Bridgeton Landfill, LLC

Monthly Data Submittals

July 2016

Required by Section 52.E of Agreed Order, Case No. 13SL-CC01088
Effective May 13, 2013

Contents:

Provided Separately:

– Flare Raw Data Excel Spreadsheet
– Gas Wellfield Raw Data Excel Spreadsheet

August 18, 2016

Commentary on Data

August 18, 2016

The following observations and comments are offered during this time period:

Gas Volume

- As seen in Attachment B-1, the gas collection volumetric rate in for this month averaged 2,615 SCFM, as normalized per the MDNR weekly flow and TRS sampling results.

Gas Quality

- Attachments D and E contain the monthly data related to gas quality as measured at the respective wellheads.

- Attachment E-1 contains vertical wells which had oxygen levels over 5% at one (1) or more weekly monitoring events during this reporting period. These consisted of 26 GEW wells that are experiencing low or restricted flows, and seven (7) GIW wells that have low gas flow due to the cooling loops that are installed within these wells. By the end of the month, the majority of these wells still exhibited oxygen at the wellhead at or greater than 5%. All of these wells are low-flow/vacuum sensitive wells with valves only slightly open. On-going tuning, maintenance, and pump operation is being performed to manage the oxygen content. With the exception of GEW-1A, all of these wells are in the south quarry area where the flexible membrane liner cap is in place to prevent atmospheric intrusion into the waste mass. A dewatering sump has been installed adjacent to GEW-1A in hopes of lowering the liquid level in the gas well. The dewatering sump is expected to improve gas collection and reduce ambient air intrusion from the wellhead.

- Attachment E-2 contains gas temperatures as measured at the wellheads. Ten (10) vertical wells (excluding GIW wells) decreased by 30°F during this reporting period. Additionally, six vertical wells (excluding GIW wells) increased by 30°F or more. All wells that exhibited changes greater than 30 degrees are all within the historical gas temperature norms for these wells or within the range of temperatures of nearby vertical wells.

- A detailed review of the gas extraction wells in the neck area was conducted. Well GEW-161 exhibited a wellhead temperature increase greater than 30°F, and wells GEW-160 and GEW-162 exhibited a wellhead temperature decrease greater than 30°F. These wells were installed in December 2015 within the south quarry area/neck area and vacuum has been adjusted over time as part of normal GCCS operations. The wellhead temperatures at these wells are similar to the wellhead temperatures of nearby wells. Maximum temperatures are consistent with previous months in each of the gas extraction wells in vicinity to the neck.

- All wells in the North Quarry during this reporting period exhibited a maximum wellhead temperature under 145°F with the exception of GEW-054. Well GEW-054 had a maximum well head temperature of 148.6°F which is consistent with historic readings. Carbon monoxide (CO) results showed non-detect (ND) for all other North quarry wells, with the exception of GEW-053 (65 ppm) and GEW-054 (33 ppm).

- Review of weekly gas quality in Attachment E reveals that all of the active North Quarry gas wells continue to have low, if any, oxygen and healthy methane and carbon dioxide levels indicating normal wellfield conditions for aged waste at all locations, consistent with GCCS wellfield conditions observed in the North Quarry for some time.

Settlement

- The South Quarry exhibited monthly maximum settlement up to 1.305 feet over 29 days for this reporting period (see Attachment F); which is comparable to last month's rate. The rate of settlement directly south of the neck continues to be small and stable.

Bird Monitoring and Mitigation

- Bridgeton Landfill conducted bird monitoring during this reporting period in accordance with the Approved Bird Hazard Monitoring and Mitigation Plan. Logs of bird population observations were provided to the Airport on a weekly basis. No change in bird population or bird hazards were observed and no bird mitigation measures were necessary with respect to landfill activities.

Low Fill Project Area

- Enclosed is the requested clean fill placement figure in accordance with the June 19, 2015 letter from the Missouri Department of Natural Resources (MDNR) granting modification approval to Permit number 0118912. This modification allows for the acceptance of clean fill and use thereof as a method of re-establishing positive surface drainage and maintaining structural stability of landfill infrastructure. Condition four (4) of this approval is satisfied via the text below and the accompanying figure.

- Clean fill activities commenced in late December and continued into early May, and commenced again in July, on a region of differential settlement located in the southeast portions of the South Quarry. The total cubic yardage of fill material used is still to be determined. The enclosed figure indicates this fill area as well as clean fill materials stockpile areas on the West Lake OU2 portion of the property and the Bridgeton Landfill North Quarry portion of the property in support of this project. Upon conclusion of the fill project the requested cubic yardage, drainage features (if applicable), and drawings showing the completed location area shall be provided with the following monthly report.

ATTACHMENT A

WORK COMPLETED AND PLANNED

Bridgeton Landfill, LLC
Monthly Summary of Work Completed and Planned

Work Completed in July 2016

Gas Collection and Control System (GCCS)

- Continued operation and maintenance of GCCS System and groundwater interceptor wells (GIW).
- Continued header realignment project to improve condensate management and header vacuum distribution.
- Installed gas extraction well GEW-177 and a sump to assist in lowering the liquid level in GEW-1A.

Alternative Heat Extraction System (HES)

- Continued operation and maintenance of the HES.
- Completed installation of main access road to accommodate loss of neck area road.
- Began installation of the neck Heat Extraction Barrier (HEB).

Leachate Management System

- Continued routine operation of previously installed and upgraded features.
- Completed work on West Lift Station including the replacement of flow meters and valves.

Pre-Treatment Facility

- Continued ongoing operation of facility.
- Continued to optimize operation efficiency of pre-treatment facility.
- Permeate continued to be discharged directly to St. Louis Metropolitan Sewer District (MSD) – Bissell Point Facility or other approved disposal facilities as determined by MSD.
- Installation of final heat exchanger unit plate.

Other Projects

- Continued North Quarry cap enhancements.
- Continued acceptance of clean fill.
- Finalized upgrades to Outfall 007.

Work Planned for August 2016

Gas Collection and Control System (GCCS)

- Continue operation and maintenance of GCCS system.
- Continue upgrades to GCCS system as necessary.

Alternative Heat Extraction System (HES)

- Continue operation and maintenance of the HES.
- Continue installation of the neck HEB.

Leachate Management System

- Continue routine operation of previously installed and upgraded features.

Pre-Treatment Facility

- Continue ongoing operation of facility.
- Continue to optimize operation efficiency of pre-treatment facility.
- Continue to discharge permeate directly to St. Louis Metropolitan Sewer District (MSD) – Bissell Point Facility or other approved disposal facilities as determined by MSD.
- Begin installation of new cationic polymer system equipment.
- Begin installation of permanent soda ash system equipment.
- Install and commission new dissolved oxygen instruments for the aeration tanks.
- Install and commission new pressure and temperature instruments for heat exchanger units.
- Begin testing of new polymer to improve flocculation and cost.

Other Projects:

- Continue acceptance of clean fill materials for future fill projects.
- Install ambient air sulfur dioxide monitoring stations and begin monitoring for a period of one (1) year per the USEPA Administrative Settlement Agreement and Order on Consent (ASAOC) for Removal Actions related to the North Quarry, EPA Docket No. CERCLA-07-2016-0005.

ATTACHMENT B

DAILY FLARE MONITORING DATA

ATTACHMENT B-1

FLOW DATA TABLE

Daily Flare Monitoring Data - Bridgeton Landfill
July 2016

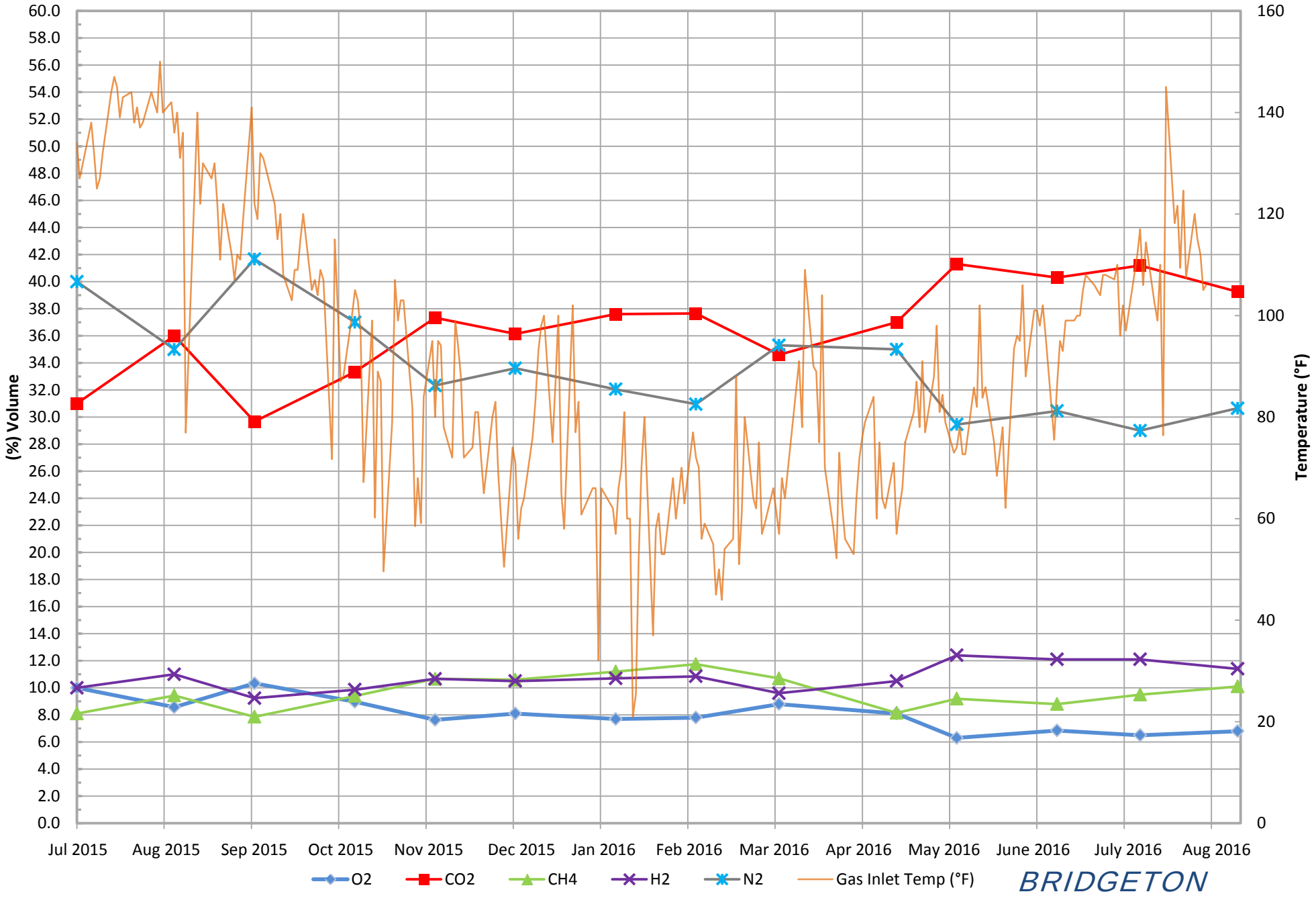
Date	Average Device Flow* (scfm)				Total Avg. Flow** (scfm)
	Utility Flare (FL-100)	Utility Flare (FL-120)	Utility Flare (FL-140)	Aux. Utility Flare***	
7/1/2016	0	2,273	0	289	2,562
7/2/2016	0	2,195	0	282	2,476
7/3/2016	0	2,189	0	283	2,471
7/4/2016	0	2,249	0	285	2,534
7/5/2016	0	2,336	0	294	2,630
7/6/2016	0	2,211	0	287	2,498
7/7/2016	0	2,211	0	287	2,498
7/8/2016	0	2,284	0	288	2,572
7/9/2016	0	2,293	0	286	2,580
7/10/2016	0	2,279	0	285	2,564
7/11/2016	0	2,290	0	290	2,579
7/12/2016	0	2,383	0	287	2,670
7/13/2016	0	2,434	0	256	2,690
7/14/2016	0	2,450	0	244	2,695
7/15/2016	0	2,486	0	292	2,778
7/16/2016	0	2,439	0	291	2,731
7/17/2016	0	2,405	0	293	2,698
7/18/2016	0	2,465	0	292	2,756
7/19/2016	0	2,493	0	295	2,788
7/20/2016	0	2,414	0	329	2,743
7/21/2016	0	2,444	0	294	2,738
7/22/2016	0	2,338	0	289	2,626
7/23/2016	0	2,304	0	286	2,590
7/24/2016	0	2,275	0	284	2,559
7/25/2016	0	1,800	437	401	2,637
7/26/2016	0	2,425	0	249	2,674
7/27/2016	0	2,351	0	254	2,605
7/28/2016	0	2,388	0	248	2,636
7/29/2016	0	2,312	0	244	2,556
7/30/2016	0	2,210	0	239	2,449
7/31/2016	0	2,245	0	242	2,487
				Average	**2,615**

* Flows normalized to **Blower Outlet Flowmeter - EPA Method 2 measurement verified

ATTACHMENT B-2

FLOW DATA GRAPHS

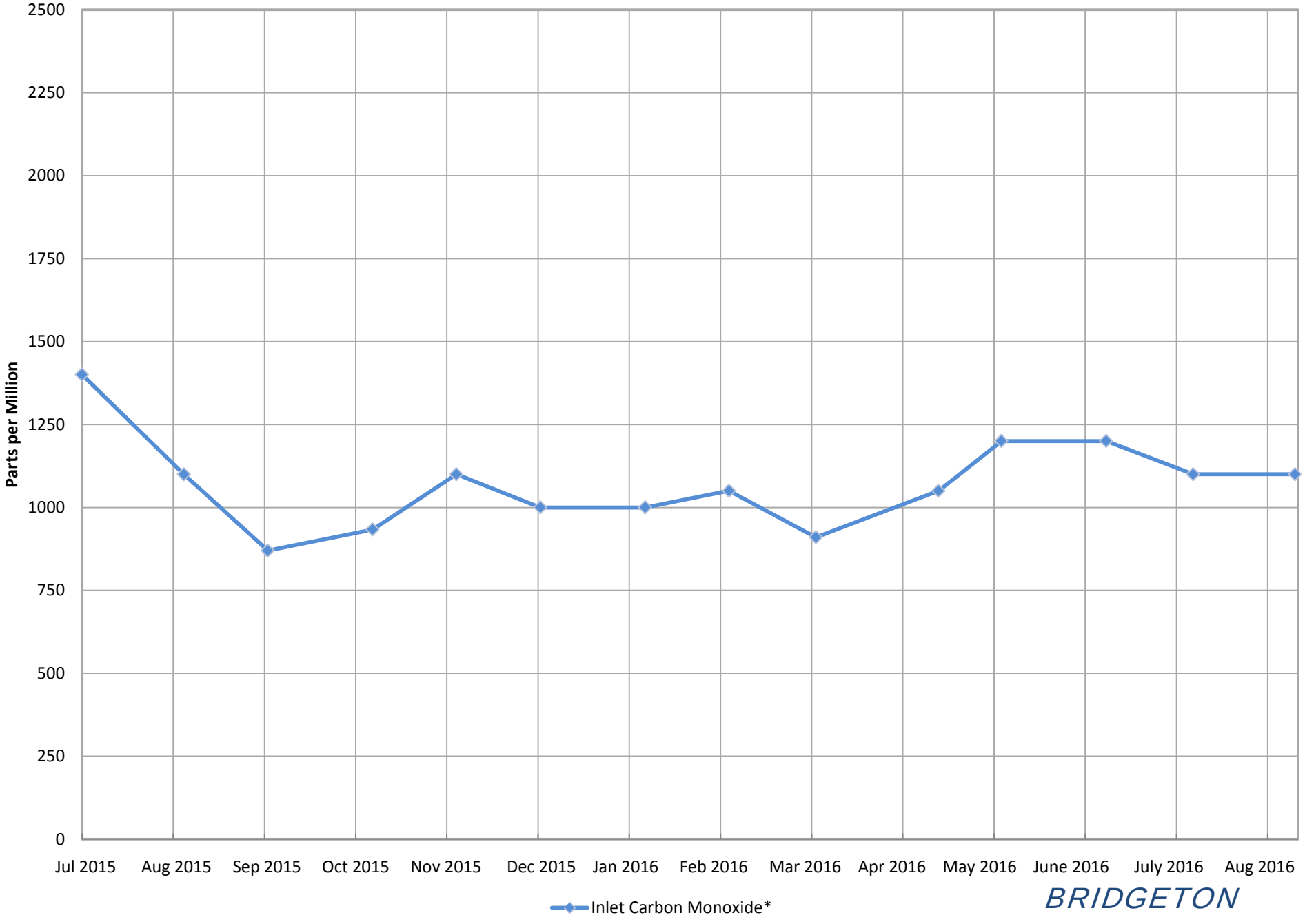
Inlet Gas and Temperature*



*Gas data collected from Laboratory Reports. Temperature data collected from field readings.

BRIDGETON LANDFILL

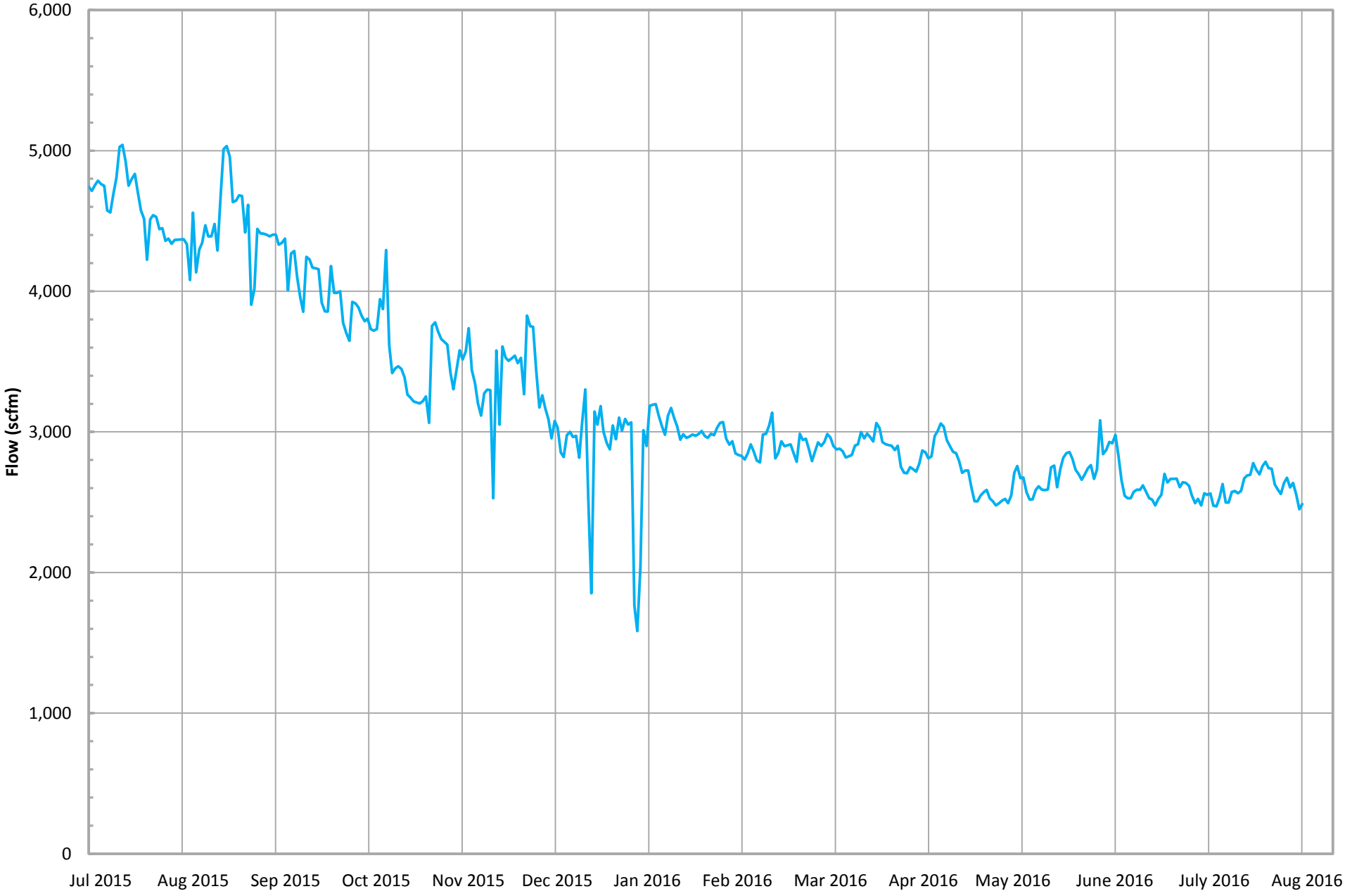
Inlet Carbon Monoxide*



*Data collected from Laboratory Reports.

BRIDGETON LANDFILL

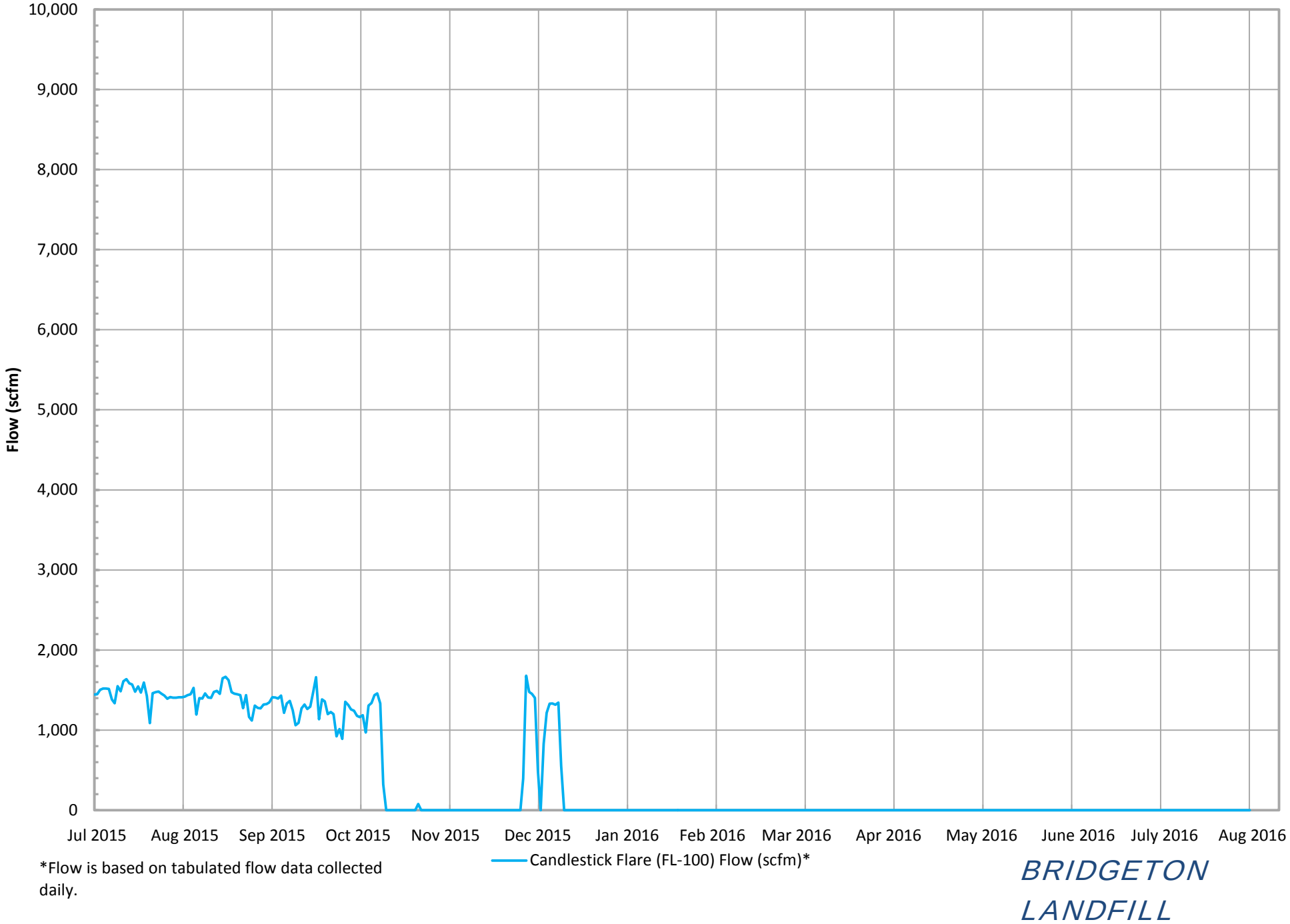
Total Combined Flow (scfm)*



*Combined flow is based on tabulated flow data collected daily from each device.

BRIDGETON LANDFILL

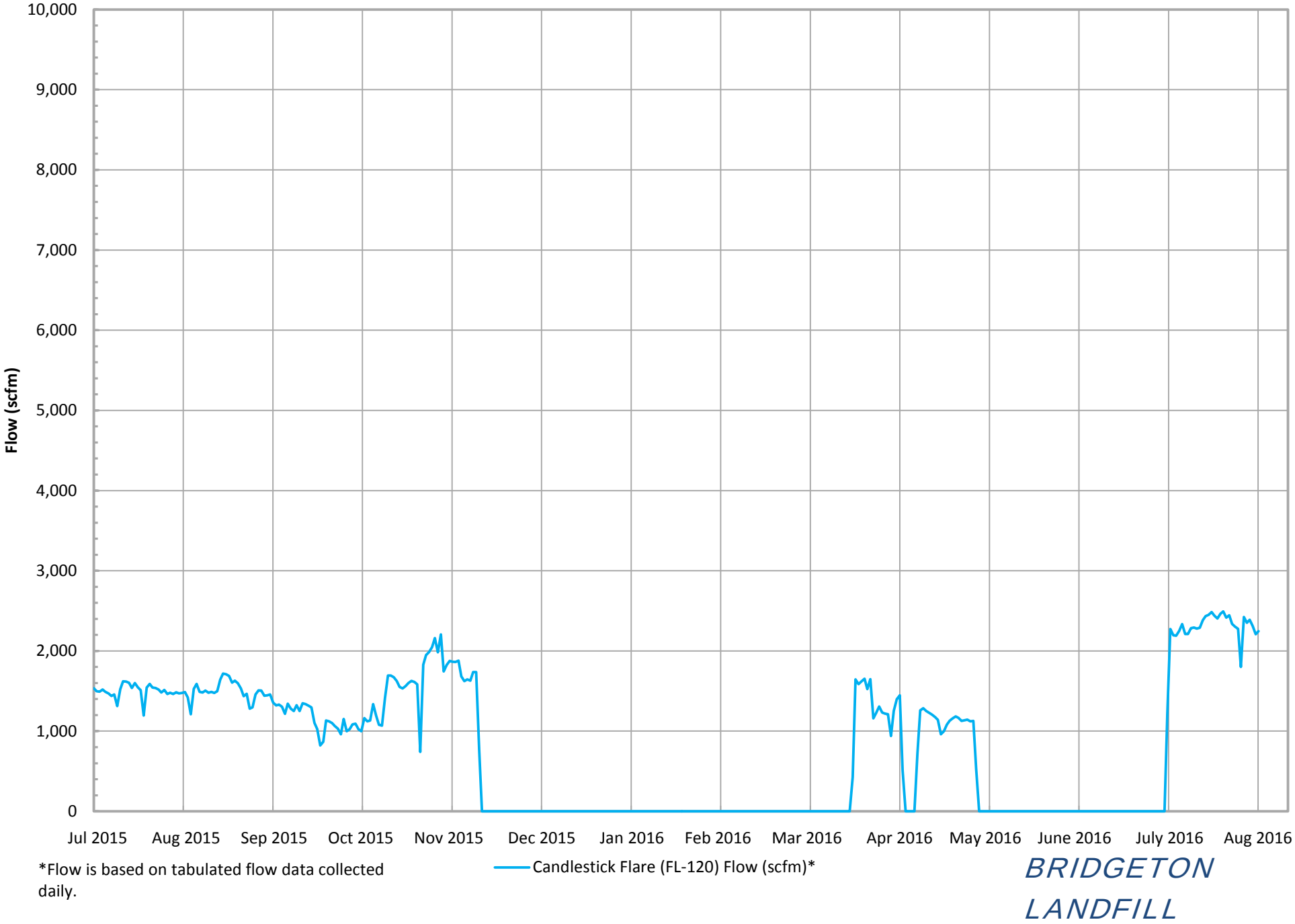
Candlestick Flare (FL-100) Flow (scfm)*



*Flow is based on tabulated flow data collected daily.

BRIDGETON LANDFILL

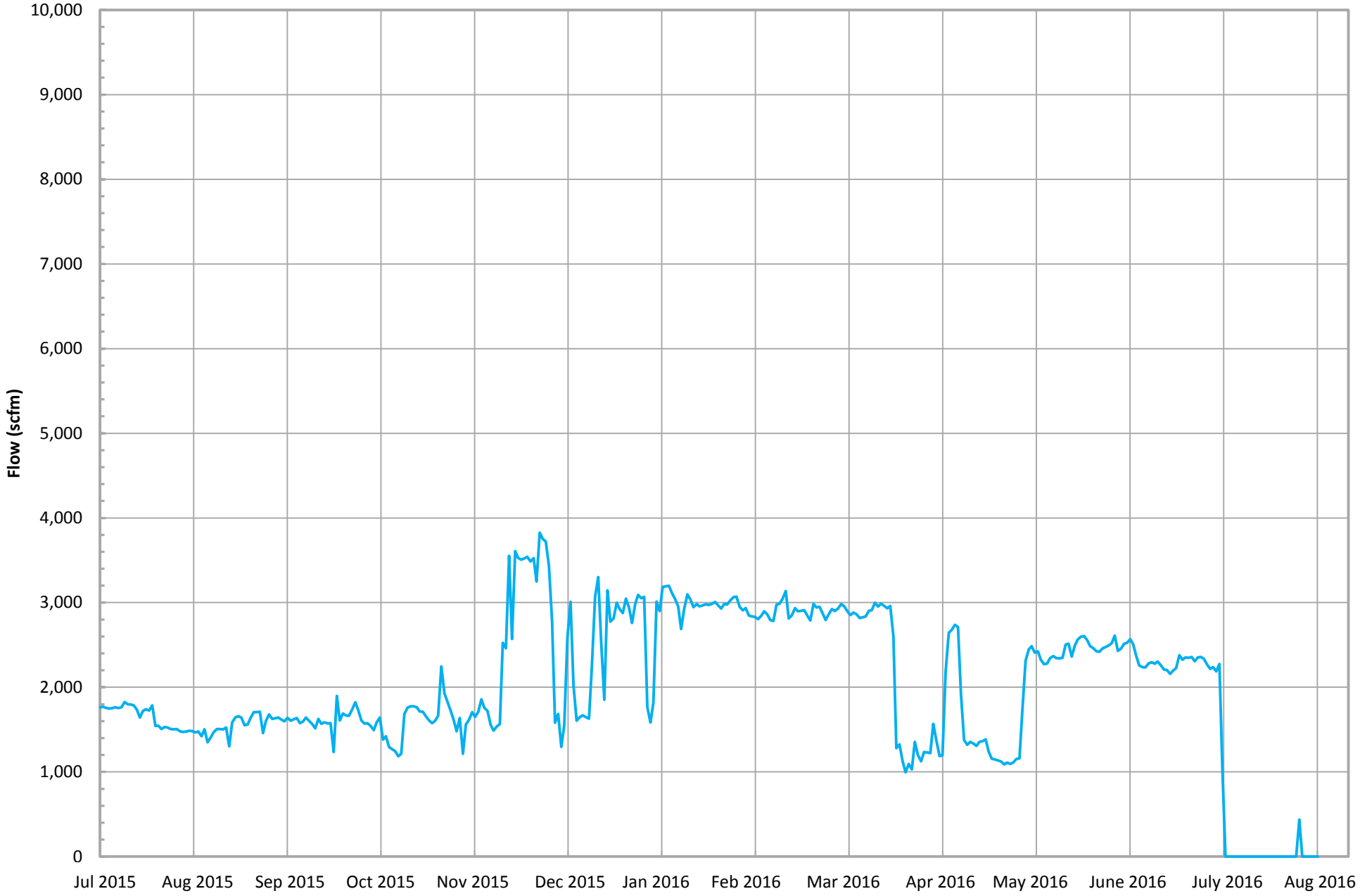
Candlestick Flare (FL-120) Flow (scfm)*



*Flow is based on tabulated flow data collected daily.

BRIDGETON LANDFILL

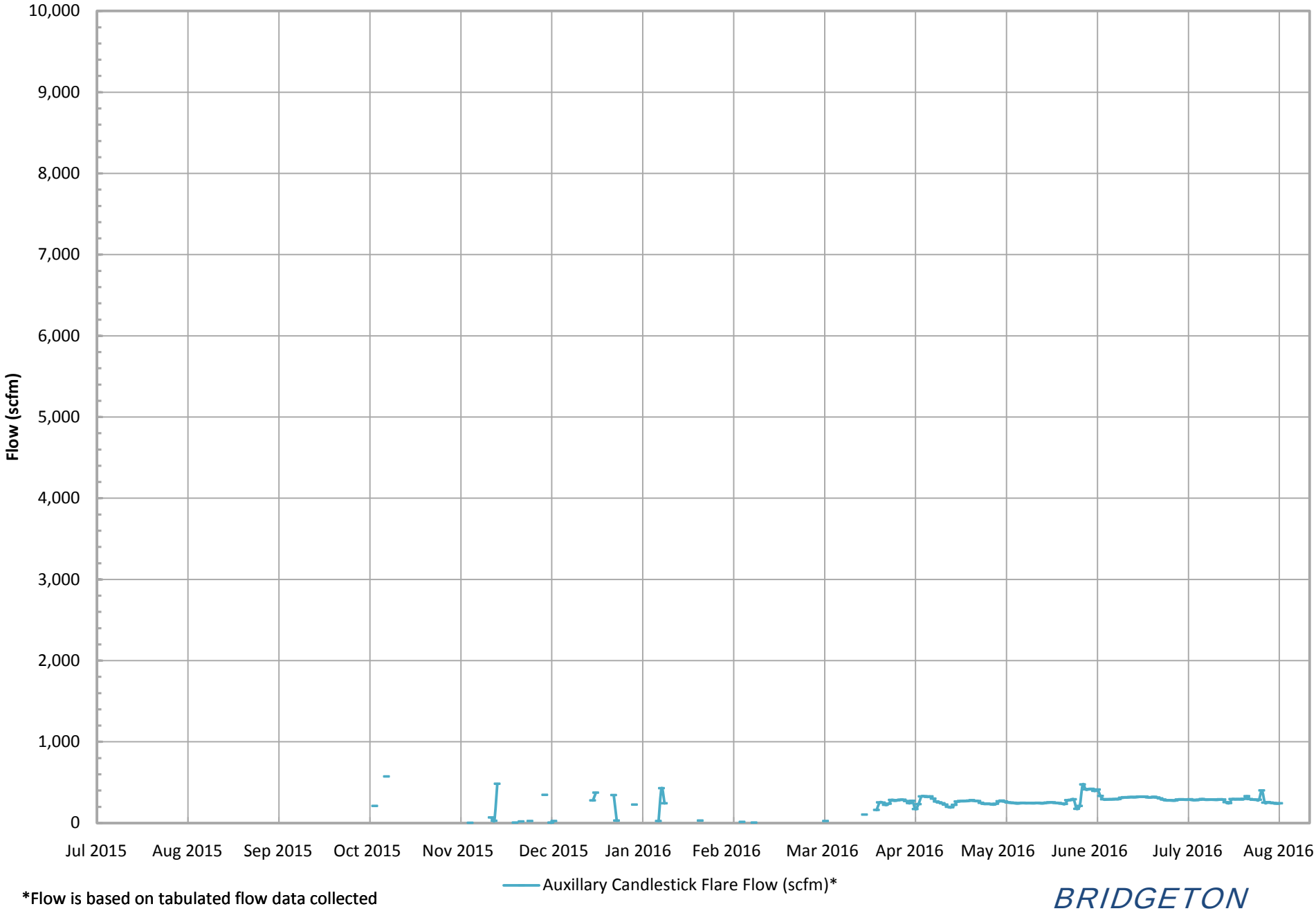
Candlestick Flare (FL-140) Flow (scfm)*



*Flow is based on tabulated flow data collected daily.

BRIDGETON LANDFILL

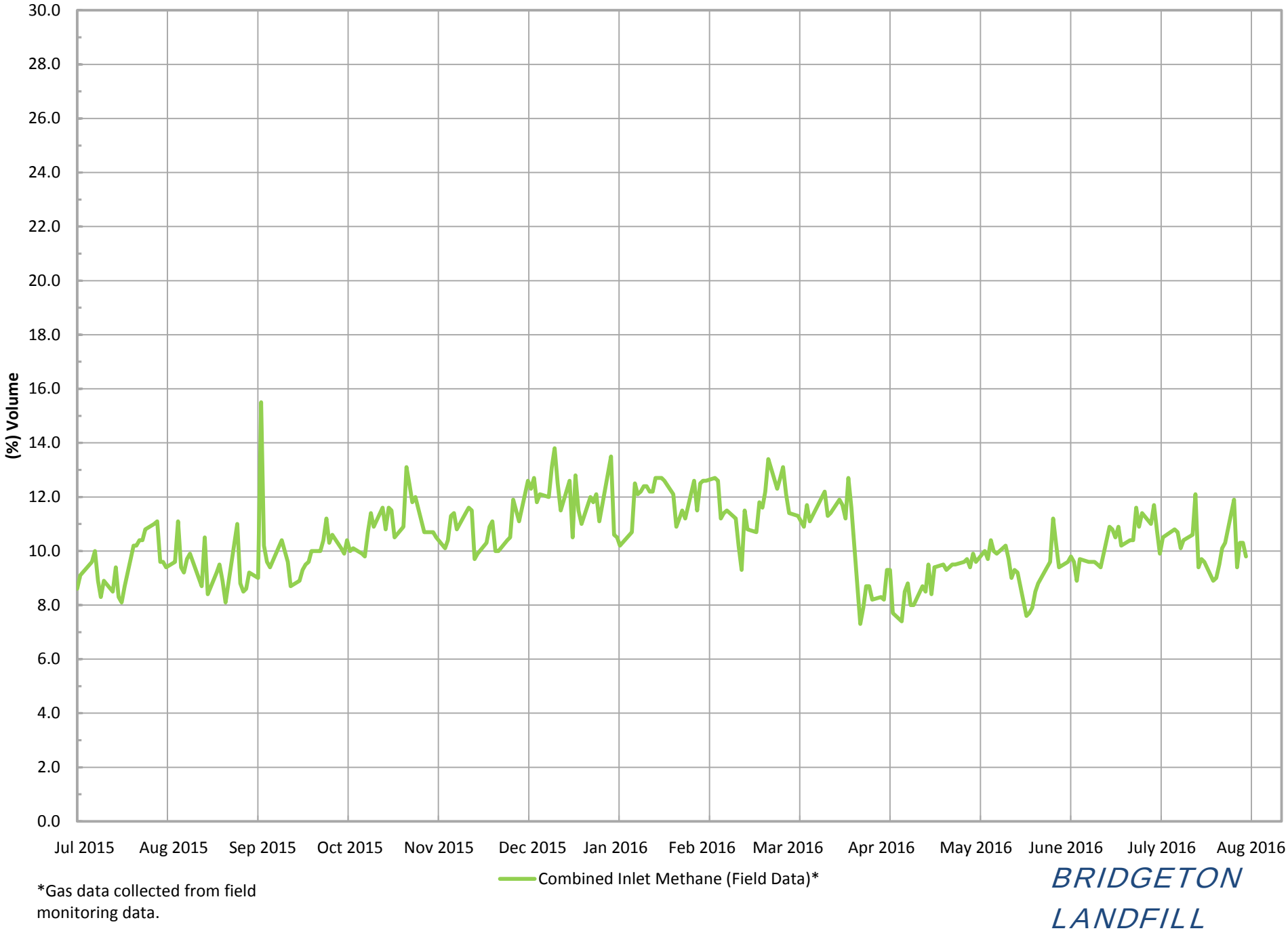
Auxillary Candlestick Flare Flow (scfm)*



*Flow is based on tabulated flow data collected daily.

BRIDGETON LANDFILL

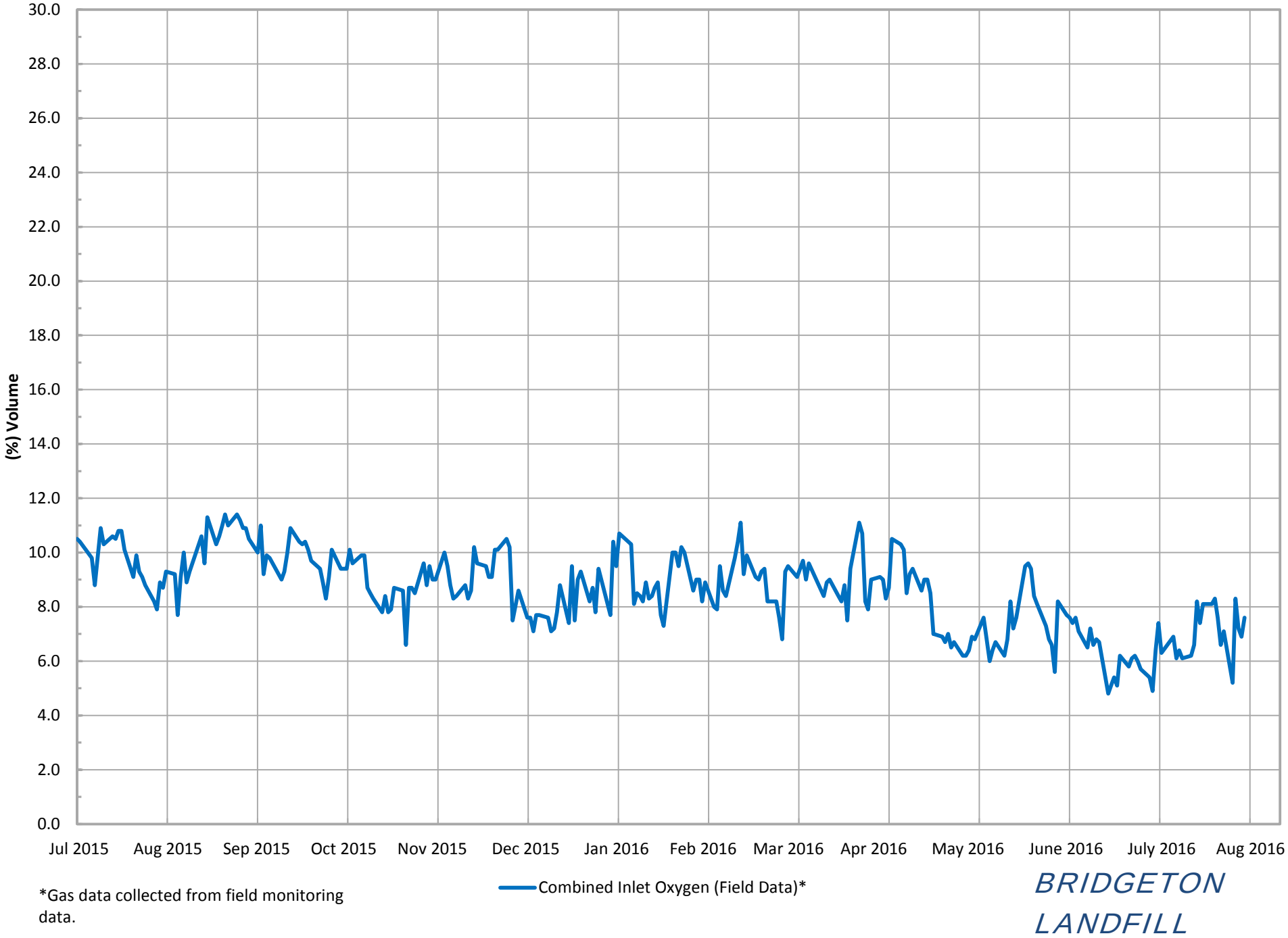
Combined Inlet Methane (Field Data)*



*Gas data collected from field monitoring data.

BRIDGETON LANDFILL

Combined Inlet Oxygen (Field Data)*

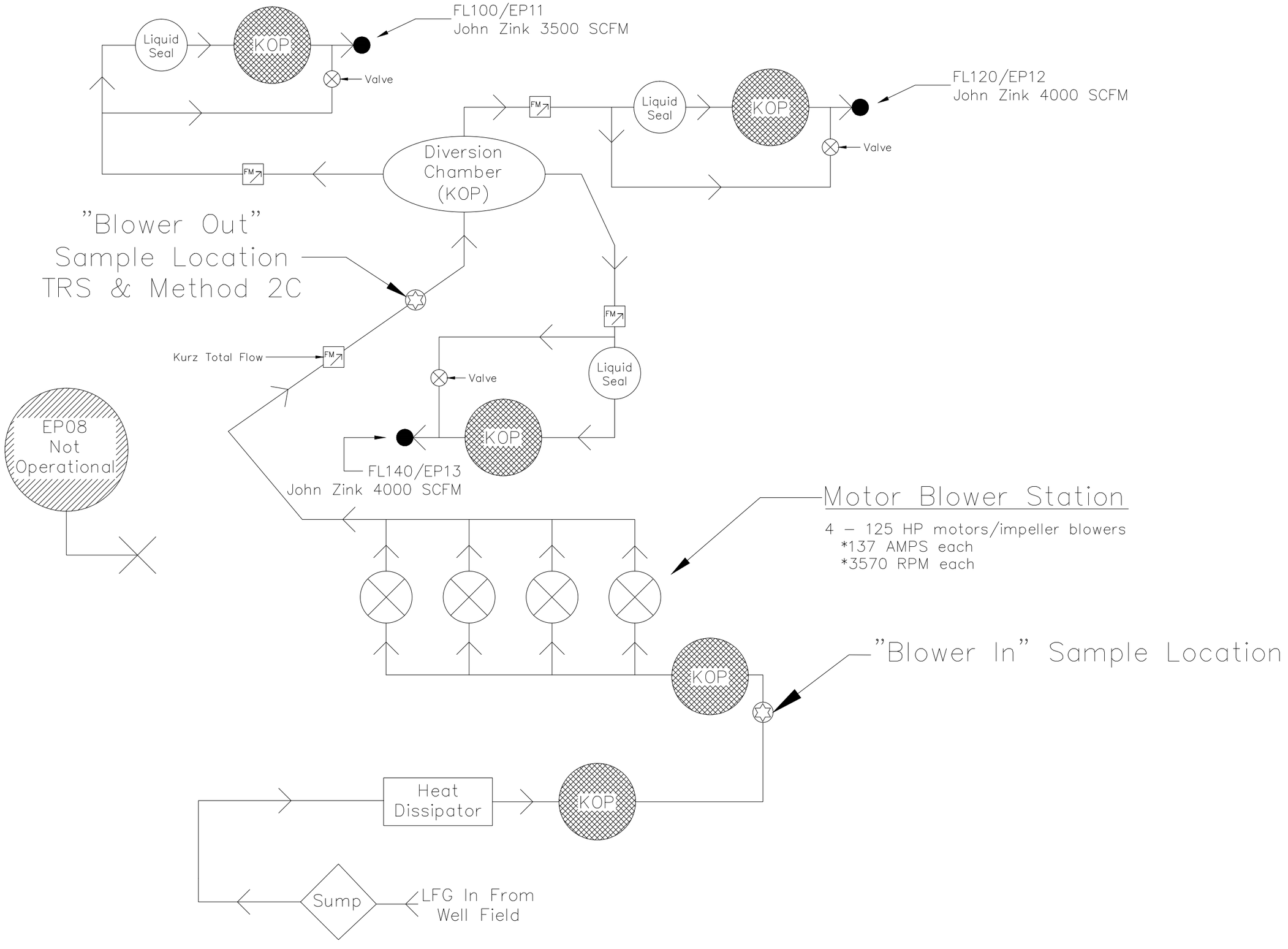


*Gas data collected from field monitoring data.

BRIDGETON LANDFILL

ATTACHMENT B-3

FLARE TRS / FLARE STATION FLOW



I:\PROJECTS\120\131 Bridgeton\Bridgeton Air Compliance 2015\TRS Assistance\Figure 1 - Flow Diagram - REV.dwg ,dthoenen;May 20, 2015

COPYRIGHT © 2015 WEAVER CONSULTANTS GROUP. ALL RIGHTS RESERVED.

PREPARED FOR:
BRIDGETON LANDFILL, LLC

FIGURE 1 - FLARE COMPOUND
PROCESS FLOW DIAGRAM
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI

No.	DATE	REVISION DESCRIPTION

Weaver Consultants Group

WEAVER CONSULTANTS GROUP
6301 EAST HWY AB
COLUMBIA, MISSOURI 65201
(636)-431-3399
www.wcgrp.com

REUSE OF DOCUMENTS
This document, and the designs incorporated herein, as an instrument of professional service, is the property of Weaver Consultants Group, and is not to be used in whole or in part, without the written authorization of Weaver Consultants Group.

DRAWN BY:	DT
REVIEWED BY:	DAR
DATE:	5/20/2015
FILE:	0120-131-10
CAD:	Figure 1 - Flow Diagram - REV.dwg

SHEET 1 OF 1

TABLE 1 **Bridgeton Landfill, LLC.**

Summary of Key LFG Tested Parameters **July 5, 2016 to August 9, 2016**

Flare Compound: *Blower Outlet*

SAMPLE EVENT #	DATE	VELOCITY ft/sec	FLOW dscfm	TRS ppm_{vd}
75-32[1]	8/9/2016	27.03	1894	2200
				1900
74-31[2]	8/3/2016	26.94	2182	1200
				1400
73-30[2]	7/26/2016	29.60	2398	1400
				1200
72-29[2]	7/20/2016	29.36	2378	1400
				1500
71-28[2]	7/14/2016	30.36	2459	1500
				1600
70-27[1]	7/5/2016	28.80	2078	N/A[3]
				1300

Notes:

[1] Indicates velocity/flow determined by EPA Method 2

[2] Indicates velocity/flow determined by KURZ

[3] Initial vacuum requirement not met, no sample

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 75-32
08/09/2016

	PARAMETER	Blower Out
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL120)		
Date	Test Date	8/9/16
Start	Run Start Time	8:36
	Run Finish Time	9:44
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:07:10
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.60
% H_2O	Moisture Content of LFG, %	10.31
% RH	Relative Humidity, %	74.80
M_{fd}	Dry Mole Fraction	0.897
%CH_4	Methane, %	10.10
%CO_2	Carbon Dioxide, %	39.25
%O_2	Oxygen, %	6.80
%Balance	Assumed as Nitrogen, %	30.65
%H_2	Hydrogen, %	11.40
%CO	Carbon Monoxide, %	0.11
M_d	Dry Molecular Weight, lb/lb-Mole	30.56
M_s	Wet Molecular weight, lb/lb-Mole	29.27
P_g	Flue Gas Static Pressure, inches of H_2O	29.20
P_s	Absolute Flue Gas Pressure, inches of Mercury	31.73
t_s	Average Stack Gas Temperature, °F	122
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.163
v_s	Average LFG Velocity, feet/second	27.03
A_s	Stack Crossectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	1,894
Q_s	Standard Volumetric Flow Rate, scfm	2,090
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	2,194
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	9,015
NHV	Net Heating Value, Btu/scf	159
LFG_{CH4}	Methane, lb/hr	478.1
	Methane, grains/dscf	29.45
LFG_{CO2}	Carbon Dioxide, lb/hr	5,097.4
	Carbon Dioxide, grains/dscf	313.92
LFG_{O2}	Oxygen, lb/hr	642.1
	Oxygen, grains/dscf	39.54
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,533.7
	Balance gas as Nitrogen, grains/dscf	156.04
LFG_{H4}	Hydrogen, lb/hr	67.8
	Hydrogen, grains/dscf	4.18
LFG_{CO}	Carbon Monoxide, lb/hr	9.1
	Carbon Monoxide, grains/dscf	0.56

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	8.10	2.60
	Hydrogen Sulfide Rate, lb/hr	0.08	0.03
	Hydrogen Sulfide Rate, grains/dscf	0.005	0.002
COS	Carbonyl Sulfide Concentration, ppmd	0.59	0.59
	Carboyl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	230.00	250.00
	Methyl Mercaptan Rate, lb/hr	3.27	3.55
	Methyl Mercaptan Rate, grains/dscf	0.201	0.219
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.60	3.50
	Ethyl Mercaptan Rate, lb/hr	0.05	0.06
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.004
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,700.00	1,400.00
	Dimethyl Sulfide Rate, lb/hr	31.17	25.67
	Dimethyl Sulfide Rate, grains/dscf	1.920	1.581
CS_2	Carbon Disulfide Concentration, ppmd	1.40	1.40
	Carbon Disulfide Rate, lb/hr	0.03	0.03
	Carbon Disulfide Rate, grains/dscf	0.002	0.002
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	120.00	140.00
	Dimethyl Disulfide Rate, lb/hr	3.34	3.15
	Dimethyl Disulfide Rate, grains/dscf	0.205	0.194

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	2,200.00	1,900.00
	TRS-->SO2 Emission Rate, lb/hr	41.59	35.92
	TRS-->SO2 Emission Rate, grains/dscf	2.561	2.212

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Tuesday, August 09, 2016

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz	Kurz vs Fleetzoom
		Method 2	FleetZoom	Kurz FM			
BLOWER OUT	8:36	2,090	2,066	2,261	1.1%	-8.2%	8.6%

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 75-327
08/09/2016

	PARAMETER	Blower Out
	EP14 NORTH QUARRY LFG ONLY	
Date	Test Date	8/9/16
Start	Run Start Time	10:04
	Run Finish Time	10:49
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	0:45:10
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.63
% H_2O	Moisture Content of LFG, %	5.77
% RH	Relative Humidity, %	88.40
M_{fd}	Dry Mole Fraction	0.942
%CH_4	Methane, %	51.25
%CO_2	Carbon Dioxide, %	38.45
%O_2	Oxygen, %	1.75
%Balance	Assumed as Nitrogen, %	7.80
%H_2	Hydrogen, %	3.15
%CO	Carbon Monoxide, %	0.0032
M_d	Dry Molecular Weight, lb/lb-Mole	27.33
M_s	Wet Molecular weight, lb/lb-Mole	26.79
P_g	Flue Gas Static Pressure, inches of H_2O	0.10
P_s	Absolute Flue Gas Pressure, inches of Mercury	29.69
t_s	Average Stack Gas Temperature, °F	99
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.019
v_s	Average LFG Velocity, feet/second	9.86
A_s	Stack Crossectional Area, square feet	0.51
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	268
Q_s	Standard Volumetric Flow Rate, scfm	283
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	304
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	1,140
NHV	Net Heating Value, Btu/scf	466
LFG_{CH4}	Methane, lb/hr	343.2
	Methane, grains/dscf	149.42
LFG_{CO2}	Carbon Dioxide, lb/hr	706.3
	Carbon Dioxide, grains/dscf	307.52
LFG_{O2}	Oxygen, lb/hr	23.4
	Oxygen, grains/dscf	10.18
LFG_{N2}	Balance gas as Nitrogen, lb/hr	91.2
	Balance gas as Nitrogen, grains/dscf	39.71
LFG_{H4}	Hydrogen, lb/hr	2.7
	Hydrogen, grains/dscf	1.15
LFG_{CO}	Carbon Monoxide, lb/hr	0.0
	Carbon Monoxide, grains/dscf	0.02

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	43.00	67.00
	Hydrogen Sulfide Rate, lb/hr	0.06	0.10
	Hydrogen Sulfide Rate, grains/dscf	0.027	0.041
COS	Carbonyl Sulfide Concentration, ppmd	0.61	0.63
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	2.10	2.70
	Methyl Mercaptan Rate, lb/hr	0.00	0.01
	Methyl Mercaptan Rate, grains/dscf	0.002	0.002
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	1.20	1.30
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	5.40	5.30
	Dimethyl Sulfide Rate, lb/hr	0.01	0.01
	Dimethyl Sulfide Rate, grains/dscf	0.006	0.006
CS_2	Carbon Disulfide Concentration, ppmd	0.61	0.63
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	0.61	0.63
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	52.00	76.00
	TRS-->SO2 Emission Rate, lb/hr	0.14	0.20
	TRS-->SO2 Emission Rate, grains/dscf	0.061	0.088

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Tuesday, August 09, 2016

LOCATION	TIME	FLOW -SCFM		Method 2 vs. Fleetzoom
		Method 2	FleetZoom	
EP14 NQ LFG	10:04	283	297	-4.8%

Air TECHNOLOGY Laboratories, Inc.

August 12, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H081001-01/04

Enclosed are results for sample(s) received 8/04/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- The reporting limits for ethyl mercaptan and dimethyl sulfide were elevated from 0.20 ppmv to 0.40 ppmv due to background interference.
- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 8/11/16.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard	☐	48 hours	☐	EDD	■	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	■	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	☐	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton LF Monthly Permit Flare LFG Testing
Report To:	Nick Bauers/Ryans Ayers/David Randall
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	NBauer@republicservices.com

BILLING

P.O. No.:	PO5881099
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: EPA 15/16 + TRS	ASTM 1946 +H2 + CO & BTU/SCF		ASTM 1946 +H2 + CO & BTU/SCF (by CH4 ONLY)		
	Canister ID	Sample Start	Sample End	Lab Receive												
H081001-01	6013	-19.88	-2.64	-4	Blower Outlet A	8/9/2016	835	C -6L	LFG	He	X	X				
-02	6014	-19.93	-2.41	-4	Blower Outlet B	8/9/2016	901	C -6L	LFG	He	X	X				
-03	6058	-20.04	-3.17	-4.5	NQ EP14 A	8/9/2016	1004	C -6L	LFG	He	X			X		
-04	5951	-20.22	-3.52	-5	NQ EP14 B	8/9/2016	1030	C -6L	LFG	He	X			X		

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	**COMMENTS: Canister 4435 had low initial pressure. No sample taken.**
SAMPLED BY: Corey McMillen	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Corey McMillen	DATE: 8/9/16	RECEIVED BY	DATE/TIME
RELINQUISHED BY: FED EX	DATE:	RECEIVED BY: DHL - 8/10/16 0851	DATE/TIME
RELINQUISHED BY	DATE:	RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 08/10/16
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	H081001-01		H081001-02		H081001-03		H081001-04	
Client Sample I.D.:	Blower Outlet A		Blower Outlet B		NQ EP14 A		NQ EP14 B	
Date/Time Sampled:	8/9/16 8:35		8/9/16 9:01		8/9/16 10:04		8/9/16 10:30	
Date/Time Analyzed:	8/10/16 18:31		8/10/16 19:24		8/10/16 20:03		8/10/16 20:29	
QC Batch No.:	160810GC3A2		160810GC3A2		160810GC3A2		160810GC3A2	
Analyst Initials:	MJ		MJ		MJ		MJ	
Dilution Factor:	3.0		3.0		3.1		3.2	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	8.1	0.59	2.6	0.59	43 d	6.1	67 d	6.3
Carbonyl Sulfide	ND	0.59	ND	0.59	ND	0.61	ND	0.63
Methyl Mercaptan	230 d	5.9	250 d	5.9	2.1	0.61	2.7	0.63
Ethyl Mercaptan	2.6	1.2	3.5	1.2	ND	1.2	ND	1.3
Dimethyl Sulfide	1,700 d	120.0	1,400 d	120.0	5.4	1.2	5.3	1.3
Carbon Disulfide	1.4	0.59	1.4	0.59	ND	0.61	ND	0.63
Dimethyl Disulfide	120 d	5.9	140 d	5.9	ND	0.61	ND	0.63
Total Reduced Sulfur	2,200	0.59	1,900	0.59	52	0.61	76	0.63

ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution

Reviewed/Approved By: _____ Date 8/11/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 160810GC3A2
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	8/10/16 18:19		8/10/16 12:19		8/10/16 12:31			
Analyst Initials:	AS		AS		AS			
Datafile:	10aug041		10aug019		10aug020			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	79	70-130%	83	70-130%	4.6	<30
Carbonyl Sulfide	ND	0.20	102	70-130%	99	70-130%	2.8	<30
Methyl Mercaptan	ND	0.20	91	70-130%	86	70-130%	5.3	<30
Ethyl Mercaptan	ND	0.40	124	70-130%	126	70-130%	2.1	<30
Dimethyl Sulfide	ND	0.40	109	70-130%	107	70-130%	1.5	<30
Carbon Disulfide	ND	0.20	93	70-130%	95	70-130%	2.2	<30
Dimethyl Disulfide	ND	0.20	99	70-130%	97	70-130%	2.0	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 8/11/16
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 08/10/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H081001-01		H081001-02					
Client Sample I.D.:	Blower Outlet A		Blower Outlet B					
Date/Time Sampled:	8/9/16 8:35		8/9/16 9:01					
Date/Time Analyzed:	8/10/16 14:09		8/10/16 14:24					
QC Batch No.:	160810GC8A1		160810GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	3.0		3.0					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	11.0	3.0	11.8	3.0				
Carbon Dioxide	38.7	0.030	39.8	0.030				
Oxygen/Argon	7.0	1.5	6.6	1.5				
Nitrogen	31.2	3.0	30.1	3.0				
Methane	10.4	0.0030	9.8	0.0030				
Carbon Monoxide	0.11	0.0030	0.11	0.0030				
Net Heating Value (BTU/ft3)	157.5	3.0	160.9	3.0				
Gross Heating Value (BTU/ft3)	178.3	3.0	182.2	3.0				

Results normalized including non-methane hydrocarbons
BTU values based on D1946 analysis and non-methane analysis assumed as propane
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 8/10/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 08/10/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H081001-03		H081001-04					
Client Sample I.D.:	NQ EP14 A		NQ EP14 B					
Date/Time Sampled:	8/9/16 10:04		8/9/16 10:30					
Date/Time Analyzed:	8/10/16 14:38		8/10/16 14:53					
QC Batch No.:	160810GC8A1		160810GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	3.1		3.2					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	ND	3.1	ND	3.2				
Carbon Dioxide	39.1	0.031	37.8	0.032				
Oxygen/Argon	ND	1.5	2.0	1.6				
Nitrogen	6.6	3.1	9.0	3.2				
Methane	52.1	0.0031	50.4	0.0032				
Carbon Monoxide	ND	0.0031	ND	0.0032				
Net Heating Value (BTU/ft3) methane only	473.6	3.1	458.8	3.2				
Gross Heating Value (BTU/ft3) methane only	526.0	3.1	509.5	3.2				

Results normalized including non-methane hydrocarbons
BTU values based on D1946 analysis methane only
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 8/11/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 160810GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	8/10/16 13:53		8/10/16 13:09		8/10/16 13:23			
Analyst Initials:	AS		AS		AS			
Datafile:	10aug003		10aug.ru		10aug001			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	100	70-130%	101	70-130%	1.3	<30
Carbon Dioxide	ND	0.010	89	70-130%	88	70-130%	1.1	<30
Oxygen/Argon	ND	0.50	93	70-130%	92	70-130%	1.1	<30
Nitrogen	ND	1.0	91	70-130%	90	70-130%	1.1	<30
Methane	ND	0.0010	108	70-130%	107	70-130%	0.7	<30
Carbon Monoxide	ND	0.0010	108	70-130%	107	70-130%	0.7	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 8/11/16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 74-31
08/03/2016

Kurz FM =	**2,297**	**scfm**
Fleetzoom Total =	**2,100**	**scfm**

Δ = **-9.4%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL120 & FL140)			
Date	Test Date		8/3/16
Time	Start	13:33	13:42
***%CH_4**	Methane, %	11.60	11.20
***%CO_2**	Carbon Dioxide, %	42.00	41.90
***'%O_2**	Oxygen, %	6.30	6.30
***%Balance**	Assumed as Nitrogen, %	40.10	40.60
P_g	Flue Gas Static Pressure, inches of H_2O	29.49	28.21
t_s	Blower Outlet LFG Temperature, °F	127	127
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	2,182	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	2,297	
LFG_{CH4}	Methane, lb/hr	632.6	610.8
	Methane, grains/dscf	33.82	32.65
LFG_{CO2}	Carbon Dioxide, lb/hr	6,283.3	6,268.3
	Carbon Dioxide, grains/dscf	335.92	335.12
LFG_{O2}	Oxygen, lb/hr	685.3	685.3
	Oxygen, grains/dscf	36.64	36.64
LFG_{N2}	Balance gas as Nitrogen, lb/hr	3,818.6	3,866.2
	Balance gas as Nitrogen, grains/dscf	204.15	206.69

** Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer*

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	0.63	0.59
	Hydrogen Sulfide Rate, lb/hr	0.01	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.66	0.62
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	96.00	0.59
	Methyl Mercaptan Rate, lb/hr	1.57	0.01
	Methyl Mercaptan Rate, grains/dscf	0.084	0.001
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	1.20	0.59
	Ethyl Mercaptan Rate, lb/hr	0.03	0.01
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	940.00	960.00
	Dimethyl Sulfide Rate, lb/hr	19.85	20.28
	Dimethyl Sulfide Rate, grains/dscf	1.061	1.084
CS_2	Carbon Disulfide Concentration, ppmd	1.20	1.40
	Carbon Disulfide Rate, lb/hr	0.03	0.04
	Carbon Disulfide Rate, grains/dscf	0.002	0.002
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	89.00	200.00
	Dimethyl Disulfide Rate, lb/hr	2.85	6.40
	Dimethyl Disulfide Rate, grains/dscf	0.152	0.342
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,200.00	1,400.00
	TRS-->SO2 Emission Rate, lb/hr	26.13	30.49
	TRS-->SO2 Emission Rate, grains/dscf	1.397	1.630
	TPY =	114.46	133.54

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 74-31
08/03/2016

Fleetzoom Total = 274 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		8/3/16
Time	Start	14:23	14:32
***%CH_4**	Methane, %	53.80	54.30
***%CO_2**	Carbon Dioxide, %	40.60	38.50
***'%O_2**	Oxygen, %	0.60	0.50
***%Balance**	Assumed as Nitrogen, %	5.00	6.70
P_g	Flue Gas Static Pressure, inches of H_2O	0.93	0.91
t_s	Blower Outlet LFG Temperature, °F	101.30	102.70
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	260	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	274	
LFG_{CH4}	Methane, lb/hr	350.2	353.5
	Methane, grains/dscf	156.85	158.31
LFG_{CO2}	Carbon Dioxide, lb/hr	725.0	687.5
	Carbon Dioxide, grains/dscf	324.72	307.92
LFG_{O2}	Oxygen, lb/hr	7.8	6.5
	Oxygen, grains/dscf	3.49	2.91
LFG_{N2}	Balance gas as Nitrogen, lb/hr	56.8	76.2
	Balance gas as Nitrogen, grains/dscf	25.45	34.11

** Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer*

		EP14 NQ	EP14 NQ-2
H_2S	Hydrogen Sulfide Concentration, ppmd	2.00	0.59
	Hydrogen Sulfide Rate, lb/hr	0.00	0.00
	Hydrogen Sulfide Rate, grains/dscf	0.001	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.59	0.59
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	3.10	0.59
	Methyl Mercaptan Rate, lb/hr	0.01	0.00
	Methyl Mercaptan Rate, grains/dscf	0.003	0.001
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.59	0.59
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	7.30	7.30
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.008	0.008
CS_2	Carbon Disulfide Concentration, ppmd	0.59	0.59
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	0.64	0.63
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	15.00	9.70
	TRS-->SO2 Emission Rate, lb/hr	0.04	0.03
	TRS-->SO2 Emission Rate, grains/dscf	0.017	0.011
	TPY =	0.17	0.11

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Air TECHNOLOGY
Laboratories, Inc.

August 8, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H080402-01/04

Enclosed are results for sample(s) received 8/04/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 8/08/16.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

Air TECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard	☐	48 hours	■	EDD	☐	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	☐	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING	
P.O. No.:	~~PO4862452~~ 5881099
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: EPA 15/16 + TRS					
	Canister ID	Sample Start	Sample End	Lab Receive												
H080402-01	1614	-20	-3.5	-5	South Quary Outlet 1	8/3/2016	1333	C	LFG	NA	X					
-02	1538	-20	-3.5	-4	South Quary Outlet 2	8/3/2016	1342	C	LFG	NA	X					
-03	J1721	-20.2	-3.5	-4	North Quary Outlet 1	8/3/2016	1423	C	LFG	NA	X					
-04	J1718	-20	-3.5	-4	North Quary Outlet 2	8/3/2016	1432	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services		DATE/TIME:
SAMPLED BY: Corey McMillen		COMPANY: Republic Services		DATE/TIME
RELINQUISHED BY: Corey Mcmillen	8/3/16	DATE: RECEIVED BY		DATE/TIME
RELINQUISHED BY: Fed Ex	8-4-16	DATE: RECEIVED BY	8-4-16 9:04	DATE/TIME
RELINQUISHED BY		DATE: RECEIVED BY		DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 08/04/16
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	H080402-01		H080402-02		H080402-03		H080402-04	
Client Sample I.D.:	South Quarry Outlet 1		South Quarry Outlet 2		North Quarry Outlet 1		North Quarry Outlet 2	
Date/Time Sampled:	8/3/16 13:33		8/3/16 13:42		8/3/16 14:23		8/3/16 14:32	
Date/Time Analyzed:	8/4/16 13:05		8/4/16 13:58		8/4/16 14:39		8/4/16 14:55	
QC Batch No.:	160804GC3A1		160804GC3A1		160804GC3A1		160804GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.0		3.0		3.0	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	ND	0.63	ND	0.59	2.0	0.59	ND	0.59
Carbonyl Sulfide	0.66	0.63	0.62	0.59	ND	0.59	ND	0.59
Methyl Mercaptan	96 d	6.3	ND	0.59	3.1	0.59	ND	0.59
Ethyl Mercaptan	1.2	0.63	ND	0.59	ND	0.59	ND	0.59
Dimethyl Sulfide	940 d	63.0	960 d	59.0	7.3	0.59	7.3	0.59
Carbon Disulfide	1.2	0.63	1.4	0.59	ND	0.59	ND	0.59
Dimethyl Disulfide	89 d	6.3	200 d	5.9	0.64	0.59	0.63	0.59
Total Reduced Sulfur	1,200	0.63	1,400	0.59	15	0.59	9.7	0.59

ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution

Reviewed/Approved By: _____ Date 8-8-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 160804GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	8/4/16 10:29		8/4/16 9:39		8/4/16 10:17			
Analyst Initials:	AS		AS		AS			
Datafile:	04aug005		04aug001		04aug004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	100	70-130%	84	70-130%	17.4	<30
Carbonyl Sulfide	ND	0.20	110	70-130%	106	70-130%	4.2	<30
Methyl Mercaptan	ND	0.20	89	70-130%	86	70-130%	2.9	<30
Ethyl Mercaptan	ND	0.20	115	70-130%	114	70-130%	0.4	<30
Dimethyl Sulfide	ND	0.20	98	70-130%	93	70-130%	5.6	<30
Carbon Disulfide	ND	0.20	80	70-130%	90	70-130%	11.7	<30
Dimethyl Disulfide	ND	0.20	84	70-130%	92	70-130%	9.4	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 8-8-16
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 73-30
07/26/2016

Kurz FM =	**2,524**	**scfm**	
Fleetzoom Total =	**2,437**	**scfm**	**Δ = -3.6%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL120 & FL140)			
Date	Test Date		7/26/16
Time	Start	14:37	14:47
***%CH_4**	Methane, %	10.60	11.20
***%CO_2**	Carbon Dioxide, %	40.30	40.30
***'%O_2**	Oxygen, %	6.10	6.20
***%Balance**	Assumed as Nitrogen, %	43.00	42.30
P_g	Flue Gas Static Pressure, inches of H_2O	49.48	46.48
t_s	Blower Outlet LFG Temperature, °F	150	150
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	2,398	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	2,524	
LFG_{CH4}	Methane, lb/hr	635.1	671.0
	Methane, grains/dscf	30.90	32.65
LFG_{CO2}	Carbon Dioxide, lb/hr	6,623.7	6,623.7
	Carbon Dioxide, grains/dscf	322.32	322.32
LFG_{O2}	Oxygen, lb/hr	729.0	740.9
	Oxygen, grains/dscf	35.47	36.05
LFG_{N2}	Balance gas as Nitrogen, lb/hr	4,498.7	4,425.5
	Balance gas as Nitrogen, grains/dscf	218.91	215.35

** Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer*

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	0.67	0.63
	Hydrogen Sulfide Rate, lb/hr	0.01	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.67	0.63
	Carboynl Sulfide Rate, lb/hr	0.02	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	130.00	0.63
	Methyl Mercaptan Rate, lb/hr	2.34	0.01
	Methyl Mercaptan Rate, grains/dscf	0.114	0.001
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	1.80	0.63
	Ethyl Mercaptan Rate, lb/hr	0.04	0.01
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,000.00	830.00
	Dimethyl Sulfide Rate, lb/hr	23.21	19.26
	Dimethyl Sulfide Rate, grains/dscf	1.129	0.937
CS_2	Carbon Disulfide Concentration, ppmd	1.30	1.10
	Carbon Disulfide Rate, lb/hr	0.04	0.03
	Carbon Disulfide Rate, grains/dscf	0.002	0.002
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	120.00	200.00
	Dimethyl Disulfide Rate, lb/hr	4.22	7.04
	Dimethyl Disulfide Rate, grains/dscf	0.205	0.342
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,400.00	1,200.00
	TRS-->SO2 Emission Rate, lb/hr	33.50	28.71
	TRS-->SO2 Emission Rate, grains/dscf	1.630	1.397
	TPY =	146.71	125.75

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 73-30
07/26/2016

Fleetzoom Total = 254 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		7/26/16
Time	Start	14:01	14:12
***%CH_4**	Methane, %	52.80	51.90
***%CO_2**	Carbon Dioxide, %	39.30	38.90
***'%O_2**	Oxygen, %	0.60	0.60
***%Balance**	Assumed as Nitrogen, %	7.30	8.60
P_g	Flue Gas Static Pressure, inches of H_2O	0.87	0.95
t_s	Blower Outlet LFG Temperature, °F	111.50	112.90
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	241	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	254	
LFG_{CH4}	Methane, lb/hr	317.9	312.4
	Methane, grains/dscf	153.94	151.31
LFG_{CO2}	Carbon Dioxide, lb/hr	649.0	642.4
	Carbon Dioxide, grains/dscf	314.32	311.12
LFG_{O2}	Oxygen, lb/hr	7.2	7.2
	Oxygen, grains/dscf	3.49	3.49
LFG_{N2}	Balance gas as Nitrogen, lb/hr	76.7	90.4
	Balance gas as Nitrogen, grains/dscf	37.16	43.78

** Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer*

		EP14 NQ	EP14 NQ-2
H_2S	Hydrogen Sulfide Concentration, ppmd	0.63	20.00
	Hydrogen Sulfide Rate, lb/hr	0.00	0.03
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.012
COS	Carbonyl Sulfide Concentration, ppmd	0.63	0.63
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	0.63	3.30
	Methyl Mercaptan Rate, lb/hr	0.00	0.01
	Methyl Mercaptan Rate, grains/dscf	0.001	0.003
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.63	0.63
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	7.50	7.80
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.008	0.009
CS_2	Carbon Disulfide Concentration, ppmd	0.63	0.63
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	2.30	0.63
	Dimethyl Disulfide Rate, lb/hr	0.01	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.004	0.001
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	13.00	33.00
	TRS-->SO2 Emission Rate, lb/hr	0.03	0.08
	TRS-->SO2 Emission Rate, grains/dscf	0.015	0.038
	TPY =	0.14	0.35

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Air TECHNOLOGY Laboratories, Inc.

August 1, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H072702-01/04

Enclosed are results for sample(s) received 7/27/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 7/29/16.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard	☐	48 hours	■	EDD	☐	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	☐	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING	
P.O. No.:	PO4862452- 5881099
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: EPA 15/16 + TRS					
	Canister ID	Sample Start	Sample End	Lab Receive												
H072702-01	J1723	-19.2	-3.5	-6	South Quary Outlet 1	7/26/2016	1437	C	LFG	NA	X					
-02	J1726	-16	-3	-5	South Quary Outlet 2	7/26/2016	1452	C	LFG	NA	X					
-03	1534	-19.35	-3.5	-5	North Quary Outlet 1	7/26/2016	1401	C	LFG	NA	X					
-04	1619	-19.9	-3.5	-5	North Quary Outlet 2	7/26/2016	1412	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer — COMPANY: Republic Services — DATE/TIME:

SAMPLED BY: Corey McMillen — COMPANY: Republic Services — DATE/TIME

RELINQUISHED BY: Corey McMillen — 7/26/16 — DATE/TIME — RECEIVED BY — DATE/TIME

RELINQUISHED BY: FED EX — DATE/TIME — RECEIVED BY — 7/27/16 0904 — DATE/TIME

RELINQUISHED BY — DATE/TIME — RECEIVED BY — DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/27/16
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	H072702-01		H072702-02		H072702-03		H072702-04	
Client Sample I.D.:	South Quarry Outlet 1		South Quarry Outlet 2		North Quarry Outlet 1		North Quarry Outlet 2	
Date/Time Sampled:	7/26/16 14:37		7/26/16 14:47		7/26/16 14:01		7/26/16 14:12	
Date/Time Analyzed:	7/27/16 11:03		7/27/16 11:53		7/27/16 12:33		7/27/16 12:46	
QC Batch No.:	160727GC3A1		160727GC3A1		160727GC3A1		160727GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.2		3.2		3.2	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	ND	0.67	ND	0.63	ND	0.63	20 d	6.3
Carbonyl Sulfide	ND	0.67	ND	0.63	ND	0.63	ND	0.63
Methyl Mercaptan	130 d	6.7	ND	0.63	ND	0.63	3.3	0.63
Ethyl Mercaptan	1.8	0.67	ND	0.63	ND	0.63	ND	0.63
Dimethyl Sulfide	1,000 d	67.0	830 d	63.0	7.5	0.63	7.8	0.63
Carbon Disulfide	1.3	0.67	1.1	0.63	ND	0.63	ND	0.63
Dimethyl Disulfide	120 d	6.7	200 d	6.3	2.3	0.63	ND	0.63
Total Reduced Sulfur	1,400	0.67	1,200	0.63	13	0.63	33	0.63

ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution

Reviewed/Approved By: _____ Date 7/29/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 160727GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/27/16 9:11		7/27/16 8:45		7/27/16 8:57			
Analyst Initials:	AS		AS		AS			
Datafile:	27jul003		27jul001		27jul002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	96	70-130%	95	70-130%	0.5	<30
Carbonyl Sulfide	ND	0.20	112	70-130%	110	70-130%	1.7	<30
Methyl Mercaptan	ND	0.20	90	70-130%	89	70-130%	0.8	<30
Ethyl Mercaptan	ND	0.20	114	70-130%	112	70-130%	1.8	<30
Dimethyl Sulfide	ND	0.20	96	70-130%	96	70-130%	0.2	<30
Carbon Disulfide	ND	0.20	93	70-130%	93	70-130%	0.0	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 7/29/16
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch No.: 160727GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/27/16 9:11		7/26/16 12:31		7/26/16 12:43			
Analyst Initials:	AS		AS		AS			
Datafile:	27jul003		26jul009		26jul010			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Dimethyl Disulfide	ND	0.20	128	70-130%	126	70-130%	1.7	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 7/29/16
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 72-29
07/20/2016

Kurz FM =	**2,503**	**scfm**	
Fleetzoom Total =	**2,372**	**scfm**	**Δ = -5.5%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL120 & FL140)			
Date	Test Date		7/20/16
Time	Start	14:28	14:38
***%CH_4**	Methane, %	10.50	11.80
***%CO_2**	Carbon Dioxide, %	39.90	39.70
***'%O_2**	Oxygen, %	6.20	6.00
***%Balance**	Assumed as Nitrogen, %	43.40	42.50
P_g	Flue Gas Static Pressure, inches of H_2O	54.87	53.40
t_s	Blower Outlet LFG Temperature, °F	142	144
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	2,378	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	2,503	
LFG_{CH4}	Methane, lb/hr	624.0	701.3
	Methane, grains/dscf	30.61	34.40
LFG_{CO2}	Carbon Dioxide, lb/hr	6,505.0	6,472.4
	Carbon Dioxide, grains/dscf	319.12	317.52
LFG_{O2}	Oxygen, lb/hr	734.9	711.2
	Oxygen, grains/dscf	36.05	34.89
LFG_{N2}	Balance gas as Nitrogen, lb/hr	4,503.9	4,410.5
	Balance gas as Nitrogen, grains/dscf	220.95	216.37

** Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer*

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	0.59	0.59
	Hydrogen Sulfide Rate, lb/hr	0.01	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.59	0.59
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	83.00	45.00
	Methyl Mercaptan Rate, lb/hr	1.48	0.80
	Methyl Mercaptan Rate, grains/dscf	0.073	0.039
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	1.60	0.84
	Ethyl Mercaptan Rate, lb/hr	0.04	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,000.00	1,100.00
	Dimethyl Sulfide Rate, lb/hr	23.02	25.32
	Dimethyl Sulfide Rate, grains/dscf	1.129	1.242
CS_2	Carbon Disulfide Concentration, ppmd	1.30	1.30
	Carbon Disulfide Rate, lb/hr	0.04	0.04
	Carbon Disulfide Rate, grains/dscf	0.002	0.002
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	140.00	160.00
	Dimethyl Disulfide Rate, lb/hr	4.89	5.58
	Dimethyl Disulfide Rate, grains/dscf	0.240	0.274
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,400.00	1,500.00
	TRS-->SO2 Emission Rate, lb/hr	33.23	35.60
	TRS-->SO2 Emission Rate, grains/dscf	1.630	1.746
	TPY =	145.53	155.92

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 72-29
07/20/2016

Fleetzoom Total = 305 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		7/20/16
Time	Start	17:39	17:49
***%CH_4**	Methane, %	50.90	53.10
***%CO_2**	Carbon Dioxide, %	35.10	36.10
***'%O_2**	Oxygen, %	2.50	2.10
***%Balance**	Assumed as Nitrogen, %	11.50	8.70
P_g	Flue Gas Static Pressure, inches of H_2O	1.00	1.11
t_s	Blower Outlet LFG Temperature, °F	118.60	119.20
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	290	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	305	
LFG_{CH4}	Methane, lb/hr	368.8	384.7
	Methane, grains/dscf	148.40	154.81
LFG_{CO2}	Carbon Dioxide, lb/hr	697.7	717.5
	Carbon Dioxide, grains/dscf	280.73	288.73
LFG_{O2}	Oxygen, lb/hr	36.1	30.3
	Oxygen, grains/dscf	14.54	12.21
LFG_{N2}	Balance gas as Nitrogen, lb/hr	145.5	110.1
	Balance gas as Nitrogen, grains/dscf	58.55	44.29

** Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer*

		EP14 NQ	EP14 NQ-2
H_2S	Hydrogen Sulfide Concentration, ppmd	7.40	19.00
	Hydrogen Sulfide Rate, lb/hr	0.01	0.03
	Hydrogen Sulfide Rate, grains/dscf	0.005	0.012
COS	Carbonyl Sulfide Concentration, ppmd	0.63	0.63
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	2.50	3.10
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.002	0.003
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.63	0.63
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	7.30	7.20
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.008	0.008
CS_2	Carbon Disulfide Concentration, ppmd	0.63	0.63
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	0.63	0.68
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	19.00	31.00
	TRS-->SO2 Emission Rate, lb/hr	0.05	0.09
	TRS-->SO2 Emission Rate, grains/dscf	0.022	0.036
	TPY =	0.24	0.39

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

AIR TECHNOLOGY Laboratories, Inc.

July 25, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H072101-01/04

Enclosed are results for sample(s) received 7/21/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 7/22/16.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard	☐	48 hours	■	EDD	☐	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	☐	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: EPA 15/16 + TRS
	Canister ID	Sample Start	Sample End	Lab Receive							
H072101-01	J1719	-20	-3.4	-4	South Quary Outlet 1	7/20/2016	1428	C	LFG	NA	X
-02	J1725	-20.1	-3.4	-4	South Quary Outlet 2	7/20/2016	1438	C	LFG	NA	X
-03	1615	-19.8	-3.5	-5	North Quary Outlet 1	7/20/2016	1739	C	LFG	NA	X
-04	1613	-20	-3.4	-5	North Quary Outlet 2	7/20/2016	1749	C	LFG	NA	X

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Corey McMillen	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Corey Mcmillen 7/20/16	DATE RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	DATE RECEIVED BY: 7/20/16 1613	DATE/TIME	
RELINQUISHED BY:	DATE RECEIVED BY	DATE/TIME	

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other_____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other Rev. 03 - 5/7/09

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/21/16
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	H072101-01		H072101-02		H072101-03		H072101-04	
Client Sample I.D.:	South Quarry Outlet 1		South Quarry Outlet 2		North Quarry Outlet 1		North Quarry Outlet 2	
Date/Time Sampled:	7/20/16 14:28		7/20/16 14:38		7/20/16 17:39		7/20/16 17:49	
Date/Time Analyzed:	7/21/16 11:33		7/21/16 13:22		7/21/16 14:14		7/21/16 14:27	
QC Batch No.:	160721GC3A1		160721GC3A1		160721GC3A1		160721GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.2		3.2	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	ND	0.59	ND	0.59	7.4	0.63	19 d	6.3
Carbonyl Sulfide	ND	0.59	ND	0.59	ND	0.63	ND	0.63
Methyl Mercaptan	83 d	5.9	45 d	5.9	2.5	0.63	3.1	0.63
Ethyl Mercaptan	1.6	0.59	0.84	0.59	ND	0.63	ND	0.63
Dimethyl Sulfide	1,000 d	59.0	1,100 d	59.0	7.3	0.63	7.2	0.63
Carbon Disulfide	1.3	0.59	1.3	0.59	ND	0.63	ND	0.63
Dimethyl Disulfide	140 d	5.9	160 d	5.9	ND	0.63	0.68	0.63
Total Reduced Sulfur	1,400	0.59	1,500	0.59	19	0.63	31	0.63

ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution

Reviewed/Approved By: _____ **Date** 7/22/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: I60721GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/21/16 9:16		7/21/16 8:27		7/21/16 8:39			
Analyst Initials:	AS		AS		AS			
Datafile:	21jul005		21jul001		21jul002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	85	70-130%	80	70-130%	5.3	<30
Carbonyl Sulfide	ND	0.20	102	70-130%	95	70-130%	7.0	<30
Methyl Mercaptan	ND	0.20	82	70-130%	83	70-130%	1.2	<30
Ethyl Mercaptan	ND	0.20	123	70-130%	118	70-130%	4.0	<30
Dimethyl Sulfide	ND	0.20	96	70-130%	95	70-130%	1.5	<30
Carbon Disulfide	ND	0.20	86	70-130%	82	70-130%	5.4	<30
Dimethyl Disulfide	ND	0.20	100	70-130%	99	70-130%	1.0	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 7/22/16
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 71-28
07/14/2016

Kurz FM =	**2,589**	**scfm**	
Fleetzoom Total =	**2,447**	**scfm**	**Δ = -5.8%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL120 & FL140)			
Date	Test Date		7/14/16
Time	Start	13:59	14:10
***%CH_4**	Methane, %	10.90	13.10
***%CO_2**	Carbon Dioxide, %	40.80	40.40
***'%O_2**	Oxygen, %	6.50	6.40
***%Balance**	Assumed as Nitrogen, %	41.80	40.10
P_g	Flue Gas Static Pressure, inches of H_2O	23.44	23.44
t_s	Blower Outlet LFG Temperature, °F	138	139
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	2,459	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	2,589	
LFG_{CH4}	Methane, lb/hr	669.9	805.1
	Methane, grains/dscf	31.78	38.19
LFG_{CO2}	Carbon Dioxide, lb/hr	6,878.9	6,811.5
	Carbon Dioxide, grains/dscf	326.32	323.12
LFG_{O2}	Oxygen, lb/hr	796.8	784.6
	Oxygen, grains/dscf	37.80	37.22
LFG_{N2}	Balance gas as Nitrogen, lb/hr	4,485.9	4,303.5
	Balance gas as Nitrogen, grains/dscf	212.80	204.15

** Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer*

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	0.63	0.65
	Hydrogen Sulfide Rate, lb/hr	0.01	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.63	0.82
	Carboynl Sulfide Rate, lb/hr	0.01	0.02
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	8.20	0.67
	Methyl Mercaptan Rate, lb/hr	0.15	0.01
	Methyl Mercaptan Rate, grains/dscf	0.007	0.001
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.63	0.65
	Ethyl Mercaptan Rate, lb/hr	0.01	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,100.00	1,100.00
	Dimethyl Sulfide Rate, lb/hr	26.18	26.18
	Dimethyl Sulfide Rate, grains/dscf	1.242	1.242
CS_2	Carbon Disulfide Concentration, ppmd	1.20	1.40
	Carbon Disulfide Rate, lb/hr	0.04	0.04
	Carbon Disulfide Rate, grains/dscf	0.002	0.002
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	210.00	230.00
	Dimethyl Disulfide Rate, lb/hr	7.58	8.30
	Dimethyl Disulfide Rate, grains/dscf	0.360	0.394
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,500.00	1,600.00
	TRS-->SO2 Emission Rate, lb/hr	36.81	39.27
	TRS-->SO2 Emission Rate, grains/dscf	1.746	1.863
	TPY =	161.25	172.00

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 71-28
07/14/2016

Fleetzoom Total = 275 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		7/14/16
Time	Start	14:38	14:49
***%CH_4**	Methane, %	51.50	54.20
***%CO_2**	Carbon Dioxide, %	37.20	35.50
***'%O_2**	Oxygen, %	2.00	2.40
***%Balance**	Assumed as Nitrogen, %	9.30	7.90
P_g	Flue Gas Static Pressure, inches of H_2O	0.78	0.45
t_s	Blower Outlet LFG Temperature, °F	112.70	113.50
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	261	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	275	
LFG_{CH4}	Methane, lb/hr	335.9	353.5
	Methane, grains/dscf	150.15	158.02
LFG_{CO2}	Carbon Dioxide, lb/hr	665.5	635.1
	Carbon Dioxide, grains/dscf	297.53	283.93
LFG_{O2}	Oxygen, lb/hr	26.0	31.2
	Oxygen, grains/dscf	11.63	13.96
LFG_{N2}	Balance gas as Nitrogen, lb/hr	105.9	90.0
	Balance gas as Nitrogen, grains/dscf	47.35	40.22

** Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer*

		EP14 NQ	EP14 NQ-2
H_2S	Hydrogen Sulfide Concentration, ppmd	8.10	0.65
	Hydrogen Sulfide Rate, lb/hr	0.01	0.00
	Hydrogen Sulfide Rate, grains/dscf	0.005	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.67	0.65
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	1.90	0.65
	Methyl Mercaptan Rate, lb/hr	0.00	0.00
	Methyl Mercaptan Rate, grains/dscf	0.002	0.001
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.65	0.65
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	7.00	7.30
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.008	0.008
CS_2	Carbon Disulfide Concentration, ppmd	0.65	0.65
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	0.78	2.50
	Dimethyl Disulfide Rate, lb/hr	0.00	0.01
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.004
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	19.00	14.00
	TRS-->SO2 Emission Rate, lb/hr	0.05	0.04
	TRS-->SO2 Emission Rate, grains/dscf	0.022	0.016
	TPY =	0.22	0.16

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

AIR TECHNOLOGY
Laboratories, Inc.

July 19, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H071502-01/04

Enclosed are results for sample(s) received 7/15/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 7/19/16.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard	☐	48 hours	■	EDD	☐	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	☐	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452 SR1099
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	EPA 15/16 + TRS					
	Canister ID	Sample Start	Sample End	Lab Receive												
H071502-01	1617	-19.9	-3.5	-5.0	SQ OU 1	7/14/2016	1359	C	LFG	NA	X					
-02	J1721	-19.9	-3.5	-5.5	SQ OU 2	7/14/2016	1410	C	LFG	NA	X					
-03	1614	-19.7	-3.4	-5.5	NQ OU 1	7/14/2016	1438	C	LFG	NA	X					
-04	1539	-19.7	-3.5	-5.5	NQ OU 2	7/14/2016	1449	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer — COMPANY: Republic Services — DATE/TIME:

SAMPLED BY: Ryan Ayers — COMPANY: Republic Services — DATE/TIME

RELINQUISHED BY: [signature] — DATE: 7-14-16 1600 — RECEIVED BY: — DATE/TIME

RELINQUISHED BY: FEDEX — DATE: 7/15/16 1927 — RECEIVED BY: [signature] — DATE/TIME: 7/15/16 1927

RELINQUISHED BY: — DATE: — RECEIVED BY: — DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In (FedEx) UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other Rev. 03 - 5/7/09

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/15/16
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	H071502-01		H071502-02		H071502-03		H071502-04	
Client Sample I.D.:	SQ OU 1		SQ OU 2		NQ OU 1		NQ OU 2	
Date/Time Sampled:	7/14/16 13:59		7/14/16 14:10		7/14/16 14:38		7/14/16 14:49	
Date/Time Analyzed:	7/18/16 10:35		7/18/16 11:15		7/18/16 11:55		7/18/16 12:37	
QC Batch No.:	160718GC3A1		160718GC3A1		160718GC3A1		160718GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.3		3.3		3.3	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	ND	0.63	ND	0.65	8.1	0.65	ND	0.65
Carbonyl Sulfide	ND	0.63	0.82	0.65	0.67	0.65	ND	0.65
Methyl Mercaptan	8.2	0.63	0.67	0.65	1.9	0.65	ND	0.65
Ethyl Mercaptan	ND	0.63	ND	0.65	ND	0.65	ND	0.65
Dimethyl Sulfide	1,100 d	63.0	1,100 d	65.0	7.0	0.65	7.3	0.65
Carbon Disulfide	1.2	0.63	1.4	0.65	ND	0.65	ND	0.65
Dimethyl Disulfide	210 d	63.0	230 d	65.0	0.78	0.65	2.5	0.65
Total Reduced Sulfur	1,500	0.63	1,600	0.65	19	0.65	14	0.65

ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution

Reviewed/Approved By: _____ Date 7/18/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 160718GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/18/16 9:33		7/18/16 8:39		7/18/16 8:52			
Analyst Initials:	AS		AS		AS			
Datafile:	18jul004		18jul001		18jul002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	83	70-130%	84	70-130%	1.2	<30
Carbonyl Sulfide	ND	0.20	102	70-130%	103	70-130%	0.2	<30
Methyl Mercaptan	ND	0.20	86	70-130%	81	70-130%	5.9	<30
Ethyl Mercaptan	ND	0.20	108	70-130%	109	70-130%	1.3	<30
Dimethyl Sulfide	ND	0.20	91	70-130%	90	70-130%	1.6	<30
Carbon Disulfide	ND	0.20	84	70-130%	83	70-130%	0.5	<30
Dimethyl Disulfide	ND	0.20	107	70-130%	108	70-130%	0.2	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 7/18/16
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 70-27
07/05/2016

	PARAMETER	Blower Out
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL120)		
Date	Test Date	7/5/16
Start	Run Start Time	8:15
	Run Finish Time	9:42
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:27:40
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.56
% H_2O	Moisture Content of LFG, %	7.53
% RH	Relative Humidity, %	68.40
M_{fd}	Dry Mole Fraction	0.925
%CH_4	Methane, %	9.50
%CO_2	Carbon Dioxide, %	41.20
%O_2	Oxygen, %	6.50
%Balance	Assumed as Nitrogen, %	29.00
%H_2	Hydrogen, %	12.10
%CO	Carbon Monoxide, %	0.11
M_d	Dry Molecular Weight, lb/lb-Mole	30.94
M_s	Wet Molecular weight, lb/lb-Mole	29.97
P_g	Flue Gas Static Pressure, inches of H_2O	28.29
P_s	Absolute Flue Gas Pressure, inches of Mercury	31.64
t_s	Average Stack Gas Temperature, °F	121
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.189
v_s	Average LFG Velocity, feet/second	28.80
A_s	Stack Crossectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	2,078
Q_s	Standard Volumetric Flow Rate, scfm	2,234
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	2,338
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	10,012
NHV	Net Heating Value, Btu/scf	160
LFG_{CH4}	Methane, lb/hr	493.3
	Methane, grains/dscf	27.70
LFG_{CO2}	Carbon Dioxide, lb/hr	5,869.0
	Carbon Dioxide, grains/dscf	329.52
LFG_{O2}	Oxygen, lb/hr	673.2
	Oxygen, grains/dscf	37.80
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,629.6
	Balance gas as Nitrogen, grains/dscf	147.64
LFG_{H4}	Hydrogen, lb/hr	79.0
	Hydrogen, grains/dscf	4.43
LFG_{CO}	Carbon Monoxide, lb/hr	10.0
	Carbon Monoxide, grains/dscf	0.56

	Minimum vacuum requirement of -18" Hg not met so cannister was not used - no sample	**Outlet A**	**Outlet B**
H_2S	Hydrogen Sulfide Concentration, ppmd		0.58
	Hydrogen Sulfide Rate, lb/hr	0.00	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.000
COS	Carbonyl Sulfide Concentration, ppmd		0.58
	Carboynl Sulfide Rate, lb/hr	0.00	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.000	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd		47.00
	Methyl Mercaptan Rate, lb/hr	0.00	0.73
	Methyl Mercaptan Rate, grains/dscf	0.000	0.041
C_2H_6S	Ethyl Mercaptan Concentration, ppmd		1.00
	Ethyl Mercaptan Rate, lb/hr	0.00	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.000	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd		970.00
	Dimethyl Sulfide Rate, lb/hr	0.00	19.51
	Dimethyl Sulfide Rate, grains/dscf	0.000	1.095
CS_2	Carbon Disulfide Concentration, ppmd		1.20
	Carbon Disulfide Rate, lb/hr	0.00	0.03
	Carbon Disulfide Rate, grains/dscf	0.000	0.002
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd		160.00
	Dimethyl Disulfide Rate, lb/hr	0.00	3.94
	Dimethyl Disulfide Rate, grains/dscf	0.000	0.221
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd		1,300.00
	TRS-->SO2 Emission Rate, lb/hr	0.00	26.96
	TRS-->SO2 Emission Rate, grains/dscf	0.000	1.514

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Tuesday, July 05, 2016

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz	Kurz vs Fleetzoom
		Method 2	FleetZoom	Kurz FM			
BLOWER OUT	8:15	2,234	2,111	2,279	5.5%	-2.0%	7.3%

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 70-27
07/05/2016

	PARAMETER	Blower Out
	EP14 NORTH QUARRY LFG ONLY	
Date	Test Date	7/5/16
Start	Run Start Time	7:52
	Run Finish Time	8:50
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	0:57:50
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.50
% H_2O	Moisture Content of LFG, %	3.84
% RH	Relative Humidity, %	76.80
M_{fd}	Dry Mole Fraction	0.962
%CH_4	Methane, %	47.25
%CO_2	Carbon Dioxide, %	36.20
%O_2	Oxygen, %	2.75
%Balance	Assumed as Nitrogen, %	13.30
%H_2	Hydrogen, %	2.80
%CO	Carbon Monoxide, %	0.0028
M_d	Dry Molecular Weight, lb/lb-Mole	28.05
M_s	Wet Molecular weight, lb/lb-Mole	27.67
P_g	Flue Gas Static Pressure, inches of H_2O	1.09
P_s	Absolute Flue Gas Pressure, inches of Mercury	29.58
t_s	Average Stack Gas Temperature, °F	92
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.022
v_s	Average LFG Velocity, feet/second	10.31
A_s	Stack Crossectional Area, square feet	0.51
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	289
Q_s	Standard Volumetric Flow Rate, scfm	300
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	317
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	1,261
NHV	Net Heating Value, Btu/scf	429.8
LFG_{CH4}	Methane, lb/hr	340.9
	Methane, grains/dscf	137.76
LFG_{CO2}	Carbon Dioxide, lb/hr	716.4
	Carbon Dioxide, grains/dscf	289.53
LFG_{O2}	Oxygen, lb/hr	39.6
	Oxygen, grains/dscf	15.99
LFG_{N2}	Balance gas as Nitrogen, lb/hr	167.5
	Balance gas as Nitrogen, grains/dscf	67.71
LFG_{H4}	Hydrogen, lb/hr	2.5
	Hydrogen, grains/dscf	1.03
LFG_{CO}	Carbon Monoxide, lb/hr	0.0
	Carbon Monoxide, grains/dscf	0.01

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	39.00	33.00
	Hydrogen Sulfide Rate, lb/hr	0.06	0.05
	Hydrogen Sulfide Rate, grains/dscf	0.024	0.020
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	2.50	1.10
	Methyl Mercaptan Rate, lb/hr	0.01	0.00
	Methyl Mercaptan Rate, grains/dscf	0.002	0.001
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.59	0.63
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	5.10	4.80
	Dimethyl Sulfide Rate, lb/hr	0.01	0.01
	Dimethyl Sulfide Rate, grains/dscf	0.006	0.005
CS_2	Carbon Disulfide Concentration, ppmd	0.56	0.56
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	0.56	0.56
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	48.00	40.00
	TRS-->SO2 Emission Rate, lb/hr	0.14	0.12
	TRS-->SO2 Emission Rate, grains/dscf	0.056	0.047

❶ TRS assumed moelcular mass = SO2, 64.06 gram/mole, I.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Tuesday, July 05, 2016

LOCATION	TIME	FLOW -SCFM		Method 2 vs. Fleetzoom
		Method 2	FleetZoom	
EP14 NQ LFG	7:52	300	306	-2.2%

Air TECHNOLOGY Laboratories, Inc.

July 8, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H070601-01/03

Enclosed are results for sample(s) received 7/06/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 7/07/16.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

Air TECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard	☐	48 hours	☐	EDD	☒	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	■	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	☐	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton LF Monthly Permit Flare LFG Testing
Report To:	Nick Bauers/Ryans Ayers/David Randall
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	NBauer@republicservices.com

BILLING

P.O. No.:	PO4862452 5881099
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg) Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ASTM 1946 (fixed gases, CH4, CO2, O2, & N2), + CO, H2, & Btu	EPA Method 15/16 + TRS	ASTM 1946 + H2, CO, BTU by GHT only			
H070601-GHT	4435				Blower Outlet A	7/5/2016										
-01	1302	-20.44	-2.91	-3.5	Blower Outlet B	7/5/2016	916	C -6L	LFG	He	X	X				
-02	1296	-20.44	-3	-3	NQ EP14 A	7/5/2016	754	C -6L	LFG	He	X	X	X			
-03	5978	-21	-3	-3	NQ EP14 B	7/5/2016	821	C -6L	LFG	He	X	X	X			

AUTHORIZATION TO PERFORM WORK: Dave Penoyer — COMPANY: Republic Services — DATE/TIME:

SAMPLED BY: Ryan Ayers — COMPANY: Republic Services — DATE/TIME

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
[signature]	7-5-16 1000		
Fed Ex		[signature]	7/6/16 1051

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

COMMENTS: Canister 4435 had low initial pressure. No sample taken.

* ANALYTICAL INST REVISIONS CONF'D VIA EMAIL FROM DRANDALL 7/6/16 1536

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/09/16
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	H070601-01		H070601-02		H070601-03			
Client Sample I.D.:	Blower Outlet B		NQ EP14 A		NQ EP14 B			
Date/Time Sampled:	7/5/16 9:16		7/5/16 7:54		7/5/16 8:21			
Date/Time Analyzed:	7/7/16 11:42		7/7/16 12:07		7/7/16 12:34			
QC Batch No.:	160707GC3A1		160707GC3A1		160707GC3A1			
Analyst Initials:	AS		AS		AS			
Dilution Factor:	2.9		2.8		2.8			
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv		
Hydrogen Sulfide	ND	0.58	39 d	5.6	33 d	5.6		
Carbonyl Sulfide	ND	0.58	ND	0.56	ND	0.56		
Methyl Mercaptan	47 d	5.8	2.5	0.56	1.1	0.56		
Ethyl Mercaptan	1.0	0.58	0.59	0.56	0.63	0.56		
Dimethyl Sulfide	970 d	58.0	5.1	0.56	4.8	0.56		
Carbon Disulfide	1.2	0.58	ND	0.56	ND	0.56		
Dimethyl Disulfide	160 d	5.8	ND	0.56	ND	0.56		
Total Reduced Sulfur	1,300	0.58	48	0.56	40	0.56		

ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution

Reviewed/Approved By: _____ Date 7/7/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/7/16 10:08		7/7/16 8:52		7/7/16 9:04			
Analyst Initials:	AS		AS		AS			
Datafile:	07jul008		07jul002		07jul003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	94	70-130%	94	70-130%	0.2	<30
Carbonyl Sulfide	ND	0.20	99	70-130%	99	70-130%	0.2	<30
Methyl Mercaptan	ND	0.20	98	70-130%	96	70-130%	2.4	<30
Ethyl Mercaptan	ND	0.20	85	70-130%	106	70-130%	21.6	<30
Dimethyl Sulfide	ND	0.20	94	70-130%	92	70-130%	2.7	<30
Carbon Disulfide	ND	0.20	94	70-130%	103	70-130%	9.6	<30
Dimethyl Disulfide	ND	0.20	115	70-130%	113	70-130%	2.0	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 7/7/16
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/09/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H070601-01							
Client Sample I.D.:	Blower Outlet B							
Date/Time Sampled:	7/5/16 9:16							
Date/Time Analyzed:	7/6/16 17:44							
QC Batch No.:	160706GC8A2							
Analyst Initials:	AS							
Dilution Factor:	2.9							
ANALYTE	**Result % v/v**	**RL % v/v**						
Hydrogen	12.1	2.9						
Carbon Dioxide	41.2	0.029						
Oxygen/Argon	6.5	1.4						
Nitrogen	29.0	2.9						
Methane	9.5	0.0029						
Carbon Monoxide	0.11	0.0029						
Net Heating Value (BTU/ft3)	159.8	2.9						
Gross Heating Value (BTU/ft3)	181.1	2.9						

Results normalized including non-methane hydrocarbons
BTU values based on D1946 analysis and non-methane analysis assumed as propane
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7/7/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/09/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H070601-02		H070601-03					
Client Sample I.D.:	NQ EP14 A		NQ EP14 B					
Date/Time Sampled:	7/5/16 7:54		7/5/16 8:21					
Date/Time Analyzed:	7/6/16 17:59		7/6/16 18:14					
QC Batch No.:	160706GC8A2		160706GC8A2					
Analyst Initials:	AS		AS					
Dilution Factor:	2.8		2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	ND	2.8	ND	2.8				
Carbon Dioxide	36.2	0.028	36.2	0.028				
Oxygen/Argon	2.7	1.4	2.8	1.4				
Nitrogen	13.3	2.8	13.3	2.8				
Methane	47.2	0.0028	47.3	0.0028				
Carbon Monoxide	ND	0.0028	ND	0.0028				
Net Heating Value (BTU/ft3) methane only	429.6	2.8	430.0	2.8				
Gross Heating Value (BTU/ft3) methane only	477.2	2.8	477.6	2.8				

Results normalized including non-methane hydrocarbons
BTU values based on D1946 analysis methane only
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7/7/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 160706GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/6/16 17:30		7/6/16 15:46		7/6/16 16:00			
Analyst Initials:	AS		AS		AS			
Datafile:	06jul035		06jul028		06jul029			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	106	70-130%	106	70-130%	0.2	<30
Carbon Dioxide	ND	0.010	106	70-130%	105	70-130%	0.3	<30
Oxygen/Argon	ND	0.50	105	70-130%	104	70-130%	0.1	<30
Nitrogen	ND	1.0	105	70-130%	105	70-130%	0.3	<30
Methane	ND	0.0010	101	70-130%	97	70-130%	3.1	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ **Date:** 7/7/16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch No.: 160706GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/6/16 17:30		7/6/16 16:17		7/6/16 16:31			
Analyst Initials:	AS		AS		AS			
Datafile:	06jul035		06jul030		06jul031			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Carbon Monoxide	ND	0.0010	110	70-130%	110	70-130%	0.1	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 7/7/16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

ATTACHMENT C

GAS WELL ANALYSIS MAPS

LEGEND

< = Well Location

Hydrogen

	<	10%
10	<	20%
20	<	30%
30	<	40%
	>	40%

NOTES:

Hydrogen represents the laboratory reported concentration for samples collected during the month.

Only points monitored during the report period show data.

1 inch = 70 meters

0 35 70 105 140

Hydrogen Data Map - July 2016 - Bridgeton Landfill

LEGEND

< = Well Location

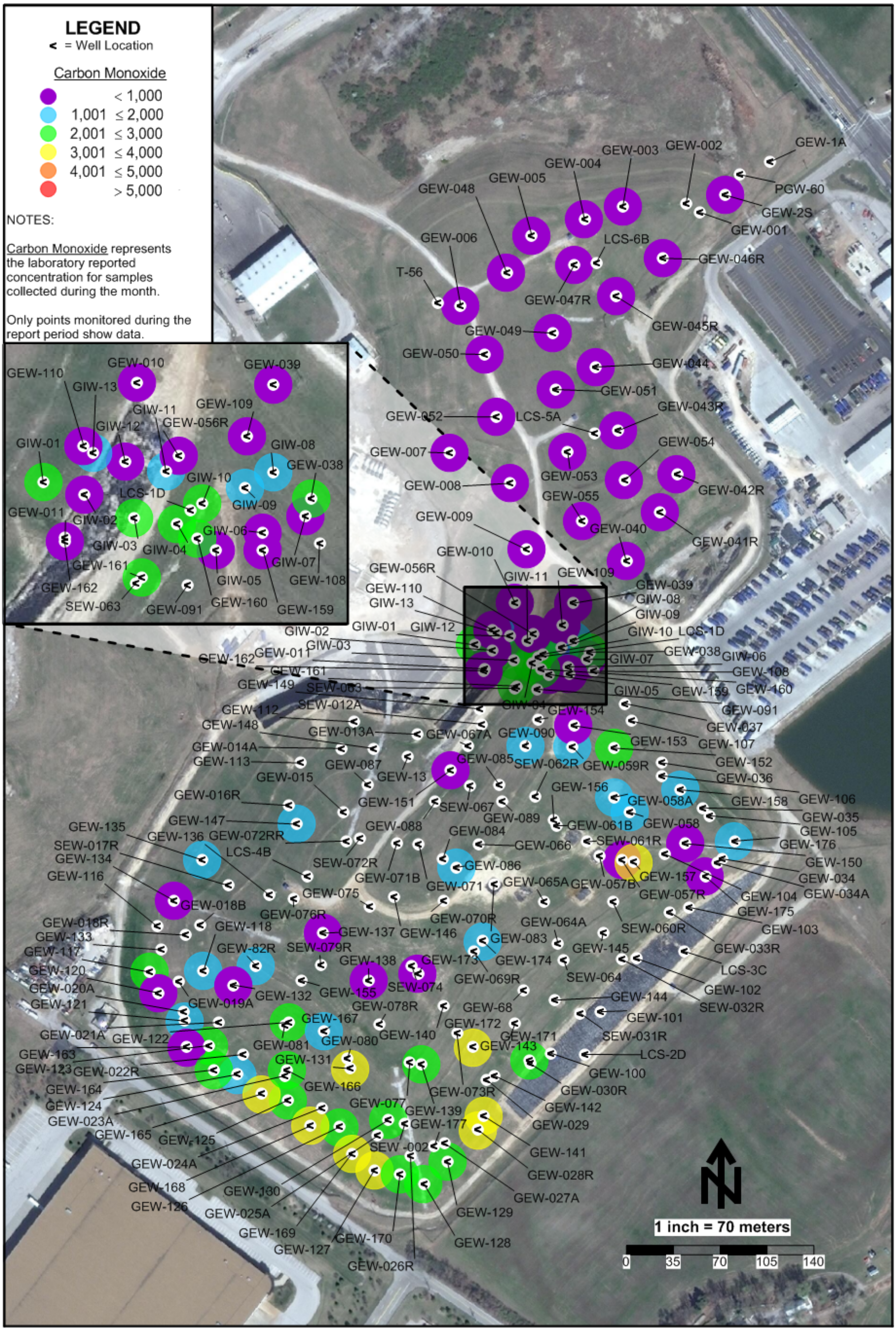
Carbon Monoxide

- < 1,000
- 1,001 ≤ 2,000
- 2,001 ≤ 3,000
- 3,001 ≤ 4,000
- 4,001 ≤ 5,000
- > 5,000

NOTES:

Carbon Monoxide represents the laboratory reported concentration for samples collected during the month.

Only points monitored during the report period show data.



Carbon Monoxide Data Map - July 2016 - Bridgeton Landfill

LEGEND

< = Well Location

Maximum Temperature

- < 131°
- 131 < 151°
- 151 < 171°
- 171 < 191°
- 191 < 211°
- 211 < 231°
- > 231°

NOTES:

Maximum Temperature represents the maximum initial wellhead temperature reading collected during the month.

Only points monitored during the report period show data.

GEW-1A GEW-002 GEW-003 GEW-004 GEW-005 GEW-048 PGW-60 GEW-2S GEW-001 GEW-006 LCS-6B GEW-046R T-56 GEW-047R GEW-045R GEW-049 GEW-050 GEW-044 GEW-051 GEW-052 LCS-5A GEW-043R GEW-007 GEW-053 GEW-054 GEW-008 GEW-042R GEW-055 GEW-009 GEW-040 GEW-041R GEW-010 GEW-056R GEW-011 GEW-109 GEW-039 GEW-110 GIW-13 GIW-08 GIW-09 GIW-01 GIW-12 GIW-10 LCS-1D GIW-02 GIW-03 GEW-038 GIW-06 GEW-162 GEW-011 GIW-07 GEW-108 GEW-161 GEW-149 SEW-063 GIW-05 GEW-159 GEW-160 GEW-091 GEW-112 SEW-012A GIW-04 GEW-154 GEW-037 GEW-148 GEW-013A GEW-067A GEW-090 GEW-107 GEW-153 GEW-014A GEW-152 GEW-113 GEW-087 GEW-085 SEW-062R GEW-059R GEW-036 GEW-015 GEW-13 GEW-156 GEW-106 GEW-016R GEW-151 SEW-067 GEW-058A GEW-158 GEW-035 GEW-147 GEW-089 GEW-061B GEW-058 GEW-105 GEW-135 GEW-088 GEW-084 GEW-136 GEW-072RR GEW-066 SEW-061R GEW-176 SEW-017R LCS-4B GEW-150 GEW-134 SEW-072R GEW-086 GEW-034 GEW-116 GEW-071B GEW-071 GEW-065A GEW-057B GEW-157 GEW-034A GEW-018B GEW-075 GEW-057R GEW-104 GEW-018R GEW-076R GEW-070R GEW-175 GEW-118 GEW-064A GEW-103 GEW-133 GEW-137 GEW-146 SEW-060R GEW-083 GEW-033R GEW-117 GEW-82R SEW-079R GEW-145 GEW-120 GEW-173 GEW-174 LCS-3C GEW-138 GEW-069R SEW-064 GEW-020A GEW-132 GEW-155 SEW-074 GEW-102 GEW-019A GEW-144 GEW-121 GEW-078R GEW-68 SEW-032R GEW-167 GEW-172 GEW-101 GEW-021A GEW-122 GEW-140 GEW-171 SEW-031R GEW-081 GEW-080 GEW-143 GEW-163 GEW-131 LCS-2D GEW-123 GEW-022R GEW-100 GEW-166 GEW-030R GEW-164 GEW-073R GEW-142 GEW-124 GEW-077 GEW-139 GEW-029 GEW-023A GEW-177 GEW-165 GEW-125 SEW -002 GEW-141 GEW-024A GEW-028R GEW-168 GEW-130 GEW-027A GEW-126 GEW-025A GEW-129 GEW-169 GEW-170 GEW-128 GEW-127 GEW-026R

1 inch = 70 meters

0 35 70 105 140

Initial Temperature Maximums - July 2016 - Bridgeton Landfill

ATTACHMENT D

LABORATORY DATA

ATTACHMENT D-1

LAB ANALYSIS SUMMARY

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
North Quarry								
GEW-002	3/7/2016	56	42	ND	ND	0.04	ND	
GEW-002	4/14/2016	54	42	ND	3.6	ND	ND	
GEW-002	5/13/2016	52	39	2	6.8	ND	ND	See Note 3
GEW-002	6/8/2016	54	42	ND	ND	ND	ND	
GEW-02S	5/13/2016	60	37	ND	ND	ND	ND	
GEW-02S	7/11/2016	62	35	ND	ND	ND	ND	
GEW-003	3/7/2016	54	40	ND	5	0.1	ND	
GEW-003	4/14/2016	45	37	1.9	16	0.1	ND	See Note 3
GEW-003	5/13/2016	52	39	ND	8.2	0.1	ND	
GEW-003	6/8/2016	51	40	ND	8.8	0.1	ND	
GEW-003	7/11/2016	52	39	ND	7.9	0.1	ND	
GEW-004	3/7/2016	56	41	ND	ND	0.1	ND	
GEW-004	4/14/2016	51	39	ND	8.3	0.1	ND	
GEW-004	5/13/2016	50	39	ND	11	0.1	ND	
GEW-004	6/8/2016	52	39	ND	7.5	0.04	ND	
GEW-004	7/11/2016	54	40	ND	4.9	0.1	ND	
GEW-005	3/7/2016	53	38	ND	8	0.1	ND	
GEW-005	4/14/2016	50	37	ND	12	0.1	ND	
GEW-005	5/13/2016	31	27	4	38	0.03	ND	See Note 3
GEW-005	6/8/2016	51	38	ND	9.7	0.05	ND	
GEW-005	7/11/2016	46	35	ND	17	ND	ND	
GEW-006	3/7/2016	56	38	ND	5.4	ND	ND	
GEW-006	5/12/2016	50	37	ND	13	ND	ND	
GEW-006	7/12/2016	55	38	ND	6.4	ND	ND	
GEW-007	3/7/2016	57	41	ND	ND	ND	ND	
GEW-007	5/12/2016	55	39	ND	4.5	ND	ND	
GEW-007	7/12/2016	57	40	ND	ND	ND	ND	
GEW-008	3/7/2016	49	47	ND	ND	1.6	ND	
GEW-008	4/18/2016	49	46	ND	ND	ND	ND	
GEW-008	5/12/2016	50	47	ND	ND	1	ND	
GEW-008	6/9/2016	50	46	ND	ND	1	ND	
GEW-008	7/12/2016	50	47	ND	ND	1.1	ND	
GEW-009	3/7/2016	54	43	ND	ND	0.9	ND	
GEW-009	4/18/2016	50	42	ND	5.7	ND	ND	
GEW-009	5/12/2016	54	42	ND	ND	0.7	ND	
GEW-009	6/9/2016	52	42	ND	5.1	0.7	ND	
GEW-009	7/12/2016	53	43	ND	ND	0.5	ND	
GEW-040	3/7/2016	55	38	ND	5	ND	ND	
GEW-040	4/14/2016	57	40	ND	ND	ND	ND	
GEW-040	5/9/2016	58	40	ND	ND	ND	ND	
GEW-040	6/7/2016	57	40	ND	ND	ND	ND	
GEW-040	7/11/2016	57	40	ND	ND	ND	ND	
GEW-041R	3/7/2016	57	41	ND	ND	ND	ND	
GEW-041R	5/9/2016	57	40	ND	ND	ND	ND	
GEW-041R	7/11/2016	52	36	2.3	9.5	ND	ND	See Note 3
GEW-042R	3/7/2016	56	42	ND	ND	ND	ND	
GEW-042R	4/14/2016	55	43	ND	ND	ND	ND	
GEW-042R	5/18/2016	55	42	ND	ND	ND	ND	
GEW-042R	6/7/2016	56	42	ND	ND	ND	ND	
GEW-042R	7/11/2016	56	42	ND	ND	ND	ND	
GEW-043R	3/7/2016	55	43	ND	ND	0.05	ND	
GEW-043R	5/9/2016	55	41	ND	3.3	0.2	ND	
GEW-043R	7/11/2016	55	42	ND	ND	0.3	ND	
GEW-044	3/7/2016	58	40	ND	ND	ND	ND	
GEW-044	5/9/2016	51	35	ND	ND	ND	ND	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-044	7/11/2016	57	40	ND	ND	ND	ND	
GEW-045R	3/7/2016	58	40	ND	ND	ND	ND	
GEW-045R	4/14/2016	53	43	ND	3.3	ND	ND	
GEW-045R	5/9/2016	53	40	ND	5.5	ND	ND	
GEW-045R	6/7/2016	54	41	ND	4.2	ND	ND	
GEW-045R	7/11/2016	55	41	ND	ND	ND	ND	
GEW-046R	3/7/2016	55	40	ND	4.4	0.1	ND	
GEW-046R	4/14/2016	50	39	ND	10	0.1	ND	
GEW-046R	5/13/2016	52	39	ND	7.9	0.1	ND	
GEW-046R	6/7/2016	54	40	ND	4.6	0.1	ND	
GEW-046R	7/11/2016	41	30	5.5	23	0.1	ND	See Note 3
GEW-047R	3/7/2016	52	39	ND	8.1	0.1	ND	
GEW-047R	4/14/2016	54	42	ND	ND	0.1	ND	
GEW-047R	5/13/2016	41	33	3.1	23	0.1	ND	See Note 3
GEW-047R	6/8/2016	51	39	ND	8	ND	ND	
GEW-047R	7/11/2016	49	38	ND	11	0.1	ND	
GEW-048	3/7/2016	57	40	ND	ND	ND	ND	
GEW-048	4/14/2016	53	38	ND	8.5	ND	ND	
GEW-048	5/13/2016	53	39	ND	7.3	0.04	ND	
GEW-048	6/8/2016	55	39	ND	4.9	ND	ND	
GEW-048	7/12/2016	55	39	ND	4.8	0.03	ND	
GEW-049	3/7/2016	57	40	ND	ND	0.1	ND	
GEW-049	4/14/2016	55	38	ND	5.3	0.1	ND	
GEW-049	5/13/2016	48	36	ND	15	0.05	ND	
GEW-049	6/8/2016	51	37	ND	11	0.05	ND	
GEW-049	7/12/2016	46	36	ND	16	ND	ND	
GEW-050	3/7/2016	56	39	ND	4.6	0.1	ND	
GEW-050	5/12/2016	54	37	ND	7.5	ND	ND	
GEW-050	7/12/2016	57	39	ND	3.5	0.1	ND	
GEW-051	3/7/2016	55	42	ND	ND	1.2	ND	
GEW-051	5/13/2016	55	41	ND	ND	1.1	ND	
GEW-051	7/12/2016	56	42	ND	ND	0.9	ND	
GEW-052	3/7/2016	53	38	ND	8.9	0.1	ND	
GEW-052	5/12/2016	54	38	ND	7	0.04	ND	
GEW-052	7/12/2016	54	40	ND	6	ND	ND	
GEW-053	3/7/2016	49	41	ND	ND	5.7	65	
GEW-053	4/14/2016	49	42	ND	ND	6.1	81	
GEW-053	5/13/2016	50	42	ND	ND	4.7	66	
GEW-053	6/8/2016	50	42	ND	ND	5.6	68	
GEW-053	7/12/2016	48	45	ND	ND	5.5	65	
GEW-054	3/7/2016	53	43	ND	ND	3.1	34	
GEW-054	4/14/2016	51	42	ND	ND	4.9	41	
GEW-054	5/13/2016	49	42	ND	ND	5	42	
GEW-054	6/8/2016	51	42	ND	ND	4.9	42	
GEW-054	7/12/2016	52	42	ND	ND	4.2	33	
GEW-055	3/7/2016	54	43	ND	ND	1.1	ND	
GEW-055	4/14/2016	52	41	ND	4.1	1.2	ND	
GEW-055	5/13/2016	53	43	ND	ND	1.4	ND	
GEW-055	6/8/2016	53	42	ND	ND	1.4	ND	
GEW-055	7/12/2016	53	43	ND	ND	1.4	ND	

Notes: (1) Based on the comparison of field to laboratory readings, oxygen to balance gas ratios, and historical concentrations, the sample was determined to be suspect due to oxygen introduction which likely occurred during sample collection or laboratory analytical methods. (2) MDNR also collected duplicate LFG samples at these locations during this sampling period. (3) Based on the oxygen verification readings taken with an Envision meter, it was determined there is a sample train leak.

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
South Quarry								
GEW-010	3/3/2016	38	50	ND	9.2	1.7	130	
GEW-010	4/13/2016	41	53	ND	4.3	1	110	
GEW-010	5/12/2016	44	49	ND	5.1	0.6	76	
GEW-010	6/6/2016	53	43	ND	ND	0.2	ND	
GEW-010	7/11/2016	46	49	ND	3.3	0.3	37	
GEW-022R	3/9/2016	0.7	65	ND	ND	30	4,300	
GEW-022R	5/10/2016	0.4	56	3.4	12	26	4,000	
GEW-028R	3/9/2016	0.1	61	ND	ND	34	4,300	
GEW-028R	5/10/2016	0.1	45	4.6	17	31	3,800	
GEW-028R	7/14/2016	0.2	50	2.5	9.2	33	3,800	See Note 4
GEW-038	3/3/2016	0.3	44	7.4	27	21	2,500	
GEW-038	4/13/2016	0.4	35	9.6	35	19	2,200	See Note 4
GEW-038	5/12/2016	0.5	49	4.6	17	27	3,100	See Note 4
GEW-038	6/6/2016	0.5	57	3.7	13	24	3,300	See Note 4
GEW-038	7/11/2016	0.5	51	4.3	16	27	2,700	See Note 4
GEW-039	3/3/2016	39	56	ND	ND	2	160	
GEW-039	4/13/2016	37	59	ND	ND	2.8	230	
GEW-039	5/12/2016	35	52	ND	10	1.3	120	
GEW-039	6/6/2016	42	54	ND	ND	1.1	91	
GEW-039	7/11/2016	36	53	ND	8.7	1.5	110	
GEW-056R	3/3/2016	17	39	ND	32	11	610	
GEW-056R	4/13/2016	12	39	ND	35	13	750	
GEW-056R	5/12/2016	12	39	ND	36	11	640	
GEW-056R	6/6/2016	16	49	ND	24	9	680	
GEW-056R	7/11/2016	13	49	ND	19	17	770	
GEW-057R	5/9/2016	10	48	3.9	24	13	1,400	See Note 4
GEW-057R	7/14/2016	14	34	3.8	44	4.3	320	See Note 4
GEW-058	5/9/2016	5	51	1.7	6.9	34	2,200	See Note 4
GEW-058	7/17/2016	1.7	48	2.5	12	33	1,800	See Note 4
GEW-058A	3/9/2016	0.5	43	4.9	18	33	2,100	
GEW-058A	5/9/2016	0.4	38	6.3	23	32	2,000	See Note 4
GEW-058A	7/14/2016	15	42	3.2	14	24	1,400	See Note 4
GEW-059R	3/9/2016	1.3	50	ND	4.4	42	2,000	
GEW-059R	5/9/2016	0.9	50	ND	ND	45	2,600	
GEW-059R	7/14/2016	3.8	50	ND	ND	41	1,600	
GEW-065A	5/9/2016	1.1	17	14	57	9.9	760	See Note 4
GEW-082R	3/9/2016	0.8	54	ND	ND	40	2,000	
GEW-082R	5/10/2016	14	49	ND	ND	33	1,300	
GEW-082R	7/14/2016	2.3	48	1.8	6.4	40	1,800	See Note 3
GEW-086	5/10/2016	5.7	48	ND	3.7	41	2,300	
GEW-086	7/14/2016	8.2	49	ND	ND	38	1,300	
GEW-090	3/9/2016	7.3	49	ND	ND	39	2,100	
GEW-090	5/10/2016	0.9	56	ND	4.1	36	2,100	
GEW-090	7/14/2016	15	46	ND	ND	35	1,600	
GEW-102	3/9/2016	1.3	56	ND	3.4	36	1,400	
GEW-102	5/9/2016	2.4	54	1.7	6	33	1,300	
GEW-107	5/10/2016	0.4	60	ND	3.8	33	3,000	
GEW-109	3/3/2016	11	46	2.9	21	19	1,100	
GEW-109	4/13/2016	10	52	ND	9.7	26	1,600	
GEW-109	5/12/2016	11	53	ND	13	22	1,100	
GEW-109	6/6/2016	11	63	ND	3.3	20	1,600	
GEW-109	7/11/2016	6.3	32	8.5	37	15	720	See Note 3
GEW-110	3/3/2016	2	36	8	32	21	1,200	
GEW-110	4/13/2016	9.7	35	5	38	11	870	See Note 4
GEW-110	5/12/2016	1	12	16	67	4.6	340	See Note 4

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-110	6/6/2016	15	36	3.2	42	2.9	300	See Note 4
GEW-110	7/11/2016	12	34	3.6	43	6.9	410	See Note 4
GEW-116	5/10/2016	3.3	61	2.3	8.4	24	2,200	See Note 4
GEW-117	5/10/2016	7.5	63	ND	4.8	22	2,300	
GEW-117	7/14/2016	5.6	66	ND	ND	23	2,100	
GEW-118	5/10/2016	1.6	49	1.8	6.2	40	2,200	See Note 3
GEW-118	7/14/2016	1.7	52	2.2	9.6	32	1,500	See Note 4
GEW-120	3/2/2016	13	60	1.6	14	11	950	
GEW-120	5/11/2016	16	59	1.9	14	7.7	470	See Note 4
GEW-120	7/12/2016	15	57	ND	21	6.2	300	
GEW-121	3/2/2016	4.5	61	ND	ND	31	2,600	
GEW-121	5/11/2016	6.6	56	ND	4.6	30	2,200	
GEW-121	7/12/2016	6.9	57	ND	4.8	29	1,800	
GEW-122	3/2/2016	5.2	56	ND	3.1	34	2,900	
GEW-122	5/11/2016	14	53	ND	8.7	23	2,100	
GEW-122	7/12/2016	11	53	ND	3.2	30	2,200	
GEW-123	5/11/2016	4	59	ND	ND	31	3,400	
GEW-123	7/12/2016	5	60	ND	ND	30	2,700	
GEW-124	3/2/2016	7.2	63	ND	2.9	26	1,800	
GEW-124	5/11/2016	0.1	5.9	20	71	2.1	220	See Note 4
GEW-124	7/12/2016	10	61	ND	ND	23	1,900	
GEW-125	5/11/2016	0.5	60	ND	ND	36	3,300	
GEW-125	7/13/2016	0.6	58	ND	ND	37	2,800	
GEW-126	3/2/2016	10	56	ND	ND	30	3,200	
GEW-126	5/10/2016	11	54	ND	4.3	28	3,200	
GEW-126	7/13/2016	15	51	ND	3.8	27	2,600	
GEW-127	3/2/2016	1.3	61	1.6	5.6	29	4,100	
GEW-127	5/10/2016	0.8	65	ND	ND	30	5,100	
GEW-127	7/13/2016	1.9	65	ND	ND	28	3,900	
GEW-128	3/2/2016	6.5	66	ND	ND	25	2,800	
GEW-128	5/10/2016	3.4	61	ND	ND	32	3,400	
GEW-128	7/13/2016	8.2	63	ND	ND	25	2,600	
GEW-129	3/2/2016	5.4	59	ND	ND	32	3,000	
GEW-129	5/10/2016	1.8	58	ND	5.8	31	3,400	
GEW-129	7/13/2016	2	57	2.5	8.8	29	2,800	See Note 3
GEW-130	5/10/2016	0.3	58	ND	ND	38	4,400	
GEW-130	7/13/2016	3.6	53	3.6	13	25	3,000	See Note 4
GEW-131	3/2/2016	10	47	3.4	12	27	2,200	
GEW-131	5/11/2016	20	49	ND	ND	28	2,300	
GEW-131	7/13/2016	0.3	54	ND	ND	42	3,400	
GEW-132	3/2/2016	7.4	49	3.4	19	20	1,700	
GEW-132	5/11/2016	8.7	45	4.3	29	12	880	
GEW-132	7/12/2016	10	46	3.3	24	15	890	See Note 4
GEW-133	5/11/2016	0.2	12	17	62	8.6	750	See Note 4
GEW-134	5/12/2016	5.7	25	13	52	4.8	400	See Note 4
GEW-134	7/7/2016	7	30	8.4	49	5.1	330	See Note 4
GEW-135	5/12/2016	4.1	31	9	40	15	910	See Note 4
GEW-135	7/7/2016	5.2	46	4.2	17	26	1,200	See Note 4
GEW-136	5/12/2016	3.8	23	12	55	5.9	360	See Note 4
GEW-137	3/4/2016	14	44	ND	39	1	ND	
GEW-137	5/12/2016	11	31	2.2	56	0.1	ND	See Note 3
GEW-137	7/7/2016	16	35	1.7	47	0.1	ND	See Note 3
GEW-138	3/4/2016	14	65	ND	7.8	12	1,300	
GEW-138	5/12/2016	5.1	29	5.0	58	2.5	320	See Note 4
GEW-138	7/12/2016	3.1	26	5.9	57	6.9	520	See Note 4
GEW-139	3/4/2016	1	60	ND	ND	35	4,000	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-139	5/12/2016	1.1	41	6.7	26	25	2,700	See Note 4
GEW-139	7/13/2016	2.7	52	2.3	9.2	32	3,000	See Note 4
GEW-140	3/4/2016	9.4	58	ND	3.7	28	2,000	
GEW-140	5/12/2016	7.6	39	6.8	29	17	1,600	See Note 4
GEW-141	3/4/2016	1.3	62	ND	ND	32	3,900	
GEW-141	5/10/2016	0.4	59	ND	ND	34	3,800	
GEW-141	7/14/2016	0.2	54	2.5	8.7	33	3,400	See Note 3
GEW-143	5/18/2016	0.2	37	7.3	27	28	2,800	See Note 4
GEW-144	5/18/2016	0.7	51	3.3	12	31	2,900	See Note 4
GEW-145	3/4/2016	4	56	ND	3.5	35	2,400	
GEW-145	5/18/2016	1.3	54	ND	4.6	37	2,900	
GEW-146	5/12/2016	2.8	14	13	69	0.6	97	See Note 4
GEW-147	3/9/2016	10	49	ND	6.8	32	1,900	
GEW-147	5/12/2016	8.9	50	1.9	8.7	30	1,700	See Note 3
GEW-147	7/7/2016	9.9	48	2.6	9.5	29	1,400	See Note 4
GEW-148	5/12/2016	3.5	46	4.4	16	29	2,400	See Note 3
GEW-149	3/9/2016	6.8	35	8.5	38	11	970	See Note 4
GEW-149	5/12/2016	8	43	5.6	27	15	1,400	See Note 4
GEW-150	3/9/2016	4	27	12	45	11	830	
GEW-150	5/12/2016	10	55	2.9	12	19	1,800	See Note 4
GEW-150	7/12/2016	12	46	5.4	23	12	920	See Note 4
GEW-151	5/12/2016	0.2	6.9	19	68	6.3	570	See Note 4
GEW-151	7/6/2016	11	36	5.5	39	8.5	550	See Note 4
GEW-152	3/9/2016	6.2	47	2.2	7.9	35	2,800	
GEW-152	5/18/2016	7.4	50	ND	5	36	3,100	
GEW-152	7/12/2016	11	51	ND	ND	33	2,200	
GEW-153	3/9/2016	23	45	ND	12	18	810	
GEW-153	5/13/2016	21	47	ND	7.7	23	1,100	
GEW-153	7/12/2016	29	43	ND	12	13	430	
GEW-154	3/9/2016	14	24	11	45	5.7	270	
GEW-154	5/12/2016	11	27	9.9	40	12	840	See Note 4
GEW-155	3/9/2016	7.9	37	8.9	41	4.8	430	
GEW-155	5/12/2016	4.3	34	6.1	41	4.3	700	See Note 3
GEW-155	5/18/2016	4.4	48	ND	19	27	1,300	
GEW-156	5/12/2016	6.3	20	12	60	1.5	230	See Note 4
GEW-157	7/12/2016	0.7	56	ND	ND	39	3,100	
GEW-158	5/18/2016	0.8	45	4.9	19	30	1,900	See Note 4
GEW-158	7/12/2016	21	56	ND	ND	19	1,100	
GEW-159	3/9/2016	13	43	ND	35	7.8	660	
GEW-159	5/13/2016	16	51	ND	22	8.2	590	
GEW-159	7/14/2016	19	55	ND	16	8.1	500	
GEW-160	5/12/2016	3	54	1.8	6.6	33	2,800	See Note 3
GEW-160	7/6/2016	4.1	57	ND	3.4	33	2,400	
GEW-161	5/12/2016	1.3	28	4.3	25	40	3,000	See Note 4
GEW-161	7/6/2016	0.5	54	ND	3.5	39	2,700	
GEW-162	5/12/2016	15	56	3.6	13	11	940	See Note 3
GEW-162	7/6/2016	22	65	2.2	8.3	1.5	140	See Note 4
GEW-163	5/11/2016	6.8	47	6.2	27	11	1,300	See Note 4
GEW-163	7/12/2016	7.7	48	5.7	26	12	1,000	See Note 4
GEW-164	5/11/2016	6.3	73	1.8	6.6	11	1,800	See Note 4
GEW-164	7/12/2016	3.7	72	ND	3.5	19	2,200	
GEW-165	5/11/2016	1	69	ND	3.9	22	4,400	
GEW-165	7/12/2016	1.1	67	ND	ND	27	3,300	
GEW-166	5/11/2016	1.4	56	1.8	7	31	3,800	See Note 4
GEW-166	7/12/2016	7.5	48	3.1	17	23	2,200	See Note 4
GEW-167	5/11/2016	4.2	35	7.9	34	18	1,600	See Note 4

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-167	7/13/2016	5.3	38	5.4	34	17	1,300	See Note 4
GEW-168	5/11/2016	0.4	67	ND	ND	27	4,400	
GEW-168	7/13/2016	0.4	59	ND	ND	35	3,600	
GEW-169	5/10/2016	0.2	63	ND	3.9	30	5,000	
GEW-169	7/13/2016	6	61	1.6	6.1	24	3,100	See Note 4
GEW-170	5/10/2016	0.8	65	ND	ND	30	4,500	
GEW-170	7/13/2016	6.9	59	2.3	8.8	22	2,900	See Note 4
GEW-171	5/18/2016	1.3	47	5.2	19	27	2,800	See Note 4
GEW-171	7/14/2016	5.5	60	ND	ND	30	2,700	
GEW-172	5/18/2016	0.2	47	2.3	8	41	3,500	See Note 4
GEW-172	7/14/2016	0.2	53	ND	ND	41	3,500	
GEW-173	5/12/2016	12	47	2.9	22	15	1,800	See Note 4
GEW-173	7/13/2016	9.6	34	6.2	42	7.4	780	See Note 4
GEW-174	5/12/2016	10	50	ND	17	21	1,700	
GEW-174	7/12/2016	9.2	38	5.2	32	15	1,100	See Note 4
GEW-175	5/18/2016	16	50	4.2	19	11	980	See Note 4
GEW-175	7/12/2016	20	56	1.8	9.5	11	770	See Note 4
GEW-176	5/18/2016	6.5	61	ND	ND	30	2,700	
GEW-176	7/12/2016	12	63	ND	ND	21	1,400	
GIW-01	3/3/2016	2.3	70	ND	ND	23	2,500	
GIW-01	4/13/2016	2	68	ND	ND	26	2,800	
GIW-01	5/10/2016	2.2	67	ND	ND	26	2,700	
GIW-01	6/6/2016	1.7	60	2.7	9.4	25	2,900	See Note 4
GIW-01	7/11/2016	1.6	59	3.3	12	23	2,300	See Note 4
GIW-02	3/3/2016	6.3	30	11	48	3.9	290	
GIW-02	4/13/2016	5.5	35	9.2	42	8.6	660	See Note 4
GIW-02	5/10/2016	5.1	42	6.7	31	14	1,200	See Note 4
GIW-02	6/6/2016	7.7	53	3.2	17	19	1,300	See Note 4
GIW-02	7/11/2016	7.2	48	4.8	26	13	890	See Note 4
GIW-03	3/3/2016	0.1	8.2	19	69	2.9	460	
GIW-03	4/13/2016	0.6	65	ND	ND	32	3,400	
GIW-03	5/10/2016	0.5	58	3.1	11	26	3,300	See Note 4
GIW-03	6/6/2016	0.5	66	ND	ND	31	4,000	
GIW-03	7/11/2016	0.6	57	3.5	12	26	2,500	See Note 4
GIW-04	3/3/2016	0.4	42	3.5	12	41	1,700	
GIW-04	4/13/2016	0.2	13	17	60	10	690	See Note 4
GIW-04	5/10/2016	0.6	36	6.2	23	33	1,900	See Note 4
GIW-04	6/6/2016	0.4	35	7.7	28	28	2,100	See Note 4
GIW-04	7/11/2016	0.8	57	ND	ND	38	2,700	
GIW-05	3/3/2016	2.8	56	1.5	5.4	33	1,500	
GIW-05	4/13/2016	4.9	56	ND	5.5	31	1,500	
GIW-05	5/10/2016	1.6	59	ND	ND	36	1,700	
GIW-05	6/6/2016	1.6	59	ND	ND	35	1,800	
GIW-05	7/11/2016	4.1	42	6.7	24	22	870	See Note 3
GIW-06	3/2/2016	1.1	61	ND	4.1	31	1,500	
GIW-06	4/13/2016	1.2	58	ND	4.8	34	1,300	
GIW-06	5/11/2016	1	49	3.6	13	32	1,200	See Note 4
GIW-06	6/6/2016	1.2	56	ND	5.8	34	1,500	
GIW-06	7/11/2016	2.9	52	2.9	15	26	910	See Note 4
GIW-07	3/2/2016	19	42	6.9	25	7.2	710	
GIW-07	4/13/2016	9.3	42	8.1	30	11	1,300	See Note 4
GIW-07	5/12/2016	9	37	9.8	36	7.5	890	See Note 4
GIW-07	6/6/2016	9.6	60	2.8	10	17	1,800	See Note 4
GIW-07	7/11/2016	7.7	57	5.3	19	10	1,000	See Note 4
GIW-08	3/2/2016	19	66	ND	12	1.7	290	
GIW-08	4/13/2016	17	51	ND	28	1.6	250	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GIW-08	5/12/2016	16	70	ND	6.7	6.3	690	
GIW-08	6/6/2016	2.5	51	8.5	31	8.8	1,400	See Note 3
GIW-08	7/11/2016	2.6	52	7.3	26	11	1,200	See Note 4
GIW-09	3/2/2016	2.4	17	15	60	5.4	400	
GIW-09	4/13/2016	1.4	9.9	17	68	2.7	270	See Note 4
GIW-09	5/12/2016	1.5	25	11	56	5.9	480	See Note 4
GIW-09	6/6/2016	2	20	14	56	7.5	570	See Note 4
GIW-09	7/11/2016	1.2	47	6.7	26	18	1,300	See Note 4
GIW-10	3/3/2016	5.6	47	ND	15	31	1,700	
GIW-10	4/13/2016	6.8	49	ND	14	29	2,000	
GIW-10	5/12/2016	3.1	50	ND	11	35	2,100	
GIW-10	6/6/2016	0.5	52	ND	ND	44	2,700	
GIW-10	7/11/2016	0.4	53	ND	ND	43	2,400	
GIW-11	3/3/2016	5.7	40	5.2	34	15	1,600	
GIW-11	4/13/2016	4.7	49	4.3	23	18	2,100	See Note 4
GIW-11	5/12/2016	5.5	48	4.3	24	17	1,900	See Note 4
GIW-11	6/6/2016	2.8	64	ND	ND	30	3,100	
GIW-11	7/11/2016	5.4	59	2	12	20	2,000	See Note 4
GIW-12	3/3/2016	8	25	8.5	54	4.3	340	
GIW-12	4/13/2016	8.5	31	6.4	46	6.9	570	See Note 4
GIW-12	5/12/2016	0.7	38	9.5	35	16	1,800	See Note 4
GIW-12	6/6/2016	1.3	56	2.8	13	26	2,500	See Note 4
GIW-12	7/11/2016	5.8	36	8.1	40	9.3	740	See Note 4
GIW-13	3/3/2016	8.7	62	ND	7.6	21	1,700	
GIW-13	4/13/2016	9.9	62	ND	7.7	20	1,600	
GIW-13	5/12/2016	9.5	64	ND	4.6	21	1,500	
GIW-13	6/6/2016	5.7	66	ND	ND	26	2,000	
GIW-13	7/11/2016	11	64	ND	ND	20	1,300	
Flare Station[2]	3/2/2016	10.7	34.6	8.8	35.3	9.6	910	See Note 7
Flare Station[2]	4/12/2016	8.2	37	8.1	35.0	10.5	1,050	See Note 6
Flare Station[2]	5/3/2016	9.2	41.3	6.3	29.5	12.4	1,200	See Note 6
Flare Station[2]	6/7/2016	8.8	40.3	6.9	30.5	12.1	1,200	See Note 6
Flare Station[2]	7/6/2016	9.5	41.2	6.5	29.0	12.1	1,100	See Note 7
Flare Station[2]	8/9/2016	10.1	39.3	6.8	30.7	11.4	1,100	See Note 6

Notes: (3) Based on the oxygen verification readings taken with an Envision meter, it was determined there is a sample train leak. (4) Based on the oxygen verification readings taken with an Envision meter, it was determined that the readings are accurate. (5) Flare station gas concentration data is an average of FL-100, FL-120, and FL-140. (6) Flare station gas concentration data is an average of Outlets 1 & 2. (7) Flare station gas concentration based on data from Outlet B.

ND = Analyte not detected in sample.

[2] = Flare Station Inlet measured at EPA Method 2 flow port (blower outlet)

ATTACHMENT D-2

LAB ANALYSIS REPORTS

Air TECHNOLOGY Laboratories, Inc.

July 26, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175
TX Cert T104704450-14-6
EPA Methods TO14A, TO15
UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H071806-01/97

Enclosed are results for sample(s) received 7/18/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 7/25/16.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 11 12
Standard	☐	48 hours	☐	EDD	☐	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	■	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H071806-01	A7651	-19.7	-5	5	GEW-160	7/6/2016	837	C	LFG	NA	X					
-02	A8065	-19.9	-5	5	GEW-161	7/6/2016	846	C	LFG	NA	X					
-03	6143	-20.1	-5	5	GEW-162	7/6/2016	925	C	LFG	NA	X					
-04	A7762	-20.1	-5	5	GEW-151	7/6/2016	942	C	LFG	NA	X					
-05	5825	-19.6	-5	5	GEW-137	7/7/2016	1342	C	LFG	NA	X					
-06	A7810	-19.1	-5	5	GEW-147	7/7/2016	1404	C	LFG	NA	X					
-07	A8075	-20	-5	5	GEW-135	7/7/2016	1417	C	LFG	NA	X					
-08	4655	-19.8	-5	5	GEW-134	7/7/2016	1429	C	LFG	NA	X					
-09	3128	-19.6	-5	5	GEW-40	7/11/2016	1152	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer — COMPANY: Republic Services — DATE/TIME:

SAMPLED BY: Corey McMillen — DATE/TIME

RELINQUISHED BY	DATE	RECEIVED BY	DATE/TIME
Corey McMillen	7/15/16		
FEDEX	7/15/16 0857	[signature] ATL	7/15/16 0857

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

Standard	☐	48 hours	☐
Same Day	☐	72 hours	☐
24 hours	☐	96 hours	☐
Other:		5 day	■

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 2 **OF** 11 ~~12~~

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg) Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
H071806-10	A8072	-19	-5	5	GEW-41R	7/11/2016	1207	C	LFG	NA	X					
-11	5306	-19.45	-5	5	GEW-42R	7/11/2016	1221	C	LFG	NA	X					
-12	5269	-19.45	-1.5	2	GEW-43R	7/11/2016	1234	C	LFG	NA	X					
-13	5309	-19.3	-5	5	GEW-44	7/11/2016	1249	C	LFG	NA	X					
-14	5308	-18.9	-5	6"	GEW-45R	7/11/2016	1356	C	LFG	NA	X					
-15	6158	-19.8	-5	5	GEW-46R	7/11/2016	1408	C	LFG	NA	X					
-16	4657	-18.5	-5.1	7	GEW-2S	7/11/2016	1433	C	LFG	NA	X					
-17	4656	-19.7	-4.8	5	GEW-3	7/11/2016	1459	C	LFG	NA	X					
-18	A7794	-19.8	-5.1	5	GEW-4	7/11/2016	1615	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	**COMMENTS**
SAMPLED BY: Corey McMillen	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Corey McMillen 7/15/16	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FEDEX 7/18/16 0857	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY	DATE/ RECEIVED BY	DATE/TIME	

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

Standard	☐	48 hours	☐
Same Day	☐	72 hours	☐
24 hours	☐	96 hours	☐
Other:		5 day	■

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 3 **OF** ~~12~~ 11

Condition upon receipt: 10

Sealed Yes ☐ No ☐

Intact Yes ☐ No ☐

Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg) Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
H071806-19	A7646	-19.7	-4.7	4.5	GEW-47R	7/11/2016	1635	C	LFG	NA	X					
-20	A7813	-19.8	-4.9	5	GEW-5	7/11/2016	1649	C	LFG	NA	X					
-21	3827	-20.4	-5	5	GIW-7	7/11/2016	817	C	LFG	NA	X					
-22	A7649	-20	-5	4.5	GIW-6	7/11/2016	826	C	LFG	NA	X					
-23	5910	-20	-5	5	GIW-8	7/11/2016	836	C	LFG	NA	X					
-24	A8099	-19.8	-5	4.5	GIW-9	7/11/2016	848	C	LFG	NA	X					
-25	5304	-19.9	-5	5	GIW-5	7/11/2016	914	C	LFG	NA	X					
-26	3131	-19.9	-5	5	GIW-4	7/11/2016	924	C	LFG	NA	X					
-27	A7764	-19.8	-5	5	GIW-3	7/11/2016	935	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Corey McMillen		COMPANY: Republic Services	DATE/TIME
RELINQUISHED BY: Corey McMillen	7/15/16	DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY: FEDEX	7/18/16 0857	DATE/ RECEIVED BY	DATE/TIME 7/18/16 0857
RELINQUISHED BY		DATE/ RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

TURNAROUND TIME				DELIVERABLES		PAGE: 4 OF 11 12
Standard	☐	48 hours	☐	EDD	☐	Condition upon receipt: D
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	■	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H071806-28	3839	-20	-5	5	GIW-2	7/11/2016	944	C	LFG	NA	X					
-29	6146	-20	-5	5	GIW-1	7/11/2016	1020	C	LFG	NA	X					
-30	A7818	-19.8	-5	5	GIW-13	7/11/2016	1031	C	LFG	NA	X					
-31	A7816	-20.1	-5	5	GIW-12	7/11/2016	1041	C	LFG	NA	X					
-32	A7809	-19.9	-5	5	GIW-11	7/11/2016	1051	C	LFG	NA	X					
-33	5821	-20	-5	5	GIW-10	7/11/2016	~~1122~~ 1121	C	LFG	NA	X					
-34	A8071	-19.7	-5	5	GEW-56R	7/11/2016	1133	C	LFG	NA	X					
-35	6131	-20	-5	5	GEW-10	7/11/2016	1329	C	LFG	NA	X					
-36	A7793	-19.8	-5	5	GEW-110	7/11/2016	1338	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Corey McMillen	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Corey McMillen 7/15/16	DATE: RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FEDEX 7/15/16 0857	DATE: RECEIVED BY: ATLI	DATE/TIME: 7/15/16 0857	
RELINQUISHED BY	DATE: RECEIVED BY	DATE/TIME	

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

PAGE: 5 OF ~~12~~ 11

TURNAROUND TIME				DELIVERABLES		Condition upon receipt: 30
Standard	☐	48 hours	☐	EDD	☐	Sealed Yes ☐ No ☐
Same Day	☐	72 hours	☐	EDF	☐	Intact Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Chilled _____ deg C
Other:		5 day	■	Level 4	☐	

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H071806-37	A7805	-19.8	-5	5	GEW-38	7/11/2016	1349	C	LFG	NA	X					
-38	5928	-15	-5	5	GEW-109	7/11/2016	1357	C	LFG	NA	X					
-39	5929	-20	-5	5	GEW-39	7/11/2016	1406	C	LFG	NA	X					
-40	A8059	-19.9	-5	5	GEW-138	7/12/2016	920	C	LFG	NA	X					
-41	6160	-19.9	-5	5	GEW-120	7/12/2016	957	C	LFG	NA	X					
-42	5834	-19.9	-5	5	GEW-132	7/12/2016	1011	C	LFG	NA	X					
-43	A8078	-20	-5	4	GEW-121	7/12/2016	1056	C	LFG	NA	X					
—			-5		GEW-			C	LFG	NA	X					
—			-5		GEW-			C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Corey McMillen		COMPANY: Republic Services	DATE/TIME
RELINQUISHED BY: Corey McMillen	7/15/16	DATE/RECEIVED BY	DATE/TIME
RELINQUISHED BY: FEDEX	7/18/16 0857	DATE/RECEIVED BY	DATE/TIME 7/18/16 0857
RELINQUISHED BY		DATE/RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES	
Standard	☐	48 hours	☐	EDD	☐
Same Day	☐	72 hours	☐	EDF	☐
24 hours	☐	96 hours	☐	Level 3	☐
Other:		5 day	■	Level 4	☐

Condition upon receipt: TD
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H071806-44	3129	-20.2	-5	5	GEW-163	7/12/2016	1115	C	LFG	NA	X					
-45	A8068	-19.9	-5	5	GEW-123	7/12/2016	1128	C	LFG	NA	X					
-46	5815	-20	-5	5	GEW-164	7/12/2016	1336	C	LFG	NA	X					
-47	3156	-19.9	-5	5	GEW-124	7/12/2016	1350	C	LFG	NA	X					
-48	A8098	-19.9	-5	5	GEW-165	7/12/2016	1404	C	LFG	NA	X					
-49	5833	-20	-5	5	GEW-166	7/12/2016	1435	C	LFG	NA	X					
-50	A7802	-19.9	-5	5	GEW-122	7/12/2016	1452	C	LFG	NA	X					
-51	3836	-20.6	-5	4.5	GEW-48	7/12/2016	909	C	LFG	NA	X					
-52	5930	-20.3	-5.1	5	GEW-6	7/12/2016	920	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Corey McMillen		COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Corey Mcmillen	7/13/16	DATE RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FEDEX	7/18/16 0957	DATE RECEIVED BY: [signature] ATLI	DATE/TIME 7/13/16 0957	
RELINQUISHED BY		DATE RECEIVED BY	DATE/TIME	

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		Condition upon receipt: 50
Standard	☐	48 hours	☐	EDD	☐	Sealed Yes ☐ No ☐
Same Day	☐	72 hours	☐	EDF	☐	Intact Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Chilled _____ deg C
Other:		5 day	■	Level 4	☐	

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H071806-53	5932	-20.5	-4.9	5	GEW-50	7/12/2016	941	C	LFG	NA	X					
-54	6145	-20	-4.8	5	GEW-52	7/12/2016	951	C	LFG	NA	X					
-55	5814	-19.4	-5.1	5.5	GEW-49	7/12/2016	1002	C	LFG	NA	X					
-56	A8060	-20	-5.1	4	GEW-51	7/12/2016	1013	C	LFG	NA	X					
-57	A8101	-19.8	-5.1	5	GEW-53	7/12/2016	1024	C	LFG	NA	X					
-58	6134	-19.9	-5.1	5	GEW-54	7/12/2016	1038	C	LFG	NA	X					
-59	5839	-20.3	-5.1	5	GEW-55	7/12/2016	1048	C	LFG	NA	X					
-60	A8086	-20.3	-5	5	GEW-9	7/12/2016	1059	C	LFG	NA	X					
-61	5916	-20.3	-5	5	GEW-8	7/12/2016	1128	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Corey McMillen		COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Corey Mcmillen	7/15/16	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FEDEX	7/18/16 0857	DATE/ RECEIVED BY: [signature]	DATE/TIME: 7/18/16 0857	
RELINQUISHED BY		DATE/ RECEIVED BY	DATE/TIME	

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		Condition upon receipt: OK
Standard	☐	48 hours	☐	EDD	☐	Sealed Yes ☐ No ☐
Same Day	☐	72 hours	☐	EDF	☐	Intact Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Chilled _____ deg C
Other:		5 day	■	Level 4	☐	

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
HG71506-62	A8064	-20.1	-5.1	5	GEW-7	7/12/2016	1138	C	LFG	NA	X					
-63	5313	-19.5	-5.1	5	GEW-153	7/12/2016	1357	C	LFG	NA	X					
-64	A7819	-19.7	-5	5	GEW-152	7/12/2016	1413	C	LFG	NA	X					
-65	5934	-19.8	-5	5	GEW-158	7/12/2016	1428	C	LFG	NA	X					
-66	6151	-19.8	-5	5	GEW-176	7/12/2016	1440	C	LFG	NA	X					
-67	5319	-19.6	-5	5	GEW-175	7/12/2016	1500	C	LFG	NA	X					
-68	6141	-19.7	-5	5	GEW-150	7/12/2016	1602	C	LFG	NA	X					
-69	A7769	-19.7	-5	5	GEW-157	7/12/2016	1615	C	LFG	NA	X					
-70	5318	-19.7	-5	5	GEW-174	7/12/2016	1644	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Corey McMillen		COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Corey Mcmillen	7/15/16	RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FEDEX	7/18/16 0957	RECEIVED BY	DATE/TIME ATLI 7/18/16 0957	
RELINQUISHED BY		RECEIVED BY	DATE/TIME	

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

Air TECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		Condition upon receipt: 30
Standard	☐	48 hours	☐	EDD	☐	Sealed Yes ☐ No ☐
Same Day	☐	72 hours	☐	EDF	☐	Intact Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Chilled _____ deg C
Other:		5 day	■	Level 4	☐	

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H071806-71	5912	-19.9	-5	5	GEW-167	7/13/2016	807	C	LFG	NA	X					
-72	A7792	-20	-5	5	GEW-125	7/13/2016	822	C	LFG	NA	X					
-73	A7670	-20	-5	5	GEW-168	7/13/2016	844	C	LFG	NA	X					
-74	5906	-20	-5	5	GEW-169	7/13/2016	859	C	LFG	NA	X					
-75	5305	-20.1	-5	5	GEW-126	7/13/2016	912	C	LFG	NA	X					
-76	5268	-20	-5	5	GEW-131	7/13/2016	929	C	LFG	NA	X					
-77	5323	-19.8	-5	5	GEW-130	7/13/2016	944	C	LFG	NA	X					
-78	A8066	-19.9	-5	5	GEW-170	7/13/2016	1031	C	LFG	NA	X					
-79	5320	-20	-5	5.5	GEW-127	7/13/2016	1042	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Corey McMillen		COMPANY: Republic Services	DATE/TIME
RELINQUISHED BY: Corey Mcmillen	7/15/16	DATE/RECEIVED BY	DATE/TIME
RELINQUISHED BY: FEDEX	7/18/16 0857	DATE/RECEIVED BY	DATE/TIME: ATLI 7/18/16 0857
RELINQUISHED BY		DATE/RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

Standard	☐	48 hours	☐
Same Day	☐	72 hours	☐
24 hours	☐	96 hours	☐
Other:		5 day	■

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 10 OF ~~12~~ 11

Condition upon receipt: 0

Sealed Yes ☐ No ☐

Intact Yes ☐ No ☐

Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg) Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
H071806-80	5840	-19.9	-5	5	GEW-128	7/13/2016	1328	C	LFG	NA	X					
-81	5832	-18.5	-5	6	GEW-129	7/13/2016	1405	C	LFG	NA	X					
-82	A8055	-19.7	-5	5	GEW-139	7/13/2016	1436	C	LFG	NA	X					
-83	A7771	-19.7	-5	5	GEW-173	7/13/2016	1449	C	LFG	NA	X					
-84	A7807	-20	-5	5	GEW-141	7/14/2016	842	C	LFG	NA	X					
-85	A8057	-19.9	-5	5	GEW-172	7/14/2016	935	C	LFG	NA	X					
-86	A8090	-19.8	-5	5	GEW-159	7/14/2016	954	C	LFG	NA	X					
-87	A7766	-20	-5	5	GEW-57R	7/14/2016	1032	C	LFG	NA	X					
-88	A7648	-19.8	-1.75	2	GEW-28R	7/14/2016	1055	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services		DATE/TIME:
SAMPLED BY: Corey McMillen		COMPANY: Republic Services		DATE/TIME
RELINQUISHED BY: Corey McMillen	7/15/16	DATE	RECEIVED BY	DATE/TIME
RELINQUISHED BY: FEDEX	7/18/16 0057	DATE	RECEIVED BY: ATLI	DATE/TIME 7/18/16 0057
RELINQUISHED BY		DATE	RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 11 OF 11 12
Standard	☐	48 hours	☐	EDD	☐	Condition upon receipt: ambient
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:		5 day	■	Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	Nbauer@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg) Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
H071806-89	6152	-19.8	-5	5	GEW-58A	7/14/2016	1111	C	LFG	NA	X					
-90	5829	-19.6	-5	5	GEW-58	7/14/2016	1122	C	LFG	NA	X					
-91	A8097	-19.7	-4.6	5	GEW-59R	7/14/2016	1144	C	LFG	NA	X					
-92	3834	-19.8	-5	5	GEW-82R	7/14/2016	1206	C	LFG	NA	X					
-93	5936	-19.1	-5	5.5	GEW-90	7/14/2016	1535	C	LFG	NA	X					
-94	A7770	-19.9	-5	5	GEW-86	7/14/2016	1545 1544	C	LFG	NA	X					
-95	A7815	-19.8	-5	5	GEW-118	7/14/2016	1611	C	LFG	NA	X					
-96	A7665	-19.7	-4.9	5	GEW-117	7/14/2016	1627	C	LFG	NA	X					
-97	5831	-20.1	-5	5	GEW-171	7/14/2016	1729	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Corey McMillen		COMPANY: Republic Services	DATE/TIME
RELINQUISHED BY: Corey Mcmillen	DATE: 7/15/16	RECEIVED BY	DATE/TIME
RELINQUISHED BY: FEDEX 7/15/16 0557	DATE:	RECEIVED BY: [signature] ATL 7/16/16 0557	DATE/TIME
RELINQUISHED BY	DATE:	RECEIVED BY	DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In **FedEx** UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCl **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other *Rev. 03 - 5/7/09*

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-01		H071806-02		H071806-03		H071806-04	
Client Sample I.D.:	GEW-160		GEW-161		GEW-162		GEW-151	
Date/Time Sampled:	7/6/16 8:37		7/6/16 8:46		7/6/16 9:25		7/6/16 9:42	
Date/Time Analyzed:	7/19/16 17:55		7/19/16 18:09		7/19/16 18:24		7/19/16 18:38	
QC Batch No.:	160719GC8A2		160719GC8A2		160719GC8A2		160719GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	33	3.2	39	3.2	1.5 d	0.032	8.5	3.2
Carbon Dioxide	57	0.032	54	0.032	65	0.032	36	0.032
Oxygen/Argon	ND	1.6	ND	1.6	2.2	1.6	5.5	1.6
Nitrogen	3.4	3.2	3.5	3.2	8.3	3.2	39	3.2
Methane	4.1	0.0032	0.54	0.0032	22	0.0032	11	0.0032
Carbon Monoxide	0.24	0.0032	0.27	0.0032	0.014	0.0032	0.055	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A1

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-05		H071806-06		H071806-07		H071806-08	
Client Sample I.D.:	GEW-137		GEW-147		GEW-135		GEW-134	
Date/Time Sampled:	7/7/16 13:42		7/7/16 14:04		7/7/16 14:17		7/7/16 14:29	
Date/Time Analyzed:	7/19/16 18:53		7/19/16 19:08		7/19/16 19:22		7/19/16 19:37	
QC Batch No.:	160719GC8A2		160719GC8A2		160719GC8A2		160719GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	0.11 d	0.032	29	3.2	26	3.2	5.1	3.2
Carbon Dioxide	35	0.032	48	0.032	46	0.032	30	0.032
Oxygen/Argon	1.7	1.6	2.6	1.6	4.2	1.6	8.4	1.6
Nitrogen	47	3.2	9.5	3.2	17	3.2	49	3.2
Methane	16	0.0032	9.9	0.0032	5.2	0.0032	7.0	0.0032
Carbon Monoxide	ND	0.0032	0.14	0.0032	0.12	0.0032	0.033	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A1

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-09		H071806-10		H071806-11		H071806-12	
Client Sample I.D.:	GEW-40		GEW-41R		GEW-42R		GEW-43R	
Date/Time Sampled:	7/11/16 11:52		7/11/16 12:07		7/11/16 12:21		7/11/16 12:34	
Date/Time Analyzed:	7/20/16 8:45		7/20/16 9:02		7/20/16 9:16		7/20/16 9:31	
QC Batch No.:	160720GC8A1		160720GC8A1		160720GC8A1		160720GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		2.7	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND d	0.032	ND d	0.032	ND d	0.032	0.33 d	0.027
Carbon Dioxide	40	0.032	36	0.032	42	0.032	42	0.027
Oxygen/Argon	ND	1.6	2.3	1.6	ND	1.6	ND	1.3
Nitrogen	ND	3.2	9.5	3.2	ND	3.2	ND	2.7
Methane	57	0.0032	52	0.0032	56	0.0032	55	0.0027
Carbon Monoxide	ND	0.0032	ND	0.0032	ND	0.0032	ND	0.0027

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A1

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-13		H071806-14		H071806-15		H071806-16	
Client Sample I.D.:	GEW-44		GEW-45R		GEW-46R		GEW-2S	
Date/Time Sampled:	7/11/16 12:49		7/11/16 13:56		7/11/16 14:08		7/11/16 14:33	
Date/Time Analyzed:	7/20/16 10:01		7/20/16 10:16		7/20/16 10:32		7/20/16 10:48	
QC Batch No.:	160720GC8A1		160720GC8A1		160720GC8A1		160720GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.4		3.2		3.6	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND d	0.032	ND d	0.034	0.055 d	0.032	ND d	0.036
Carbon Dioxide	40	0.032	41	0.034	30	0.032	35	0.036
Oxygen/Argon	ND	1.6	ND	1.7	5.5	1.6	ND	1.8
Nitrogen	ND	3.2	ND	3.4	23	3.2	ND	3.6
Methane	57	0.0032	55	0.0034	41	0.0032	62	0.0036
Carbon Monoxide	ND	0.0032	ND	0.0034	ND	0.0032	ND	0.0036

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A1, 2

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-17		H071806-18		H071806-19		H071806-20	
Client Sample I.D.:	GEW-3		GEW-4		GEW-47R		GEW-5	
Date/Time Sampled:	7/11/16 14:59		7/11/16 16:15		7/11/16 16:35		7/11/16 16:49	
Date/Time Analyzed:	7/20/16 11:03		7/20/16 11:17		7/20/16 11:32		7/20/16 11:47	
QC Batch No.:	160720GC8A1		160720GC8A1		160720GC8A1		160720GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.1		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	**0.11** d	0.032	**0.085** d	0.032	**0.078** d	0.031	**ND** d	0.032
Carbon Dioxide	**39**	0.032	**40**	0.032	**38**	0.031	**35**	0.032
Oxygen/Argon	**ND**	1.6	**ND**	1.6	**ND**	1.5	**ND**	1.6
Nitrogen	**7.9**	3.2	**4.9**	3.2	**11**	3.1	**17**	3.2
Methane	**52**	0.0032	**54**	0.0032	**49**	0.0031	**46**	0.0032
Carbon Monoxide	**ND**	0.0032	**ND**	0.0032	**ND**	0.0031	**ND**	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A2

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-21		H071806-22		H071806-23		H071806-24	
Client Sample I.D.:	GIW-7		GIW-6		GIW-8		GIW-9	
Date/Time Sampled:	7/11/16 8:17		7/11/16 8:26		7/11/16 8:36		7/11/16 8:48	
Date/Time Analyzed:	7/20/16 12:01		7/20/16 12:16		7/20/16 12:30		7/20/16 12:45	
QC Batch No.:	160720GC8A1		160720GC8A1		160720GC8A1		160720GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.1		3.2		3.1	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	10.0	3.2	26	3.1	11	3.2	18	3.1
Carbon Dioxide	57	0.032	52	0.031	52	0.032	47	0.031
Oxygen/Argon	5.3	1.6	2.9	1.5	7.3	1.6	6.7	1.5
Nitrogen	19	3.2	15	3.1	26	3.2	26	3.1
Methane	7.7	0.0032	2.9	0.0031	2.6	0.0032	1.2	0.0031
Carbon Monoxide	0.10	0.0032	0.091	0.0031	0.12	0.0032	0.13	0.0031

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-25		H071806-26		H071806-27		H071806-28	
Client Sample I.D.:	GIW-5		GIW-4		GIW-3		GIW-2	
Date/Time Sampled:	7/11/16 9:14		7/11/16 9:24		7/11/16 9:35		7/11/16 9:44	
Date/Time Analyzed:	7/20/16 13:40		7/20/16 13:25		7/20/16 13:55		7/20/16 14:09	
QC Batch No.:	160720GC8A1		160720GC8A1		160720GC8A1		160720GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	22	3.2	38	3.2	26	3.2	13	3.2
Carbon Dioxide	42	0.032	57	0.032	57	0.032	48	0.032
Oxygen/Argon	6.7	1.6	ND	1.6	3.5	1.6	4.8	1.6
Nitrogen	24	3.2	ND	3.2	12	3.2	26	3.2
Methane	4.1	0.0032	0.79	0.0032	0.58	0.0032	7.2	0.0032
Carbon Monoxide	0.087	0.0032	0.27	0.0032	0.25	0.0032	0.089	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-29		H071806-30		H071806-31		H071806-32	
Client Sample I.D.:	GIW-1		GIW-13		GIW-12		GIW-11	
Date/Time Sampled:	7/11/16 10:20		7/11/16 10:31		7/11/16 10:41		7/11/16 10:51	
Date/Time Analyzed:	7/20/16 16:24		7/20/16 16:39		7/20/16 16:53		7/20/16 17:08	
QC Batch No.:	160720GC8A2		160720GC8A2		160720GC8A2		160720GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	23	3.2	20	3.2	9.3	3.2	20	3.2
Carbon Dioxide	59	0.032	64	0.032	36	0.032	59	0.032
Oxygen/Argon	3.3	1.6	ND	1.6	8.1	1.6	2.0	1.6
Nitrogen	12	3.2	ND	3.2	40	3.2	12	3.2
Methane	1.6	0.0032	11	0.0032	5.8	0.0032	5.4	0.0032
Carbon Monoxide	0.23	0.0032	0.13	0.0032	0.074	0.0032	0.20	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-33		H071806-34		H071806-35		H071806-36	
Client Sample I.D.:	GIW-10		GEW-56R		GEW-10		GEW-110	
Date/Time Sampled:	7/11/16 11:21		7/11/16 11:33		7/11/16 13:29		7/11/16 13:38	
Date/Time Analyzed:	7/21/16 12:58		7/20/16 17:37		7/20/16 17:52		7/20/16 18:06	
QC Batch No.:	160721GC8A1		160720GC8A2		160720GC8A2		160720GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	43	3.2	17	3.2	0.29 d	0.032	6.9	3.2
Carbon Dioxide	53	0.032	49	0.032	49	0.032	34	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	3.6	1.6
Nitrogen	ND	3.2	19	3.2	3.3	3.2	43	3.2
Methane	0.41	0.0032	13	0.0032	46	0.0032	12	0.0032
Carbon Monoxide	0.24	0.0032	0.077	0.0032	0.0037	0.0032	0.041	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A1

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-37		H071806-38		H071806-39		H071806-40	
Client Sample I.D.:	GEW-38		GEW-109		GEW-39		GEW-138	
Date/Time Sampled:	7/11/16 13:49		7/11/16 13:57		7/11/16 14:06		7/12/16 9:20	
Date/Time Analyzed:	7/20/16 18:21		7/20/16 18:35		7/20/16 18:50		7/20/16 19:05	
QC Batch No.:	160720GC8A2		160720GC8A2		160720GC8A2		160720GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	27	3.2	15	3.2	1.5 d	0.032	6.9	3.2
Carbon Dioxide	51	0.032	32	0.032	53	0.032	26	0.032
Oxygen/Argon	4.3	1.6	8.5	1.6	ND	1.6	5.9	1.6
Nitrogen	16	3.2	37	3.2	8.7	3.2	57	3.2
Methane	0.49	0.0032	6.3	0.0032	36	0.0032	3.1	0.0032
Carbon Monoxide	0.27	0.0032	0.072	0.0032	0.011	0.0032	0.052	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A2

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-41		H071806-42		H071806-43		H071806-44	
Client Sample I.D.:	GEW-120		GEW-132		GEW-121		GEW-163	
Date/Time Sampled:	7/12/16 9:57		7/12/16 10:11		7/12/16 10:56		7/12/16 11:15	
Date/Time Analyzed:	7/20/16 19:19		7/20/16 19:34		7/20/16 19:49		7/20/16 20:03	
QC Batch No.:	160720GC8A2		160720GC8A2		160720GC8A2		160720GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.0		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	6.2	3.2	15	3.2	29	3.0	12	3.2
Carbon Dioxide	57	0.032	46	0.032	57	0.030	48	0.032
Oxygen/Argon	ND	1.6	3.3	1.6	ND	1.5	5.7	1.6
Nitrogen	21	3.2	24	3.2	4.8	3.0	26	3.2
Methane	15	0.0032	10	0.0032	6.9	0.0030	7.7	0.0032
Carbon Monoxide	0.030	0.0032	0.089	0.0032	0.18	0.0030	0.10	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-45		H071806-46		H071806-47		H071806-48	
Client Sample I.D.:	GEW-123		GEW-164		GEW-124		GEW-165	
Date/Time Sampled:	7/12/16 11:28		7/12/16 13:36		7/12/16 13:50		7/12/16 14:04	
Date/Time Analyzed:	7/20/16 20:18		7/21/16 13:27		7/21/16 13:42		7/21/16 13:57	
QC Batch No.:	160720GC8A2		160721GC8A1		160721GC8A1		160721GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	30	3.2	19	3.2	23	3.2	27	3.2
Carbon Dioxide	60	0.032	72	0.032	61	0.032	67	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.2	3.5	3.2	ND	3.2	ND	3.2
Methane	5.0	0.0032	3.7	0.0032	10	0.0032	1.1	0.0032
Carbon Monoxide	0.27	0.0032	0.22	0.0032	0.19	0.0032	0.33	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-49		H071806-50		H071806-51		H071806-52	
Client Sample I.D.:	GEW-166		GEW-122		GEW-48		GEW-6	
Date/Time Sampled:	7/12/16 14:35		7/12/16 14:52		7/12/16 9:09		7/12/16 9:20	
Date/Time Analyzed:	7/21/16 15:55		7/21/16 16:10		7/21/16 16:24		7/21/16 16:39	
QC Batch No.:	160721GC8A2		160721GC8A2		160721GC8A2		160721GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.1		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	23	3.2	30	3.2	0.031 d	0.031	ND d	0.032
Carbon Dioxide	48	0.032	53	0.032	39	0.031	38	0.032
Oxygen/Argon	3.1	1.6	ND	1.6	ND	1.5	ND	1.6
Nitrogen	17	3.2	3.2	3.2	4.8	3.1	6.4	3.2
Methane	7.5	0.0032	11	0.0032	55	0.0031	55	0.0032
Carbon Monoxide	0.22	0.0032	0.22	0.0032	ND	0.0031	ND	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A2

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-53		H071806-54		H071806-55		H071806-56	
Client Sample I.D.:	GEW-50		GEW-52		GEW-49		GEW-51	
Date/Time Sampled:	7/12/16 9:41		7/12/16 9:51		7/12/16 10:02		7/12/16 10:13	
Date/Time Analyzed:	7/22/16 8:03		7/21/16 17:08		7/21/16 17:23		7/21/16 17:37	
QC Batch No.:	160722GC8A2		160721GC8A2		160721GC8A2		160721GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.3		3.0	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	0.074 d	0.032	ND d	0.032	ND d	0.033	0.91 d	0.030
Carbon Dioxide	39	0.032	40	0.032	36	0.033	42	0.030
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.5
Nitrogen	3.5	3.2	6.0	3.2	16	3.3	ND	3.0
Methane	57	0.0032	54	0.0032	46	0.0033	56	0.0030
Carbon Monoxide	ND	0.0032	ND	0.0032	ND	0.0033	ND	0.0030

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A2

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-57		H071806-58		H071806-59		H071806-60	
Client Sample I.D.:	GEW-53		GEW-54		GEW-55		GEW-9	
Date/Time Sampled:	7/12/16 10:24		7/12/16 10:38		7/12/16 10:48		7/12/16 10:59	
Date/Time Analyzed:	7/21/16 17:52		7/21/16 18:07		7/21/16 18:21		7/21/16 18:36	
QC Batch No.:	160721GC8A2		160721GC8A2		160721GC8A2		160721GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	5.5	3.2	4.2	3.2	1.4 d	0.032	0.53 d	0.032
Carbon Dioxide	45	0.032	42	0.032	43	0.032	43	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.2	ND	3.2	ND	3.2	ND	3.2
Methane	48	0.0032	52	0.0032	53	0.0032	53	0.0032
Carbon Monoxide	0.0065	0.0032	0.0033	0.0032	ND	0.0032	ND	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 160723GC8A2

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-61		H071806-62		H071806-63		H071806-64	
Client Sample I.D.:	GEW-8		GEW-7		GEW-153		GEW-152	
Date/Time Sampled:	7/12/16 11:28		7/12/16 11:38		7/12/16 13:57		7/12/16 14:13	
Date/Time Analyzed:	7/22/16 8:19		7/22/16 8:33		7/22/16 8:48		7/22/16 9:03	
QC Batch No.:	160721GC8A2		160721GC8A2		160721GC8A2		160721GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	1.1 d	0.032	ND d	0.032	13	3.2	33	3.2
Carbon Dioxide	47	0.032	40	0.032	43	0.032	51	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.2	ND	3.2	12	3.2	ND	3.2
Methane	50	0.0032	57	0.0032	29	0.0032	11	0.0032
Carbon Monoxide	ND	0.0032	ND	0.0032	0.043	0.0032	0.22	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch 160723GC8A2

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-65		H071806-66		H071806-67		H071806-68	
Client Sample I.D.:	GEW-158		GEW-176		GEW-175		GEW-150	
Date/Time Sampled:	7/12/16 14:28		7/12/16 14:40		7/12/16 15:00		7/12/16 16:02	
Date/Time Analyzed:	7/22/16 9:17		7/22/16 9:32		7/22/16 9:47		7/22/16 11:45	
QC Batch No.:	160721GC8A2		160721GC8A2		160721GC8A2		160722GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	19	3.2	21	3.2	11	3.2	12	3.2
Carbon Dioxide	56	0.032	63	0.032	56	0.032	46	0.032
Oxygen/Argon	ND	1.6	ND	1.6	1.8	1.6	5.4	1.6
Nitrogen	ND	3.2	ND	3.2	9.5	3.2	23	3.2
Methane	21	0.0032	12	0.0032	20	0.0032	12	0.0032
Carbon Monoxide	0.11	0.0032	0.14	0.0032	0.077	0.0032	0.092	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-69		H071806-70		H071806-71		H071806-72	
Client Sample I.D.:	GEW-157		GEW-174		GEW-167		GEW-125	
Date/Time Sampled:	7/12/16 16:15		7/12/16 16:44		7/13/16 8:07		7/13/16 8:22	
Date/Time Analyzed:	7/22/16 12:00		7/22/16 12:14		7/22/16 12:29		7/22/16 12:44	
QC Batch No.:	160722GC8A1		160722GC8A1		160722GC8A1		160722GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	39	3.2	15	3.2	17	3.2	37	3.2
Carbon Dioxide	56	0.032	38	0.032	38	0.032	58	0.032
Oxygen/Argon	ND	1.6	5.2	1.6	5.4	1.6	ND	1.6
Nitrogen	ND	3.2	32	3.2	34	3.2	ND	3.2
Methane	0.65	0.0032	9.2	0.0032	5.3	0.0032	0.64	0.0032
Carbon Monoxide	0.31	0.0032	0.11	0.0032	0.13	0.0032	0.28	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-73		H071806-74		H071806-75		H071806-76	
Client Sample I.D.:	GEW-168		GEW-169		GEW-126		GEW-131	
Date/Time Sampled:	7/13/16 8:44		7/13/16 8:59		7/13/16 9:12		7/13/16 9:29	
Date/Time Analyzed:	7/22/16 12:58		7/22/16 13:13		7/22/16 13:27		7/22/16 13:42	
QC Batch No.:	160722GC8A1		160722GC8A1		160722GC8A1		160722GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	35	3.2	24	3.2	27	3.2	42	3.2
Carbon Dioxide	59	0.032	61	0.032	51	0.032	54	0.032
Oxygen/Argon	ND	1.6	1.6	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.2	6.1	3.2	3.8	3.2	ND	3.2
Methane	0.42	0.0032	6.0	0.0032	15	0.0032	0.27	0.0032
Carbon Monoxide	0.36	0.0032	0.31	0.0032	0.26	0.0032	0.34	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-77		H071806-78		H071806-79		H071806-80	
Client Sample I.D.:	GEW-130		GEW-170		GEW-127		GEW-128	
Date/Time Sampled:	7/13/16 9:44		7/13/16 10:31		7/13/16 10:42		7/13/16 13:28	
Date/Time Analyzed:	7/22/16 13:57		7/22/16 15:55		7/22/16 16:09		7/22/16 16:25	
QC Batch No.:	160722GC8A1		160722GC8A2		160722GC8A2		160722GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.3		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	25	3.2	22	3.2	28	3.3	25	3.2
Carbon Dioxide	53	0.032	59	0.032	65	0.033	63	0.032
Oxygen/Argon	3.6	1.6	2.3	1.6	ND	1.6	ND	1.6
Nitrogen	13	3.2	8.8	3.2	ND	3.3	ND	3.2
Methane	3.6	0.0032	6.9	0.0032	1.9	0.0033	8.2	0.0032
Carbon Monoxide	0.30	0.0032	0.29	0.0032	0.39	0.0033	0.26	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-81		H071806-82		H071806-83		H071806-84	
Client Sample I.D.:	GEW-129		GEW-139		GEW-173		GEW-141	
Date/Time Sampled:	7/13/16 14:05		7/13/16 14:36		7/13/16 14:49		7/14/16 8:42	
Date/Time Analyzed:	7/22/16 16:39		7/22/16 16:54		7/22/16 17:09		7/22/16 17:23	
QC Batch No.:	160722GC8A2		160722GC8A2		160722GC8A2		160722GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.2		3.2		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	29	3.4	32	3.2	7.4	3.2	33	3.2
Carbon Dioxide	57	0.034	52	0.032	34	0.032	54	0.032
Oxygen/Argon	2.5	1.7	2.3	1.6	6.2	1.6	2.5	1.6
Nitrogen	8.8	3.4	9.2	3.2	42	3.2	8.7	3.2
Methane	2.0	0.0034	2.7	0.0032	9.6	0.0032	0.18	0.0032
Carbon Monoxide	0.28	0.0034	0.30	0.0032	0.078	0.0032	0.34	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 07/18/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H071806-85		H071806-86		H071806-87		H071806-88	
Client Sample I.D.:	GEW-172		GEW-159		GEW-57R		GEW-28R	
Date/Time Sampled:	7/14/16 9:35		7/14/16 9:54		7/14/16 10:32		7/14/16 10:55	
Date/Time Analyzed:	7/22/16 17:38		7/22/16 17:52		7/22/16 18:07		7/22/16 21:32	
QC Batch No.:	160722GC8A2		160722GC8A2		160722GC8A2		160722GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		2.7	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	41	3.2	8.1	3.2	4.3	3.2	33	2.7
Carbon Dioxide	53	0.032	55	0.032	34	0.032	50	0.027
Oxygen/Argon	ND	1.6	ND	1.6	3.8	1.6	2.5	1.3
Nitrogen	ND	3.2	16	3.2	44	3.2	9.2	2.7
Methane	0.24	0.0032	19	0.0032	14	0.0032	0.24	0.0027
Carbon Monoxide	0.35	0.0032	0.050	0.0032	0.032	0.0032	0.38	0.0027

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-89		H071806-90		H071806-91		H071806-92	
Client Sample I.D.:	GEW-58A		GEW-58		GEW-59R		GEW-82R	
Date/Time Sampled:	7/14/16 11:11		7/14/16 11:22		7/14/16 11:44		7/14/16 12:06	
Date/Time Analyzed:	7/22/16 18:36		7/22/16 18:51		7/22/16 19:06		7/22/16 19:20	
QC Batch No.:	160722GC8A2		160722GC8A2		160722GC8A2		160722GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	24	3.2	33	3.2	41	3.2	40	3.2
Carbon Dioxide	42	0.032	48	0.032	50	0.032	48	0.032
Oxygen/Argon	3.2	1.6	2.5	1.6	ND	1.6	1.8	1.6
Nitrogen	14	3.2	12	3.2	ND	3.2	6.4	3.2
Methane	15	0.0032	1.7	0.0032	3.8	0.0032	2.3	0.0032
Carbon Monoxide	0.14	0.0032	0.18	0.0032	0.16	0.0032	0.18	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H071806-93		H071806-94		H071806-95		H071806-96	
Client Sample I.D.:	GEW-90		GEW-86		GEW-118		GEW-117	
Date/Time Sampled:	7/14/16 15:35		7/14/16 15:44		7/14/16 16:11		7/14/16 16:27	
Date/Time Analyzed:	7/22/16 19:35		7/22/16 19:50		7/22/16 20:04		7/22/16 20:19	
QC Batch No.:	160722GC8A2		160722GC8A2		160722GC8A2		160722GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.3		3.2		3.2		3.2	
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**
Hydrogen	35	3.3	38	3.2	32	3.2	23	3.2
Carbon Dioxide	46	0.033	49	0.032	52	0.032	66	0.032
Oxygen/Argon	ND	1.6	ND	1.6	2.2	1.6	ND	1.6
Nitrogen	ND	3.3	ND	3.2	9.6	3.2	ND	3.2
Methane	15	0.0033	8.2	0.0032	1.7	0.0032	5.6	0.0032
Carbon Monoxide	0.16	0.0033	0.13	0.0032	0.15	0.0032	0.21	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**07/18/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	**H071806-97**							
Client Sample I.D.:	**GEW-171**							
Date/Time Sampled:	**7/14/16 17:29**							
Date/Time Analyzed:	**7/22/16 20:34**							
QC Batch No.:	**160722GC8A2**							
Analyst Initials:	**AS**							
Dilution Factor:	**3.2**							
ANALYTE	**Result % v/v**	**RL % v/v**						
Hydrogen	**30**	3.2						
Carbon Dioxide	**60**	0.032						
Oxygen/Argon	**ND**	1.6						
Nitrogen	**ND**	3.2						
Methane	**5.5**	0.0032						
Carbon Monoxide	**0.27**	0.0032						

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 160719GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/19/16 15:13		7/19/16 14:44		7/19/16 14:58			
Analyst Initials:	AS		AS		AS			
Datafile:	19jul029		19jul027		19jul028			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	107	70-130%	107	70-130%	0.1	<30
Carbon Dioxide	ND	0.010	95	70-130%	95	70-130%	0.0	<30
Oxygen/Argon	ND	0.50	101	70-130%	101	70-130%	0.1	<30
Nitrogen	ND	1.0	98	70-130%	98	70-130%	0.1	<30
Methane	ND	0.0010	107	70-130%	107	70-130%	0.2	<30
Carbon Monoxide	ND	0.0010	107	70-130%	107	70-130%	0.3	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 7-25-16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch No.: 160720GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/20/16 8:30		7/20/16 8:01		7/20/16 8:15			
Analyst Initials:	AS		AS		AS			
Datafile:	20jul002		20jul.ru		20jul001			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	101	70-130%	101	70-130%	0.4	<30
Carbon Dioxide	ND	0.010	92	70-130%	91	70-130%	0.9	<30
Oxygen/Argon	ND	0.50	101	70-130%	100	70-130%	1.7	<30
Nitrogen	ND	1.0	98	70-130%	97	70-130%	1.4	<30
Methane	ND	0.0010	107	70-130%	105	70-130%	2.5	<30
Carbon Monoxide	ND	0.0010	107	70-130%	104	70-130%	2.5	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 7-25-16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch No.: 160720GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/20/16 15:54		7/20/16 15:39		7/20/16 16:09			
Analyst Initials:	AS		AS		AS			
Datafile:	20jul033		20jul032		20jul034			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	101	70-130%	103	70-130%	1.1	<30
Carbon Dioxide	ND	0.010	94	70-130%	94	70-130%	0.3	<30
Oxygen/Argon	ND	0.50	103	70-130%	103	70-130%	0.5	<30
Nitrogen	ND	1.0	100	70-130%	100	70-130%	0.5	<30
Methane	ND	0.0010	110	70-130%	110	70-130%	0.3	<30
Carbon Monoxide	ND	0.0010	106	70-130%	106	70-130%	0.1	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 7-25-16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch No.: 160721GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/21/16 11:26		7/21/16 10:56		7/21/16 11:11			
Analyst Initials:	AS		AS		AS			
Datafile:	21jul015		21jul013		21jul014			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	94	70-130%	97	70-130%	2.7	<30
Carbon Dioxide	ND	0.010	90	70-130%	92	70-130%	2.3	<30
Oxygen/Argon	ND	0.50	101	70-130%	103	70-130%	1.9	<30
Nitrogen	ND	1.0	98	70-130%	100	70-130%	2.0	<30
Methane	ND	0.0010	108	70-130%	107	70-130%	0.7	<30
Carbon Monoxide	ND	0.0010	104	70-130%	103	70-130%	0.4	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 7-25-16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch No.: 160721GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/21/16 15:40		7/21/16 14:55		7/21/16 15:10			
Analyst Initials:	AS		AS		AS			
Datafile:	21jul032		21jul029		21jul030			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	96	70-130%	95	70-130%	1.5	<30
Carbon Dioxide	ND	0.010	92	70-130%	92	70-130%	0.2	<30
Oxygen/Argon	ND	0.50	103	70-130%	104	70-130%	0.1	<30
Nitrogen	ND	1.0	100	70-130%	100	70-130%	0.1	<30
Methane	ND	0.0010	109	70-130%	108	70-130%	0.1	<30
Carbon Monoxide	ND	0.0010	105	70-130%	105	70-130%	0.3	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 7-25-16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch No.: 160722GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/22/16 11:30		7/22/16 11:00		7/22/16 11:14			
Analyst Initials:	AS		AS		AS			
Datafile:	22jul004		22jul002		22jul003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	87	70-130%	89	70-130%	2.7	<30
Carbon Dioxide	ND	0.010	87	70-130%	89	70-130%	2.7	<30
Oxygen/Argon	ND	0.50	102	70-130%	104	70-130%	2.6	<30
Nitrogen	ND	1.0	98	70-130%	101	70-130%	2.6	<30
Methane	ND	0.0010	117	70-130%	117	70-130%	0.1	<30
Carbon Monoxide	ND	0.0010	105	70-130%	105	70-130%	0.2	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 7-25-16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch No.: 160722GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	7/22/16 15:40		7/22/16 15:11		7/22/16 15:25			
Analyst Initials:	AS		AS		AS			
Datafile:	22jul021		22jul019		22jul020			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	87	70-130%	87	70-130%	0.6	<30
Carbon Dioxide	ND	0.010	88	70-130%	88	70-130%	0.1	<30
Oxygen/Argon	ND	0.50	104	70-130%	104	70-130%	0.1	<30
Nitrogen	ND	1.0	101	70-130%	100	70-130%	0.1	<30
Methane	ND	0.0010	118	70-130%	117	70-130%	0.4	<30
Carbon Monoxide	ND	0.0010	105	70-130%	105	70-130%	0.4	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 7-25-16

Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch # 160723GC8A1
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	7/23/2016 10:56		7/23/2016 10:45		7/23/2016 1:51			
Analyst Initials:	MJ		MJ		MJ			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.01	101	70-130	102	70-130	0.8	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By: _____ Date: 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

QC Batch # 160723GC8A2
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	7/23/2016 13:15		7/23/2016 13:06		7/23/2016 13:11			
Analyst Initials:	VM		VM		VM			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.01	102	70-130	102	70-130	0.4	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By: Date: 7-25-16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

ATTACHMENT E

GAS WELLFIELD DATA

ATTACHMENT E-1

WELLFIELD DATA TABLE

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-002	7/7/2016 15:25	58.5	38.3	0.1	3.1	123.9		37	38	-1.4	-1.4	-13.2
GEW-002	7/7/2016 15:27	56.0	40.8	0.1	3.1	123.9		55	57	-1.2	-1.2	-12.9
GEW-002	7/11/2016 14:42	55.4	41.4	0.1	3.1	122.9		15	15	-0.6	-0.7	-12.7
GEW-002	7/26/2016 9:01	55.4	40.2	0.0	4.4	92.4		0	0	0.8	0.7	0.8
GEW-003	7/7/2016 15:42	49.9	39.9	0.2	10.0	115.5		34	31	-0.4	-0.4	-13.0
GEW-003	7/11/2016 14:54	50.8	39.7	0.2	9.3	117.1		12	12	-0.3	-0.3	-13.4
GEW-003	7/11/2016 15:01	50.9	39.6	0.2	9.3	117.2		37	35	-0.2	-0.2	-12.4
GEW-003	7/19/2016 11:07	51.0	38.4	0.2	10.4	117.9		15	15	-0.5	-0.5	-12.4
GEW-003	7/26/2016 9:23	53.2	39.8	0.0	7.0	117.8		16	13	-0.4	-0.4	-12.1
GEW-004	7/7/2016 15:46	53.6	40.3	0.1	6.0	121.0		38	39	-0.5	-0.4	-13.0
GEW-004	7/11/2016 16:10	53.6	40.8	0.0	5.6	121.8		14	14	-0.2	-0.2	-12.7
GEW-004	7/11/2016 16:18	53.6	40.4	0.0	6.0	121.8		11	7	-0.2	-0.2	-12.5
GEW-004	7/19/2016 11:14	52.7	39.3	0.1	7.9	121.8		0	0	-0.5	-0.5	-12.7
GEW-004	7/26/2016 9:28	53.9	40.0	0.0	6.1	121.3		13	13	-0.4	-0.4	-12.2
GEW-005	7/7/2016 16:00	45.2	35.5	0.1	19.2	95.6		41	41	-0.3	-0.3	-12.7
GEW-005	7/11/2016 16:44	46.3	35.7	0.0	18.0	96.7		16	16	-0.1	-0.1	-12.6
GEW-005	7/11/2016 16:50	46.9	34.7	0.0	18.4	96.6		21	19	-0.2	-0.2	-12.9
GEW-005	7/19/2016 11:24	43.4	33.5	0.1	23.0	95.5		0	0	-0.4	-0.3	-12.8
GEW-005	7/26/2016 9:38	45.4	36.0	0.0	18.6	95.8		10	9	-0.3	-0.3	-12.4
GEW-006	7/7/2016 16:08	55.9	38.3	0.1	5.7	91.5		16	15	-0.2	-0.2	-12.9
GEW-006	7/12/2016 9:16	54.5	38.4	0.0	7.1	90.3		11	10	-0.5	-0.5	-13.4
GEW-006	7/12/2016 9:22	55.0	38.3	0.0	6.7	90.3		17	17	-0.5	-0.5	-12.6
GEW-006	7/19/2016 11:31	54.6	37.9	0.2	7.3	91.1		10	16	-0.3	-0.3	-12.7
GEW-006	7/26/2016 9:44	55.1	38.4	0.0	6.5	90.8		14	13	-0.2	-0.2	-12.2
GEW-007	7/7/2016 17:56	57.0	41.6	0.0	1.4	100.1		9	12	-1.0	-1.0	-12.8
GEW-007	7/12/2016 11:34	56.9	42.1	0.1	0.9	98.4		9	7	-1.5	-1.5	-13.4
GEW-007	7/12/2016 11:40	57.6	40.8	0.1	1.5	98.7		9	10	-1.3	-1.3	-12.8
GEW-007	7/19/2016 14:01	57.2	41.8	0.1	0.9	101.5		9	9	-0.6	-0.6	-13.2
GEW-007	7/26/2016 11:01	55.0	42.1	0.1	2.8	101.1		11	11	-0.8	-0.8	-11.9
GEW-008	7/7/2016 17:51	50.2	45.9	0.0	3.9	113.6		15	15	-0.3	-0.3	-12.7
GEW-008	7/12/2016 11:24	50.3	46.0	0.2	3.5	113.1		16	17	-0.6	-0.6	-13.3
GEW-008	7/12/2016 11:30	50.6	46.1	0.2	3.1	113.4		22	22	-0.6	-0.6	-13.3
GEW-008	7/19/2016 13:56	51.0	45.0	0.1	3.9	114.8		17	15	-0.2	-0.2	-12.8
GEW-008	7/26/2016 10:57	50.7	43.4	0.1	5.8	114.4		16	10	-0.3	-0.3	-11.9
GEW-009	7/7/2016 17:46	52.8	42.2	0.0	5.0	125.2		12	13	-0.2	-0.2	-18.2
GEW-009	7/12/2016 10:54	53.3	43.0	0.1	3.6	124.5		26	27	-0.4	-0.5	-16.4
GEW-009	7/12/2016 11:00	54.0	42.4	0.1	3.5	124.5		4	0	-0.4	-0.4	-16.9
GEW-009	7/19/2016 13:52	54.7	41.2	0.1	4.0	125.6		30	29	-0.1	-0.1	-17.5
GEW-009	7/26/2016 10:54	53.0	41.3	0.1	5.6	125.9		10	14	-0.2	-0.2	-17.8
GEW-010	7/5/2016 9:48	50.4	44.6	0.0	5.0	94.2		1	1	-3.0	-3.0	-12.5
GEW-010	7/11/2016 13:25	46.0	44.3	0.1	9.6	105.5		3	3	-10.1	-10.1	-17.2
GEW-010	7/11/2016 13:31	45.8	44.1	0.2	9.9	105.3		3	2	-10.1	-10.1	-17.5
GEW-010	7/18/2016 10:40	44.9	47.5	0.5	7.1	102.2		2	3	-8.8	-8.5	-16.8

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-010	7/25/2016 14:23	43.8	45.7	1.2	9.3	107.9		3	3	-6.8	-6.8	-17.0
GEW-013A	7/21/2016 10:19	3.4	20.7	13.6	62.3	146.6				-5.5	-5.8	-13.8
GEW-013A	7/21/2016 10:20	3.5	20.6	13.6	62.3	146.6				-5.9	-6.2	-14.1
GEW-028R	7/14/2016 10:52	1.1	54.4	1.8	42.7	95.1		4	3	-13.2	-12.8	-12.9
GEW-028R	7/14/2016 10:57	1.3	57.3	2.1	39.3	96.5		10	8	-13.3	-12.8	-13.0
GEW-038	7/5/2016 8:47	0.3	45.0	7.7	47.0	94.2		6	10	-11.1	-11.2	-12.4
GEW-038	7/5/2016 8:48	0.3	44.4	8.0	47.3	95.4		5	3	-11.4	-11.4	-12.1
GEW-038	7/11/2016 13:45	0.5	48.2	4.9	46.4	103.9		8	3	-9.4	-7.7	-9.7
GEW-038	7/11/2016 13:51	0.4	46.6	3.6	49.4	102.7		4	1	-6.3	-6.4	-9.7
GEW-038	7/18/2016 8:25	0.4	52.6	4.5	42.5	94.0		6	13	-6.8	-6.8	-10.1
GEW-038	7/25/2016 11:19	0.4	47.0	6.1	46.5	85.3		4	6	-9.7	-9.8	-13.7
GEW-038	7/25/2016 11:20	0.4	46.9	7.1	45.6	85.5		6	5	-9.8	-9.8	-12.0
GEW-039	7/5/2016 9:43	36.5	50.1	0.1	13.3	127.5		21	22	-1.3	-1.3	-16.7
GEW-039	7/11/2016 14:02	34.5	48.7	0.1	16.7	128.6		14	25	-1.3	-1.3	-16.8
GEW-039	7/11/2016 14:08	35.8	46.5	0.2	17.5	129.0		12	17	-1.2	-1.2	-17.5
GEW-039	7/19/2016 14:34	41.5	49.2	0.0	9.3	130.2		43	40	-4.9	-4.8	-18.5
GEW-039	7/25/2016 11:33	30.1	49.7	0.1	20.1	133.0				-5.2	-5.3	-17.8
GEW-039	7/25/2016 11:34	30.3	49.3	0.1	20.3	133.1		42	38	-5.4	-5.3	-19.9
GEW-040	7/7/2016 14:47	58.9	38.4	0.1	2.6	94.3		17	17	-0.7	-0.7	-12.9
GEW-040	7/11/2016 11:47	56.7	41.0	0.0	2.3	95.7		12	12	-0.7	-0.7	-12.5
GEW-040	7/11/2016 11:55	56.5	41.2	0.0	2.3	96.0		14	13	-0.7	-0.7	-12.9
GEW-040	7/19/2016 10:21	59.1	38.4	0.1	2.4	98.9		16	16	-0.8	-0.8	-12.9
GEW-040	7/26/2016 8:39	58.6	39.3	0.0	2.1	95.0		16	16	-0.9	-0.9	-12.6
GEW-041R	7/7/2016 14:50	56.3	38.6	0.5	4.6	106.7		18	16	-0.6	-0.7	-10.2
GEW-041R	7/11/2016 12:02	54.6	39.8	0.4	5.2	107.2		14	15	-0.5	-0.5	-9.9
GEW-041R	7/11/2016 12:09	54.8	39.7	0.4	5.1	107.2		10	17	-0.5	-0.4	-10.1
GEW-041R	7/19/2016 10:25	55.6	37.6	0.4	6.4	107.6		12	21	-0.6	-0.6	-10.7
GEW-041R	7/26/2016 8:42	56.7	37.3	0.1	5.9	107.3		18	0	-0.6	-0.5	-10.2
GEW-042R	7/7/2016 14:53	56.1	40.5	0.1	3.3	112.7		12	12	-1.0	-1.0	-3.3
GEW-042R	7/7/2016 14:55	55.4	41.6	0.1	2.9	112.2		16	12	-0.9	-0.9	-3.6
GEW-042R	7/11/2016 12:16	55.2	42.2	0.1	2.5	112.4		11	11	-0.5	-0.4	-2.3
GEW-042R	7/11/2016 12:23	55.3	42.3	0.1	2.3	112.2		21	19	-0.5	-0.4	-3.4
GEW-042R	7/19/2016 10:29	56.4	38.7	0.0	4.9	112.8		23	8	-0.6	-0.6	-2.1
GEW-042R	7/26/2016 8:45	57.4	39.0	0.0	3.6	110.2		21	0	-0.4	-0.6	-1.2
GEW-043R	7/7/2016 14:59	54.1	41.8	0.2	3.9	123.5		20	17	-0.5	-0.5	-12.9
GEW-043R	7/11/2016 12:30	54.1	42.2	0.3	3.4	123.1		17	17	-0.3	-0.3	-12.9
GEW-043R	7/11/2016 12:38	54.6	41.9	0.3	3.2	123.4		17	17	-0.3	-0.3	-12.2
GEW-043R	7/19/2016 10:32	54.6	39.5	0.2	5.7	124.1		22	19	-0.6	-0.6	-12.7
GEW-043R	7/26/2016 8:49	55.7	39.1	0.2	5.0	122.6		19	18	-0.7	-0.6	-12.6
GEW-044	7/7/2016 15:02	56.7	40.7	0.1	2.5	94.8		13	11	-0.7	-0.7	-5.9
GEW-044	7/11/2016 12:44	56.1	40.9	0.1	2.9	96.2		35	35	-0.5	-0.5	-5.2
GEW-044	7/11/2016 12:50	56.6	39.6	0.1	3.7	96.1		8	8	-0.4	-0.4	-5.0
GEW-044	7/19/2016 10:36	56.1	39.7	0.0	4.2	96.5		5	0	-0.8	-0.8	-4.8

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-044	7/26/2016 8:52	57.5	39.3	0.0	3.2	92.7		6	7	-0.7	-0.7	-5.3
GEW-045R	7/7/2016 15:06	55.9	40.7	0.1	3.3	96.0		8	8	-0.6	-0.6	-13.0
GEW-045R	7/11/2016 13:52	55.2	41.8	0.2	2.8	101.6		9	10	-0.5	-0.5	-12.5
GEW-045R	7/11/2016 13:58	55.4	41.3	0.2	3.1	101.6		10	10	-0.4	-0.4	-12.6
GEW-045R	7/19/2016 10:40	54.4	40.0	0.2	5.4	102.9		9	9	-0.9	-0.9	-12.7
GEW-045R	7/26/2016 8:55	56.5	39.6	0.0	3.9	96.8		10	8	-0.8	-0.8	-12.4
GEW-046R	7/7/2016 15:09	52.7	39.9	0.1	7.3	100.1		15	8	-0.5	-0.5	-13.1
GEW-046R	7/11/2016 14:04	52.7	40.2	0.1	7.0	101.1		14	14	-0.3	-0.3	-12.6
GEW-046R	7/11/2016 14:13	52.9	40.6	0.1	6.4	101.0		41	39	-0.3	-0.3	-12.5
GEW-046R	7/19/2016 10:44	52.4	39.6	0.0	8.0	101.0		0	0	-0.6	-0.6	-12.8
GEW-047R	7/7/2016 15:55	49.7	39.2	0.2	10.9	115.3		39	40	-0.4	-0.4	-12.7
GEW-047R	7/11/2016 16:31	49.8	39.1	0.0	11.1	115.9		15	15	-0.2	-0.2	-12.5
GEW-047R	7/11/2016 16:37	50.1	39.0	0.0	10.9	115.9		18	19	-0.2	-0.2	-12.6
GEW-047R	7/19/2016 11:20	46.9	38.2	0.2	14.7	115.1		37	38	-0.5	-0.4	-12.4
GEW-047R	7/26/2016 9:34	48.3	39.4	0.0	12.3	115.0		25	25	-0.4	-0.4	-12.6
GEW-048	7/7/2016 16:04	55.5	38.5	0.1	5.9	106.5		13	13	-0.3	-0.2	-11.8
GEW-048	7/12/2016 8:54	55.9	40.5	0.0	3.6	105.6		18	16	-0.7	-0.7	-10.5
GEW-048	7/12/2016 9:11	55.8	39.8	0.0	4.4	105.3		16	15	-0.6	-0.6	-8.2
GEW-048	7/19/2016 11:27	54.6	37.7	0.2	7.5	106.0		12	15	-0.4	-0.4	-10.6
GEW-048	7/26/2016 9:41	56.2	38.8	0.0	5.0	105.5		12	12	-0.3	-0.3	-11.8
GEW-049	7/7/2016 16:33	50.6	38.0	0.1	11.3	111.7		9	9	-0.3	-0.3	-5.5
GEW-049	7/12/2016 9:59	45.3	36.8	0.1	17.8	110.2		13	14	-0.3	-0.3	-5.2
GEW-049	7/12/2016 10:04	46.7	36.7	0.1	16.5	110.5		12	9	-0.4	-0.4	-5.6
GEW-049	7/19/2016 11:43	46.9	36.5	0.2	16.4	110.5		9	10	-0.3	-0.3	-4.8
GEW-049	7/26/2016 10:30	51.0	36.5	0.0	12.5	111.2		3	8	-0.2	-0.2	-4.7
GEW-050	7/7/2016 16:21	57.1	39.1	0.1	3.7	109.2		11	13	-0.2	-0.2	-6.0
GEW-050	7/12/2016 9:37	56.6	39.4	0.1	3.9	108.7		0	0	-0.6	-0.5	-8.4
GEW-050	7/12/2016 9:43	56.5	40.0	0.1	3.4	108.7		20	17	-0.6	-0.5	-10.1
GEW-050	7/19/2016 11:35	56.2	38.6	0.2	5.0	109.5		37	39	-0.4	-0.4	-7.4
GEW-050	7/26/2016 9:47	57.4	38.9	0.0	3.7	109.0		28	28	-0.3	-0.3	-6.0
GEW-051	7/7/2016 16:37	54.9	41.0	0.2	3.9	128.3		18	14	-0.3	-0.3	-12.7
GEW-051	7/12/2016 10:08	55.3	41.6	0.1	3.0	128.4		31	31	-0.5	-0.5	-12.9
GEW-051	7/12/2016 10:15	55.2	41.4	0.1	3.3	128.3		12	17	-0.5	-0.5	-12.4
GEW-051	7/19/2016 11:47	54.6	40.8	0.3	4.3	128.2		33	33	-0.4	-0.3	-12.8
GEW-051	7/26/2016 10:33	55.4	38.2	0.0	6.4	128.3		15	12	-0.2	-0.2	-12.2
GEW-052	7/7/2016 16:25	54.1	38.6	0.2	7.1	116.3		37	37	-0.2	-0.2	-12.5
GEW-052	7/12/2016 9:47	53.4	40.1	0.1	6.4	114.4		14	8	-0.4	-0.4	-12.8
GEW-052	7/12/2016 9:53	53.7	39.8	0.1	6.4	114.5		19	18	-0.3	-0.3	-13.2
GEW-052	7/19/2016 11:37	54.1	38.5	0.2	7.2	115.0		14	13	-0.3	-0.3	-12.9
GEW-052	7/26/2016 9:50	55.0	39.1	0.0	5.9	115.1		0	0	-0.3	-0.2	-11.9
GEW-053	7/1/2016 8:13	49.1	44.4	0.0	6.5	140.0		12	10	-0.6	-0.6	-13.5
GEW-053	7/1/2016 8:14	48.4	45.5	0.0	6.1	139.9		8	13	-0.6	-0.6	-13.6
GEW-053	7/7/2016 16:44	47.6	44.9	0.2	7.3	138.7		11	11	0.0	0.0	-12.7

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-053	7/7/2016 16:48	47.9	44.5	0.2	7.4	138.7		11	10	0.0	0.0	-12.5
GEW-053	7/12/2016 10:20	47.7	44.7	0.1	7.5	140.2		14	14	-0.2	-0.2	-13.0
GEW-053	7/12/2016 10:26	48.1	45.0	0.1	6.8	139.9		10	14	-0.2	-0.1	-13.0
GEW-053	7/19/2016 13:19	48.9	42.7	0.0	8.4	141.2		0	0	0.3	0.3	-13.2
GEW-053	7/19/2016 13:22	49.1	43.3	0.0	7.6	142.2		45	50	0.0	0.0	-13.1
GEW-053	7/26/2016 10:36	51.0	41.1	0.1	7.8	142.1		19	15	-0.2	-0.2	-12.2
GEW-053	7/26/2016 10:37	49.3	43.8	0.1	6.8	142.0		12	10	-0.2	-0.2	-12.1
GEW-054	7/1/2016 8:10	52.8	44.3	0.0	2.9	146.9		43	44	-3.4	-3.4	-11.4
GEW-054	7/1/2016 8:10	52.4	43.2	0.0	4.4	146.8		45	51	-3.5	-3.3	-11.0
GEW-054	7/7/2016 17:36	52.4	42.2	0.0	5.4	146.6		46	42	-3.0	-3.1	-10.2
GEW-054	7/7/2016 17:38	52.1	43.0	0.0	4.9	146.6		47	48	-3.1	-3.1	-8.9
GEW-054	7/12/2016 10:34	52.4	42.7	0.1	4.8	146.5		47	40	-3.3	-3.4	-10.3
GEW-054	7/12/2016 10:40	51.8	42.6	0.1	5.5	146.6		38	49	-3.3	-3.2	-9.9
GEW-054	7/19/2016 13:40	51.9	41.5	0.0	6.6	148.5		45	48	-2.3	-2.4	-9.2
GEW-054	7/19/2016 13:42	52.1	41.4	0.0	6.5	148.6		51	43	-2.4	-2.4	-10.1
GEW-054	7/26/2016 10:46	52.4	40.2	0.0	7.4	147.0		46	36	-2.7	-2.8	-9.6
GEW-054	7/26/2016 10:47	51.5	42.1	0.1	6.3	147.1		42	39	-2.8	-2.9	-9.6
GEW-055	7/7/2016 17:43	52.8	43.5	0.0	3.7	127.5		39	39	-0.3	-0.3	-12.7
GEW-055	7/12/2016 10:43	53.0	43.1	0.1	3.8	127.8		0	0	-0.6	-0.6	-12.2
GEW-055	7/12/2016 10:49	53.3	43.0	0.1	3.6	127.5		0	0	-0.6	-0.6	-12.5
GEW-055	7/19/2016 13:47	53.8	42.8	0.1	3.3	129.1		13	13	0.0	0.0	-12.0
GEW-055	7/26/2016 10:50	52.8	41.2	0.1	5.9	127.5		13	12	-0.1	-0.1	-10.2
GEW-056R	7/5/2016 10:12	1.9	9.7	20.5	67.9	94.0		5	6	-16.8	-16.8	-16.4
GEW-056R	7/5/2016 10:13	1.8	4.4	20.8	73.0	94.8		7	7	-17.2	-17.3	-17.1
GEW-056R	7/7/2016 8:52	1.7	8.3	20.6	69.4	81.5		7	5	-18.1	-18.1	-18.1
GEW-056R	7/7/2016 8:53	1.6	5.8	20.8	71.8	81.5		1	2	-18.0	-18.0	-17.8
GEW-056R	7/8/2016 8:40	1.0	56.9	0.0	42.1	160.1		15	24	-6.4	-6.6	-18.5
GEW-056R	7/8/2016 8:41	1.2	56.6	0.0	42.2	162.3		7	19	-6.1	-5.9	-17.5
GEW-056R	7/11/2016 11:29	20.1	48.5	0.1	31.3	155.0		17	19	-4.0	-4.1	-17.6
GEW-056R	7/11/2016 11:35	19.4	49.3	0.0	31.3	154.9		28	25	-3.5	-4.8	-17.0
GEW-056R	7/18/2016 10:35	16.6	50.0	0.1	33.3	159.6		8	8	-2.3	-2.3	-17.4
GEW-056R	7/18/2016 10:37	16.9	51.5	0.1	31.5	160.1		8	7	-2.3	-2.3	-17.1
GEW-056R	7/25/2016 14:16	16.0	53.8	0.3	29.9	164.6		8	11	-2.9	-2.9	-17.1
GEW-056R	7/25/2016 14:17	16.5	53.8	0.2	29.5	164.6		11	8	-3.0	-3.0	-18.3
GEW-057B	7/20/2016 14:37	2.6	51.1	0.5	45.8	130.3		19	17	-12.9	-12.9	-12.0
GEW-057R	7/14/2016 10:33	15.7	35.5	2.9	45.9	124.7				-10.9	-12.2	-12.2
GEW-057R	7/14/2016 10:40	15.9	34.8	3.1	46.2	125.0		13	13	-11.2	-10.4	-11.8
GEW-058	7/14/2016 11:18	7.5	50.8	2.2	39.5	185.7		4	9	-15.2	-15.6	-15.8
GEW-058	7/14/2016 11:24	8.9	49.9	2.2	39.0	186.4		4	9	-16.1	-15.2	-16.0
GEW-058A	7/14/2016 11:08	29.6	44.7	2.9	22.8	145.2				-6.8	-6.8	-8.4
GEW-058A	7/14/2016 11:13	28.7	43.2	3.0	25.1	148.8				-6.8	-6.8	-8.4
GEW-059R	7/14/2016 11:41	13.0	54.7	0.4	31.9	189.0				-15.1	-14.7	-15.1
GEW-059R	7/14/2016 11:47	18.1	52.5	0.4	29.0	189.2		9	18	-15.2	-15.2	-15.5

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-065A	7/14/2016 11:53	8.1	19.1	12.2	60.6	102.4				-9.8	-10.1	-9.4
GEW-065A	7/14/2016 11:54	8.1	20.2	11.4	60.3	103.7				-9.8	-10.7	-9.3
GEW-067A	7/21/2016 11:14	6.6	22.2	11.5	59.7	157.0		3	6	-13.2	-13.0	-16.3
GEW-067A	7/21/2016 11:16	6.8	22.3	11.4	59.5	156.6		7	3	-12.9	-12.8	-15.5
GEW-077	7/21/2016 10:27	0.6	60.7	0.1	38.6	198.9				-14.6	-14.6	-13.5
GEW-077	7/21/2016 10:28	0.7	62.5	0.0	36.8	198.4				-14.3	-13.9	-12.2
GEW-078R	7/21/2016 9:21	9.1	48.1	0.0	42.8	188.5				-13.6	-13.9	-13.2
GEW-078R	7/21/2016 9:22	9.3	53.7	0.0	37.0	188.5				-13.7	-13.9	-12.8
GEW-080	7/20/2016 13:59	2.9	18.1	12.4	66.6	97.7		8	9	-15.7	-15.6	-15.4
GEW-080	7/20/2016 14:00	3.5	24.7	9.6	62.2	98.5		11	4	-12.5	-12.9	-12.6
GEW-082R	7/14/2016 12:00	20.3	52.6	0.4	26.7	192.3		13	16	-9.3	-10.3	-9.1
GEW-082R	7/14/2016 12:10	17.7	51.0	0.6	30.7	192.3		30	23	-13.2	-12.7	-13.7
GEW-086	7/14/2016 15:41	12.6	50.6	0.1	36.7	101.1				-0.1	-0.1	-16.1
GEW-086	7/14/2016 15:46	15.4	42.7	0.1	41.8	102.5		3	3	-0.1	-0.1	-15.8
GEW-089	7/21/2016 11:08	7.9	20.7	14.5	56.9	109.5		11	9	-2.2	-1.9	-6.7
GEW-089	7/21/2016 11:09	9.0	18.6	14.7	57.7	109.0		10	8	-2.4	-2.4	-14.5
GEW-090	7/14/2016 15:30	19.7	48.8	0.1	31.4	182.7		5	1	-15.1	-15.1	-15.1
GEW-090	7/14/2016 15:36	21.2	47.2	0.1	31.5	183.3		5	10	-15.6	-15.6	-15.6
GEW-102	7/14/2016 15:54	0.7	2.1	19.9	77.3	125.3				-15.6	-15.7	-15.6
GEW-102	7/14/2016 15:55	0.7	1.3	19.9	78.1	125.4				-16.6	-16.6	-16.6
GEW-104	7/21/2016 15:08	0.7	60.9	0.3	38.1	112.5		9	5	5.5	5.4	5.2
GEW-104	7/21/2016 15:09	0.7	60.5	0.4	38.4	112.0		6	8	4.7	4.8	4.7
GEW-108	7/21/2016 15:46	1.9	7.0	18.3	72.8	108.5				-16.2	-17.1	-17.4
GEW-108	7/21/2016 15:47	2.5	6.6	17.8	73.1	110.4		6	6	-16.1	-16.2	-16.3
GEW-109	7/5/2016 9:40	11.9	50.6	0.0	37.5	110.4		2	7	-7.2	-7.2	-17.7
GEW-109	7/11/2016 13:54	10.5	51.9	0.0	37.6	110.9		4	6	-6.9	-6.9	-17.8
GEW-109	7/11/2016 14:00	11.3	49.5	0.0	39.2	110.9		4	3	-7.4	-7.3	-17.7
GEW-109	7/18/2016 8:28	13.6	49.4	0.0	37.0	104.5		3	2	-9.8	-9.8	-16.5
GEW-109	7/25/2016 11:30	13.2	42.8	1.9	42.1	94.0		2	1	-9.7	-9.8	-17.4
GEW-110	7/5/2016 10:09	12.8	36.4	1.5	49.3	112.8		8	8	-0.1	-0.1	-18.0
GEW-110	7/11/2016 13:35	12.6	36.0	2.3	49.1	113.3		7	8	0.0	0.0	-16.7
GEW-110	7/11/2016 13:40	12.0	34.9	2.5	50.6	113.7		9	8	0.0	0.0	-17.0
GEW-110	7/18/2016 9:35	0.3	18.3	17.0	64.4	111.1		6	7	0.0	0.0	-16.9
GEW-110	7/18/2016 9:36	0.3	15.2	17.2	67.3	111.2		5	7	0.0	0.0	-17.4
GEW-110	7/25/2016 13:42	0.8	9.6	17.8	71.8	109.5		7	7	0.0	0.0	-17.2
GEW-110	7/25/2016 13:43	0.8	9.1	17.8	72.3	109.4		6	6	0.0	0.0	-16.3
GEW-112	7/21/2016 10:55	3.1	46.4	4.7	45.8	110.4				-13.7	-13.8	-14.5
GEW-113	7/21/2016 10:47	11.5	47.4	2.9	38.2	173.6				-8.6	-8.8	-14.3
GEW-113	7/21/2016 10:48	12.2	48.2	2.8	36.8	173.6				-8.9	-8.9	-14.6
GEW-117	7/14/2016 16:24	15.4	63.6	0.8	20.2	119.7				-14.2	-14.7	-14.3
GEW-117	7/14/2016 16:30	16.9	62.2	0.9	20.0	118.9				-14.7	-14.7	-14.6
GEW-118	7/14/2016 16:07	6.6	54.3	1.7	37.4	195.0		62	60	-9.1	-9.3	-13.3
GEW-118	7/14/2016 16:15	9.8	55.0	2.3	32.9	194.3		65	66	-8.9	-9.2	-13.4

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-118	7/21/2016 9:05	2.3	45.0	2.0	50.7	192.5		60	60	-10.9	-10.9	-14.9
GEW-118	7/21/2016 9:06	2.0	52.4	1.9	43.7	193.0		56	57	-11.9	-11.5	-14.8
GEW-120	7/12/2016 9:54	15.7	53.3	0.0	31.0	149.3				-14.2	-13.9	-14.1
GEW-120	7/12/2016 10:00	15.8	53.6	0.0	30.6	152.1				-13.8	-13.2	-13.5
GEW-121	7/12/2016 10:52	7.6	57.2	0.1	35.1	180.8		24	23	-12.0	-11.1	-13.3
GEW-121	7/12/2016 10:58	8.3	54.2	0.0	37.5	180.3		29	35	-12.8	-11.8	-13.6
GEW-122	7/12/2016 14:49	12.0	53.3	0.0	34.7	188.5				-6.6	-6.6	-15.2
GEW-122	7/12/2016 14:57	13.3	47.5	0.0	39.2	188.8				-6.3	-6.3	-14.7
GEW-123	7/12/2016 11:24	5.3	59.9	0.1	34.7	185.0		15	12	-14.2	-14.1	-14.1
GEW-123	7/12/2016 11:32	5.3	59.6	0.2	34.9	185.2		5	11	-14.5	-14.5	-13.9
GEW-124	7/12/2016 13:46	10.9	57.5	0.2	31.4	91.8		4	5	-15.1	-15.3	-14.7
GEW-124	7/12/2016 13:53	11.2	55.4	0.2	33.2	92.4		8	5	-15.3	-15.3	-15.0
GEW-125	7/13/2016 8:18	0.7	59.4	0.0	39.9	191.3				-8.3	-8.2	-14.9
GEW-125	7/13/2016 8:26	0.8	49.3	0.1	49.8	191.3				-8.5	-7.7	-14.5
GEW-126	7/13/2016 9:08	18.3	52.4	0.0	29.3	150.9				-12.6	-12.3	-12.5
GEW-126	7/13/2016 9:17	18.8	52.4	0.1	28.7	154.5				-12.2	-12.4	-12.1
GEW-127	7/13/2016 10:38	5.3	62.5	0.1	32.1	187.9				-12.9	-12.5	-13.6
GEW-127	7/13/2016 10:44	5.6	61.3	0.1	33.0	187.9				-13.2	-13.2	-13.7
GEW-128	7/13/2016 13:24	8.9	57.0	0.0	34.1	172.2		27	34	-11.8	-11.8	-14.2
GEW-128	7/13/2016 13:31	8.9	59.3	0.0	31.8	172.2		30	33	-11.8	-11.8	-14.3
GEW-129	7/13/2016 14:03	3.4	62.7	0.0	33.9	145.1		8	12	-8.1	-8.0	-13.9
GEW-129	7/13/2016 14:08	2.6	58.3	0.0	39.1	147.4		9	12	-10.4	-10.4	-13.6
GEW-130	7/13/2016 9:41	4.3	51.1	3.9	40.7	175.7		76	80	-4.3	-3.9	-14.4
GEW-130	7/13/2016 9:48	5.7	54.1	3.3	36.9	176.2		74	81	-3.7	-3.8	-14.2
GEW-131	7/13/2016 9:25	0.6	56.4	0.0	43.0	109.7				7.4	7.1	7.3
GEW-131	7/13/2016 9:33	0.6	56.5	0.0	42.9	110.2				3.1	3.8	7.6
GEW-132	7/12/2016 10:07	11.0	44.9	3.1	41.0	165.9				-4.9	-5.0	-10.2
GEW-132	7/12/2016 10:14	10.8	47.0	2.8	39.4	166.1				-5.5	-5.7	-13.5
GEW-133	7/12/2016 9:45	0.1	14.6	18.2	67.1	93.8		4	3	-13.8	-14.6	-13.8
GEW-133	7/12/2016 9:46	0.1	14.4	18.2	67.3	96.9		7	6	-14.2	-14.5	-14.1
GEW-134	7/7/2016 14:25	9.0	39.2	5.1	46.7	146.6				-10.4	-10.5	-14.1
GEW-134	7/7/2016 14:31	9.1	38.9	5.0	47.0	150.5				-10.1	-10.1	-14.1
GEW-135	7/7/2016 14:14	5.5	48.7	4.0	41.8	175.7				-2.5	-2.5	-8.8
GEW-135	7/7/2016 14:20	5.8	49.1	3.7	41.4	175.6				-2.5	-2.4	-13.9
GEW-136	7/7/2016 13:52	5.9	36.3	9.0	48.8	121.3		40	21	-7.7	-3.7	-14.9
GEW-136	7/7/2016 13:54	5.8	35.4	9.2	49.6	120.7		22	19	-3.7	-3.3	-9.1
GEW-137	7/7/2016 13:38	16.8	36.6	0.2	46.4	86.6		26	5	-14.9	-12.0	-15.3
GEW-137	7/7/2016 13:44	16.5	37.1	0.2	46.2	87.0		19	27	-11.9	-10.4	-12.0
GEW-138	7/12/2016 9:16	3.4	29.4	5.2	62.0	151.7				-2.1	-2.0	-4.4
GEW-138	7/12/2016 9:24	3.1	31.4	5.0	60.5	153.8				-2.8	-2.3	-13.9
GEW-139	7/13/2016 14:32	4.8	52.9	1.5	40.8	179.3		37	27	-7.4	-6.8	-12.3
GEW-139	7/13/2016 14:38	3.6	51.1	1.6	43.7	179.3		39	39	-8.1	-8.1	-12.5
GEW-140	7/14/2016 8:28	12.0	42.9	5.6	39.5	167.6				-8.4	-8.5	-13.5

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-140	7/14/2016 8:29	12.1	42.9	5.6	39.4	167.6				-8.6	-8.4	-13.9
GEW-141	7/14/2016 8:38	0.3	61.2	0.2	38.3	118.4				-14.0	-14.0	-13.8
GEW-141	7/14/2016 8:45	0.4	58.6	0.3	40.7	119.7				-14.2	-14.3	-13.8
GEW-142	7/14/2016 17:19	0.3	36.3	10.0	53.4	93.2		8	4	-14.7	-14.7	-14.6
GEW-142	7/14/2016 17:20	0.4	37.6	9.7	52.3	95.3		5	3	-14.3	-14.7	-14.5
GEW-143	7/14/2016 17:35	0.4	36.6	9.2	53.8	91.9		5	5	-14.2	-14.2	-14.4
GEW-143	7/14/2016 17:36	0.5	36.7	8.5	54.3	92.7		0	5	-14.2	-14.2	-14.5
GEW-144	7/14/2016 17:41	1.1	59.1	0.8	39.0	91.7		9	6	-14.2	-14.7	-14.4
GEW-145	7/12/2016 16:33	4.1	32.3	12.5	51.1	96.7				-17.6	-16.2	-17.8
GEW-145	7/12/2016 16:35	4.0	27.1	12.9	56.0	97.7				-16.7	-17.0	-16.5
GEW-146	7/7/2016 13:29	6.7	26.0	9.1	58.2	100.4		38	28	-3.0	-1.5	-17.1
GEW-146	7/7/2016 13:31	7.0	27.2	8.9	56.9	99.7		27	28	-1.5	-1.5	-16.8
GEW-147	7/7/2016 14:01	12.0	54.2	0.0	33.8	187.4				-15.5	-15.7	-15.1
GEW-147	7/7/2016 14:08	12.4	52.3	0.0	35.3	187.4				-15.9	-15.9	-15.8
GEW-148	7/6/2016 10:40	0.0	0.2	22.5	77.3	79.5		38	39	-17.1	-16.7	-17.0
GEW-148	7/6/2016 10:41	0.0	0.1	22.6	77.3	79.5		40	40	-17.6	-16.9	-17.4
GEW-149	7/6/2016 9:15	5.2	31.7	11.4	51.7	141.8		17	18	-0.5	-0.6	-17.8
GEW-149	7/6/2016 9:16	4.7	31.3	12.3	51.7	140.2		18	18	-0.5	-0.5	-17.7
GEW-150	7/12/2016 15:57	17.2	46.6	4.9	31.3	156.9				-6.4	-6.5	-13.8
GEW-150	7/12/2016 16:04	17.0	46.3	4.9	31.8	155.0				-5.1	-5.4	-14.4
GEW-151	7/6/2016 9:38	11.0	40.9	4.8	43.3	147.0		38	34	-13.0	-12.3	-16.1
GEW-151	7/6/2016 9:43	11.1	37.6	4.9	46.4	145.1		36	30	-11.9	-12.0	-16.5
GEW-152	7/12/2016 14:08	12.0	53.8	0.3	33.9	183.9		12	12	-15.1	-15.2	-17.1
GEW-152	7/12/2016 14:15	11.1	53.3	0.3	35.3	183.3		10	13	-15.2	-15.2	-17.8
GEW-153	7/12/2016 13:51	30.1	44.1	0.2	25.6	143.6		16	17	-10.3	-10.3	-17.7
GEW-153	7/12/2016 14:00	29.3	44.6	0.2	25.9	142.9		17	14	-10.3	-10.0	-17.5
GEW-154	7/6/2016 9:08	0.0	0.4	22.0	77.6	79.1		9	12	-16.9	-16.6	-16.4
GEW-154	7/6/2016 9:09	0.0	0.2	22.1	77.7	78.8		2	9	-16.6	-17.8	-16.2
GEW-155	7/12/2016 9:32	1.3	19.6	10.5	68.6	124.9				-3.8		-9.7
GEW-155	7/12/2016 9:34	1.2	20.8	10.4	67.6	124.3				-2.3	-1.7	-13.6
GEW-156	7/12/2016 16:24	8.3	11.2	14.3	66.2	115.0		21	22	-2.6	-2.6	-16.5
GEW-156	7/12/2016 16:25	8.3	11.3	14.3	66.1	115.0		21	22	-2.6	-2.7	-15.9
GEW-157	7/12/2016 16:11	1.9	58.4	0.1	39.6	178.0		10	10	-11.7	-14.7	-11.9
GEW-157	7/12/2016 16:16	2.5	51.5	0.1	45.9	178.6		4	7	-12.3	-13.3	-13.1
GEW-158	7/12/2016 14:23	22.0	55.5	0.3	22.2	93.8		13	19	-6.4	-2.6	-13.2
GEW-158	7/12/2016 14:29	21.9	56.2	0.3	21.6	96.2		30	7	-2.6	-5.7	-14.0
GEW-159	7/14/2016 9:51	21.6	55.2	0.2	23.0	149.6		12	11	-9.5	-9.5	-9.4
GEW-159	7/14/2016 9:57	22.9	54.2	0.2	22.7	150.4		9	7	-9.4	-9.5	-9.4
GEW-160	7/6/2016 8:33	4.6	56.7	0.0	38.7	139.0		17	20	-11.2	-11.5	-10.4
GEW-160	7/6/2016 8:40	4.5	57.4	0.2	37.9	135.3		19	16	-10.6	-10.6	-10.0
GEW-161	7/6/2016 8:42	0.5	57.2	0.3	42.0	154.5		12	10	-8.1	-8.1	-10.9
GEW-161	7/6/2016 8:48	0.6	54.2	0.3	44.9	155.4		13	11	-8.8	-8.8	-10.9
GEW-162	7/6/2016 9:21	23.7	59.1	1.0	16.2	79.1		10	11	-17.5	-17.6	-17.5

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-162	7/6/2016 9:28	23.6	57.7	0.9	17.8	79.5		15	15	-17.9	-17.9	-17.6
GEW-163	7/12/2016 11:11	8.4	50.5	4.9	36.2	172.7		40	46	-8.1	-8.2	-13.9
GEW-163	7/12/2016 11:19	8.6	50.0	4.8	36.6	173.4		39	37	-8.2	-8.2	-13.9
GEW-164	7/12/2016 13:32	3.9	64.4	0.2	31.5	98.3		50	21	-14.4	-14.6	-13.7
GEW-164	7/12/2016 13:41	4.0	64.0	0.2	31.8	100.0		33	40	-15.1	-15.1	-15.4
GEW-165	7/12/2016 14:03	1.2	62.7	0.0	36.1	192.6		45	45	-10.3	-10.3	-14.8
GEW-165	7/12/2016 14:11	1.1	62.1	0.0	36.8	192.6		45	45	-10.3	-10.2	-15.4
GEW-166	7/12/2016 14:32	8.0	48.7	2.4	40.9	175.2		60	69	-6.5	-6.3	-9.1
GEW-166	7/12/2016 14:39	8.0	48.5	2.5	41.0	175.2		62	31	-6.9	-6.9	-11.6
GEW-167	7/13/2016 8:04	5.7	40.8	4.8	48.7	177.7		65	47	-1.6	-1.6	-15.4
GEW-167	7/13/2016 8:10	5.7	37.6	4.8	51.9	178.2		64	59	-1.5	-1.4	-14.6
GEW-168	7/13/2016 8:35	0.4	60.4	0.0	39.2	184.1		15	11	-12.6	-12.6	-12.5
GEW-168	7/13/2016 8:46	0.5	58.9	0.1	40.5	183.5		8	3	-11.2	-10.9	-10.8
GEW-169	7/13/2016 8:55	6.7	59.8	0.9	32.6	183.0		61	67	-13.2	-13.2	-13.3
GEW-169	7/13/2016 9:02	7.0	58.7	0.9	33.4	183.5		63	66	-13.2	-13.3	-13.4
GEW-170	7/13/2016 10:27	12.0	55.1	1.9	31.0	171.7		40	37	-9.8	-9.8	-14.0
GEW-170	7/13/2016 10:34	12.6	56.6	1.8	29.0	172.1		39	36	-9.1	-9.4	-13.1
GEW-171	7/14/2016 17:26	7.7	60.3	0.1	31.9	176.7		10	16	-14.7	-14.7	-14.6
GEW-171	7/14/2016 17:31	7.2	59.2	0.1	33.5	175.8		6	20	-14.6	-14.7	-14.6
GEW-172	7/14/2016 9:29	0.2	58.0	0.4	41.4	185.1		9	6	-12.8	-13.2	-12.9
GEW-172	7/14/2016 9:37	0.3	54.3	0.5	44.9	185.1		1	3	-13.2	-13.5	-13.2
GEW-173	7/13/2016 14:45	10.6	36.6	5.2	47.6	118.6		52	50	-2.6	-2.6	-15.6
GEW-173	7/13/2016 14:51	10.7	35.1	5.3	48.9	120.2		46	55	-2.5	-2.5	-16.2
GEW-174	7/12/2016 16:40	15.7	39.5	4.7	40.1	156.9		93	84	-3.3	-3.8	-8.8
GEW-174	7/12/2016 16:45	16.3	36.9	4.6	42.2	156.7		106	78	-3.3	-3.2	-8.8
GEW-175	7/12/2016 14:55	23.5	55.4	1.5	19.6	139.6		113	120	-13.7	-13.7	-15.8
GEW-175	7/12/2016 15:02	24.9	55.3	1.5	18.3	139.5		112	129	-13.3	-13.3	-15.2
GEW-176	7/12/2016 14:34	12.7	59.2	0.3	27.8	165.8		11	11	-0.7	-0.7	-17.8
GEW-176	7/12/2016 14:43	14.3	60.9	0.4	24.4	169.5		29	29	-0.6	-0.6	-17.6
GEW-177	7/21/2016 13:59	2.0	54.6	0.0	43.4	193.7		37	36	-0.1	-6.7	-15.7
GEW-177	7/21/2016 14:00	2.4	56.4	0.0	41.2	193.7		46	51	-7.7	-7.7	-14.6
GEW-1A	7/7/2016 15:15	0.3	2.7	20.1	76.9	97.9		7	13	-1.5	-0.3	-12.9
GEW-1A	7/7/2016 15:16	0.3	1.1	20.3	78.3	98.3		8	10	-1.3	-0.8	-12.9
GEW-1A	7/11/2016 14:18	0.2	2.4	20.3	77.1	105.7		3	3	-7.0	-6.9	-12.2
GEW-1A	7/11/2016 14:21	0.1	0.2	20.3	79.4	109.5		1	1	-8.4	-8.3	-12.9
GEW-1A	7/19/2016 10:49	0.4	3.0	20.5	76.1	103.4		12	7	-7.7	-6.7	-12.9
GEW-1A	7/19/2016 10:49	0.3	1.2	20.8	77.7	104.3		6	1	-7.2	-7.4	-12.7
GEW-2S	7/7/2016 15:21	61.6	35.4	0.1	2.9	98.9		3	4	-0.1	-0.1	-9.8
GEW-2S	7/11/2016 14:28	62.5	34.2	0.1	3.2	105.2		6	4	0.0	0.0	-9.9
GEW-2S	7/11/2016 14:35	61.2	35.5	0.1	3.2	106.0		3	4	0.0	-0.1	-11.3
GEW-2S	7/19/2016 10:58	57.7	37.1	0.4	4.8	115.8		12	6	-7.4	-7.1	-8.4
GIW-01	7/5/2016 8:21	3.3	57.7	3.2	35.8	168.3		13	14	-17.4	-18.2	-17.4
GIW-01	7/5/2016 8:22	1.8	56.4	3.1	38.7	168.8		15	15	-17.2	-17.5	-17.2

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GIW-01	7/11/2016 10:16	2.8	57.5	2.8	36.9	164.1		0	0	-17.4	-17.0	-17.1
GIW-01	7/11/2016 10:23	2.8	57.9	2.9	36.4	162.3		19	0	-17.4	-17.0	-17.5
GIW-01	7/18/2016 9:27	1.5	45.1	8.1	45.3	165.9		14	13	-17.9	-17.6	-18.1
GIW-01	7/18/2016 9:28	1.2	46.7	8.0	44.1	165.1		24	19	-17.6	-17.6	-17.1
GIW-01	7/25/2016 13:34	0.4	16.8	16.9	65.9	141.5		25	29	-16.7	-16.9	-16.8
GIW-01	7/25/2016 13:35	0.4	16.3	16.9	66.4	141.5		27	24	-17.0	-16.6	-17.0
GIW-01	7/26/2016 10:14	1.3	22.6	16.5	59.6	148.0		33	42	-17.3	-17.3	-17.8
GIW-01	7/26/2016 10:16	0.6	22.1	16.7	60.6	148.5		30	24	-16.9	-16.9	-17.1
GIW-02	7/5/2016 8:18	7.6	52.6	2.8	37.0	95.0		5	5	-0.1	-0.1	-17.0
GIW-02	7/11/2016 9:41	9.4	49.0	4.4	37.2	96.7		3	3	-0.2	-0.2	-17.7
GIW-02	7/11/2016 9:47	10.1	48.5	4.4	37.0	97.7		5	4	-0.1	-0.2	-16.9
GIW-02	7/18/2016 9:22	5.0	45.7	8.3	41.0	98.8		4	3	-0.2	-0.2	-18.5
GIW-02	7/18/2016 9:23	5.6	42.0	8.5	43.9	100.2		2	2	-0.2	-0.2	-17.2
GIW-02	7/25/2016 13:26	6.1	42.0	7.0	44.9	95.4		4	5	-0.2	-0.2	-16.5
GIW-02	7/25/2016 13:28	6.5	43.0	6.9	43.6	96.4		4	11	-0.5	-0.5	-17.0
GIW-03	7/5/2016 8:15	1.1	52.6	4.7	41.6	84.1		2	2	-1.3	-1.3	-12.5
GIW-03	7/11/2016 9:31	1.0	57.0	3.2	38.8	90.1		6	5	-1.4	-1.4	-10.8
GIW-03	7/11/2016 9:37	1.0	57.2	3.0	38.8	90.1		3	2	-1.4	-1.4	-10.1
GIW-03	7/18/2016 9:19	0.6	62.1	0.1	37.2	93.6		3	3	-0.1	-0.1	-11.7
GIW-03	7/25/2016 13:20	0.7	52.4	5.2	41.7	96.7		2	2	-3.6	-3.6	-13.3
GIW-03	7/25/2016 13:21	0.6	53.3	4.8	41.3	96.9		3	3	-3.6	-3.4	-13.4
GIW-04	7/5/2016 8:11	0.8	56.3	0.0	42.9	93.6		13	7	-10.7	-10.7	-12.9
GIW-04	7/11/2016 9:21	1.2	58.1	0.0	40.7	95.5		7	11	-8.4	-8.5	-10.6
GIW-04	7/11/2016 9:27	1.3	57.2	0.0	41.5	96.5		6	11	-8.9	-8.9	-11.1
GIW-04	7/18/2016 8:39	0.9	57.0	0.2	41.9	92.7		9	6	-7.6	-7.4	-10.2
GIW-04	7/25/2016 13:14	0.7	60.4	0.4	38.5	96.6		7	6	-9.3	-9.3	-13.5
GIW-05	7/5/2016 8:08	7.1	45.4	0.7	46.8	86.2		5	5	-4.9	-4.8	-11.8
GIW-05	7/11/2016 9:11	7.1	57.2	0.8	34.9	89.7		7	7	-4.7	-4.7	-9.4
GIW-05	7/11/2016 9:16	7.1	56.6	0.8	35.5	90.3		7	7	-4.7	-4.7	-10.7
GIW-05	7/18/2016 8:36	1.9	57.9	0.8	39.4	91.7		0	6	-3.1	-3.0	-10.1
GIW-05	7/25/2016 13:08	2.1	58.0	0.7	39.2	95.8		10	10	-5.0	-5.0	-12.7
GIW-06	7/5/2016 8:53	1.4	60.3	0.0	38.3	89.9				6.8	-10.8	-12.0
GIW-06	7/5/2016 8:54	1.5	60.3	0.0	38.2	90.1				-10.9	-10.9	-12.4
GIW-06	7/11/2016 8:23	3.4	55.2	1.3	40.1	88.4				-11.3	-11.1	-10.8
GIW-06	7/11/2016 8:29	3.4	54.3	1.3	41.0	89.9				-11.3	-11.6	-11.1
GIW-06	7/18/2016 8:33	3.2	54.1	0.7	42.0	91.5				-10.6	-10.6	-10.2
GIW-06	7/25/2016 11:01	4.3	48.7	3.6	43.4	85.3				-14.6	-14.4	-14.6
GIW-07	7/5/2016 8:59	9.9	53.5	5.1	31.5	95.2		5	1	-1.7	-1.7	-13.1
GIW-07	7/5/2016 9:01	10.0	53.5	5.1	31.4	95.6		2	2	-1.7	-1.7	-12.5
GIW-07	7/11/2016 8:13	8.2	52.8	5.2	33.8	91.7		1	1	-1.5	-1.5	-11.2
GIW-07	7/11/2016 8:19	8.1	51.9	5.3	34.7	93.0		3	2	-1.5	-1.5	-10.6
GIW-07	7/18/2016 8:19	7.9	54.2	5.3	32.6	98.1		3	3	-1.7	-1.7	-10.8
GIW-07	7/18/2016 8:20	8.0	54.8	5.2	32.0	98.6		3	3	-1.7	-1.7	-10.1

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GIW-07	7/25/2016 11:07	5.0	27.1	13.4	54.5	83.8		3	3	-2.5	-2.5	-14.6
GIW-07	7/25/2016 11:08	6.6	37.2	10.8	45.4	84.7		3	3	-2.6	-2.6	-13.7
GIW-08	7/5/2016 8:44	3.5	58.0	4.9	33.6	90.3		5	4	-1.0	-1.0	-13.0
GIW-08	7/11/2016 8:33	3.2	55.6	5.6	35.6	89.7		4	4	-0.9	-0.9	-10.9
GIW-08	7/11/2016 8:39	2.9	52.8	6.5	37.8	90.0		4	4	-0.9	-0.9	-10.8
GIW-08	7/18/2016 8:22	3.7	58.0	4.3	34.0	92.9		3	1	-1.0	-1.0	-10.7
GIW-08	7/25/2016 11:16	4.8	69.4	0.3	25.5	86.6		1	4	-8.3	-8.3	-14.1
GIW-09	7/5/2016 8:39	0.8	43.0	10.4	45.8	87.4				-0.7	-0.7	-11.9
GIW-09	7/5/2016 8:41	1.2	43.5	8.7	46.6	88.4				-0.7	-0.7	-12.5
GIW-09	7/11/2016 8:45	1.6	53.5	4.6	40.3	89.2				-0.6	-0.6	-10.7
GIW-09	7/11/2016 8:51	1.6	50.7	5.7	42.0	88.7				-0.7	-0.6	-10.1
GIW-09	7/18/2016 8:30	1.3	54.8	4.2	39.7	91.7				-0.7	-0.7	-9.6
GIW-09	7/25/2016 11:25	6.5	59.0	0.6	33.9	86.6				-4.2	-4.3	-14.1
GIW-10	7/5/2016 8:37	0.8	55.9	0.0	43.3	84.9		5	4	-0.3	-0.3	-12.1
GIW-10	7/11/2016 11:19	1.8	55.3	0.0	42.9	98.9		4	3	-0.5	-0.5	-11.4
GIW-10	7/11/2016 11:25	1.5	53.2	0.0	45.3	98.7		2	3	-0.4	-0.4	-11.1
GIW-10	7/18/2016 9:46	0.8	56.5	0.0	42.7	100.8		3	3	-0.7	-0.7	-11.1
GIW-10	7/25/2016 14:02	0.5	58.0	0.2	41.3	99.4		3	3	-1.2	-1.2	-13.3
GIW-11	7/5/2016 8:34	5.3	58.4	1.0	35.3	88.8				-1.1	-1.1	-17.7
GIW-11	7/11/2016 10:46	9.2	57.4	1.4	32.0	94.4				-1.2	-1.2	-17.1
GIW-11	7/11/2016 10:53	9.8	58.0	1.4	30.8	94.8				-1.2	-1.2	-17.5
GIW-11	7/18/2016 9:44	6.5	57.8	1.6	34.1	97.9				-1.2	-1.2	-16.8
GIW-11	7/25/2016 13:58	5.9	59.2	1.0	33.9	98.9				-1.3	-1.3	-18.9
GIW-12	7/5/2016 8:30	8.7	47.5	5.8	38.0	89.8				-0.3	-0.3	-13.0
GIW-12	7/5/2016 8:31	8.8	46.8	5.9	38.5	90.5				-0.3	-0.3	-11.8
GIW-12	7/11/2016 10:38	8.9	39.3	7.9	43.9	93.8				-0.3	-0.3	-14.8
GIW-12	7/11/2016 10:43	9.1	38.4	7.9	44.6	93.8				-0.3	-0.3	-12.8
GIW-12	7/18/2016 9:40	6.5	38.7	7.9	46.9	96.9				-0.3	-0.3	-10.7
GIW-12	7/18/2016 9:41	6.6	38.5	7.9	47.0	97.3				-0.3	-0.3	-12.4
GIW-12	7/25/2016 13:52	7.0	39.5	5.6	47.9	96.9				-0.3	-0.3	-15.6
GIW-12	7/25/2016 13:53	7.2	41.5	5.5	45.8	98.1				-0.3	-0.3	-15.2
GIW-13	7/5/2016 8:26	15.2	59.4	0.0	25.4	94.8				-3.7	-3.7	-13.6
GIW-13	7/11/2016 10:27	15.7	60.1	0.0	24.2	97.1				-3.7	-3.6	-11.6
GIW-13	7/11/2016 10:33	15.9	60.3	0.0	23.8	97.1				-3.6	-3.6	-10.5
GIW-13	7/18/2016 9:32	10.8	62.2	0.1	26.9	98.1				-2.4	-2.4	-9.1
GIW-13	7/25/2016 13:47	9.3	64.1	0.0	26.6	96.9				-2.3	-2.3	-8.2
LCS-5A	7/7/2016 17:31	58.7	41.0	0.0	0.3	94.6				-12.2	-12.3	-11.8
LCS-5A	7/12/2016 10:29	58.0	40.5	0.1	1.4	95.3				-12.3	-12.2	-12.6
LCS-5A	7/19/2016 13:35	58.6	40.8	0.0	0.6	95.5				-12.3	-12.3	-12.5
LCS-5A	7/26/2016 10:43	57.4	40.4	0.0	2.2	95.0				-11.6	-12.1	-11.7
LCS-6B	7/7/2016 15:50	53.7	41.7	0.2	4.4	100.1		9	9	-0.9	-0.9	-12.7
LCS-6B	7/11/2016 16:25	53.0	42.4	0.0	4.6	103.1		5	4	-0.6	-0.7	-12.7
LCS-6B	7/19/2016 11:17	50.9	39.4	0.1	9.6	106.7		9	8	-1.2	-1.2	-12.7

July 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
LCS-6B	7/26/2016 9:31	54.4	38.8	0.0	6.8	103.3		3	0	-1.1	-1.1	-12.2
PGW-60	7/7/2016 15:19	59.0	38.2	0.2	2.6	86.7		13	0	-8.8	-9.8	-8.8
SEW-002	7/20/2016 13:50	0.0	4.1	17.9	78.0	95.5		4	4	-13.1	-13.1	-14.8
SEW-002	7/20/2016 13:51	0.0	5.6	17.5	76.9	97.1		4	3	-13.7	-13.5	-14.2
T-56	7/7/2016 16:12	58.1	38.6	0.1	3.2	81.7		9	9	0.1	0.0	-12.9
T-56	7/7/2016 16:17	58.4	38.6	0.1	2.9	81.5		12	12	0.0	0.0	-12.2

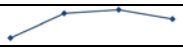
ATTACHMENT E-2

MAXIMUM WELLHEAD TEMPERATURE TABLE

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	April 2016	May 2016	June 2016	July 2016		
GEW-001	--	--	--	--		
GEW-002	125.4	128.1	127.8	123.9		
GEW-003	121.5	117.3	117.3	117.9		
GEW-004	119.1	122.0	122.6	121.8		
GEW-005	97.6	95.0	98.7	96.7		
GEW-006	93.1	90.8	93.9	91.5		
GEW-007	94.0	97.1	103.4	101.5		
GEW-008	112.5	114.3	114.9	114.8		
GEW-009	124.9	128.6	125.8	125.9		
GEW-010	103.0	98.9	97.5	107.9		
GEW-011	--	--	--	--		
GEW-013A	160.1	156.6	165.5	146.6		
GEW-014A	--	--	--	--		
GEW-015	--	--	--	--		
GEW-016R	--	--	--	--		
GEW-018B	--	--	--	--		
GEW-018R	--	--	--	--		
GEW-019A	--	--	--	--		
GEW-020A	--	--	--	--		
GEW-021A	--	--	--	--		
GEW-022R	192.5	190.2	193.7	--		
GEW-023A	--	--	--	--		
GEW-024A	--	--	--	--		
GEW-025A	--	--	--	--		
GEW-026R	--	--	--	--		
GEW-027A	--	--	--	--		
GEW-028R	189.1	83.4	84.0	96.5		
GEW-029	--	--	--	--		
GEW-030R	--	--	--	--		
GEW-033R	--	--	--	--		
GEW-034	--	--	--	--		
GEW-034A	--	--	--	--		
GEW-035	--	--	--	--		
GEW-036	--	--	--	--		
GEW-037	--	--	--	--		
GEW-038	102.2	105.2	110.6	103.9		
GEW-039	134.7	134.4	136.0	133.1		
GEW-040	92.7	91.7	97.1	98.9		
GEW-041R	105.8	107.1	108.0	107.6		
GEW-042R	110.6	113.7	114.8	112.8		
GEW-043R	137.6	131.0	124.5	124.1		

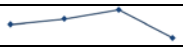
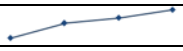
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	April 2016	May 2016	June 2016	July 2016		
GEW-044	90.4	90.4	97.2	96.5		
GEW-045R	98.5	91.3	105.2	102.9		
GEW-046R	98.0	100.4	102.2	101.1		
GEW-047R	116.5	114.8	118.1	115.9		
GEW-048	105.1	105.5	107.5	106.5		
GEW-049	110.9	113.8	115.0	111.7		
GEW-050	108.4	107.3	110.3	109.5		
GEW-051	124.3	129.8	131.4	128.4		
GEW-052	113.5	117.1	117.0	116.3		
GEW-053	142.2	142.0	143.0	142.2		
GEW-054	154.9	155.0	154.0	148.6		
GEW-055	128.1	130.0	130.0	129.1		
GEW-056R	157.0	156.5	155.5	164.6		
GEW-057B	127.8	89.3	145.2	130.3		
GEW-057R	146.6	133.7	131.2	125		
GEW-058	183.5	179.8	148.0	186.4		
GEW-058A	89.9	79.2	99.8	148.8		
GEW-059R	191.3	189.6	192.9	189.2		
GEW-061B	--	--	--	--		
GEW-064A	--	--	--	--		
GEW-065A	92.9	81.9	98.4	103.7		
GEW-066	--	--	--	--		
GEW-067A	84.9	179.7	193.7	157.0		
GEW-068A	--	--	--	--		
GEW-069R	--	--	--	--		
GEW-070R	--	--	--	--		
GEW-071	--	--	--	--		
GEW-071B	--	--	--	--		
GEW-072RR	--	--	--	--		
GEW-073R	--	--	--	--		
GEW-075	--	--	--	--		
GEW-076R	--	--	--	--		
GEW-077	--	111.6	120.7	198.9		
GEW-078R	--	191.6	190.2	188.5		
GEW-080	--	95.0	82.3	98.5		
GEW-081	--	125.8	87.6	--		
GEW-082R	194.2	192.1	191.6	192.3		
GEW-083	--	--	--	--		
GEW-084	--	--	--	--		
GEW-085	--	--	--	--		
GEW-086	81.7	64.6	96.2	102.5		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	April 2016	May 2016	June 2016	July 2016		
GEW-087	--	--	--	--		
GEW-088	--	--	--	--		
GEW-089	72.4	71.7	99.2	109.5		
GEW-090	185.2	183.0	189.6	183.3		
GEW-091	--	--	--	--		
GEW-100	--	--	--	--		
GEW-101	--	--	--	--		
GEW-102	193.7	192.5	192.3	125.4		
GEW-103	--	--	--	--		
GEW-104	--	110.0	104.5	112.5		
GEW-105	--	69.6	178.7	--		
GEW-106	--	--	--	--		
GEW-107	92.1	77.8	92.3	--		
GEW-108	76.9	78.5	92.8	110.4		
GEW-109	139.7	103.8	111.8	110.9		
GEW-110	113.5	108.2	111.7	113.7		
GEW-112	--	75.5	93.6	110.4		
GEW-113	--	184.7	171.6	173.6		
GEW-116	70.4	71.4	90.8	--		
GEW-117	102.1	87.0	95.3	119.7		
GEW-118	194.3	194.8	200.1	195		
GEW-120	165.5	160.6	146.5	152.1		
GEW-121	175.7	197.9	184.6	180.8		
GEW-122	188.5	168.8	180.4	188.8		
GEW-123	114.2	187.9	187.9	185.2		
GEW-124	67.8	88.1	98.9	92.4		
GEW-125	190.1	190.5	196.0	191.3		
GEW-126	95.6	186.7	185.2	154.5		
GEW-127	178.2	184.1	189.0	187.9		
GEW-128	174.6	177.2	174.8	172.2		
GEW-129	176.2	176.7	104.7	147.4		
GEW-130	182.7	193.7	179.2	176.2		
GEW-131	175.2	181.9	187.7	110.2		
GEW-132	172.7	169.7	166.9	166.1		
GEW-133	60.5	98.3	98.1	96.9		
GEW-134	118.3	135.6	139.8	150.5		
GEW-135	144.4	166.4	176.4	175.7		
GEW-136	112.3	120.2	126.9	121.3		
GEW-137	89.6	103.3	107.5	87		
GEW-138	151.7	137.3	150.5	153.8		
GEW-139	190.2	185.2	180.8	179.3		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	April 2016	May 2016	June 2016	July 2016		
GEW-140	161.4	163.6	176.2	167.6		
GEW-141	69.7	104.3	152.1	119.7		
GEW-142	67.1	94.6	97.9	95.3		
GEW-143	64.8	91.1	104.0	92.7		
GEW-144	64.0	102.8	94.4	91.7		
GEW-145	173.1	163.6	166.1	97.7		
GEW-146	79.9	94.1	104.7	100.4		
GEW-147	191.6	189.6	190.2	187.4		
GEW-148	55.5	92.5	99.0	79.5		
GEW-149	131.5	167.4	167.2	141.8		
GEW-150	150.1	159.2	150.3	156.9		
GEW-151	165.9	93.1	157.1	147		
GEW-152	175.7	167.8	182.9	183.9		
GEW-153	151.4	157.9	155.6	143.6		
GEW-154	130.2	151.0	186.4	79.1		
GEW-155	112.5	185.1	127.8	124.9		
GEW-156	88.9	122.1	124.8	115.0		
GEW-157	66.0	93.6	164.3	178.6		
GEW-158	65.7	88.6	91.4	96.2		
GEW-159	154.1	154.1	154.3	150.4		
GEW-160	60.0	186.3	171.1	139.0		
GEW-161	59.0	96.7	109.7	155.4		
GEW-162	178.2	94.8	179.8	79.5		
GEW-163	--	170.0	169.9	173.4		
GEW-164	--	171.6	161.4	100.0		
GEW-165	--	191.6	195.7	192.6		
GEW-166	--	174.7	188.5	175.2		
GEW-167	--	179.8	180.3	178.2		
GEW-168	--	157.0	190.8	184.1		
GEW-169	--	191.4	193.6	183.5		
GEW-170	--	185.8	180.6	172.1		
GEW-171	--	100.4	187.4	176.7		
GEW-172	--	119.9	192.3	185.1		
GEW-173	--	102.6	106.1	120.2		
GEW-174	--	174.6	173.1	156.9		
GEW-175	--	127.8	163.3	139.6		
GEW-176	--	89.5	120.2	169.5		
GEW-1A	--	95.9	113.5	109.5		
GEW-2S	--	99.9	108.0	115.8		
GIW-01	183.5	184.6	171.6	168.8		
GIW-02	84.0	98.4	103.8	100.2		

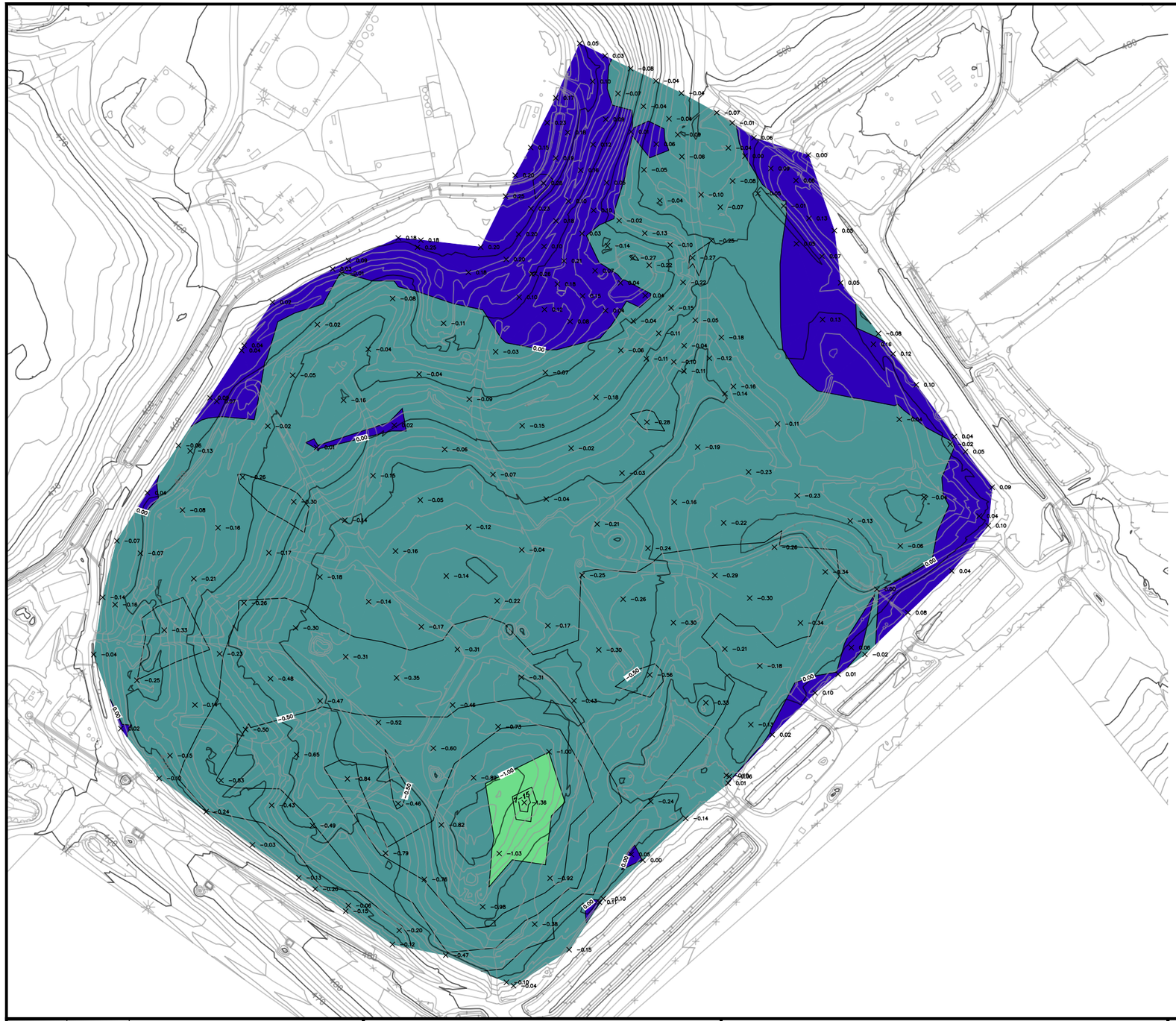
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	April 2016	May 2016	June 2016	July 2016		
GIW-03	86.0	94.6	101.0	96.9		
GIW-04	88.4	99.1	106.5	96.6		
GIW-05	86.9	96.0	105.5	95.8		
GIW-06	88.0	99.7	103.5	91.5		
GIW-07	90.1	97.9	107.7	98.6		
GIW-08	92.9	101.8	108.2	92.9		
GIW-09	72.2	106.6	103.8	91.7		
GIW-10	90.3	101.3	106.9	100.8		
GIW-11	96.0	107.7	104.7	98.9		
GIW-12	91.9	99.4	101.1	98.1		
GIW-13	99.4	96.7	106.2	98.1		
LCS-1D	--	--	--	--		
LCS-2D	--	--	--	--		
LCS-3C	--	--	--	--		
LCS-4B	--	--	--	--		
LCS-5A	95.9	95.8	98.7	95.5		
LCS-6B	88.6	96.7	110.2	106.7		
PGW-60	77.5	88.6	78.0	86.7		
SEW-002	85.2	74.3	93.2	97.1		
SEW-012A	--	--	--	--		
SEW-017R	--	--	--	--		
SEW-031R	--	--	--	--		
SEW-032R	--	--	--	--		
SEW-060R	--	--	--	--		
SEW-061R	--	--	--	--		
SEW-062R	--	--	--	--		
SEW-063	--	--	--	--		
SEW-064	--	--	--	--		
SEW-067	--	--	--	--		
SEW-072R	--	--	--	--		
SEW-074	--	--	--	--		
SEW-079R	--	--	--	--		
T-56	60.8	70.0	72.3	81.7		

-- = Indicates no data available.

ATTACHMENT F

SETTLEMENT FRONT MAP



N

0 200'

GRAPHIC SCALE

NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY COOPER AERIAL SURVEYS, CO. ON FEBRUARY 27, 2016.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. ELEVATION DIFFERENCE DETERMINED BY SUBTRACTING SPOT ELEVATIONS SURVEYED ON 6-16-16 FROM SPOT ELEVATIONS SURVEYED ON 7-15-16.
4. SURVEY POINTS WERE PERFORMED USING GPS METHODS.
5. SETTLEMENT RANGE SURFACE WAS GENERATED FROM THE SPOT ELEVATION DIFFERENCES.
6. ELEVATION DIFFERENCES THAT ARE SHOWN AS NEGATIVE INDICATE SPOTS OF SETTLEMENT.
7. ANY POINTS THAT ARE NOT A GROUND-TO-GROUND COMPARISON TO THE PREVIOUS MONTH'S POINTS, OR THAT WERE NOT SURVEYED IN THE SAME LOCATION AS THE PREVIOUS MONTH ARE NOT INCLUDED AND WERE NOT USED IN ANY SURFACE GENERATION.

LEGEND

× −0.42	SPOT ELEVATION DIFFERENCE (7-15-16 TO 6-16-16)
	MINOR ELEVATION CHANGE CONTOUR (0.25 FEET)
−0.50	MAJOR ELEVATION CHANGE CONTOUR (0.50 FEET)
7-15	SETTLEMENT FRONT CONTOUR FOR AREA WITH 1.35' PER 30 DAYS FOR CURRENT PERIOD OF DAYS (AREA REPRESENTS 1.305' OVER 29 DAYS BASED ON CONVERSION)

ELEVATION CHANGE (FEET)

Number	Minimum Elev. Change	Maximum Elev. Change	Area (sq.ft.)	Color
1	−5.00	−4.00	0.00	
2	−4.00	−3.00	0.00	
3	−3.00	−2.00	0.00	
4	−2.00	−1.00	19926.20	
5	−1.00	0.00	1295219.68	
6	0.00	1.00	226039.23	

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL

CB&I Environmental & Infrastructure, Inc.

STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

CB&I Environmental & Infrastructure, Inc. has prepared this document for a specific project or purpose. All information contained within this document is copyrighted and remains intellectual property of CB&I Environmental & Infrastructure, Inc. This document may not be used or copied, in part or in whole, for any reason without expressed written consent by CB&I Environmental & Infrastructure, Inc

BRIDGETON LANDFILL
BRIDGETON, MO

SETTLEMENT MAP
JUNE 16, 2016 THROUGH JULY 15, 2016

DRAWN BY:	ORC	APPROVED BY:	DJD	PROJ. NO.:	155162	DATE:	AUGUST 2016

ATTACHMENT G

SUMMARY OF ODOR COMPLAINTS

July 1, 2016 – July 31, 2016 / MDNR ODOR COMPLAINTS

Name: N/A

Message: Odor logged July 1, 2016, at 7:33 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 2 hours following the time cited in this concern so real time follow up was not possible. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location cited was directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 1, 2016, at 7:34 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 2 hours following the time cited in this concern so real time follow up was not possible. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location cited was directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 3, 2016, at 7:17 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location referenced is of such distance as to be well in excess of the maximum historical distance of Bridgeton Landfill odor observation. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 3, 2016, at 7:28 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location referenced is of such distance as to be well in excess of the maximum historical distance of Bridgeton Landfill odor observation. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Samantha Compton

Message: Odor logged July 3, 2016, at 7:04 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported the following day so real time follow up was not possible. The concern location referenced is of such distance as to be well in excess of the maximum historical distance of Bridgeton Landfill odor observation. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged July 4, 2016, at 6:44 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed after the time cited in this concern did not observe any odor related to the Bridgeton Landfill. The concern location provided is in close proximity to and immediately downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Sarah Abernathy

Message: Odor logged July 4, 2016, at 10:59 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe any odor related to the Bridgeton Landfill. At the time of this concern winds were of a southwestern origin placing this location inside the downwind pathway of the Bridgeton Landfill. Based on the wind direction there is potential for this to have been a Bridgeton Landfill odor.

Name: Dawn Chapman

Message: Odor logged July 4, 2016, at 11:07 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe any odor related to the Bridgeton Landfill. At the time of this concern winds were of a south southwestern origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 4, 2016, at 11:10 pm strength of 10

Follow-up: The following concern lacks essential location data and is therefore invalid.

Name: Jan Hiber

Message: Odor logged July 4, 2016, at 11:13 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe any odor related to the Bridgeton Landfill. At the time of this concern winds were of a western origin placing this location inside the downwind pathway of the Bridgeton Landfill. Based on the wind direction there is potential for this to have been a Bridgeton Landfill odor.

Name: Jan Hiber

Message: Odor logged July 4, 2016, at 11:13 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe any odor related to the Bridgeton Landfill. At the time of this concern winds were of a west origin placing this location inside the downwind pathway of the Bridgeton Landfill. Based on the wind direction there is potential for this to have been a Bridgeton Landfill odor.

Name: Sue Robison

Message: Odor logged July 3, 2016, at 1:25 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported the following day so real time follow up was not possible. The concern location provided is in close proximity to and immediately downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: June Terry

Message: Odor logged July 4, 2016, at 11:28 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe any odor related to the Bridgeton Landfill. At the time of this concern winds were of a western origin placing this

location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 4, 2016, at 11:40 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe Bridgeton Landfill odor at observation points between this location and the Bridgeton Landfill. At the time given in this concern winds were of a west southwestern origin, placing this location upwind of the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 4, 2016, at 11:41 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe Bridgeton Landfill odor at observation points between this location and the Bridgeton Landfill. At the time of this concern winds were of a southwestern origin placing this location inside the downwind pathway of the Bridgeton Landfill. Based on the wind direction there is potential for this to have been a Bridgeton Landfill odor.

Name: Janet Frayne

Message: Odor logged July 4, 2016, at 9:43 pm strength of 10

Follow-up: The following concern lacks essential location data and is therefore invalid.

Name: N/A

Message: Odor logged July 5, 2016, at 6:57 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed within one hour of the time cited in this concern. No off-site odor was observed from the Bridgeton Landfill at that time. An odor was detected from another known odor source with frequent off-site emissions at an odor patrol observation point in the vicinity of the location cited in this concern. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 4, 2016, at 11:00 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over the following day so real time follow up was not possible. An odor patrol performed before the time cited in this concern did not observe Bridgeton Landfill odor at observation points between this location and the Bridgeton Landfill. At the time of this concern winds were of a west southwestern origin placing this location inside the downwind pathway of the Bridgeton Landfill. Based on the wind direction there is potential for this to have been a Bridgeton Landfill odor.

Name: Jan Huber

Message: Odor logged July 5, 2016, at 9:45 am strength of 6

Follow-up: The following concern was investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in the concern. This was not a Bridgeton Landfill odor.

Name: Mel Leib

Message: Odor logged July 4, 2016, at 9:01 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported the following day so real time follow up was not possible. An odor patrol performed after the time cited in this concern did not observe off-site odor from the Bridgeton Landfill at that time. There is no evidence to suggest this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 5, 2016, at 3:30 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 13 hours after the observation time so real time follow-up was not possible. An odor patrol performed after the time cited in this concern did not observe off-site odor from the Bridgeton Landfill at that time. An odor was detected from another known odor source with frequent off-site emissions at an odor patrol observation point in the vicinity of the location cited in this concern. There is no evidence to suggest this was a Bridgeton Landfill odor.

Name: Melissa Quigg

Message: Odor logged July 6, 2016, at 3:03 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location cited was directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 6, 2016, at 3:15 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location referenced is of such distance as to be well in excess of the maximum historical distance of Bridgeton Landfill odor observation. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 6, 2016, at 3:19 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location referenced is of such distance as to be well in excess of the maximum historical distance of Bridgeton Landfill odor observation. Another known odor source with frequent off-site odor emissions is between this location and the Bridgeton Landfill. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 6, 2016, at 3:21 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The following concern cites two conflicting addresses. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between these locations and the Bridgeton Landfill. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 6, 2016, at 3:29 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location referenced is of such distance as to be well in excess of the maximum historical distance of Bridgeton Landfill odor observation. Another known odor source with frequent off-site odor emissions is between this location and the Bridgeton Landfill. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kathy Bell

Message: Odor logged July 7, 2016, at 7:07 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern cites a time 9 minutes in the future from the time of submittal, therefore Bridgeton Landfill staff were unable to ascertain the observation time of this odor concern. An odor patrol performed after the submittal time of this concern did not observe any odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Amanda Dent

Message: Odor logged July 7, 2016, at 1:22 pm strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. At the time of this concern winds were of a south southwestern origin placing this location outside the downwind pathway of the Bridgeton Landfill. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Amanda Dent

Message: Odor logged July 7, 2016, at 1:21 pm strength of 4

Follow-up: The following concern lacks essential location data and is therefore invalid.

Name: Kirbi

Message: Odor logged July 8, 2016, at 8:16 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. At the time of this concern winds were of a western origin placing this location outside the downwind pathway of the Bridgeton Landfill. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi

Message: Odor logged July 8, 2016, at 9:59 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to and immediately downwind of another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged July 9, 2016, at 8:49 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged July 9, 2016, at 5:16 pm strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: David Blackwell

Message: Odor logged July 12, 2016, at 7:00 am strength of 3

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over one hour after the observation time so real time follow-up was not possible. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. At the time given in this concern winds were of a southwestern origin, placing this location upwind of the Bridgeton Landfill and downwind of another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged July 12, 2016, at 8:46 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to and immediately downwind of another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Liz Spector

Message: Odor logged July 12, 2016, at 9:48 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to and immediately downwind of another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:29 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided was immediately downwind of another known odor source with

frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:31 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:31 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:31 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:32 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Liz Spector

Message: Odor logged July 14, 2016, at 6:12 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to and immediately downwind of another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Liz Spector

Message: Odor logged July 14, 2016, at 6:12 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to and immediately downwind of another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Tina Stricklan

Message: Odor logged July 14, 2016, at 7:55 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points in the vicinity of this location. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:28 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided was immediately downwind of another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:29 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided was immediately downwind of another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 14, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 15, 2016, at 7:45 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 15, 2016, at 7:40 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 15, 2016, at 9:40 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed before the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple between this location and the Bridgeton Landfill. Winds were calm at the time of this concern. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 18, 2016, at 6:40 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. An odor was detected from another known odor source with frequent off-site emissions at the concern location and 2 other locations in close proximity to the concern location. This was not a Bridgeton Landfill odor.

Name: Pam Farris

Message: Odor logged July 18, 2016, at 8:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 3 hours after the observation time so real time follow-up was not possible. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to and immediately downwind of another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged July 18, 2016, at 3:33 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. An odor was detected from another known odor source with frequent off-site emissions at the concern location. This was not a Bridgeton Landfill odor.

Name: Tracey

Message: Odor logged July 19, 2016, at 7:58 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over one hour after the observation time so real time follow-up was not possible. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. At the time of this concern winds were of a southern origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 19, 2016, at 5:59 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 3 hours after the observation time so real time follow-up was not possible. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. At the time of this concern winds were of an east southeastern origin

placing this location directly downwind of another known odor source with frequent off-site emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Beth Kroeger

Message: Odor logged July 19, 2016, at 9:01 am strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The following concern has been investigated by Bridgeton Landfill staff. Odor patrols performed before and after the time cited in this concern did not observe any odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Brittani

Message: Odor logged July 19, 2016, at 7:35 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 2 hours after the observation time so real time follow-up was not possible. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Corey Bruer

Message: Odor logged July 19, 2016, at 5:32 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 5 hours after the observation time so real time follow-up was not possible. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 19, 2016, at 7:45 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 3 hours after the observation time so real time follow-up was not possible. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. At the time of this concern winds were of a southern origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Tammy Dunn

Message: Odor logged July 19, 2016, at 9:45 am strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 4 hours after the observation time so real time follow-up was not possible. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. At the time of this concern winds were of a northeastern origin placing this directly downwind of another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Dan Hyatt

Message: Odor logged July 16, 2016, at 2:02 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported 3 days after the observation time so real time follow-up was not possible. At the time of this concern winds were of an eastern origin placing this location outside the downwind pathway of the Bridgeton Landfill. There was no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Sonny Hummert

Message: Odor logged July 19, 2016, at 7:20 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported 7 hours after the observation time so real time follow-up was not possible. An odor patrol performed immediately after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Dan Hyatt

Message: Odor logged July 9, 2016, at 6:00 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported 10 days after the observation time so real time follow-up was not possible. Odor patrols performed on this date did not observe odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Rose Eichholz

Message: Odor logged July 22, 2016, at 10:38 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in the concern. An odor patrol performed before the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: David Blackwell

Message: Odor logged July 25, 2016, at 4:00 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 4 hours after the observation time so real time follow-up was not possible. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location cited was directly downwind of another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 25, 2016, at 7:15 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over one hour after the observation time so real time follow-up was not possible. An odor patrol performed within an hour of the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location cited was directly downwind of another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged July 25, 2016, at 10:01 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor was observed from another known odor source with frequent off-site emissions at the location cited in this concern. An odor patrol performed within an hour of the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Liz Spector

Message: Odor logged July 26, 2016, at 7:37 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in the concern. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged July 26, 2016, at 9:18 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in the concern. An odor patrol performed before the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location cited was directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 26, 2016, at 10:05 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. Winds were calm at the time cited in this concern. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: John

Message: Date and time was improperly filled out; strength of 1

Follow-up: The following concern did not provide a proper date or time. The location cited in this concern was in the state of California. This was not a valid odor concern.

Name: N/A

Message: Date, time, and odor strength were not provided

Follow-up: The following odor concern left all information fields blank. This was not a valid odor concern.

Name: N/A

Message: Odor logged July 27, 2016, at 7:45 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported the following day so real time follow up was not possible. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 28, 2016, at 8:17 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in the concern. Odor patrols performed before and after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Greg and Ellen Wortham

Message: Odor logged July 28, 2016, at 9:01 am strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in the concern. Odor patrols performed before and after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Melanie Shedd

Message: Odor logged July 28, 2016, at 8:59 am strength of 2

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location referenced is of such distance as to be well in excess of the maximum historical distance of Bridgeton Landfill odor observation. Odor patrols performed before and after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Kevin R. Toal

Message: Odor logged July 28, 2016, at 9:51 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor was observed from another known odor source with frequent off-site emissions at the location cited in this concern. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Kevin R. Toal

Message: Odor logged July 28, 2016, at 10:47 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor was observed from another known odor source with frequent off-site emissions at the location cited in this concern. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Liz Spector

Message: Odor logged July 28, 2016, at 11:22 pm strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor was observed from another known odor source with frequent off-site emissions at the location cited in this concern. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location cited was directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Liz Spector

Message: Odor logged July 28, 2016, at 11:22 pm strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor was observed from another known odor source with frequent off-site emissions at the location cited in this concern. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location cited was directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Kevin R. Toal

Message: Odor logged July 29, 2016, at 6:20 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at the location cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged July 29, 2016, at 9:18 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at the location cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity and was directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Kevin R. Toal

Message: Odor logged July 29, 2016, at 10:41 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed concurrently with the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location referenced is of such distance as to be in excess of the maximum historical distance of Bridgeton Landfill odor observation. This was not a Bridgeton Landfill odor.

Name: Bridget Elder

Message: Odor logged July 30, 2016, at 6:18 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor related to Bridgeton Landfill was observed at this location within an hour of the time cited in this concern. An odor patrol performed after the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Date, time, and odor strength were not provided

Follow-up: The following odor concern left all information fields blank. This was not a valid odor concern.

Name: Kevin R. Toal

Message: Odor logged July 30, 2016, at 9:12 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over 3 hours after the observation time so real time follow-up was not possible. An odor patrol performed within an hour of the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Kevin R. Toal

Message: Odor logged July 30, 2016, at 11:10 pm strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This odor concern was reported over an hour after the observation time so real time follow-up was not possible. An odor patrol performed before the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. The concern location provided is in close proximity to another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged July 31, 2016, at 8:25 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in this concern. An odor patrol performed before the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Donna Sparks

Message: Odor logged July 31, 2016, at 10:53 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in this concern. An odor patrol performed before the time cited in this concern did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill. At the time of this concern winds were of a western origin placing this location outside the downwind pathway of the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

ATTACHMENT H

LIQUID CHARACTERIZATION DATA AND DISCHARGE LOG

Bridgeton Landfill - Leachate PreTreatment Plant

July 2016

Liquid Characterization Data

Liquid characterization data is made available to MDNR on an ongoing basis. No additional lechate characterization data, beyond that produced for MSD, was collected during the prior month.

Hauled Disposal to MSD – Bissell Point

Date	Waste	Source	Transporter	Quantity
7/1/2016	LPTP Activated Sludge/ Permeate	Tank 1 (T1)	MBI	0
7/2/2016				0
7/3/2016				0
7/4/2016				0
7/5/2016				0
7/6/2016				0
7/7/2016				0
7/8/2016				0
7/9/2016				0
7/10/2016				0
7/11/2016				0
7/12/2016				0
7/13/2016				0
7/14/2016				0
7/15/2016				0
7/16/2016				0
7/17/2016				0
7/18/2016				0
7/19/2016				0
7/20/2016				0
7/21/2016				0
7/22/2016				0
7/23/2016				0
7/24/2016				0
7/25/2016				0
7/26/2016				0
7/27/2016				0
7/28/2016				0
7/29/2016				0
7/30/2016				0
7/31/2016				0
			Total=	**0**

Direct Discharge to MSD

Date	Waste	Source	Quantity (gal)
7/1/2016	LPTP Permeate	Through Tank AST 97k (MSD Sampling Point 013)	281,032
7/2/2016			279,692
7/3/2016			247,892
7/4/2016			298,220
7/5/2016			269,600
7/6/2016			280,804
7/7/2016			291,044
7/8/2016			293,076
7/9/2016			293,624
7/10/2016			291,660
7/11/2016			293,576
7/12/2016			290,520
7/13/2016			271,688
7/14/2016			97,156
7/15/2016			176,480
7/16/2016			291,164
7/17/2016			287,680
7/18/2016			286,656
7/19/2016			287,500
7/20/2016			284,920
7/21/2016			282,160
7/22/2016			279,188
7/23/2016			274,216
7/24/2016			272,664
7/25/2016			243,980
7/26/2016			290,296
7/27/2016			284,424
7/28/2016			274,384
7/29/2016			264,084
7/30/2016			194,376
7/31/2016			292,244
		Total =	**8,346,000**

ATTACHMENT I

LOW FILL PROJECT AREA

N

0 350'

GRAPHIC SCALE

NOTES

1. SITE AERIAL TOPOGRAPHIC SURVEY BY COOPER AERIAL SURVEYS, CO. ON AUGUST 1, 2015.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. SURVEY POINTS WERE PERFORMED USING GPS METHODS.

LEGEND

BOUNDARY OF FILL AREA FOR 6-16-16 THROUGH 7-15-16

BOUNDARY OF STOCKPILE AREA FOR 6-16-16 THROUGH 7-15-16

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL

CB&I Environmental & Infrastructure, Inc.

STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

CB&I Environmental & Infrastructure, Inc. has prepared this document for a specific project or purpose. All information contained within this document is copyrighted and remains intellectual property of CB&I Environmental & Infrastructure, Inc. This document may not be used or copied, in part or in whole, for any reason without expressed written consent by CB&I Environmental & Infrastructure, Inc

BRIDGETON LANDFILL
BRIDGETON, MO

LOW FILL AREA BOUNDARY
JULY 2016

DRAWN BY:	ORC	APPROVED BY:	DJD	PROJ. NO.:	155162	DATE:	AUGUST 2016