare.

The leachate collection system was upgraded in 1996 and currently consists of pneumatic pumps installed in nine of the extraction wells. The purpose of leachate extraction is to lower leachate head levels and reduce the potential for groundwater contamination. A compressor located near the blower/flare station supplies air to the pneumatic pumps. The leachate is stored onsite in a 25,000-gallon underground storage tank (UST). Leachate is subsequently removed from the tank and transported to the Madison Metropolitan Sewerage District (MMSD) for treatment and disposal.

2.0 LEACHATE RECOVERY SYSTEM

2.1 Leachate Levels

Leachate levels were measured monthly in the gas extraction wells using an electric water level indicator. The leachate head measurements in the gas extraction wells are summarized on **Table 1**. Leachate levels in the various extraction wells ranged from approximately 2.7 feet (GW 11) to 42.6 (GW 12) feet above the well bottom during the contract period and were generally consistent with measurements from the previous contract year.

2.2 Leachate Quantity

The volume of recovered leachate is influenced by numerous factors including, but not limited to, interruptions to compressor operations, the number of operational pneumatic pumps, the severity of blockages within the leachate piping network (i.e. freezing wellhead conditions, biological fouling, natural scaling), seasonal weather variations, the condition of the clay cap, the frequency and duration of precipitation events, and the corresponding leachate elevation within the landfill.

During the current contract period, the volume of leachate recovered was greater than the 2015-2016 period and was the largest volume recovered since the 2012-2013 reporting period (**Figure 2**). The compressor operated each month during the reporting period. The annual rainfall total for the current contract period was the greatest total recorded since 2007-2008.

Approximately 201,223 gallons of leachate were recovered and removed from RHL from July 2016 through June 2017 **(Table 2)**. The annual leachate recovery volumes dating back to July 2007 are depicted on **Figure 2**. The volume of leachate recovered and the corresponding annual rainfall total is documented in the table below. For the current contract period, the Dane County Regional Airport - Truax weather station precipitation data were obtained from Weather Underground (www.wunderground.com).

CONTRACT PERIOD	LEACHATE VOLUME RECOVERED (gallons)	ANNUAL RAINFALL TOTAL (inches)	O&M CONTRACTOR
July 2016-June 2017	201,223	52.81	LBG
July 2015-June 2016	148,645	41.06	LBG
July 2014-June 2015	97,736	27.68	LBG
July 2013-June 2014	190,229	35.73	LBG
July 2012-June 2013	275,061	45.92	LBG
July 2011-June 2012	304,143	22.28	LBG
July 2010-June 2011	563,145	36.67	LBG
July 2009-June 2010	469,239	36.25	LBG
July 2008-June 2009	214,360	37.13	Other consultant
July 2007-June 2008	226,606	55.24	Other consultant

During the current contract period, monthly leachate recovery volumes ranged from approximately 5,000 gallons to 34,317 gallons. A graph of the monthly leachate recovery volumes is included as **Figure 3**. The highest recovery rates for the contract period were experienced during March, April, and May 2017 when the compressor and leachate pumps operated with few interruptions. The lowest recovery rates were observed during October 2016 and January 2017.

2.3 Leachate Quality

Leachate samples were collected on a quarterly basis for laboratory analysis. On September 29, 2016, December 28, 2016, March 31, 2017, and July 10, 2017, leachate samples were collected by LBG personnel by lowering a disposable bailer into the UST. The samples were placed in the appropriate containers, packaged on ice in a cooler, and sent via FedEx to Test America, Inc. (Wisconsin Certification No. 999580010) for laboratory analysis of 12 inorganic parameters. Pursuant to the MMSD Wastewater Discharge Permit (Permit) NTO-5.12 and the WDNR's request for proposal, the samples were analyzed for cadmium,

chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc, and total cyanide. As indicated on **Table 3,** concentrations of the inorganic compounds were less than the discharge permit effluent limitations. The laboratory analytical reports are included in **Appendix I**.

2.4 Leachate Discharge Permit Compliance

Leachate is pumped on an as-needed basis from the UST by A-1 Sewer Service and is transported to a MMSD facility for treatment and disposal as allowed by the Permit. As stated above, concentrations of the analyzed parameters did not exceed any discharge permit limits. On June 9, 2014, the MMSD issued Permit NTO-5.12 which will expire on June 30, 2019. A copy of Permit NTO-5.12 is included as **Appendix II**. To fulfill the reporting requirements of Permit NTO-5.12 Part 3, Section 3.01, monitoring results were submitted to the MMSD within sixty days of the end of each quarterly monitoring period.

2.5 Operational Duration and Maintenance Activities

On August 12, 2016, landfill leachate pumps were shut down to analyze the use of compressed air by the desiccant dryer system and air loss from the compressor's air distribution system. After three days with all the pumps offline, the compressor's operational hours were recorded on August 15, 2016 and a background duty cycle of 43 percent was calculated. A follow-up analysis was conducted the susequent week and a background duty cycle of 40 percent was recorded. Therefore, the compressor operates at least 40 percent of the time just to operate the desiccant dryer system and maintain pressure in the air distribution system when all the pumps are offline. The manufacturer recommends that the compressor operate at a duty cycle of less than 60 percent.

The operation of select leachate pumps remained sporadic. Interruptions to leachate pump operations were primarily caused by the duty cycle limitations of the compressor. The combination of apparent integrity issues with the underground air distribution system and the volume of airflow required by the desiccant dryer system restrict the number of pumps that can be operated at a given time. Additionally, interference to wellhead leachate discharge lines and internal pump components prevented select pumps from properly cycling. Leachate pumps were removed for troubleshooting on different occasions throughout the reporting period. Pumps in

wells GW4, GW10, and GW11 ran consistently; however, they were not operated simultaneously to keep the compressor duty cycle in the recommended range.

The annual removal and cleaning of the pumps was completed in May and June 2017. The pumps were cleaned with soap and water and the internal components (i.e. magnet spacing) were adjusted to allow for proper cycling. Well pumps were cleaned and adjusted, except the pumps in GW7 and GW13 which cannot be removed. Landfill settlement may have impacted the well casing above the pumps in such a manner that the pumps can no longer be pulled up to the landfill surface for cleaning and troubleshooting. Pumps were never installed in wells GW1, GW2, GW3, and GW6.

The pumps from wells GW4, GW5, GW8, GW9, GW10, GW11, and GW12 were cleaned during the annual event. Pumps in GW4, GW10, and GW11 cycled and functioned properly upon the completion of the annual task. The pump in GW12 pumped discharged a minimal volume of leachate following pump cleaning and has been monitored closely since the cleaning event. Additional troubleshooting will be required for the pumps in wells GW5 and GW8 as the pumps appear to cycle while being tested in an above-grade water column (PVC pipe) but the pumps cycle minimally upon being repositioned into the well following cleaning. The pump in GW5 cycled and functioned properly when tested in the above-grade PVC pipe, but it would not cycle when placed in the well. Slack in the GW5 pump cable and air lines is observed when the pump comes to rest in the well casing, which may indicate that an obstruction or landfill settlement is not allowing the pump to remain in a vertical position within the well. The pump in GW8 appeared to cycle while being tested in the PVC pipe and also cycled very slowly when placed back into the well; however, over time the pump did not cycle and could not be reset. The pump manufacturers will be consulted in regards to additional troubleshooting or replacement parts that may be required to address the operational issues. A regulator is not currently installed at GW9 and air-line repairs are needed from the main valve to the pump.

As a component of the annual inspection, a contractor was retained to conduct jetting of the leachate lines, driplegs and cleanouts. Approximately 725 feet of leachate lines were cleaned along the Central branch and portions of the northern branch between four cleanout locations on the landfill. The jetting was completed using similar access ports and in a similar fashion to past jetting events.

3.0 LFG EXTRACTION SYSTEM

3.1 Collection Network

The gas extraction system consists of a network of 13 vertical extraction wells. The wells, which connect to a header pipe, are grouped together in "branches". The header pipe from each of the branches is connected to the blower to draw the LFG from the wells.

The header piping system is divided into three branches: North, Central, and South. The branches are also connected by header segments at their extremities to provide redundancy. The pipe segment connecting the Central and North branches at their extremities contains control valve CV2 (**Figure 1**). During the 2014-2015 contract period, a new pipe segment was installed to connect the Central branch to GW4, GW5 and the GW5 laterals to re-establish vacuum to these wells within the South branch. Control valves were installed at GW4 and GW5, consisting of a butterfly valve with a geared actuator extending above the ground surface. Piping from the branches enters the blower station and each pipe has an individual control valve. The branch headers are then combined before entering the blower.

When the system is in operation, vacuum is applied to the wells connected to the North and Central branches. Vacuum measurements are recorded on **Table 4**. However, vacuum cannot be applied to wellheads GW1 through GW3 on the South branch when the blower is operational due to low points within the South branch header. After LFG system upgrades were completed in September 2014 vacuum was applied to GW4, GW5 and the GW5 laterals via the Central branch.

In September 2015, sewer balls were placed within the solid piping of the GW5 laterals upstream from the perforated screens to prevent a vacuum from being applied to the laterals. The sewer balls were installed because monitoring data indicated that elevated methane concentrations and low oxygen levels could not be sustained from the lateral wells. The integrity of the sewer balls has been monitored by LBG personnel.

No changes or upgrades to the LFG collection system were made during the current reporting period.

3.2 Operational Duration

The blower has been off-line since August 2016 due to operational issues with the flare and its transformer. The combustion system issues, which are presented in more detail below, resulted in the extraction blower operating approximately 2 percent of the contract period (**Table 5**). Periodic visual inspections of the blower were completed throughout the reporting period. Due to the age of the blower and the extended duration of it being off-line, the blower may experience some operational issues if the WDNR allocates resources to restart the combustion system at a later time.

3.3 LFG Recovery Flow Rates

LFG flow rates varied considerably during the contract period due to the number of extraction wells on-line and other site factors (i.e. leachate head levels). The total LFG flow rate of the three branches ranged from no flow when the system was offline to an average of 4,090 standard cubic feet per minute for the short periods that the system was operational. A summary of blower and flare station flow rates and methane concentrations is attached as **Appendix III**.

4.0 LFG COMBUSTION SYSTEM

4.1 Operational Duration

During July 2013, LBG rehabilitated the existing pedestal flare for reuse at the Site. The enclosed flare was permanently taken offline. The pedestal flare is designed to operate at a lower flow rate and methane concentration than the enclosed flare; thereby, resulting in a higher operational percentage and less direct emissions of LFG to the atmosphere. However, the LFG combustion system was off-line during most of the contract period. As indicated on **Table 5**, the operational percentage of the LFG extraction blower was 2 percent and the flare operated less than the blower.

4.2 Troubleshooting Activities

Several mechanical issues were encountered at the flare early in the reporting period. On July 13, 2016, maintenance was conducted at the flare and a new transformer was installed; however, the electrode at the flare pedestal required minute manipulation to create a suitable

arcing condition for LFG ignition. On July 15, 2016, LBG personnel, while in communication with a manufacturer representative, attempted to adjust the electrode spacing to create a suitable condition for arcing; however, ignition could not be achieved. Further manipulation and maintenance was conducted by LBG on July 22, 2016 and the flare was brought on line; however, the flare was not operational by July 25, 2016 due to the failure of the electrode at the flare. On August 18, 2016, LBG personnel replaced the electrode at the flare and the LFG combustion system was operational. The LFG combustion system operated with minimal interruption due to mechanical issues until September 8, 2017. At that time, LBG personnel discovered an electrical issue (another blown transformer) which rendered the LFG combustion system non-operational. The condition of the flare system has deteriorated over time and appears to be causing the repeated failure of integral system components. LBG communicated with the manufacturer representative and outlined some potential options for addressing the non-operational combustion system. The WDNR is evaluating potential actions for the LFG recovery system.

5.0 LANDFILL PERIMETER GAS PROBE MONITORING RESULTS

5.1 Monthly Monitoring

During the contract period, methane was detected in four perimeter gas probe clusters (G-1S/G-1D, G-2S, GP-11S/GP-11D, and GP-12S/GP-12D) at concentrations at or above the lower explosive limit (LEL) of 5 percent by volume. Elevated methane concentrations have been detected occasionally at these wells during previous years. The methane concentrations at these four clusters ranged from non-detect to 26.5 percent by volume **(Table 6)**.

The clusters exhibiting occasional elevated methane concentrations are located within approximately 125 feet of the landfill limits **(Figure 1)**. Cluster G-1 is located near the Speedway buildings; however, methane was not detected at or above the LEL within the closest Speedway building during the contract period. Clusters G-2, GP-11, and GP-12 are located near the southwestern property line. Well GW5 is the closest extraction well to clusters G-2, GP-11, and GP-12.

5.2 Wellhead Updates

During the contract year, the port at GPW-1M was replaced and a shared valve was installed at the G-2S/G-2D nest. A second valve is scheduled to be installed at the G-2S/G-2D nest during Fall 2017. Gas probe wells G-5, G-6, and G-10 currently do not have ports. LBG personnel are planning to repair those wellheads, which will include the installation of a fitting, tubing, and an adjustable valve. The improvements are anticipated to be completed during the 2017-2018 reporting period. A map of the network is included as **Figure 4**.

6.0 LANDFILL SURFACE COVER AND DRAINAGE INSPECTION

6.1 Landfill Surface

The landfill surface was inspected monthly from July through November 2016 and from April through June 2017 to evaluate cap integrity, determine the condition of the drainage ways, and assess the extent of vegetative cover. Limited areas of the landfill cover have experienced settlement resulting in pools of stormwater collecting on the landfill surface, particularly between GW6 and GW7. Small areas of limited vegetative growth have been noted on the southern portion of the landfill in the area of south branch wells GW1 through GW5. Additionally, several erosion rills exist along the southeastern and western slope of the landfill. Two significant dips on the landfill access road near GW6 have made entering and exiting the landfill difficult for maintenance vehicles and allows for a notable volume of stormwater to accumulate and remain on the landfill surface. Several groves of saplings exist on the landfill which may impact the clay cap as the tree roots advance below the surface of the landfill cover.

6.2 Sedimentation Basin

The sedimentation basin was visited during May 2017 to evaluate the distance between the invert of the outlet structure and the top of the sediment within the pond. Approximately 17 inches of clearance existed between the outlet pipe and the sediment surface below.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Based on the information presented above, the following conclusions have been made:

- Leachate levels in the various extraction wells ranged from approximately 2.7 feet (GW 11) to 42.6 (GW 12) feet above the well bottom.
- Approximately 201,223 gallons of leachate were removed from RHL. Monthly leachate recovery volumes ranged from approximately 5,000 gallons to 34,317 gallons.
- Concentrations of inorganic compounds in the quarterly leachate samples were less than the discharge permit effluent limitations.
- In July 2016, a new transformer was installed at the flare and in August 2016 a new electrode was installed. On September 8, 2016, the LFG flare system experienced reoccurring electrical issues, which rendered the system non-operational for the remainder of the reporting period. The WDNR is evaluating options for addressing the LFG combustion system.
- Leachate pumps were selectively cycled throughout the reporting period to prevent the compressor from operating above the manufacturer's recommended duty cycle. In August 2016, the compressor's airline distribution system was analyzed to gauge the background duty cycle. The background duty cycle (i.e. no leachate collection pumps are operating) was recorded at 40 percent and 43 percent during two test periods. The compressor manufacturer recommends a duty cycle below 60 percent.
- Select leachate pumps could not be removed from the well for maintenance due to apparent issues with the well casing. Select pumps would not operate following the annual cleaning event due to issues with internal components or the associated lines.
- Sewer balls were previously installed in the GW5 laterals (GW5-LWSP, GW5-LWMSP, and GW5-LESP) to prevent a vacuum on the laterals when methane concentrations are low and oxygen concentrations are elevated.
- When the flare was functional, the extraction blower was taken off-line for a limited duration when methane concentrations were below operating levels or oxygen levels

were elevated. Due to the issues with the flare, the extraction blower operated approximately 2 percent of the contract period.

- Methane was detected in four perimeter gas probe clusters at concentrations greater than the LEL. One cluster is located near the Speedway buildings and three clusters are in close proximity to the southwestern property line. Methane was not detected above the LEL within the Speedway buildings.
- Limited areas of the landfill cover have experienced settlement resulting in pools of stormwater collecting on the landfill surface. Small areas of limited vegetative growth have been noted on the southern portion of the landfill. Additionally, several erosion rills exist along the southeastern and western slope of the landfill. Two significant dips on the landfill access road near GW6. Several groves of saplings exist on the landfill which may impact the clay cap as the tree roots advance.
- The distance between the outlet pipe structure invert and the top of sediment within the retention pond was 17 inches. The allowable storm water storage volume of the sedimentation basin appears to have diminished over time.

7.2 Recommendations

LBG recommends that the WDNR have an assessment completed in regards to the anticipated duration of future leachate and LFG recovery and treatment activities and an evaluation conducted of the remaining life cycle of the various system components. Based on the evaluation, a prioritized list of capital expenditures should be developed so that funding can be procured to optimize system operations as warranted. In addition to the landfill and system assessment, the following tasks are being recommended for implementation during the next contract year:

- Complete mowing activities within the fenced-in areas (i.e. wellheads, blower/flare station, leachate tank);
- Seed areas of sparse vegetation on the landfill cap; and
- Refurbish the landfill cap access road.

TABLES

TABLE 1

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW1	7/22/2016	53.70	37.12	16.6								No pump.
GW1	8/22/2016	53.70	37.34	16.4								No pump.
GW1	9/29/2016	53.70	37.52	16.2								No pump.
GW1	10/28/2016	53.70	37.31	16.4								No pump.
GW1	11/29/2016	53.70	36.78	16.9								No pump.
GW1	12/28/2016	53.70	36.62	17.1								No pump.
GW1	1/31/2017	53.70	36.20	17.5								No pump.
GW1	2/27/2017	53.70	36.19	17.5								No pump.
GW1	3/21/2017	53.70	35.39	18.3								No pump.
GW1	4/19/2017	53.70	35.09	18.6								No pump.
GW1	5/11/2017	53.70	35.09	18.6								No pump.
GW1	6/7/2017	53.70	35.60	18.1								No pump.
GW2	7/22/2016	53.90	36.40	17.5								No pump.
GW2	8/22/2016	53.90	36.38	17.5								No pump.
GW2	9/29/2016	53.90	36.28	17.6								No pump.
GW2	10/28/2016	53.90	36.13	17.8								No pump.
GW2	11/29/2016	53.90	35.62	18.3								No pump.
GW2	12/28/2016	53.90	35.58	18.3								No pump.
GW2	1/31/2017	53.90	35.51	18.4								No pump.
GW2	2/27/2017	53.90	35.08	18.8								No pump.
GW2	3/21/2017	53.90	34.99	18.9								No pump.
GW2	4/19/2017	53.90	34.85	19.1								No pump.
GW2	5/11/2017	53.90	34.94	19.0								No pump.
GW2	6/7/2017	53.90	35.51	18.4								No pump.
GW3	7/22/2016	59.70	55.30	4.4								No pump.
GW3	8/22/2016	59.70	55.28	4.4								No pump.
GW3	9/29/2016	59.70	55.25	4.5								No pump.
GW3	10/28/2016	59.70	54.71	5.0								No pump.
GW3	11/29/2016	59.70	55.24	4.5								No pump.
GW3	12/28/2016	59.70	55.21	4.5								No pump.

TABLE 1

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LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW3	1/31/2017	59.70	55.27	4.4								No pump.
GW3	2/27/2017	59.70	55.08	4.6								No pump.
GW3	3/21/2017	59.70	55.13	4.6								No pump.
GW3	4/19/2017	59.70	55.18	4.5								No pump.
GW3	5/11/2017	59.70	55.08	4.6								No pump.
GW3	6/7/2017	59.70	55.35	4.4								No pump.
GW4	7/22/2016	65	36.78	28.2	50	103,471	121	0				Pump was confirmed cycling; however, turned off due to a high compressor duty cycle.
GW4	8/22/2016	65	39.90	25.1	60	155,528	52,057	70				Pump confirmed cycling. Elevated amount of air-out discharge noted upon start-up due to pump cycling quickly.
GW4	9/29/2016	65	54.85	10.2	60	177,414	21,886	24				Air-out line found to be discharging continuously while the pump was on; pump turned off.
GW4	10/28/2016	65	35.38	29.6	55	177,417	3	0				Pump turned on and confirmed cycling; previously off.
GW4	11/29/2016	65	34.38	30.6	54	189,075	11,661	15				Pump turned on and confirmed cycling; previously off.
GW4	12/28/2016	65	35.63	29.4	65	205,917	16,842	24				Pump was initially off; however, was turned on and left running for the duration of the monthly event; turned off upon departure.
GW4	1/31/2017	65	33.67	31.3	65	206,824	907	1				Pump ran periodically during the reporting period; however, was non-operational upon arrival and confirmed to not cycle.
GW4	2/27/2017	65	53.48	11.5	40	241,895	35,071	54				Pump running upon arrival; however, a continuous air discharge was noted. The pump was turned off upon departure to allow recharge within the area of influence and to minimize the compressor's duty cycle.
GW4	3/21/2017	65	34.23	30.8	45	288,460	46,565	88				Pump was off upon arrival due to continuous pumping at GW10. Pump turned on and confirmed cycling. Pump left running upon departure.
GW4	4/19/2017	65	33.50	31.5	60	378,987	90,527	130				Pump was off upon arrival due to continuous pumping at GW10. Pump turned on and confirmed cycling. Pump left running upon departure.
GW4	5/11/2017	65	38.20	26.8	50	421,185	42,198	80				The pump was off upon arrival; however, it was turned on and confirmed cycling. The pump was left on.

TABLE 1

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LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW4	6/7/2017	65	36.81	28.2	60	526,842	105,657	163				The pump was pulled, cleaned, inspected, and verified to function properly. During the monthly activities, the pump was on upon arrival; however, a continuous air discharge was observed at the well head. The pump was turned off upon departure.
GW5	7/22/2016	70	41.20	28.8	65	435,620	1	0	17,972	0	0	Pump cycled once and then was confirmed not cycling.
GW5	8/22/2016	70	40.05	30.0	63	435,620	0	0	17,972	0	0	Pump cycled once and then was confirmed not cycling.
GW5	9/29/2016	70	40.35	29.7	75	435,620	0	0	17,972	0	0	Pump cycled once with flowing leachate and then was confirmed to not cycle.
GW5	10/28/2016	70	39.62	30.4	70	435,620	0	0	17,972	0	0	Pump cycled once with flowing leachate followed by excessive bubbling and then was confirmed to not cycle.
GW5	11/29/2016	70	39.06	30.9	70	435,620	0	0	17,972	0	0	Pump cycled once with flowing leachate and then was confirmed to not cycle.
GW5	12/28/2016	70	39.44	30.6	62	435,620	0	0	17,972	0	0	Pump cycled once with flowing leachate and then was confirmed to not cycle.
GW5	1/31/2017	70	39.23	30.8	70	435,620	0	0	17,972	0	0	Pump cycled once with flowing leachate and then was confirmed to not cycle.
GW5	2/27/2017	70	38.47	31.5	62	435,620	0	0	17,972	0	0	Pump was turned on; however, no cycle or indication of flowing leachate was noted. Pump left off.
GW5	3/21/2017	70	37.86	32.1	70	435,620	0	0	17,972	0	0	Pump was turned on and one cycle with flowing leachate was noted; however, no indication of continual pumping was observed. Pump left off
GW5	4/19/2017	70	37.52	32.5	45	435,620	0	0	17,972	0	0	Pump was turned on and one cycle with flowing leachate was noted; however, no indication of continual pumping was observed. Pump left off.
GW5	5/11/2017	70	37.64	32.4	50	435,620	0	0	17,972	0	0	Pump was turned on and one cycle with flowing leachate was noted; however, no indication of continual pumping was observed. Pump left off

TABLE 1

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW5	6/7/2017	70	39.32	30.7	55	435,620	0	0	17,972	0	0	The pump was pulled, cleaned, inspected, and verified to function in the test well. Once the pump was returned to the well, a single cycle with flowing leachate was observed followed by no additional cycles. During the monthly activities, the pump was turned on and one cycle with flowing leachate was observed; however, no indication of continual pumping was observed. Pump left off.
GW6	7/22/2016	40	35.19	4.8								No pump.
GW6	8/22/2016	40	34.50	5.5								No pump.
GW6	9/29/2016	40	35.04	5.0								No pump.
GW6	10/28/2016	40	34.99	5.0								No pump.
GW6	11/29/2016	40	35.17	4.8								No pump.
GW6	12/28/2016	40	35.03	5.0								No pump.
GW6	1/31/2017	40	35.27	4.7								No pump.
GW6	2/27/2017	40	35.00	5.0								No pump.
GW6	3/21/2017	40	35.02	5.0								No pump.
GW6	4/19/2017	40	35.10	4.9								No pump.
GW6	5/11/2017	40	35.05	5.0								No pump.
GW6	6/7/2017	40	--	--								No pump.
GW7	7/22/2016	60	43.28	16.7	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	8/22/2016	60	40.25	19.8	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	9/29/2016	60	42.71	17.3	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	10/28/2016	60	41.50	18.5	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	11/29/2016	60	40.41	19.6	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	12/28/2016	60	40.65	19.4	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	1/31/2017	60	41.05	19.0	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	2/27/2017	60	41.22	18.8	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	3/21/2017	60	38.86	21.1	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	4/19/2017	60	38.20	21.8	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.
GW7	5/11/2017	60	35.22	24.8	--	--	--	--	--	--	--	Pump stuck in well and no regulator; pump off.

TABLE 1

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW7	6/7/2017	60	35.20	24.8	--	--	--	--	--	--	--	An attempt to pull the well for annual cleaning, testing, and inspecting was made; however, the pump is stuck in the well and could not be pulled. The pump was left off following monthly activities as it has no regulator.
GW8	7/22/2016	69	40.96	28.0	70	656,094	28	0	654,897	12	0	Pump cycled once with flowing leachate and then was confirmed not cycling.
GW8	8/22/2016	69	39.40	29.6	75	656,098	4	0	654,900	3	0	Pump cycled once with flowing leachate and then was confirmed not cycling.
GW8	9/29/2016	69	41.00	28.0	70	656,102	4	0	654,903	3	0	Pump cycled once with flowing leachate and then was confirmed not cycling.
GW8	10/28/2016	69	40.54	28.5	84	656,107	5	0	654,906	3	0	Pump cycled once with flowing leachate and then was confirmed not cycling.
GW8	11/29/2016	69	39.39	29.6	80	656,109	2	0	654,908	2	0	Pump was turned on and cycled once with no flowing leachate. After the initial cycle the pump was confirmed not cycling.
GW8	12/28/2016	69	40.18	28.8	60	656,109	0	0	654,908	0	0	Pump was turned on and cycled once with flowing leachate. After the initial cycle the pump was confirmed not cycling.
GW8	1/31/2017	69	40.29	28.7	60	656,114	5	0	654,909	1	0	Pump was turned on and cycled once with flowing leachate. After the initial cycle the pump was confirmed not cycling.
GW8	2/27/2017	69	40.84	28.2	78	656,117	3	0	654,910	1	0	Pump was turned on and cycled once with flowing leachate. After the initial cycle the pump was confirmed not cycling.
GW8	3/21/2017	69	40.58	28.4	70	656,119	2	0	654,911	1	0	Pump was turned on and cycled once with flowing leachate. After the initial cycle the pump was confirmed not cycling. Pump left off.
GW8	4/19/2017	69	39.76	29.2	60	656,119	0	0	654,911	0	0	Pump was turned on and cycled once with flowing leachate. After the initial cycle the pump was confirmed not cycling. Pump left off.
GW8	5/11/2017	69	39.70	29.3	70	656,123	4	0	654,914	3	0	Pump was turned on and cycled once with flowing leachate. After the initial cycle the pump was confirmed not cycling. Pump left off.
GW8	6/7/2017	69	39.77	29.2	70	656,125	2	0	654,916	2	0	The pump was pulled, cleaned, inspected, and tested. The pump turned on and cycled once with flowing leachate. After the initial cycle the pump was confirmed not cycling Pump left off.
GW9	7/22/2016	65	44.35	20.7	--	--	--	--	--	--	--	No regulator; pump off.
GW9	8/22/2016	65	42.33	22.7	--	--	--	--	--	--	--	No regulator, broken airline; pump off.

TABLE 1

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW9	9/29/2016	65	40.50	24.5	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	10/28/2016	65	42.54	22.5	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	11/29/2016	65	42.10	22.9	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	12/28/2016	65	42.97	22.0	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	1/31/2017	65	42.81	22.2	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	2/27/2017	65	43.55	21.5	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	3/21/2017	65	43.78	21.2	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	4/19/2017	65	43.35	21.7	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	5/11/2017	65	43.05	22.0	--	--	--	--	--	--	--	No regulator, broken airline; pump off.
GW9	6/7/2017	65	43.58	21.4	--	--	--	--	--	--	--	The pump was pulled, cleaned, and inspected. Upon pulling the pump from the well casing, the exhaust airline was damaged and the functionality of the well could not be verified. Future repairs will be made to the airline. The pump was left off upon departure.
GW10	7/22/2016	70	55.18	14.8	60	725,357	1,520	2				Pump confirmed cycling.
GW10	8/22/2016	70	55.35	14.7	60	725,389	32	0				Pump confirmed cycling.
GW10	9/29/2016	70	53.85	16.2	60	726,935	1,546	2				Pump confirmed cycling.
GW10	10/28/2016	70	54.73	15.3	60	732,831	5,896	8				Pump confirmed cycling slowly. Pump turned off to allow GW4 to run without elevating the compressor's duty cycle.
GW10	11/29/2016	70	54.79	15.2	63	736,436	3,605	5				Pump confirmed cycling slowly. Pump turned off to allow GW4 to run without elevating the compressor's duty cycle.
GW10	12/28/2016	70	54.08	15.9	78	736,436	0	0				Pump initially off; turned on and confirmed cycling; pump left on upon departure.
GW10	1/31/2017	70	53.81	16.2	83	738,284	1,848	2				Pump was confirmed not cycling upon arrival and was non operational upon departure.
GW10	2/27/2017	70	51.82	18.2	78	738,314	30	0				Pump turned on upon arrival and was confirmed cycling with flowing leachate. Pump left on.
GW10	3/21/2017	70	52.78	17.2	50	747,851	9,537	18				Pump was not pumping upon arrival. Pump was turned on and confirmed cycling; however, the pump was left off due to GW4 being brought on line.

TABLE 1

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW10	4/19/2017	70	52.37	17.6	50	752,816	4,965	7				Pump was pumping upon arrival; however, the pump was turned off due to GW4 being brought on line and in an effort to maintain a sustainable duty cycle at the compressor.
GW10	5/11/2017	70	52.07	17.9	50	758,804	5,988	11				The pump was pulled, cleaned, inspected, and observed functional during annual maintenance activities. The pump was on upon arrival of monthly activities; however, the pump was not pumping. Turned off due to GW4 being brought on line and in an effort to maintain a sustainable duty cycle at the compressor.
GW10	6/7/2017	70	53.18	16.8	40	761,305	2,501	4				The pump was off upon arrival and subsequently turned on. The pump was confirmed cycling and was left on.
GW11	7/22/2016	65	61.88	3.1	80	100,912	3	0				Pump confirmed cycling.
GW11	8/22/2016	65	48.35	16.7	80	118,296	17,384	23				Pump confirmed cycling.
GW11	9/29/2016	65	60.33	4.7	80	149,587	31,291	34				Pump confirmed cycling.
GW11	10/28/2016	65	61.78	3.2	80	171,753	22,166	32				Pump confirmed cycling.
GW11	11/29/2016	65	61.78	3.2	81	196,456	24,703	32				Pump confirmed cycling.
GW11	12/28/2016	65	61.63	3.4	78	217,551	21,095	30				Pump confirmed cycling.
GW11	1/31/2017	65	62.28	2.7	80	238,662	21,111	26				Pump confirmed cycling.
GW11	2/27/2017	65	61.89	3.1	65	247,089	8,427	13				Pump confirmed cycling.
GW11	3/21/2017	65	61.84	3.2	76	264,396	17,307	33				Pump confirmed cycling.
GW11	4/19/2017	65	61.85	3.2	80	296,421	32,025	46				Pump confirmed cycling.
GW11	5/11/2017	65	62.35	2.7	70	326,585	30,164	57				The pump was pulled, cleaned, inspected, and observed functional during annual maintenance activities. The pump was confirmed cycling during monthly activities; however, it was turned off due to additional pumps being on line.
GW11	6/7/2017	65	44.38	20.6	65	326,689	104	0				The pump was off upon arrival and subsequently turned on. The pump was confirmed cycling; however a continuous air discharge was observed at the well head after several minutes. The pump was turned off.
GW12	7/22/2016	81	42.57	38.4	50	54,471	6	0	437,494	109	0	Pump confirmed to cycle once; however, no pumping followed.
GW12	8/22/2016	81	41.05	40.0	77	54,471	0	0	437,495	1	0	Pump confirmed to cycle once; however, no pumping followed.

TABLE 1

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW12	9/29/2016	81	41.15	39.9	55	54,473	2	0	437,499	4	0	Pump confirmed to cycle once; however, no pumping followed.
GW12	10/28/2016	81	42.40	38.6	63	54,474	1	0	437,502	3	0	Pump confirmed to cycle once; however, no pumping followed.
GW12	11/29/2016	81	41.35	39.7	--	54,474	0	0	437,504	2	0	Airline severed from November mowing event. Unable to start pump; however, the pump was previously off.
GW12	12/28/2016	81	41.38	39.6	50	54,474	0	0	437,504	0	0	Airline repaired from November mowing event. Pump turned on and liquid discharge from the air-out line was observed; pump left off upon departure.
GW12	1/31/2017	81	40.95	40.1	58	54,477	3	0	437,509	5	0	Pump turned on and confirmed to slowly cycle. The pump was left on and rechecked prior to departure from the Site. Upon departure the pump was confirmed not cycling and turned off.
GW12	2/27/2017	81	40.27	40.7	50	54,477	0	0	437,523	14	0	Pump turned on and confirmed to slowly cycle with lightly flowing leachate. The counter at the regulator was not recording cycles and the pressure gauge did not appear to be accurately regulating the pump. Pump left off upon departure.
GW12	3/21/2017	81	38.74	42.3	50	54,478	1	0	437,525	2	0	Pump turned on and confirmed to slowly cycle with lightly flowing leachate. The counter at the regulator was not recording cycles and the pressure gauge did not appear to be accurately regulating the pump. Pump left off upon departure.
GW12	4/19/2017	81	37.75	43.3	50	54,479	1	0	437,527	2	0	Pump turned on and confirmed to slowly cycle with lightly flowing leachate. The counter at the regulator was not recording cycles and the pressure gauge did not appear to be accurately regulating the pump. Pump left off upon departure.
GW12	5/11/2017	81	37.20	43.8	50	54,480	1	0	437,529	2	0	The pump was pulled, cleaned, inspected, and observed functional during the annual maintenance activities. During the monthly activities, the pump turned on and was confirmed to slowly cycle with lightly flowing leachate. The counter at the regulator was not recording cycles and the pressure gauge did not appear to be accurately regulating the pump. Pump left off upon departure.
GW12	6/7/2017	81	38.89	42.1	50	54,483	3	0	437,535	6	0	The pump was off upon arrival and was subsequently turned on. The pump was confirmed cycling and was left on upon departure.
GW13	7/22/2016	69	49.45	19.6	80	561,361	1	0	843,686	1	0	Pump stuck in well and confirmed not cycling.

TABLE 1

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

LEACHATE EXTRACTION WELL SUMMARY

Well	Date	Well Depth*	Depth to Leachate (feet)	Leachate Level (feet above well bottom)	Wellhead Pressure (psi)	Primary Counter			Secondary Counter			Comments
						Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	Pump Cycle Reading	Cycles Per Period	Cycles Per Hour	
GW13	8/22/2016	69	46.80	22.2	70	561,362	1	0	843,687	1	0	Pump stuck in well. Pump was heard to cycle; however, no leachate was heard. Pump off.
GW13	9/29/2016	69	59.54	9.5	65	561,366	4	0	843,689	2	0	Pump stuck in well. Pump was turned on; however, no cycle was noted.
GW13	10/28/2016	69	47.33	21.7	60	561,368	2	0	843,690	1	0	Pump stuck in well. Pump was turned on; however, no cycle was noted.
GW13	11/29/2016	69	45.46	23.5	65	561,369	1	0	843,691	1	0	Pump stuck in well. Pump was turned on; however, no cycle was noted.
GW13	12/28/2016	69	46.47	22.5	60	561,371	2	0	843,691	0	0	Pump stuck in well. Pump was turned on; however, no cycle was noted.
GW13	1/31/2017	69	46.59	22.4	60	561,373	2	0	843,693	2	0	Pump stuck in well. Pump was turned on; however, no cycle was noted.
GW13	2/27/2017	69	48.28	20.7	63	561,374	1	0	843,694	1	0	Pump stuck in well. Pump was turned on; however, no functional cycle was noted.
GW13	3/21/2017	69	45.87	23.1	52	561,376	2	0	843,696	2	0	Pump stuck in well. Pump was turned on; however, no functional cycle was noted.
GW13	4/19/2017	69	44.23	24.8	60	561,377	1	0	843,696	0	0	Pump stuck in well. Pump was turned on; however, no functional cycle was noted.
GW13	5/11/2017	69	44.22	24.8	65	561,379	2	0	843,697	1	0	An attempt was made to pull, clean, and inspect the pump during the monthly maintenance activities; however, the pump was stuck in the well casing. The pump was turned on during monthly activities; however, no functional cycle was noted.
GW13	6/7/2017	69	45.32	23.7	60	561,381	2	0	843,697	0	0	Pump stuck in well. Pump was turned on; however, no functional cycle was noted.

* : Value approximated in wells GW4, GW5, GW7, GW8, GW9, GW10, GW11, GW12, and GW13.
psi : Pounds per square inch.

TABLE 2

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY LEACHATE COLLECTION VOLUME

Month	Reported Volume Hauled (gallons)	Cumulative Volume Hauled (gallons)
July 2016	13,567	13,567
August 2016	19,912	33,479
September 2016	9,072	42,551
October 2016	5,000	47,551
November 2016	19,270	66,821
December 2016	9,960	76,781
January 2017	5,000	81,781
February 2017	14,862	96,643
March 2017	34,317	130,960
April 2017	29,189	160,149
May 2017	29,570	189,719
June 2017	11,504	201,223
Total	**201,223**	

TABLE 3

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

QUARTERLY LEACHATE EFFLUENT ANALYTICAL RESULTS - INORGANICS
(all results are in milligrams per liter (mg/L))

Date	Cadmium	Chromium	Chromium Hexavalent	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Zinc	Cyanide (Total)
Local Ordinance Effluent Limitations* (daily maximum)	**0.25**	**10.0**	**0.5**	**1.5**	**5**	**0.02**	**--**	**2.0**	**0.3**	**3**	**8**	**0.1**
9/29/2016	0.0012 J	0.014	< 0.0025 H	0.0032 J	< 0.0025	< 0.00011	< 0.0022	0.034	< 0.0051	< 0.0013	0.032	0.010 B
12/28/2016	0.0012 J	0.017	< 0.0032 F1	0.0047 J	< 0.0025	< 0.00011	< 0.0022	0.038	< 0.0051	< 0.0013	0.010 J	0.0098 J
3/21/2017	< 0.00094	0.0087 J	< 0.0032	0.0037 J	< 0.0025	< 0.00011	< 0.0022	0.020	0.0063 J	< 0.0013	< 0.010	< 0.0036
7/10/2017	0.00059 J	0.025	< 0.016 H	0.0071 J	< 0.0027	0.0002	0.0038 J	0.047	< 0.0053	< 0.0015	0.031	0.0049 J

* : Madison Metropolitan Sewerage District Use Ordinance - Wastewater Discharge Permit NTO-5.12.
F1 : MS and/or MSD recovery is outside acceptance limits.
J : Estimated value. Analyte detected at a level less than reporting limit (RL) and greater than or equal to the laboratory method detection limit (MDL).
B : Compound was found in the blank and sample.
-- : Effluent limitation not set.
< : Less than laboratory method detection limit.
F1 : MS and/or MSD recovery exceeds the control limits.
H : Sample was prepped or analyzed beyond the specified holding time.

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW1	7/22/2016	48.5	3.1	60.0	-11.6	0	0	0	--	--	--
GW1	8/22/2016	21.5	4.5	55.2	18.8	0	0	0	22.3	1.0	89.4
GW1	9/29/2016	28.0	3.0	27.2	41.8	--	0	0	--	--	--
GW1	10/28/2016	48.0	3.1	29.7	19.2	--	0	0	--	--	--
GW1	11/29/2016	48.5	5.8	37.0	8.7	--	0	0	--	--	--
GW1	12/28/2016	51.5	3.0	40.0	5.5	--	0	0	--	--	--
GW1	1/31/2017	46.0	3.8	38.0	12.2	--	0	0	--	--	--
GW1	2/27/2017	46.5	5.5	30.4	17.6	--	0	0	--	--	--
GW1	3/21/2017	40.5	7.3	31.8	20.4	--	0	0	--	--	--
GW1	4/19/2017	43.5	3.0	36.4	17.1	--	0	0	--	--	--
GW1	5/11/2017	47.5	3.1	32.0	17.4	--	0	0	--	--	--
GW1	6/7/2017	48.0	3.3	33.2	15.5	--	0	0	--	--	--
GW2	7/22/2016	49.0	3.0	60.0	-12.0	0	0	0	--	--	--
GW2	8/22/2016	15.0	14.0	19.0	52.0	0	0	0	11.5	0.52	90.0
GW2	9/29/2016	45.8	3.2	33.1	17.9	--	0	0	--	--	--
GW2	10/28/2016	47.5	3.3	29.4	19.8	--	0	0	--	--	--
GW2	11/29/2016	47.0	7.0	37.4	8.6	--	0	0	--	--	--
GW2	12/28/2016	51.5	3.0	40.4	5.1	--	0	0	--	--	--
GW2	1/31/2017	44.5	3.4	39.2	12.9	--	0	0	--	--	--
GW2	2/27/2017	46.5	5.8	30.6	17.1	--	0	0	--	--	--
GW2	3/21/2017	47.5	5.3	37.2	10.0	--	0	0	--	--	--

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW2	4/19/2017	44.0	3.1	37.0	15.9	--	0	0	--	--	--
GW2	5/11/2017	48.0	4.7	32.8	14.5	--	0	0	--	--	--
GW2	6/7/2017	49.0	4.0	33.6	13.4	--	0	0	--	--	--
GW3	7/22/2016	56.0	3.7	51.4	-11.1	0	0	0	--	--	--
GW3	8/22/2016	3.5	19.6	2.6	74.3	0	0	0	14.4	0.65	87.7
GW3	9/29/2016	52.5	3.4	29.8	14.3	--	0	0	--	--	--
GW3	10/28/2016	53.5	3.0	26.6	16.9	--	0	0	--	--	--
GW3	11/29/2016	52.0	6.0	35.0	7.0	--	0	0	--	--	--
GW3	12/28/2016	58.0	2.9	35.0	4.1	--	0	0	--	--	--
GW3	1/31/2017	53.5	4.8	32.2	9.5	--	0	0	--	--	--
GW3	2/27/2017	52.5	5.3	26.4	15.8	--	0	0	--	--	--
GW3	3/21/2017	54.5	4.9	30.2	10.4	--	0	0	--	--	--
GW3	4/19/2017	47.5	3.3	31.8	17.4	--	0	0	--	--	--
GW3	5/11/2017	55.5	4.4	26.8	13.3	--	0	0	--	--	--
GW3	6/7/2017	58.1	3.1	25.4	13.4	--	0	0	--	--	--
GW4	7/22/2016	52.0	3.1	52.8	-7.9	--	100	100	--	--	--
GW4	8/22/2016	0.0	20.9	0.0	79.1	-15	100	0	288	13	84.9
GW4	9/29/2016	46.0	3.1	26.8	24.1	--	0	100	--	--	--
GW4	10/28/2016	52.0	3.0	27.0	18.0	--	100	100	--	--	--
GW4	11/29/2016	54.5	5.3	29.6	10.6	--	100	100	--	--	--
GW4	12/28/2016	56.5	3.0	36.0	4.5	--	100	100	--	--	--

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW4	1/31/2017	25.0	12.1	14.4	48.5	--	100	100	--	--	--
GW4	2/27/2017	53.0	2.9	26.0	18.1	--	100	100	--	--	--
GW4	3/21/2017	0.3	20.9	0.0	78.9	--	100	0	--	--	--
GW4	4/19/2017	48.0	4.0	31.2	16.8	--	0	100	--	--	--
GW4	5/11/2017	29.0	10.6	13.8	46.6	--	100	0	--	--	--
GW4	6/7/2017	54.5	5.2	28.4	11.9	--	0	0	--	--	--
GW5	7/22/2016	55.0	3.0	47.0	-5.0	--	0	100	--	--	--
GW5	8/22/2016	0.0	20.9	0.0	79.1	-15	100	0	989	45	78.9
GW5	9/29/2016	53.8	2.9	29.2	14.1	--	100	100	--	--	--
GW5	10/28/2016	53.5	4.7	26.2	15.6	--	100	100	--	--	--
GW5	11/29/2016	48.0	5.7	27.0	19.3	--	100	100	--	--	--
GW5	12/28/2016	58.0	3.1	34.4	4.5	--	100	100	--	--	--
GW5	1/31/2017	52.0	4.3	32.4	11.3	--	100	100	--	--	--
GW5	2/27/2017	52.0	3.0	25.8	19.2	--	100	100	--	--	--
GW5	3/21/2017	24.5	12.3	13.8	49.4	--	100	100	--	--	--
GW5	4/19/2017	48.5	3.3	30.2	18.0	--	100	100	--	--	--
GW5	5/11/2017	22.5	12.7	10.8	54.0	--	100	0	--	--	--
GW5	6/7/2017	57.5	3.2	26.6	12.7	--	0	100	--	--	--
GW5 - Lat East	7/22/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	8/22/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat East	9/29/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW5 - Lat East	10/28/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat East	11/29/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat East	12/28/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat East	1/31/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat East	2/27/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat East	3/21/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat East	4/19/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat East	5/11/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat East	6/7/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	7/22/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	8/22/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	9/29/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	10/28/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	11/29/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	12/28/2016	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	1/31/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	2/27/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	3/21/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	4/19/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	5/11/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]
GW5 - Lat West	6/7/2017	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]	--[S]

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW5 - Lat West Mid	7/22/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	8/22/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	9/29/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	10/28/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	11/29/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	12/28/2016	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	1/31/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	2/27/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	3/21/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	4/19/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	5/11/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW5 - Lat West Mid	6/7/2017	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]	--[s]
GW6	7/22/2016	50.5	4.7	58.4	-13.6	--	100	100	--	--	--
GW6	8/22/2016	34.0	7.1	51.8	7.1	-24	100	100	4447	200	76.6
GW6	9/29/2016	50.5	3.3	31.2	15.0	--	100	100	--	--	--
GW6	10/28/2016	49.5	6.6	29.4	14.5	--	100	100	--	--	--
GW6	11/29/2016	48.5	7.4	33.0	11.1	--	100	100	--	--	--
GW6	12/28/2016	51.5	3.0	36.0	9.5	--	100	100	--	--	--
GW6	1/31/2017	47.0	3.2	34.8	15.0	--	100	100	--	--	--
GW6	2/27/2017	51.0	2.9	29.2	16.9	--	100	100	--	--	--
GW6	3/21/2017	52.0	3.1	34.8	10.1	--	100	100	--	--	--

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW6	4/19/2017	45.0	3.4	35.0	16.6	--	100	100	--	--	--
GW6	5/11/2017	50.5	3.3	31.0	15.2	--	100	100	--	--	--
GW6	6/7/2017	52.5	2.9	32.2	12.4	--	100	100	--	--	--
GW7	7/22/2016	59.0	3.1	39.0	-1.1	--	100	100	--	--	--
GW7	8/22/2016	40.0	5.9	40.8	13.3	-25	100	100	654	29	87.0
GW7	9/29/2016	54.0	3.0	28.2	14.8	--	100	100	--	--	--
GW7	10/28/2016	54.5	5.0	24.8	15.7	--	100	100	--	--	--
GW7	11/29/2016	56.0	4.4	25.8	13.8	--	100	100	--	--	--
GW7	12/28/2016	59.0	3.0	28.0	10.0	--	100	100	--	--	--
GW7	1/31/2017	56.0	3.0	25.6	15.4	--	100	100	--	--	--
GW7	2/27/2017	60.0	3.0	22.0	15.0	--	100	100	--	--	--
GW7	3/21/2017	48.0	6.0	21.6	24.4	--	100	100	--	--	--
GW7	4/19/2017	53.0	3.0	24.6	19.4	--	100	100	--	--	--
GW7	5/11/2017	59.5	3.1	21.8	15.6	--	100	100	--	--	--
GW7	6/7/2017	62.5	3.0	21.8	12.7	--	100	100	--	--	--
GW8	7/22/2016	60.5	3.0	36.0	0.5	--	100	100	--	--	--
GW8	8/22/2016	41.0	7.4	28.2	23.4	-24	100	100	504	23	88.0
GW8	9/29/2016	58.0	4.0	23.4	14.6	--	100	100	--	--	--
GW8	10/28/2016	60.5	2.9	20.6	16.0	--	100	100	--	--	--
GW8	11/29/2016	60.0	6.0	21.8	12.2	--	100	100	--	--	--
GW8	12/28/2016	62.5	3.1	24.2	10.2	--	100	100	--	--	--

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW8	1/31/2017	58.0	2.9	23.4	15.7	--	100	100	--	--	--
GW8	2/27/2017	62.0	2.8	20.4	14.8	--	100	100	--	--	--
GW8	3/21/2017	61.5	3.4	22.6	12.5	--	100	100	--	--	--
GW8	4/19/2017	55.0	3.2	22.0	19.8	--	100	100	--	--	--
GW8	5/11/2017	61.5	3.1	19.8	15.6	--	100	100	--	--	--
GW8	6/7/2017	63.5	3.2	21.0	12.3	--	100	100	--	--	--
GW9	7/22/2016	64.0	3.0	24.0	9.0	--	100	100	--	--	--
GW9	8/22/2016	19.5	14.6	5.0	60.9	-24	100	0	524	24	87.2
GW9	9/29/2016	55.5	3.8	26.4	14.3	--	0	100	--	--	--
GW9	10/28/2016	67.5	2.9	10.8	18.8	--	100	100	--	--	--
GW9	11/29/2016	67.5	3.1	11.6	17.8	--	100	100	--	--	--
GW9	12/28/2016	74.5	2.8	13.2	9.5	--	100	100	--	--	--
GW9	1/31/2017	67.5	3.0	12.8	16.7	--	100	100	--	--	--
GW9	2/27/2017	68.0	2.7	10.2	19.1	--	100	100	--	--	--
GW9	3/21/2017	58.0	5.8	11.0	25.2	--	100	100	--	--	--
GW9	4/19/2017	62.0	3.0	11.4	23.6	--	100	100	--	--	--
GW9	5/11/2017	54.5	4.2	27.0	14.3	--	100	100	--	--	--
GW9	6/7/2017	71.1	3.0	10.4	15.5	--	100	0	--	--	--
GW10	7/22/2016	52.5	3.0	42.8	1.7	--	100	100	--	--	--
GW10	8/22/2016	27.5	6.9	28.8	36.8	-16	100	100	986	44	85.2
GW10	9/29/2016	55.5	3.0	27.0	14.5	--	100	100	--	--	--

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW10	10/28/2016	54.5	2.8	24.6	18.1	--	100	100	--	--	--
GW10	11/29/2016	53.5	7.1	27.0	12.4	--	100	100	--	--	--
GW10	12/28/2016	54.0	3.0	32.4	10.6	--	100	100	--	--	--
GW10	1/31/2017	53.0	3.1	27.6	16.3	--	100	100	--	--	--
GW10	2/27/2017	57.0	3.0	22.4	17.6	--	100	100	--	--	--
GW10	3/21/2017	56.0	3.5	27.4	13.1	--	100	100	--	--	--
GW10	4/19/2017	53.0	2.8	24.0	20.2	--	100	100	--	--	--
GW10	5/11/2017	60.0	2.9	20.0	17.1	--	100	100	--	--	--
GW10	6/7/2017	60.0	3.1	16.2	20.7	--	100	100	--	--	--
GW11	7/22/2016	64.5	2.9	25.6	7.0	--	100	100	--	--	--
GW11	8/22/2016	27.5	11.5	11.2	49.8	-20	100	100	932	42	85.5
GW11	9/29/2016	59.0	2.9	24.4	13.7	--	100	100	--	--	--
GW11	10/28/2016	63.0	2.9	15.8	18.3	--	100	100	--	--	--
GW11	11/29/2016	64.5	3.5	18.2	13.8	--	100	100	--	--	--
GW11	12/28/2016	68.0	2.9	17.6	11.5	--	100	100	--	--	--
GW11	1/31/2017	64.5	3.0	17.6	14.9	--	100	100	--	--	--
GW11	2/27/2017	66.5	2.9	14.2	16.4	--	100	100	--	--	--
GW11	3/21/2017	43.0	6.9	22.8	27.3	--	100	100	--	--	--
GW11	4/19/2017	59.5	3.3	15.2	22.0	--	100	100	--	--	--
GW11	5/11/2017	67.0	3.0	14.2	15.8	--	100	100	--	--	--
GW11	6/7/2017	66.5	2.4	15.4	15.7	--	100	100	--	--	--

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW12	7/22/2016	53.0	3.0	44.2	-0.2	--	100	100	--	--	--
GW12	8/22/2016	35.0	6.3	43.4	15.3	-24	100	100	768	35	84.7
GW12	9/29/2016	55.0	2.9	24.6	17.5	--	100	100	--	--	--
GW12	10/28/2016	54.0	2.9	24.8	18.3	--	100	100	--	--	--
GW12	11/29/2016	55.0	3.7	28.8	12.5	--	100	100	--	--	--
GW12	12/28/2016	57.5	2.9	30.2	9.4	--	100	100	--	--	--
GW12	1/31/2017	54.0	3.3	31.0	11.7	--	100	100	--	--	--
GW12	2/27/2017	55.5	3.0	24.8	16.7	--	100	100	--	--	--
GW12	3/21/2017	48.0	5.2	25.8	21.0	--	100	100	--	--	--
GW12	4/19/2017	49.5	4.1	28.8	17.6	--	100	100	--	--	--
GW12	5/11/2017	55.3	7.0	25.2	12.5	--	100	0	--	--	--
GW12	6/7/2017	58.5	3.1	25.2	13.2	--	0	100	--	--	--
GW13	7/22/2016	56.5	3.0	43.4	-2.9	--	100	100	--	--	--
GW13	8/22/2016	42.5	5.1	48.6	3.8	-24	100	100	494	22	87.1
GW13	9/29/2016	57.0	2.9	24.3	15.8	--	100	100	--	--	--
GW13	10/28/2016	56.5	2.9	24.0	16.6	--	100	100	--	--	--
GW13	11/29/2016	54.0	6.1	26.4	13.5	--	100	100	--	--	--
GW13	12/28/2016	59.0	2.9	28.4	9.7	--	100	100	--	--	--
GW13	1/31/2017	53.5	2.9	27.6	16.0	--	100	100	--	--	--
GW13	2/27/2017	58.0	2.9	23.4	15.7	--	100	100	--	--	--
GW13	3/21/2017	54.5	4.9	27.2	13.4	--	100	100	--	--	--

TABLE 4

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

GAS WELL MONITORING RESULTS

Location	Date	CH_4	O_2	CO_2	Balance Gas*	Well Pressure	Valve Position		Gas Velocity	Gas Flow**	Gas Temp
		(%)	(%)	(%)	(%)	(in WC)	Initial (%)	After (%)	(fpm)	(cfm)	(deg F)
GW13	4/19/2017	49.0	3.2	28.0	19.8	--	100	100	--	--	--
GW13	5/11/2017	50.0	5.0	23.6	21.4	--	100	100	--	--	--
GW13	6/7/2017	58.0	3.1	25.0	13.9	--	100	100	--	--	--

* : Balance gas calculated as 100% - (%CH_4+%CO_2+%O_2).

** : Gas Flow (cfm) calculated by multiplying gas velocity (fpm) by pipe area 0.045 (3" diameter).

-- : Not measured.

fpm : Feet per minute.

cfm : Cubic feet per minute.

in WC : Inches of water column.

deg F : Degrees Fahrenheit.

--^{s} : Sewer ball in place.

TABLE 5

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER, FLARE, AND COMPRESSOR STATION OPERATIONAL DURATION

	Blower				Flare			Compressor					
Date	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Oil Added (Y/N)	Comments
7/8/16 4:00 AM	66,331.0	0.0	0%	--	212.0	0.0	0%	7,515.7	105	50%	<1/2	N	Blower and flare non-operational due to transformer issues at the flare. System down upon arrival and departure. Maintenance conducted on 7/13/2016 to install new transformer. Additional electrode spacing required to obtain suitable arc.
7/15/16 3:22 PM	66,331.0	0.0	0%	--	179.4	0.0	0%	7,593.9	78	44%	1/3	Y	LBG personnel unable to get flare ignited with adjustments made to electrode spacing. Electrode issue to be investigated. System down upon arrival and departure.
7/21/16 2:52 PM	66,331.0	0.0	0%	--	143.5	0.0	0%	7,661.0	67	47%	1/2	Y	Blower and flare non-operational due to electrode issues at the flare. System down upon arrival and departure. Maintenance conducted on 7/22/2016 by LBG personnel brought the flare online. LBG personnel reported the flare non-operational on 7/25/2016. Blower turned off on 7/25/2016.
7/29/16 8:30 AM	66,405.1	74.1	40%	--	185.6	0*	0%	7,747.2	86	46%	3/4	N	Blower and flare non-operational due to electrode issues at the flare. System down since 7/25/2016 and upon arrival and departure. New electrode scheduled for installation in August.
Monthly Summary		**74.1**	**10%**		720	**0**	**0%**		337	**47%**			
8/5/16 1:30 PM	66,405.1	0.0	0%	--	173.0	0.0	0%	7,839.9	93	54%	2/3	N	Blower and flare non-operational due to electrode issue at the flare. System down upon arrival and departure.
8/12/16 1:46 PM	66,405.1	0.0	0%	--	168.3	0.0	0%	7,935.9	96	57%	3/4	Y	Blower and flare non-operational due to electrode issue at the flare. System down upon arrival and departure. All landfill leachate pumps shut down on August 12, 2016 at 2:15 PM to analyze the extent of air loss from the air-line distribution system. Compressor hours were analyzed on August 15, 2016 and a background duty cycle of 43% was recorded; leachate pumps GW4 and GW11 were brought on-line.

TABLE 5

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER, FLARE, AND COMPRESSOR STATION OPERATIONAL DURATION

	Blower				Flare			Compressor					
Date	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Oil Added (Y/N)	Comments
8/19/16 1:55 PM	66,433.2	28.1	17%	7.0	168.1	28.1	17%	8,062.0	126	75%	2/3	N	On August 18, 2016 LBG personnel replaced the electrode at the flare and the blower and flare were operational upon departure. The blower and flare were operational upon arrival for the weekly inspection on August 19, 2016; however, the system was shut down upon departure due to high oxygen concentrations at the blower station. During the weekly activities, GW4 and GW11 leachate pumps were shut down to analyze the compressor's background duty cycle. On August 22, 2016 compressor hours were analyzed and a background duty cycle of 40% was noted at the compressor and GW4, GW10, and GW11 were brought on-line.
8/26/16 1:35 PM	66,532.4	99.2	59%	7.0	167.7	99.2	59%	8,172.5	111	66%	3/4	N	On August 22, 2016 LBG personnel conducted monthly activities during which the blower and flare were brought on-line. During the weekly Site inspection on August 26, 2016, the blower and flare were operational upon arrival; however, the system was shut down upon departure due to high oxygen concentrations at the blower station.
Monthly Summary		**127.3**	**19%**		**677**	**127.3**	**19%**		**425**	**63%**			
9/2/16 10:50 AM	66,532.9	0.5	0%	6.0	165.3	0.5	0%	8,244.4	72	44%	3/4	N	Blower and flare non-operational upon arrival. Blower and flare non-operational upon departure due to high oxygen concentrations at the blower station.
9/8/16 2:30 PM	66,533.6	0.7	0%	7.0	147.7	0.7	0%	8,324.6	80	54%	1/2	N	Blower and flare non-operational upon arrival due to high oxygen concentrations at the blower station. LBG personnel attempted to bring the blower and flare on-line upon departure; however, an electrical issue was encountered at the flare and the system could not be started.
9/16/16 11:10 AM	66,534.0	0.4	0%	--	188.7	0.4	0%	8,395.9	71	38%	<1/2	Y	Blower and flare non-operational due to electrical issue at the flare. System down upon arrival and departure.

TABLE 5

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER, FLARE, AND COMPRESSOR STATION OPERATIONAL DURATION

	Blower				Flare			Compressor					
Date	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Oil Added (Y/N)	Comments
9/23/16 2:08 PM	66,534.0	0.0	0%	--	171.0	0.0	0%	8,470.7	75	44%	3/4	N	Blower and flare non-operational due to electrical issue at the flare. System down upon arrival and departure.
9/29/16 3:25 PM	66,534.0	0.0	0%	--	145.3	0.0	0%	8,571.3	101	69%	1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**1.6**	**0%**		**817.8**	**2**	**0%**		**399**	**49%**			
10/7/16 9:33 AM	66,534.0	0.0	0%	--	186.1	0.0	0%	8,662.5	91	49%	1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
10/13/16 2:10 PM	66,534.0	0.0	0%	--	148.6	0.0	0%	8,731.2	69	46%	1/4	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
10/20/16 2:30 PM	66,534.0	0.0	0%	--	168.3	0.0	0%	8,813.0	82	49%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
10/28/16 1:45 PM	66,534.0	0.0	0%	--	191.3	0.0	0%	8,903.1	90	47%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**694.3**	**0.0**	**0%**		**332**	**48%**			
11/4/16 10:00 AM	66,534.0	0.0	0%	--	164.3	0.0	0%	9,016.0	113	69%	<1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
11/9/16 2:37 PM	66,534.0	0.0	0%	--	124.6	0.0	0%	9,075.2	59	48%	>1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
11/15/16 1:22 PM	66,534.0	0.0	0%	--	142.7	0.0	0%	9,156.1	81	57%	1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.

TABLE 5

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER, FLARE, AND COMPRESSOR STATION OPERATIONAL DURATION

	Blower				Flare			Compressor					
Date	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Oil Added (Y/N)	Comments
11/21/16 12:00 PM	66,534.0	0.0	0%	--	142.6	0.0	0%	9,213.0	57	40%	<1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
11/29/16 11:15 AM	66,534.0	0.0	0%	--	191.3	0.0	0%	9,302.2	89	47%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**765.5**	**0.0**	**0%**		**399**	**52%**			
12/8/16 1:30 PM	66,534.0	0.0	0%	--	218.3	0.0	0%	9,484.7	183	84%	<1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
12/15/16 10:45 AM	66,534.0	0.0	0%	--	165.2	0.0	0%	9,552.9	68	41%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
12/22/16 1:22 PM	66,534.0	0.0	0%	--	170.6	0.0	0%	9,624.2	71	42%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
12/28/16 1:20 PM	66,534.0	0.0	0%	--	144.0	0.0	0%	9,684.1	60	42%	>1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**698.1**	**0.0**	**0%**		**382**	**55%**			
1/6/17 12:30 PM	66,534.0	0.0	0%	--	215.2	0.0	0%	9,789.1	105	49%	1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
1/13/17 10:30 AM	66,534.0	0.0	0%	--	166.0	0.0	0%	9,868.9	80	48%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
1/20/17 10:38 AM	66,534.0	0.0	0%	--	168.1	0.0	0%	9,952.1	83	49%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.

TABLE 5

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER, FLARE, AND COMPRESSOR STATION OPERATIONAL DURATION

	Blower				Flare			Compressor					
Date	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Oil Added (Y/N)	Comments
1/26/17 12:00 PM	66,534.0	0.0	0%	--	145.4	0.0	0%	10,026.8	75	51%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**694.7**	**0.0**	**0%**		**343**	**49%**			
2/3/17 8:30 AM	66,534.0	0.0	0%	--	188.5	0.0	0%	10,113.4	87	46%	<1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
2/10/17 11:05 AM	66,534.0	0.0	0%	--	170.6	0.0	0%	10,182.5	69	41%	>1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
2/17/17 10:45 AM	66,534.0	0.0	0%	--	167.7	0.0	0%	10,250.5	68	41%	<1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
2/22/17 11:23 AM	66,534.0	0.0	0%	--	120.6	0.0	0%	10,311.0	61	50%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**647.4**	**0.0**	**0%**		**284**	**44%**			
3/3/17 12:30 PM	66,534.0	0.0	0%	--	217.1	0.0	0%	10,464.0	153	70%	<1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
3/9/17 12:45 PM	66,534.0	0.0	0%	--	144.2	0.0	0%	10,533.6	70	48%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
3/16/17 12:15 PM	66,534.0	0.0	0%	--	167.5	0.0	0%	10,641.1	108	64%	1/4	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
3/24/17 2:15 PM	66,534.0	0.0	0%	--	194.0	0.0	0%	10,749.4	108	56%	<1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.

TABLE 5

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER, FLARE, AND COMPRESSOR STATION OPERATIONAL DURATION

	Blower				Flare			Compressor					
Date	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Oil Added (Y/N)	Comments
3/31/17 2:00 PM	66,534.0	0.0	0%	--	167.8	0.0	0%	10,818.7	69	41%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**890.6**	**0.0**	**0%**		**508**	**57%**			
4/7/17 11:20 AM	66,534.0	0.0	0%	--	165.3	0.0	0%	10,897.9	79	48%	1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
4/13/17 2:00 PM	66,534.0	0.0	0%	--	146.7	0.0	0%	10,986.3	88	60%	<1/4	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
4/21/17 1:15 PM	66,534.0	0.0	0%	--	191.3	0.0	0%	11,089.7	103	54%	<1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
4/28/17 10:00 AM	66,534.0	0.0	0%	--	164.7	0.0	0%	11,171.0	81	49%	1/2	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**668.0**	**0.0**	**0%**		**352**	**53%**			
5/3/17 3:00 PM	66,534.0	0.0	0%	--	125.0	0.0	0%	11,278.0	107	86%	1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
5/11/17 4:21 PM	66,534.0	0.0	0%	--	193.4	0.0	0%	11,375.2	97	50%	1/4	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
5/20/17 3:15 PM	66,534.0	0.0	0%	--	214.9	0.0	0%	11,511.1	136	63%	--	--	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
5/25/17 1:30 PM	66,534.0	0.0	0%	--	118.3	0.0	0%	11,598.5	87	74%	<1/4	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		**651.5**	**0.0**	**0%**		**428**	**66%**			

TABLE 5

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER, FLARE, AND COMPRESSOR STATION OPERATIONAL DURATION

	Blower				Flare			Compressor					
Date	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Motor Current (amps)	Hours Per Period (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Hour Counter (hours)	Operational Hours Per Period (hours)	Percent Operational (%)	Fraction of Oil in Viewport	Oil Added (Y/N)	Comments
6/2/17 3:35 PM	66,534.0	0.0	0%	--	194.1	0.0	0%	11,690.5	92	47%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
6/7/17 3:45 PM	66,534.0	0.0	0%	--	120.2	0.0	0%	11,793.4	103	86%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
6/16/17 12:00 AM	66,534.0	0.0	0%	--	200.3	0.0	0%	11,900.2	107	53%	1/4	Y	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
6/23/17 12:00 AM	66,534.0	0.0	0%	--	168.0	0.0	0%	11,984.0	84	50%	3/4	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
6/27/17 8:30 AM	66,534.0	0.0	0%	--	104.5	0.0	0%	12,069.4	85	82%	1/2	N	Blower and flare non-operational due to electrical and transformer issue at the flare. System down upon arrival and departure.
Monthly Summary		**0.0**	**0%**		787.0	**0.0**	**0%**		**471**	**60%**			
Auunal Summary		**203.0**	**2%**		8712.5	**128.9**	**1%**		**4659**	**53%**			

--: No Measurement.

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
G-1S	7/29/16	0.00	--	**13.5**	3.1	26.4	57.0	
G-1S	8/15/16	0.00	--	**14.0**	3.8	34.0	48.2	
G-1S	9/29/16	0.00	--	**21.0**	3.9	18.6	56.5	
G-1S	10/20/16	0.00	--	**18.0**	3.5	17.2	61.3	
G-1S	11/21/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-1S	12/22/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-1S	1/26/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-1S	2/22/17	0.02	--	**18.5**	3.6	19.2	58.7	
G-1S	3/16/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-1S	4/21/17	0.00	--	**8.0**	9.5	8.8	73.7	
G-1S	5/25/17	0.00	--	**26.5**	3.8	21.6	48.1	
G-1S	6/16/17	0.07	--	**22.5**	4.0	22.2	51.3	
G-1D	7/29/16	0.00	--	**9.5**	3.7	24.8	62.0	
G-1D	8/15/16	0.00	--	**8.5**	2.9	29.8	58.8	
G-1D	9/29/16	0.00	--	**11.5**	4.0	15.9	68.6	
G-1D	10/20/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-1D	11/21/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-1D	12/22/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-1D	1/26/17	-0.05	0.0	0.0	20.9	0.0	79.1	
G-1D	2/22/17	0.05	--	**16.5**	4.1	19.4	60.0	
G-1D	3/16/17	0.00	2.0	0.1	20.9	0.0	79.0	
G-1D	4/21/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-1D	5/25/17	0.00	--	**14.0**	3.1	17.4	65.5	
G-1D	6/16/17	0.05	--	**12.0**	3.0	17.4	67.6	
G-2S	7/29/16	0.00	0.0	0.0	20.9	0.2	78.9	Needs replacement valve.
G-2S	8/15/16	0.00	--	**5.5**	4.1	24.4	66.0	Needs replacement valve.
G-2S	9/29/16	0.00	1.0	0.1	19.2	2.2	78.6	Needs replacement valve.
G-2S	10/20/16	0.00	0.0	0.0	20.9	0.0	79.1	Needs replacement valve.
G-2S	11/21/16	0.00	0.0	0.0	20.9	0.0	79.1	Needs replacement valve.

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
G-2S	12/22/16	0.00	0.0	0.0	20.9	0.0	79.1	Valve Installed
G-2S	1/26/17	-0.03	0.0	0.0	20.9	0.0	79.1	
G-2S	2/22/17	0.00	--	6.5	2.8	17.6	73.1	
G-2S	3/16/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-2S	4/21/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-2S	5/25/17	0.00	--	6.5	4.2	14.0	75.3	
G-2S	6/16/17	0.00	--	6.5	3.2	15.0	75.3	
G-2D	7/29/16	0.00	0.0	0.0	20.2	1.4	78.4	Needs replacement valve.
G-2D	8/15/16	0.00	0.0	0.0	19.0	1.8	79.2	Needs replacement valve.
G-2D	9/29/16	0.00	1.0	0.1	16.8	4.4	78.8	Needs replacement valve.
G-2D	10/20/16	0.00	0.0	0.0	19.5	3.2	77.3	Needs replacement valve.
G-2D	11/21/16	0.00	0.0	0.0	20.9	0.0	79.1	Needs replacement valve.
G-2D	12/22/16	0.00	0.0	0.0	20.9	0.0	79.1	Valve Installed
G-2D	1/26/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-2D	2/22/17	0.00	8.0	0.4	12.3	2.0	85.3	
G-2D	3/16/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-2D	4/21/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-2D	5/25/17	0.00	22.0	1.1	4.4	8.8	85.7	
G-2D	6/16/17	0.00	1.0	0.1	17.6	2.4	80.0	
G-5	7/29/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	8/15/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	9/29/16	--	1.0	0.1	20.9	0.0	79.1	No Port.
G-5	10/20/16	--	0.0	0.0	20.9	0.6	78.5	No Port.
G-5	11/21/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	12/22/16	--	0.0	0.0	20.9	0.2	78.9	No Port.
G-5	1/26/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	2/22/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	3/16/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	4/21/17	--	0.0	0.0	20.9	0.0	79.1	No Port.

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
G-5	5/25/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-5	6/16/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-6	7/29/16	--	0.0	0.0	20.4	0.0	79.6	No Port.
G-6	8/15/16	--	0.0	0.0	20.9	0.2	78.9	No Port.
G-6	9/29/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-6	10/20/16	--	0.0	0.0	18.2	1.6	80.2	No Port.
G-6	11/21/16	--	0.0	0.0	18.0	1.8	80.2	No Port.
G-6	12/22/16	--	0.0	0.0	20.5	0.8	78.7	No Port.
G-6	1/26/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-6	2/22/17	--	0.0	0.0	20.5	0.4	79.1	No Port.
G-6	3/16/17	--	0.0	0.0	20.9	0.6	78.5	No Port.
G-6	4/21/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-6	5/25/17	--	0.0	0.0	19.4	0.8	79.8	No Port.
G-6	6/16/17	--	0.0	0.0	19.4	1.0	79.6	No Port.
G-8	7/29/16	0.00	0.0	0.0	16.3	0.0	83.7	
G-8	8/15/16	0.00	0.0	0.0	17.0	0.0	83.0	
G-8	9/29/16	0.00	0.0	0.0	19.1	0.0	80.9	
G-8	10/20/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	11/21/16	0.00	0.0	0.0	17.5	0.0	82.5	
G-8	12/22/16	0.00	0.0	0.0	18.8	0.0	81.2	
G-8	1/26/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	2/22/17	0.00	0.0	0.0	16.4	0.0	83.6	
G-8	3/16/17	0.00	0.0	0.0	20.5	0.0	79.5	
G-8	4/21/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-8	5/25/17	0.00	0.0	0.0	20.6	0.0	79.4	
G-8	6/16/17	0.00	0.0	0.0	17.0	0.0	83.0	
G-9	7/29/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	8/15/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	9/29/16	0.00	0.0	0.0	20.9	0.0	79.1	

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
G-9	10/20/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	11/21/16	0.00	0.0	0.0	20.9	0.0	79.1	
G-9	12/22/16	0.00	1.0	0.1	20.7	0.8	78.5	
G-9	1/26/17	0.00	0.0	0.0	19.6	1.0	79.4	
G-9	2/22/17	0.00	0.0	0.0	20.7	0.4	78.9	
G-9	3/16/17	0.00	0.0	0.0	19.1	1.2	79.7	
G-9	4/21/17	0.00	0.0	0.0	20.9	0.2	78.9	
G-9	5/25/17	0.00	0.0	0.0	20.1	0.4	79.5	
G-9	6/16/17	0.00	0.0	0.0	20.9	0.0	79.1	
G-10	7/29/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	8/15/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	9/29/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	10/20/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	11/21/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	12/22/16	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	1/26/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	2/22/17	--	0.0	0.0	19.7	0.6	79.7	No Port.
G-10	3/16/17	--	0.0	0.0	20.2	0.6	79.2	No Port.
G-10	4/21/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	5/25/17	--	0.0	0.0	20.9	0.0	79.1	No Port.
G-10	6/16/17	--	0.0	0.0	19.7	0.6	79.7	No Port.
GP-8	7/29/16	0.00	0.0	0.0	16.8	4.4	78.8	
GP-8	8/15/16	0.00	0.0	0.0	17.0	6.4	76.6	
GP-8	9/29/16	0.00	1.0	0.1	18.2	3.0	78.8	
GP-8	10/20/16	0.00	0.0	0.0	18.2	3.2	78.6	
GP-8	11/21/16	0.00	1.0	0.1	18.9	2.8	78.3	
GP-8	12/22/16	0.00	0.0	0.0	20.7	1.3	78.0	
GP-8	1/26/17	-0.05	0.0	0.0	19.9	0.6	79.5	
GP-8	2/22/17	0.00	0.0	0.0	20.3	0.2	79.5	

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
GP-8	3/16/17	0.00	1.0	0.1	20.5	1.4	78.1	
GP-8	4/21/17	0.00	0.0	0.0	20.0	0.4	79.6	
GP-8	5/25/17	0.00	0.0	0.0	19.2	1.2	79.6	
GP-8	6/16/17	0.00	0.0	0.0	18.4	0.2	81.4	
GP-11S	7/29/16	0.00	98.0	4.9	3.6	20.2	71.3	
GP-11S	8/15/16	0.00	87.0	4.4	5.6	21.6	68.5	
GP-11S	9/29/16	0.00	2.0	0.1	18.1	2.4	79.4	
GP-11S	10/20/16	0.00	3.0	0.2	19.3	2.2	78.4	
GP-11S	11/21/16	0.00	1.0	0.1	20.9	0.4	78.7	
GP-11S	12/22/16	0.00	1.0	0.1	20.9	0.2	78.9	
GP-11S	1/26/17	0.00	1.0	0.1	21.0	0.0	79.0	
GP-11S	2/22/17	0.00	0.0	0.0	18.5	2.2	79.3	
GP-11S	3/16/17	0.00	0.0	0.0	20.9	0.0	79.1	
GP-11S	4/21/17	0.00	0.0	0.0	20.3	1.0	78.7	
GP-11S	5/25/17	0.00	13.0	0.7	8.8	4.8	85.8	
GP-11S	6/16/17	0.00	--	**7.5**	3.7	9.6	79.2	
GP-11D	7/29/16	0.00	--	**5.0**	5.0	18.6	71.4	
GP-11D	8/15/16	0.00	--	**5.0**	4.7	24.0	66.3	
GP-11D	9/29/16	0.00	36.0	1.8	15.6	4.6	78.0	
GP-11D	10/20/16	0.00	41.0	2.1	15.8	4.8	77.4	
GP-11D	11/21/16	0.00	1.0	0.1	20.9	0.2	78.9	
GP-11D	12/22/16	0.00	0.0	0.0	20.9	0.1	79.0	
GP-11D	1/26/17	0.00	1.0	0.1	21.0	0.0	79.0	
GP-11D	2/22/17	0.00	0.0	0.0	18.6	2.6	78.8	
GP-11D	3/16/17	0.00	1.0	0.1	20.9	0.0	79.1	
GP-11D	4/21/17	0.00	2.0	0.1	19.4	1.4	79.1	
GP-11D	5/25/17	0.00	60.0	3.0	8.6	6.6	81.8	
GP-11D	6/16/17	0.00	--	**8.5**	3.0	13.0	75.5	
GP-12S	7/29/16	0.00	0.0	0.0	18.3	3.4	78.3	

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
GP-12S	8/15/16	0.00	0.0	0.0	19.1	2.6	78.3	
GP-12S	9/29/16	0.00	1.0	0.1	14.5	6.2	79.3	
GP-12S	10/20/16	0.00	0.0	0.0	19.2	1.8	79.0	
GP-12S	11/21/16	0.00	1.0	0.1	20.7	1.4	77.9	
GP-12S	12/22/16	0.00	1.0	0.1	20.9	0.8	78.3	
GP-12S	1/26/17	0.00	1.0	0.1	20.9	0.4	78.7	
GP-12S	2/22/17	0.00	0.0	0.0	18.6	2.2	79.2	
GP-12S	3/16/17	0.00	0.0	0.0	20.9	0.2	78.9	
GP-12S	4/21/17	0.00	1.0	0.1	18.4	1.7	79.9	
GP-12S	5/25/17	0.00	--	**5.5**	12.0	7.2	75.3	
GP-12S	6/16/17	0.00	--	**10.0**	3.4	13.6	73.0	
GP-12D	7/29/16	-0.05	--	**5.5**	12.9	13.8	67.8	
GP-12D	8/15/16	0.00	52.0	2.6	16.5	7.4	73.5	
GP-12D	9/29/16	0.00	47.0	2.4	17.6	3.8	76.3	
GP-12D	10/20/16	0.00	68.0	3.4	16.3	5.4	74.9	
GP-12D	11/21/16	0.00	32.0	1.6	19.8	2.0	76.6	
GP-12D	12/22/16	0.00	14.0	0.7	20.9	0.6	77.8	
GP-12D	1/26/17	0.00	22.0	1.1	20.9	0.9	77.1	
GP-12D	2/22/17	0.08	--	**5.5**	14.7	6.4	73.4	
GP-12D	3/16/17	0.00	33	1.7	20.7	1.0	76.7	
GP-12D	4/21/17	0.00	--	**7.5**	13.3	9.0	70.2	
GP-12D	5/25/17	0.00	--	**17.0**	3.1	19.6	60.3	
GP-12D	6/16/17	0.00	--	**10.5**	8.2	15.4	65.9	
GP-13S	7/29/16	0.00	1.0	0.1	11.9	8.2	79.9	
GP-13S	8/15/16	0.00	0.0	0.0	16.5	6.0	77.5	
GP-13S	9/29/16	0.00	1.0	0.1	18.2	2.8	79.0	
GP-13S	10/20/16	0.00	0.0	0.0	19.9	2.0	78.1	
GP-13S	11/21/16	0.00	0.0	0.0	20.9	0.4	78.7	
GP-13S	12/22/16	0.00	0.0	0.0	20.9	0.2	78.9	

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
GP-13S	1/26/17	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13S	2/22/17	0.00	0.0	0.0	17.6	2.4	80.0	
GP-13S	3/16/17	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13S	4/21/17	0.00	0.0	0.0	20.0	1.2	78.8	
GP-13S	5/25/17	0.00	0.0	0.0	11.4	3.6	85.0	
GP-13S	6/16/17	0.00	50.0	2.5	5.4	7.4	84.7	
GP-13D	7/29/16	0.00	35.0	1.8	12.1	10.2	76.0	
GP-13D	8/15/16	0.00	19.0	1.0	15.2	7.2	76.7	
GP-13D	9/29/16	0.00	6.0	0.3	19.9	1.2	78.6	
GP-13D	10/20/16	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13D	12/22/16	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13D	12/22/16	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13D	1/26/17	-0.04	0.0	0.0	20.9	0.0	79.1	
GP-13D	2/22/17	0.03	0.0	0.0	16.7	3.0	80.3	
GP-13D	3/16/17	0.00	0.0	0.0	20.9	0.0	79.1	
GP-13D	4/21/17	0.00	0.0	0.0	20.9	0.4	78.7	
GP-13D	5/25/17	0.00	12.0	0.6	15.9	2.8	80.7	
GP-13D	6/16/17	0.03	75.0	3.8	6.0	10.2	80.1	
GPW-1S	7/29/16	0.00	0.0	0.0	20.1	1.6	78.3	
GPW-1S	8/15/16	0.00	0.0	0.0	17.1	4.4	78.5	
GPW-1S	9/29/16	0.00	0.0	0.0	18.8	1.8	79.4	
GPW-1S	10/20/16	0.00	0.0	0.0	19.0	1.6	79.4	
GPW-1S	11/21/16	0.00	0.0	0.0	18.6	2.0	79.4	
GPW-1S	12/22/16	0.00	0.0	0.0	18.6	1.8	79.6	
GPW-1S	1/26/17	0.00	0.0	0.0	20.9	0.0	79.1	
GPW-1S	2/22/17	0.00	0.0	0.0	18.8	1.6	79.6	
GPW-1S	3/16/17	0.00	0.0	0.0	19.3	1.2	79.5	
GPW-1S	4/21/17	0.00	0.0	0.0	20.2	1.2	78.6	
GPW-1S	5/25/17	0.00	0.0	0.0	20.4	0.8	78.8	

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
GPW-1S	6/16/17	0.00	0.0	0.0	19.9	1.0	79.1	
GPW-1M	7/29/16	-0.20	0.0	0.0	20.9	0.0	79.1	Needs replacement valve.
GPW-1M	8/15/16	-0.20	0.0	0.0	20.9	0.0	79.1	Needs replacement valve.
GPW-1M	9/29/16	-0.05	0.0	0.0	20.9	0.0	79.1	Needs replacement valve.
GPW-1M	10/20/16	0.00	0.0	0.0	20.9	0.0	79.1	Needs replacement valve.
GPW-1M	11/21/16	0.20	0.0	0.0	20.9	0.0	79.1	Installed replacement valve.
GPW-1M	12/22/16	-0.50	0.0	0.0	20.9	0.0	79.1	
GPW-1M	1/26/17	-0.60	0.0	0.0	20.9	0.0	79.1	
GPW-1M	2/22/17	0.85	0.0	0.0	19.0	1.2	79.8	
GPW-1M	3/16/17	0.19	0.0	0.0	19.9	1.2	78.9	
GPW-1M	4/21/17	-0.35	0.0	0.0	20.9	0.0	79.1	
GPW-1M	5/25/17	0.04	0.0	0.0	20.9	0.0	79.1	
GPW-1M	6/16/17	0.35	0.0	0.0	19.0	1.4	79.6	
GPW-1D	7/29/16	-0.25	0.0	0.0	20.3	1.6	78.1	
GPW-1D	8/15/16	-0.25	0.0	0.0	18.2	2.8	79.0	
GPW-1D	9/29/16	-0.10	0.0	0.0	20.9	0.0	79.1	
GPW-1D	10/20/16	-0.05	0.0	0.0	18.3	2.0	79.7	
GPW-1D	11/21/16	0.20	1.0	0.1	17.6	2.4	80.0	
GPW-1D	12/22/16	-0.65	0.0	0.0	20.9	0.0	79.1	
GPW-1D	1/26/17	-0.65	0.0	0.0	20.9	0.0	79.1	
GPW-1D	2/22/17	1.05	0.0	0.0	17.9	2.0	80.1	
GPW-1D	3/16/17	0.20	0.0	0.0	18.2	1.8	80.0	
GPW-1D	4/21/17	-0.45	0.0	0.0	20.9	0.0	79.1	
GPW-1D	5/25/17	0.05	0.0	0.0	19.2	1.2	79.6	
GPW-1D	6/16/17	0.45	0.0	0.0	18.9	1.4	79.7	
Speedway Buildings	7/29/16		0.0	0.0	16.9	0.0	83.1	
Speedway Buildings	8/15/16		0.0	0.0	20.2	0.0	79.8	
Speedway Buildings	9/29/16		1.0	0.1	18.7	0.0	81.3	
Speedway Buildings	10/20/16		0.0	0.0	20.9	0.0	79.1	

TABLE 6

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY GAS PROBE MONITORING RESULTS

Location	Date	Pressure	CH_4[a]		O_2	CO_2	Balance Gas[b]	Comments
		(in. WC)	(% LEL)	(% Vol)	(% Vol)	(% Vol)	(% Vol)	
Speedway Buildings	11/21/16		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	12/22/16		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	1/26/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	2/22/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	3/16/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	4/21/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	5/25/17		0.0	0.0	20.9	0.0	79.1	
Speedway Buildings	6/16/17		0.0	0.0	20.9	0.0	79.1	

a : Percent volume calculated as % LEL/20.

b : Balance gas calculated as 100% - ($\%CH_4+\%CO_2+\%O_2$).

in. WC : Inches of water column.

FIGURES

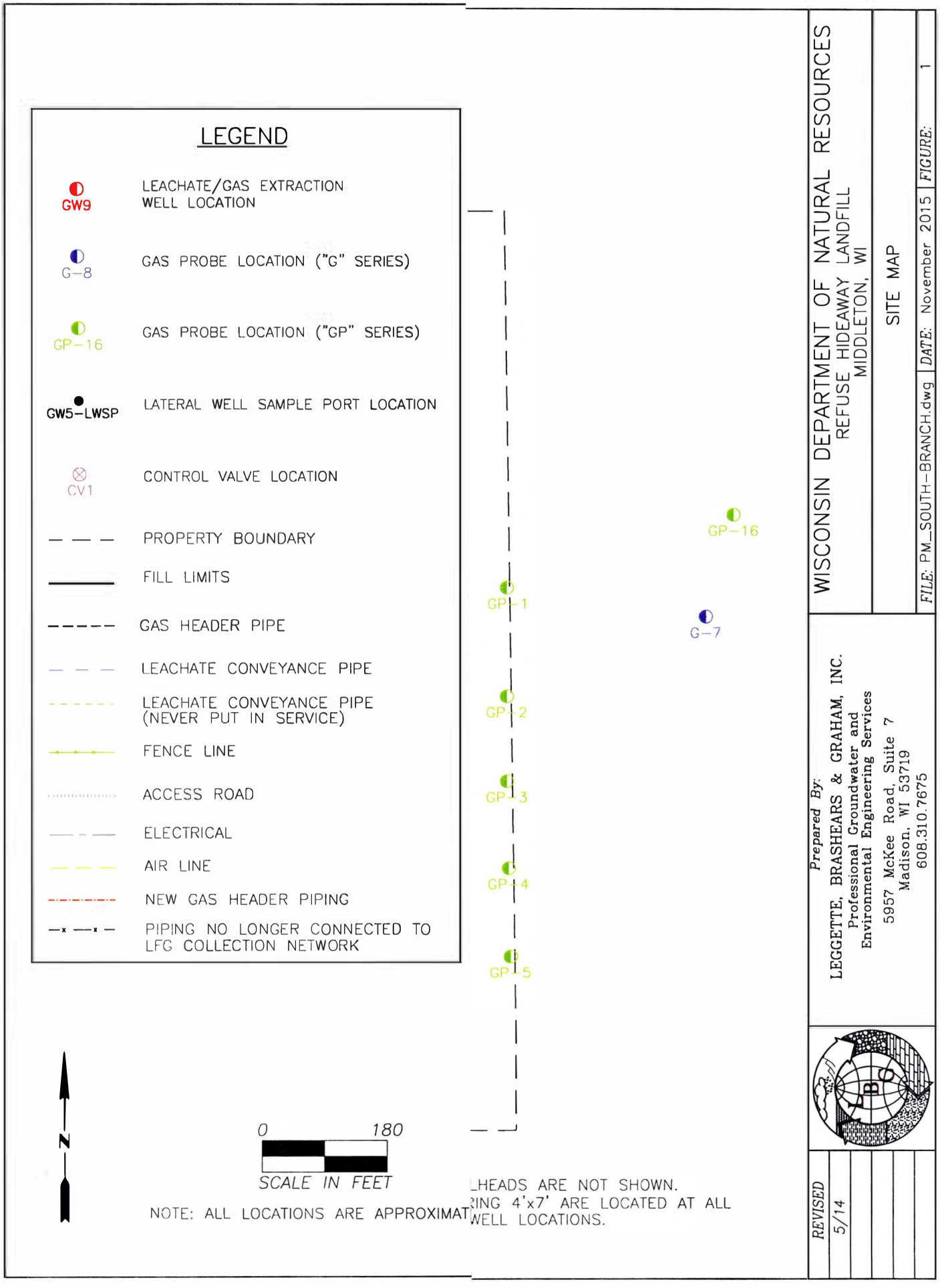

LEGEND
GW9
LEACHATE/GAS EXTRACTION WELL LOCATION
G-8
GAS PROBE LOCATION ("G" SERIES)
GP-16
GAS PROBE LOCATION ("GP" SERIES)
GW5-LWSP
LATERAL WELL SAMPLE PORT LOCATION
CV1
CONTROL VALVE LOCATION
PROPERTY BOUNDARY
FILL LIMITS
GAS HEADER PIPE
LEACHATE CONVEYANCE PIPE
LEACHATE CONVEYANCE PIPE (NEVER PUT IN SERVICE)
FENCE LINE
ACCESS ROAD
ELECTRICAL
AIR LINE
NEW GAS HEADER PIPING
PIPING NO LONGER CONNECTED TO LFG COLLECTION NETWORK
GP-16
GP-1
G-7
GP-2
GP-3
GP-4
GP-5
N
0
180
SCALE IN FEET
NOTE: ALL LOCATIONS ARE APPROXIMAT
LHEADS ARE NOT SHOWN.
RING 4'x7' ARE LOCATED AT ALL
WELL LOCATIONS.
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WI
SITE MAP
FILE: PM_SOUTH-BRANCH.dwg
DATE: November 2015
FIGURE: 1
Prepared By:
LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Groundwater and Environmental Engineering Services
5957 McKee Road, Suite 7
Madison, WI 53719
608.310.7675
REVISED
5/14

FIGURE 2

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEWAY LANDFILL
MIDDLETON, WISCONSIN

ANNUAL LEACHATE COLLECTION VOLUME (2007-2017)

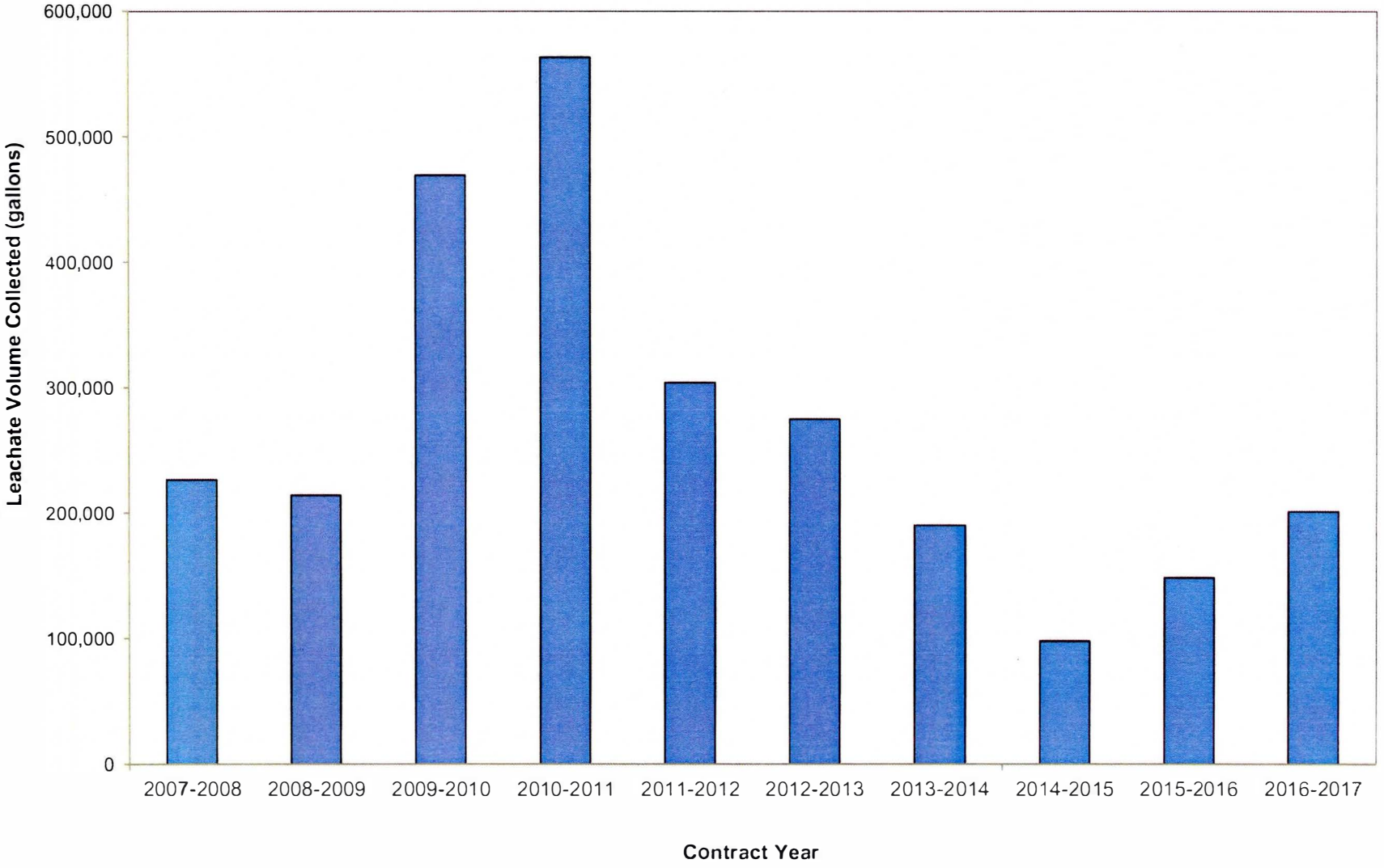
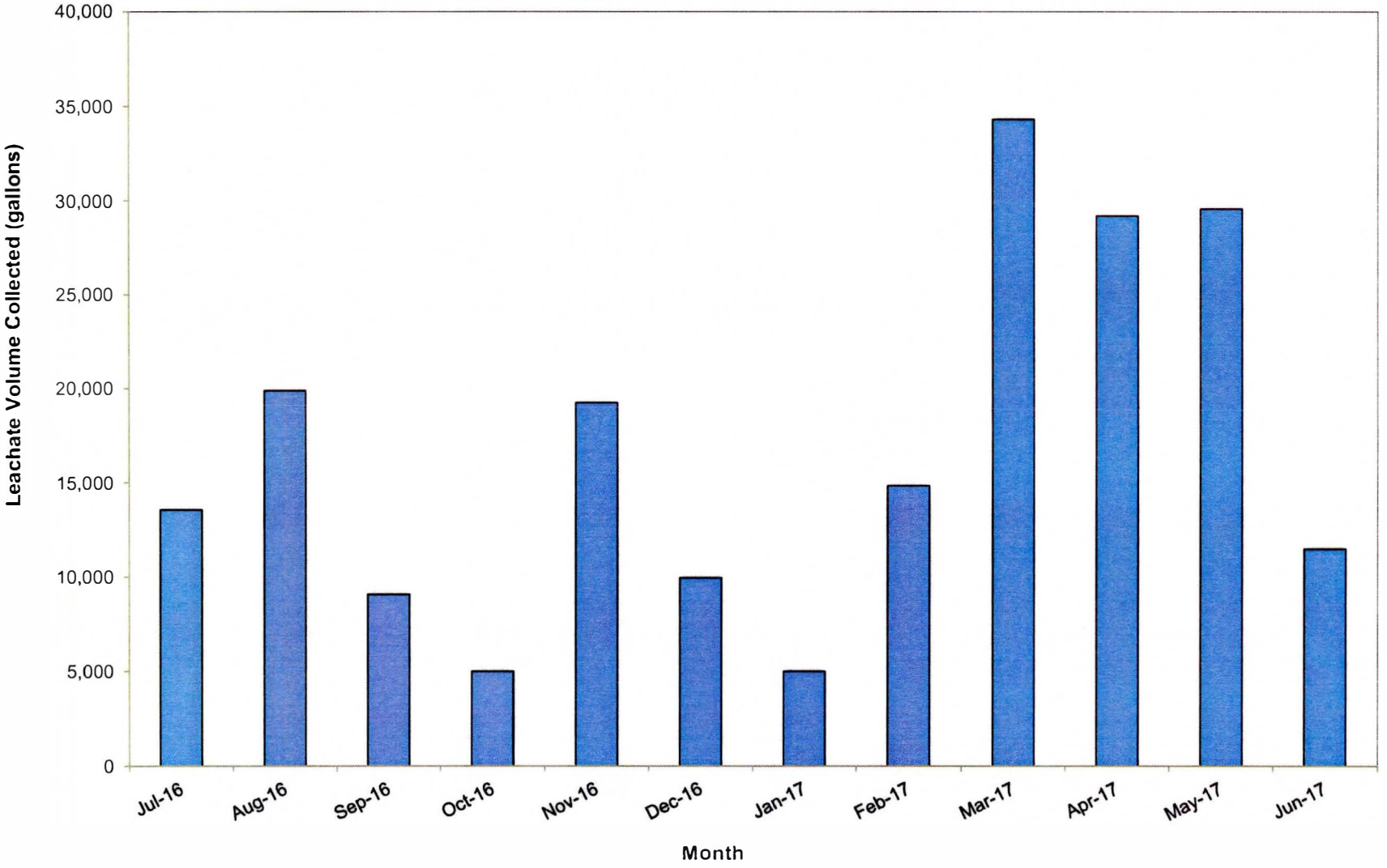


FIGURE 3

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEWAY LANDFILL
MIDDLETON, WISCONSIN

MONTHLY LEACHATE COLLECTION VOLUME (JULY 2016-JUNE 2017)



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

G:\GIS\Refuse_Hideaway\maps\g3refuse01f.mxd, 10/9/2015, 3:40:52 PM, NAD 1983 UTM Zone 16N

Prepared By:
LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Groundwater and
Environmental Engineering Services
8 Pine Tree Drive, Suite 250
St. Paul, Minnesota 55112
(651) 490-1405

REFUSE HIDEAWAY LANDFILL

MIDDLETON, WISCONSIN

SITE GAS WELLS/PROBES

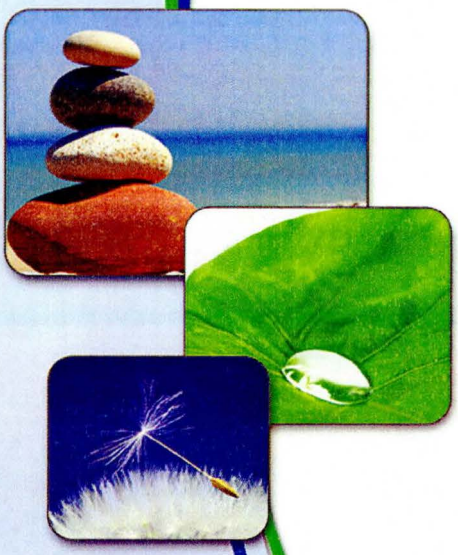
FILE:	DATE:	FIGURE:
g3refuse01f.MXD	10/9/2015	4

APPENDIX I

LEACHATE LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118005-1
Client Project/Site: Refuse Hideaway Landfill

For:
Leggette, Brashears & Graham, Inc.
5957 McKee Road,
Suite 7
Madison, Wisconsin 53719

Attn: Jennifer Shelton

Sandie Fredrick

Authorized for release by:
10/7/2016 4:46:38 PM

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Job ID: 500-118005-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118005-1

Comments
No additional comments.

Receipt
The sample was received on 10/3/2016 10:10 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 16.9° C.

Receipt Exceptions
The following sample(s) was received at the laboratory outside the required temperature criteria: 16.9. Received past hold time for Cr+6

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Client Sample ID: Leachate

Lab Sample ID: 500-118005-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010B	Total/NA
Chromium	0.014		0.010	0.0024	mg/L	1		6010B	Total/NA
Copper	0.0032	J	0.010	0.0022	mg/L	1		6010B	Total/NA
Nickel	0.034		0.010	0.0037	mg/L	1		6010B	Total/NA
Zinc	0.032		0.020	0.010	mg/L	1		6010B	Total/NA
Cyanide, Total	0.010	B	0.010	0.0036	mg/L	1		SM 4500 CN E	Total/NA

4

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 3500 CR B	Chromium, Hexavalent	SM	TAL CHI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI

5

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-118005-1	Leachate	Water	09/29/16 15:45	10/03/16 10:10

Client Sample Results

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Client Sample ID: Leachate

Date Collected: 09/29/16 15:45
Date Received: 10/03/16 10:10

Lab Sample ID: 500-118005-1

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		10/05/16 09:07	10/07/16 01:56	1
Chromium	**0.014**		0.010	0.0024	mg/L		10/05/16 09:07	10/07/16 01:56	1
Copper	**0.0032**	**J**	0.010	0.0022	mg/L		10/05/16 09:07	10/07/16 01:56	1
Lead	<0.0025		0.0050	0.0025	mg/L		10/05/16 09:07	10/07/16 01:56	1
Molybdenum	<0.0022		0.010	0.0022	mg/L		10/05/16 09:07	10/07/16 01:56	1
Nickel	**0.034**		0.010	0.0037	mg/L		10/05/16 09:07	10/07/16 01:56	1
Selenium	<0.0051		0.010	0.0051	mg/L		10/05/16 09:07	10/07/16 01:56	1
Silver	<0.0013		0.0050	0.0013	mg/L		10/05/16 09:07	10/07/16 01:56	1
Zinc	**0.032**		0.020	0.010	mg/L		10/05/16 09:07	10/07/16 01:56	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		10/06/16 17:00	10/07/16 08:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0025	H	0.010	0.0025	mg/L			10/03/16 18:51	1
Cyanide, Total	**0.010**	**B**	0.010	0.0036	mg/L		10/05/16 10:20	10/05/16 16:14	1

Definitions/Glossary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Metals

Prep Batch: 354687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118005-1	Leachate	Total/NA	Water	3010A	
MB 500-354687/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-354687/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 354984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118005-1	Leachate	Total/NA	Water	7470A	
MB 500-354984/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-354984/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 355072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118005-1	Leachate	Total/NA	Water	6010B	354687
MB 500-354687/1-A	Method Blank	Total/NA	Water	6010B	354687
LCS 500-354687/2-A	Lab Control Sample	Total/NA	Water	6010B	354687

Analysis Batch: 355081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118005-1	Leachate	Total/NA	Water	7470A	354984
MB 500-354984/12-A	Method Blank	Total/NA	Water	7470A	354984
LCS 500-354984/13-A	Lab Control Sample	Total/NA	Water	7470A	354984

General Chemistry

Prep Batch: 354686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118005-1	Leachate	Total/NA	Water	Distill/CN	
MB 500-354686/11-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 500-354686/12-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 354749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118005-1	Leachate	Total/NA	Water	SM 3500 CR B	
MB 500-354749/3	Method Blank	Total/NA	Water	SM 3500 CR B	
LCS 500-354749/4	Lab Control Sample	Total/NA	Water	SM 3500 CR B	

Analysis Batch: 354784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118005-1	Leachate	Total/NA	Water	SM 4500 CN E	354686
MB 500-354686/11-A	Method Blank	Total/NA	Water	SM 4500 CN E	354686
LCS 500-354686/12-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	354686

QC Sample Results

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 500-354687/1-A
Matrix: Water
Analysis Batch: 355072

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354687

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00094		0.0020	0.00094	mg/L		10/05/16 09:07	10/07/16 00:49	1
Chromium	<0.0024		0.010	0.0024	mg/L		10/05/16 09:07	10/07/16 00:49	1
Copper	<0.0022		0.010	0.0022	mg/L		10/05/16 09:07	10/07/16 00:49	1
Lead	<0.0025		0.0050	0.0025	mg/L		10/05/16 09:07	10/07/16 00:49	1
Molybdenum	<0.0022		0.010	0.0022	mg/L		10/05/16 09:07	10/07/16 00:49	1
Nickel	<0.0037		0.010	0.0037	mg/L		10/05/16 09:07	10/07/16 00:49	1
Selenium	<0.0051		0.010	0.0051	mg/L		10/05/16 09:07	10/07/16 00:49	1
Silver	<0.0013		0.0050	0.0013	mg/L		10/05/16 09:07	10/07/16 00:49	1
Zinc	<0.010		0.020	0.010	mg/L		10/05/16 09:07	10/07/16 00:49	1

10

Lab Sample ID: LCS 500-354687/2-A
Matrix: Water
Analysis Batch: 355072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354687

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.0484		mg/L		97	80 - 120
Chromium	0.200	0.200		mg/L		100	80 - 120
Copper	0.250	0.252		mg/L		101	80 - 120
Lead	0.100	0.0989		mg/L		99	80 - 120
Molybdenum	1.00	0.981		mg/L		98	80 - 120
Nickel	0.500	0.498		mg/L		100	80 - 120
Selenium	0.100	0.0940		mg/L		94	80 - 120
Silver	0.0500	0.0490		mg/L		98	80 - 120
Zinc	0.500	0.497		mg/L		99	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-354984/12-A
Matrix: Water
Analysis Batch: 355081

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354984

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		10/06/16 17:00	10/07/16 08:35	1

Lab Sample ID: LCS 500-354984/13-A
Matrix: Water
Analysis Batch: 355081

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354984

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	1.84		ug/L		92	80 - 120

Method: SM 3500 CR B - Chromium, Hexavalent

Lab Sample ID: MB 500-354749/3
Matrix: Water
Analysis Batch: 354749

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0025		0.010	0.0025	mg/L			10/03/16 18:48	1

Lab Sample ID: LCS 500-354749/4
Matrix: Water
Analysis Batch: 354749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.250	0.260		mg/L		104	85 - 115

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-354686/11-A
Matrix: Water
Analysis Batch: 354784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354686

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.00470	J	0.010	0.0036	mg/L		10/05/16 10:20	10/05/16 16:09	1

Lab Sample ID: LCS 500-354686/12-A
Matrix: Water
Analysis Batch: 354784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354686

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.0900		mg/L		90	80 - 120

Lab Chronicle

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Client Sample ID: Leachate

Date Collected: 09/29/16 15:45
Date Received: 10/03/16 10:10

Lab Sample ID: 500-118005-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			354687	10/05/16 09:07	JEF	TAL CHI
Total/NA	Analysis	6010B		1	355072	10/07/16 01:56	PJ1	TAL CHI
Total/NA	Prep	7470A			354984	10/06/16 17:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	355081	10/07/16 08:52	MJD	TAL CHI
Total/NA	Analysis	SM 3500 CR B		1	354749		CCK	TAL CHI
					(Start)	10/03/16 18:51		
					(End)	10/03/16 18:51		
Total/NA	Prep	Distill/CN			354686	10/05/16 10:20	VIP	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	354784		VIP	TAL CHI
					(Start)	10/05/16 16:14		
					(End)	10/05/16 16:14		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-118005-1

Laboratory: TestAmerica Chicago

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	999580010	08-31-17

TestAmerica

THE LEADER IN ENVIRONMENTA

2417 Bond Street, University Park, IL 6
Phone: 708.534.5200 Fax: 708.5

500-118005 COC

Chain of Custody Record

Lab Job #: 500-118005

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 16.9

Report To (optional)	Bill To (optional)
Contact: Jennifer Shelton	Contact:
Company: LBG	Company:
Address:	Address:
Address:	Address:
Phone:	Phone:
Fax:	Fax:
E-Mail:	PO#/Reference#

Client	Client Project #
LBG	
Project Name	
Refuse Hideaway Landfill	
Project Location/State	**Lab Project #**
Middleton, WI	
Sampler	**Lab PM**
Brad DalSanto	

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative	Parameter: Hex Chrome	Parameter: Cyanide	Parameter: Metals/Mercury	Comments
								8	4	3	
1		Leachate	9/29	1545	3	L		X	X	X	

BOD

Turnaround Time Required (Business Days)

___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other

Requested Due Date _____

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
BJD	LBG	9/29	1710	[illegible]	TH-Ott	10/3/16	1010
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier

Shipped: FedEx

Hand Delivered

Matrix Key

WW – Wastewater	SE – Sediment
W – Water	SO – Soil
S – Soil	L – Leachate
SL – Sludge	WI – Wipe
MS – Miscellaneous	DW – Drinking Water
OL – Oil	O – Other
A – Air	

Client Comments

Lab Comments:

TAL-4124-500 (1209)

10/7/2016

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Login Sample Receipt Checklist

Client: Leggette, Brashears & Graham, Inc.

Job Number: 500-118005-1

Login Number: 118005
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Water present in cooler; indicates evidence of melted ice.
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	16.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Hex Chrome received past hold.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-121994-1
Client Project/Site: Refuse Hideaway Landfill

For:
Leggette, Brashears & Graham, Inc.
5957 McKee Road,
Suite 7
Madison, Wisconsin 53719

Attn: Jennifer Shelton

Therese Hargraves

Authorized for release by:
1/4/2017 1:59:53 PM
Therese Hargraves, Project Manager I
therese.hargraves@testamericainc.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

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Table of Contents

Case Narrative

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-121994-1

Job ID: 500-121994-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-121994-1

Comments
No additional comments.

Receipt
The sample was received on 12/29/2016 10:55 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.1° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-121994-1

Client Sample ID: Leachate

Lab Sample ID: 500-121994-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0012	J	0.0020	0.00094	mg/L	1		6010B	Total/NA
Chromium	0.017		0.010	0.0024	mg/L	1		6010B	Total/NA
Copper	0.0047	J	0.010	0.0022	mg/L	1		6010B	Total/NA
Nickel	0.038		0.010	0.0037	mg/L	1		6010B	Total/NA
Zinc	0.010	J	0.020	0.010	mg/L	1		6010B	Total/NA
Cyanide, Total	0.0098	J	0.010	0.0036	mg/L	1		SM 4500 CN E	Total/NA

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This Detection Summary does not include radiochemical test results.

Method Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-121994-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 3500 CR B	Chromium, Hexavalent	SM	TAL CHI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI

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Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-121994-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-121994-1	Leachate	Water	12/28/16 14:10	12/29/16 10:55

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Client Sample Results

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-121994-1

Client Sample ID: Leachate

Date Collected: 12/28/16 14:10
Date Received: 12/29/16 10:55

Lab Sample ID: 500-121994-1

Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		01/03/17 08:27	01/03/17 15:01	1
Chromium	**0.017**		0.010	0.0024	mg/L		01/03/17 08:27	01/03/17 15:01	1
Copper	**0.0047**	**J**	0.010	0.0022	mg/L		01/03/17 08:27	01/03/17 15:01	1
Lead	<0.0025		0.0050	0.0025	mg/L		01/03/17 08:27	01/03/17 15:01	1
Molybdenum	<0.0022		0.010	0.0022	mg/L		01/03/17 08:27	01/03/17 15:01	1
Nickel	**0.038**		0.010	0.0037	mg/L		01/03/17 08:27	01/03/17 15:01	1
Selenium	<0.0051		0.010	0.0051	mg/L		01/03/17 08:27	01/03/17 15:01	1
Silver	<0.0013		0.0050	0.0013	mg/L		01/03/17 08:27	01/03/17 15:01	1
Zinc	**0.010**	**J**	0.020	0.010	mg/L		01/03/17 08:27	01/03/17 15:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		01/03/17 10:45	01/04/17 08:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032	F1	0.010	0.0032	mg/L			12/29/16 13:50	1
Cyanide, Total	**0.0098**	**J**	0.010	0.0036	mg/L		12/30/16 13:30	12/30/16 15:58	1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-121994-1

Metals

Prep Batch: 367296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-121994-1	Leachate	Total/NA	Water	3010A	
MB 500-367296/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-367296/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 500-367296/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Prep Batch: 367324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-121994-1	Leachate	Total/NA	Water	7470A	
MB 500-367324/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-367324/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 367421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-121994-1	Leachate	Total/NA	Water	6010B	367296
MB 500-367296/1-A	Method Blank	Total/NA	Water	6010B	367296
LCS 500-367296/2-A	Lab Control Sample	Total/NA	Water	6010B	367296
LCSD 500-367296/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	367296

Analysis Batch: 367452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-121994-1	Leachate	Total/NA	Water	7470A	367324
MB 500-367324/12-A	Method Blank	Total/NA	Water	7470A	367324
LCS 500-367324/13-A	Lab Control Sample	Total/NA	Water	7470A	367324

General Chemistry

Prep Batch: 367202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-121994-1	Leachate	Total/NA	Water	Distill/CN	
MB 500-367202/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 500-367202/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 367233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-121994-1	Leachate	Total/NA	Water	SM 3500 CR B	
MB 500-367233/3	Method Blank	Total/NA	Water	SM 3500 CR B	
LCS 500-367233/4	Lab Control Sample	Total/NA	Water	SM 3500 CR B	
LCSD 500-367233/5	Lab Control Sample Dup	Total/NA	Water	SM 3500 CR B	
500-121994-1 MS	Leachate	Total/NA	Water	SM 3500 CR B	

Analysis Batch: 367316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-121994-1	Leachate	Total/NA	Water	SM 4500 CN E	367202
MB 500-367202/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	367202
LCS 500-367202/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	367202

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 500-367296/1-A
Matrix: Water
Analysis Batch: 367421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 367296

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00094		0.0020	0.00094	mg/L		01/03/17 08:27	01/03/17 14:48	1
Chromium	<0.0024		0.010	0.0024	mg/L		01/03/17 08:27	01/03/17 14:48	1
Copper	<0.0022		0.010	0.0022	mg/L		01/03/17 08:27	01/03/17 14:48	1
Lead	<0.0025		0.0050	0.0025	mg/L		01/03/17 08:27	01/03/17 14:48	1
Molybdenum	<0.0022		0.010	0.0022	mg/L		01/03/17 08:27	01/03/17 14:48	1
Nickel	<0.0037		0.010	0.0037	mg/L		01/03/17 08:27	01/03/17 14:48	1
Selenium	<0.0051		0.010	0.0051	mg/L		01/03/17 08:27	01/03/17 14:48	1
Silver	<0.0013		0.0050	0.0013	mg/L		01/03/17 08:27	01/03/17 14:48	1
Zinc	<0.010		0.020	0.010	mg/L		01/03/17 08:27	01/03/17 14:48	1

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Lab Sample ID: LCS 500-367296/2-A
Matrix: Water
Analysis Batch: 367421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 367296

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.0529		mg/L		106	80 - 120
Chromium	0.200	0.211		mg/L		106	80 - 120
Copper	0.250	0.269		mg/L		108	80 - 120
Lead	0.100	0.102		mg/L		102	80 - 120
Molybdenum	1.00	1.05		mg/L		105	80 - 120
Nickel	0.500	0.517		mg/L		103	80 - 120
Selenium	0.100	0.101		mg/L		101	80 - 120
Silver	0.0500	0.0492		mg/L		98	80 - 120
Zinc	0.500	0.509		mg/L		102	80 - 120

Lab Sample ID: LCSD 500-367296/3-A
Matrix: Water
Analysis Batch: 367421

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 367296

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	0.0500	0.0519		mg/L		104	80 - 120	2	20
Chromium	0.200	0.208		mg/L		104	80 - 120	1	20
Copper	0.250	0.265		mg/L		106	80 - 120	2	20
Lead	0.100	0.0998		mg/L		100	80 - 120	2	20
Molybdenum	1.00	1.03		mg/L		103	80 - 120	2	20
Nickel	0.500	0.505		mg/L		101	80 - 120	2	20
Selenium	0.100	0.0965		mg/L		97	80 - 120	5	20
Silver	0.0500	0.0480		mg/L		96	80 - 120	2	20
Zinc	0.500	0.499		mg/L		100	80 - 120	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-367324/12-A
Matrix: Water
Analysis Batch: 367452

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 367324

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		01/03/17 10:45	01/04/17 08:26	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 500-367324/13-A
Matrix: Water
Analysis Batch: 367452

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 367324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	1.88		ug/L		94	80 - 120

Method: SM 3500 CR B - Chromium, Hexavalent

Lab Sample ID: MB 500-367233/3
Matrix: Water
Analysis Batch: 367233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032		0.010	0.0032	mg/L			12/29/16 13:48	1

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Lab Sample ID: LCS 500-367233/4
Matrix: Water
Analysis Batch: 367233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.250	0.256		mg/L		102	85 - 115

Lab Sample ID: LCSD 500-367233/5
Matrix: Water
Analysis Batch: 367233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	0.250	0.258		mg/L		103	85- 115	1	20

Lab Sample ID: 500-121994-1 MS
Matrix: Water
Analysis Batch: 367233

Client Sample ID: Leachate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	<0.0032	F1	0.250	0.0941	F1	mg/L		38	85 - 115

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-367202/1-A
Matrix: Water
Analysis Batch: 367316

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 367202

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0036		0.010	0.0036	mg/L		12/30/16 13:30	12/30/16 15:55	1

Lab Sample ID: LCS 500-367202/2-A
Matrix: Water
Analysis Batch: 367316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 367202

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.101		mg/L		101	80 - 120

Lab Chronicle

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-121994-1

Client Sample ID: Leachate

Date Collected: 12/28/16 14:10
Date Received: 12/29/16 10:55

Lab Sample ID: 500-121994-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			367296	01/03/17 08:27	JEF	TAL CHI
Total/NA	Analysis	6010B		1	367421	01/03/17 15:01	PJ1	TAL CHI
Total/NA	Prep	7470A			367324	01/03/17 10:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	367452	01/04/17 08:49	MJD	TAL CHI
Total/NA	Analysis	SM 3500 CR B		1	367233		CCK	TAL CHI
					(Start)	12/29/16 13:50		
					(End)	12/29/16 13:50		
Total/NA	Prep	Distill/CN			367202	12/30/16 13:30	VIP	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	367316		VIP	TAL CHI
					(Start)	12/30/16 15:58		
					(End)	12/30/16 15:59		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-121994-1

Laboratory: TestAmerica Chicago

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	999580010	08-31-17

TestAmerica

THE LEADER IN ENVIRONMENT

2417 Bond Street, University Park, IL
Phone: 708.534.5200 Fax: 708.:

500-121994 COC

Chain of Custody Record

Lab Job #: 500-121994

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: -0.1

Report To (optional)	Bill To (optional)
Contact: Jennifer Shelton	Contact:
Company: LBG, Inc.	Company:
Address:	Address:
Address:	Address:
Phone:	Phone:
Fax:	Fax:
E-Mail:	PO#/Reference#

Client: LBG, Inc	Client Project #:	Preservative:	
Project Name: Refuse Hideaway Landfill		Parameter:	
Project Location/State: Middleton, WI	Lab Project #:		
Sampler: Brad DalSanto	Lab PM:		

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
5. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Hex Chrome	Cyanide	Metals/Mercury	Comments
1		Leachate	12/28	1410	3	L	X	X	X	

Turnaround Time Required (Business ays)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days STANDARD ____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
BJD	LBG	12/28	1430	FedEx			
					TA	12/29/16	1030

Lab Courier
Shipped Fed Ex
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments
Metals: Cadmium, chromium, copper, lead, Selenium, Silver, Zinc, Molybdenum, Nickel

Lab Comments:

TAL-4124-500 (1209) 1/4/2017

Login Sample Receipt Checklist

Client: Leggette, Brashears & Graham, Inc.

Job Number: 500-121994-1

Login Number: 121994
List Number: 1
Creator: James, Jeff A

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	-0.1(samples not frozen)
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-125436-1
Client Project/Site: Refuse Hideaway Landfill

For:
Leggette, Brashears & Graham, Inc.
5957 McKee Road,
Suite 7
Madison, Wisconsin 53719

Attn: Jennifer Shelton

Therese Hargraves

Authorized for release by:
3/30/2017 4:30:04 PM
Therese Hargraves, Project Manager I
therese.hargraves@testamericainc.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Job ID: 500-125436-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-125436-1

Comments
No additional comments.

Receipt
The sample was received on 3/22/2017 10:25 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Client Sample ID: Leachate

Lab Sample ID: 500-125436-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.0087	J	0.010	0.0024	mg/L	1		6010B	Total/NA
Copper	0.0037	J	0.010	0.0022	mg/L	1		6010B	Total/NA
Nickel	0.020		0.010	0.0037	mg/L	1		6010B	Total/NA
Selenium	0.0063	J	0.010	0.0051	mg/L	1		6010B	Total/NA

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This Detection Summary does not include radiochemical test results.

Method Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 3500 CR B	Chromium, Hexavalent	SM	TAL CHI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI

5

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-125436-1	Leachate	Water	03/21/17 13:15	03/22/17 10:25

6

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Client Sample ID: Leachate
Date Collected: 03/21/17 13:15
Date Received: 03/22/17 10:25

Lab Sample ID: 500-125436-1
Matrix: Water

7

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00094		0.0020	0.00094	mg/L		03/25/17 09:12	03/30/17 00:07	1
Chromium	**0.0087**	**J**	0.010	0.0024	mg/L		03/25/17 09:12	03/30/17 00:07	1
Copper	**0.0037**	**J**	0.010	0.0022	mg/L		03/25/17 09:12	03/30/17 12:48	1
Lead	<0.0025		0.0050	0.0025	mg/L		03/25/17 09:12	03/30/17 00:07	1
Molybdenum	<0.0022		0.010	0.0022	mg/L		03/25/17 09:12	03/30/17 00:07	1
Nickel	**0.020**		0.010	0.0037	mg/L		03/25/17 09:12	03/30/17 00:07	1
Selenium	**0.0063**	**J**	0.010	0.0051	mg/L		03/25/17 09:12	03/30/17 00:07	1
Silver	<0.0013		0.0050	0.0013	mg/L		03/25/17 09:12	03/30/17 00:07	1
Zinc	<0.010		0.020	0.010	mg/L		03/25/17 09:12	03/30/17 00:07	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		03/23/17 13:30	03/24/17 09:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032		0.010	0.0032	mg/L			03/22/17 12:42	1
Cyanide, Total	<0.0036		0.010	0.0036	mg/L		03/28/17 10:50	03/28/17 15:36	1

Definitions/Glossary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Metals

Prep Batch: 377036

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-125436-1	Leachate	Total/NA	Water	7470A	
MB 500-377036/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-377036/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 377233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-125436-1	Leachate	Total/NA	Water	7470A	377036
MB 500-377036/12-A	Method Blank	Total/NA	Water	7470A	377036
LCS 500-377036/13-A	Lab Control Sample	Total/NA	Water	7470A	377036

Prep Batch: 377319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-125436-1	Leachate	Total/NA	Water	3010A	
MB 500-377319/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-377319/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 377995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-125436-1	Leachate	Total/NA	Water	6010B	377319
MB 500-377319/1-A	Method Blank	Total/NA	Water	6010B	377319
LCS 500-377319/2-A	Lab Control Sample	Total/NA	Water	6010B	377319

Analysis Batch: 378108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-125436-1	Leachate	Total/NA	Water	6010B	377319
MB 500-377319/1-A	Method Blank	Total/NA	Water	6010B	377319
LCS 500-377319/2-A	Lab Control Sample	Total/NA	Water	6010B	377319

General Chemistry

Analysis Batch: 376902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-125436-1	Leachate	Total/NA	Water	SM 3500 CR B	
MB 500-376902/3	Method Blank	Total/NA	Water	SM 3500 CR B	
LCS 500-376902/4	Lab Control Sample	Total/NA	Water	SM 3500 CR B	
LCSD 500-376902/5	Lab Control Sample Dup	Total/NA	Water	SM 3500 CR B	

Prep Batch: 377660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-125436-1	Leachate	Total/NA	Water	Distill/CN	
MB 500-377660/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 500-377660/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 377733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-125436-1	Leachate	Total/NA	Water	SM 4500 CN E	377660
MB 500-377660/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	377660
LCS 500-377660/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	377660

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 500-377319/1-A
Matrix: Water
Analysis Batch: 377995

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 377319

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00094		0.0020	0.00094	mg/L		03/25/17 09:12	03/29/17 22:59	1
Chromium	<0.0024		0.010	0.0024	mg/L		03/25/17 09:12	03/29/17 22:59	1
Lead	<0.0025		0.0050	0.0025	mg/L		03/25/17 09:12	03/29/17 22:59	1
Molybdenum	<0.0022		0.010	0.0022	mg/L		03/25/17 09:12	03/29/17 22:59	1
Nickel	<0.0037		0.010	0.0037	mg/L		03/25/17 09:12	03/29/17 22:59	1
Selenium	<0.0051		0.010	0.0051	mg/L		03/25/17 09:12	03/29/17 22:59	1
Silver	<0.0013		0.0050	0.0013	mg/L		03/25/17 09:12	03/29/17 22:59	1
Zinc	<0.010		0.020	0.010	mg/L		03/25/17 09:12	03/29/17 22:59	1

Lab Sample ID: MB 500-377319/1-A
Matrix: Water
Analysis Batch: 378108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 377319

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.0022		0.010	0.0022	mg/L		03/25/17 09:12	03/30/17 12:41	1

Lab Sample ID: LCS 500-377319/2-A
Matrix: Water
Analysis Batch: 377995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377319

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.0489		mg/L		98	80 - 120
Chromium	0.200	0.201		mg/L		100	80 - 120
Lead	0.100	0.0901		mg/L		90	80 - 120
Molybdenum	1.00	0.968		mg/L		97	80 - 120
Nickel	0.500	0.479		mg/L		96	80 - 120
Selenium	0.100	0.0913		mg/L		91	80 - 120
Silver	0.0500	0.0482		mg/L		96	80 - 120
Zinc	0.500	0.449		mg/L		90	80 - 120

Lab Sample ID: LCS 500-377319/2-A
Matrix: Water
Analysis Batch: 378108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377319

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Copper	0.250	0.255		mg/L		102	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-377036/12-A
Matrix: Water
Analysis Batch: 377233

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 377036

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.11		0.20	0.11	ug/L		03/23/17 13:30	03/24/17 09:37	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 500-377036/13-A
Matrix: Water
Analysis Batch: 377233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377036

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	2.13		ug/L		106	80 - 120

Method: SM 3500 CR B - Chromium, Hexavalent

Lab Sample ID: MB 500-376902/3
Matrix: Water
Analysis Batch: 376902

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032		0.010	0.0032	mg/L			03/22/17 12:40	1

Lab Sample ID: LCS 500-376902/4
Matrix: Water
Analysis Batch: 376902

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.250	0.241		mg/L		96	85 - 115

Lab Sample ID: LCSD 500-376902/5
Matrix: Water
Analysis Batch: 376902

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium, hexavalent	0.250	0.267		mg/L		107	85 - 115	10	20

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-377660/1-A
Matrix: Water
Analysis Batch: 377733

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 377660

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0036		0.010	0.0036	mg/L		03/28/17 10:50	03/28/17 15:35	1

Lab Sample ID: LCS 500-377660/2-A
Matrix: Water
Analysis Batch: 377733

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 377660

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.105		mg/L		105	80 - 120

Lab Chronicle

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Client Sample ID: Leachate

Date Collected: 03/21/17 13:15
Date Received: 03/22/17 10:25

Lab Sample ID: 500-125436-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			377319	03/25/17 09:12	JNH	TAL CHI
Total/NA	Analysis	6010B		1	377995	03/30/17 00:07	PJ1	TAL CHI
Total/NA	Prep	3010A			377319	03/25/17 09:12	JNH	TAL CHI
Total/NA	Analysis	6010B		1	378108	03/30/17 12:48	PJ1	TAL CHI
Total/NA	Prep	7470A			377036	03/23/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	377233	03/24/17 09:52	MJD	TAL CHI
Total/NA	Analysis	SM 3500 CR B		1	376902		CCK	TAL CHI
					(Start)	03/22/17 12:42		
					(End)	03/22/17 12:42		
Total/NA	Prep	Distill/CN			377660	03/28/17 10:50	EAT	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	377733		EAT	TAL CHI
					(Start)	03/28/17 15:36		
					(End)	03/28/17 15:36		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-125436-1

Laboratory: TestAmerica Chicago

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	999580010	08-31-17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-125436

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 0.4

(optional) Report To	(optional) Bill To
Contact: Jen Shelton	Contact:
Company: LBG, Inc.	Company:
Address:	Address:
Address:	Address:
Phone:	Phone:
Fax:	Fax:
E-Mail:	PO#/Reference#

Client: LBG, Inc	Client Project #:	Preservative:	
Project Name: Refuse Hideaway Landfill		Parameter:	
Project Location/State: Middleton, WI	Lab Project #:		
Sampler: Brad DalSanto	Lab PM:		

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
4°
4°
to 4°

500-125436 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Hex Chrome	Cyanide	Metals/ Mercury	Comments
1		Leachate	3/21	1315	3	L	X	X	X	

BJD BJD BJD

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days Standard ____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
BJD	LBG	3/21	1330	FedEx			
				David Sam	TAL-CHI	03/22/17	1025

Lab Courier:
Shipped: FX Priority
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments:

Lab Comments:

3/30/2017

ORIGIN ID:JOTA (708) 534-5200
BRADLEY DALSANTO
LEGGETTE, BRASHEARS & GRAHAM, INC.
5957 MCKEE ROAD
SUITE 7
MADISON, WI 53719
UNITED STATES US

SHIP DATE: 27FEB17
ACTWGT: 20.00 LB MAN
CAD: 33264/CAFE3011

TO **SAMPLE LOGIN**
TESTAMERICA LABS
2417 BOND ST

UNIVERSITY PARK IL 60466
(708) 534-5200
DEPT: PM
REF: 8600-51657DM

RMA:

FedEx Express

FedEx
TRK# 0221 **6514 8431 9501**

WED - 22 MAR 10:30A
PRIORITY OVERNIGHT

79 JOTA

60466
IL-US **ORD**

#2630582 03/21 546J3/1ADB/53C1

540C3/1ADB/727F

500-125436 Waybill

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Login Sample Receipt Checklist

Client: Leggette, Brashears & Graham, Inc.

Job Number: 500-125436-1

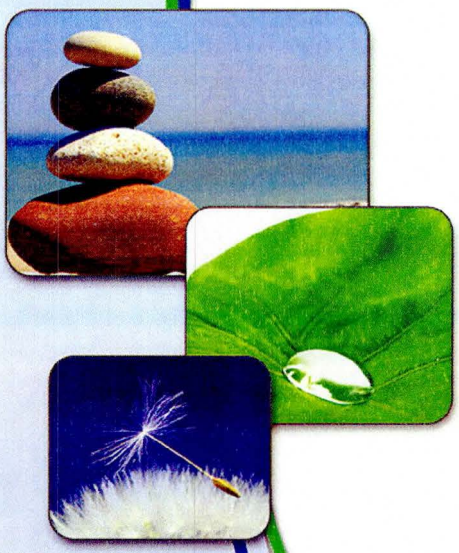
Login Number: 125436
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-130832-1
Client Project/Site: Refuse Hideaway Landfill

For:
Leggette, Brashears & Graham, Inc.
5957 McKee Road,
Suite 7
Madison, Wisconsin 53719

Attn: Jennifer Shelton

Therese Hargraves

Authorized for release by:
7/20/2017 2:57:27 PM
Therese Hargraves, Project Manager I
therese.hargraves@testamericainc.com

Designee for

Sandie Fredrick, Project Manager II
(920)261-1660
sandie.fredrick@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Case Narrative

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Job ID: 500-130832-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-130832-1

Comments
No additional comments.

Receipt
The sample was received on 7/12/2017 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 15.1° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) SM 3500 CR B: Please note that the following Hexavalent Chromium samples have been diluted due to the matrix of the samples and have been reported with elevated reporting limits: Leachate (500-130832-1).

Method(s) SM 3500 CR B: The following Hexavalent chromium sample was received outside of the 24 hour holding time: Leachate (500-130832-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Client Sample ID: Leachate

Lab Sample ID: 500-130832-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.00059	J	0.0020	0.00043	mg/L	1		6010B	Total/NA
Chromium	0.025		0.010	0.0017	mg/L	1		6010B	Total/NA
Copper	0.0071	J	0.010	0.0018	mg/L	1		6010B	Total/NA
Molybdenum	0.0038	J	0.010	0.0038	mg/L	1		6010B	Total/NA
Nickel	0.047		0.010	0.0019	mg/L	1		6010B	Total/NA
Zinc	0.031		0.020	0.0050	mg/L	1		6010B	Total/NA
Mercury	0.20		0.20	0.098	ug/L	1		7470A	Total/NA
Cyanide, Total	0.0049	J	0.010	0.0030	mg/L	1		SM 4500 CN E	Total/NA

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This Detection Summary does not include radiochemical test results.

Method Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 3500 CR B	Chromium, Hexavalent	SM	TAL CHI
SM 4500 CN E	Cyanide, Total	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-130832-1	Leachate	Wastewater	07/10/17 15:30	07/12/17 09:30

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Client Sample Results

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Client Sample ID: Leachate

Date Collected: 07/10/17 15:30
Date Received: 07/12/17 09:30

Lab Sample ID: 500-130832-1

Matrix: Wastewater

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.00059	J	0.0020	0.00043	mg/L		07/13/17 08:11	07/13/17 18:11	1
Chromium	0.025		0.010	0.0017	mg/L		07/13/17 08:11	07/13/17 18:11	1
Copper	0.0071	J	0.010	0.0018	mg/L		07/13/17 08:11	07/13/17 18:11	1
Lead	<0.0027		0.0050	0.0027	mg/L		07/13/17 08:11	07/13/17 18:11	1
Molybdenum	0.0038	J	0.010	0.0038	mg/L		07/13/17 08:11	07/13/17 18:11	1
Nickel	0.047		0.010	0.0019	mg/L		07/13/17 08:11	07/13/17 18:11	1
Selenium	<0.0053		0.010	0.0053	mg/L		07/13/17 08:11	07/13/17 18:11	1
Silver	<0.0015		0.0050	0.0015	mg/L		07/13/17 08:11	07/13/17 18:11	1
Zinc	0.031		0.020	0.0050	mg/L		07/13/17 08:11	07/14/17 12:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20		0.20	0.098	ug/L		07/12/17 14:50	07/13/17 12:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.016	H	0.050	0.016	mg/L			07/12/17 15:35	5
Cyanide, Total	0.0049	J	0.010	0.0030	mg/L		07/14/17 11:40	07/14/17 15:14	1

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Definitions/Glossary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Metals

Prep Batch: 392814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-130832-1	Leachate	Total/NA	Wastewater	7470A	
MB 500-392814/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-392814/13-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 392878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-130832-1	Leachate	Total/NA	Wastewater	3010A	
MB 500-392878/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-392878/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 392949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-130832-1	Leachate	Total/NA	Wastewater	7470A	392814
MB 500-392814/12-A	Method Blank	Total/NA	Water	7470A	392814
LCS 500-392814/13-A	Lab Control Sample	Total/NA	Water	7470A	392814

Analysis Batch: 393017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-130832-1	Leachate	Total/NA	Wastewater	6010B	392878
MB 500-392878/1-A	Method Blank	Total/NA	Water	6010B	392878
LCS 500-392878/2-A	Lab Control Sample	Total/NA	Water	6010B	392878

Analysis Batch: 393093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-130832-1	Leachate	Total/NA	Wastewater	6010B	392878

General Chemistry

Analysis Batch: 392817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-130832-1	Leachate	Total/NA	Wastewater	SM 3500 CR B	
MB 500-392817/3	Method Blank	Total/NA	Water	SM 3500 CR B	
LCS 500-392817/4	Lab Control Sample	Total/NA	Water	SM 3500 CR B	

Prep Batch: 393061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-130832-1	Leachate	Total/NA	Wastewater	Distill/CN	
MB 500-393061/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 500-393061/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 393315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-130832-1	Leachate	Total/NA	Wastewater	SM 4500 CN E	393061
MB 500-393061/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	393061
LCS 500-393061/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	393061

QC Sample Results

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 500-392878/1-A
Matrix: Water
Analysis Batch: 393017

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 392878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	<0.00043		0.0020	0.00043	mg/L		07/13/17 08:11	07/13/17 16:11	1
Chromium	<0.0017		0.010	0.0017	mg/L		07/13/17 08:11	07/13/17 16:11	1
Copper	<0.0018		0.010	0.0018	mg/L		07/13/17 08:11	07/13/17 16:11	1
Lead	<0.0027		0.0050	0.0027	mg/L		07/13/17 08:11	07/13/17 16:11	1
Molybdenum	<0.0038		0.010	0.0038	mg/L		07/13/17 08:11	07/13/17 16:11	1
Nickel	<0.0019		0.010	0.0019	mg/L		07/13/17 08:11	07/13/17 16:11	1
Selenium	0.00659	J	0.010	0.0053	mg/L		07/13/17 08:11	07/13/17 16:11	1
Silver	<0.0015		0.0050	0.0015	mg/L		07/13/17 08:11	07/13/17 16:11	1
Zinc	<0.0050		0.020	0.0050	mg/L		07/13/17 08:11	07/13/17 16:11	1

Lab Sample ID: LCS 500-392878/2-A
Matrix: Water
Analysis Batch: 393017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 392878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	0.0500	0.0497		mg/L		99	80 - 120
Chromium	0.200	0.198		mg/L		99	80 - 120
Copper	0.250	0.254		mg/L		102	80 - 120
Lead	0.100	0.0946		mg/L		95	80 - 120
Molybdenum	1.00	0.988		mg/L		99	80 - 120
Nickel	0.500	0.498		mg/L		100	80 - 120
Selenium	0.100	0.101		mg/L		101	80 - 120
Silver	0.0500	0.0481		mg/L		96	80 - 120
Zinc	0.500	0.492		mg/L		98	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-392814/12-A
Matrix: Water
Analysis Batch: 392949

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 392814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.098		0.20	0.098	ug/L		07/12/17 14:50	07/13/17 12:47	1

Lab Sample ID: LCS 500-392814/13-A
Matrix: Water
Analysis Batch: 392949

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 392814

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	2.00	2.08		ug/L		104	80 - 120

Method: SM 3500 CR B - Chromium, Hexavalent

Lab Sample ID: MB 500-392817/3
Matrix: Water
Analysis Batch: 392817

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.0032		0.010	0.0032	mg/L			07/12/17 15:34	1

Lab Sample ID: LCS 500-392817/4
Matrix: Water
Analysis Batch: 392817

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.250	0.258		mg/L		103	85 - 115

Method: SM 4500 CN E - Cyanide, Total

Lab Sample ID: MB 500-393061/1-A
Matrix: Water
Analysis Batch: 393315

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 393061

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0030		0.010	0.0030	mg/L		07/14/17 11:40	07/14/17 15:01	1

Lab Sample ID: LCS 500-393061/2-A
Matrix: Water
Analysis Batch: 393315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 393061

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.100	0.108		mg/L		108	80 - 120

Lab Chronicle

Client: Leggette, Brashears & Graham, Inc.
Project/Site: Refuse Hideaway Landfill

TestAmerica Job ID: 500-130832-1

Client Sample ID: Leachate

Date Collected: 07/10/17 15:30
Date Received: 07/12/17 09:30

Lab Sample ID: 500-130832-1

Matrix: Wastewater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			392878	07/13/17 08:11	AAP	TAL CHI
Total/NA	Analysis	6010B		1	393093	07/14/17 12:19	KML	TAL CHI
Total/NA	Prep	3010A			392878	07/13/17 08:11	AAP	TAL CHI
Total/NA	Analysis	6010B		1	393017	07/13/17 18:11	PJ1	TAL CHI
Total/NA	Prep	7470A			392814	07/12/17 14:50	PFK	TAL CHI
Total/NA	Analysis	7470A		1	392949	07/13/17 12:55	MJD	TAL CHI
Total/NA	Analysis	SM 3500 CR B		5	392817		JBJ	TAL CHI
					(Start)	07/12/17 15:35		
					(End)	07/12/17 15:36		
Total/NA	Prep	Distill/CN			393061	07/14/17 11:40	NMH	TAL CHI
Total/NA	Analysis	SM 4500 CN E		1	393315		NMH	TAL CHI
					(Start)	07/14/17 15:14		
					(End)	07/14/17 15:15		

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Accreditation/Certification Summary

Client: Leggette, Brashears & Graham, Inc. TestAmerica Job ID: 500-130832-1
Project/Site: Refuse Hideaway Landfill

Laboratory: TestAmerica Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Wisconsin	State Program	5	999580010	08-31-17 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-130832

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 15-0-15-1

500-130832 COC

(optional) Report To		(optional) Bill To	
Contact:	Jennifer Shelton	Contact:	
Company:	LBG	Company:	
Address:	5957 McKee Rd, Ste 7	Address:	
Address:		Address:	
Phone:		Phone:	
Fax:		Fax:	
E-Mail:	JSHELTON@LBGMAD.com	PO#/Reference#	

Client	LBG	Client Project #		Preservative										
Project Name	Refuse Hideaway Landfill			Parameter										
Project Location/State	Middleton, WI	Lab Projec #												
Sampler	Brad DalSanto	Lab PM												

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Hex Chrome	Cyanide	Metals/ Mercury						Comments
1		Leachate	7/10/17	1530	3	L	X	X	X						

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days): Standard

___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other

Requested Due Date: _____

Sample Disposal: ☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
BSD	LBG	7/10/2017	1541	FedEx			
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
					TA	07/12/17	0930
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: ☐

Shipped: ☑

Hand Delivered: ☐

Matrix Key
WW – Wastewater; W – Water; S – Soil; SL – Sludge; MS – Miscellaneous; OL – Oil; A – Air; SE – Sediment; SO – Soil; L – Leachate; WI – Wipe; DW – Drinking Water; O – Other

Client Comments: Metals: Cadmium, Chromium, Copper, Lead, Selenium, Silver, Zinc, Molybdenum, Nickel

Lab Comments:

TAL-4124-500 (1209)

7/20/2017

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Login Sample Receipt Checklist

Client: Leggette, Brashears & Graham, Inc.

Job Number: 500-130832-1

Login Number: 130832
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	ON ICE
Cooler Temperature is recorded.	True	15.1c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX II

MADISON METROPOLITAN SEWERAGE DISTRICT
WASTEWATER DISCHARGE PERMIT NTO-5.12

LEGGETTE, BRASHEARS & GRAHAM, INC.

Madison Metropolitan Sewerage District

1610 Moorland Road • Madison, WI 53713-3398 • Telephone (608) 222-1201 • Fax (608) 222-2703 • madsewer.org

June 18, 2014

Mr. Charles Burgis
Leggette, Brashears, & Graham, Inc.
6409 Odana Road, Suite 11
Madison, WI 53719

Mr. Burgis:

Enclosed is the permit that allows continued hauling of leachate from the Refuse Hideaway Landfill to the Nine Springs Wastewater Treatment Plant. The permit is valid for five years.

We appreciate when O&M managers provide us updates on atypical circumstances that they encounter and resolve; please include such narrative data when appropriate in your reports.

You can reach me at extension 362; I'd be glad to discuss these permit matters with you.

Sincerely,

Ralph Erickson
Pretreatment and Waste Acceptance Coordinator

Enclosure:

Cc: Hank Kuehling, WDNR

WASTEWATER DISCHARGE PERMIT NTO-5.11

In compliance with the provisions of section 66.24(1)(d) and 66.25(3) of the Wisconsin Statutes, Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, and the District's Policy on Acceptance of Wastewater Containing Non-Typical Organic and Inorganic Constituents,

Wisconsin Department of Natural Resources
BOX 7921 Madison, WI 53707,
for the site,
Refuse Hideaway Landfill,
located at,
US Highway 14, Middleton, WI,
with wastewater O&M provided by,
Leggette, Brashears, & Graham, Inc of Madison

is hereby authorized to discharge leachate from the **Refuse Hideaway Landfill** located at the above address, via a permitted waste hauler, to the Nine Springs Wastewater Treatment Plant in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

This permit shall be effective for five years. It shall become effective on July 1, 2014 and shall expire at midnight, June 30, 2019. Any appeals to the conditions of this permit must be made to the Chief Engineer and Director within thirty days of the signature date.

The Permittee shall not discharge after the date of expiration. If the Permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit in accordance with the requirements of Article 5 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, at least 90-days prior to the expiration date.

In accordance with Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, the District reserves the right to amend this permit from time to time.

By _____
D. Michael Mucha
Chief Engineer and Director

Dated this 9 day of June 2014.

Permit: NTO-5.12 Table of Contents

Part 1 - LIMITS

1.01 INTRODUCTION

(1) Discharges from the outfalls regulated by this permit are subject to the local limits established by the District in the Sewer Use Ordinance 84-001 (Revised June 14, 2010). Based upon these requirements, the District has established the pretreatment standards set forth in secs. 1.02 to 1.03 of this permit.

(2) The Permittee shall comply with all requirements imposed by federal, state, and local municipal governments relating to operation of the licensed landfill.

1.02 OUTFALL NTO-5A

(1) Outfall NTO-5A is the discharge point of the leachate collection system serving the Refuse Hideaway Landfill. The Permittee has constructed facilities to allow for collection of a representative sample from the on-site 25,000 gallon storage tank. Grab samples will be collected from the discharge point per the requirements of sec. 2.04. Outfall NTO-5A shall contain only leachate.

(2) The Refuse Hideaway Landfill is located outside of the District's sewer service area. Therefore, all leachate from the site must be hauled to the Nine Springs Wastewater Treatment Plant. The waste hauler shall have a Septage Disposal Permit, as issued annually by the District.

(3) The following MMSD limits apply to discharges from Outfall NTO-5A:

Outfall NTO-5A
Applicable Local Limits

Parameter	Local Ordinance Effluent Limitations (daily maximum) (mg/L)	POTW maximum allowance per landfill site
Cadmium (T)	0.25	
Chromium (T)	10.0	
Copper (T)	1.5	
Lead (T)	5.0	
Nickel (T)	2.0	
Selenium (T)	0.3	
Silver (T)	3.0	
Zinc (T)	8.0	
Molybdenum (T)	None set	
Mercury (T)	0.02	

1.03 OTHER OUTFALLS

The Permittee may not discharge groundwater to any location other than as described for the outfalls listed in sub.(1.02). Domestic wastewater shall only flow into any outfalls after the sampling points for process wastewater.

Part 2 - SAMPLING

2.01 SAMPLING FREQUENCY PER MMSD REQUIREMENTS

The Permittee shall sample (self-monitor) for the pollutants shown in the following table.

Outfall	Required Parameters/Measurements & Frequency	
Outfall NTO-5A	Volume	Recorded per load
	ICP metals (9)	Quarterly
	Mercury	Quarterly

2.02 REPRESENTATIVE SAMPLES

The Permittee's self-monitoring shall represent discharges normally occurring during the reporting period.

2.03 SAMPLE COLLECTION AND ANALYSIS

(1) The Permittee shall use the following primary devices for flow measurement:

Outfall	Primary Device
NTO-5A	In-line meter or Pumping runtime records

(2) The Permittee shall collect, preserve, and analyze samples using techniques that provide sufficient precision and accuracy to measure the regulated pollutants at or below the applicable limit to a reasonable degree of scientific certainty, using analytical methods included in 40 CFR Part 136 or ch. NR 219, Wis. Adm. Code, or other methods approved by the Department of Natural Resources. For analysis, the Permittee, whenever possible, shall use a laboratory certified or registered by the Department of Natural Resources, according ch. NR 149, Wis. Adm. Code, for the parameter being analyzed. With prior District approval, per NR 211.15(8), the Permittee may be allowed to use a laboratory not certified or registered in Wisconsin.

(3) The District will randomly collect and analyze samples of leachate, taken from the hauling vehicle, to verify leachate quality and treatability.

(4) Samples collected by the Permittee shall be independent of samples collected by the District. The Permittee is allowed split samples from District sampling events; however the Permittee must collect its own independent samples on a different date per sub. (2.01).

Part 3 - REPORTING

3.01 SELF-MONITORING REPORTS

All self-monitoring results must be submitted to the District within sixty (60) days of the end of a quarterly monitoring period.

(1) All monitoring data is to be reported if the Permittee monitors a pollutant more frequently than required by this permit using the sample type and the sample collection, preservation, and the analytical techniques set forth in sec. 2.03 to 2.04.

(2) Self-monitoring Reporting Format

(a) The Permittee shall report to the District the results of all sampling required by sec. 2.01 to 2.04.

(b) Reports shall include:

1. The place, date, type, and time of the sample or sub-samples;
2. The names of the persons collecting the samples, the persons doing the analyses, and the laboratory performing the analyses;
3. The dates the analyses were performed;
4. The analytical techniques used; and
5. The analytical results.

3.02 REPORT OF VIOLATION AND RESAMPLING

(1) If sampling performed by the Permittee identifies a violation of any applicable pretreatment standard or requirement, the Permittee shall:

(a) Notify the District within 24-hours of becoming aware of the violation,

(b) Provide a written report with sample results to the District within five (5) days after becoming aware of the violation, and

(c) Repeat the sampling and analysis of the violation-parameter(s) and submit the results of the repeat analysis to the District within thirty (30) days after becoming aware of the violation.

(2) The reports required by sub. (1) shall be signed by the responsible corporate officer according to sub. (3.04) and sec. (2.1)(44) of the District Sewer Use Ordinance.

3.03 NOTICE OF INTENT TO CHANGE DISCHARGE

Before any activity that would result in a 25 percent long-term increase or decrease in the volume of non-domestic wastewater discharged by the Permittee or that would significantly change the characteristics of the discharge, the Permittee shall submit a written Notice of Intent to the District (sec. 5.13).

3.04 SIGNATURE BY RESPONSIBLE CORPORATE OFFICER

All reports shall be signed and sworn by a principal executive officer, or his/her designee.

3.05 REPORTING ADDRESSES

The Permittee shall submit all reports required by this permit to the District and the City of Madison Engineering Department at the following addresses:

Madison Metropolitan Sewerage District
1610 Moorland Road
Madison, Wisconsin 53713-3398

Part 4 - SPECIAL CONDITIONS

4.01 DISTRICT RATE DETERMINATIONS AND BILLING

(1) The District will track each load delivered and will prepare quarterly bills for treatment costs. The rate for disposal is based on samples drawn at the Nine Springs Wastewater Treatment Plant for the parameters CBOD, TSS, TKN, and TP. The rate is adjusted annually, in December, based on service charge rates set for the following year. Outside-the-District surcharges apply to this site and are capped at 100% per District policy. Leachate treatment charges have typically been set at two times the minimum hauled wastewater rate, based on historical analytical data for the billing parameters.

(2) The primary contact for the Refuse Hideaway Landfill is Leggette, Brashears, & Graham, Inc. of Madison. Discharges made to the Nine Springs Wastewater Treatment Plant under the provisions of this permit, will be billed quarterly to:

Mr. Charles Burgis
Leggette, Brashears, & Graham, Inc.
6409 Odana Road, Suite C
Madison, WI 53719

Part 5 - GENERAL CONDITIONS

5.01 COMPLIANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS

The Permittee shall comply with all applicable pretreatment standards and requirements set forth in the District Sewer Use Ordinance, the Wisconsin Administrative Code, and the Code of Federal Regulations, regardless of their enumeration in this permit.

5.02 SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

5.03 DUTY TO COMPLY

The Permittee must comply with all conditions of this permit. Failure to comply with the requirements of this permit may be grounds for administrative action, or enforcement proceedings including civil or criminal penalties, injunctive relief, and summary abatements.

5.04 DUTY TO MITIGATE

The Permittee shall take all reasonable actions necessary to minimize and correct any adverse impacts to the sewerage system or the environment resulting from noncompliance with this permit. The Permittee shall notify the District within 24-hours of its first awareness of the commencement of the adverse impact (upset) in accordance with sec. 5.6.5 of the District Sewer Use Ordinance.

5.05 DUTY TO REAPPLY

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must submit an application for a new permit at least 90-days before the expiration date of this permit.

5.06 CONTINUATION OF EXPIRED PERMIT

An expired permit will continue to be effective and enforceable until the permit is reissued if:

(1) The Permittee has submitted a complete permit application at least 90-days prior to the expiration date of the user's existing permit.

(2) The failure to reissue the permit, prior to expiration of the previous permit, is not due to any act or failure to act on the part of the Permittee.

5.07 PERMIT MODIFICATION

The District may modify this wastewater discharge permit at any time to reflect changes in federal, state, or local law, to incorporate the terms of an order, or to reflect changed circumstances. Any modifications which result in new conditions in the permit shall include a reasonable time schedule for compliance if necessary.

5.08 PERMIT TRANSFER

Wastewater discharge permits are issued to a specific user for a specific operation and are not assignable to another user or transferable to any other location without prior written approval of the District. Sale of a user shall obligate the purchaser to seek prior written approval of the District for continued discharge to the District sewerage system. If an owner or operator changes without the prior approval of the District, then this permit is void.

5.09 SAMPLING LOCATION

The Permittee may change sampling locations only after receiving approval from the District. The District shall ensure that any change in the Permittee's sampling location will not allow the Permittee to substitute dilution for adequate treatment.

5.10 SAMPLING FACILITIES

(1) The Permittee shall provide sampling facilities that will be accessible and that will provide representative samples of the process wastewater.

(2) The Permittee shall allow the District access to all sampling facilities according to the requirements of sub. (5.11).

5.11 RIGHT OF ENTRY

The Permittee consents to inspection and sampling by the District according to the requirements and limitations set forth in sec. 11.1 of the Sewer Use Ordinance. The Permittee shall, after reasonable notification by the District, allow the District or its representatives, exhibiting proper credentials and identification, to enter upon the premises of the Permittee at all reasonable hours, for the purposes of inspection, sampling, or records inspection. Reasonable hours in the context of inspection and sampling includes any time the Permittee is operating any process which results in a process wastewater discharge to the District sewerage system.

5.12 NO PROPERTY RIGHTS CREATED

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

5.13 NOTICE OF INTENT

If the Permittee is planning to alter or change any activity at the Permittee's facility that would significantly increase or decrease the volume or alter the content of any existing source of wastewater discharge into the District sewerage system must file a written Request to Discharge Form in accordance with Article 5 of the District Sewer Use Ordinance. A significant increase or decrease shall be defined as a 25 percent increase or decrease in the volume of industrial wastewater currently being discharged by a Permittee.

5.14 REVIEW OF PROPOSED TREATMENT FACILITIES

(1) If the Permittee is planning to install or modify treatment facilities or operations to comply with a categorical pretreatment standard, a pretreatment standard set forth in sec. 5.2.2 of the District Sewer Use Ordinance, a permit condition, or an order of the District, then the Permittee

shall provide the District with plans, specifications, and operating procedures for the proposed facilities. The District may approve, conditionally approve, or disapprove the plans, specifications, and operating procedures. The Permittee may not begin discharging from the treatment facilities until the Permittee has satisfied the requirements of the District.

(2) The Wisconsin Department of Natural Resources has separate requirements for the review of plans, specifications, and operating procedures of proposed pretreatment facilities, such as the requirements set forth in sec. 144.04, Wis. Stats., and ch. NR 108, Wis. Admin. Code. The Permittee shall comply with these requirements before commencing discharges to the sewerage system.

5.15 ADDITIONAL REPORTS

In addition to the reports required by this permit and the reports specifically required by the District Sewer Use Ordinance, the District may require other reports, management plans, or other information whenever the District finds that such a requirement is necessary to fulfill the District's responsibilities under the Sewer Use Ordinance, or any other local, state, or federal law.

5.16 HAZARDOUS WASTE NOTIFICATION

The Permittee shall notify the District, the Department of Natural Resources, and the EPA Regional Waste Management Division Director in writing of any discharge to the sanitary sewer system of a substance which, if otherwise disposed of, would be a hazardous water under 40 CFR Part 261. Such notification must include the name of the hazardous waste as set forth in 40 CFR Part 261, the EPA hazardous waste number, and the type of discharge. If the Permittee discharges to the sanitary sewer more than 100 kilograms of such waste per calendar month, the additional notification requirements of 40 CFR sec. 403.12(p) apply. In the case of any notification made under this section, the Permittee shall certify that it has a program in place to reduce the volume and toxicity of hazardous wastes generated to the degree it has determined to be economically practical.

5.17 PUBLIC INFORMATION

All written information submitted to the District shall be available upon request to any person for public inspection at the headquarters of the District, according to sec. 19.35, Wis. Stats., unless:

(1) The Permittee provides, at the time the Permittee submits the information, a written notice to the District that the Permittee claims that all or part of the information is exempt from disclosure according to sec. 19.36(5), Wis. Stats.; and

(2) The Permittee demonstrates to the District's satisfaction that the information is a trade secret according to sec. 134.90(1)(c), Wis. Stats.

WASTEWATER DISCHARGE PERMIT NTO-5.12

In compliance with the provisions of section 66.24(1)(d) and 66.25(3) of the Wisconsin Statutes, Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, and the District's Policy on Acceptance of Wastewater Containing Non-Typical Organic and Inorganic Constituents,

Wisconsin Department of Natural Resources
BOX 7921 Madison, WI 53707,
for the site,
Refuse Hideaway Landfill,
located at,
US Highway 14, Middleton, WI,
with wastewater O&M provided by,
Leggette, Brashears, & Graham, Inc of Madison

is hereby authorized to discharge leachate from the **Refuse Hideaway Landfill** located at the above address, via a permitted waste hauler, to the Nine Springs Wastewater Treatment Plant in accordance with the effluent limitations, monitoring requirements, and other conditions set forth in this permit.

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

This permit shall be effective for five years. It shall become effective on July 1, 2014 and shall expire at midnight, June 30, 2019. Any appeals to the conditions of this permit must be made to the Chief Engineer and Director within thirty days of the signature date.

The Permittee shall not discharge after the date of expiration. If the Permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit in accordance with the requirements of Article 5 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, at least 90-days prior to the expiration date.

In accordance with Articles 5 and 6 of the Madison Metropolitan Sewerage District Sewer Use Ordinance, the District reserves the right to amend this permit from time to time.

By _____
D. Michael Mucha
Chief Engineer and Director

Dated this ____ day of _____ 2014.

APPENDIX III

TABLE A: BLOWER AND FLARE STATION GAS MONITORING

TABLE A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER AND FLARE STATION GAS MONITORING

Location	Date	Pressure (in. WC)	CH_4 (% LEL)	CH_4 (% Vol)	O_2 (% Vol)	CO_2 (% Vol)	Balance Gas* (% Vol)	Valve Position (% open)	Gas Velocity (fpm)	Gas Flow** (scfm)	Gas Temp (deg F)
BLOWER	North Branch										
	7/8/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	7/15/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	7/21/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	7/29/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	8/5/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	8/12/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	8/19/2016	-21		9.5	13.5	11.6	65.4	0	1870	84.2	77.4
	8/26/2016	-25		9.0	10.6	19.4	61.0	0	1451	65.3	78.2
	9/2/2016	-24		28.0	8.0	7.8	56.2	0	2540	114.3	76.0
	9/8/2016	-21		41.0	4.9	21.6	32.5	0	1791	80.6	73.9
	9/16/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	9/23/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	9/29/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	10/7/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	10/13/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	10/20/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	10/28/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/4/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/9/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/16/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/21/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/29/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	12/8/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	12/15/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	12/22/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	12/28/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	1/6/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	1/13/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	1/20/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	1/26/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	2/3/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	2/10/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	2/17/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	2/22/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/3/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/9/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/16/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/24/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/31/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	4/7/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	4/13/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	4/21/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	4/28/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	5/3/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	5/11/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	5/20/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	5/25/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/2/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/7/2017	--*		--*	--*	--*	--*	0	--*	--*	--*

TABLE A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER AND FLARE STATION GAS MONITORING

Location	Date	Pressure (in. WC)	CH_4 (% LEL)	CH_4 (% Vol)	O_2 (% Vol)	CO_2 (% Vol)	Balance Gas* (% Vol)	Valve Position (% open)	Gas Velocity (fpm)	Gas Flow** (scfm)	Gas Temp (deg F)
	6/16/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/23/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/27/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	Central Branch										
	7/8/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	7/15/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	7/21/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	7/29/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	8/5/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	8/12/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	8/19/2016	-21		15.0	12.8	21.4	50.8	0	2800	126	76.5
	8/26/2016	-25		17.5	9.6	32.4	40.5	0	1909	86	76.2
	9/2/2016	-24		35.0	8.0	50.4	6.6	0	1350	61	75.8
	9/8/2016	-21		41.0	6.6	26.2	26.2	0	2075	93	73.2
	9/16/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	9/23/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	9/29/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	10/7/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	10/13/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	10/20/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	10/28/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/4/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/9/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/16/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/21/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	11/29/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	12/8/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	12/15/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	12/22/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	12/28/2016	--*		--*	--*	--*	--*	0	--*	--*	--*
	1/6/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	1/13/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	1/20/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	1/26/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	2/3/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	2/10/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	2/17/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	2/22/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/3/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/9/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/16/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/24/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	3/31/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	4/7/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	4/13/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	4/21/2017	--*		--*	--*	--*	--*	0	--*	--*	--*

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Location	Date	Pressure (in. WC)	CH_4 (% LEL)	CH_4 (% Vol)	O_2 (% Vol)	CO_2 (% Vol)	Balance Gas* (% Vol)	Valve Position (% open)	Gas Velocity (fpm)	Gas Flow** (scfm)	Gas Temp (deg F)
	4/28/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	5/3/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	5/11/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	5/20/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	5/25/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/2/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/7/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/16/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/23/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	6/27/2017	--*		--*	--*	--*	--*	0	--*	--*	--*
	South Branch										
	7/8/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	7/15/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	7/21/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	7/29/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	8/5/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	8/12/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	8/19/2016	-11		0.05	20.9	0.0	79.1	5	185	8.3	78.4
	8/26/2016	-13		0.10	16.6	0.0	83.3	5	60	2.7	77.4
	9/2/2016	-20		0.35	20.4	4.4	74.9	5	113	5.1	75.6
	9/8/2016	-14		1.50	17.6	1.8	79.1	5	229	10.3	74.9
	9/16/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	9/23/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	9/29/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	10/7/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	10/13/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	10/20/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	10/28/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	11/4/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	11/9/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	11/16/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	11/21/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	11/29/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	12/8/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	12/15/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	12/22/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	12/28/2016	--*		--*	--*	--*	--*	5	--*	--*	--*
	1/6/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	1/13/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	1/20/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	1/26/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	2/3/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	2/10/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	2/17/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	2/22/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	3/3/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	3/9/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	3/16/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	3/24/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	3/31/2017	--*		--*	--*	--*	--*	5	--*	--*	--*

TABLE A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER AND FLARE STATION GAS MONITORING

Location	Date	Pressure (in. WC)	CH_4 (% LEL)	CH_4 (% Vol)	O_2 (% Vol)	CO_2 (% Vol)	Balance Gas* (% Vol)	Valve Position (% open)	Gas Velocity (fpm)	Gas Flow** (scfm)	Gas Temp (deg F)
	4/7/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	4/13/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	4/21/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	4/28/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	5/3/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	5/11/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	5/20/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	5/25/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	6/2/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	6/7/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	6/16/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	6/23/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	6/27/2017	--*		--*	--*	--*	--*	5	--*	--*	--*
	Branches-Total Flow***										
	7/8/2016								--*	--*	
	7/15/2016								--*	--*	
	7/21/2016								--*	--*	
	8/5/2016								--*	--*	
	8/12/2016								--*	--*	
	8/19/2016								4855	218	
	8/26/2016								3420	154	
	9/2/2016								4003	180	
	9/8/2016								4095	184	
	9/16/2016								--*	--*	
	9/23/2016								--*	--*	
	9/29/2016								--*	--*	
	10/7/2016								--*	--*	
	10/13/2016								--*	--*	
	10/20/2016								--*	--*	
	10/28/2016								--*	--*	
	11/4/2016								--*	--*	
	11/9/2016								--*	--*	
	11/16/2016								--*	--*	
	11/21/2016								--*	--*	
	11/29/2016								--*	--*	
	12/8/2016								--*	--*	
	12/15/2016								--*	--*	
	12/22/2016								--*	--*	
	12/28/2016								--*	--*	
	1/6/2017								--*	--*	
	1/13/2017								--*	--*	
	1/20/2017								--*	--*	
	1/26/2017								--*	--*	
	2/3/2017								--*	--*	
	2/10/2017								--*	--*	
	2/17/2017								--*	--*	
	2/22/2017								--*	--*	
	3/3/2017								--*	--*	
	3/9/2017								--*	--*	
	3/16/2017								--*	--*	
	3/24/2017								--*	--*	

TABLE A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER AND FLARE STATION GAS MONITORING

Location	Date	Pressure (in. WC)	CH_4 (% LEL)	CH_4 (% Vol)	O_2 (% Vol)	CO_2 (% Vol)	Balance Gas* (% Vol)	Valve Position (% open)	Gas Velocity (fpm)	Gas Flow** (scfm)	Gas Temp (deg F)
	3/31/2017								--*	--*	
	4/7/2017								--*	--*	
	4/13/2017								--*	--*	
	4/21/2017								--*	--*	
	4/28/2017								--*	--*	
	5/3/2017								--*	--*	
	5/11/2017								--*	--*	
	5/20/2017								--*	--*	
	5/25/2017								--*	--*	
	6/2/2017								--*	--*	
	6/7/2017								--*	--*	
	6/16/2017								--*	--*	
	6/23/2017								--*	--*	
	6/27/2017								--*	--*	
	Inlet Sample Port A										
	7/8/2016	--*		--*	--*	--*	--*				
	7/15/2016	--*		--*	--*	--*	--*				
	7/21/2016	--*		--*	--*	--*	--*				
	7/29/2016	--*		--*	--*	--*	--*				
	8/5/2016	--*		--*	--*	--*	--*				
	8/12/2016	--*		--*	--*	--*	--*				
	8/19/2016	-21		13.0	13.0	17.6	56.4				
	8/26/2016	-25		13.5	9.7	26.8	50.0				
	9/2/2016	-24		33.0	14.0	43.2	9.8				
	9/8/2016	-21		40.0	5.5	24.2	30.3				
	9/16/2016	--*		--*	--*	--*	--*				
	9/23/2016	--*		--*	--*	--*	--*				
	9/29/2016	--*		--*	--*	--*	--*				
	10/7/2016	--*		--*	--*	--*	--*				
	10/13/2016	--*		--*	--*	--*	--*				
	10/20/2016	--*		--*	--*	--*	--*				
	10/28/2016	--*		--*	--*	--*	--*				
	11/4/2016	--*		--*	--*	--*	--*				
	11/9/2016	--*		--*	--*	--*	--*				
	11/16/2016	--*		--*	--*	--*	--*				
	11/21/2016	--*		--*	--*	--*	--*				
	11/29/2016	--*		--*	--*	--*	--*				
	12/8/2016	--*		--*	--*	--*	--*				
	12/15/2016	--*		--*	--*	--*	--*				
	12/22/2016	--*		--*	--*	--*	--*				
	12/28/2016	--*		--*	--*	--*	--*				
	1/6/2017	--*		--*	--*	--*	--*				
	1/13/2017	--*		--*	--*	--*	--*				
	1/20/2017	--*		--*	--*	--*	--*				
	1/26/2017	--*		--*	--*	--*	--*				
	2/3/2017	--*		--*	--*	--*	--*				
	2/10/2017	--*		--*	--*	--*	--*				
	2/17/2017	--*		--*	--*	--*	--*				
	2/22/2017	--*		--*	--*	--*	--*				
	3/3/2017	--*		--*	--*	--*	--*				
	3/9/2017	--*		--*	--*	--*	--*				

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WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER AND FLARE STATION GAS MONITORING

Location	Date	Pressure (in. WC)	CH_4 (% LEL)	CH_4 (% Vol)	O_2 (% Vol)	CO_2 (% Vol)	Balance Gas* (% Vol)	Valve Position (% open)	Gas Velocity (fpm)	Gas Flow** (scfm)	Gas Temp (deg F)
	3/16/2017	--*		--*	--*	--*	--*				
	3/24/2017	--*		--*	--*	--*	--*				
	3/31/2017	--*		--*	--*	--*	--*				
	4/7/2017	--*		--*	--*	--*	--*				
	4/13/2017	--*		--*	--*	--*	--*				
	4/21/2017	--*		--*	--*	--*	--*				
	4/28/2017	--*		--*	--*	--*	--*				
	5/3/2017	--*		--*	--*	--*	--*				
	5/11/2017	--*		--*	--*	--*	--*				
	5/20/2017	--*		--*	--*	--*	--*				
	5/25/2017	--*		--*	--*	--*	--*				
	6/2/2017	--*		--*	--*	--*	--*				
	6/7/2017	--*		--*	--*	--*	--*				
	6/16/2017	--*		--*	--*	--*	--*				
	6/23/2017	--*		--*	--*	--*	--*				
	6/27/2017	--*		--*	--*	--*	--*				
	Inlet Sample Port B										
	7/8/2016	--*		--*	--*	--*	--*				
	7/15/2016	--*		--*	--*	--*	--*				
	7/21/2016	--*		--*	--*	--*	--*				
	7/29/2016	--*		--*	--*	--*	--*				
	8/5/2016	--*		--*	--*	--*	--*				
	8/12/2016	--*		--*	--*	--*	--*				
	8/19/2016	-21		13.0	13.1	17.4	56.5				
	8/26/2016	-25		14.0	7.8	26.8	51.4				
	9/2/2016	-24		33.8	13.5	43.6	9.1				
	9/8/2016	-21		39.0	6.2	23.8	31.0				
	9/16/2016	--*		--*	--*	--*	--*				
	9/23/2016	--*		--*	--*	--*	--*				
	9/29/2016	--*		--*	--*	--*	--*				
	10/7/2016	--*		--*	--*	--*	--*				
	10/13/2016	--*		--*	--*	--*	--*				
	10/20/2016	--*		--*	--*	--*	--*				
	10/28/2016	--*		--*	--*	--*	--*				
	11/4/2016	--*		--*	--*	--*	--*				
	11/9/2016	--*		--*	--*	--*	--*				
	11/16/2016	--*		--*	--*	--*	--*				
	11/21/2016	--*		--*	--*	--*	--*				
	11/29/2016	--*		--*	--*	--*	--*				
	12/8/2016	--*		--*	--*	--*	--*				
	12/15/2016	--*		--*	--*	--*	--*				
	12/22/2016	--*		--*	--*	--*	--*				
	12/28/2016	--*		--*	--*	--*	--*				
	1/6/2017	--*		--*	--*	--*	--*				
	1/13/2017	--*		--*	--*	--*	--*				
	1/20/2017	--*		--*	--*	--*	--*				
	1/26/2017	--*		--*	--*	--*	--*				
	2/3/2017	--*		--*	--*	--*	--*				
	2/10/2017	--*		--*	--*	--*	--*				
	2/17/2017	--*		--*	--*	--*	--*				
	2/22/2017	--*		--*	--*	--*	--*				

TABLE A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER AND FLARE STATION GAS MONITORING

Location	Date	Pressure (in. WC)	CH_4 (% LEL)	CH_4 (% Vol)	O_2 (% Vol)	CO_2 (% Vol)	Balance Gas* (% Vol)	Valve Position (% open)	Gas Velocity (fpm)	Gas Flow** (scfm)	Gas Temp (deg F)
	3/3/2017	--*		--*	--*	--*	--*				
	3/9/2017	--*		--*	--*	--*	--*				
	3/16/2017	--*		--*	--*	--*	--*				
	3/24/2017	--*		--*	--*	--*	--*				
	3/31/2017	--*		--*	--*	--*	--*				
	4/7/2017	--*		--*	--*	--*	--*				
	4/13/2017	--*		--*	--*	--*	--*				
	4/21/2017	--*		--*	--*	--*	--*				
	4/28/2017	--*		--*	--*	--*	--*				
	5/3/2017	--*		--*	--*	--*	--*				
	5/11/2017	--*		--*	--*	--*	--*				
	5/20/2017	--*		--*	--*	--*	--*				
	5/25/2017	--*		--*	--*	--*	--*				
	6/2/2017	--*		--*	--*	--*	--*				
	6/7/2017	--*		--*	--*	--*	--*				
	6/16/2017	--*		--*	--*	--*	--*				
	6/23/2017	--*		--*	--*	--*	--*				
	6/27/2017	--*		--*	--*	--*	--*				
	Outlet Sample Port A										
	7/8/2016	--*		--*	--*	--*	--*				
	7/15/2016	--*		--*	--*	--*	--*				
	7/21/2016	--*		--*	--*	--*	--*				
	7/29/2016	--*		--*	--*	--*	--*				
	8/5/2016	--*		--*	--*	--*	--*				
	8/12/2016	--*		--*	--*	--*	--*				
	8/19/2016	12		14.0	13.4	19.2	53.4				
	8/26/2016	7		14.5	9.7	28.6	47.2				
	9/2/2016	8		29.7	14.2	40.4	15.7				
	9/8/2016	6		41.0	5.8	25.0	28.2				
	9/16/2016	--*		--*	--*	--*	--*				
	9/23/2016	--*		--*	--*	--*	--*				
	9/29/2016	--*		--*	--*	--*	--*				
	10/7/2016	--*		--*	--*	--*	--*				
	10/13/2016	--*		--*	--*	--*	--*				
	10/20/2016	--*		--*	--*	--*	--*				
	10/28/2016	--*		--*	--*	--*	--*				
	11/4/2016	--*		--*	--*	--*	--*				
	11/9/2016	--*		--*	--*	--*	--*				
	11/16/2016	--*		--*	--*	--*	--*				
	11/21/2016	--*		--*	--*	--*	--*				
	11/29/2016	--*		--*	--*	--*	--*				
	12/8/2016	--*		--*	--*	--*	--*				
	12/15/2016	--*		--*	--*	--*	--*				
	12/22/2016	--*		--*	--*	--*	--*				
	12/28/2016	--*		--*	--*	--*	--*				
	1/6/2017	--*		--*	--*	--*	--*				
	1/13/2017	--*		--*	--*	--*	--*				
	1/20/2017	--*		--*	--*	--*	--*				
	1/26/2017	--*		--*	--*	--*	--*				
	2/3/2017	--*		--*	--*	--*	--*				
	2/10/2017	--*		--*	--*	--*	--*				

TABLE A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
REFUSE HIDEAWAY LANDFILL
MIDDLETON, WISCONSIN

BLOWER AND FLARE STATION GAS MONITORING

Location	Date	Pressure (in. WC)	CH_4 (% LEL)	CH_4 (% Vol)	O_2 (% Vol)	CO_2 (% Vol)	Balance Gas* (% Vol)	Valve Position (% open)	Gas Velocity (fpm)	Gas Flow** (scfm)	Gas Temp (deg F)
	2/17/2017	--*		--*	--*	--*	--*				
	2/22/2017	--*		--*	--*	--*	--*				
	3/3/2017	--*		--*	--*	--*	--*				
	3/9/2017	--*		--*	--*	--*	--*				
	3/16/2017	--*		--*	--*	--*	--*				
	3/24/2017	--*		--*	--*	--*	--*				
	3/31/2017	--*		--*	--*	--*	--*				
	4/7/2017	--*		--*	--*	--*	--*				
	4/13/2017	--*		--*	--*	--*	--*				
	4/21/2017	--*		--*	--*	--*	--*				
	4/28/2017	--*		--*	--*	--*	--*				
	5/3/2017	--*		--*	--*	--*	--*				
	5/11/2017	--*		--*	--*	--*	--*				
	5/20/2017	--*		--*	--*	--*	--*				
	5/25/2017	--*		--*	--*	--*	--*				
	6/2/2017	--*		--*	--*	--*	--*				
	6/7/2017	--*		--*	--*	--*	--*				
	6/16/2017	--*		--*	--*	--*	--*				
	6/23/2017	--*		--*	--*	--*	--*				
	6/27/2017	--*		--*	--*	--*	--*				
Annual Average				24.8	10.8						

* : Balance gas calculated as 100% - ($\%CH_4$+$\%CO_2$+$\%O_2$).

** : Gas flow (cfm) calculated by multiplying gas velocity (fpm) by 0.045 (3" diameter), 0.078 (4" blower inlet), or 0.185 (6" flare inlet).

*** : Total flow is the sum of flow values from the northern, central and southern branches.

in WC : Inches of water column.

% Vol : Percent volume.

% LEL : Percent of lower explosive limit.

fpm : Feet per minute.

scfm : Standard cubic feet per minute.

--* : Blower and flare non-operational due to electrical issues at flare.