Bridgeton Landfill, LLC

Monthly Data Submittals

January 2017

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

February 20, 2017

Commentary on Data

February 20, 2017

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 1,696 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 41 GEW wells that are experiencing low or restricted flows, and five (5) 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.

- Attachment E-1 notes that GEW-1A has an oxygen concentration greater than 5% at one (1) or more weekly monitoring events during the reporting period. This has been the case since it's installation in December 2015. Bridgeton has made MDNR and St Louis County's Air Pollution Control Program aware of this. The area in which GEW-1A is installed is very saturated. Bridgeton has installed a sump in the vicinity of GEW-1A and will be increasing the force main capacity during the North Quarry capping projects in hope of lowering the potentiometric surface in the area to improve gas quality and reduce ambient air intrusion at the well.

- Attachment E-2 contains gas temperatures as measured at the wellheads. Nine (9) vertical wells (excluding GIW wells) decreased by 30°F during this reporting period. Additionally, nine (9) 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-162 exhibited a wellhead temperature decrease greater than 30°F. Additionally, GEW-108 exhibited a wellhead temperature increase greater than 30°F. These wells are installed within the south quarry area/neck area and the vacuum has been adjusted

over time as part of normal GCCS operations. The maximum wellhead temperatures of these wells are consistent with previous months in each of the gas extraction wells in the 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 145.5°F which is consistent with historic readings. Carbon monoxide (CO) results showed non-detect (ND) for North Quarry wells.

- Review of weekly gas quality in Attachment E reveals that all of the active North Quarry gas wells, with the exception of GEW-1A, continue to have low, if any, oxygen and healthy methane and carbon dioxide levels. These levels indicate normal wellfield conditions for aged waste and are consistent with GCCS wellfield conditions observed in the North Quarry for some time. As mentioned previously, the area in which GEW-1A is installed is very saturated. Bridgeton has installed a sump near GEW-1A and will be increasing the force main capacity during the North Quarry capping projects in hope of lowering the potentiometric surface in the area to improve gas quality and reduce ambient air intrusion at the well.

Settlement

- The South Quarry exhibited monthly maximum settlement up to 1.11 feet over 35 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. The Bridgeton Landfill submitted an updated Bird Hazard Monitoring and Mitigation Plan to the airport on 12/2/16.

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 4 of this approval is satisfied via the text below and the accompanying figure.

- Planned low fill maintenance activities have ceased for January and will commence again later in 2017.

ATTACHMENT A

WORK COMPLETED AND PLANNED

Bridgeton Landfill, LLC
Monthly Summary of Work Completed and Planned

Work Completed in January 2017

Gas Collection and Control System (GCCS)

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

Heat Extraction System (HES)

- Continued operation and maintenance of the HES (pilot and barrier wells).

Leachate Management System

- Continued routine operation of previously installed and upgraded features.
- Evaluated options to repair or replace LCS-5A.

Pre-Treatment Facility

- Continued ongoing operation of facility.
- Continued to optimize operation efficiency of pre-treatment facility.
- Continued to discharge permeate directly to St. Louis Metropolitan Sewer District (MSD) – Bissell Point Facility or other approved disposal facilities as determined by MSD.
- Continued testing of new polymer to improve flocculation.

Other Projects

- Continued acceptance of clean fill.
- Construction for the North Quarry EVOH capping project was on hold due to inclement weather.
- Removed gravel road on east side of the South Quarry, performed liner repairs, and replaced the gravel road on the east side of the South Quarry.
- Reinstalled two sumps in the South Quarry.
- Performed clean out and permeability testing of Interception Trench Sumps ITS-1 through ITS-7. This will continue on a monthly basis for the near future, but frequency may reduce based on results.

Work Planned for February 2017

Gas Collection and Control System (GCCS)

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

Heat Extraction System (HES)

- Continue operation and maintenance of the HES.
- Continue upgrades to the HES as necessary.

Leachate Management System

- Continue routine operation of previously installed and upgraded features.
- Begin drilling and installation of LCS-5B as a replacement for LCS-5A.

Pre-Treatment Facility

- 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.
- Continue testing of new polymer to improve flocculation.

Other Projects:

- Continue acceptance of clean fill materials for future fill projects.
- Construction for the North Quarry EVOH capping project will be on hold pending drilling and installation of LCS-5B.
- Perform clean out and permeability testing of Interception Trench Sumps ITS-1 through ITS-7. This will continue on a monthly basis for the near future, but frequency may reduce based on results.

ATTACHMENT B

DAILY FLARE MONITORING DATA

ATTACHMENT B-1

FLOW DATA TABLE

Daily Flare Monitoring Data - Bridgeton Landfill
January 2017

Date	Average Device Flow* (scfm)				Total Avg. Flow** (scfm)
	Utility Flare (FL-100)	Utility Flare (FL-120)	Utility Flare (FL-140)	EP14 NQ Utility Flare***	
1/1/2017	0	0	1,533	190	1,724
1/2/2017	0	0	1,510	192	1,702
1/3/2017	0	0	1,504	195	1,698
1/4/2017	0	0	1,516	218	1,734
1/5/2017	0	0	1,504	166	1,670
1/6/2017	0	0	1,499	121	1,620
1/7/2017	0	0	1,481	145	1,627
1/8/2017	0	0	1,437	150	1,588
1/9/2017	0	0	1,394	157	1,551
1/10/2017	0	0	1,426	165	1,592
1/11/2017	0	0	1,468	169	1,637
1/12/2017	0	0	1,446	156	1,602
1/13/2017	0	0	1,435	154	1,589
1/14/2017	0	0	1,412	159	1,571
1/15/2017	0	0	1,407	164	1,571
1/16/2017	0	0	1,403	184	1,588
1/17/2017	0	0	1,453	200	1,653
1/18/2017	0	0	1,519	203	1,721
1/19/2017	0	0	1,560	207	1,767
1/20/2017	0	0	1,557	203	1,760
1/21/2017	0	0	1,602	211	1,813
1/22/2017	0	0	1,560	191	1,750
1/23/2017	0	0	1,544	190	1,734
1/24/2017****	0	0	1,571	195	1,765
1/25/2017****	0	0	1,554	196	1,750
1/26/2017****	0	0	1,683	194	1,878
1/27/2017	0	0	1,592	198	1,790
1/28/2017	0	0	1,575	199	1,774
1/29/2017	0	0	1,579	194	1,773
1/30/2017	0	0	1,601	186	1,787
1/31/2017	0	0	1,584	205	1,789
				Average	**1,696**

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

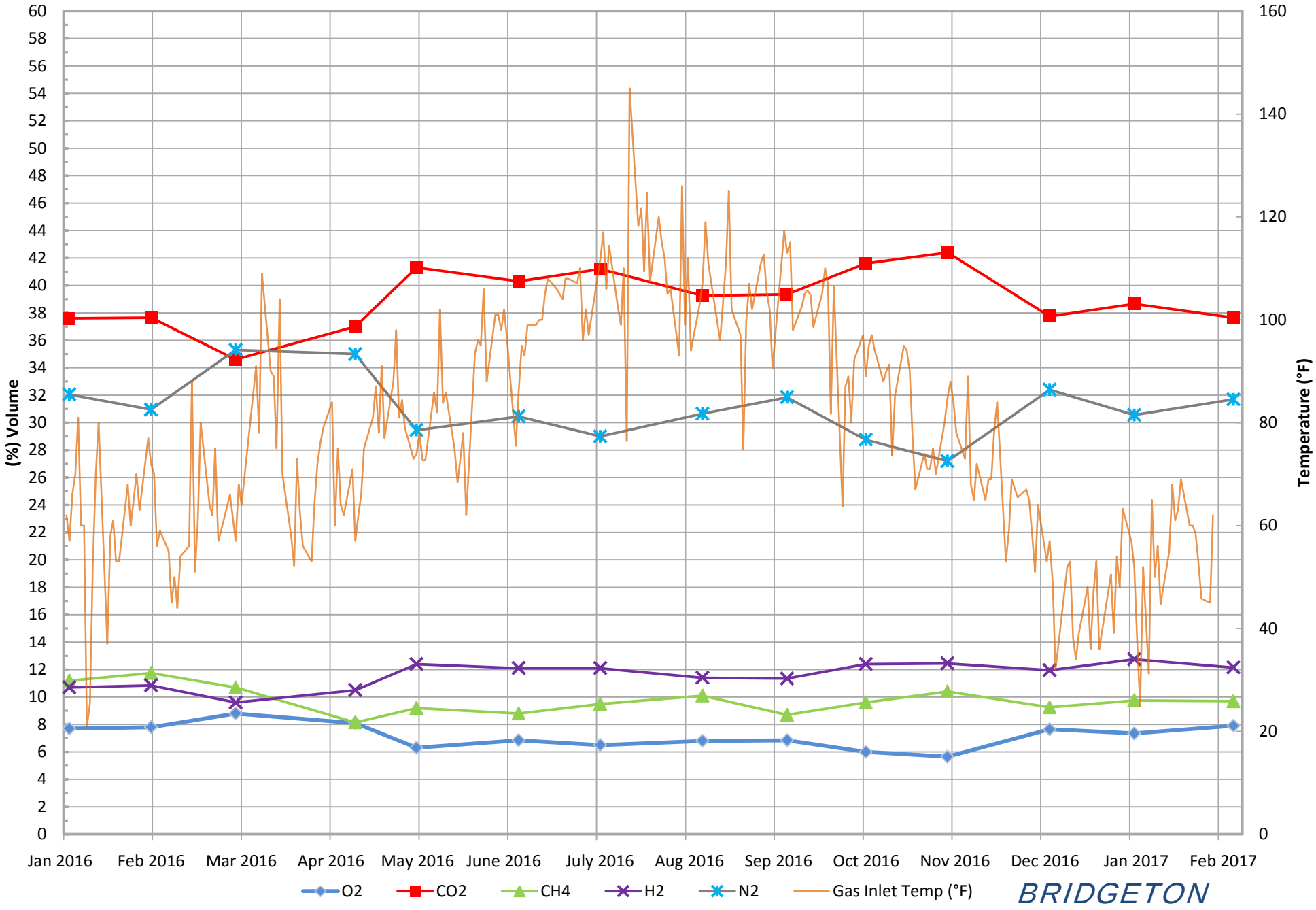
*** On 3/18/2016, the Bridgeton Landfill began separating the North Quarry gas to the Auxiliary Flare.

**** KURZ FM was partially/not functional during this date and all flow was being routed through FL-140. The velocity/flow was recorded by the Fleetzoom Flow Meter for FL-140.

ATTACHMENT B-2

FLOW DATA GRAPHS

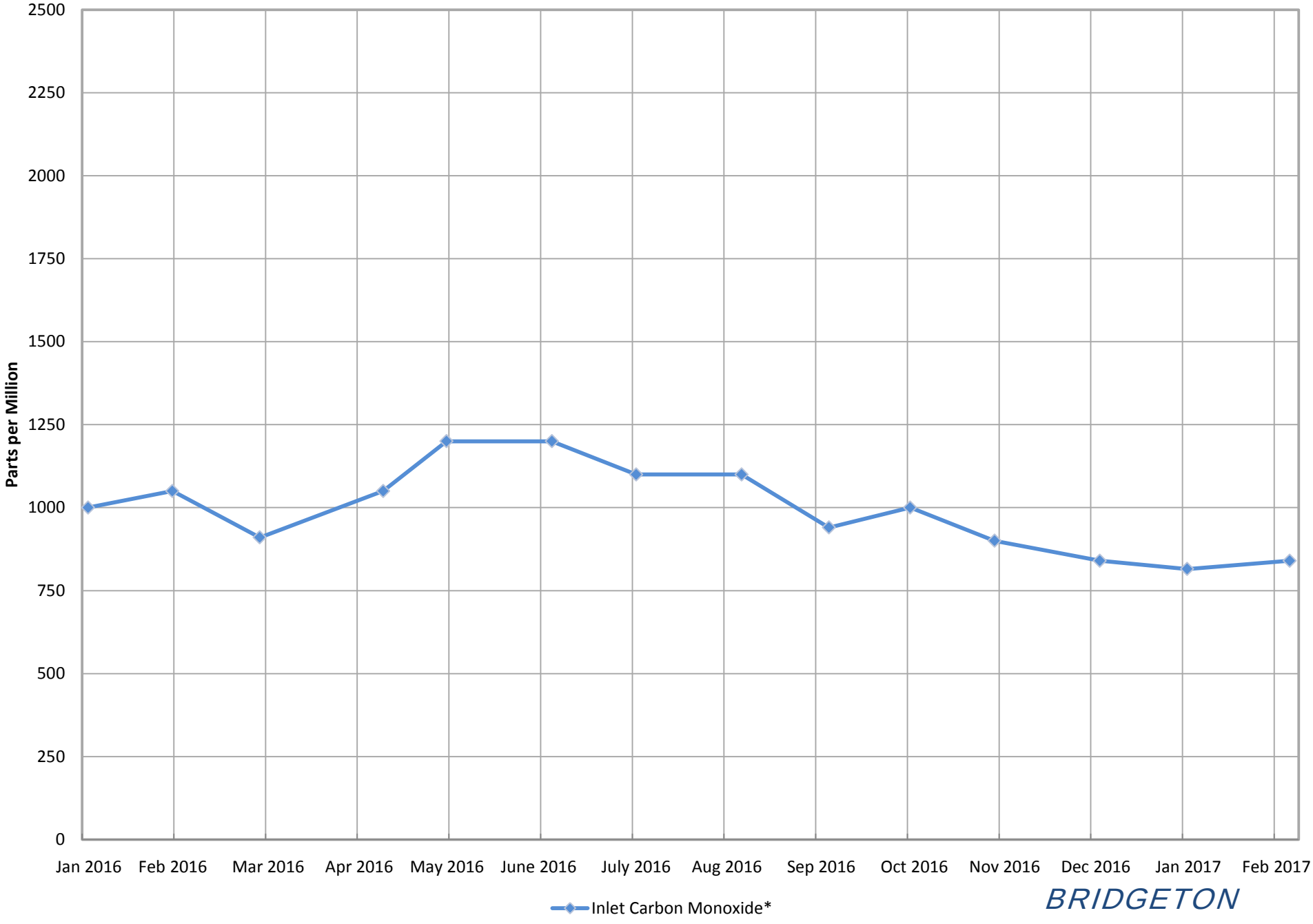
South Quarry Inlet Gas and Temperature*



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

BRIDGETON LANDFILL

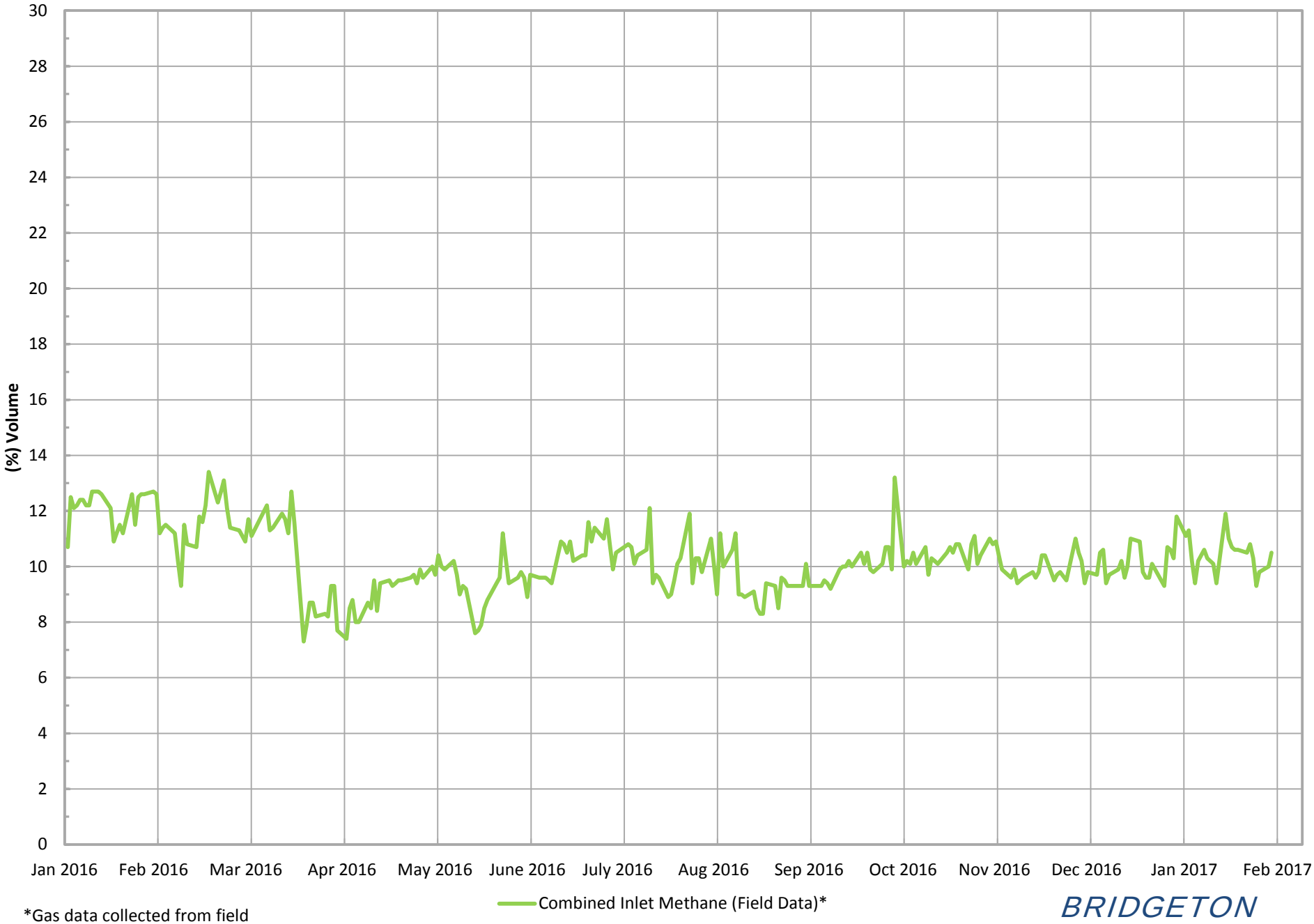
South Quarry Inlet Carbon Monoxide*



*Data collected from Laboratory Reports for the South Quarry.

BRIDGETON LANDFILL

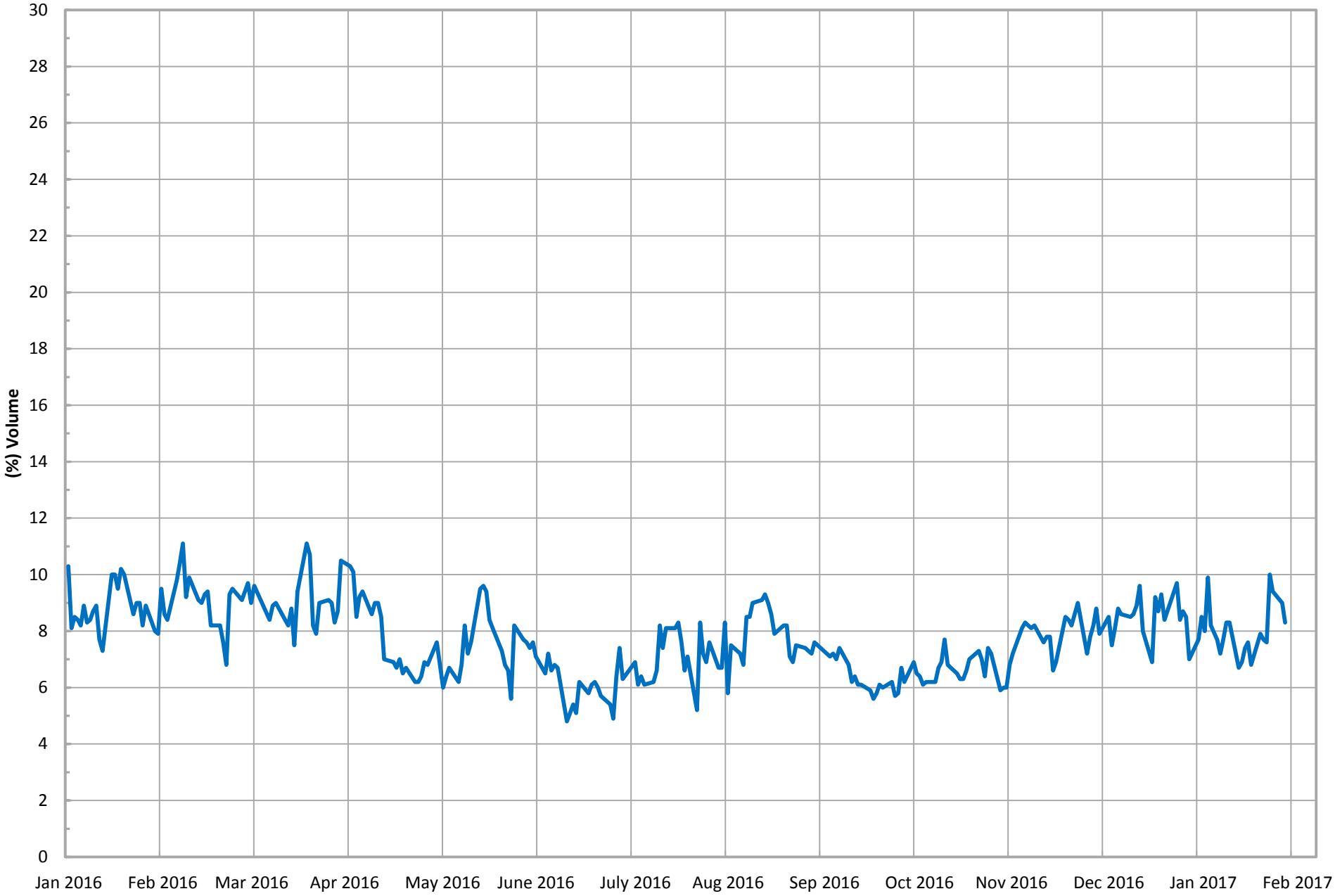
South Quarry Inlet Methane (Field Data)*



*Gas data collected from field monitoring data in the South Quarry.

BRIDGETON LANDFILL

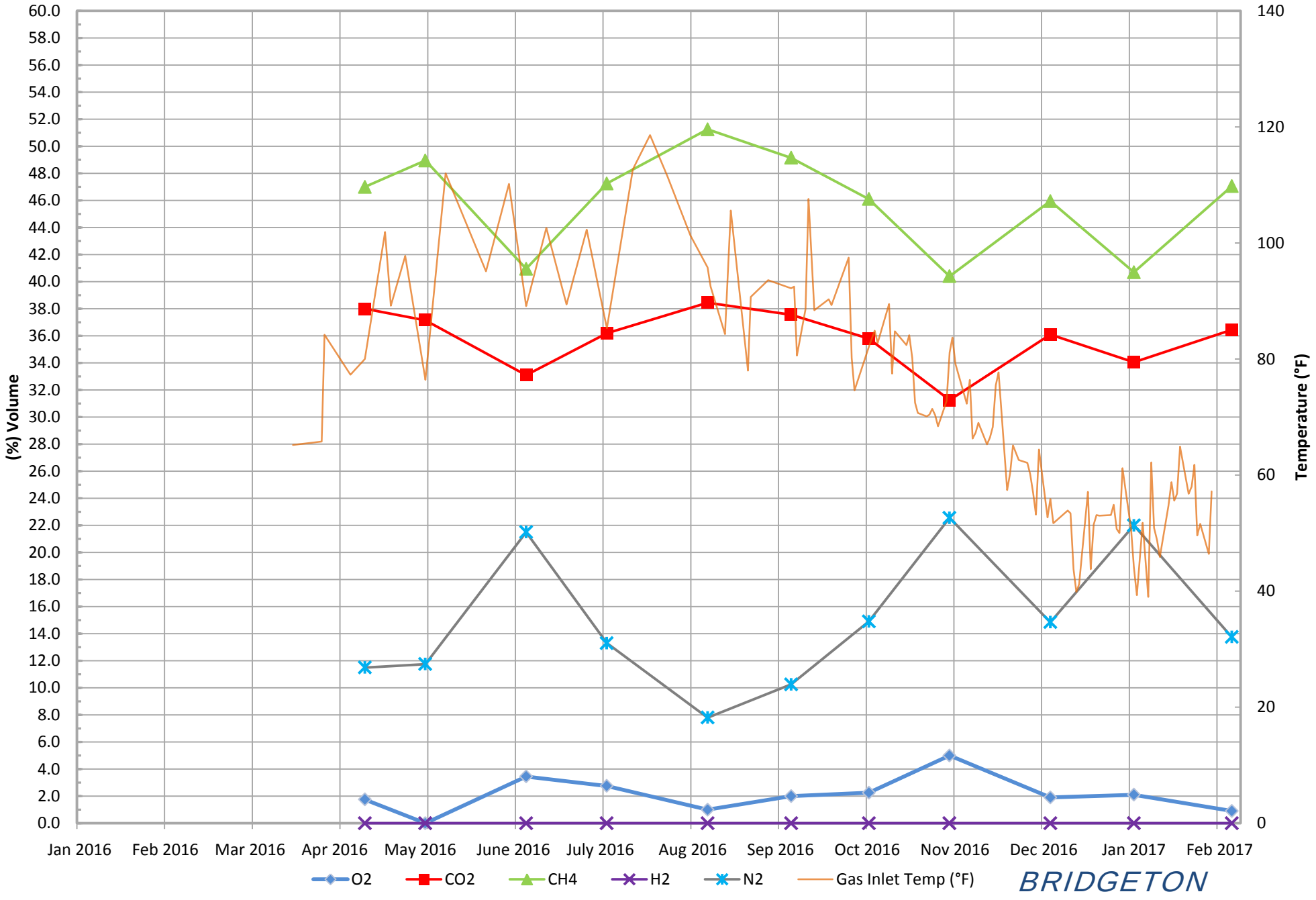
South Quarry Inlet Oxygen (Field Data)*



*Gas data collected from field monitoring data in the South Quarry.

BRIDGETON LANDFILL

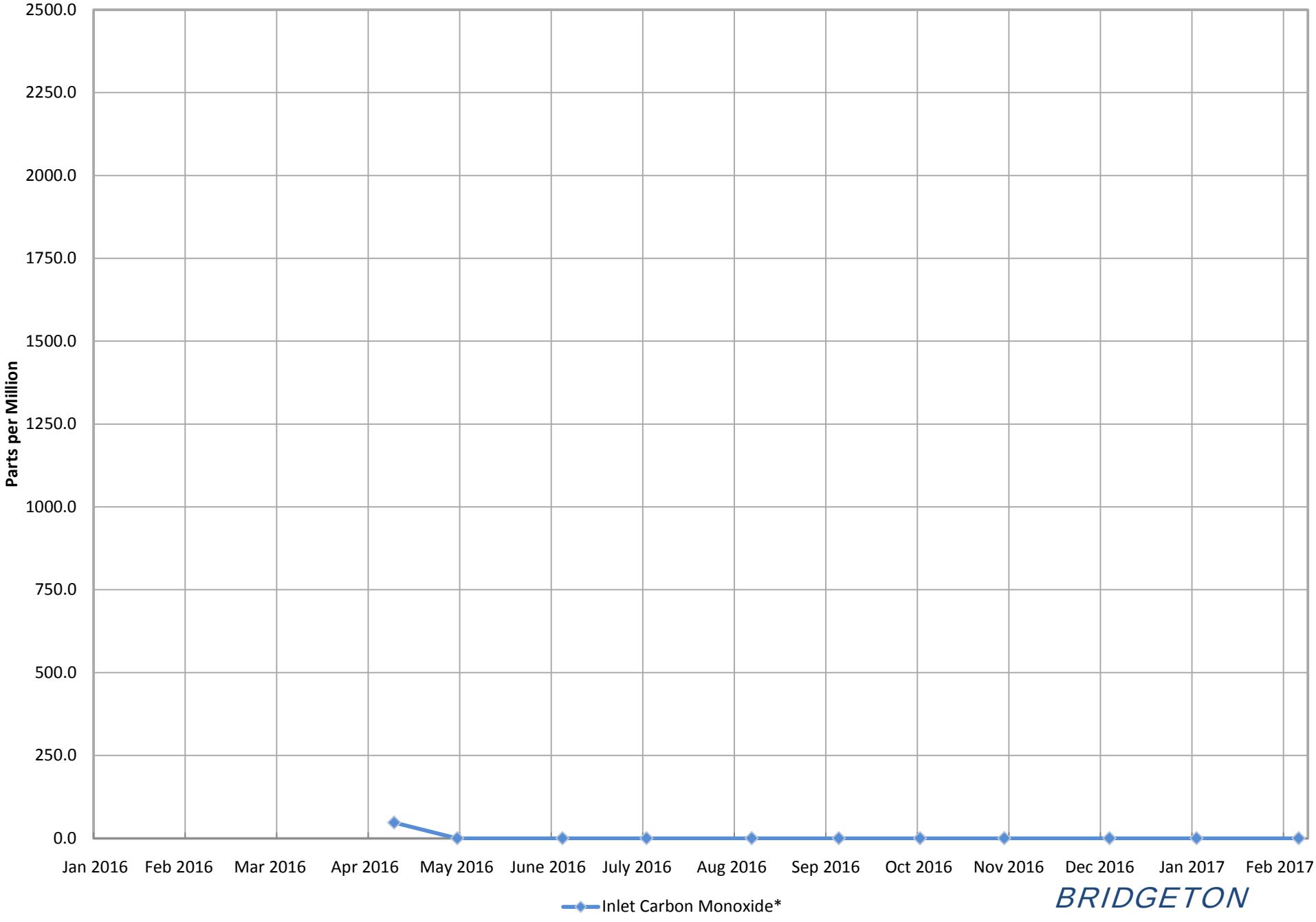
North Quarry Inlet Gas and Temperature*



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

BRIDGETON LANDFILL

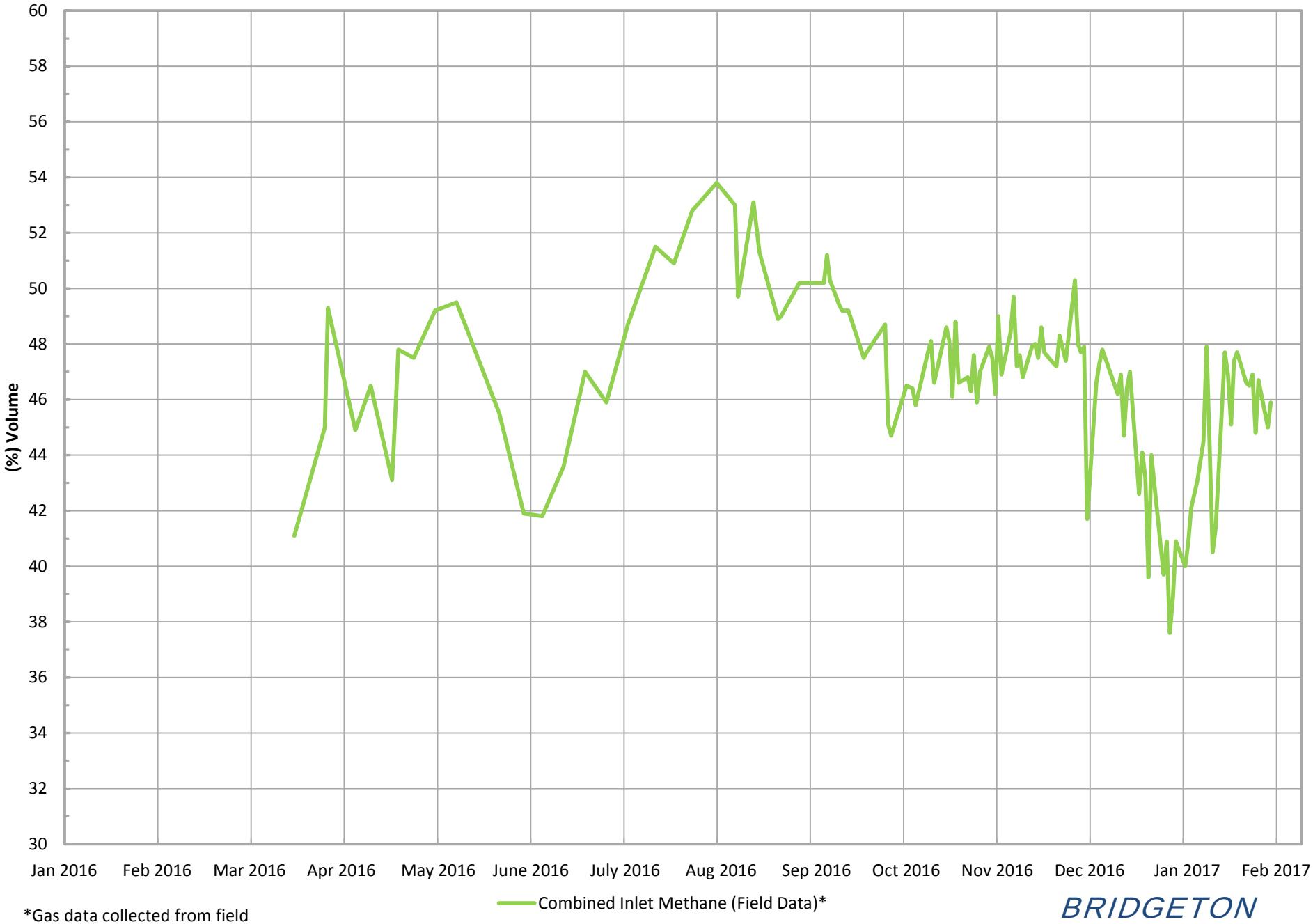
North Quarry Inlet Carbon Monoxide*



*Data collected from Laboratory Reports for the North Quarry.

BRIDGETON LANDFILL

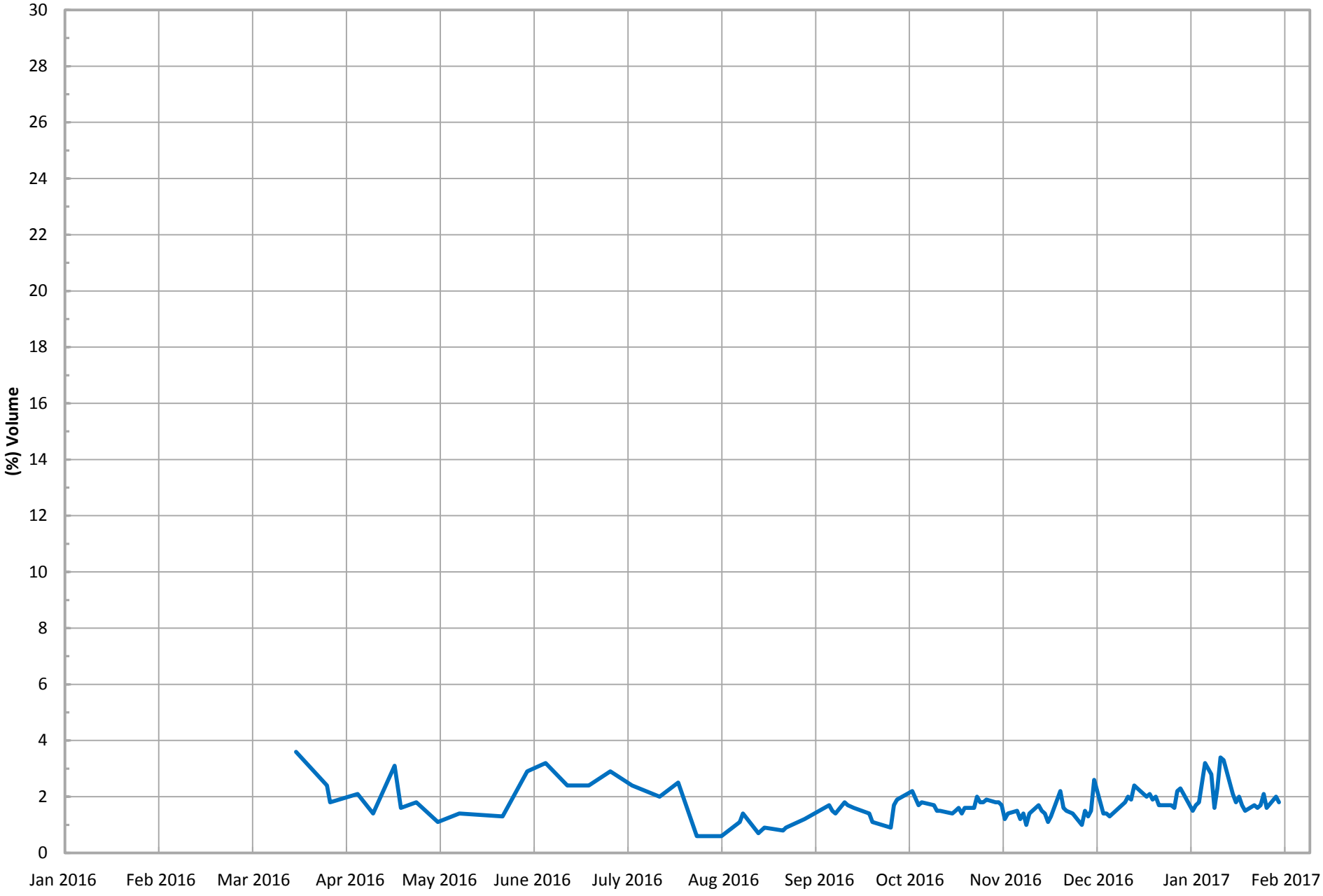
North Quarry Inlet Methane (Field Data)*



*Gas data collected from field monitoring data in the North Quarry.

BRIDGETON LANDFILL

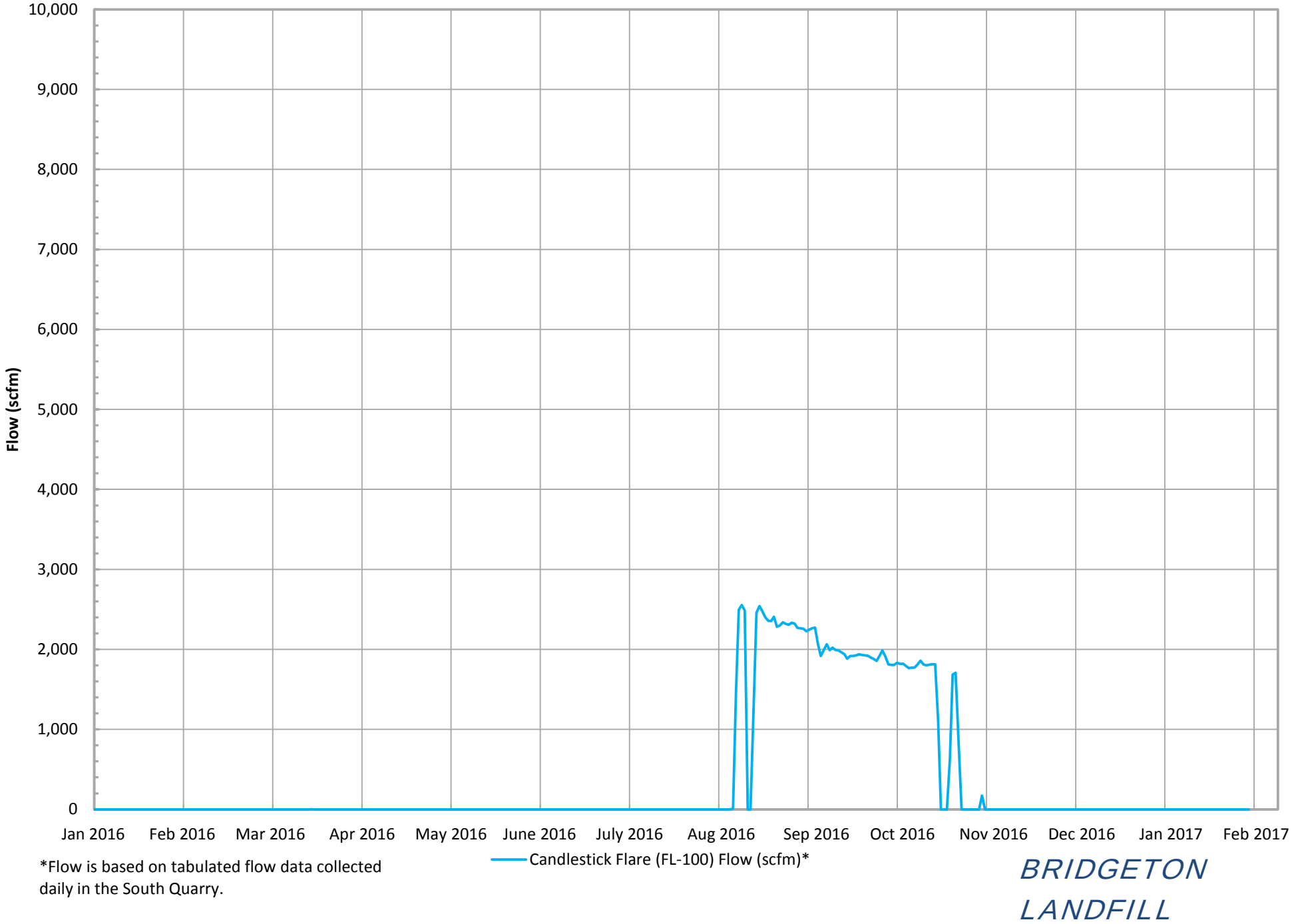
North Quarry Inlet Oxygen (Field Data)*



*Gas data collected from field monitoring data in the North Quarry.

BRIDGETON LANDFILL

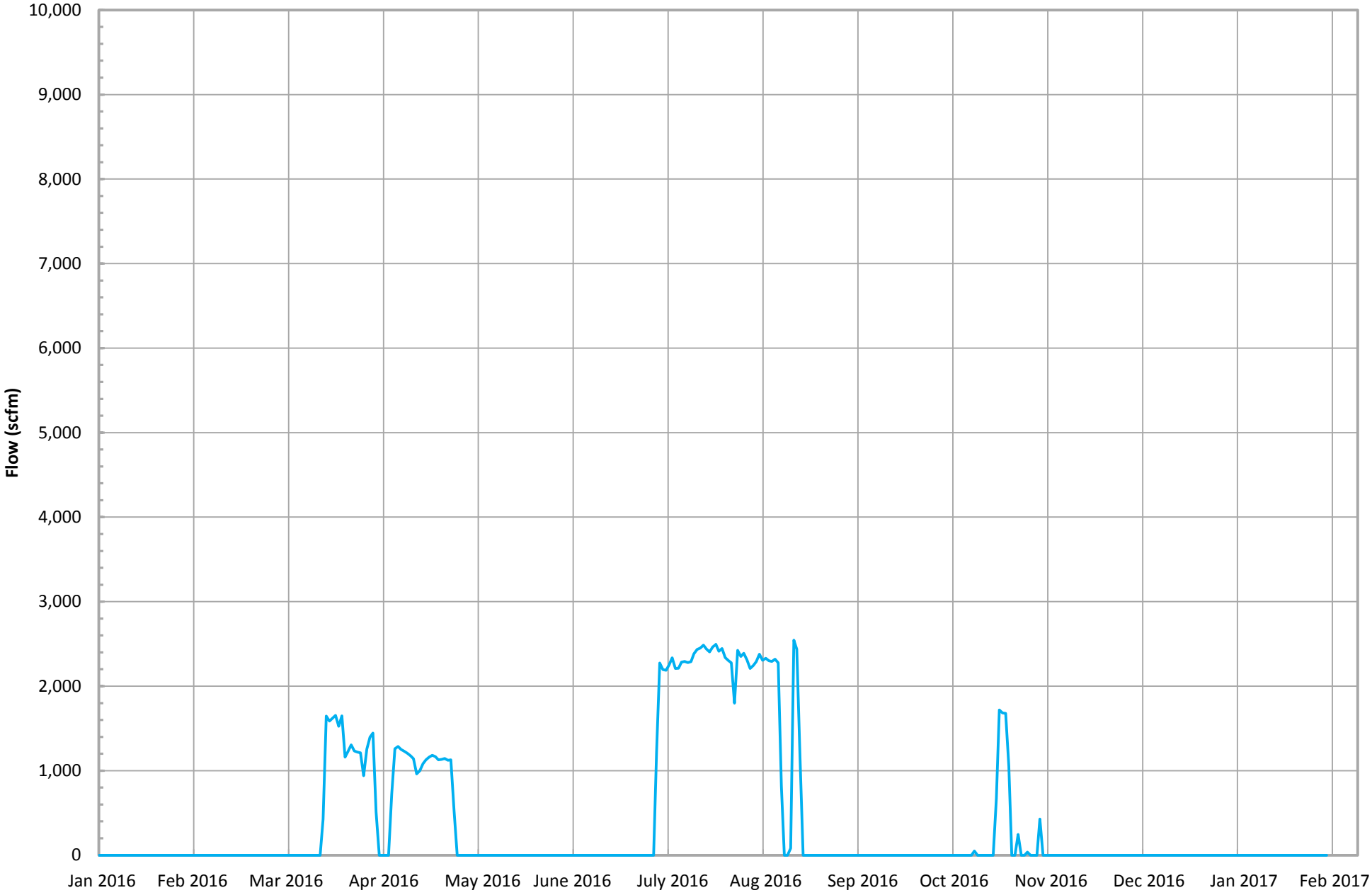
Candlestick Flare (FL-100) Flow (scfm)*



*Flow is based on tabulated flow data collected daily in the South Quarry.

BRIDGETON LANDFILL

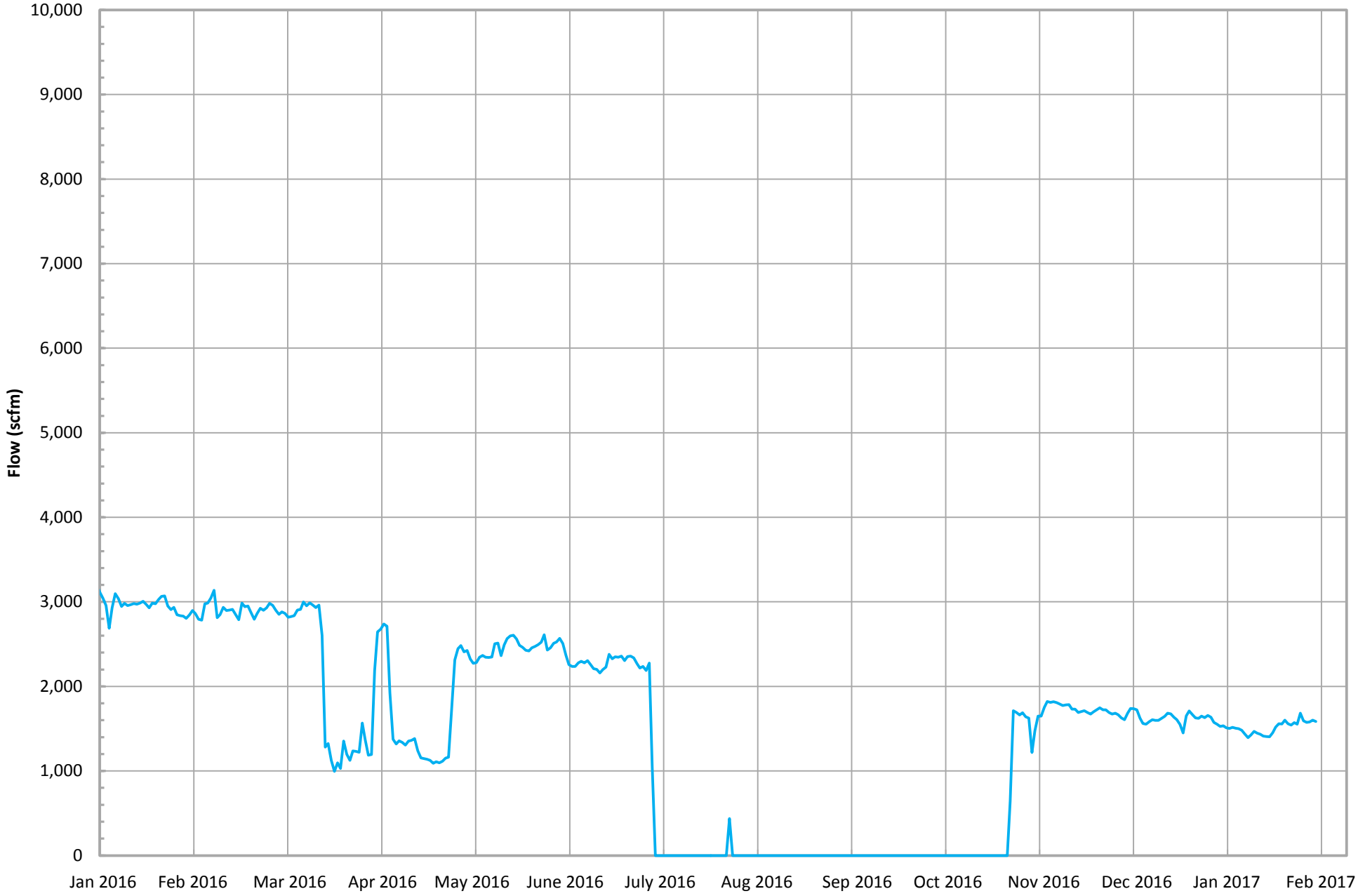
Candlestick Flare (FL-120) Flow (scfm)*



*Flow is based on tabulated flow data collected daily in the South Quarry.

BRIDGETON LANDFILL

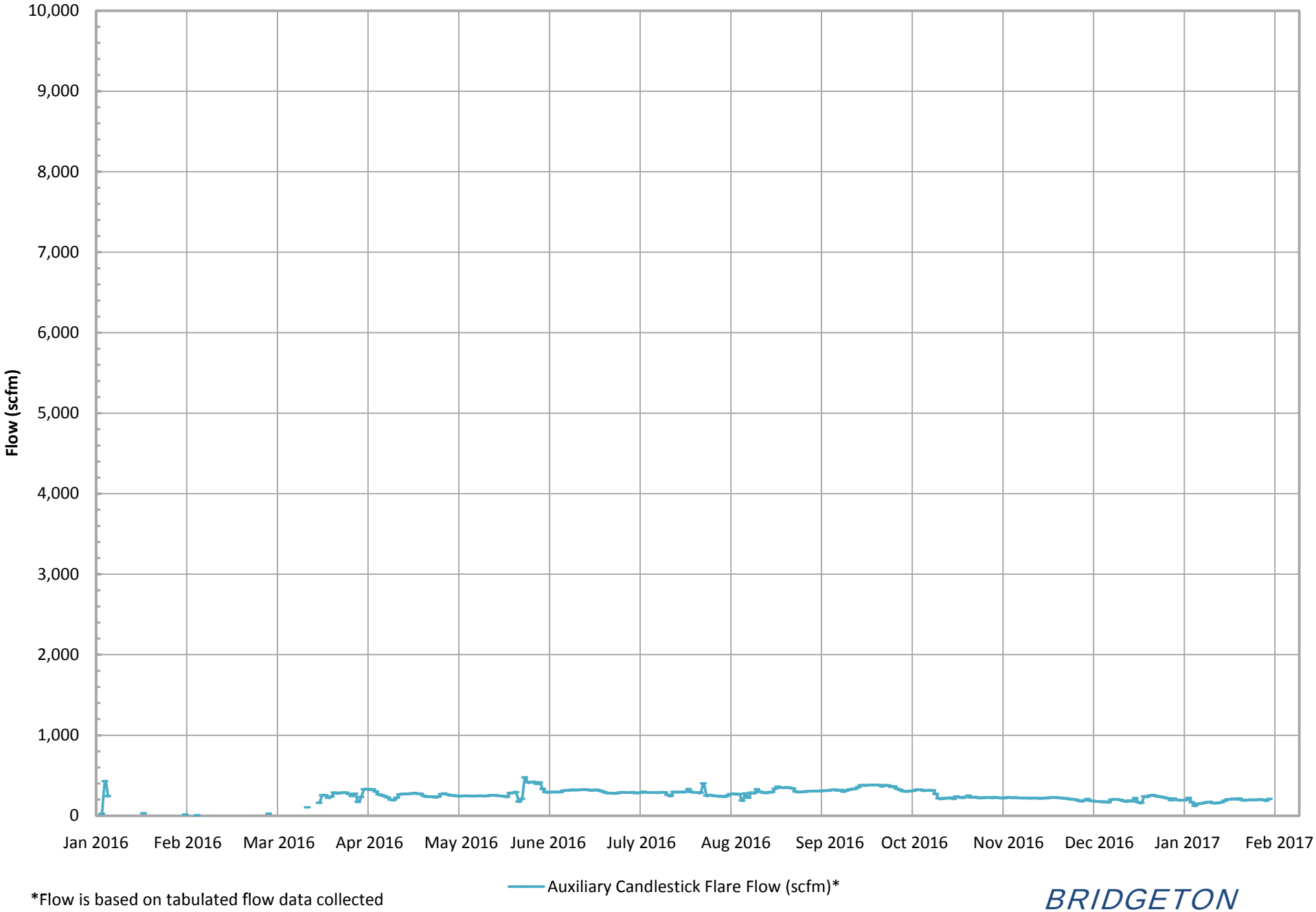
Candlestick Flare (FL-140) Flow (scfm)*



*Flow is based on tabulated flow data collected daily in the South Quarry.

BRIDGETON LANDFILL

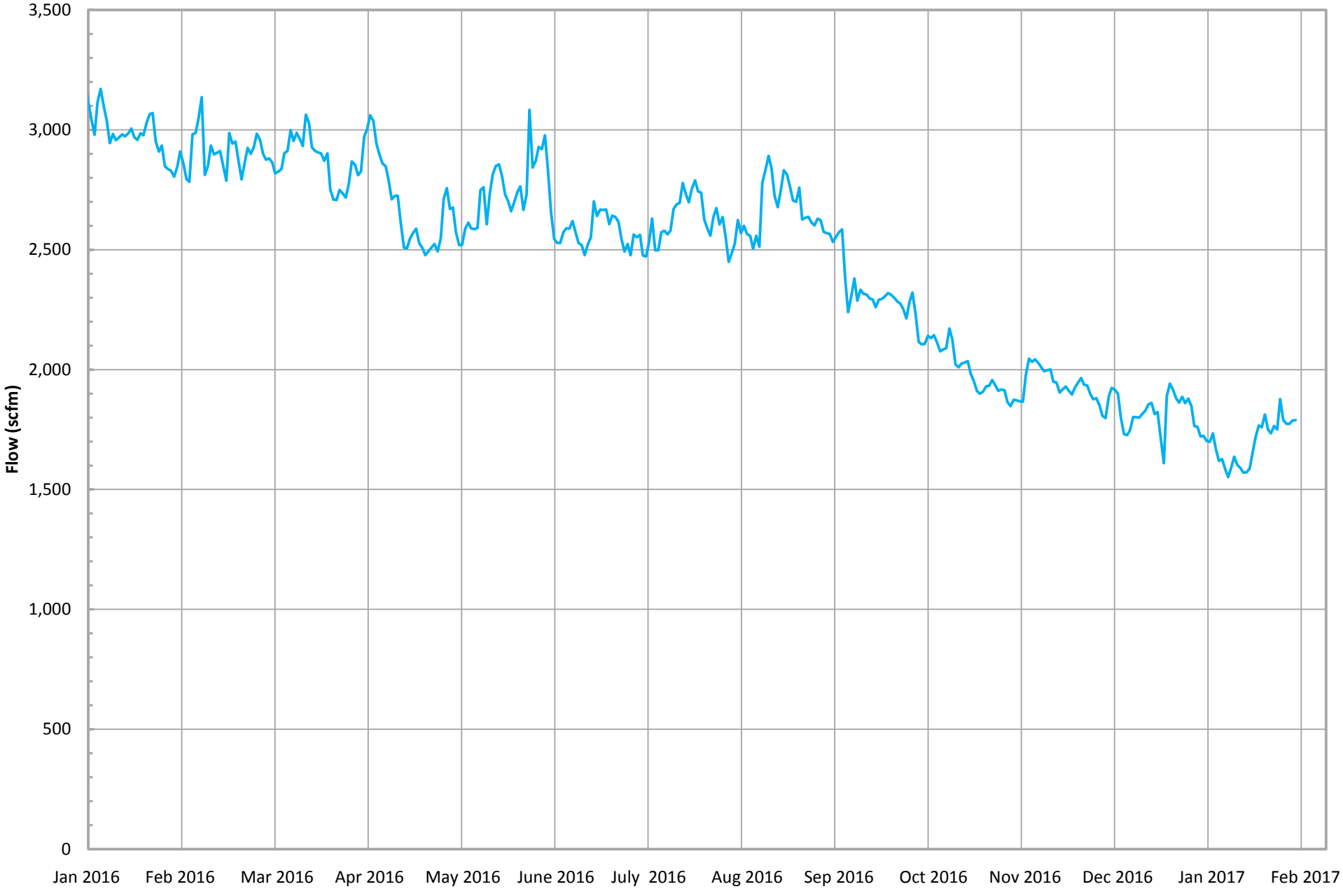
Auxiliary Candlestick Flare Flow (scfm)*



*Flow is based on tabulated flow data collected daily in the North Quarry.

BRIDGETON LANDFILL

Total Combined Flow (scfm)*

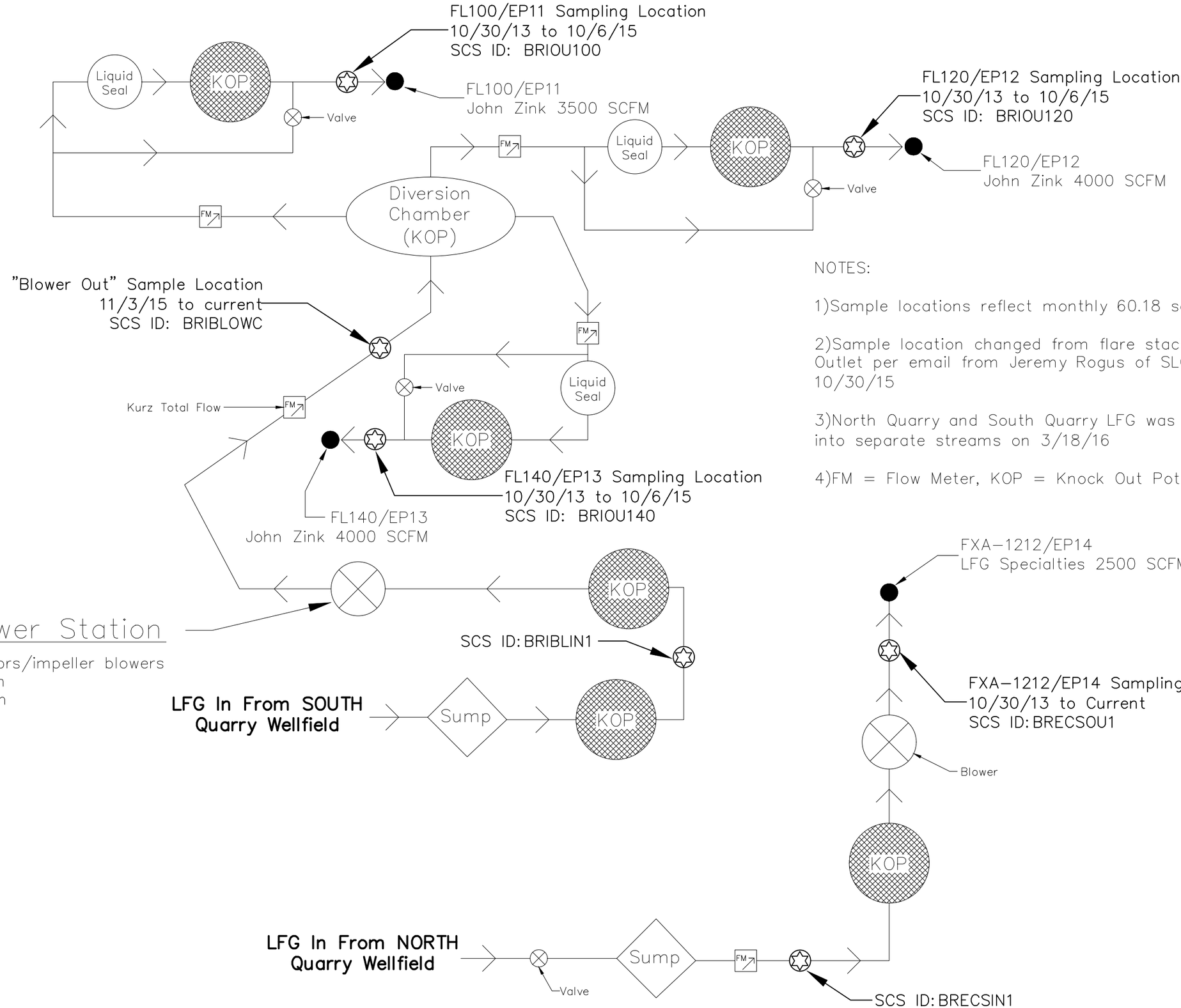


*Combined flow is based on tabulated flow data collected daily from FL-100, FL-120, FL-140, and the Auxillary Candlestick Flare.

BRIDGETON LANDFILL

ATTACHMENT B-3

FLARE TRS / FLARE STATION FLOW



NOTES:

1)Sample locations reflect monthly 60.18 sampling points

2)Sample location changed from flare stacks to Blower Outlet per email from Jeremy Rogus of SLCHD dated 10/30/15

3)North Quarry and South Quarry LFG was segregated into separate streams on 3/18/16

4)FM = Flow Meter, KOP = Knock Out Pot

PREPARED FOR:
BRIDGETON LANDFILL, LLC

FIGURE 1 - NORTH & SOUTH QUARRY FLARE COMPOUND
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI

No.	DATE	REVISION DESCRIPTION
1	9/19/2016	EP-9B Removed, shown only to represent SQ LFG flow

Weaver Consultants Group

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COLUMBIA, MISSOURI 65201
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www.wcgrp.com

DRAWN BY:	DT
REVIEWED BY:	MC
DATE:	10/7/2016
FILE:	0120-131-10
CAD:	Figure 1 - Flow Diagram.dwg
SHEET	1 OF 1

TABLE 1 **Bridgeton Landfill, LLC.**

Summary of Key LFG Tested Parameters **January 4, 2017 to February 7, 2017**

Flare Compound: Blower Outlet

SAMPLE EVENT #	DATE	VELOCITY ft/sec	FLOW dscfm	TRS ppm_{vd}
101-06[1]	2/7/2017	18.35	1443	1800
				1800
100-05[2]	1/31/2017	18.67	1512	1500
				1500
99-04[3]	1/24/2017	18.78	1521	1600
				1800
98-03[2]	1/17/2017	16.93	1371	1700
				1900
97-02[2]	1/11/2017	17.30	1401	2000
				2000
96-01[1]	1/4/2017	17.84	1526	1500
				1500

Notes:

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

[2]Indicates velocity/flow recorded by Blower Outlet's KURZ Flow Meter

[3]Indicates velocity/flow recorded by FL140 Fleetzoom Flow Meter (All flow was being routed through FL140 and the KURZ FM was not functional at time of sampling)

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 101-06
02/07/2017

	PARAMETER	Blower Out
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)		
Date	Test Date	2/7/17
Start	Run Start Time	9:01
	Run Finish Time	10:31
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:30:00
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.12
% H_2O	Moisture Content of LFG, %	1.89
% RH	Relative Humidity, %	58.20
M_{fd}	Dry Mole Fraction	0.981
%CH_4	Methane, %	9.70
%CO_2	Carbon Dioxide, %	37.65
%O_2	Oxygen, %	7.90
%Balance	Assumed as Nitrogen, %	30.55
%H_2	Hydrogen, %	12.15
%CO	Carbon Monoxide, %	0.08
M_d	Dry Molecular Weight, lb/lb-Mole	29.48
M_s	Wet Molecular weight, lb/lb-Mole	29.26
P_g	Flue Gas Static Pressure, inches of H_2O	13.60
P_s	Absolute Flue Gas Pressure, inches of Mercury	30.12
t_s	Average Stack Gas Temperature, °F	78
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.077
v_s	Average LFG Velocity, feet/second	18.35
A_s	Stack Crossectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	1,443
Q_s	Standard Volumetric Flow Rate, scfm	1,471
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	1,490
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	6,627
NHV	Net Heating Value, Btu/scf	140.2
LFG_{CH4}	Methane, lb/hr	349.9
	Methane, grains/dscf	28.28
LFG_{CO2}	Carbon Dioxide, lb/hr	3,725.7
	Carbon Dioxide, grains/dscf	301.13
LFG_{O2}	Oxygen, lb/hr	568.4
	Oxygen, grains/dscf	45.94
LFG_{N2}	Balance gas as Nitrogen, lb/hr	1,924.3
	Balance gas as Nitrogen, grains/dscf	155.53
LFG_{H2}	Hydrogen, lb/hr	55.1
	Hydrogen, grains/dscf	4.45
LFG_{CO}	Carbon Monoxide, lb/hr	5.3
	Carbon Monoxide, grains/dscf	0.43

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	17	22
	Hydrogen Sulfide Rate, lb/hr	0.13	0.17
	Hydrogen Sulfide Rate, grains/dscf	0.011	0.014
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	200	200
	Methyl Mercaptan Rate, lb/hr	2.16	2.16
	Methyl Mercaptan Rate, grains/dscf	0.175	0.175
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.3	2.4
	Ethyl Mercaptan Rate, lb/hr	0.03	0.03
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,400	1,300
	Dimethyl Sulfide Rate, lb/hr	19.56	18.16
	Dimethyl Sulfide Rate, grains/dscf	1.581	1.468
CS_2	Carbon Disulfide Concentration, ppmd	0.76	0.76
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	96	98
	Dimethyl Disulfide Rate, lb/hr	2.03	1.68
	Dimethyl Disulfide Rate, grains/dscf	0.164	0.136

❶ **$E_{TRS-SO2}$**	TRS-->SO2 Emission Concentration, ppmd	1,800	1,800
	TRS-->SO2 Emission Rate, lb/hr	25.93	25.93
	TRS-->SO2 Emission Rate, grains/dscf	2.096	2.096

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, February 07, 2017

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz	Kurz vs Fleetzoom
		Method 2	FleetZoom	Kurz FM			
BLOWER OUT	**9:01**	**1,471**	**1,647**	**1,647**	**-12.0%**	**-12.0%**	**0.0%**

Notes:
*Backup Kurz FM (FD36010A) removed on February 5, 2017 due to mechanical failure and installed KURZ FM (FD34178A) in it's place.
*Additional calculations are provided in the next few pages showing the 12% deviation from the Method 2 calculation results and the KURZ/Fleetzoom flow meters.

Blower Outlet (pre diversion chamber)

FleetZoom Flow Average = **1,647** **scfm**

KURZ Average = **1,647** **scfm**

CALCULATED RESULTS		
V_s =	**18.35**	ft/sec
Q_{dscfm}=	**1,443**	ft^3/min
Q_{scfm} =	**1,471**	ft^3/min
Q_{acfm} =	**1,490**	ft^3/min
Q_{lb} =	**6,627**	dry air flow rate lb/hr

CALCULATED VALUES

A_s =	1.35	ft^2
P_s =	30.12	in. Hg
$\%H_2O$ =	1.89	%
M_d =	29.48	lb/lb-mole
M_s =	29.26	lb/lb-mole

TEST VARIABLES

C_p =	**0.99**	[unitless]
P_{br} =	**29.12**	in Hg
T_A =	**62.0**	^oF
Point ID =	**15.8**	inches
RH% ambient =	**61.0**	%

SOURCE GAS PARAMETERS

Bws	**1.89**	%
P_g =	**13.6**	in H_2O
T_d =	**78.2**	^oF
T_w =	**67.5**	^oF
T_g =	**78.2**	^oF
RH%=	**58.2**	%

CH_4 =	**9.70**	%
CO_2 =	**37.65**	%
O_2 =	**7.90**	%
N_2=	**30.55**	%
H_2 =	**12.15**	%
CO=	**0.084**	%

FIELD DATA

Duration = 9:01 ***to*** 10:31

Average DP= 0.077 in H_2O

Device: Bridgeton Main Flares
ESN: FXA-1186
Report Type: Report of Analog Input Values
Report Start Date: 2/7/2017
Report End Date: 2/7/2017
Records Reported: Up to 1,000,000

Date	Blower Out - KURZ SCFM	FL-100 Gas Flow (2800) SCFM	FL-120 Gas Flow (3486) SCFM	FL-140 Gas Flow (3486) SCFM
2/7/2017 0:05	1,667.57	0	0	1,654.39
2/7/2017 0:15	1,666.87	0	0	1,650.51
2/7/2017 0:25	1,643.89	0	0	1,621.18
2/7/2017 0:35	1,659.09	0	0	1,639.08
2/7/2017 0:45	1,657.50	0	0	1,641.46
2/7/2017 0:55	1,655.38	0	0	1,635.80
2/7/2017 1:05	1,654.14	0	0	1,641.36
2/7/2017 1:15	1,669.17	0	0	1,653.20
2/7/2017 1:25	1,659.98	0	0	1,642.96
2/7/2017 1:35	1,662.45	0	0	1,647.43
2/7/2017 1:45	1,655.38	0	0	1,648.52
2/7/2017 1:55	1,661.74	0	0	1,648.72
2/7/2017 2:05	1,664.22	0	0	1,640.67
2/7/2017 2:15	1,610.85	0	0	1,580.41
2/7/2017 2:25	1,607.49	0	0	1,594.03
2/7/2017 2:35	1,610.32	0	0	1,590.45
2/7/2017 2:45	1,620.39	0	0	1,606.26
2/7/2017 2:55	1,617.74	0	0	1,606.36
2/7/2017 3:05	1,622.87	0	0	1,613.02
2/7/2017 3:15	1,622.69	0	0	1,619.69
2/7/2017 3:26	1,630.29	0	0	1,618.29
2/7/2017 3:36	1,628.34	0	0	1,615.51
2/7/2017 3:46	1,630.64	0	0	1,619.98
2/7/2017 3:56	1,632.58	0	0	1,626.35
2/7/2017 4:06	1,622.34	0	0	1,630.43
2/7/2017 4:16	1,644.25	0	0	1,642.96
2/7/2017 4:26	1,621.27	0	0	1,619.98
2/7/2017 4:36	1,649.02	0	0	1,643.55
2/7/2017 4:46	1,626.75	0	0	1,614.71
2/7/2017 4:56	1,627.64	0	0	1,613.42
2/7/2017 5:06	1,623.57	0	0	1,632.61
2/7/2017 5:16	1,618.80	0	0	1,608.75
2/7/2017 5:26	1,619.33	0	0	1,612.92
2/7/2017 5:36	1,637.71	0	0	1,643.35
2/7/2017 5:46	1,640.01	0	0	1,635.40
2/7/2017 5:56	1,634.18	0	0	1,638.68
2/7/2017 6:06	1,636.83	0	0	1,638.28
2/7/2017 6:16	1,634.18	0	0	1,623.86
2/7/2017 6:26	1,644.60	0	0	1,644.65
2/7/2017 6:36	1,638.06	0	0	1,631.62
2/7/2017 6:46	1,637.18	0	0	1,637.78
2/7/2017 6:56	1,643.19	0	0	1,629.03
2/7/2017 7:06	1,656.97	0	0	1,645.94
2/7/2017 7:16	1,637.36	0	0	1,628.24
2/7/2017 7:26	1,630.29	0	0	1,614.71

2/7/2017 7:36	1,630.46	0	0	1,622.67
2/7/2017 7:46	1,643.72	0	0	1,638.48
2/7/2017 7:56	1,634.00	0	0	1,626.25
2/7/2017 8:06	1,628.17	0	0	1,627.94
2/7/2017 8:16	1,641.42	0	0	1,637.49
2/7/2017 8:26	1,638.59	0	0	1,628.83
2/7/2017 8:36	1,642.83	0	0	1,624.16
2/7/2017 8:46	1,640.18	0	0	1,636.89
2/7/2017 8:56	1,655.73	0	0	1,648.23
2/7/2017 9:06	1,647.61	0	0	1,643.15
2/7/2017 9:16	1,646.72	0	0	1,640.37
2/7/2017 9:26	1,642.30	0	0	1,641.46
2/7/2017 9:36	1,651.67	0	0	1,653.10
2/7/2017 9:46	1,647.78	0	0	1,652.20
2/7/2017 9:57	1,644.78	0	0	1,647.93
2/7/2017 10:07	1,655.20	0	0	1,654.19
2/7/2017 10:17	1,649.90	0	0	1,654.39
2/7/2017 10:27	1,630.99	0	0	1,634.11
	1,647.27			1,646.91
2/7/2017 10:37	1,640.01	0	0	1,649.62
2/7/2017 10:47	1,623.93	0	0	1,626.25
2/7/2017 10:57	1,625.34	0	0	1,622.97
2/7/2017 11:07	1,624.10	0	0	1,635.10
2/7/2017 11:17	1,624.63	0	0	1,639.28
2/7/2017 11:27	1,626.93	0	0	1,636.59
2/7/2017 11:37	1,616.15	0	0	1,633.91
2/7/2017 11:47	1,614.91	0	0	1,639.18
2/7/2017 11:57	1,626.93	0	0	1,650.51
2/7/2017 12:07	1,617.03	0	0	1,636.09
2/7/2017 12:17	1,617.56	0	0	1,642.76
2/7/2017 12:27	1,618.09	0	0	1,651.01
2/7/2017 12:37	1,618.98	0	0	1,660.26
2/7/2017 12:47	1,612.79	0	0	1,652.50
2/7/2017 12:57	1,611.20	0	0	1,642.66
2/7/2017 13:07	1,602.72	0	0	1,655.58
2/7/2017 13:17	1,621.98	0	0	1,666.42
2/7/2017 13:27	1,606.25	0	0	1,639.08
2/7/2017 13:37	1,605.37	0	0	1,661.35
2/7/2017 13:47	1,608.55	0	0	1,660.86
2/7/2017 13:57	1,615.80	0	0	1,670.20
2/7/2017 14:07	1,620.21	0	0	1,678.56
2/7/2017 14:17	1,612.09	0	0	1,674.38
2/7/2017 14:27	1,613.32	0	0	1,672.89
2/7/2017 14:37	1,615.09	0	0	1,659.07
2/7/2017 14:47	1,613.68	0	0	1,672.09
2/7/2017 14:57	1,606.61	0	0	1,672.99
2/7/2017 15:07	1,613.32	0	0	1,671.40
2/7/2017 15:17	1,613.15	0	0	1,677.86
2/7/2017 15:27	1,612.26	0	0	1,664.63
2/7/2017 15:37	1,611.38	0	0	1,677.96
2/7/2017 15:47	1,607.31	0	0	1,672.59
2/7/2017 15:57	1,604.84	0	0	1,657.18
2/7/2017 16:07	1,614.56	0	0	1,670.30
2/7/2017 16:17	1,563.84	0	0	1,613.42
2/7/2017 16:27	1,569.14	0	0	1,606.56
2/7/2017 16:37	1,577.80	0	0	1,605.96
2/7/2017 16:48	1,576.39	0	0	1,613.92

2/7/2017 16:58	1,573.91	0	0	1,600.99
2/7/2017 17:08	1,577.10	0	0	1,602.18
2/7/2017 17:18	1,571.26	0	0	1,602.38
2/7/2017 17:28	1,572.68	0	0	1,592.14
2/7/2017 17:38	1,578.16	0	0	1,596.22
2/7/2017 17:48	1,590.70	0	0	1,597.51
2/7/2017 17:58	1,583.81	0	0	1,591.05
2/7/2017 18:08	1,590.53	0	0	1,601.19
2/7/2017 18:18	1,590.70	0	0	1,595.72
2/7/2017 18:28	1,588.58	0	0	1,576.43
2/7/2017 18:38	1,590.88	0	0	1,578.12
2/7/2017 18:48	1,599.36	0	0	1,570.36
2/7/2017 18:58	1,606.61	0	0	1,592.44
2/7/2017 19:08	1,604.49	0	0	1,587.96
2/7/2017 19:18	1,605.37	0	0	1,568.87
2/7/2017 19:28	1,602.19	0	0	1,582.10
2/7/2017 19:38	1,592.65	0	0	1,551.77
2/7/2017 19:48	1,601.48	0	0	1,558.53
2/7/2017 19:58	1,592.12	0	0	1,549.18
2/7/2017 20:08	1,596.00	0	0	1,546.40
2/7/2017 20:18	1,593.00	0	0	1,549.48
2/7/2017 20:28	1,588.76	0	0	1,546.99
2/7/2017 20:38	1,589.11	0	0	1,555.45
2/7/2017 20:48	1,586.11	0	0	1,537.85
2/7/2017 20:58	1,586.82	0	0	1,524.62
2/7/2017 21:08	1,589.64	0	0	1,530.49
2/7/2017 21:18	1,599.54	0	0	1,528.20
2/7/2017 21:28	1,605.19	0	0	1,536.15
2/7/2017 21:38	1,590.70	0	0	1,522.03
2/7/2017 21:48	1,594.24	0	0	1,525.81
2/7/2017 21:58	1,593.53	0	0	1,520.54
2/7/2017 22:08	1,591.76	0	0	1,522.23
2/7/2017 22:18	1,577.27	0	0	1,508.11
2/7/2017 22:28	1,594.06	0	0	1,514.97
2/7/2017 22:38	1,580.10	0	0	1,487.77
2/7/2017 22:48	1,592.12	0	0	1,502.36
2/7/2017 22:58	1,586.11	0	0	1,500.37
2/7/2017 23:08	1,581.16	0	0	1,500.07
2/7/2017 23:19	1,586.29	0	0	1,508.61
2/7/2017 23:29	1,592.12	0	0	1,511.89
2/7/2017 23:39	1,593.35	0	0	1,504.14
2/7/2017 23:49	1,595.30	0	0	1,494.81
2/7/2017 23:59	1,591.76	0	0	1,495.61

Constants, conversions, and calculations

From Ideal Gas Law: PV = NRT

CONSTANTS		
R =	0.08206	L atm/K-mole
P =	1	atmosphere
T =	293.15	K (Kelvin)
Fwt - Standard Molecular Mass (MM)		
SO_2 =	64.0638	grams/mole
NOx =	46.0055	grams/mole
CO =	28.0101	grams/mole
CO_2 =	44.0095	grams/mole
CH_4 =	16.04246	grams/mole
N_2 =	28.0134	grams/mole
H_2 =	2.01588	grams/mole
O_2 =	31.9988	grams/mole
HCl =	36.46094	grams/mole
Standard Conversions		
1lb =	453.5924	grams
1 Liter =	0.0353	ft3
1minute =	60	seconds
1 ppmvd =	1,000,000	[unitless]

P = Pressure
V = Volume
N = Number of moles
R = Universal Gas Constant
T = Temperature
MM = Molecular Mass

Standard Atmoic Mass ($g.mol^{-1}$)	
Carbon, C =	12.0107
Oxygen, O =	15.9994
Hydrogen, H =	1.00794
Nitrogen, N =	14.0067
Sulfur, S =	32.065
Chlorine, Cl =	35.453

C_{ppmvd} = Gas concentration, dry standard
Q_{sd} = Dry volumetric flue gas flow rate, dry standard cubic feet per minute

* NOTE: NOx Fwt computed as NO2 (one Nitrogen, two oxygen)

*Note **T**, as standard temperature for purposes relevant to emissions and per EPA methodology (Method 19), 20 degrees celsius or 293.15 Kelvin*

TRS'			
Hydrogen Sulfide	H_2S	34.08088	grams/mole
Carboynl Sulfide	COS	60.0751	grams/mole
Methyl Mercaptan	CH_4S	48.10746	grams/mole
Ethyl Mercaptan	C_2H_6S	62.13404	grams/mole
Dimethyl Sulfide	$(CH_3)_2S$	62.13404	grams/mole
Carbon Disulfide	CS_2	76.1407	grams/mole
Dimethyl Disulfide	$C_2H_6S_2$	94.19904	grams/mole

Gas Density [lb/dry standard cubic foot} = (P/RT)(Fwt)

X gas compound density = $\frac{1\ atmosphere}{0.0826\ Liters-atmosphere} \times \frac{K-mole}{293.15^{o}\ Kelvin} \times X\ gas\ compound\ MM\ \left[\frac{gram}{gram-mole}\right] \times \frac{1\ pound}{453.5924\ grams} \times \frac{1\ Liter}{0.0353\ ft^3}$

If pollutant/gas measured as a:

	%	ppm_{vd}	
SO_2 =	0.1663	1.663E-07	lb/ft^3_{sd}
NOx =	0.1194	1.194E-07	lb/ft^3_{sd}
CO =	0.0727	7.272E-08	lb/ft^3_{sd}
CO_2 =	0.1143	1.143E-07	lb/ft^3_{sd}
CH_4 =	0.0416	4.165E-08	lb/ft^3_{sd}
N_2 =	0.0727	7.273E-08	lb/ft^3_{sd}
H_2 =	0.0052	5.234E-09	lb/ft^3_{sd}
O_2 =	0.0831	8.308E-08	lb/ft^3_{sd}
HCl =	0.0947	9.466E-08	lb/ft^3sd

		ppmvd
Hydrogen Sulfide	H_2S	8.84808E-08
Carboynl Sulfide	COS	1.55967E-07
Methyl Mercaptan	CH_4S	1.24897E-07
Ethyl Mercaptan	C_2H_6S	1.61312E-07
Dimethyl Sulfide	$(CH_3)_2S$	1.61312E-07
Carbon Disulfide	CS_2	1.97676E-07
Dimethyl Disulfide	$C_2H_6S_2$	2.4456E-07

Gas Emission Rate [lb/hr] = (C%)(Qsd)(Gas Density)

$$Gas\ E\ x = \frac{X\ compound\ (\%)}{100} \times Q_{SD}\left[\frac{ft^3, dry\ \&\ standard}{min}\right] \times \frac{60\ minutes}{hour} \times X gas\ density\ \left[\frac{lbs}{ft^3}\right]$$

$$Gas\ E\ x = \frac{X\ compound\ (ppmvd)}{} \times Q_{SD}\left[\frac{ft^3, dry\ \&\ standard}{min}\right] \times \frac{60\ minutes}{hour} \times X gas\ density\ \left[\frac{lbs}{ft^3}\right]$$

Example Calculations

1) Dry Volumetric Flue Gas Flow Rate at Standard Conditions, dscfm
(dry, standard, cubic feet per minute)

$$Q_{SD} = \frac{60 \times M_{fd} \times (t_{std} + 460) \times P_s \times V_s \times A_s}{(t_s + 460) \times P_{std}}$$

2) Actual Wet Volumetric Flue Gas Flow Rate at Actual Conditions, acfm
(actual [standard] cubic feet per minute)

$$Q_{AW} = 60 \times V_S \times A_S$$

3) Average Source Flue Gas Velocity, ft/sec

$$V_S = 85.49 \times C_p \times \sqrt{\left[\frac{(460 + t_S) \times \Delta P_{AVG}}{(P_S \times M_S)}\right]}$$

4) Wet Molecular Weight of the Flue Gas, lb/lb-mole

$$M_S = M_d \times M_{fd} + 18 \times \frac{\%H_2O}{100}$$

t_{std} = standard temperature; 68 ^oF
t_s = stack temperature; in units of ^oF
P_{std} = standard pressure; 29.92 inches Hg
A_S = stack cross sectional area; in units ft^2 (at point of sample collection)
C_p = pitot tube constant; unitless, defaults: 0.99 for standard pitot tube 0.84 for "S" Type
$\triangle P_{avg}$ = stack average differential pressure; in inches of H_2O from pitot tube & manometer
P_{Br} = barometeric pressure, inches of Hg
P_g = stack, static pressure, inches of H_2O
t_d = temperature, dry bulb; ^oF
t_{wet} = temperature, wet-bulb; ^oF
$\%H_2O$ = moisture content, % by volume

5) Dry Molecular Weight of Flue Gas, lb/lb-mole

$$M_d = \left(\frac{16.0425}{100\%} \, x \, CH_4\%\right) + \left(\frac{44.0095}{100\%} \, x \, CO_2\right) + \left(\frac{31.9988}{100\%} \, x \, O_2\%\right) + \left(\frac{28.0134}{100\%} \, x \, N_2\%\right) + \left(\frac{28.0101}{100\%} \, x \, CO\%\right) + \left(\frac{2.0159}{100\%} \, x \, H_2\%\right)$$

6) Percent Moisture at Flue Gas Conditions, % [via, dry bulb-wet bulb analysis]

$$\%H_2O = \left(\frac{100}{P_s}\right) \times 10$$

7) Absolute Flue Gas Pressure, Inches of Mercury

$$P_s = P_{Br} + \left(\frac{P_g}{13.6}\right)$$

8) Dry Mole Fraction of Flue Gas

$$M_{fd} = 1 - \left(\frac{\%H_2O}{100}\right)$$

9) EXAMPLE: CO_2 lb/hr determination from CO_2% measurement (for "dry" sample collection)

$$E_{CO_2} = (CO_2\% \times 10{,}000) \, x \, \frac{Q_{SCF}}{\text{min } ute} \, x \, \frac{60 \text{ min } ute}{hour} \, x \, \frac{44.0095 \, gram}{gram - mole} \, x \, \frac{1}{385{,}300{,}000}$$

10) $\%H_2O$ - Mositure Content via wet-bulb-dry-bulb determination

$$\%H_2O = \left(\frac{100}{P_S}\right) \text{ x } 10^{\left\{6.6912 - \left[\frac{3144}{(T_{wet} + 390.86)}\right]\right\} - \left\{0.011 \times P_{Br} \times (T_{wet} - T_{dry}) \times \left[1 + \frac{(T_{wet} - 32)}{1571}\right]\right\}}$$

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 47-06
02/07/2017

	PARAMETER	Blower Out
	EP14 NORTH QUARRY LFG ONLY	
Date	Test Date	2/7/17
Start	Run Start Time	9:18
	Run Finish Time	10:49
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:31:00
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.12
% H_2O	Moisture Content of LFG, %	1.81
% RH	Relative Humidity, %	69.00
M_{fd}	Dry Mole Fraction	0.982
%CH_4	Methane, %	47.05
%CO_2	Carbon Dioxide, %	36.45
%O_2	Oxygen, %	1.65
%Balance	Assumed as Nitrogen, %	13.75
%H_2	Hydrogen, % (** reported at the laboratory detection limit*)	3.00
%CO	Carbon Monoxide, % (** reported at the laboratory detection limit*)	0.00300
M_d	Dry Molecular Weight, lb/lb-Mole	28.03
M_s	Wet Molecular weight, lb/lb-Mole	27.85
P_g	Flue Gas Static Pressure, inches of H_2O	1.50
P_s	Absolute Flue Gas Pressure, inches of Mercury	29.23
t_s	Average Stack Gas Temperature, °F	71
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.014
v_s	Average LFG Velocity, feet/second	8.09
A_s	Stack Crossectional Area, square feet	0.51
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	237
Q_s	Standard Volumetric Flow Rate, scfm	242
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	249
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	1,037
NHV	Net Heating Value, Btu/scf	428.0
LFG_{CH4}	Methane, lb/hr	279.2
	Methane, grains/dscf	137.17
LFG_{CO2}	Carbon Dioxide, lb/hr	593.5
	Carbon Dioxide, grains/dscf	291.53
LFG_{O2}	Oxygen, lb/hr	19.5
	Oxygen, grains/dscf	9.60
LFG_{N2}	Balance gas as Nitrogen, lb/hr	142.5
	Balance gas as Nitrogen, grains/dscf	70.00
LFG_{H4}	Hydrogen, lb/hr	2.2
	Hydrogen, grains/dscf	1.10
LFG_{CO}	Carbon Monoxide, lb/hr	0.0
	Carbon Monoxide, grains/dscf	0.02

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	69	19
	Hydrogen Sulfide Rate, lb/hr	0.09	0.02
	Hydrogen Sulfide Rate, grains/dscf	0.043	0.012
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	2.3	2.0
	Methyl Mercaptan Rate, lb/hr	0.00	0.00
	Methyl Mercaptan Rate, grains/dscf	0.002	0.002
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	9.2	9.1
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.010	0.010
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	0.59	0.59
	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	81	31
	TRS-->SO2 Emission Rate, lb/hr	0.19	0.07
	TRS-->SO2 Emission Rate, grains/dscf	0.094	0.036

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.

February 9, 2017

ANAB ACCREDITED DOD ELAP
ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

nelac
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 LF Monthly Permit Flare LFG Testing
Lab Number: I020802-01/04

Enclosed are results for sample(s) received 2/08/17 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 and Mike Lambrich; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 2/09/17.

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.:	6312552
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 Method 15/16	ASTM 1946 + H2 + CO & Btu/SCF		ASTM 1946 + H2 + CO & Btu/SCF (by CH4 only)		
	Canister ID	Sample Start	Sample End	Lab Receive												
I020802-01	#5951	-20.31	-3.92	-4	Blower Outlet A	1/31/2017*	900	C-1L	LFG	He	X	X				
-02	#6052	-20.23	-3.93	-4	Blower Outlet B	1/31/2017*	925	C-1L	LFG	He	X	X				
-03	#6062	-19.00	-2.72	-4	NQ EP14 A	1/31/2017*	0925	C-1L	LFG	He	X			X		
-04	#5960	-19.12	-2.22	-4	NQ EP14 B	1/31/2017*	0955	C-1L	LFG	He	X			X		

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: DAR/JH		COMPANY: Weaver Consultants Group	DATE/TIME 02/07/2017
RELINQUISHED BY		DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY	UPS	DATE/ RECEIVED BY	DATE/TIME 2/8/17 0955
RELINQUISHED BY		DATE/ RECEIVED BY	DATE/TIME

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

COMMENTS

Request NQ H2% to have RL as low as resonable

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*

Sample date misprinted on COC, should read 2/7/2017

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**02/08/17**
Matrix:	**Air**
Reporting Units:	**ppmv**

Date Sampled incorrect on sheet, should read 2/7/2017. Time sampled is correct

EPA Methods 15/16

Lab No.:	I020802-01		I020802-02		I020802-03		I020802-04	
Client Sample I.D.:	Blower Outlet A		Blower Outlet B		NQ EP14 A		NQ EP14 B	
Date/Time Sampled:	*1/31/17 9:00		*1/31/17 9:25		*1/31/17 9:25		*1/31/17 9:55	
Date/Time Analyzed:	2/8/17 13:40		2/8/17 13:52		2/8/17 14:05		2/8/17 14:17	
QC Batch No.:	170208GC3A1		170208GC3A1		170208GC3A1		170208GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		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	17	0.59	22	0.59	69 d	5.9	19	0.59
Carbonyl Sulfide	ND	0.59	ND	0.59	ND	0.59	ND	0.59
Methyl Mercaptan	200 d	5.9	200 d	5.9	2.3	0.59	2.0	0.59
Ethyl Mercaptan	2.3	0.59	2.4	0.59	ND	0.59	ND	0.59
Dimethyl Sulfide	1,400 d	59	1,300 d	59	9.2	0.59	9.1	0.59
Carbon Disulfide	0.76	0.59	0.76	0.59	ND	0.59	ND	0.59
Dimethyl Disulfide	96 d	5.9	98 d	5.9	ND	0.59	ND	0.59
Total Reduced Sulfur	1,800	0.59	1,800	0.59	81	0.59	31	0.59

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

Reviewed/Approved By: _____ Date 2-9-17

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.: 170208GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	2/8/17 11:06		2/8/17 10:41		2/8/17 10:53			
Analyst Initials:	AS		AS		AS			
Datafile:	08feb003		08feb001		08feb002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	113	70-130%	111	70-130%	2.0	<30
Carbonyl Sulfide	ND	0.20	108	70-130%	106	70-130%	1.8	<30
Methyl Mercaptan	ND	0.20	109	70-130%	107	70-130%	1.1	<30
Ethyl Mercaptan	ND	0.20	111	70-130%	110	70-130%	1.7	<30
Dimethyl Sulfide	ND	0.20	103	70-130%	102	70-130%	1.7	<30
Carbon Disulfide	ND	0.20	99	70-130%	98	70-130%	1.3	<30
Dimethyl Disulfide	ND	0.20	92	70-130%	91	70-130%	0.7	<30

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

Reviewed/Approved By: _____ Date: 2-9-17
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:	**02/08/17**
Matrix:	**Air**
Reporting Units:	**% v/v**

Date Sampled incorrect on sheet. Should read 2/7/2017. Time sampled is correct.

ASTM D1946

Lab No.:	I020802-01		I020802-02					
Client Sample I.D.:	Blower Outlet A		Blower Outlet B					
Date/Time Sampled:	* 1/31/17 9:00		* 1/31/17 9:25					
Date/Time Analyzed:	2/8/17 12:46		2/8/17 13:00					
QC Batch No.:	170208GC8A1		170208GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	3.0		3.0					
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**				
Hydrogen	12.1	3.0	12.2	3.0				
Carbon Dioxide	37.7	0.030	37.6	0.030				
Oxygen/Argon	7.9	1.5	7.9	1.5				
Nitrogen	31.7	3.0	31.7	3.0				
Methane	9.7	0.0030	9.7	0.0030				
Carbon Monoxide	0.083	0.0030	0.085	0.0030				
Net Heating Value (BTU/ft3)	139.7	3.0	140.7	3.0				
Gross Heating Value (BTU/ft3)	159.3	3.0	160.4	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 2-9-17

Mark Johnson
Operations Manager

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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:	**02/08/17**
Matrix:	**Air**
Reporting Units:	**% v/v**

Date Sampled incorrect on sheet. Should read 2/7/2017. Time Sampled is correct.

ASTM D1946

Lab No.:	I020802-03		I020802-04					
Client Sample I.D.:	NQ EP14 A		NQ EP14 B					
Date/Time Sampled:	* 1/31/17 9:25		* 1/31/17 9:55					
Date/Time Analyzed:	2/8/17 13:15		2/8/17 13:29					
QC Batch No.:	170208GC8A1		170208GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	3.0		3.0					
ANALYTE	**Result % v/v**	**RL % v/v**	**Result % v/v**	**RL % v/v**				
Hydrogen	ND	3.0	ND	3.0				
Carbon Dioxide	36.1	0.030	36.8	0.030				
Oxygen/Argon	1.8	1.5	ND	1.5				
Nitrogen	14.4	3.0	13.1	3.0				
Methane	46.6	0.0030	47.5	0.0030				
Carbon Monoxide	ND	0.0030	ND	0.0030				
Net Heating Value (BTU/ft3) methane only	423.9	3.0	432.1	3.0				
Gross Heating Value (BTU/ft3) methane only	470.8	3.0	479.8	3.0				

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 2-9-17

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: 170208GC8A1
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	2/8/17 11:02			2/8/17 11:33		2/8/17 11:47					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	5.93	119	5.80	116	2.2	70	130	30
Carbon Dioxide	ND	0.010	10	9.94	99	9.66	96	2.8	70	130	30
Oxygen/Argon	ND	0.50	15	15.8	106	15.3	103	3.2	70	130	30
Nitrogen	ND	1.0	70	71.4	102	69.2	99	3.1	70	130	30
Methane	ND	0.0010	0.10	0.110	110	0.110	110	0.3	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.110	110	0.110	110	0.2	70	130	30

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

Reviewed/Approved By: _____ Date 2-9-17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 100-05
01/31/2017

Kurz FM =	**1,580**	scfm
Fleetzoom Total =	**1,591**	scfm

$\Delta =$ **0.7%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)			
Date	Test Date		1/31/17
Time	Start	12:05	12:16
***%CH_4**	Methane, %	10.80	10.90
***%CO_2**	Carbon Dioxide, %	37.00	37.30
***'%O_2**	Oxygen, %	7.90	8.10
***%Balance**	Assumed as Nitrogen, %	44.30	43.70
P_g	Flue Gas Static Pressure, inches of H_2O	14.76	14.76
t_s	Blower Outlet LFG Temperature, °F	71	72
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	1,512	
Q_s	Fleetzoom FM, Standard Volumetric Flow Rate, scfm	1,591	
LFG_{CH4}	Methane, lb/hr	408.0	411.8
	Methane, grains/dscf	31.49	31.78
LFG_{CO2}	Carbon Dioxide, lb/hr	3,834.7	3,865.8
	Carbon Dioxide, grains/dscf	295.93	298.33
LFG_{O2}	Oxygen, lb/hr	595.3	610.4
	Oxygen, grains/dscf	45.94	47.10
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,922.5	2,882.9
	Balance gas as Nitrogen, grains/dscf	225.53	222.48

** 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	1.40	0.53
	Hydrogen Sulfide Rate, lb/hr	0.01	0.00
	Hydrogen Sulfide Rate, grains/dscf	0.001	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.53	0.53
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	150.00	110.00
	Methyl Mercaptan Rate, lb/hr	1.70	1.25
	Methyl Mercaptan Rate, grains/dscf	0.131	0.096
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	1.70	1.40
	Ethyl Mercaptan Rate, lb/hr	0.02	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,200.00	1,200.00
	Dimethyl Sulfide Rate, lb/hr	17.56	17.56
	Dimethyl Sulfide Rate, grains/dscf	1.355	1.355
CS_2	Carbon Disulfide Concentration, ppmd	0.66	0.69
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	87.00	90.00
	Dimethyl Disulfide Rate, lb/hr	1.93	2.00
	Dimethyl Disulfide Rate, grains/dscf	0.149	0.154
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,500.00	1,500.00
	TRS-->SO2 Emission Rate, lb/hr	22.63	22.63
	TRS-->SO2 Emission Rate, grains/dscf	1.746	1.746
	TPY =	99.12	99.12

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 46-05
01/31/2017

Fleetzoom Total = 207 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		1/31/17
Time	Start	11:24	11:34
***%CH_4**	Methane, %	46.00	45.60
***%CO_2**	Carbon Dioxide, %	35.20	34.90
***'%O_2**	Oxygen, %	1.90	1.70
***%Balance**	Assumed as Nitrogen, %	16.90	17.80
P_g	Flue Gas Static Pressure, inches of H_2O	1.19	1.27
t_s	Blower Outlet LFG Temperature, °F	65.70	65.40
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	196	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	207	
LFG_{CH4}	Methane, lb/hr	225.7	223.8
	Methane, grains/dscf	134.11	132.94
LFG_{CO2}	Carbon Dioxide, lb/hr	473.8	469.8
	Carbon Dioxide, grains/dscf	281.53	279.13
LFG_{O2}	Oxygen, lb/hr	18.6	16.6
	Oxygen, grains/dscf	11.05	9.89
LFG_{N2}	Balance gas as Nitrogen, lb/hr	144.8	152.5
	Balance gas as Nitrogen, grains/dscf	86.04	90.62

** 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	140.00	0.52
	Hydrogen Sulfide Rate, lb/hr	0.15	0.00
	Hydrogen Sulfide Rate, grains/dscf	0.087	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.53	0.52
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	2.20	0.52
	Methyl Mercaptan Rate, lb/hr	0.00	0.00
	Methyl Mercaptan Rate, grains/dscf	0.002	0.000
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.53	0.52
	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	9.10	9.00
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.010	0.010
CS_2	Carbon Disulfide Concentration, ppmd	0.53	0.52
	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	0.53	0.52
	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	150.00	10.00
	TRS-->SO2 Emission Rate, lb/hr	0.29	0.02
	TRS-->SO2 Emission Rate, grains/dscf	0.175	0.012
	TPY =	1.29	0.09

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.

February 8, 2017

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: I020101-01/04

Enclosed are results for sample(s) received 2/01/17 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 and Mike Lambrich; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 2/08/17.

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.: 6312552
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 Method 15/16
	Canister ID	Sample Start	Sample End	Lab Receive							
I02-01-01	#1612	-19.53	-2.22	-2	Blower Outlet A	1/31/2017	1205	C -1L	LFG	He	X
-02	#1617	-19.75	-2.22	-2	Blower Outlet B	1/31/2017	1216	C -1L	LFG	He	X
-03	#1534	~~-12.5~~ -19.21	~~-1.60~~ -2.03	-2	NQ EP14 A	1/31/2017	1124	C -1L	LFG	He	X
-04	#1530	~~-19.21~~ -20.05	~~-2.03~~ -2.11	-1.5	NQ EP14 B	1/31/2017	1134	C -1L	LFG	He	X

AUTHORIZATION TO PERFORM WORK: Dave Penoyer — COMPANY: Republic Services — DATE/TIME:
SAMPLED BY: DAR/JH — COMPANY: Weaver Consultants Group — DATE/TIME 01/31/2017 1230
RELINQUISHED BY: [signature] — DATE/RECEIVED BY: [signature] 1300 1/31/17 — DATE/TIME
RELINQUISHED BY: UPS — DATE/RECEIVED BY: [signature] 2/1/17 1028 — 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: 02/01/17
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I020101-01		I020101-02		I020101-03		I020101-04	
Client Sample I.D.:	Blower Outlet A		Blower Outlet B		NQ EP14 A		NQ EP14 B	
Date/Time Sampled:	1/31/17 12:05		1/31/17 12:16		1/31/17 11:24		1/31/17 11:34	
Date/Time Analyzed:	2/2/17 9:08		2/2/17 9:20		2/2/17 9:33		2/2/17 9:45	
QC Batch No.:	170202GC3A1		170202GC3A1		170202GC3A1		170202GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.7		2.7		2.7		2.6	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	1.4	0.53	ND	0.53	140 d	5.3	ND	0.52
Carbonyl Sulfide	ND	0.53	ND	0.53	ND	0.53	ND	0.52
Methyl Mercaptan	150 d	5.3	110 d	5.3	2.2	0.53	ND	0.52
Ethyl Mercaptan	1.7	0.53	1.4	0.53	ND	0.53	ND	0.52
Dimethyl Sulfide	1,200 d	53	1,200 d	53	9.1	0.53	9.0	0.52
Carbon Disulfide	0.66	0.53	0.69	0.53	ND	0.53	ND	0.52
Dimethyl Disulfide	87 d	5.3	90 d	5.3	ND	0.53	ND	0.52
Total Reduced Sulfur	1,500	0.53	1,500	0.53	150	0.53	10	0.52

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

Reviewed/Approved By: _____ Date 2-8-17
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.: 170202GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	2/2/17 8:51		2/2/17 8:26		2/2/17 8:38			
Analyst Initials:	AS		AS		AS			
Datafile:	02feb003		02feb001		02feb002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	121	70-130%	120	70-130%	0.5	<30
Carbonyl Sulfide	ND	0.20	111	70-130%	110	70-130%	0.7	<30
Methyl Mercaptan	ND	0.20	115	70-130%	114	70-130%	1.0	<30
Ethyl Mercaptan	ND	0.20	118	70-130%	116	70-130%	1.8	<30
Dimethyl Sulfide	ND	0.20	102	70-130%	101	70-130%	1.1	<30
Carbon Disulfide	ND	0.20	101	70-130%	100	70-130%	1.3	<30
Dimethyl Disulfide	ND	0.20	86	70-130%	85	70-130%	0.8	<30

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

Reviewed/Approved By: _____ Date: 2-8-17
Mark J. Johnson
Operations Manager

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 99-04
01/24/2017

Kurz FM =	**0**	**scfm**	***KURZ Flow Meter was not recording data at time of sampling, therefore the Fleetzoom Flow Meters are used to quanitify flow for the calculation**
Fleetzoom Total =	**1,601**	**scfm**	**Δ = NA**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)			
Date	Test Date		1/24/17
Time	Start	14:36	14:45
***%CH_4**	Methane, %	11.40	11.40
***%CO_2**	Carbon Dioxide, %	40.20	35.90
***'%O_2**	Oxygen, %	7.20	7.50
***%Balance**	Assumed as Nitrogen, %	41.20	45.20
P_g	Flue Gas Static Pressure, inches of H_2O	13.72	16.17
t_s	Blower Outlet LFG Temperature, °F	60	58
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	1,521	
Q_s	Fleetzoom FM, Standard Volumetric Flow Rate, scfm	1,601	
LFG_{CH4}	Methane, lb/hr	433.4	433.4
	Methane, grains/dscf	33.24	33.24
LFG_{CO2}	Carbon Dioxide, lb/hr	4,192.4	3,743.9
	Carbon Dioxide, grains/dscf	321.52	287.13
LFG_{O2}	Oxygen, lb/hr	546.0	568.7
	Oxygen, grains/dscf	41.87	43.61
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,735.0	3,000.5
	Balance gas as Nitrogen, grains/dscf	209.75	230.11

** 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	32.00	33.00
	Hydrogen Sulfide Rate, lb/hr	0.26	0.27
	Hydrogen Sulfide Rate, grains/dscf	0.020	0.020
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	230.00	230.00
	Methyl Mercaptan Rate, lb/hr	2.62	2.62
	Methyl Mercaptan Rate, grains/dscf	0.201	0.201
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.50	2.70
	Ethyl Mercaptan Rate, lb/hr	0.04	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,200.00	1,300.00
	Dimethyl Sulfide Rate, lb/hr	17.67	19.14
	Dimethyl Sulfide Rate, grains/dscf	1.355	1.468
CS_2	Carbon Disulfide Concentration, ppmd	0.66	0.71
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	76.00	88.00
	Dimethyl Disulfide Rate, lb/hr	1.70	1.96
	Dimethyl Disulfide Rate, grains/dscf	0.130	0.151
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,600.00	1,800.00
	TRS-->SO2 Emission Rate, lb/hr	24.29	27.33
	TRS-->SO2 Emission Rate, grains/dscf	1.863	2.096
	TPY =	106.39	119.69

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 45-04
01/24/2017

Fleetzoom Total = 202 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		1/24/17
Time	Start	13:56	14:05
***%CH_4**	Methane, %	50.10	51.10
***%CO_2**	Carbon Dioxide, %	36.60	32.60
***'%O_2**	Oxygen, %	1.50	1.40
***%Balance**	Assumed as Nitrogen, %	11.80	14.90
P_g	Flue Gas Static Pressure, inches of H_2O	1.16	1.01
t_s	Blower Outlet LFG Temperature, °F	66.30	67.00
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	192	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	202	
LFG_{CH4}	Methane, lb/hr	240.4	245.2
	Methane, grains/dscf	146.06	148.98
LFG_{CO2}	Carbon Dioxide, lb/hr	481.8	429.1
	Carbon Dioxide, grains/dscf	292.73	260.74
LFG_{O2}	Oxygen, lb/hr	14.4	13.4
	Oxygen, grains/dscf	8.72	8.14
LFG_{N2}	Balance gas as Nitrogen, lb/hr	98.9	124.8
	Balance gas as Nitrogen, grains/dscf	60.07	75.86

** 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	0.59	34.00
	Hydrogen Sulfide Rate, lb/hr	0.00	0.03
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.021
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	0.59	3.60
	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	0.59	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	12.00	13.00
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.014	0.015
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	3.40	0.59
	Dimethyl Disulfide Rate, lb/hr	0.01	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.006	0.001
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	20.00	52.00
	TRS-->SO2 Emission Rate, lb/hr	0.04	0.10
	TRS-->SO2 Emission Rate, grains/dscf	0.023	0.061
	TPY =	0.17	0.44

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.

February 2, 2017

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: I012502-01/04

Enclosed are results for sample(s) received 1/25/17 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 2/01/17.

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.:	PO6312552
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												
I812562-01	J1718	-19.8	-3.5	-4	NQ EP14 A	1/24/2017	1356	C	LFG	NA	X					
-02	J1724	-19.7	-3.5	-4	NQ EP14 B	1/24/2017	1405	C	LFG	NA	X					
-03	R1160	-19.8	-3.5	-4	SQ Blower Outlet A	1/24/2017	1436	C	LFG	NA	X					
-04	R1155	-19.6	-3.5	-4	SQ Blower Outlet B	1/24/2017	1445	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers 1-24-17 1500	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	DATE/ RECEIVED BY: [illegible] 1/25/17 1100	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: 01/25/17
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I012502-01		I012502-02		I012502-03		I012502-04	
Client Sample I.D.:	NQ EP14 A		NQ EP14 B		SQ Blower Outlet A		SQ Blower Outlet B	
Date/Time Sampled:	1/24/17 13:56		1/24/17 14:05		1/24/17 14:36		1/24/17 14:45	
Date/Time Analyzed:	1/26/17 9:47		1/26/17 9:59		1/26/17 10:11		1/26/17 10:24	
QC Batch No.:	170126GC3A1		170126GC3A1		170126GC3A1		170126GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		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	0.59	34 d	5.9	32 d	5.9	33 d	5.9
Carbonyl Sulfide	ND	0.59	ND	0.59	ND	0.59	ND	0.59
Methyl Mercaptan	ND	0.59	3.6	0.59	230 d	5.9	230 d	5.9
Ethyl Mercaptan	ND	0.59	ND	0.59	2.5	0.59	2.7	0.59
Dimethyl Sulfide	12	0.59	13	0.59	1,200 d	59	1,300 d	59
Carbon Disulfide	ND	0.59	ND	0.59	0.66	0.59	0.71	0.59
Dimethyl Disulfide	3.4	0.59	ND	0.59	76 d	5.9	88 d	5.9
Total Reduced Sulfur	20	0.59	52	0.59	1,600	0.59	1,800	0.59

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

Reviewed/Approved By: _____ Date 2-1-17

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 for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	1/26/17 9:33		1/26/17 8:53		1/26/17 9:05			
Analyst Initials:	AS		AS		AS			
Datafile:	26jan004		26jan001		26jan002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	123	70-130%	122	70-130%	0.7	<30
Carbonyl Sulfide	ND	0.20	119	70-130%	119	70-130%	0.1	<30
Methyl Mercaptan	ND	0.20	117	70-130%	115	70-130%	1.2	<30
Ethyl Mercaptan	ND	0.20	117	70-130%	117	70-130%	0.1	<30
Dimethyl Sulfide	ND	0.20	108	70-130%	108	70-130%	0.5	<30
Carbon Disulfide	ND	0.20	107	70-130%	106	70-130%	1.0	<30
Dimethyl Disulfide	ND	0.20	91	70-130%	90	70-130%	0.2	<30

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

Reviewed/Approved By: _____ Date: 2-1-17
Mark J. Johnson
Operations Manager

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 98-03
01/17/2017

Kurz FM =	**1,443**	**scfm**	
Fleetzoom Total =	**1,432**	**scfm**	**Δ = -0.8%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)			
Date	Test Date		1/17/17
Time	Start	10:15	10:23
***%CH_4**	Methane, %	11.70	10.60
***%CO_2**	Carbon Dioxide, %	44.90	47.00
***'%O_2**	Oxygen, %	7.10	7.40
***%Balance**	Assumed as Nitrogen, %	36.30	35.00
P_g	Flue Gas Static Pressure, inches of H_2O	31.47	31.34
t_s	Blower Outlet LFG Temperature, °F	60	60
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	1,371	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	1,443	
LFG_{CH4}	Methane, lb/hr	400.8	363.2
	Methane, grains/dscf	34.11	30.90
LFG_{CO2}	Carbon Dioxide, lb/hr	4,220.0	4,417.3
	Carbon Dioxide, grains/dscf	359.11	375.91
LFG_{O2}	Oxygen, lb/hr	485.2	505.7
	Oxygen, grains/dscf	41.29	43.03
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,171.6	2,093.9
	Balance gas as Nitrogen, grains/dscf	184.80	178.18

** 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	33.00	41.00
	Hydrogen Sulfide Rate, lb/hr	0.24	0.30
	Hydrogen Sulfide Rate, grains/dscf	0.020	0.025
COS	Carbonyl Sulfide Concentration, ppmd	0.58	0.58
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	240.00	300.00
	Methyl Mercaptan Rate, lb/hr	2.47	3.08
	Methyl Mercaptan Rate, grains/dscf	0.210	0.262
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.80	2.90
	Ethyl Mercaptan Rate, lb/hr	0.04	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,300.00	1,400.00
	Dimethyl Sulfide Rate, lb/hr	17.25	18.58
	Dimethyl Sulfide Rate, grains/dscf	1.468	1.581
CS_2	Carbon Disulfide Concentration, ppmd	0.79	0.85
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	80.00	98.00
	Dimethyl Disulfide Rate, lb/hr	1.61	1.97
	Dimethyl Disulfide Rate, grains/dscf	0.137	0.168
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,700.00	1,900.00
	TRS-->SO2 Emission Rate, lb/hr	23.26	25.99
	TRS-->SO2 Emission Rate, grains/dscf	1.979	2.212
	TPY =	101.87	113.86

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 44-03
01/17/2017

Fleetzoom Total = 200 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		1/17/17
Time	Start	9:48	9:58
***%CH_4**	Methane, %	47.40	47.30
***%CO_2**	Carbon Dioxide, %	34.40	34.80
***'%O_2**	Oxygen, %	1.90	2.10
***%Balance**	Assumed as Nitrogen, %	16.30	15.80
P_g	Flue Gas Static Pressure, inches of H_2O	1.01	1.12
t_s	Blower Outlet LFG Temperature, °F	60.80	63.00
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	190	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	200	
LFG_{CH4}	Methane, lb/hr	225.1	224.6
	Methane, grains/dscf	138.19	137.90
LFG_{CO2}	Carbon Dioxide, lb/hr	448.1	453.3
	Carbon Dioxide, grains/dscf	275.13	278.33
LFG_{O2}	Oxygen, lb/hr	18.0	19.9
	Oxygen, grains/dscf	11.05	12.21
LFG_{N2}	Balance gas as Nitrogen, lb/hr	135.1	131.0
	Balance gas as Nitrogen, grains/dscf	82.98	80.44

** 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	44.00	0.56
	Hydrogen Sulfide Rate, lb/hr	0.04	0.00
	Hydrogen Sulfide Rate, grains/dscf	0.027	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.59	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	3.20	0.56
	Methyl Mercaptan Rate, lb/hr	0.00	0.00
	Methyl Mercaptan Rate, grains/dscf	0.003	0.000
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.59	0.56
	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	12.00	7.70
	Dimethyl Sulfide Rate, lb/hr	0.02	0.01
	Dimethyl Sulfide Rate, grains/dscf	0.014	0.009
CS_2	Carbon Disulfide Concentration, ppmd	0.59	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	0.59	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	59.00	9.00
	TRS-->SO2 Emission Rate, lb/hr	0.11	0.02
	TRS-->SO2 Emission Rate, grains/dscf	0.069	0.010
	TPY =	0.49	0.07

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.

January 24, 2017

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: I011802-01/04

Enclosed are results for sample(s) received 1/18/17 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 1/24/17.

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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.:	PO~~4862452~~ 6312552
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	EPA 15/16 + TRS					
I01802-01	1615	-19.7	-3.5	-4	NQ EP14 A	1/17/2017	948	C	LFG	NA	X					
-02	1531	-15	-3.5	-3	NQ EP14 B	1/17/2017	958	C	LFG	NA	X					
-03	R1350	-19.8	-3.5	-3.5	SQ Blower Outlet A	1/17/2017	1015	C	LFG	NA	X					
-04	R1365	-19.5	-3.5	-3.5	SQ Blower Outlet B	1/17/2017	1023	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	**COMMENTS**
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers	DATE: 1-17-17 1200 RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	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*

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/18/17
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I011802-01		I011802-02		I011802-03		I011802-04	
Client Sample I.D.:	NQ EP14 A		NQ EP14 B		SQ Blower Outlet A		SQ Blower Outlet B	
Date/Time Sampled:	1/17/17 9:48		1/17/17 9:58		1/17/17 10:15		1/17/17 10:23	
Date/Time Analyzed:	1/23/17 9:12		1/23/17 9:24		1/23/17 9:37		1/23/17 9:49	
QC Batch No.:	170123GC3A1		170123GC3A1		170123GC3A1		170123GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		2.8		2.9		2.9	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	44 d	5.9	ND	0.56	33 d	5.8	41 d	5.8
Carbonyl Sulfide	ND	0.59	ND	0.56	ND	0.58	ND	0.58
Methyl Mercaptan	3.2	0.59	ND	0.56	240 d	5.8	300 d	5.8
Ethyl Mercaptan	ND	0.59	ND	0.56	2.8	0.58	2.9	0.58
Dimethyl Sulfide	12	0.59	7.7	0.56	1,300 d	58	1,400 d	58
Carbon Disulfide	ND	0.59	ND	0.56	0.79	0.58	0.85	0.58
Dimethyl Disulfide	ND	0.59	ND	0.56	80 d	5.8	98 d	5.8
Total Reduced Sulfur	59	0.59	9.0	0.56	1,700	0.58	1,900	0.58

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

Reviewed/Approved By: Mark Johnson
Operations Manager

Date 1/24/17

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.: 170123GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	1/23/17 8:58		1/23/17 8:34		1/23/17 8:46			
Analyst Initials:	AS		AS		AS			
Datafile:	23jan003		23jan001		23jan002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	71	70-130%	70	70-130%	1.1	<30
Carbonyl Sulfide	ND	0.20	104	70-130%	104	70-130%	0.7	<30
Methyl Mercaptan	ND	0.20	72	70-130%	71	70-130%	0.5	<30
Ethyl Mercaptan	ND	0.20	75	70-130%	74	70-130%	0.1	<30
Dimethyl Sulfide	ND	0.20	93	70-130%	92	70-130%	1.5	<30
Carbon Disulfide	ND	0.20	89	70-130%	88	70-130%	0.9	<30
Dimethyl Disulfide	ND	0.20	78	70-130%	79	70-130%	0.9	<30

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

Reviewed/Approved By: _____ Date: 1/24/17
Mark J. Johnson
Operations Manager

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 97-02
01/11/2017

Kurz FM =	**1,475**	**scfm**	
Fleetzoom Total =	**1,516**	**scfm**	**Δ = 2.7%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)			
Date	Test Date		1/11/17
Time	Start	14:40	14:50
***%CH_4**	Methane, %	11.30	11.70
***%CO_2**	Carbon Dioxide, %	44.10	44.20
***'%O_2**	Oxygen, %	5.70	5.60
***%Balance**	Assumed as Nitrogen, %	38.90	38.50
P_g	Flue Gas Static Pressure, inches of H_2O	16.41	16.91
t_s	Blower Outlet LFG Temperature, °F	81	80
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	1,401	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	1,475	
LFG_{CH4}	Methane, lb/hr	395.7	409.7
	Methane, grains/dscf	32.94	34.11
LFG_{CO2}	Carbon Dioxide, lb/hr	4,236.0	4,245.6
	Carbon Dioxide, grains/dscf	352.71	353.51
LFG_{O2}	Oxygen, lb/hr	398.1	391.1
	Oxygen, grains/dscf	33.15	32.57
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,378.4	2,353.9
	Balance gas as Nitrogen, grains/dscf	198.04	196.00

** 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	23.00	28.00
	Hydrogen Sulfide Rate, lb/hr	0.17	0.21
	Hydrogen Sulfide Rate, grains/dscf	0.014	0.017
COS	Carbonyl Sulfide Concentration, ppmd	0.63	0.63
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	250.00	250.00
	Methyl Mercaptan Rate, lb/hr	2.62	2.62
	Methyl Mercaptan Rate, grains/dscf	0.219	0.219
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.90	3.10
	Ethyl Mercaptan Rate, lb/hr	0.04	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.004
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,500.00	1,500.00
	Dimethyl Sulfide Rate, lb/hr	20.34	20.34
	Dimethyl Sulfide Rate, grains/dscf	1.694	1.694
CS_2	Carbon Disulfide Concentration, ppmd	0.92	0.92
	Carbon Disulfide Rate, lb/hr	0.02	0.02
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	110.00	120.00
	Dimethyl Disulfide Rate, lb/hr	2.26	2.47
	Dimethyl Disulfide Rate, grains/dscf	0.188	0.205
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	2,000.00	2,000.00
	TRS-->SO2 Emission Rate, lb/hr	27.96	27.96
	TRS-->SO2 Emission Rate, grains/dscf	2.329	2.329
	TPY =	122.49	122.49

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 43-02
01/11/2017

Fleetzoom Total = 179 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		1/11/17
Time	Start	14:00	14:09
***%CH_4**	Methane, %	45.20	45.40
***%CO_2**	Carbon Dioxide, %	36.50	36.30
***'%O_2**	Oxygen, %	1.80	1.80
***%Balance**	Assumed as Nitrogen, %	16.50	16.50
P_g	Flue Gas Static Pressure, inches of H_2O	0.92	0.96
t_s	Blower Outlet LFG Temperature, °F	75.50	79.50
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	170	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	179	
LFG_{CH4}	Methane, lb/hr	191.8	192.7
	Methane, grains/dscf	131.78	132.36
LFG_{CO2}	Carbon Dioxide, lb/hr	425.0	422.7
	Carbon Dioxide, grains/dscf	291.93	290.33
LFG_{O2}	Oxygen, lb/hr	15.2	15.2
	Oxygen, grains/dscf	10.47	10.47
LFG_{N2}	Balance gas as Nitrogen, lb/hr	122.3	122.3
	Balance gas as Nitrogen, grains/dscf	84.00	84.00

** 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	0.63
	Hydrogen Sulfide Rate, lb/hr	0.00	0.00
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.000
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	0.63
	Methyl Mercaptan Rate, lb/hr	0.00	0.00
	Methyl Mercaptan Rate, grains/dscf	0.001	0.001
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	14.00	14.00
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.016	0.016
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	0.63
	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	16.00	16.00
	TRS-->SO2 Emission Rate, lb/hr	0.03	0.03
	TRS-->SO2 Emission Rate, grains/dscf	0.019	0.019
	TPY =	0.12	0.12

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

AirTECHNOLOGY
Laboratories, Inc.

January 19, 2017

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: I011302-01/04

Enclosed are results for sample(s) received 1/13/17 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 1/19/17.

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.: PO~~4862452~~ 6312552
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	EPA 15/16 + TRS					
I011302-01	J1720	-19.2	-3.5	-5	NQ EP14 A	1/11/2017	1400	C	LFG	NA	X					
-02	1540	-19	-3.5	-5	NQ EP14 B	1/11/2017	1409	C	LFG	NA	X					
-03	R1164	-19.2	-3.5	-5	SQ Blower Outlet A	1/11/2017	1440	C	LFG	NA	X					
-04	R1161	-19.1	-3.5	-5	SQ Blower Outlet B	1/11/2017	1450	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY R. Ayers 1-11-17 1600	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY FED EX	DATE/ RECEIVED BY [signature]	DATE/TIME 1/13/17 1235	
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: 01/13/17
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I011302-01		I011302-02		I011302-03		I011302-04	
Client Sample I.D.:	NQ EP14 A		NQ EP14 B		SQ Blower Outlet A		SQ Blower Outlet B	
Date/Time Sampled:	1/11/17 14:00		1/11/17 14:09		1/11/17 14:40		1/11/17 14:50	
Date/Time Analyzed:	1/17/17 9:42		1/17/17 9:55		1/17/17 10:07		1/17/17 10:19	
QC Batch No.:	170117GC3A1		170117GC3A1		170117GC3A1		170117GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		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	0.63	ND	0.63	23	0.63	28	0.63
Carbonyl Sulfide	ND	0.63	ND	0.63	ND	0.63	ND	0.63
Methyl Mercaptan	ND	0.63	ND	0.63	250 d	6.3	250 d	6.3
Ethyl Mercaptan	ND	0.63	ND	0.63	2.9	0.63	3.1	0.63
Dimethyl Sulfide	14	0.63	14	0.63	1,500 d	63	1,500 d	63
Carbon Disulfide	ND	0.63	ND	0.63	0.92	0.63	0.92	0.63
Dimethyl Disulfide	ND	0.63	ND	0.63	110 d	6.3	120 d	6.3
Total Reduced Sulfur	16	0.63	16	0.63	2,000	0.63	2,000	0.63

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

Reviewed/Approved By: _____ Date 1/19/17
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 for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	1/17/17 9:28		1/17/17 9:01		1/17/17 9:13			
Analyst Initials:	AS		AS		AS			
Datafile:	17jan004		17jan002		17jan003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	70	70-130%	70	70-130%	0.2	<30
Carbonyl Sulfide	ND	0.20	95	70-130%	94	70-130%	0.6	<30
Methyl Mercaptan	ND	0.20	77	70-130%	78	70-130%	1.2	<30
Ethyl Mercaptan	ND	0.20	88	70-130%	87	70-130%	1.1	<30
Dimethyl Sulfide	ND	0.20	90	70-130%	89	70-130%	1.0	<30
Carbon Disulfide	ND	0.20	93	70-130%	92	70-130%	0.9	<30
Dimethyl Disulfide	ND	0.20	77	70-130%	77	70-130%	0.5	<30

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

Reviewed/Approved By: _____ Date: 1/19/17
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 96-01
01/04/2017

	PARAMETER	Blower Out
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)		
Date	Test Date	1/4/17
Start	Run Start Time	14:03
	Run Finish Time	15:23
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:19:55
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.82
% H_2O	Moisture Content of LFG, %	0.87
% RH	Relative Humidity, %	76.10
M_{fd}	Dry Mole Fraction	0.991
%CH_4	Methane, %	9.75
%CO_2	Carbon Dioxide, %	38.65
%O_2	Oxygen, %	7.35
%Balance	Assumed as Nitrogen, %	30.55
%H_2	Hydrogen, %	12.75
%CO	Carbon Monoxide, %	0.08
M_d	Dry Molecular Weight, lb/lb-Mole	29.76
M_s	Wet Molecular weight, lb/lb-Mole	29.66
P_g	Flue Gas Static Pressure, inches of H_2O	15.18
P_s	Absolute Flue Gas Pressure, inches of Mercury	30.80
t_s	Average Stack Gas Temperature, °F	51
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.079
v_s	Average LFG Velocity, feet/second	17.84
A_s	Stack Crossectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	1,526
Q_s	Standard Volumetric Flow Rate, scfm	1,539
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	1,448
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	7,071
NHV	Net Heating Value, Btu/scf	143.8
LFG_{CH4}	Methane, lb/hr	371.7
	Methane, grains/dscf	28.43
LFG_{CO2}	Carbon Dioxide, lb/hr	4,042.5
	Carbon Dioxide, grains/dscf	309.12
LFG_{O2}	Oxygen, lb/hr	558.9
	Oxygen, grains/dscf	42.74
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,033.9
	Balance gas as Nitrogen, grains/dscf	155.53
LFG_{H2}	Hydrogen, lb/hr	61.1
	Hydrogen, grains/dscf	4.67
LFG_{CO}	Carbon Monoxide, lb/hr	5.4
	Carbon Monoxide, grains/dscf	0.41

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	27	30
	Hydrogen Sulfide Rate, lb/hr	0.22	0.24
	Hydrogen Sulfide Rate, grains/dscf	0.017	0.019
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	230	230
	Methyl Mercaptan Rate, lb/hr	2.63	2.63
	Methyl Mercaptan Rate, grains/dscf	0.201	0.201
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.5	2.7
	Ethyl Mercaptan Rate, lb/hr	0.04	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,100	1,100
	Dimethyl Sulfide Rate, lb/hr	16.24	16.24
	Dimethyl Sulfide Rate, grains/dscf	1.242	1.242
CS_2	Carbon Disulfide Concentration, ppmd	0.71	0.74
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	69	67
	Dimethyl Disulfide Rate, lb/hr	1.54	1.21
	Dimethyl Disulfide Rate, grains/dscf	0.118	0.093

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,500	1,500
	TRS-->SO2 Emission Rate, lb/hr	22.84	22.84
	TRS-->SO2 Emission Rate, grains/dscf	1.746	1.746

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

Wednesday, January 04, 2017

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz	Kurz vs Fleetzoom
		Method 2	FleetZoom	Kurz FM			
BLOWER OUT	**14:03**	**1,539**	**1,468**	**1,538**	**4.6%**	**0.0%**	**4.6%**

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 42-01*
01/04/2017

	PARAMETER	Blower Out
	EP14 NORTH QUARRY LFG ONLY	
Date	Test Date	1/4/17
Start	Run Start Time	11:00
	Run Finish Time	12:12
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:12:00
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.82
% H_2O	Moisture Content of LFG, %	1.01
% RH	Relative Humidity, %	95.60
M_{fd}	Dry Mole Fraction	0.990
%CH_4	Methane, %	40.70
%CO_2	Carbon Dioxide, %	34.05
%O_2	Oxygen, %	2.10
%Balance	Assumed as Nitrogen, %	22.00
%H_2	Hydrogen, % (** reported at the laboratory detection limit*)	2.80
%CO	Carbon Monoxide, % (** reported at the laboratory detection limit*)	0.00280
M_d	Dry Molecular Weight, lb/lb-Mole	28.41
M_s	Wet Molecular weight, lb/lb-Mole	28.30
P_g	Flue Gas Static Pressure, inches of H_2O	1.09
P_s	Absolute Flue Gas Pressure, inches of Mercury	29.90
t_s	Average Stack Gas Temperature, °F	47
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.030
v_s	Average LFG Velocity, feet/second	11.35
A_s	Stack Crossectional Area, square feet	0.51
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	360
Q_s	Standard Volumetric Flow Rate, scfm	364
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	349
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	1,592
NHV	Net Heating Value, Btu/scf	370.2
LFG_{CH4}	Methane, lb/hr	366.1
	Methane, grains/dscf	118.66
LFG_{CO2}	Carbon Dioxide, lb/hr	840.2
	Carbon Dioxide, grains/dscf	272.33
LFG_{O2}	Oxygen, lb/hr	37.7
	Oxygen, grains/dscf	12.21
LFG_{N2}	Balance gas as Nitrogen, lb/hr	345.5
	Balance gas as Nitrogen, grains/dscf	112.00
LFG_{H4}	Hydrogen, lb/hr	3.2
	Hydrogen, grains/dscf	1.03
LFG_{CO}	Carbon Monoxide, lb/hr	0.0
	Carbon Monoxide, grains/dscf	0.01

*Starting with calendar year 2017, event numbering for NQ follows the same procedure for the SQ. The first number represents the total number of sample events performed, second number represents the number of sample events for the current calendar year. Ex: this is the 42nd sample collected solely from the NQ, 1st of the calendar year 2017. In the past, numbering for NQ was identical to the SQ numbering.

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	47	42
	Hydrogen Sulfide Rate, lb/hr	0.09	0.08
	Hydrogen Sulfide Rate, grains/dscf	0.029	0.026
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	2.5	2.6
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.002	0.002
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.56	0.56
	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	10.0	10
	Dimethyl Sulfide Rate, lb/hr	0.03	0.03
	Dimethyl Sulfide Rate, grains/dscf	0.011	0.011
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	60	56
	TRS-->SO2 Emission Rate, lb/hr	0.22	0.20
	TRS-->SO2 Emission Rate, grains/dscf	0.070	0.065

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.

January 6, 2017

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: I010506-01/04

Enclosed are results for sample(s) received 1/05/17 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 1/06/17.

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

AirTECHNOLOGY 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/Ryan 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					
	Canister ID	Sample Start	Sample End	Lab Receive							EPA 15/16 + TRS	ASTM 1946 +H2 + CO & BTU/SCF		ASTM 1946 +H2 + CO & BTU/SCF (by CH4 ONLY)		
I610506-01	5987	-20.8	-3.5	-3	SQ Blower Outlet A	1/4/2016*	1300	C -6L	LFG	He	X	X				
-02	5962	-20.2	-3.5	-3	SQ Blower Outlet B	1/4/2016*	1320	C -6L	LFG	He	X	X				
-03	5966	-19.8	-3.5	-3	NQ EP14 A	1/4/2016*	1004	C -6L	LFG	He	X			X		
-04	5950	-19.5	-3.5	-3	NQ EP14 B	1/4/2016*	1024	C -6L	LFG	He	X			X		

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

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

RELINQUISHED BY	Ryan Ayers	1-4-17	1445	RECEIVED BY	DATE/TIME
RELINQUISHED BY	FEDEX			RECEIVED BY	1/5/17 0916 DATE/TIME
RELINQUISHED BY				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*

*Sample date misprinted on COC, should read 1/4/2017

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 01/05/17
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I010506-01		I010506-02		I010506-03		I010506-04	
Client Sample I.D.:	SQ Blower Outlet A		SQ Blower Outlet B		NQ EP14 A		NQ EP14 B	
Date/Time Sampled:	1/4/17 13:00		1/4/17 13:20		1/4/17 10:04		1/4/17 10:24	
Date/Time Analyzed:	1/5/17 12:23		1/5/17 12:36		1/5/17 12:48		1/5/17 13:00	
QC Batch No.:	170104GC3A1		170104GC3A1		170104GC3A1		170104GC3A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	2.8		2.8		2.8		2.8	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	27	0.56	30 d	0.56	47 d	5.6	42 d	5.6
Carbonyl Sulfide	ND	0.56	ND	0.56	ND	0.56	ND	0.56
Methyl Mercaptan	230 d	5.6	230 d	5.6	2.5	0.56	2.6	0.56
Ethyl Mercaptan	2.5	0.56	2.7	0.56	ND	0.56	ND	0.56
Dimethyl Sulfide	1,100 d	56	1,100 d	56	10.0	0.56	10	0.56
Carbon Disulfide	0.71	0.56	0.74	0.56	ND	0.56	ND	0.56
Dimethyl Disulfide	69 d	5.6	67 d	5.6	ND	0.56	ND	0.56
Total Reduced Sulfur	1,500	0.56	1,500	0.56	60	0.56	56	0.56

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

Reviewed/Approved By: _____ Date 1/6/17
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.: 170104GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	1/4/17 16:23		1/4/17 15:59		1/4/17 16:11			
Analyst Initials:	AS		AS		AS			
Datafile:	29dec006		29dec009		29dec010			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	103	70-130%	106	70-130%	2.9	<30
Carbonyl Sulfide	ND	0.20	102	70-130%	104	70-130%	1.8	<30
Methyl Mercaptan	ND	0.20	104	70-130%	107	70-130%	2.8	<30
Ethyl Mercaptan	ND	0.20	109	70-130%	110	70-130%	1.3	<30
Dimethyl Sulfide	ND	0.20	95	70-130%	96	70-130%	0.9	<30
Carbon Disulfide	ND	0.20	115	70-130%	117	70-130%	1.2	<30
Dimethyl Disulfide	ND	0.20	84	70-130%	85	70-130%	0.9	<30

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

Reviewed/Approved By: _____ Date: 1/6/17
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 LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 01/05/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I010506-01		I010506-02					
Client Sample I.D.:	SQ Blower Outlet A		SQ Blower Outlet B					
Date/Time Sampled:	1/4/17 13:00		1/4/17 13:20					
Date/Time Analyzed:	1/5/17 15:25		1/5/17 15:40					
QC Batch No.:	170105GC8A1		170105GC8A1					
Analyst Initials:	MJ		MJ					
Dilution Factor:	2.8		2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	12.8	2.8	12.7	2.8				
Carbon Dioxide	38.6	0.028	38.7	0.028				
Oxygen/Argon	7.4	1.4	7.3	1.4				
Nitrogen	30.6	2.8	30.5	2.8				
Methane	9.7	0.0028	9.8	0.0028				
Carbon Monoxide	0.082	0.0028	0.081	0.0028				
Net Heating Value (BTU/ft3)	143.5	2.8	144.1	2.8				
Gross Heating Value (BTU/ft3)	163.8	2.8	164.4	2.8				

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 1-9-17

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 LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 01/05/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I010506-03		I010506-04					
Client Sample I.D.:	NQ EP14 A		NQ EP14 B					
Date/Time Sampled:	1/4/17 10:04		1/4/17 10:24					
Date/Time Analyzed:	1/5/17 15:54		1/5/17 16:09					
QC Batch No.:	170105GC8A1		170105GC8A1					
Analyst Initials:	MJ		MJ					
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	34.1	0.028	34.0	0.028				
Oxygen/Argon	2.1	1.4	2.1	1.4				
Nitrogen	22.1	2.8	21.9	2.8				
Methane	40.7	0.0028	40.7	0.0028				
Carbon Monoxide	ND	0.0028	ND	0.0028				
Net Heating Value (BTU/ft3) methane only	369.8	2.8	370.6	2.8				
Gross Heating Value (BTU/ft3) methane only	410.8	2.8	411.6	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 1-9-17

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.: 170105GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	1/5/17 12:21		1/5/17 11:08		1/5/17 11:23			
Analyst Initials:	MJ		MJ		MJ			
Datafile:	05jan011		05jan006		05jan007			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	118	70-130%	115	70-130%	1.9	<30
Carbon Dioxide	ND	0.010	99	70-130%	96	70-130%	2.5	<30
Oxygen/Argon	ND	0.50	102	70-130%	100	70-130%	1.7	<30
Nitrogen	ND	1.0	97	70-130%	96	70-130%	1.1	<30
Methane	ND	0.0010	107	70-130%	106	70-130%	1.2	<30
Carbon Monoxide	ND	0.0010	101	70-130%	100	70-130%	1.2	<30

ND = Not Detected (Below RL)

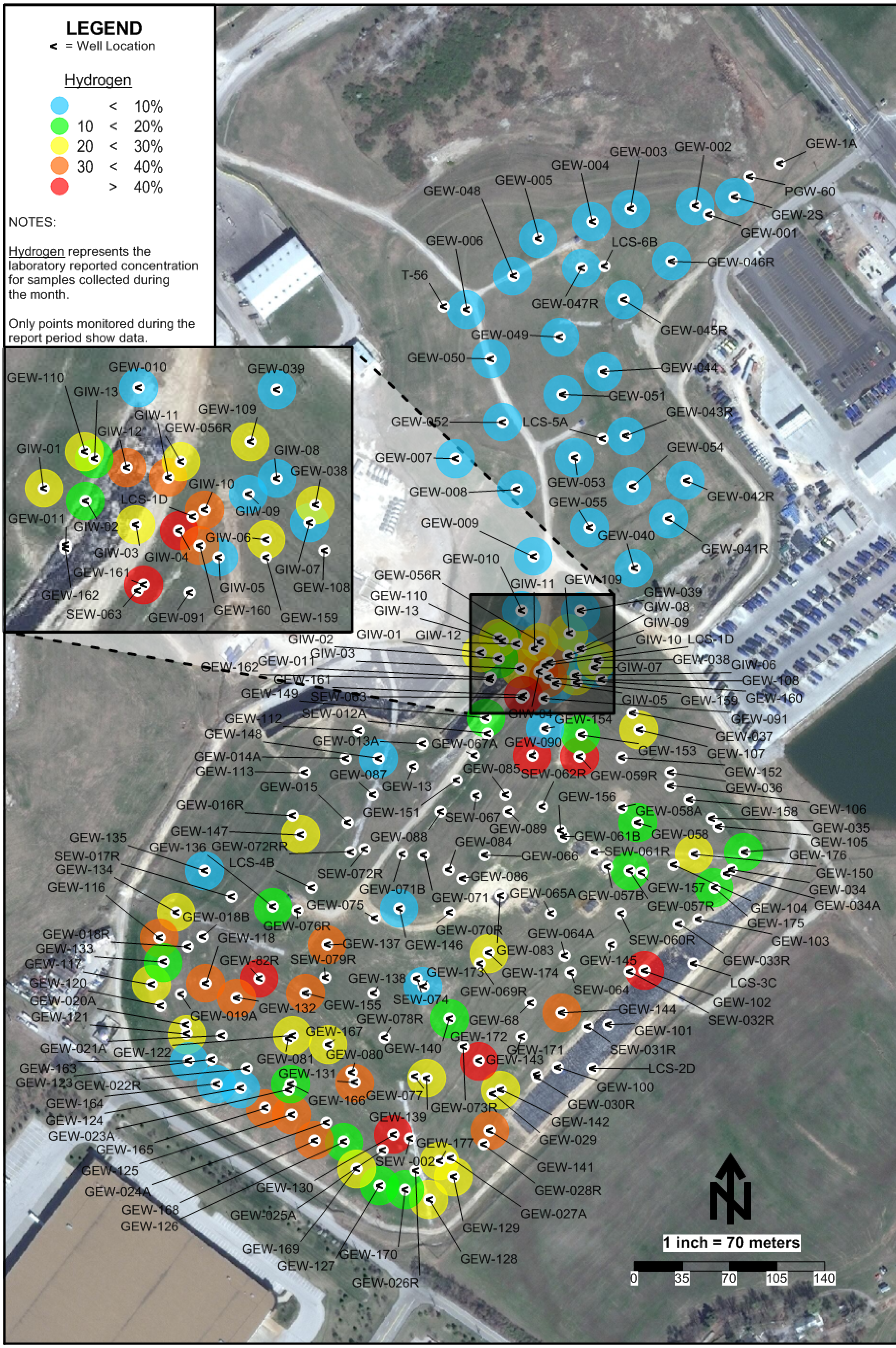
Reviewed/Approved By: _____ Date: 1-6-17

Mark J. Johnson
Operations Manager

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

ATTACHMENT C

GAS WELL ANALYSIS MAPS



Hydrogen Data Map - January 2017 - Bridgeton Landfill

LEGEND

< = Well Location

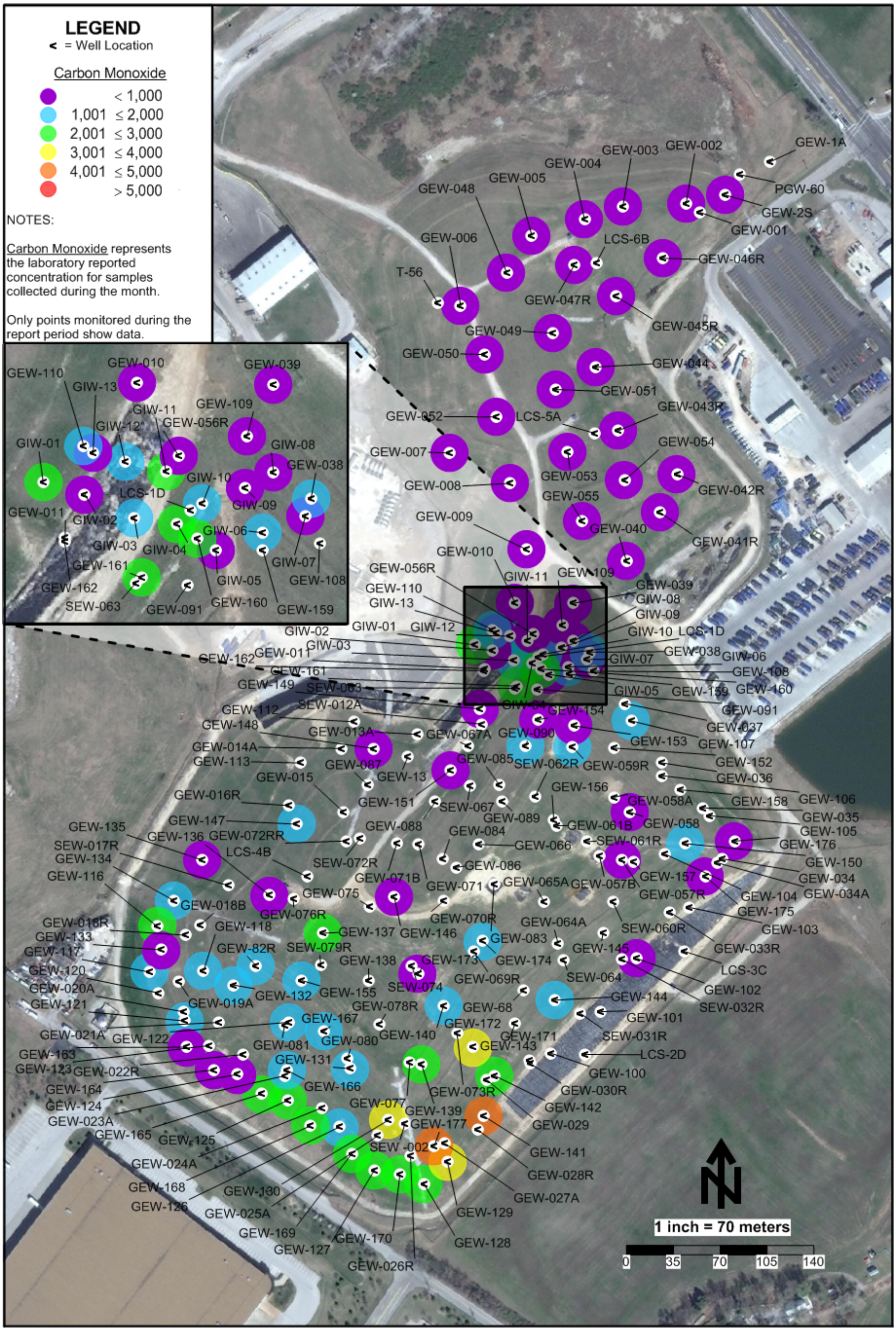
Carbon Monoxide

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

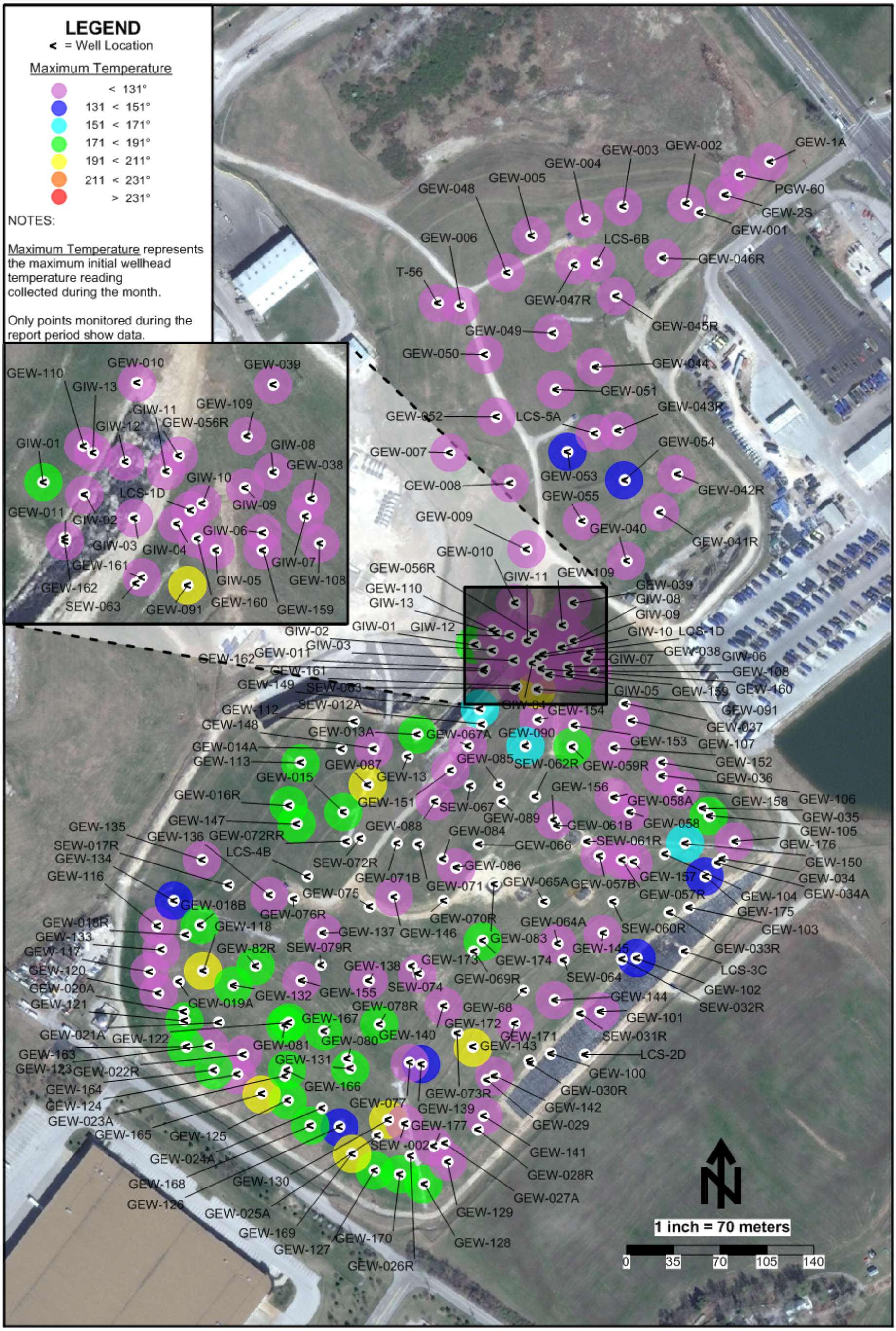
NOTES:

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 - January 2017 - Bridgeton Landfill



Initial Temperature Maximums - January 2017 - 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-01A	9/12/2016	2.9	2.3	21	74	ND	43	See Note 4
GEW-002	9/7/2016	55	40	ND	4.1	ND	ND	
GEW-002	10/6/2016	54	41	ND	3.9	ND	ND	
GEW-002	11/7/2016	55	41	ND	3.2	ND	ND	
GEW-002	12/7/2016	51	42	1.7	5.8	ND	ND	See Note 3
GEW-002	1/9/2017	54	40	ND	5.6	ND	ND	
GEW-02S	9/12/2016	49	33	4	14	ND	ND	See Note 3
GEW-02S	11/7/2016	55	42	ND	ND	ND	ND	
GEW-02S	1/9/2017	50	34	3.5	12	ND	ND	See Note 3
GEW-003	9/7/2016	53	40	ND	5.8	0.1	ND	
GEW-003	10/6/2016	54	40	ND	4.4	0.1	ND	
GEW-003	11/7/2016	50	38	ND	10	0.1	ND	
GEW-003	12/7/2016	54	40	ND	5.7	0.1	ND	
GEW-003	1/9/2017	49	37	ND	12	0.1	ND	
GEW-004	9/7/2016	54	41	ND	4.3	0.1	ND	
GEW-004	10/6/2016	55	41	ND	ND	0.1	ND	
GEW-004	11/7/2016	51	40	ND	7.9	0.1	ND	
GEW-004	12/7/2016	51	38	ND	9.7	0.1	ND	
GEW-004	1/9/2017	54	41	ND	4.5	0.1	ND	
GEW-005	9/8/2016	51	36	ND	12	ND	ND	
GEW-005	10/6/2016	51	37	ND	11	ND	ND	
GEW-005	11/7/2016	47	37	ND	15	0.04	ND	
GEW-005	12/7/2016	48	36	ND	15	ND	ND	
GEW-005	1/10/2017	50	37	ND	11	0.1	ND	
GEW-006	9/8/2016	56	39	ND	4.5	ND	ND	
GEW-006	11/7/2016	45	35	2.3	18	ND	ND	See Note 3
GEW-006	1/10/2017	52	37	ND	11	ND	ND	
GEW-007	9/12/2016	54	38	1.8	6.2	ND	ND	See Note 3
GEW-007	11/7/2016	56	40	ND	ND	ND	ND	
GEW-007	1/10/2017	56	40	ND	ND	ND	ND	
GEW-008	9/12/2016	49	42	1.8	6.1	1.1	ND	See Note 3
GEW-008	10/6/2016	53	44	ND	ND	0.9	ND	
GEW-008	11/7/2016	53	43	ND	ND	1.1	ND	
GEW-008	12/7/2016	53	42	ND	3	0.8	ND	
GEW-008	1/10/2017	50	41	1.9	6.8	0.4	ND	See Note 3
GEW-009	9/12/2016	51	41	ND	6.4	0.5	ND	
GEW-009	10/6/2016	50	42	ND	7.1	0.5	ND	
GEW-009	11/7/2016	48	41	ND	8.6	0.6	ND	
GEW-009	12/7/2016	47	39	ND	12	0.5	ND	
GEW-009	1/10/2017	44	37	ND	17	0.5	ND	
GEW-040	9/7/2016	57	40	ND	ND	ND	ND	
GEW-040	10/6/2016	57	40	ND	ND	ND	ND	
GEW-040	11/7/2016	57	40	ND	ND	ND	ND	
GEW-040	12/7/2016	56	39	ND	4	ND	ND	
GEW-040	1/9/2017	58	40	ND	ND	ND	ND	
GEW-041R	9/7/2016	53	37	2.1	8.1	ND	ND	See Note 3
GEW-041R	11/7/2016	52	37	1.6	9.7	ND	ND	See Note 4
GEW-041R	1/9/2017	56	40	ND	3	ND	ND	
GEW-042R	9/7/2016	55	42	ND	ND	ND	ND	
GEW-042R	10/6/2016	54	42	ND	3.3	ND	ND	
GEW-042R	11/7/2016	50	38	2.7	9.6	ND	ND	See Note 3
GEW-042R	12/7/2016	55	39	ND	5.1	ND	ND	
GEW-042R	1/9/2017	57	39	ND	3	ND	ND	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-043R	9/7/2016	54	42	ND	3.5	0.2	ND	
GEW-043R	11/7/2016	53	42	ND	4.7	0.2	ND	
GEW-043R	1/9/2017	55	42	ND	ND	0.1	ND	
GEW-044	9/7/2016	57	40	ND	ND	ND	ND	
GEW-044	11/7/2016	55	39	ND	5	ND	ND	
GEW-044	1/9/2017	56	41	ND	ND	ND	ND	
GEW-045R	9/7/2016	55	43	ND	ND	ND	ND	
GEW-045R	10/6/2016	56	37	ND	5.1	ND	ND	
GEW-045R	11/7/2016	55	42	ND	ND	ND	ND	
GEW-045R	12/7/2016	42	31	6	21	ND	ND	See Note 3
GEW-045R	1/9/2017	57	37	ND	5.6	ND	ND	
GEW-046R	9/7/2016	55	41	ND	3.1	0.1	ND	
GEW-046R	10/6/2016	53	39	ND	6.2	0.1	ND	
GEW-046R	11/7/2016	55	41	ND	ND	0.1	ND	
GEW-046R	12/7/2016	53	39	1.7	6.3	0.1	ND	See Note 3
GEW-046R	1/9/2017	54	41	ND	4.5	0.1	ND	
GEW-047R	9/8/2016	50	39	ND	10	0.1	ND	
GEW-047R	10/6/2016	46	38	ND	15	ND	ND	
GEW-047R	11/7/2016	48	38	ND	12	ND	ND	
GEW-047R	12/7/2016	48	39	ND	12	ND	ND	
GEW-047R	1/9/2017	54	41	ND	4.4	0.1	ND	
GEW-048	9/8/2016	12	8.1	18	63	ND	ND	See Note 1 and 3
GEW-048	10/6/2016	53	38	ND	7.7	ND	ND	
GEW-048	11/7/2016	53	40	ND	6.2	0.04	ND	
GEW-048	12/7/2016	53	39	ND	7.5	ND	ND	
GEW-048	1/10/2017	55	39	ND	5	ND	ND	
GEW-049	9/8/2016	52	38	ND	9.1	ND	ND	
GEW-049	10/6/2016	36	32	2.2	29	ND	ND	See Note 3
GEW-049	11/7/2016	51	38	ND	9.9	0.1	ND	
GEW-049	12/7/2016	45	35	ND	18	0.03	ND	
GEW-049	1/9/2017	54	39	ND	6.2	0.1	ND	
GEW-050	9/12/2016	56	39	ND	3.4	0.1	ND	
GEW-050	11/7/2016	53	39	ND	6.6	0.1	ND	
GEW-050	1/10/2017	51	37	ND	12	0.04	ND	
GEW-051	9/8/2016	54	41	ND	ND	1	ND	
GEW-051	11/7/2016	53	40	ND	4.6	1.2	ND	
GEW-051	1/9/2017	55	42	ND	ND	1.5	ND	
GEW-052	9/12/2016	54	40	ND	4.5	0.03	ND	
GEW-052	11/7/2016	52	40	ND	7.4	0.1	ND	
GEW-052	1/10/2017	52	38	ND	9.1	ND	ND	
GEW-053	9/8/2016	49	43	ND	ND	4.6	61	
GEW-053	10/6/2016	50	42	ND	3.9	3	49	
GEW-053	11/7/2016	49	40	ND	5.9	4.2	59	
GEW-053	12/7/2016	48	39	ND	9.9	2.1	34	
GEW-053	1/9/2017	40	34	3.4	2.1	1.8	ND	See Note 3
GEW-054	9/12/2016	50	40	ND	5.6	2.2	ND	
GEW-054	10/6/2016	51	41	ND	5.2	2.2	ND	
GEW-054	11/7/2016	46	38	2.8	12	2	ND	See Note 3
GEW-054	12/7/2016	50	40	ND	6.9	1.8	43	
GEW-054	1/9/2017	55	41	ND	ND	1.2	ND	
GEW-055	9/12/2016	53	42	ND	ND	1.6	ND	
GEW-055	10/6/2016	52	41	ND	4.1	1.6	ND	
GEW-055	11/7/2016	51	42	ND	3.8	2	ND	
GEW-055	12/7/2016	50	40	1.6	5.7	2.2	33	See Note 3
GEW-055	1/9/2017	47	37	3	11	1.5	ND	See Note 3

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
Flare Station²	9/7/2016	49.2	37.6	2	10.3	ND	ND	See Note 5
Flare Station	10/4/2016	46.1	35.8	2.3	14.9	ND	ND	See Note 5
Flare Station²	11/1/2016	40.4	31.3	5	22.6	ND	ND	See Note 5
Flare Station²	12/6/2016	46.0	36.1	1.9	14.9	ND	ND	See Note 5
Flare Station²	1/4/2017	40.7	34.1	2.1	22	ND	ND	See Note 5
Flare Station²	2/7/2017	47.1	36.5	0.9	13.8	ND	ND	See Note 5

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. (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 NQ EP14 A (or 1) and NQ EP14 B (or 2), located in the North Quarry.

ND = Analyte not detected in sample.

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

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
South Quarry								
GEW-010	9/6/2016	56	41	ND	ND	0.2	ND	
GEW-010	10/4/2016	14	10	17	60	ND	ND	See Note 3
GEW-010	11/9/2016	43	48	ND	7.3	0.1	ND	
GEW-010	12/9/2016	42	49	1.7	7.7	0.1	ND	See Note 4
GEW-010	1/11/2017	51	46	ND	ND	0.1	ND	
GEW-022R	9/14/2016	0.02	0.1	22	78	ND	ND	See Note 3
GEW-022R	11/11/2016	1.2	66	ND	ND	30	3,300	
GEW-038	9/6/2016	0.8	58	2.1	7.4	30	2,800	See Note 4
GEW-038	10/4/2016	8.9	58	ND	5.3	25	2,100	
GEW-038	11/9/2016	8.1	40	6.3	23	22	1,000	See Note 4
GEW-038	12/9/2016	8.8	45	4.4	18	23	1,100	See Note 4
GEW-038	1/11/2017	7.2	42	6.3	22	22	1,500	See Note 4
GEW-039	9/6/2016	43	55	ND	ND	0.2	ND	
GEW-039	10/4/2016	44	54	ND	ND	0.2	ND	
GEW-039	11/8/2016	44	53	ND	ND	0.1	ND	
GEW-039	12/8/2016	11	12	17	60	ND	ND	See Note 3
GEW-039	1/11/2017	45	53	ND	ND	0.1	ND	
GEW-056R	9/6/2016	20	47	ND	22	10	430	
GEW-056R	10/4/2016	13	54	ND	ND	30	1,200	
GEW-056R	11/9/2016	10	51	ND	7.2	30	1,200	
GEW-056R	12/9/2016	13	49	ND	12	25	990	
GEW-056R	1/11/2017	13	57	ND	ND	27	1,000	
GEW-057R	1/12/2017	8.6	39	4.6	29	19	840	See Note 4
GEW-058	11/11/2016	0.4	39	6.2	22	32	1,700	See Note 4
GEW-058	1/12/2017	8.5	32	6.8	38	14	610	See Note 4
GEW-058A	9/14/2016	22	45	1.9	6.7	23	1,400	See Note 3
GEW-058A	11/11/2016	24	37	4.7	18	16	880	See Note 4
GEW-059R	9/14/2016	4.2	45	3.1	11	36	1,400	See Note 4
GEW-059R	11/10/2016	5.5	43	2.8	9.7	38	1,300	See Note 4
GEW-059R	1/12/2017	4.1	49	ND	ND	44	1,800	
GEW-082R	9/14/2016	4.7	50	ND	5.6	37	1,700	
GEW-082R	11/11/2016	4.9	53	ND	ND	39	1,700	
GEW-082R	1/12/2017	3.2	50	ND	ND	43	1,900	
GEW-086	11/11/2016	10	28	7.3	53	2	160	See Note 4
GEW-090	9/14/2016	14	46	ND	5.6	31	1,500	
GEW-090	11/11/2016	11	45	ND	4.3	38	1,700	
GEW-090	1/12/2017	11	46	ND	ND	40	1,800	
GEW-102	9/13/2016	5	59	ND	ND	30	980	
GEW-102	11/10/2016	3.9	55	ND	3.9	35	760	
GEW-102	1/12/2017	2	53	ND	3	40	830	
GEW-107	1/12/2017	24	47	2	7	20	1,200	See Note 4
GEW-109	9/6/2016	20	52	ND	9.7	16	610	
GEW-109	10/4/2016	21	52	ND	9.7	16	640	
GEW-109	11/8/2016	20	48	ND	14	17	720	
GEW-109	12/8/2016	13	28	9.6	38	12	420	See Note 3
GEW-109	1/11/2017	21	51	ND	6.5	20	790	
GEW-110	9/6/2016	1.1	4.9	20	73	1.5	120	See Note 4
GEW-110	10/4/2016	6	28	9	46	11	600	See Note 4
GEW-110	11/9/2016	1.9	31	9.3	38	20	1,100	See Note 4
GEW-110	12/9/2016	2.5	24	11	46	16	870	See Note 4
GEW-110	1/11/2017	13	48	ND	13	25	1,300	
GEW-116	1/12/2017	1.8	59	ND	4.8	33	2,100	
GEW-117	9/14/2016	16	55	1.9	20	5.9	290	See Note 3
GEW-117	11/11/2016	7.3	63	ND	4.5	23	1,800	
GEW-117	1/12/2017	7.4	61	1.7	5.9	23	1,900	See Note 4
GEW-118	9/14/2016	1.8	51	3	13	30	1,400	See Note 4

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Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-118	11/11/2016	2	47	3.7	18	29	1,200	See Note 4
GEW-118	1/12/2017	1.3	53	2.1	7.6	35	1,500	See Note 3
GEW-120	9/13/2016	15	52	3	24	5.6	280	See Note 3
GEW-120	11/10/2016	22	52	4.1	16	5.2	250	See Note 3
GEW-121	9/13/2016	8.2	52	2.4	11	25	1,600	See Note 3
GEW-121	11/11/2016	8.7	58	ND	5	27	1,600	
GEW-121	1/11/2017	9.2	56	ND	6.3	27	1,500	
GEW-122	9/13/2016	16	53	ND	ND	27	2,000	
GEW-122	1/11/2017	18	50	ND	5.7	25	1,400	
GEW-123	9/13/2016	21	58	2.7	9.8	7.5	770	See Note 3
GEW-123	11/11/2016	8.9	56	2.5	11	21	1,800	See Note 4
GEW-124	9/13/2016	9	60	ND	5.4	22	2,100	
GEW-124	1/11/2017	35	49	2.9	10	2.4	280	See Note 4
GEW-125	9/13/2016	0.9	59	ND	ND	35	2,700	
GEW-125	11/11/2016	2.9	44	3.5	18	31	2,200	See Note 3
GEW-125	1/11/2017	2.4	55	ND	ND	38	2,600	
GEW-126	9/13/2016	12	48	2.7	11	24	2,500	See Note 3
GEW-126	11/11/2016	22	53	ND	4.4	19	1,800	
GEW-126	1/11/2017	24	52	ND	5.4	18	1,600	
GEW-127	9/13/2016	3.9	67	ND	ND	24	3,400	
GEW-127	11/11/2016	3.3	65	ND	4.2	26	3,300	
GEW-127	1/11/2017	2.9	46	7	25	18	2,200	See Note 4
GEW-128	9/12/2016	5	47	7	25	16	1,800	See Note 4
GEW-128	11/11/2016	5.6	64	ND	3.3	26	2,800	
GEW-128	1/12/2017	6.4	64	ND	ND	26	2,900	
GEW-129	9/12/2016	1.6	63	ND	ND	30	3,000	
GEW-129	11/11/2016	1.9	66	2.2	7.7	22	3,000	See Note 3
GEW-129	1/12/2017	1.4	69	1.7	5.9	22	3,300	See Note 4
GEW-130	9/13/2016	6.3	52	4.4	17	18	2,400	See Note 4
GEW-130	11/11/2016	3.4	43	5.9	23	23	2,400	See Note 4
GEW-130	1/11/2017	0.4	55	ND	ND	41	3,600	
GEW-131	9/14/2016	0.3	52	ND	ND	43	3,200	
GEW-131	11/11/2016	5.4	47	ND	ND	45	2,700	
GEW-131	1/11/2017	0.8	61	ND	ND	36	2,000	
GEW-132	11/10/2016	11	46	1.7	24	16	920	See Note 4
GEW-132	1/9/2017	4.8	53	ND	ND	39	2,000	
GEW-133	9/13/2016	3	57	2.7	9.5	27	2,000	See Note 3
GEW-133	1/9/2017	0.6	18	15	53	14	1,000	See Note 3
GEW-134	9/13/2016	7.4	38	4.9	47	2.2	340	See Note 3
GEW-134	11/10/2016	7.1	32	6.6	51	2.8	300	See Note 4
GEW-134	1/9/2017	18	52	ND	ND	26	1,300	
GEW-135	9/13/2016	3.4	48	3.2	11	33	1,700	See Note 3
GEW-135	11/10/2016	5.1	41	5.1	31	18	900	See Note 4
GEW-135	1/9/2017	0.2	6.6	19	68	6.4	190	See Note 4
GEW-136	11/10/2016	3.7	22	12	54	8.9	380	See Note 4
GEW-136	1/9/2017	7.5	41	ND	39	11	410	
GEW-137	9/13/2016	38	41	ND	19	0.1	ND	
GEW-137	11/10/2016	0.5	59	ND	ND	38	2,700	
GEW-137	1/9/2017	0.6	57	ND	ND	39	2,600	
GEW-138	11/10/2016	3.7	26	6.8	53	10	680	See Note 4
GEW-139	9/13/2016	5.5	56	1.9	8.5	26	2,600	See Note 4
GEW-139	11/11/2016	3.8	44	4.3	17	30	2,400	See Note 4
GEW-139	1/12/2017	3	40	6	23	27	2,100	See Note 4
GEW-140	9/13/2016	0.3	56	ND	3.9	36	3,200	
GEW-140	11/11/2016	8.6	51	1.9	8.4	30	1,600	See Note 4
GEW-140	1/12/2017	5.7	37	7.9	30	19	1,100	See Note 4
GEW-141	9/13/2016	0.2	60	ND	ND	35	4,100	

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Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-141	11/11/2016	0.3	48	4.3	15	31	3,400	See Note 4
GEW-141	1/12/2017	0.3	54	2.1	7.3	36	4,100	See Note 4
GEW-142	9/13/2016	0.03	2	21	76	0.5	98	See Note 3
GEW-142	1/12/2017	2.3	58	3.5	12	23	2,100	See Note 4
GEW-143	9/14/2016	0.01	1	22	77	0.4	65	See Note 3
GEW-144	9/14/2016	ND	0.04	22	78	ND	ND	See Note 3
GEW-144	1/12/2017	4.7	55	ND	4.7	33	1,600	
GEW-145	9/13/2016	1.6	53	2.1	7.4	33	2,100	See Note 4
GEW-145	11/10/2016	1	51	2.2	7.8	36	2,100	See Note 4
GEW-146	9/12/2016	6.4	27	6.1	58	2	120	See Note 4
GEW-146	1/9/2017	2.8	9	13	75	0.9	120	See Note 4
GEW-147	9/13/2016	11	48	2.9	10	27	1,400	See Note 3
GEW-147	11/11/2016	4.8	48	1.7	5.7	39	2,000	See Note 3
GEW-147	1/9/2017	12	50	ND	9.8	27	1,200	
GEW-148	1/9/2017	0.2	1.9	21	76	0.6	31	See Note 4
GEW-149	11/10/2016	11	52	2	17	17	1,000	See Note 4
GEW-149	1/9/2017	17	48	1.5	16	17	750	See Note 4
GEW-150	11/10/2016	1.9	55	3.3	12	27	1,800	See Note 3
GEW-150	1/11/2017	5.4	50	3.5	18	22	1,400	See Note 4
GEW-151	11/10/2016	2.5	54	1.6	5.8	35	1,600	See Note 4
GEW-151	1/9/2017	1.4	45	ND	ND	51	1,000	
GEW-152	9/14/2016	0.1	0.4	22	78	0.1	ND	See Note 3
GEW-152	11/9/2016	18	48	ND	3	29	1,800	
GEW-153	9/14/2016	20	30	6.5	34	8.5	280	See Note 3
GEW-153	11/9/2016	28	40	ND	20	11	360	
GEW-153	1/11/2017	31	43	2.4	8.4	14	530	See Note 4
GEW-154	1/9/2017	1.7	4.3	20	72	1.3	89	See Note 4
GEW-155	11/10/2016	0.5	58	ND	ND	38	2,800	
GEW-155	1/9/2017	5.4	52	ND	8.2	33	1,200	
GEW-157	9/14/2016	9.8	52	2.3	8.3	27	1,900	See Note 3
GEW-159	9/14/2016	22	50	ND	25	2	91	
GEW-159	11/8/2016	5.6	35	7.6	27	25	1,500	See Note 4
GEW-160	9/12/2016	4.1	56	ND	5.8	31	2,100	
GEW-160	11/10/2016	3.8	57	ND	ND	36	2,000	
GEW-160	1/9/2017	5.5	54	ND	ND	37	2,100	
GEW-161	9/12/2016	0.5	51	2.1	7.4	37	2,500	See Note 4
GEW-161	1/9/2017	2.8	54	ND	ND	40	2,200	
GEW-162	9/12/2016	7.1	61	1.9	6.9	22	1,600	See Note 3
GEW-162	11/10/2016	7	62	ND	ND	27	1,800	
GEW-163	11/11/2016	4.8	30	9.5	47	7.9	580	See Note 4
GEW-163	1/11/2017	1	16	16	59	7.8	490	See Note 4
GEW-164	9/13/2016	3.8	70	ND	5.3	18	2,400	
GEW-164	11/11/2016	8.7	69	ND	ND	18	1,900	
GEW-164	1/11/2017	5	25	13	49	7	540	See Note 4
GEW-165	9/13/2016	1.3	66	ND	3.4	26	3,200	
GEW-165	11/11/2016	1.7	63	ND	3.3	30	2,900	
GEW-165	1/11/2017	3.2	63	ND	ND	30	2,800	
GEW-166	9/13/2016	0.3	60	ND	ND	35	3,500	
GEW-166	11/11/2016	2.1	36	9.2	32	20	1,700	See Note 3
GEW-166	1/11/2017	5.6	32	8.2	36	18	1,400	See Note 4
GEW-167	9/14/2016	5	36	6.2	35	17	1,300	See Note 4
GEW-167	11/11/2016	1.4	58	ND	ND	38	2,600	
GEW-167	1/11/2017	3.6	39	5.1	23	29	1,900	See Note 4
GEW-168	9/13/2016	3.1	61	ND	3.8	29	2,900	
GEW-168	11/11/2016	0.6	57	ND	ND	39	3,400	
GEW-168	1/11/2017	4.2	59	ND	ND	32	2,600	
GEW-169	9/13/2016	5.5	61	2.1	7.7	22	2,900	See Note 4

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Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-169	11/11/2016	1.8	40	8.1	29	20	2,100	See Note 4
GEW-169	1/11/2017	3.3	53	4.5	16	22	2,300	See Note 4
GEW-170	9/13/2016	7.5	59	2.6	11	18	2,600	See Note 4
GEW-170	11/11/2016	3.2	57	3.5	13	22	2,900	See Note 4
GEW-170	1/11/2017	4.2	50	5.8	22	17	2,400	See Note 4
GEW-171	9/13/2016	4.1	42	7.5	27	18	1,700	See Note 3
GEW-172	9/13/2016	5.3	55	ND	3.2	34	2,600	
GEW-172	1/12/2017	0.7	57	ND	ND	40	3,200	
GEW-173	1/12/2017	4.3	16	15	62	2.6	260	See Note 4
GEW-174	9/13/2016	5.5	34	5.5	42	12	910	See Note 4
GEW-174	11/10/2016	4.5	31	7.5	42	15	1,000	See Note 4
GEW-174	1/12/2017	4.6	39	4.9	29	21	1,500	See Note 4
GEW-175	9/14/2016	ND	0.1	22	78	ND	ND	See Note 3
GEW-175	11/10/2016	10	33	7.9	43	6.1	420	See Note 4
GEW-175	1/11/2017	18	52	3.2	16	11	610	See Note 4
GEW-176	9/14/2016	0.9	3.3	21	74	0.5	64	See Note 3
GEW-176	11/10/2016	11	49	4.1	20	16	970	See Note 4
GEW-176	1/11/2017	23	53	1.9	8.9	13	590	See Note 4
GEW-177	9/13/2016	1.2	63	ND	ND	31	3,900	
GEW-177	1/12/2017	0.2	55	3.8	13	27	4,300	See Note 4
GIW-01	9/6/2016	3.2	63	1.9	10	20	2,100	See Note 4
GIW-01	10/4/2016	2.4	70	ND	ND	24	2,300	
GIW-01	11/9/2016	3.1	69	ND	ND	24	2,100	
GIW-01	12/8/2016	3.5	51	5.8	21	18	1,400	See Note 3
GIW-01	1/11/2017	4.5	67	ND	3.8	23	2,100	
GIW-02	9/6/2016	3.9	29	12	50	4.4	280	See Note 4
GIW-02	10/4/2016	4.2	34	11	41	9.4	550	See Note 4
GIW-02	11/9/2016	2.7	64	ND	5.6	26	1,900	
GIW-02	12/8/2016	3.1	65	1.7	5.6	24	1,700	See Note 3
GIW-02	1/11/2017	12	67	ND	ND	19	970	
GIW-03	9/6/2016	1	49	6.2	22	21	1,900	See Note 4
GIW-03	10/4/2016	0.7	62	2	7	26	2,200	See Note 4
GIW-03	11/9/2016	0.7	64	ND	5	27	2,200	
GIW-03	12/8/2016	1	53	5.1	18	22	1,600	See Note 4
GIW-03	1/11/2017	1	66	ND	ND	29	2,000	
GIW-04	9/6/2016	0.7	56	2	6.9	34	2,400	See Note 4
GIW-04	10/4/2016	0.9	43	5.8	21	28	1,900	See Note 3
GIW-04	11/9/2016	1.1	51	2.4	8.2	37	2,200	See Note 4
GIW-04	12/8/2016	0.8	42	5	18	34	2,000	See Note 3
GIW-04	1/11/2017	1.1	53	ND	ND	43	2,400	
GIW-05	9/12/2016	1.9	60	ND	ND	34	1,400	
GIW-05	10/4/2016	ND	0.1	22	78	ND	ND	See Note 4
GIW-05	11/9/2016	0.01	1	22	77	ND	ND	See Note 4
GIW-05	12/8/2016	0.03	0.5	22	77	ND	ND	See Note 4
GIW-05	1/11/2017	0.2	1.6	22	77	ND	ND	See Note 4
GIW-06	9/6/2016	4.1	52	ND	19	23	740	
GIW-06	10/4/2016	0.1	0.9	22	77	0.3	ND	See Note 1 and 3
GIW-06	11/8/2016	17	54	ND	6.3	20	700	
GIW-06	12/9/2016	26	48	ND	4.1	20	550	
GIW-06	1/11/2017	3.1	36	ND	37	21	1,200	
GIW-07	9/6/2016	1.4	15	18	64	2.4	190	See Note 4
GIW-07	10/4/2016	11	65	2.8	10	10	640	See Note 4
GIW-07	11/8/2016	12	58	2.1	7.3	20	1,000	See Note 4
GIW-07	12/9/2016	26	50	1.7	6.1	16	720	See Note 4
GIW-07	1/11/2017	37	49	ND	6.4	6	410	
GIW-08	9/6/2016	16	63	ND	18	1.8	220	
GIW-08	10/4/2016	22	64	ND	11	1.2	160	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GIW-08	11/8/2016	23	60	ND	16	0.8	130	
GIW-08	12/9/2016	31	52	2.8	14	0.3	77	See Note 3
GIW-08	1/11/2017	35	46	ND	18	0.3	88	
GIW-09	9/6/2016	2.2	16	12	67	2.3	150	See Note 4
GIW-09	10/4/2016	5.3	22	9	61	2.5	140	See Note 4
GIW-09	11/9/2016	0.8	8.5	18	71	1.8	110	See Note 4
GIW-09	12/9/2016	ND	16	13	65	1.5	92	See Note 4
GIW-09	1/11/2017	24	36	3.9	31	4.4	150	See Note 4
GIW-10	9/6/2016	0.6	50	2.6	10	36	2,000	See Note 3
GIW-10	10/4/2016	3.7	52	ND	9.6	33	1,600	
GIW-10	11/9/2016	4.1	49	ND	11	34	1,700	
GIW-10	12/8/2016	6.9	41	4.8	23	24	1,000	See Note 3
GIW-10	1/11/2017	6.7	53	ND	ND	37	1,400	
GIW-11	9/6/2016	6.9	61	1.9	11	18	1,900	See Note 4
GIW-11	10/4/2016	6.2	62	1.6	9.9	20	1,900	See Note 4
GIW-11	11/9/2016	0.9	63	ND	ND	33	2,700	
GIW-11	12/9/2016	2	62	ND	6.2	28	2,100	
GIW-11	1/11/2017	1.8	64	ND	ND	31	2,100	
GIW-12	9/6/2016	6.2	32	9.6	45	7	470	See Note 4
GIW-12	10/4/2016	13	41	5.3	29	10	610	See Note 4
GIW-12	11/9/2016	7.7	35	7.5	42	7.9	460	See Note 4
GIW-12	12/9/2016	7.6	31	9.3	45	6.3	320	See Note 4
GIW-12	1/11/2017	3.5	64	ND	ND	31	1500	
GIW-13	9/6/2016	12	63	ND	5.9	17	1,000	
GIW-13	10/4/2016	12	59	2.7	9.8	16	970	See Note 3
GIW-13	11/9/2016	10	65	ND	ND	20	1,300	
GIW-13	12/9/2016	12	65	ND	3.5	19	1,100	
GIW-13	1/11/2017	9.9	69	ND	ND	18	890	
Flare Station²	9/7/2016	8.7	39.4	6.9	31.9	11.4	940	See Note 6
Flare Station²	10/4/2016	9.6	41.6	6.0	28.8	12.4	1,000	See Note 6
Flare Station²	11/1/2016	10.4	42.4	5.7	27.2	12.5	900	See Note 6
Flare Station²	12/6/2016	9.3	37.8	7.7	32.4	12.0	840	See Note 6
Flare Station²	1/4/2017	9.8	38.7	7.4	30.6	12.8	815	See Note 6
Flare Station²	2/7/2017	9.7	37.7	7.9	31.7	12.2	840	See Note 6

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. (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 NQ EP14 A (or 1) and NQ EP14 B (or 2), located in the North Quarry. (6) Flare station gas concentration data is an average of Outlets 1 and 2 (A & B) or SQ OU 1 and OU 2, located in the South Quarry. (7) Flare station gas concentration based on data from Outlet B in the South Quarry.

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.

January 27, 2017

ANAB ACCREDITED DOD ELAP
ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

nelac
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: I011303-01/100

Enclosed are **revised** results for sample(s) received 1/13/17 by Air Technology Laboratories. This revision replaces the report dated 1/23/16 in its entirety. Report was revised to correct samples identifications, per client's request. 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 1/23/17.

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

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

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 1 **OF** 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					
I011303-01	5306	-21.2	-5	-3.5	GEW-49	1/9/2017	848	C	LFG	NA	X					
-02	A8072	-21.1	-5	-3	GEW-51	1/9/2017	906	C	LFG	NA	X					
-03	A7646	-19.6	-5	-3	GEW-53	1/9/2017	924	C	LFG	NA	X					
-04	6144	-21.2	-5	-3.5	GEW-54	1/9/2017	946	C	LFG	NA	X					
-05	4644	-20.8	-5	-1.5	GEW-55	1/9/2017	1054	C	LFG	NA	X					
-06	3126	-20.7	-5	-3.5	GEW-40	1/9/2017	1108	C	LFG	NA	X					
-07	A8064	-20.7	-5	-4	GEW-41R Dilution	1/9/2017	1130	C	LFG	NA	X					
-08	A8063	-20.7	-5	-4	GEW-42R "	1/9/2017	1312	C	LFG	NA	X					
-09	A7803	-21	-5	-4	GEW-43R "	1/9/2017	1332	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	Ryan Ayers 1-12-17 1500	RECEIVED BY	DATE/TIME
RELINQUISHED BY	FedEx	RECEIVED BY	DATE/TIME 1/13/17 1235
RELINQUISHED BY		RECEIVED BY	DATE/TIME

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

COMMENTS
ID corrections per N. Bauer 1/26/17. SD

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CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		Condition upon receipt:	
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:	314-683-3021
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) Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST D1946 + CO, H2
I01303-10	A7798	-20.5	-5	-4	GEW-44	1/9/2017	1350	C	LFG	NA	X
-11	3162	-20.9	-5	-4	GEW-45R	1/9/2017	1407	C	LFG	NA	X
-12	A8086	-20.9	-5	-4	GEW-46R	1/9/2017	1421	C	LFG	NA	X
-13	3837	-20.7	-5	-4	GEW-2S	1/9/2017	1503	C	LFG	NA	X
-14	3130	-20.4	-5	-4	GEW-2	1/9/2017	1523	C	LFG	NA	X
-15	5916	-20.3	-5	-4.5	GEW-3	1/9/2017	1540	C	LFG	NA	X
-16	6158	-20.6	-5	-4.5	GEW-4	1/9/2017	1553	C	LFG	NA	X
-17	4657	-20.7	-5	-3	GEW-47R	1/9/2017	1613	C	LFG	NA	X
-18	A7761	-21	-5	-3.5	GEW-160	1/9/2017	841	C	LFG	NA	X

AUTHORIZATION TO PERFORM WORK: Dave Ponoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Ryan Ayers		COMPANY: Republic Services	DATE/TIME
RELINQUISHED BY	1-12-17 1500	DATE/RECEIVED BY	DATE/TIME
RELINQUISHED BY		DATE/RECEIVED BY	DATE/TIME 1/13/17 1235
RELINQUISHED BY		DATE/RECEIVED BY	DATE/TIME

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ID CORRECTIONS PER N BAUER 1/12/17 GD

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CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		Condition upon receipt:	
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												
I011303-19	A8059	-21.1	-5	-3	GEW-161	1/9/2017	852	C	LFG	NA	X					
-20	5268	-20.9	-5	-4	GEW-154	1/9/2017	913	C	LFG	NA	X					
-21	A7744	-20.8	-5	-3.5	GEW-149	1/9/2017	943	C	LFG	NA	X					
-22	5929	-20.6	-5	-4	GEW-151	1/9/2017	1000	C	LFG	NA	X					
-23	A7814	-20.8	-5	-4	GEW-148	1/9/2017	1047	C	LFG	NA	X					
-24	A8076	-20.6	-5	-4	GEW-146	1/9/2017	1051	C	LFG	NA	X					
-25	6152	-20.7	-5	-4	GEW-137	1/9/2017	1110	C	LFG	NA	X					
-26	A7767	-21	-5	-4	GEW-136	1/9/2017	1125	C	LFG	NA	X					
-27	A8096	-20.9	-5	-4	GEW-147	1/9/2017	1142	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: [signature] 1-12-17 1500	DATE/RECEIVED BY	DATE/TIME	
RELINQUISHED BY: [signature]	DATE/RECEIVED BY: [signature] 1/13/17 0735	DATE/TIME	
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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	☐

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					
I01303-28	5825	-20.4	-5	-4	GEW-135	1/9/2017	1333	C	LFG	NA	X					
-29	5906	-20.2	-5	-4	GEW-134	1/9/2017	1346	C	LFG	NA	X					
-30	A7815	-20.4	-5	-4	GEW-133	1/9/2017	1411	C	LFG	NA	X					
-31	A7792	-20.3	-5	-4	GEW-155	1/9/2017	1434	C	LFG	NA	X					
-32	A7747	-20.1	-5	-4	GEW-132	1/9/2017	1448	C	LFG	NA	X					
-33	5813	-19.7	-5	-6	GEW-5	1/10/2017	1243	C	LFG	NA	X					
-34	3128	-19.2	-5	-6	GEW-48	1/10/2017	1257	C	LFG	NA	X					
-35	5308	-19.3	-5	-6	GEW-6	1/10/2017	1309	C	LFG	NA	X					
-36	4658	-19.5	-5	-6	GEW-50	1/10/2017	1325	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Ponoyer	COMPANY: Republic Services	DATE/TIME:	
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers	DATE/RECEIVED BY	DATE/TIME	1-12-17 1500
RELINQUISHED BY: FedEx	DATE/RECEIVED BY	DATE/TIME	1/13/17 1235
RELINQUISHED BY	DATE/RECEIVED BY	DATE/TIME	

COMMENTS

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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	☐

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					
ID11303-37	5817	-19.5	-5	-6	GEW-52	1/10/2017	1446	C	LFG	NA	X					
-38	A7751	-19.6	-5	-6.9	GEW-7	1/10/2017	1458	C	LFG	NA	X					
-39	5269	-18.8	-5	-6	GEW-8	1/10/2017	1511	C	LFG	NA	X					
-40	4656	-19.5	-5	-6	GEW-9	1/10/2017	1523	C	LFG	NA	X					
-41	5305	-20.1	-5	-4	GEW-128	1/11/2017	810	C	LFG	NA	X					
-42	6143	-19.9	-5	-5	GEW-163	1/11/2017	823	C	LFG	NA	X					
-43	5816	-19.9	-5	-5	GEW-164	1/11/2017	851	C	LFG	NA	X					
-44	6146	-19.7	-5	-5	GEW-124	1/11/2017	905	C	LFG	NA	X					
-45	5905	-19.7	-5	-5	GEW-165	1/11/2017	957	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	Ryan Ayers 1-12-17 1500	DATE/RECEIVED BY	DATE/TIME
RELINQUISHED BY	FedEx	DATE/RECEIVED BY	DATE/TIME 1/13/17 1235
RELINQUISHED BY		DATE/RECEIVED BY	DATE/TIME

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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	☐

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)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
I01303 -46	5934	-19.9	-5	-5	GEW-166	1/11/2017	1011	C	LFG	NA	X					
-47	A8097	-19.7	-5	-5	GEW-122	1/11/2017	1026	C	LFG	NA	X					
-48	A7793	-19.7	-5	-5	GEW-167	1/11/2017	1042	C	LFG	NA	X					
-49	A7804	-19.7	-5	-5	GEW-131	1/11/2017	1058	C	LFG	NA	X					
-50	6160	-19.5	-5	-5.5	GEW-125	1/11/2017	1136	C	LFG	NA	X					
-51	3834	-19.5	-5	-5.5	GEW-168	1/11/2017	1148	C	LFG	NA	X					
-52	3156	-19.3	-5	-6	GEW-169	1/11/2017	1315	C	LFG	NA	X					
-53	A8075	-19.3	-5	-6	GEW-126	1/11/2017	1342	C	LFG	NA	X					
-54	A7764	-19.2	-5	-6.5	GEW-130	1/11/2017	1356	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: Ryan Ayers 1-12-17 1500	DATE	RECEIVED BY	DATE/TIME
RELINQUISHED BY: FedEx	DATE	RECEIVED BY: 1/13/17	DATE/TIME 1235
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.

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Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		Condition upon receipt:
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												
I01303-55	3131	-19.2	-5	-6	GEW-127	1/11/2017	1427	C	LFG	NA	X					
-56	A8065	-19.3	-5	-6.9	GEW-170	1/11/2017	1438	C	LFG	NA	X					
-57	A8055	-20.3	-5	-5.9	GEW-39	1/11/2017	814	C	LFG	NA	X					
-58	3441	-20.3	-5	-5	GEW-109	1/11/2017	826	C	LFG	NA	X					
-59	A7670	-20.1	-5	-5	GIW-6	1/11/2017	837	C	LFG	NA	X					
-60	5832	-20	-5	-5	GIW-7	1/11/2017	848	C	LFG	NA	X					
-61	A8083	-20	-5	-5	GIW-8	1/11/2017	858	C	LFG	NA	X					
-62	A7778	-19.8	-5	-5	GEW-38	1/11/2017	909	C	LFG	NA	X					
-63	6130	-19.8	-5	-4.9	GIW-9	1/11/2017	919	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Ponoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers	DATE RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	DATE RECEIVED BY	DATE/TIME: 1/12-17 1500	
RELINQUISHED BY	DATE RECEIVED BY: 1/13/17	DATE/TIME: 1235	

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.

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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	☐

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

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												
I011303-64	5818	-18.9	-5	-5	GIW-5	1/11/2017	932	C	LFG	NA	X					
-65	A7770	-20	-5	-5	GIW-10	1/11/2017	943	C	LFG	NA	X					
-66	5831	-19.9	-5	-5	GEW-10	1/11/2017	955	C	LFG	NA	X					
-67	5323	-20.1	-5	-5	GEW-110	1/11/2017	1009	C	LFG	NA	X					
-68	A7807	-19.9	-5	-5	GEW-56R	1/11/2017	1021	C	LFG	NA	X					
-69	A7818	-20	-5	-5	GIW-18 DUP	1/11/2017	1050	C	LFG	NA	X					
-70	A8090	-19.9	-5	-5	GIW-2	1/11/2017	1103	C	LFG	NA	X					
-71	3627	-20.1	-5	-5	GIW-3	1/11/2017	1125	C	LFG	NA	X					
-72	5834	-19.8	-5	-5	GIW-4	1/11/2017	1138	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: R. Ayers — DATE: 1-12-17 — TIME: 1500 — RECEIVED BY — DATE/TIME

RELINQUISHED BY: FedEx — DATE — RECEIVED BY: [signature] — DATE: 1/13/17 — TIME: 1235

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

CHAIN OF CUSTODY RECORD

AIR TECHNOLOGY Laboratories, Inc.

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City of Industry, CA 91748
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Fx: 626-964-5832

PAGE: 9 OF 12

TURNAROUND TIME		DELIVERABLES	Condition upon receipt:
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 ID	Sample Start ("hg)	Sample End ("hg)	Lab Receive ("hg)	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2
I011303-73	A7794	-19.5	-5	-6	GIW-13	1/11/2017	1313	C	LFG	NA	X
-74	5921	-19.3	-5	-6	GIW-12	1/11/2017	1326	C	LFG	NA	X
-75	5313	-19.5	-5	-6	GIW-11	1/11/2017	~~1330~~ 1337	C	LFG	NA	X
-76	A7776	-18.5	-5	-6	GEW-153	1/11/2017	1421	C	LFG	NA	X
-77	A8068	-19.3	-5	-6.5	GEW-176	1/11/2017	1502	C	LFG	NA	X
-78	A7769	-19.1	-5	-6	GEW-175	1/11/2017	1600	C	LFG	NA	X
-79	3839	-19.1	-5	-6	GEW-150	1/11/2017	1612	C	LFG	NA	X
-80	6141	-20.6	-5	-3.5	GEW-128	1/12/2017	814	C	LFG	NA	X
-81	A7802	-20.4	-5	-4	GEW-129	1/12/2017	830	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: Ryan Ayers 1-12-17 1500 — DATE/RECEIVED BY — DATE/TIME
RELINQUISHED BY: FED EX — DATE/RECEIVED BY: [signature] 1/13/17 — DATE/TIME 1235
RELINQUISHED BY — DATE/RECEIVED BY — DATE/TIME

COMMENTS
TIME COLLECTED CONF'D VIA EMAIL W/ RAYERS [illegible] 1517 1/12/17

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.*

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CHAIN OF CUSTODY RECORD

PAGE: 10 OF 12

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

DELIVERABLES: EDD ☐ EDF ☐ Level 3 ☐ Level 4 ☐

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 ID	Sample Start ("hg)	Sample End ("hg)	Lab Receive ("hg)	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER Q'TY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2
I011303-82	5815	-20.7	-5	-4	GEW-177	1/12/2017	845	C	LFG	NA	X
-83	5833	-20.7	-5	-3.5	GEW-141	1/12/2017	918	C	LFG	NA	X
-84	A8073	-20.9	-5	-3.9	GEW-139	1/12/2017	934	C	LFG	NA	X
-85	5320	-20.8	-5	-3.5	GEW-173	1/12/2017	1001	C	LFG	NA	X
-86	5912	-20.5	-5	-3.5	GEW-140	1/12/2017	1010	C	LFG	NA	X
-87	5835	-20.7	-5	-4	GEW-172	1/12/2017	1024	C	LFG	NA	X
-88	A7808	-20.5	-5	-3.9	GEW-142	1/12/2017	~~1034~~ 1039	C	LFG	NA	X
-89	5821	-20.5	-5	-4	GEW-144	1/12/2017	1054	C	LFG	NA	X
-90	A7663	-20.9	-5	-3.5	GEW-82R	1/12/2017	1135	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] 1-12-17 1500 — DATE/RECEIVED BY — DATE/TIME

RELINQUISHED BY: [signature] — DATE/RECEIVED BY: [signature] 1/13/17 — DATE/TIME 1235

RELINQUISHED BY — DATE/RECEIVED BY — DATE/TIME

COMMENTS
TIME COLLECTED CONF'D VIA EMAIL W/ RAYERS @ 1518 1/13/17

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.

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City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		Condition upon receipt:
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												
I0113 03 - 91	A7766	-20.7	-5	-4	GEW-118	1/12/2017	1149	C	LFG	NA	X					
-92	A8071	-21	-5	-4	GEW-117	1/12/2017	1200	C	LFG	NA	X					
-93	A8066	-20.8	-5	-4	GEW-116	1/12/2017	1211	C	LFG	NA	X					
-94	5840	-20.6	-5	-3.5	GEW-107	1/12/2017	833	C	LFG	NA	X					
-95	A7648	-20.5	-5	-4	GEW-59R	1/12/2017	849	C	LFG	NA	X					
-96	3825	-20.8	-5	-3.5	GEW-58	1/12/2017	925	C	LFG	NA	X					
-97	A7805	-20.8	-5	-3.5	GEW-57R	1/12/2017	951	C	LFG	NA	X					
-98	A7651	-20.5	-5	-3.5	GEW-102	1/12/2017	1028	C	LFG	NA	X					
-99	5928	-20.6	-5	-3.5	GEW-174	1/12/2017	1046	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers	DATE: 1-12-17 1500 RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	DATE: RECEIVED BY: [signature] 1/13/17	DATE/TIME: 1235	
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.

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Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		Condition upon receipt:	
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												
I011303-100	A8082	-20.7	-5	-4	GEW-90	1/12/2017	1130	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers 1-12-17 1500	DATE RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	DATE RECEIVED BY: [illegible] 1/13/17 1235	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: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-01		I011303-02		I011303-03		I011303-04	
Client Sample I.D.:	GEW-49		GEW-51		GEW-53		GEW-54	
Date/Time Sampled:	1/9/17 8:48		1/9/17 9:06		1/9/17 9:24		1/9/17 9:46	
Date/Time Analyzed:	1/17/17 10:17		1/17/17 10:32		1/17/17 10:47		1/17/17 11:01	
QC Batch No.:	170117GC8A1		170117GC8A1		170117GC8A1		170117GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.9		2.8		2.8		2.9	
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	0.084 d	0.029	1.5 d	0.028	1.8 d	0.028	1.2 d	0.029
Carbon Dioxide	39	0.029	42	0.028	34	0.028	41	0.029
Oxygen/Argon	ND	1.4	ND	1.4	3.4	1.4	ND	1.4
Nitrogen	6.2	2.9	ND	2.8	21	2.8	ND	2.9
Methane	54	0.0029	55	0.0028	40	0.0028	55	0.0029
Carbon Monoxide	ND	0.0029	ND	0.0028	ND	0.0028	ND	0.0029

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis. QC Batch: 170123GC8A1

Reviewed/Approved By: _____ Date 1-27-17
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: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-05		I011303-06		I011303-07		I011303-08	
Client Sample I.D.:	GEW-55		GEW-40		GEW-41R		GEW-42R	
Date/Time Sampled:	1/9/17 10:54		1/9/17 11:08		1/9/17 11:30		1/9/17 13:12	
Date/Time Analyzed:	1/17/17 11:16		1/17/17 11:30		1/17/17 11:45		1/17/17 11:59	
QC Batch No.:	170117GC8A1		170117GC8A1		170117GC8A1		170117GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.6		2.9		3.0		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	1.5 d	0.026	ND d	0.029	ND d	0.030	ND d	0.030
Carbon Dioxide	37	0.026	40	0.029	40	0.030	39	0.030
Oxygen/Argon	3.0	1.3	ND	1.4	ND	1.5	ND	1.5
Nitrogen	11	2.6	ND	2.9	3.0	3.0	3.0	3.0
Methane	47	0.0026	58	0.0029	56	0.0030	57	0.0030
Carbon Monoxide	ND	0.0026	ND	0.0029	ND	0.0030	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: 170123GC8A1

Reviewed/Approved By: _____ Date 1-27-17

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: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-09		I011303-10		I011303-11		I011303-12	
Client Sample I.D.:	GEW-43R		GEW-44		GEW-45R		GEW-46R	
Date/Time Sampled:	1/9/17 13:32		1/9/17 13:50		1/9/17 14:07		1/9/17 14:21	
Date/Time Analyzed:	1/17/17 12:14		1/17/17 12:28		1/17/17 12:43		1/17/17 12:58	
QC Batch No.:	170117GC8A1		170117GC8A1		170117GC8A1		170117GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		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	0.071 d	0.030	ND d	0.030	ND d	0.030	0.076 d	0.030
Carbon Dioxide	42	0.030	41	0.030	37	0.030	41	0.030
Oxygen/Argon	ND	1.5	ND	1.5	ND	1.5	ND	1.5
Nitrogen	ND	3.0	ND	3.0	5.6	3.0	4.5	3.0
Methane	55	0.0030	56	0.0030	57	0.0030	54	0.0030
Carbon Monoxide	ND	0.0030	ND	0.0030	ND	0.0030	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: 170123GC8A1

Reviewed/Approved By: _____ Date 1-27-17

Mark Johnson
Operations Manager

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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: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-13		I011303-14		I011303-15		I011303-16	
Client Sample I.D.:	GEW-2S		GEW-2		GEW-3		GEW-4	
Date/Time Sampled:	1/9/17 15:03		1/9/17 15:23		1/9/17 15:40		1/9/17 15:53	
Date/Time Analyzed:	1/17/17 15:49		1/17/17 16:03		1/17/17 16:18		1/17/17 16:32	
QC Batch No.:	170117GC8A2		170117GC8A2		170117GC8A2		170117GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.1		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	ND d	0.030	ND d	0.030	0.091 d	0.031	0.078 d	0.031
Carbon Dioxide	34	0.030	40	0.030	37	0.031	41	0.031
Oxygen/Argon	3.5	1.5	ND	1.5	ND	1.5	ND	1.5
Nitrogen	12	3.0	5.6	3.0	12	3.1	4.5	3.1
Methane	50	0.0030	54	0.0030	49	0.0031	54	0.0031
Carbon Monoxide	ND	0.0030	ND	0.0030	ND	0.0031	ND	0.0031

Results normalized including non-methane hydrocarbons
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Reviewed/Approved By: _____ Date 1-27-17

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Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-17		I011303-18		I011303-19		I011303-20	
Client Sample I.D.:	GEW-47R		GEW-160		GEW-161		GEW-154	
Date/Time Sampled:	1/9/17 16:13		1/9/17 8:41		1/9/17 8:52		1/9/17 9:13	
Date/Time Analyzed:	1/17/17 16:47		1/17/17 17:01		1/17/17 17:16		1/17/17 17:31	
QC Batch No.:	170117GC8A2		170117GC8A2		170117GC8A2		170117GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.8		2.9		2.8		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	0.098 d	0.028	37	2.9	40	2.8	1.3 d	0.030
Carbon Dioxide	41	0.028	54	0.029	54	0.028	4.3	0.030
Oxygen/Argon	ND	1.4	ND	1.4	ND	1.4	20	1.5
Nitrogen	4.4	2.8	ND	2.9	ND	2.8	72	3.0
Methane	54	0.0028	5.5	0.0029	2.8	0.0028	1.7	0.0030
Carbon Monoxide	ND	0.0028	0.21	0.0029	0.22	0.0028	0.0089	0.0030

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Reviewed/Approved By: _____ Date 1-27-17

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Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-21		I011303-22		I011303-23		I011303-24	
Client Sample I.D.:	GEW-149		GEW-151		GEW-148		GEW-146	
Date/Time Sampled:	1/9/17 9:43		1/9/17 10:00		1/9/17 10:47		1/9/17 10:51	
Date/Time Analyzed:	1/17/17 17:45		1/17/17 18:00		1/17/17 18:14		1/17/17 18:29	
QC Batch No.:	170117GC8A2		170117GC8A2		170117GC8A2		170117GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.9		3.0		3.0		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	17	2.9	51	3.0	0.61 d	0.030	0.86 d	0.030
Carbon Dioxide	48	0.029	45	0.030	1.9	0.030	9.0	0.030
Oxygen/Argon	1.5	1.4	ND	1.5	21	1.5	13	1.5
Nitrogen	16	2.9	ND	3.0	76	3.0	75	3.0
Methane	17	0.0029	1.4	0.0030	0.19	0.0030	2.8	0.0030
Carbon Monoxide	0.075	0.0029	0.10	0.0030	0.0031	0.0030	0.0039	0.0030

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Reviewed/Approved By: _____ Date 1-27-17

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Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-25		I011303-26		I011303-27		I011303-28	
Client Sample I.D.:	GEW-137		GEW-136		GEW-147		GEW-135	
Date/Time Sampled:	1/9/17 11:10		1/9/17 11:25		1/9/17 11:42		1/9/17 13:33	
Date/Time Analyzed:	1/17/17 18:43		1/17/17 18:58		1/17/17 19:12		1/17/17 19:27	
QC Batch No.:	170117GC8A2		170117GC8A2		170117GC8A2		170117GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		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	39	3.0	11	3.0	27	3.0	6.4	3.0
Carbon Dioxide	57	0.030	41	0.030	50	0.030	6.6	0.030
Oxygen/Argon	ND	1.5	ND	1.5	ND	1.5	19	1.5
Nitrogen	ND	3.0	39	3.0	9.8	3.0	68	3.0
Methane	0.63	0.0030	7.5	0.0030	12	0.0030	0.18	0.0030
Carbon Monoxide	0.26	0.0030	0.041	0.0030	0.12	0.0030	0.019	0.0030

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Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-29		I011303-30		I011303-31		I011303-32	
Client Sample I.D.:	GEW-134		GEW-133		GEW-155		GEW-132	
Date/Time Sampled:	1/9/17 13:46		1/9/17 14:11		1/9/17 14:34		1/9/17 14:48	
Date/Time Analyzed:	1/17/17 19:42		1/17/17 19:56		1/17/17 20:11		1/17/17 20:25	
QC Batch No.:	170117GC8A2		170117GC8A2		170117GC8A2		170117GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		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	26	3.0	14	3.0	33	3.0	39	3.0
Carbon Dioxide	52	0.030	18	0.030	52	0.030	53	0.030
Oxygen/Argon	ND	1.5	15	1.5	ND	1.5	ND	1.5
Nitrogen	ND	3.0	53	3.0	8.2	3.0	ND	3.0
Methane	18	0.0030	0.60	0.0030	5.4	0.0030	4.8	0.0030
Carbon Monoxide	0.13	0.0030	0.10	0.0030	0.12	0.0030	0.20	0.0030

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Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-33		I011303-34		I011303-35		I011303-36	
Client Sample I.D.:	GEW-5		GEW-48		GEW-6		GEW-50	
Date/Time Sampled:	1/10/17 12:43		1/10/17 12:57		1/10/17 13:09		1/10/17 13:25	
Date/Time Analyzed:	1/18/17 8:55		1/18/17 9:09		1/18/17 9:24		1/18/17 9:38	
QC Batch No.:	170118GC8A1		170118GC8A1		170118GC8A1		170118GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.4		3.4		3.4	
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	0.083 d	0.034	ND d	0.034	ND d	0.034	0.044 d	0.034
Carbon Dioxide	37	0.034	39	0.034	37	0.034	37	0.034
Oxygen/Argon	ND	1.7	ND	1.7	ND	1.7	ND	1.7
Nitrogen	11	3.4	5.0	3.4	11	3.4	12	3.4
Methane	50	0.0034	55	0.0034	52	0.0034	51	0.0034
Carbon Monoxide	ND	0.0034	ND	0.0034	ND	0.0034	ND	0.0034

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Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-37		I011303-38		I011303-39		I011303-40	
Client Sample I.D.:	GEW-52		GEW-7		GEW-8		GEW-9	
Date/Time Sampled:	1/10/17 14:46		1/10/17 14:58		1/10/17 15:11		1/10/17 15:23	
Date/Time Analyzed:	1/18/17 9:53		1/18/17 10:07		1/18/17 10:22		1/18/17 10:36	
QC Batch No.:	170118GC8A1		170118GC8A1		170118GC8A1		170118GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.5		3.4		3.4	
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	0.034	ND d	0.035	0.41 d	0.034	0.48 d	0.034
Carbon Dioxide	38	0.034	40	0.035	41	0.034	37	0.034
Oxygen/Argon	ND	1.7	ND	1.7	1.9	1.7	ND	1.7
Nitrogen	9.1	3.4	ND	3.5	6.8	3.4	17	3.4
Methane	52	0.0034	56	0.0035	50	0.0034	44	0.0034
Carbon Monoxide	ND	0.0034	ND	0.0035	ND	0.0034	ND	0.0034

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Project No.: NA
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Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-41		I011303-42		I011303-43		I011303-44	
Client Sample I.D.:	GEW-121		GEW-163		GEW-164		GEW-124	
Date/Time Sampled:	1/11/17 8:10		1/11/17 8:23		1/11/17 8:51		1/11/17 9:05	
Date/Time Analyzed:	1/18/17 10:51		1/18/17 11:05		1/18/17 11:20		1/18/17 11:35	
QC Batch No.:	170118GC8A1		170118GC8A1		170118GC8A1		170118GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		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	3.0	7.8	3.2	7.0	3.2	2.4 d	0.032
Carbon Dioxide	56	0.030	16	0.032	25	0.032	49	0.032
Oxygen/Argon	ND	1.5	16	1.6	13	1.6	2.9	1.6
Nitrogen	6.3	3.0	59	3.2	49	3.2	10	3.2
Methane	9.2	0.0030	0.95	0.0032	5.0	0.0032	35	0.0032
Carbon Monoxide	0.15	0.0030	0.049	0.0032	0.054	0.0032	0.028	0.0032

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Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-45		I011303-46		I011303-47		I011303-48	
Client Sample I.D.:	GEW-165		GEW-166		GEW-122		GEW-167	
Date/Time Sampled:	1/11/17 9:57		1/11/17 10:11		1/11/17 10:26		1/11/17 10:42	
Date/Time Analyzed:	1/18/17 11:49		1/18/17 12:04		1/18/17 12:18		1/18/17 12:33	
QC Batch No.:	170118GC8A1		170118GC8A1		170118GC8A1		170118GC8A1	
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	18	3.2	25	3.2	29	3.2
Carbon Dioxide	63	0.032	32	0.032	50	0.032	39	0.032
Oxygen/Argon	ND	1.6	8.2	1.6	ND	1.6	5.1	1.6
Nitrogen	ND	3.2	36	3.2	5.7	3.2	23	3.2
Methane	3.2	0.0032	5.6	0.0032	18	0.0032	3.6	0.0032
Carbon Monoxide	0.28	0.0032	0.14	0.0032	0.14	0.0032	0.19	0.0032

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Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-49		I011303-50		I011303-51		I011303-52	
Client Sample I.D.:	GEW-131		GEW-125		GEW-168		GEW-169	
Date/Time Sampled:	1/11/17 10:58		1/11/17 11:36		1/11/17 11:48		1/11/17 13:15	
Date/Time Analyzed:	1/18/17 12:47		1/18/17 13:02		1/18/17 13:16		1/18/17 13:31	
QC Batch No.:	170118GC8A1		170118GC8A1		170118GC8A1		170118GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.3		3.3		3.4	
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	36	3.2	38	3.3	32	3.3	22	3.4
Carbon Dioxide	61	0.032	55	0.033	59	0.033	53	0.034
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	4.5	1.7
Nitrogen	ND	3.2	ND	3.3	ND	3.3	16	3.4
Methane	0.75	0.0032	2.4	0.0033	4.2	0.0033	3.3	0.0034
Carbon Monoxide	0.20	0.0032	0.26	0.0033	0.26	0.0033	0.23	0.0034

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Client: Republic Services
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Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-53		I011303-54		I011303-55		I011303-56	
Client Sample I.D.:	GEW-126		GEW-130		GEW-127		GEW-170	
Date/Time Sampled:	1/11/17 13:42		1/11/17 13:56		1/11/17 14:27		1/11/17 14:38	
Date/Time Analyzed:	1/18/17 15:27		1/18/17 15:42		1/18/17 15:56		1/18/17 16:11	
QC Batch No.:	170118GC8A2		170118GC8A2		170118GC8A2		170118GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.5		3.4		3.5	
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	18	3.4	41	3.5	18	3.4	17	3.5
Carbon Dioxide	52	0.034	55	0.035	46	0.034	50	0.035
Oxygen/Argon	ND	1.7	ND	1.7	7.0	1.7	5.8	1.7
Nitrogen	5.4	3.4	ND	3.5	25	3.4	22	3.5
Methane	24	0.0034	0.39	0.0035	2.9	0.0034	4.2	0.0035
Carbon Monoxide	0.16	0.0034	0.36	0.0035	0.22	0.0034	0.24	0.0035

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Operations Manager

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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: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-57		I011303-58		I011303-59		I011303-60	
Client Sample I.D.:	GEW-39		GEW-109		GIW-6		GIW-7	
Date/Time Sampled:	1/11/17 8:14		1/11/17 8:26		1/11/17 8:37		1/11/17 8:48	
Date/Time Analyzed:	1/18/17 16:25		1/18/17 16:40		1/18/17 16:54		1/18/17 17:09	
QC Batch No.:	170118GC8A2		170118GC8A2		170118GC8A2		170118GC8A2	
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	0.070 d	0.033	20	3.2	21	3.2	6.0	3.2
Carbon Dioxide	53	0.033	51	0.032	36	0.032	49	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.3	6.5	3.2	37	3.2	6.4	3.2
Methane	45	0.0033	21	0.0032	3.1	0.0032	37	0.0032
Carbon Monoxide	ND	0.0033	0.079	0.0032	0.12	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: 170123GC8A2

Reviewed/Approved By: _____ Date 1-27-17

Mark Johnson
Operations Manager

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-61		I011303-62		I011303-63		I011303-64	
Client Sample I.D.:	GIW-8		GEW-38		GIW-9		GIW-5	
Date/Time Sampled:	1/11/17 8:58		1/11/17 9:09		1/11/17 9:19		1/11/17 9:32	
Date/Time Analyzed:	1/18/17 17:24		1/18/17 17:38		1/18/17 17:53		1/18/17 18:07	
QC Batch No.:	170118GC8A2		170118GC8A2		170118GC8A2		170118GC8A2	
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	0.28 d	0.032	22	3.2	4.4	3.1	ND d	0.032
Carbon Dioxide	46	0.032	42	0.032	36	0.031	1.6	0.032
Oxygen/Argon	ND	1.6	6.3	1.6	3.9	1.5	22	1.6
Nitrogen	18	3.2	22	3.2	31	3.1	77	3.2
Methane	35	0.0032	7.2	0.0032	24	0.0031	0.18	0.0032
Carbon Monoxide	0.0088	0.0032	0.15	0.0032	0.015	0.0031	ND	0.0032

Results normalized including non-methane hydrocarbons
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Reviewed/Approved By: _____ Date 1-27-17

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-65		I011303-66		I011303-67		I011303-68	
Client Sample I.D.:	GIW-10		GEW-10		GEW-110		GEW-56R	
Date/Time Sampled:	1/11/17 9:43		1/11/17 9:55		1/11/17 10:09		1/11/17 10:21	
Date/Time Analyzed:	1/18/17 18:22		1/18/17 18:36		1/18/17 18:51		1/18/17 19:05	
QC Batch No.:	170118GC8A2		170118GC8A2		170118GC8A2		170118GC8A2	
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	37	3.2	0.11 d	0.032	25	3.2	27	3.2
Carbon Dioxide	53	0.032	46	0.032	48	0.032	57	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.2	ND	3.2	13	3.2	ND	3.2
Methane	6.7	0.0032	51	0.0032	13	0.0032	13	0.0032
Carbon Monoxide	0.14	0.0032	ND	0.0032	0.13	0.0032	0.10	0.0032

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Reviewed/Approved By: _____ Date 1-27-17

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-69		I011303-70		I011303-71		I011303-72	
Client Sample I.D.:	GIW-1		GIW-2		GIW-3		GIW-4	
Date/Time Sampled:	1/11/17 10:50		1/11/17 11:03		1/11/17 11:25		1/11/17 11:38	
Date/Time Analyzed:	1/18/17 19:20		1/18/17 19:34		1/18/17 19:49		1/18/17 20:03	
QC Batch No.:	170118GC8A2		170118GC8A2		170118GC8A2		170118GC8A2	
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	19	3.2	29	3.2	43	3.2
Carbon Dioxide	67	0.032	67	0.032	66	0.032	53	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	3.8	3.2	ND	3.2	ND	3.2	ND	3.2
Methane	4.5	0.0032	12	0.0032	1.0	0.0032	1.1	0.0032
Carbon Monoxide	0.21	0.0032	0.097	0.0032	0.20	0.0032	0.24	0.0032

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Reviewed/Approved By: _____ Date 1-27-17

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Operations Manager

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-73		I011303-74		I011303-75		I011303-76	
Client Sample I.D.:	GIW-13		GIW-12		GIW-11		GEW-153	
Date/Time Sampled:	1/11/17 13:13		1/11/17 13:26		1/11/17 13:37		1/11/17 14:21	
Date/Time Analyzed:	1/19/17 9:53		1/19/17 10:08		1/19/17 10:22		1/19/17 10:37	
QC Batch No.:	170119GC8A1		170119GC8A1		170119GC8A1		170119GC8A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	3.4		3.4		3.4		3.4	
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	18	3.4	31	3.4	31	3.4	14	3.4
Carbon Dioxide	69	0.034	64	0.034	64	0.034	43	0.034
Oxygen/Argon	ND	1.7	ND	1.7	ND	1.7	2.4	1.7
Nitrogen	ND	3.4	ND	3.4	ND	3.4	8.4	3.4
Methane	9.9	0.0034	3.5	0.0034	1.8	0.0034	31	0.0034
Carbon Monoxide	0.089	0.0034	0.15	0.0034	0.21	0.0034	0.053	0.0034

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Reviewed/Approved By: _____ Date 1-27-17

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Operations Manager

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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: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-77		I011303-78		I011303-79		I011303-80	
Client Sample I.D.:	GEW-176		GEW-175		GEW-150		GEW-128	
Date/Time Sampled:	1/11/17 15:02		1/11/17 16:00		1/11/17 16:12		1/12/17 8:14	
Date/Time Analyzed:	1/19/17 10:51		1/19/17 11:06		1/19/17 11:20		1/19/17 11:35	
QC Batch No.:	170119GC8A1		170119GC8A1		170119GC8A1		170119GC8A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	3.5		3.4		3.4		2.9	
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	13	3.5	11	3.4	22	3.4	26	2.9
Carbon Dioxide	53	0.035	52	0.034	50	0.034	64	0.029
Oxygen/Argon	1.9	1.7	3.2	1.7	3.5	1.7	ND	1.4
Nitrogen	8.9	3.5	16	3.4	18	3.4	ND	2.9
Methane	23	0.0035	18	0.0034	5.4	0.0034	6.4	0.0029
Carbon Monoxide	0.059	0.0035	0.061	0.0034	0.14	0.0034	0.29	0.0029

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Reviewed/Approved By: _____ Date 1-27-17

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-81		I011303-82		I011303-83		I011303-84	
Client Sample I.D.:	GEW-129		GEW-177		GEW-141		GEW-139	
Date/Time Sampled:	1/12/17 8:30		1/12/17 8:45		1/12/17 9:18		1/12/17 9:34	
Date/Time Analyzed:	1/19/17 11:49		1/19/17 12:04		1/19/17 13:17		1/19/17 13:46	
QC Batch No.:	170119GC8A1		170119GC8A1		170119GC8A1		170119GC8A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	3.0		3.0		2.9		2.9	
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	3.0	27	3.0	36	2.9	27	2.9
Carbon Dioxide	69	0.030	55	0.030	54	0.029	40	0.029
Oxygen/Argon	1.7	1.5	3.8	1.5	2.1	1.4	6.0	1.4
Nitrogen	5.9	3.0	13	3.0	7.3	2.9	23	2.9
Methane	1.4	0.0030	0.21	0.0030	0.31	0.0029	3.0	0.0029
Carbon Monoxide	0.33	0.0030	0.43	0.0030	0.41	0.0029	0.21	0.0029

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-85		I011303-86		I011303-87		I011303-88	
Client Sample I.D.:	GEW-173		GEW-140		GEW-172		GEW-142	
Date/Time Sampled:	1/12/17 10:01		1/12/17 10:10		1/12/17 10:24		1/12/17 10:39	
Date/Time Analyzed:	1/19/17 14:00		1/19/17 14:15		1/19/17 14:30		1/19/17 14:44	
QC Batch No.:	170119GC8A1		170119GC8A1		170119GC8A1		170119GC8A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	2.9		2.9		3.0		2.9	
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	2.6 d	0.029	19	2.9	40	3.0	23	2.9
Carbon Dioxide	16	0.029	37	0.029	57	0.030	58	0.029
Oxygen/Argon	15	1.4	7.9	1.4	ND	1.5	3.5	1.4
Nitrogen	62	2.9	30	2.9	ND	3.0	12	2.9
Methane	4.3	0.0029	5.7	0.0029	0.74	0.0030	2.3	0.0029
Carbon Monoxide	0.026	0.0029	0.11	0.0029	0.32	0.0030	0.21	0.0029

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Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-89		I011303-90		I011303-91		I011303-92	
Client Sample I.D.:	GEW-144		GEW-82R		GEW-118		GEW-117	
Date/Time Sampled:	1/12/17 10:54		1/12/17 11:35		1/12/17 11:49		1/12/17 12:00	
Date/Time Analyzed:	1/19/17 14:59		1/19/17 15:13		1/19/17 15:28		1/19/17 15:42	
QC Batch No.:	170119GC8A1		170119GC8A1		170119GC8A1		170119GC8A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	3.0		2.9		3.0		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	33	3.0	43	2.9	35	3.0	23	3.0
Carbon Dioxide	55	0.030	50	0.029	53	0.030	61	0.030
Oxygen/Argon	ND	1.5	ND	1.4	2.1	1.5	1.7	1.5
Nitrogen	4.7	3.0	ND	2.9	7.6	3.0	5.9	3.0
Methane	4.7	0.0030	3.2	0.0029	1.3	0.0030	7.4	0.0030
Carbon Monoxide	0.16	0.0030	0.19	0.0029	0.15	0.0030	0.19	0.0030

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Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-93		I011303-94		I011303-95		I011303-96	
Client Sample I.D.:	GEW-116		GEW-107		GEW-59R		GEW-58	
Date/Time Sampled:	1/12/17 12:11		1/12/17 8:33		1/12/17 8:49		1/12/17 9:25	
Date/Time Analyzed:	1/19/17 18:10		1/19/17 18:25		1/19/17 18:40		1/19/17 18:54	
QC Batch No.:	170119GC8A2		170119GC8A2		170119GC8A2		170119GC8A2	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	3.0		2.9		3.0		2.9	
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	3.0	20	2.9	44	3.0	14	2.9
Carbon Dioxide	59	0.030	47	0.029	49	0.030	32	0.029
Oxygen/Argon	ND	1.5	2.0	1.4	ND	1.5	6.8	1.4
Nitrogen	4.8	3.0	7.0	2.9	ND	3.0	38	2.9
Methane	1.8	0.0030	24	0.0029	4.1	0.0030	8.5	0.0029
Carbon Monoxide	0.21	0.0030	0.12	0.0029	0.18	0.0030	0.061	0.0029

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 01/13/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I011303-97		I011303-98		I011303-99		I011303-100	
Client Sample I.D.:	GEW-57R		GEW-102		GEW-174		GEW-90	
Date/Time Sampled:	1/12/17 9:51		1/12/17 10:28		1/12/17 10:46		1/12/17 11:30	
Date/Time Analyzed:	1/19/17 19:09		1/19/17 19:23		1/19/17 19:38		1/19/17 19:52	
QC Batch No.:	170119GC8A2		170119GC8A2		170119GC8A2		170119GC8A2	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	2.9		2.9		2.9		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	19	2.9	40	2.9	21	2.9	40	3.0
Carbon Dioxide	39	0.029	53	0.029	39	0.029	46	0.030
Oxygen/Argon	4.6	1.4	ND	1.4	4.9	1.4	ND	1.5
Nitrogen	29	2.9	3.0	2.9	29	2.9	ND	3.0
Methane	8.6	0.0029	2.0	0.0029	4.6	0.0029	11	0.0030
Carbon Monoxide	0.084	0.0029	0.083	0.0029	0.15	0.0029	0.18	0.0030

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Mark Johnson
Operations Manager

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

QC Batch No: 170117GC8A1
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	1/17/17 9:45			1/17/17 9:01		1/17/17 9:16					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	5.37	107	5.14	103	4.3	70	130	30
Carbon Dioxide	ND	0.010	10	9.11	91	8.75	87	4.0	70	130	30
Oxygen/Argon	ND	0.50	15	14.9	100	14.3	96	4.2	70	130	30
Nitrogen	ND	1.0	70	67.3	96	64.5	92	4.1	70	130	30
Methane	ND	0.0010	0.10	0.111	111	0.111	111	0.3	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.106	106	0.105	105	0.4	70	130	30

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Operations Manager

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QC Batch No: 170117GC8A2
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	1/17/17 15:34			1/17/17 14:50		1/17/17 15:05					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	5.30	106	5.35	107	1.0	70	130	30
Carbon Dioxide	ND	0.010	10	9.21	92	9.25	92	0.4	70	130	30
Oxygen/Argon	ND	0.50	15	15.1	102	15.1	102	0.4	70	130	30
Nitrogen	ND	1.0	70	68.3	98	68.5	98	0.4	70	130	30
Methane	ND	0.0010	0.10	0.111	111	0.110	110	0.5	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.105	105	0.105	105	0.2	70	130	30

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

Reviewed/Approved By: _____ Date 1-27-17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No: 170118GC8A1
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	1/18/17 8:40			1/18/17 7:57		1/18/17 8:11					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	5.01	100	5.04	101	0.7	70	130	30
Carbon Dioxide	ND	0.010	10	8.99	90	9.13	91	1.6	70	130	30
Oxygen/Argon	ND	0.50	15	15.1	102	15.2	103	0.7	70	130	30
Nitrogen	ND	1.0	70	67.6	97	68.0	97	0.6	70	130	30
Methane	ND	0.0010	0.10	0.119	119	0.117	117	1.5	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.108	108	0.106	106	1.6	70	130	30

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

Reviewed/Approved By: _____ Date 1-27-17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No: 170118GC8A2
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	1/18/17 15:13			1/18/17 14:29		1/18/17 14:44					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	4.88	98	4.95	99	1.6	70	130	30
Carbon Dioxide	ND	0.010	10	8.66	86	9.04	90	4.3	70	130	30
Oxygen/Argon	ND	0.50	15	14.9	100	15.3	103	2.8	70	130	30
Nitrogen	ND	1.0	70	67.0	96	68.6	98	2.3	70	130	30
Methane	ND	0.0010	0.10	0.123	123	0.122	122	0.4	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.106	106	0.105	105	0.2	70	130	30

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

Reviewed/Approved By: _____ Date 1-27-17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No: 170119GC8A1
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	1/19/17 9:36			1/18/17 21:01		1/18/17 21:16					
Analyst Initials:	VM			VM		VM					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	4.64	93	4.75	95	2.4	70	130	30
Carbon Dioxide	ND	0.010	10	8.49	85	8.78	88	3.3	70	130	30
Oxygen/Argon	ND	0.50	15	14.8	100	15.2	103	2.4	70	130	30
Nitrogen	ND	1.0	70	66.7	95	68.2	98	2.3	70	130	30
Methane	ND	0.0010	0.10	0.127	127	0.126	126	0.5	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.106	106	0.105	105	0.4	70	130	30

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

Reviewed/Approved By: _____ Date 1-27-17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No: 170119GC8A2
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	1/19/17 17:56			1/19/17 17:12		1/19/17 17:27					
Analyst Initials:	VM			VM		VM					
Dilution Factor:	1.0			1.0		1.0					
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	5.93	119	5.59	112	6.0	70	130	30
Carbon Dioxide	ND	0.010	10	10.0	100	9.27	93	7.9	70	130	30
Oxygen/Argon	ND	0.50	15	15.1	102	14.3	96	5.8	70	130	30
Nitrogen	ND	1.0	70	68.1	97	64.3	92	5.7	70	130	30
Methane	ND	0.0010	0.10	0.113	113	0.111	111	1.6	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.110	110	0.110	110	0.4	70	130	30

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

Reviewed/Approved By: _____ Date 1-27-17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch # 170123GC8A1
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	1/23/2017 8:44		1/23/2017 8:35		1/23/2017 8:39			
Analyst Initials:	AS		AS		AS			
Dilution Factor:	AS		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.01	90	70-130	91	70-130	1.1	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By: _____ **Date:** 1-27-17

Mark Johnson
Operations Manager

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

QC Batch # 170123GC8A2
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	1/23/2017 10:58		1/23/2017 10:21		1/23/2017 10:53			
Analyst Initials:	AS		AS		AS			
Dilution Factor:	AS		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.01	91	70-130	90	70-130	1.3	<20

ND = Not Detected (Below RL)
RL = PQL X Dilution Factor

Reviewed/Approved By: _____ **Date:** 1-27-17

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

January 2017 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	1/5/2017 14:15	57.8	39.4	0.0	2.8	77.1	76.8	16	20	-0.3	-0.4	-11.8
GEW-002	1/9/2017 15:19	55.8	39.3	0.0	4.9	118.8		49	54	-1.5	-1.5	-15.2
GEW-002	1/9/2017 15:30	55.3	39.0	0.0	5.7	110.6		23	23	-0.6	-0.6	-14.3
GEW-002	1/16/2017 15:18	55.7	40.0	0.0	4.3	81.3		0	0	2.7	2.7	-14.0
GEW-002	1/16/2017 15:20	55.0	40.9	0.0	4.1	98.3		36	20	2.3	2.3	-14.1
GEW-002	1/17/2017 8:24	55.7	41.4	0.0	2.9	120.2		0	0	0.2	0.2	-14.8
GEW-002	1/24/2017 15:30	57.8	37.4	0.0	4.8	121.6		15	19	0.1	0.1	-15.1
GEW-002	1/24/2017 15:32	56.3	40.2	0.0	3.5	121.8		24	24	0.1	0.1	-14.4
GEW-003	1/5/2017 14:22	52.7	37.2	0.0	10.1	110.2	110.5	9	19	-0.5	-0.4	-11.6
GEW-003	1/5/2017 14:24	52.4	38.0	0.0	9.6	110.2	110.4	0	0	-0.5	-0.5	-11.9
GEW-003	1/9/2017 15:36	50.9	37.9	0.0	11.2	111.3		0	0	0.4	0.4	-14.4
GEW-003	1/9/2017 15:43	51.6	38.0	0.0	10.4	111.3		0	0	0.3	0.3	-14.7
GEW-003	1/16/2017 15:23	53.5	39.2	0.0	7.3	112.6		13	13	0.7	0.7	-13.8
GEW-003	1/16/2017 15:25	54.6	38.9	0.0	6.5	113.3		0	0	0.6	0.6	-13.6
GEW-003	1/17/2017 8:28	53.3	39.7	0.0	7.0	111.1		12	12	-1.2	-1.2	-13.3
GEW-003	1/24/2017 15:35	53.9	39.4	0.0	6.7	112.3		0	0	0.2	0.2	-13.8
GEW-003	1/24/2017 15:37	55.3	38.9	0.0	5.8	112.2		8	8	0.2	0.2	-14.0
GEW-004	1/5/2017 14:28	47.8	38.2	0.0	14.0	112.8	113.8	0	0	-0.6	-0.6	-11.5
GEW-004	1/5/2017 14:30	46.8	37.4	0.4	15.4	103.5	103.0	0	0	-0.4	-0.4	-12.0
GEW-004	1/9/2017 15:50	54.4	39.2	0.0	6.4	83.0		0	0	0.7	0.7	-14.6
GEW-004	1/9/2017 15:58	54.6	38.4	0.0	7.0	82.8		0	0	0.7	0.7	-14.8
GEW-004	1/16/2017 15:28	54.6	39.1	0.0	6.3	107.0		0	0	0.8	0.8	-13.6
GEW-004	1/16/2017 15:30	54.2	39.2	0.0	6.6	111.4		8	8	0.7	0.7	-14.0
GEW-004	1/17/2017 8:33	51.4	39.1	0.3	9.2	110.2		8	9	-1.0	-1.0	-13.8
GEW-004	1/24/2017 15:40	54.5	38.4	0.0	7.1	113.0		0	0	0.4	0.4	-13.7
GEW-004	1/24/2017 15:41	54.4	39.1	0.0	6.5	113.7		0	0	0.3	0.3	-13.6
GEW-005	1/5/2017 14:46	34.7	35.0	0.0	30.3	87.1	87.3	10	15	-0.3	-0.3	-11.7
GEW-005	1/5/2017 14:47	35.1	34.2	0.0	30.7	79.7	79.4	0	0	-0.2	-0.2	-12.1
GEW-005	1/10/2017 12:39	55.1	35.1	0.0	9.8	76.1		30	29	0.4	0.4	-13.3
GEW-005	1/10/2017 12:46	53.3	35.7	0.0	11.0	77.5		0	0	0.3	0.3	-13.2
GEW-005	1/16/2017 15:44	53.6	38.6	0.0	7.8	78.5		6	0	0.7	0.7	-13.7
GEW-005	1/16/2017 15:46	53.9	38.4	0.0	7.7	88.4		32	31	0.6	0.6	-13.7
GEW-005	1/17/2017 8:38	44.3	36.6	0.1	19.0	88.8		0	0	-0.6	-0.5	-13.7
GEW-005	1/24/2017 15:53	50.7	37.3	0.0	12.0	89.9		0	0	0.5	0.4	-13.8
GEW-005	1/24/2017 15:55	50.4	37.4	0.0	12.2	91.1		0	0	0.4	0.4	-14.1
GEW-006	1/5/2017 14:58	38.5	34.3	0.0	27.2	86.8	86.5	14	15	-0.6	-0.6	-11.7
GEW-006	1/5/2017 15:00	38.5	34.3	0.0	27.2	79.4	79.8	0	0	-0.3	-0.3	-12.3
GEW-006	1/10/2017 13:06	52.1	37.7	0.0	10.2	84.5		11	7	0.2	0.2	-13.3
GEW-006	1/10/2017 13:12	52.2	36.8	0.0	11.0	85.7		0	0	0.1	0.1	-13.4
GEW-006	1/16/2017 15:55	53.0	37.8	0.0	9.2	84.7		23	23	0.5	0.5	-13.8
GEW-006	1/16/2017 15:56	54.6	37.0	0.0	8.4	88.6		30	28	0.4	0.3	-13.5
GEW-006	1/17/2017 8:51	51.3	36.3	0.0	12.4	89.1		14	14	-0.5	-0.5	-13.1
GEW-006	1/24/2017 16:58	53.9	32.2	0.0	13.9	89.8		0	0	0.4	0.3	-13.8

January 2017 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-006	1/24/2017 16:59	56.1	35.8	0.0	8.1	90.4		0	0	0.1	0.2	-13.8
GEW-007	1/5/2017 9:35	55.7	39.6	0.2	4.5	78.9	79.1	16	4	-1.9	-1.9	-12.5
GEW-007	1/5/2017 9:37	55.7	39.9	0.2	4.2	75.2	75.2	39	39	-0.8	-0.8	-12.6
GEW-007	1/10/2017 14:54	58.5	39.3	0.0	2.2	85.1		0	6	-0.1	-0.1	-13.6
GEW-007	1/10/2017 15:01	58.2	39.1	0.1	2.6	84.7		0	0	-0.1	-0.1	-13.4
GEW-007	1/16/2017 13:54	57.9	39.0	0.0	3.1	80.9		0	0	1.4	1.4	-13.9
GEW-007	1/16/2017 13:56	57.7	39.2	0.0	3.1	83.2		0	0	0.8	0.8	-13.9
GEW-007	1/24/2017 14:02	56.7	38.4	0.0	4.9	88.0		5	0	0.4	0.4	-13.8
GEW-007	1/24/2017 14:04	57.5	39.1	0.0	3.4	88.7		5	0	-0.1	-0.1	-13.5
GEW-008	1/5/2017 9:45	51.3	41.8	0.4	6.5	105.5	105.7	14	13	-1.3	-1.3	-12.3
GEW-008	1/5/2017 9:46	51.0	42.1	0.4	6.5	102.8	103.3	7	7	-0.8	-0.8	-12.4
GEW-008	1/10/2017 15:08	53.6	41.2	0.2	5.0	108.1		7	10	-0.6	-0.6	-13.2
GEW-008	1/10/2017 15:14	54.3	41.2	0.3	4.2	108.1		11	12	-0.7	-0.7	-13.4
GEW-008	1/16/2017 14:01	56.0	39.4	0.0	4.6	108.1		36	36	0.4	0.4	-13.7
GEW-008	1/16/2017 14:02	54.4	41.2	0.0	4.4	109.5		16	12	0.1	0.1	-13.8
GEW-008	1/24/2017 13:57	54.1	38.1	0.0	7.8	109.9		11	8	-0.2	-0.2	-13.5
GEW-009	1/5/2017 9:53	41.8	38.6	0.0	19.6	117.1	117.1	28	28	-0.6	-0.6	-18.5
GEW-009	1/5/2017 9:55	41.7	38.9	0.0	19.4	116.3	116.6	27	26	-0.5	-0.5	-18.5
GEW-009	1/10/2017 15:20	47.1	38.2	0.1	14.6	119.1		9	9	-0.7	-0.7	-18.3
GEW-009	1/10/2017 15:27	45.5	37.3	0.1	17.1	117.3		0	0	-0.7	-0.8	-18.7
GEW-009	1/16/2017 14:07	53.5	40.2	0.0	6.3	122.3		0	0	0.1	0.1	-18.0
GEW-009	1/16/2017 14:08	52.8	40.4	0.0	6.8	123.2		26	26	0.0	0.0	-17.7
GEW-009	1/24/2017 13:52	50.3	39.0	0.0	10.7	120.2		24	24	-0.1	-0.1	-18.8
GEW-010	1/6/2017 9:25	52.9	35.7	0.7	10.7	10.5		10	10	-3.3	-3.3	2.3
GEW-010	1/11/2017 9:52	50.6	43.5	0.2	5.7	48.7		3	3	-3.6	-3.7	-20.1
GEW-010	1/11/2017 10:01	36.2	33.3	7.0	23.5	52.1		3	3	-5.8	-5.8	-20.1
GEW-010	1/17/2017 10:38	45.3	45.6	0.1	9.0	50.1		7	7	-3.5	-3.5	-19.7
GEW-010	1/27/2017 10:39	53.6	42.1	0.1	4.2	34.2	34.2	7	6	-3.7	-3.7	-19.0
GEW-013A	1/17/2017 14:44	10.6	53.3	1.3	34.8	182.4		5	12	-0.1	-0.1	-18.3
GEW-013A	1/17/2017 14:46	19.8	53.1	0.8	26.3	128.1		72	73	-7.2	-8.1	-19.2
GEW-013A	1/31/2017 9:17	13.7	41.5	5.7	39.1	121.2	121.3	72	76	-7.2	-7.5	-18.1
GEW-013A	1/31/2017 9:20	13.8	40.9	5.7	39.6	126.7	126.7	58	62	-4.3	-4.5	-20.6
GEW-015	1/17/2017 13:55	6.4	44.8	4.3	44.5	169.3		NFD		-3.9	-3.9	-12.8
GEW-015	1/17/2017 13:56	6.9	43.6	4.4	45.1	168.8		NFD		-3.9	-3.9	-12.9
GEW-015	1/30/2017 11:19	6.4	42.6	5.0	46.0	178.6	178.6	NFD		-3.4	-3.4	-12.1
GEW-015	1/30/2017 11:21	6.7	41.7	5.0	46.6	178.6	178.6	NFD		-4.1	-4.1	-12.1
GEW-016R	1/17/2017 14:05	2.7	48.1	2.8	46.4	186.8		NFD		-18.3	-18.3	-17.8
GEW-016R	1/17/2017 14:07	1.8	46.9	2.7	48.6	187.4		NFD		-18.3	-18.6	-18.0
GEW-016R	1/30/2017 11:07	2.0	44.3	2.4	51.3	187.6	187.6	NFD		-17.9	-17.6	-17.6
GEW-016R	1/30/2017 11:08	2.0	46.5	2.4	49.1	187.5	187.6	NFD		-17.9	-17.5	-17.8
GEW-018B	1/17/2017 14:31	2.2	51.8	0.7	45.3	172.7		5	5	-11.5	-11.5	-11.3
GEW-018B	1/17/2017 14:32	2.2	51.8	0.6	45.4	173.3		12	8	-12.2	-12.9	-11.5
GEW-018B	1/30/2017 13:47	3.0	52.3	0.2	44.5	177.1	176.9	4	2	-12.1	-12.0	-11.8

January 2017 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-018B	1/30/2017 13:48	2.7	51.7	0.1	45.5	169.5	171.6	4	8	-12.5	-12.1	-12.1
GEW-022R	1/12/2017 13:08	0.4	6.3	18.8	74.5	95.6		5	3	-13.5	-12.9	-13.8
GEW-022R	1/12/2017 13:12	0.3	15.5	18.2	66.0	95.6		5	8	-12.3	-12.4	-13.1
GEW-022R	1/31/2017 15:36	0.1	22.1	17.0	60.8	112.7	112.3	17	19	-13.3	-13.8	-14.3
GEW-022R	1/31/2017 15:39	0.1	7.3	18.8	73.8	113.5	105.1	4	5	-0.1	-0.1	-13.9
GEW-038	1/6/2017 8:47	12.5	51.5	4.4	31.6	10.0		3	3	-6.5	-6.5	-9.0
GEW-038	1/11/2017 9:05	7.8	45.1	6.0	41.1	44.5		10	7	-8.5	-8.5	-9.3
GEW-038	1/11/2017 9:11	7.8	43.0	6.7	42.5	44.8		5	5	-8.7	-8.5	-9.8
GEW-038	1/17/2017 10:21	10.3	46.0	4.9	38.8	48.6		3	9	-8.3	-8.4	-10.6
GEW-038	1/26/2017 15:08	16.6	46.7	1.9	34.8	34.8	34.9	4	4	-8.4	-8.4	-9.9
GEW-039	1/6/2017 8:28	45.7	53.9	0.0	0.4	85.5		10	12	-0.2	-0.2	-17.7
GEW-039	1/11/2017 8:09	45.3	47.7	0.0	7.0	101.1		3	5	-0.2	-0.2	-18.8
GEW-039	1/11/2017 8:17	45.3	46.8	0.3	7.6	101.3		7	3	-0.1	-0.1	-19.1
GEW-039	1/17/2017 10:06	50.2	43.8	0.0	6.0	103.2		12	13	-0.2	-0.2	-18.9
GEW-039	1/26/2017 14:46	49.2	47.0	0.0	3.8	99.2	99.2	7	7	-0.3	-0.2	-19.0
GEW-040	1/5/2017 10:32	57.3	40.9	0.0	1.8	74.1	74.1	33	34	-0.7	-0.7	-12.3
GEW-040	1/5/2017 10:34	57.4	40.7	0.0	1.9	73.2	73.2	14	14	-0.4	-0.4	-12.6
GEW-040	1/9/2017 11:05	58.8	38.7	0.0	2.5	75.5		32	32	-0.1	-0.1	-15.0
GEW-040	1/9/2017 11:12	59.4	38.1	0.0	2.5	75.0		31	31	-0.2	-0.2	-15.1
GEW-040	1/16/2017 14:13	54.8	39.0	0.0	6.2	79.2		0	0	0.1	0.1	-13.7
GEW-040	1/16/2017 14:15	58.3	38.7	0.0	3.0	79.9		0	0	0.0	0.0	-14.0
GEW-040	1/24/2017 14:44	55.8	39.8	0.0	4.4	82.5		0	0	0.0	0.0	-14.1
GEW-041R	1/5/2017 10:39	58.2	40.3	0.0	1.5	22.4	22.4	6	6	0.1	0.1	-1.9
GEW-041R	1/5/2017 10:42	58.4	40.4	0.0	1.2	28.7	28.9	0	0	0.0	0.0	-1.6
GEW-041R	1/5/2017 15:34	53.2	36.2	0.6	10.0	95.8	93.4	0	0	-0.6	-0.6	-12.5
GEW-041R	1/9/2017 11:26	58.8	38.4	0.0	2.8	84.7		0	0	0.0	0.0	-14.5
GEW-041R	1/9/2017 11:36	57.4	38.0	0.2	4.4	87.8		35	35	-0.1	-0.1	-14.1
GEW-041R	1/16/2017 14:22	56.7	37.4	0.0	5.9	94.0		0	0	0.1	0.1	-13.7
GEW-041R	1/16/2017 14:23	57.0	37.9	0.0	5.1	95.2		25	25	0.1	0.1	-13.9
GEW-041R	1/24/2017 14:48	55.5	37.5	0.0	7.0	98.9		0	0	-0.1	-0.1	-13.5
GEW-042R	1/5/2017 10:45	58.0	40.3	0.0	1.7	23.3	23.4	110	110	0.1	0.1	2.2
GEW-042R	1/5/2017 10:47	57.6	41.2	0.0	1.2	23.7	23.7	81	81	0.0	0.0	1.8
GEW-042R	1/5/2017 15:38	60.2	37.3	0.0	2.5	31.7	31.6	111	111	-0.5	-0.5	-12.5
GEW-042R	1/9/2017 13:09	59.0	37.8	0.0	3.2	76.6		6	8	-0.8	-0.8	-13.9
GEW-042R	1/9/2017 13:15	58.1	38.8	0.0	3.1	76.6		3	4	-0.7	-0.7	-13.9
GEW-042R	1/16/2017 14:28	56.0	38.0	0.0	6.0	90.3		0	0	0.3	0.3	-13.7
GEW-042R	1/16/2017 14:29	55.6	40.2	0.0	4.2	90.9		8	7	0.3	0.3	-13.7
GEW-042R	1/24/2017 14:52	57.7	37.6	0.0	4.7	94.2		0	0	0.0	0.0	-13.8
GEW-042R	1/24/2017 14:53	55.4	41.0	0.0	3.6	94.2		0	3	0.0	-0.1	-13.8
GEW-043R	1/5/2017 11:21	52.4	35.2	0.5	11.9	113.2	113.3	0	0	-1.0	-1.0	-12.2
GEW-043R	1/5/2017 11:26	51.4	38.3	0.6	9.7	95.0	94.3	0	0	-0.2	-0.2	-12.3
GEW-043R	1/9/2017 13:26	55.6	40.6	0.0	3.8	43.9		0	0	1.0	1.0	-14.4
GEW-043R	1/9/2017 13:36	56.1	40.2	0.0	3.7	55.3		3	3	0.9	0.9	-14.2

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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-043R	1/16/2017 14:34	53.4	40.2	0.0	6.4	103.9		0	0	1.4	1.4	-13.7
GEW-043R	1/16/2017 14:36	53.3	42.1	0.0	4.6	122.9		0	0	0.9	0.9	-13.9
GEW-043R	1/24/2017 14:57	55.0	39.5	0.0	5.5	128.1		17	14	0.0	0.0	-14.3
GEW-044	1/5/2017 11:38	42.8	36.5	0.0	20.7	58.8	59.2	0	0	-0.5	-0.5	-12.2
GEW-044	1/5/2017 11:40	42.9	36.5	0.1	20.5	53.0	52.4	8	8	-0.1	-0.1	-12.5
GEW-044	1/9/2017 13:46	56.9	39.5	0.0	3.6	49.3		0	0	0.8	0.8	-14.2
GEW-044	1/9/2017 13:55	56.9	40.0	0.0	3.1	54.6		0	0	0.6	0.6	-14.3
GEW-044	1/16/2017 14:41	50.9	38.5	0.0	10.6	70.7		25	24	0.4	0.4	-13.4
GEW-044	1/16/2017 14:42	51.8	37.8	0.0	10.4	74.8		31	29	0.1	0.1	-13.7
GEW-044	1/17/2017 9:30	51.6	34.6	0.1	13.7	76.9		0	0	-1.0	-1.0	-14.0
GEW-044	1/24/2017 15:02	51.1	37.6	0.1	11.2	74.3		0	0	-0.1	-0.1	-13.5
GEW-045R	1/5/2017 11:49	58.4	37.5	0.0	4.1	29.7	29.8	4	7	-0.3	-0.3	-12.3
GEW-045R	1/9/2017 14:03	57.8	37.3	0.5	4.4	52.8		0	0	-0.6	-0.6	-14.3
GEW-045R	1/9/2017 14:11	58.1	37.1	0.2	4.6	53.1		0	0	-0.5	-0.5	-14.3
GEW-045R	1/16/2017 14:46	53.7	37.6	0.0	8.7	56.1		5	5	0.0	0.0	-13.7
GEW-045R	1/16/2017 14:49	59.2	37.7	0.0	3.1	56.0		5	6	-0.1	-0.1	-13.7
GEW-045R	1/17/2017 9:35	57.8	38.2	0.1	3.9	54.9		0	0	-0.5	-0.5	-14.1
GEW-045R	1/24/2017 15:07	58.1	37.4	0.0	4.5	59.1		0	0	0.0	0.0	-13.6
GEW-045R	1/24/2017 15:08	59.8	37.8	0.0	2.4	59.3		0	0	-0.2	-0.2	-13.8
GEW-046R	1/5/2017 11:55	57.0	39.8	0.0	3.2	88.6	88.3	32	31	-0.2	-0.2	-12.3
GEW-046R	1/9/2017 14:18	56.2	38.7	0.0	5.1	93.2		11	11	0.1	0.0	-14.3
GEW-046R	1/9/2017 14:26	55.6	39.3	0.0	5.1	93.2		0	0	0.0	0.0	-14.5
GEW-046R	1/16/2017 14:53	57.8	37.1	0.0	5.1	98.7		0	0	0.6	0.6	-13.8
GEW-046R	1/16/2017 14:55	56.2	38.8	0.0	5.0	100.4		0	0	0.4	0.4	-14.3
GEW-046R	1/17/2017 9:39	56.1	37.9	0.2	5.8	95.4		0	0	-0.9	-0.9	-14.0
GEW-046R	1/24/2017 15:13	55.0	38.9	0.0	6.1	96.9		0	0	-0.2	-0.2	-14.1
GEW-047R	1/5/2017 14:37	35.7	35.2	0.0	29.1	110.0	109.7	0	0	-0.7	-0.7	-11.9
GEW-047R	1/5/2017 14:39	34.7	34.9	0.0	30.4	103.6	103.5	0	0	-0.4	-0.4	-12.0
GEW-047R	1/9/2017 16:08	55.3	39.7	0.0	5.0	98.6		0	0	0.5	0.5	-14.7
GEW-047R	1/9/2017 16:18	55.9	38.3	0.0	5.8	75.0		0	0	0.5	0.5	-14.6
GEW-047R	1/16/2017 15:39	56.1	40.2	0.0	3.7	60.2		8	3	0.7	0.8	-13.7
GEW-047R	1/16/2017 15:40	55.9	39.9	0.0	4.2	72.9		8	8	0.6	0.6	-13.7
GEW-047R	1/17/2017 8:18	54.3	39.5	0.2	6.0	99.4		15	16	-0.6	-0.6	-13.7
GEW-047R	1/24/2017 15:48	53.6	39.2	0.0	7.2	104.0		0	0	0.5	0.4	-13.9
GEW-047R	1/24/2017 15:50	53.4	39.1	0.0	7.5	105.2		0	0	0.4	0.4	-13.7
GEW-048	1/5/2017 14:51	48.9	35.9	0.0	15.2	98.2	98.2	0	0	-0.5	-0.5	-8.9
GEW-048	1/5/2017 14:52	49.4	37.9	0.0	12.7	94.3	94.6	0	0	-0.2	-0.2	-9.4
GEW-048	1/10/2017 12:53	56.3	39.7	0.0	4.0	99.0		0	0	0.3	0.3	-8.2
GEW-048	1/10/2017 13:00	56.9	38.1	0.0	5.0	99.2		0	0	0.2	0.2	-8.4
GEW-048	1/16/2017 15:49	56.6	38.3	0.0	5.1	98.5		0	0	0.6	0.6	-9.4
GEW-048	1/16/2017 15:51	56.5	39.0	0.0	4.5	99.6		0	0	0.5	0.5	-8.7
GEW-048	1/17/2017 8:42	51.9	38.0	0.1	10.0	99.3		0	0	-0.6	-0.6	-8.9
GEW-048	1/24/2017 15:58	54.5	37.7	0.0	7.8	100.8		13	5	0.4	0.4	-10.0

January 2017 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-048	1/24/2017 15:59	55.2	38.6	0.0	6.2	100.2		11	12	0.3	0.3	-10.3
GEW-049	1/5/2017 9:19	35.2	36.3	0.3	28.2	102.8	102.8	0	0	-0.8	-0.8	-11.7
GEW-049	1/5/2017 9:21	39.5	35.4	0.2	24.9	97.2	97.2	0	0	-0.5	-0.5	-12.2
GEW-049	1/9/2017 8:45	55.0	39.1	0.0	5.9	100.3		0	9	0.0	0.0	-14.8
GEW-049	1/9/2017 8:54	55.4	38.7	0.0	5.9	101.3		0	0	0.0	0.0	-15.4
GEW-049	1/16/2017 13:22	59.3	30.6	0.0	10.1	104.3		15	15	0.5	0.5	-13.8
GEW-049	1/16/2017 13:24	56.4	38.1	0.0	5.5	105.8		0	0	0.5	0.5	-13.8
GEW-049	1/24/2017 14:12	53.2	36.9	0.0	9.9	106.5		0	0	0.3	0.3	-13.6
GEW-049	1/24/2017 14:14	55.3	38.7	0.0	6.0	107.2		0	0	0.3	0.3	-13.8
GEW-050	1/5/2017 15:09	40.2	33.8	0.0	26.0	104.8	104.5	0	0	-0.9	-0.9	-8.7
GEW-050	1/5/2017 15:10	39.4	34.4	0.0	26.2	98.3	98.2	0	0	-0.3	-0.3	-7.5
GEW-050	1/10/2017 13:22	52.5	36.9	0.0	10.6	98.5		0	0	0.2	0.2	-10.1
GEW-050	1/10/2017 13:27	50.1	33.2	0.0	16.7	98.3		0	0	0.4	0.5	-6.7
GEW-050	1/16/2017 16:04	55.2	36.0	0.0	8.8	101.2		3	3	0.5	0.5	-6.5
GEW-050	1/16/2017 16:05	54.4	37.2	0.0	8.4	103.0		0	0	0.4	0.4	-7.1
GEW-050	1/24/2017 17:05	54.3	34.5	0.0	11.2	104.6		31	29	0.3	0.3	-8.7
GEW-050	1/24/2017 17:06	55.5	36.5	0.0	8.0	105.9		16	25	0.2	0.1	-6.9
GEW-051	1/5/2017 9:25	51.4	37.5	0.0	11.1	121.5	121.3	0	0	-1.0	-1.0	-11.9
GEW-051	1/5/2017 9:27	51.2	40.1	0.0	8.7	109.0	107.2	0	0	-0.6	-0.6	-11.9
GEW-051	1/9/2017 9:02	55.8	39.8	0.0	4.4	88.4		0	0	0.4	0.4	-15.2
GEW-051	1/9/2017 9:10	54.4	38.6	0.0	7.0	103.4		27	27	0.3	0.3	-15.2
GEW-051	1/16/2017 13:27	56.2	37.1	0.0	6.7	118.6		0	0	0.8	0.7	-13.9
GEW-051	1/16/2017 13:29	55.0	39.8	0.0	5.2	122.7		0	0	0.6	0.6	-13.8
GEW-051	1/24/2017 14:17	54.6	38.3	0.0	7.1	123.4		11	8	0.3	0.3	-13.5
GEW-051	1/24/2017 14:19	54.6	39.4	0.0	6.0	124.0		0	0	0.3	0.3	-13.4
GEW-052	1/5/2017 15:14	25.5	31.1	0.0	43.4	110.0	110.0	0	0	-0.7	-0.7	-12.1
GEW-052	1/5/2017 15:16	25.1	31.1	0.0	43.8	104.8	105.0	0	0	-0.2	-0.2	-12.3
GEW-052	1/10/2017 14:43	53.4	37.3	0.3	9.0	108.1		8	7	-0.3	-0.2	-13.4
GEW-052	1/10/2017 14:50	53.8	36.8	0.0	9.4	108.1		5	8	-0.3	-0.3	-13.3
GEW-052	1/16/2017 16:09	54.5	36.9	0.0	8.6	107.3		29	28	0.1	0.1	-13.9
GEW-052	1/16/2017 16:11	55.4	38.7	0.0	5.9	112.1		9	18	-0.1	-0.1	-13.8
GEW-052	1/24/2017 14:07	47.6	36.4	0.0	16.0	111.9		0	0	0.1	0.1	-13.7
GEW-052	1/24/2017 14:09	44.9	35.5	0.0	19.6	112.0		13	10	0.0	0.0	-13.8
GEW-053	1/4/2017 9:03	43.6	38.6	0.0	17.8	132.4		43	47	-4.2	-4.1	-12.6
GEW-053	1/4/2017 9:05	44.3	38.3	0.0	17.4	132.1		43	47	-3.7	-3.8	-12.5
GEW-053	1/9/2017 9:20	47.0	38.0	0.0	15.0	132.1		55	49	-3.2	-3.3	-15.7
GEW-053	1/9/2017 9:28	46.6	38.4	0.0	15.0	132.1		49	49	-3.1	-3.1	-15.2
GEW-053	1/16/2017 13:34	48.6	37.4	0.0	14.0	130.8		52	48	-2.9	-2.9	-14.5
GEW-053	1/24/2017 14:23	46.9	37.9	0.0	15.2	132.7		47	47	-2.7	-2.8	-13.8
GEW-053	1/24/2017 14:25	46.7	38.1	0.0	15.2	132.6		40	44	-2.5	-2.5	-14.0
GEW-054	1/5/2017 10:21	55.6	40.1	0.0	4.3	133.8	134.0	3	10	-1.3	-1.3	-1.2
GEW-054	1/5/2017 10:23	54.3	41.2	0.0	4.5	134.1	134.1	8	5	-1.2	-1.2	-1.3
GEW-054	1/5/2017 15:28	53.5	39.0	0.0	7.5	139.6	139.0	50	49	-6.4	-6.4	-12.8

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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-054	1/9/2017 9:42	55.7	40.1	0.0	4.2	90.1		0	0	1.5	1.5	1.3
GEW-054	1/9/2017 9:50	56.1	39.7	0.0	4.2	90.3		0	0	1.5	1.5	1.3
GEW-054	1/9/2017 10:31	56.5	37.8	0.0	5.7	140.4		55	60	-4.1	-4.1	-12.8
GEW-054	1/16/2017 13:40	54.0	38.5	0.0	7.5	142.9		58	58	-3.3	-3.3	-14.7
GEW-054	1/16/2017 13:42	52.3	40.5	0.0	7.2	142.9		61	58	-3.6	-3.7	-13.3
GEW-054	1/24/2017 14:33	54.0	38.3	0.0	7.7	145.5		55	55	-3.9	-4.0	-13.8
GEW-054	1/24/2017 14:34	52.1	40.3	0.0	7.6	145.5		59	62	-4.2	-4.3	-12.5
GEW-055	1/5/2017 10:27	53.5	41.3	0.0	5.2	121.5	121.8	3	5	-1.0	-1.0	-7.4
GEW-055	1/5/2017 10:28	53.3	41.9	0.0	4.8	112.0	111.8	0	0	-0.7	-0.7	-7.3
GEW-055	1/9/2017 10:51	54.6	39.7	0.0	5.7	101.7		9	8	0.0	0.0	-9.1
GEW-055	1/9/2017 10:58	54.8	39.5	0.0	5.7	99.8		0	0	0.1	0.1	-9.0
GEW-055	1/16/2017 13:46	53.7	40.6	0.0	5.7	102.4		0	0	0.4	0.4	-8.0
GEW-055	1/16/2017 13:48	53.7	40.9	0.0	5.4	104.6		8	7	0.3	0.3	-8.2
GEW-055	1/24/2017 14:39	53.4	40.6	0.0	6.0	110.6		0	0	0.1	0.1	-7.7
GEW-055	1/24/2017 14:41	53.6	40.8	0.0	5.6	110.6		0	0	0.1	0.1	-7.7
GEW-056R	1/6/2017 16:11	18.2	53.4	0.1	28.3	60.6		4	4	-0.5	-0.5	-17.9
GEW-056R	1/11/2017 10:18	14.0	47.2	1.2	37.6	89.9		0	0	-0.3	-0.3	-18.7
GEW-056R	1/11/2017 10:24	12.5	50.5	2.6	34.4	91.1		4	0	-0.3	-0.3	-18.3
GEW-056R	1/17/2017 11:14	19.1	51.6	0.0	29.3	92.5		9	9	-0.4	-0.4	-19.7
GEW-056R	1/27/2017 14:29	18.8	48.4	0.0	32.8	74.1	74.0	4	3	-0.5	-0.5	-18.7
GEW-057B	1/18/2017 8:36	4.6	50.5	0.1	44.8	40.2		17	8	-12.5	-12.8	-12.3
GEW-057B	1/31/2017 14:25	4.3	51.2	0.3	44.2	53.7	53.7	13	22	-13.2	-13.7	-12.9
GEW-057R	1/12/2017 9:47	10.0	41.3	4.6	44.1	38.4		19	25	-0.3	-0.7	-13.3
GEW-057R	1/12/2017 9:55	9.7	42.3	4.4	43.6	39.5		24	22	-0.7	-0.5	-13.2
GEW-057R	1/31/2017 14:30	8.6	41.0	3.3	47.1	63.3	63.3	23	24	-0.7	-0.8	-12.4
GEW-058	1/12/2017 9:21	11.2	40.6	4.3	43.9	51.8		16	11	-18.4	-18.5	-18.4
GEW-058	1/12/2017 9:29	11.3	40.5	4.3	43.9	50.6		11	9	-19.5	-19.7	-19.1
GEW-058	1/31/2017 14:13	7.5	36.8	3.6	52.1	78.9	79.7	14	18	-16.4	-17.2	-18.0
GEW-058A	1/12/2017 9:15	10.9	36.0	6.2	46.9	84.4		5	4	-13.7	-13.7	-20.1
GEW-058A	1/12/2017 9:17	11.9	34.4	6.3	47.4	83.8		5	6	-13.7	-13.7	-20.9
GEW-058A	1/31/2017 14:07	10.9	23.1	4.9	61.1	104.2	104.0	9	13	-9.5	-9.4	-18.5
GEW-059R	1/12/2017 8:46	4.9	51.5	0.0	43.6	174.1		14	10	-19.5	-19.1	-20.4
GEW-059R	1/12/2017 8:53	4.7	49.4	0.0	45.9	171.7		13	21	-19.5	-20.4	-19.6
GEW-059R	1/31/2017 14:39	9.8	47.3	0.1	42.8	171.6	171.6	11	11	-17.7	-17.8	-17.8
GEW-059R	1/31/2017 14:41	9.2	51.5	0.0	39.3	171.6	171.0	13	15	-18.1	-18.3	-17.9
GEW-064A	1/31/2017 9:39	7.6	60.8	0.7	30.9	51.3	51.3	7	8	-19.0	-19.0	-19.1
GEW-067A	1/31/2017 9:32	6.8	55.6	0.4	37.2	70.2	70.2	4	4	0.1	0.1	-0.9
GEW-067A	1/31/2017 9:34	8.9	54.7	1.3	35.1	73.4	74.3	1	5	-0.2	-0.1	-0.9
GEW-077	1/17/2017 13:45	0.9	50.9	2.1	46.1	53.6		4	5	-15.9	-15.6	-15.6
GEW-077	1/31/2017 8:36	1.0	54.3	0.8	43.9	79.8	79.1	9	4	-11.7	-12.0	-11.5
GEW-077	1/31/2017 8:38	1.0	54.6	1.4	43.0	76.5	76.4	12	20	-11.6	-12.2	-12.2
GEW-078R	1/17/2017 13:17	12.5	47.4	0.0	40.1	168.2		17	10	-16.3	-15.9	-15.7
GEW-078R	1/17/2017 13:18	11.4	50.3	0.0	38.3	168.8		23	23	-16.6	-16.3	-15.2

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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-078R	1/31/2017 8:43	7.7	49.5	0.2	42.6	172.6	172.1	12	9	-16.6	-17.0	-17.1
GEW-078R	1/31/2017 8:44	9.5	49.2	0.0	41.3	172.1	171.0	21	18	-17.0	-17.2	-16.2
GEW-081	1/17/2017 14:18	1.4	51.7	0.1	46.8	179.0		NR	NR	-13.7	-14.5	-13.5
GEW-081	1/17/2017 14:20	1.0	57.8	0.0	41.2	178.7		NR	NR	-13.5	-13.9	-13.1
GEW-081	1/31/2017 15:31	1.0	55.6	0.2	43.2	188.9	188.5	NR	NR	-14.7	-13.9	-14.5
GEW-081	1/31/2017 15:32	0.8	58.5	0.1	40.6	188.3	188.3	NR	NR	-14.2	-14.3	-13.9
GEW-082R	1/12/2017 11:32	3.6	64.5	0.0	31.9	185.7	185.1	4	4	-6.9	-6.8	-7.2
GEW-082R	1/12/2017 11:39	3.5	63.6	0.0	32.9	186.4	185.7	2	3	-7.1	-7.1	-7.4
GEW-082R	1/31/2017 15:44	3.6	52.0	0.1	44.3	183.3	183.9	0	2	-4.8	-4.8	-5.0
GEW-082R	1/31/2017 15:46	3.7	53.8	0.0	42.5	181.5	180.9	8	10	-4.8	-4.8	-4.9
GEW-086	1/12/2017 11:42	0.3	10.5	21.4	67.8	32.1		4	11	-1.3	-1.3	-2.0
GEW-086	1/12/2017 11:44	0.1	4.1	22.3	73.5	31.9		5	4	-1.4	-1.4	-2.1
GEW-086	1/31/2017 10:07	4.3	33.0	10.6	52.1	54.2	54.2	1	3	-0.4	-0.5	-0.9
GEW-086	1/31/2017 10:09	3.8	27.8	12.4	56.0	54.7	54.7	4	0	-0.6	-0.5	-1.0
GEW-087	1/17/2017 15:26	5.4	36.2	3.4	55.0	184.6		NR	NR	-17.2	-17.6	-16.4
GEW-087	1/17/2017 15:28	2.6	45.9	0.7	50.8	184.6		NR	NR	-17.0	-16.7	-17.1
GEW-087	1/31/2017 9:10	2.5	54.4	0.4	42.7	193.6	125.6	NR	NR	-17.9	-17.6	-18.4
GEW-087	1/31/2017 9:11	2.2	54.5	0.4	42.9	195.0	110.2	NR	NR	-18.0	-18.2	-17.6
GEW-088	1/18/2017 9:29	1.2	51.2	0.0	47.6	60.2		4	12	5.5	5.5	5.7
GEW-088	1/18/2017 9:30	1.1	51.4	0.0	47.5	61.0		5	1	5.7	5.7	5.7
GEW-090	1/12/2017 11:27	12.2	49.4	0.0	38.4	129.0		26	26	-19.8	-19.8	-18.1
GEW-090	1/12/2017 11:35	12.3	48.7	0.0	39.0	141.2		66	62	-20.1	-19.1	-12.8
GEW-090	1/31/2017 10:00	16.8	46.1	0.1	37.0	158.1	159.7	13	16	-19.0	-18.7	-18.1
GEW-090	1/31/2017 10:02	16.0	48.7	0.0	35.3	160.1	160.7	20	26	-19.0	-18.9	-15.2
GEW-091	1/18/2017 9:43	5.4	35.6	0.3	58.7	191.9		10	6	-17.8	-16.5	-17.4
GEW-091	1/18/2017 9:44	4.4	57.5	0.0	38.1	192.1		9	4	-18.2	-17.9	-17.8
GEW-091	1/31/2017 9:44	5.0	58.9	0.0	36.1	164.3	163.3	12	9	-17.0	-16.4	-17.1
GEW-091	1/31/2017 9:45	5.7	60.1	0.0	34.2	165.2	165.2	17	13	-16.1	-16.8	-16.3
GEW-101	1/19/2017 10:35	8.1	42.6	8.4	40.9	69.2		50	31	-2.4	-1.0	-14.7
GEW-101	1/19/2017 10:37	7.9	42.4	8.5	41.2	69.0		33	43	-1.0	-1.4	-5.4
GEW-101	1/30/2017 11:35	11.1	48.1	5.8	35.0	70.7	70.7	46	54	-1.7	-2.2	-13.8
GEW-101	1/30/2017 11:37	11.6	49.7	5.1	33.6	71.4	71.6	75	25	-3.4	-1.0	-13.4
GEW-102	1/12/2017 10:24	2.3	54.4	0.1	43.2	139.3		NFD		-9.1	-9.6	-9.4
GEW-102	1/12/2017 10:32	2.4	55.0	0.0	42.6	141.8		NFD		-9.9	-9.9	-9.9
GEW-102	1/30/2017 11:30	6.6	43.4	4.7	45.3	52.3	52.3	NFD		-16.4	-16.0	-16.3
GEW-102	1/30/2017 11:31	6.9	45.1	4.7	43.3	52.9	52.9	NFD		-16.2	-16.2	-16.2
GEW-105	1/18/2017 8:22	11.1	49.2	3.2	36.5	156.7		18	9	-13.9	-13.5	-18.7
GEW-105	1/18/2017 8:23	9.2	52.0	2.7	36.1	157.0		6	6	-13.8	-14.1	-19.5
GEW-105	1/30/2017 14:42	8.9	43.8	5.2	42.1	175.8	175.8	5	19	-9.0	-8.6	-12.8
GEW-105	1/30/2017 14:44	8.8	47.8	5.0	38.4	177.5	177.5	19	10	-14.6	-14.9	-12.9
GEW-106	1/20/2017 8:57	17.6	46.2	2.5	33.7	83.2		19	9	-17.8	-15.2	-19.3
GEW-106	1/30/2017 14:48	7.9	45.8	4.0	42.3	83.8	84.0	16	13	-16.4	-15.0	-18.2
GEW-107	1/12/2017 8:30	26.2	47.6	1.5	24.7	33.4		26	12	-20.3	-20.2	-20.8

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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-107	1/12/2017 8:38	26.0	47.4	1.4	25.2	32.9		23	31	-19.8	-19.8	-19.8
GEW-107	1/30/2017 14:52	39.0	45.0	1.3	14.7	59.4	59.4	13	29	-18.3	-19.3	-18.4
GEW-108	1/18/2017 8:47	35.0	48.0	0.9	16.1	83.2		6	8	-19.2	-19.9	-19.1
GEW-108	1/30/2017 15:08	47.6	42.1	0.5	9.8	102.3	103.0	5	12	-18.1	-17.8	-17.7
GEW-109	1/6/2017 8:31	28.1	53.7	0.0	18.2	27.3		2	3	-14.6	-14.6	-18.2
GEW-109	1/11/2017 8:22	18.4	45.2	3.9	32.5	72.6		3	4	-14.4	-14.3	-19.4
GEW-109	1/11/2017 8:28	22.5	49.1	0.0	28.4	73.8		4	4	-14.3	-14.3	-19.6
GEW-109	1/17/2017 10:09	22.8	49.8	0.0	27.4	78.8		8	8	-11.7	-11.7	-20.2
GEW-109	1/26/2017 14:50	23.5	49.6	0.0	26.9	65.4	65.4	4	3	-12.1	-12.1	-19.0
GEW-110	1/6/2017 9:30	11.4	34.8	6.9	46.9	16.8		16	12	-0.3	-0.2	-19.1
GEW-110	1/6/2017 9:31	9.7	37.2	7.1	46.0	17.3		13	17	-0.2	-0.3	-18.2
GEW-110	1/11/2017 10:06	14.5	48.0	0.5	37.0	55.2		3	6	0.0	0.0	-20.3
GEW-110	1/11/2017 10:12	14.0	46.1	1.9	38.0	57.0		4	3	0.0	0.0	-19.8
GEW-110	1/17/2017 10:42	11.4	36.7	8.6	43.3	59.4		9	10	-0.1	-0.1	-19.8
GEW-110	1/17/2017 10:44	6.5	36.9	8.6	48.0	59.3		9	6	-0.1	-0.1	-19.8
GEW-110	1/27/2017 14:25	9.1	42.0	6.0	42.9	48.2	48.2	4	5	-0.1	-0.1	-18.9
GEW-110	1/27/2017 14:26	10.2	38.7	6.1	45.0	48.2	48.2	0	3	-0.1	-0.1	-18.9
GEW-113	1/17/2017 14:00	7.5	48.5	1.1	42.9	166.9		NFD		-3.4	-3.4	-18.1
GEW-113	1/17/2017 14:02	6.6	52.7	0.9	39.8	166.9		NFD		-3.3	-3.4	-18.3
GEW-113	1/30/2017 11:14	3.9	52.4	0.9	42.8	170.5	170.5	2	2	-0.5	-0.4	-18.4
GEW-113	1/30/2017 11:15	4.3	52.9	1.1	41.7	175.3	175.3	22	22	-9.1	-9.2	-17.2
GEW-116	1/12/2017 12:06	1.9	75.1	0.5	22.5	94.1	93.4	8	7	-14.3	-14.8	-14.7
GEW-116	1/12/2017 12:12	1.8	69.8	0.5	27.9	49.0	48.8	5	6	-15.8	-14.3	-16.4
GEW-116	1/30/2017 14:15	0.9	43.4	1.7	54.0	55.2	55.2	1	5	-14.2	-14.0	-14.2
GEW-117	1/12/2017 11:57	1.5	67.3	1.7	29.5	38.9	37.8	NFD		-14.8	-14.5	-15.3
GEW-117	1/12/2017 12:02	8.1	71.1	1.3	19.5	38.5	38.5	NFD		-14.8	-15.8	-15.4
GEW-117	1/30/2017 14:20	6.4	50.5	4.7	38.4	57.9	57.9	NFD		-14.3	-14.6	-14.3
GEW-118	1/12/2017 11:44	1.7	78.2	0.3	19.8	195.7	196.4	43	33	-11.1	-11.1	-12.3
GEW-118	1/12/2017 11:51	1.5	72.2	0.4	25.9	195.7	195.7	69	78	-3.9	-4.3	-10.8
GEW-118	1/30/2017 13:53	1.6	55.0	0.0	43.4	189.6	188.9	78	71	-4.6	-4.1	-11.9
GEW-118	1/30/2017 13:55	1.4	56.7	0.0	41.9	194.3	194.4	72	82	-4.1	-5.4	-9.8
GEW-120	1/25/2017 11:03	33.0	60.0	1.4	5.6	48.2		12	12	-11.1	-11.8	-11.2
GEW-121	1/11/2017 8:06	10.0	64.7	0.0	25.3	171.0	170.5	26	28	-12.5	-12.5	-12.8
GEW-121	1/11/2017 8:11	9.7	66.7	0.0	23.6	170.0	170.5	21	36	-12.7	-13.3	-12.8
GEW-121	1/25/2017 11:05	10.4	66.7	0.0	22.9	167.0		33	21	-15.2	-15.0	-16.1
GEW-121	1/25/2017 11:06	10.2	67.9	0.0	21.9	166.4		31	19	-15.1	-13.5	-16.1
GEW-122	1/11/2017 10:22	19.2	59.4	0.0	21.4	179.7	179.7	21	25	-12.1	-13.0	-13.1
GEW-122	1/11/2017 10:28	19.6	58.1	0.0	22.3	179.7	179.7	22	28	-12.2	-12.8	-13.1
GEW-122	1/26/2017 15:24	0.5	54.9	0.0	44.6	31.3		14	21	-15.4	-15.8	-15.1
GEW-123	1/11/2017 8:35	0.0	8.4	21.5	70.1	45.5	45.5	3	4	-13.8	-14.3	-14.2
GEW-123	1/11/2017 8:36	0.0	4.3	22.2	73.5	45.5	45.5	4	4	-14.5	-13.8	-14.7
GEW-123	1/26/2017 15:15	0.0	0.0	21.7	78.3	32.8		1	3	-14.9	-14.5	-15.5
GEW-123	1/26/2017 15:16	0.0	0.0	21.9	78.1	33.0		3	5	-14.5	-14.5	-15.1

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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-124	1/11/2017 9:02	34.4	54.0	2.9	8.7	47.0	47.0	6	7	-3.9	-3.8	-4.9
GEW-124	1/11/2017 9:07	32.0	46.5	4.0	17.5	46.5	46.4	4	4	-3.9	-3.9	-4.9
GEW-124	1/26/2017 15:20	19.8	56.8	0.3	23.1	33.0		7	8	-14.9	-14.9	-15.3
GEW-125	1/11/2017 11:33	2.3	69.1	0.0	28.6	182.1	182.1	19	9	-13.8	-13.9	-14.3
GEW-125	1/11/2017 11:38	2.3	68.7	0.0	29.0	182.7	182.7	16	18	-13.8	-13.2	-14.2
GEW-125	1/25/2017 11:15	2.7	70.1	0.0	27.2	177.2		9	16	-16.2	-16.6	-17.4
GEW-125	1/25/2017 11:16	2.7	70.6	0.0	26.7	177.7		13	22	-16.2	-16.2	-16.7
GEW-126	1/11/2017 13:36	23.7	59.0	0.2	17.1	134.7	133.2	36	38	-8.8	-8.8	-10.4
GEW-126	1/11/2017 13:44	24.7	57.1	0.0	18.2	130.6	130.3	14	12	-10.5	-10.5	-11.0
GEW-126	1/25/2017 11:19	20.2	62.2	0.5	17.1	51.9		7	4	-15.5	-15.5	-16.1
GEW-127	1/11/2017 14:24	2.8	53.8	6.2	37.2	178.6	178.0	20	22	-12.0	-12.5	-11.5
GEW-127	1/11/2017 14:28	3.1	53.6	6.4	36.9	178.6	178.6	33	25	-10.5	-11.3	-11.2
GEW-127	1/25/2017 11:22	4.3	59.7	4.5	31.5	176.2		26	32	-13.5	-15.0	-14.3
GEW-127	1/25/2017 11:23	3.9	61.8	4.4	29.9	176.9		31	33	-13.1	-15.4	-14.1
GEW-128	1/12/2017 8:10	7.3	71.4	0.0	21.3	172.2	172.1	22	24	-12.8	-13.1	-13.3
GEW-128	1/12/2017 8:16	6.9	75.0	0.0	18.1	172.3	172.2	22	22	-12.8	-13.1	-14.1
GEW-128	1/25/2017 11:26	6.9	77.2	0.0	15.9	170.7		19	23	-14.8	-14.7	-16.5
GEW-128	1/25/2017 11:27	7.0	77.7	0.0	15.3	170.7		17	21	-14.5	-14.9	-16.1
GEW-129	1/12/2017 8:26	1.1	68.7	4.3	25.9	35.3	35.3	9	8	-12.5	-13.1	-14.1
GEW-129	1/12/2017 8:32	1.2	84.8	1.0	13.0	34.8	34.8	6	5	-12.5	-11.9	-15.1
GEW-129	1/25/2017 11:30	1.3	84.4	0.0	14.3	47.5		16	14	-11.0	-10.8	-16.3
GEW-130	1/11/2017 13:52	0.3	67.4	0.0	32.3	195.0	195.0	33	26	8.1	7.9	7.2
GEW-130	1/11/2017 13:57	0.3	66.3	0.0	33.4	195.0		27	NR	8.1	NR	8.0
GEW-130	1/26/2017 15:47	4.9	44.3	6.2	44.6	158.3		25	26	-6.3	-6.6	-6.6
GEW-130	1/26/2017 15:48	4.6	45.9	6.3	43.2	157.5		27	25	-5.6	-5.6	-6.3
GEW-131	1/11/2017 10:55	0.6	74.8	0.0	24.6	64.4	64.7	NFD		6.7	6.7	5.7
GEW-131	1/11/2017 11:00	0.7	74.2	0.0	25.1	67.3	67.1	NFD		6.7	6.7	5.7
GEW-131	1/26/2017 15:43	26.5	46.6	0.6	26.3	178.7		NFD		-5.1	-5.1	-5.8
GEW-131	1/26/2017 15:44	25.7	47.3	0.4	26.6	180.3		NFD		-4.9	-4.7	-5.4
GEW-132	1/9/2017 14:44	5.1	63.9	0.0	31.0	174.6	174.2	4	4	0.0	0.0	-9.8
GEW-132	1/9/2017 14:51	5.2	63.5	0.0	31.3	174.0	173.9	3	4	0.0	0.0	-5.1
GEW-132	1/25/2017 11:10	4.7	54.2	4.6	36.5	171.2		10	9	-0.3	-0.3	-13.6
GEW-132	1/25/2017 11:11	4.4	54.2	4.6	36.8	171.4		9	8	-0.3	-0.3	-13.7
GEW-133	1/9/2017 14:07	0.2	9.6	18.1	72.1	44.6	44.6	3	5	-2.3	-2.3	-13.1
GEW-133	1/9/2017 14:13	0.3	14.1	15.6	70.0	44.3	44.3	4	4	-4.3	-4.2	-12.5
GEW-133	1/26/2017 15:37	0.2	4.0	21.6	74.2	32.9		3	3	0.0	0.0	-15.7
GEW-133	1/26/2017 15:38	0.1	2.8	21.9	75.2	32.4		5	2	0.0	0.0	-15.3
GEW-134	1/9/2017 13:43	18.9	59.5	0.0	21.6	148.7	148.4	3	2	0.0	0.0	-12.9
GEW-134	1/9/2017 13:49	19.2	58.9	0.0	21.9	148.4	149.1	2	2	0.0	0.0	-12.4
GEW-134	1/26/2017 15:29	14.4	48.4	1.4	35.8	138.3		6	6	-0.9	-0.9	-15.5
GEW-134	1/26/2017 15:30	14.5	49.5	1.4	34.6	139.0		9	10	-0.9	-0.9	-15.7
GEW-135	1/9/2017 13:29	0.1	6.9	18.4	74.6	46.3	46.7	10	14	-13.9	-12.2	-14.1
GEW-135	1/9/2017 13:35	0.0	4.8	19.4	75.8	47.9	47.8	20	15	-13.2	-13.4	-12.2

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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-135	1/25/2017 11:53	0.0	5.6	20.9	73.5	49.0		4	7	-16.2	-16.5	-16.7
GEW-135	1/25/2017 11:54	0.0	4.5	21.1	74.4	49.0		3	7	-16.2	-16.6	-16.4
GEW-136	1/9/2017 11:21	7.7	51.4	0.3	40.6	77.7	77.8	11	3	-0.4	-0.4	-7.7
GEW-136	1/9/2017 11:27	8.0	45.3	0.3	46.4	78.2	78.0	5	3	-0.5	-0.5	-7.5
GEW-136	1/25/2017 11:49	5.6	33.2	5.2	56.0	90.7		7	6	-0.8	-0.8	-12.7
GEW-136	1/30/2017 17:44	5.4	31.5	4.9	58.2	100.6	100.6	5	4	-0.7	-0.7	-10.8
GEW-137	1/9/2017 11:06	0.5	70.6	0.0	28.9	37.8	37.8	4	11	0.8	0.8	0.3
GEW-137	1/9/2017 11:12	0.5	69.8	0.0	29.7	37.5	37.5	5	15	0.8	0.9	0.7
GEW-137	1/25/2017 11:46	10.2	23.2	4.4	62.2	50.3		4	3	-0.1	-0.1	2.3
GEW-138	1/9/2017 14:22	0.0	5.2	20.4	74.4	44.0	44.1	3	3	-14.2	-14.9	-14.4
GEW-138	1/9/2017 14:23	0.0	2.2	20.8	77.0	44.1	44.3	1	3	-14.7	-14.6	-14.4
GEW-138	1/25/2017 11:39	0.0	5.4	21.2	73.4	47.9		9	6	-16.6	-16.6	-17.0
GEW-138	1/25/2017 11:39	0.0	4.1	21.4	74.5	47.6		7	9	-16.7	-16.9	-17.2
GEW-139	1/12/2017 9:30	3.1	53.9	6.0	37.0	139.6	139.6	19	20	-11.6	-11.5	-17.4
GEW-139	1/12/2017 9:36	3.2	50.1	6.2	40.5	139.9	139.7	21	22	-11.1	-11.1	-15.6
GEW-139	1/25/2017 11:34	3.2	57.9	4.0	34.9	149.7		18	19	-8.5	-8.4	-13.5
GEW-139	1/25/2017 11:34	3.2	55.6	4.0	37.2	149.0		19	23	-9.1	-8.8	-13.9
GEW-140	1/12/2017 10:06	6.2	43.2	8.3	42.3	100.7	100.6	14	11	-1.6	-1.6	-13.3
GEW-140	1/12/2017 10:12	6.1	42.1	8.2	43.6	101.3	101.1	14	13	-1.6	-1.6	-15.4
GEW-140	1/26/2017 15:56	5.3	35.5	10.0	49.2	94.2		11	10	-2.0	-1.8	-15.5
GEW-140	1/26/2017 15:57	5.3	34.8	10.1	49.8	94.2		12	13	-2.0	-2.1	-16.0
GEW-141	1/12/2017 9:15	0.2	68.0	1.8	30.0	35.0	35.0	9	11	-9.8	-9.8	-10.0
GEW-141	1/12/2017 9:20	0.1	69.4	1.4	29.1	34.9	35.0	5	15	-9.7	-9.7	-9.9
GEW-141	1/26/2017 16:02	2.3	54.4	4.6	38.7	30.3		14	NR	-3.6	NR	-5.8
GEW-142	1/12/2017 10:35	1.9	73.1	3.3	21.7	37.1	37.1	14	11	-6.1	-6.7	-8.4
GEW-142	1/12/2017 10:40	2.2	64.2	3.5	30.1	37.2	37.2	5	4	-6.9	-6.4	-7.7
GEW-143	1/12/2017 10:46	0.0	12.7	19.3	68.0	34.6	34.5	2	4	-13.5	-13.5	-14.7
GEW-143	1/12/2017 10:47	0.0	12.6	19.3	68.1	34.6	34.5	3	3	-13.7	-13.6	-14.6
GEW-143	1/26/2017 16:05	0.1	14.4	18.2	67.3	30.8		2	4	-10.0	-10.0	-13.6
GEW-143	1/26/2017 16:06	0.1	13.3	18.2	68.4	30.7		1	4	-10.5	-10.4	-15.0
GEW-144	1/12/2017 10:51	5.3	70.0	0.6	24.1	37.7	37.4	16	18	-9.1	-7.8	-10.4
GEW-144	1/12/2017 10:56	5.2	66.7	0.4	27.7	38.5	38.6	13	16	-8.1	-10.1	-8.1
GEW-144	1/26/2017 16:09	3.1	54.1	2.8	40.0	31.4		13	3	-7.1	-7.0	-7.6
GEW-145	1/12/2017 10:17	2.9	22.6	17.6	56.9	32.5		4	8	-10.1	-10.3	-9.7
GEW-145	1/12/2017 10:19	1.8	13.9	17.1	67.2	32.2		4	4	-9.7	-9.7	-9.4
GEW-145	1/26/2017 16:15	0.0	10.6	20.5	68.9	30.5		9	8	-15.9	-17.1	-16.3
GEW-145	1/26/2017 16:18	0.0	6.6	21.2	72.2	30.5		13	15	-11.6	-11.5	-16.3
GEW-146	1/9/2017 10:47	2.7	8.9	13.2	75.2	69.3	69.3	14	8	-0.2	-0.2	-18.6
GEW-146	1/9/2017 10:54	2.7	9.5	12.9	74.9	68.8	68.8	9	13	-0.2	-0.2	-18.4
GEW-146	1/26/2017 16:21	2.2	5.5	16.3	76.0	64.3		12	7	-0.3	-0.3	-19.5
GEW-146	1/26/2017 16:22	2.2	6.4	16.1	75.3	64.6		13	13	-0.3	-0.3	-19.0
GEW-147	1/9/2017 11:38	12.6	59.5	0.2	27.7	178.0	178.0	19	15	-14.9	-14.9	-17.8
GEW-147	1/9/2017 11:45	12.9	58.8	0.2	28.1	178.1	178.0	24	22	-14.2	-14.5	-17.5

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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-147	1/26/2017 16:26	13.5	51.0	0.3	35.2	176.5		23	23	-14.9	-14.9	-18.9
GEW-147	1/26/2017 16:28	13.5	50.4	0.2	35.9	176.7		24	22	-15.1	-14.9	-19.2
GEW-148	1/9/2017 10:14	0.1	14.0	20.8	65.1	36.4	36.4	23	21	-16.6	-15.8	-17.7
GEW-148	1/9/2017 10:19	0.0	3.8	22.7	73.5	36.8	36.8	28	21	-15.4	-16.2	-16.0
GEW-149	1/9/2017 9:39	18.4	53.8	0.9	26.9	152.1	152.1	27	24	-0.7	-0.8	-20.1
GEW-149	1/9/2017 9:45	17.9	53.7	0.7	27.7	152.5	152.5	23	21	-0.6	-0.6	-19.7
GEW-149	1/27/2017 12:05	15.5	46.9	1.7	35.9	147.0	147.0	29	29	-0.6	-0.6	-19.8
GEW-149	1/27/2017 12:06	16.1	46.7	1.7	35.5	147.0	147.0	31	24	-0.7	-0.9	-20.1
GEW-150	1/11/2017 16:08	6.1	51.5	2.7	39.7	155.4		5	10	-0.6	-0.7	-18.6
GEW-150	1/11/2017 16:15	6.2	50.9	2.8	40.1	155.6		8	9	-0.5	-0.5	-18.9
GEW-150	1/27/2017 12:11	4.5	45.2	6.2	44.1	155.7	155.6	4	6	-0.7	-0.7	-19.3
GEW-150	1/27/2017 12:12	4.1	45.8	6.3	43.8	155.6	155.6	1	4	-0.7	-0.7	-18.7
GEW-151	1/9/2017 9:57	1.2	57.5	0.0	41.3	35.3	35.3	9	5	2.5	2.5	2.1
GEW-151	1/9/2017 10:03	1.2	56.6	0.0	42.2	35.5	35.5	6	7	2.5	2.5	2.0
GEW-151	1/27/2017 12:02	1.1	48.9	0.0	50.0	33.0	33.1	4	6	2.2	2.3	2.3
GEW-152	1/11/2017 14:42	0.1	4.8	20.1	75.0	77.5		8	8	-13.1	-13.1	-18.4
GEW-152	1/11/2017 14:44	0.0	1.2	20.3	78.5	77.7		4	4	-11.1	-11.1	-18.8
GEW-152	1/31/2017 14:00	0.0	0.0	20.6	79.4	56.3	56.3	3	0	-13.7	-13.6	-18.2
GEW-152	1/31/2017 14:02	0.0	0.0	20.7	79.3	56.2	56.3	4	3	-17.6	-18.6	-17.6
GEW-153	1/11/2017 14:17	33.7	42.7	2.2	21.4	124.0		24	18	-15.8	-16.2	-18.5
GEW-153	1/11/2017 14:23	36.6	45.6	0.0	17.8	123.4		18	21	-15.8	-16.4	-17.6
GEW-153	1/27/2017 12:27	7.6	42.7	4.8	44.9	31.8	31.8	7	8	-20.2	-19.3	-20.1
GEW-154	1/9/2017 9:10	1.5	12.1	20.5	65.9	33.0	33.0	29	26	-17.5	-17.6	-17.2
GEW-154	1/9/2017 9:16	1.1	5.8	21.9	71.2	32.9	32.9	31	34	-18.2	-16.9	-18.1
GEW-154	1/31/2017 9:53	0.1	4.4	21.0	74.5	51.8	50.6	4	2	-15.7	-16.4	-16.2
GEW-154	1/31/2017 9:55	0.1	0.7	21.2	78.0	50.4	50.4	4	4	-15.6	-16.0	-16.6
GEW-155	1/9/2017 14:30	6.3	59.8	0.2	33.7	45.0	44.8	18	17	-14.2	-13.6	-13.4
GEW-155	1/9/2017 14:36	5.7	61.3	0.0	33.0	44.8	44.8	16	13	-13.6	-13.9	-13.2
GEW-155	1/27/2017 14:42	0.1	0.0	22.0	77.9	35.3	35.3	5	5	-14.8	-14.4	-14.4
GEW-156	1/12/2017 10:09	10.6	29.9	11.3	48.2	74.8		4	7	-0.4	-0.5	-19.1
GEW-156	1/12/2017 10:11	10.6	29.4	11.3	48.7	75.5		8	8	-0.4	-0.5	-18.4
GEW-156	1/27/2017 14:57	14.5	30.0	7.9	47.6	64.2	67.7	8	11	-1.3	-1.4	-17.8
GEW-156	1/27/2017 14:58	14.3	30.5	7.9	47.3	76.4	76.7	14	14	-1.3	-1.4	-17.8
GEW-157	1/12/2017 9:41	0.1	5.7	22.7	71.5	31.3		12	14	-13.7	-13.7	-13.4
GEW-157	1/12/2017 9:42	0.0	1.7	23.3	75.0	31.3		3	6	-12.7	-12.7	-12.7
GEW-157	1/27/2017 15:02	0.2	21.2	11.5	67.1	37.5	37.4	7	9	-12.7	-12.4	-12.1
GEW-157	1/27/2017 15:03	0.1	20.4	16.8	62.7	38.3	38.3	6	13	-12.7	-12.0	-12.1
GEW-158	1/11/2017 14:50	0.1	1.8	20.0	78.1	76.5		6	6	-16.9	-16.9	-18.6
GEW-158	1/11/2017 14:51	0.0	0.8	20.2	79.0	76.2		8	7	-17.2	-17.1	-18.9
GEW-158	1/31/2017 14:17	0.1	12.6	18.6	68.7	54.4	54.4	3	3	-17.8	-17.9	-18.8
GEW-158	1/31/2017 14:19	0.0	1.9	20.2	77.9	53.9	53.9	2	5	-17.1	-17.0	-19.2
GEW-159	1/11/2017 14:09	0.1	2.2	19.9	77.8	74.9		9	11	25.8	25.8	-8.3
GEW-159	1/11/2017 14:10	0.1	0.8	20.5	78.6	73.8		13	13	-7.7	-7.7	-7.9

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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-159	1/27/2017 15:08	2.1	14.7	18.6	64.6	39.9	39.8	7	7	-9.6	-9.6	-9.2
GEW-159	1/27/2017 15:08	2.5	13.0	19.0	65.5	40.7	40.8	7	8	-9.3	-9.3	-8.8
GEW-160	1/9/2017 8:38	5.9	64.3	0.1	29.7	38.9	38.6	12	12	-8.2	-8.1	-8.2
GEW-160	1/9/2017 8:46	5.6	65.8	0.0	28.6	38.5	38.4	15	23	-8.2	-8.1	-8.6
GEW-160	1/27/2017 15:12	15.6	52.7	0.2	31.5	40.0	40.2	9	15	-9.4	-9.3	-8.8
GEW-160	1/27/2017 15:13	15.9	53.8	0.2	30.1	40.6	40.7	0	7	-9.4	-9.3	-9.2
GEW-161	1/9/2017 8:49	3.0	67.0	0.0	30.0	33.4	33.3	8	8	-8.1	-7.8	-8.8
GEW-161	1/9/2017 8:54	3.0	64.6	0.0	32.4	33.3	33.3	11	9	-7.8	-7.8	-8.7
GEW-161	1/27/2017 15:17	0.2	29.2	12.9	57.7	39.5	39.5	3	7	-9.3	-9.3	-9.1
GEW-161	1/27/2017 15:18	0.3	28.9	12.9	57.9	39.5	39.5	5	5	-9.3	-9.3	-9.2
GEW-162	1/9/2017 9:32	0.3	4.4	22.6	72.7	32.7	32.8	2	3	-18.9	-18.2	-19.1
GEW-162	1/9/2017 9:34	0.0	3.5	22.8	73.7	33.0	33.0	2	17	-18.2	-18.3	-18.6
GEW-162	1/27/2017 15:22	0.0	5.5	21.5	73.0	44.0	44.0	4	14	-18.4	-18.4	-18.1
GEW-162	1/27/2017 15:23	0.0	4.2	21.6	74.2	44.6	44.7	7	11	-18.7	-18.4	-18.4
GEW-163	1/5/2017 16:29	4.4	22.3	15.0	58.3	187.3	187.6	50	35	-1.4	-1.4	-10.4
GEW-163	1/5/2017 16:31	1.2	22.6	14.9	61.3	187.1	187.0	42	47	-0.9	-0.9	-10.4
GEW-163	1/11/2017 8:19	0.8	20.1	16.8	62.3	172.1	172.1	46	48	-0.6	-0.6	-10.3
GEW-163	1/11/2017 8:24	0.7	17.8	17.2	64.3	171.6	172.6	41	46	-0.7	-0.7	-5.0
GEW-163	1/20/2017 8:07	3.8	32.3	14.8	49.1	161.8		49	47	-1.1	-1.0	-10.7
GEW-163	1/20/2017 8:08	1.0	20.1	16.3	62.6	161.3		42	50	-1.1	-1.1	-10.5
GEW-163	1/27/2017 15:40	1.7	13.5	18.7	66.1	125.9	126.6	92	81	-4.3	-4.1	-6.4
GEW-163	1/27/2017 15:41	1.7	13.4	18.6	66.3	126.2	126.7	80	78	-4.0	-4.0	-6.4
GEW-164	1/6/2017 13:48	7.4	25.5	11.3	55.8	148.5		53	58	-1.5	-1.5	-14.3
GEW-164	1/6/2017 13:50	6.8	30.0	10.6	52.6	149.7		48	60	-1.1	-1.2	-15.2
GEW-164	1/11/2017 8:47	5.4	27.4	13.8	53.4	140.2	139.6	55	54	-1.4	-1.4	-13.6
GEW-164	1/11/2017 8:53	5.3	27.1	13.7	53.9	139.4	139.6	50	57	-1.5	-1.6	-15.1
GEW-164	1/20/2017 8:11	9.8	43.0	5.8	41.4	171.2		35	37	-0.4	-0.4	-16.2
GEW-164	1/20/2017 8:12	9.5	48.3	5.7	36.5	171.2		32	33	-0.4	-0.4	-16.6
GEW-164	1/27/2017 15:44	11.4	41.8	8.0	38.8	152.5	152.5	51	45	-1.1	-1.1	-16.3
GEW-164	1/27/2017 15:45	11.4	42.5	7.9	38.2	152.9	152.5	47	47	-1.1	-1.1	-15.4
GEW-165	1/7/2017 16:37	3.6	60.7	0.0	35.7	193.1		22	29	-13.5	-13.5	-13.3
GEW-165	1/7/2017 16:38	3.0	62.1	0.0	34.9	193.1		17	17	-14.2	-14.2	-14.1
GEW-165	1/11/2017 9:53	3.3	76.4	0.0	20.3	194.4	194.3	12	19	-14.5	-15.2	-14.9
GEW-165	1/11/2017 9:58	3.5	71.9	0.0	24.6	194.3	194.3	16	21	-13.9	-13.9	-14.3
GEW-165	1/20/2017 8:16	9.6	56.8	0.1	33.5	193.4		45	55	-13.7	-13.5	-15.0
GEW-165	1/20/2017 8:18	7.7	61.6	0.0	30.7	193.7		45	50	-14.5	-14.5	-14.8
GEW-165	1/27/2017 15:49	6.8	60.5	0.0	32.7	193.0	192.9	29	18	-14.9	-14.7	-14.5
GEW-165	1/27/2017 15:49	6.6	61.1	0.0	32.3	193.0	192.9	34	19	-14.7	-14.4	-14.8
GEW-166	1/7/2017 16:42	10.3	41.9	6.6	41.2	175.7		30	36	-9.1	-9.3	-16.0
GEW-166	1/7/2017 16:42	11.0	40.2	6.7	42.1	175.7		30	29	-8.8	-8.8	-15.1
GEW-166	1/11/2017 10:07	5.7	40.8	8.2	45.3	176.4	176.4	27	34	-9.1	-9.1	-16.2
GEW-166	1/11/2017 10:13	5.9	36.9	8.3	48.9	176.4	176.4	41	26	-8.8	-8.7	-16.6
GEW-166	1/20/2017 8:22	4.2	39.2	7.6	49.0	179.3		52	48	-12.8	-12.8	-16.9

January 2017 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-166	1/20/2017 8:23	4.4	36.8	7.8	51.0	179.3		48	47	-12.4	-12.4	-15.7
GEW-166	1/27/2017 15:53	7.4	39.7	7.3	45.6	173.1	173.1	36	42	-13.4	-13.4	-15.4
GEW-166	1/27/2017 15:54	7.8	38.3	7.4	46.5	173.1	173.1	43	39	-13.4	-13.4	-15.1
GEW-167	1/7/2017 16:45	4.9	43.3	4.9	46.9	176.2		9	7	-0.2	-0.2	-11.6
GEW-167	1/7/2017 16:46	4.3	43.7	4.8	47.2	176.7		9	8	-0.2	-0.2	-11.5
GEW-167	1/11/2017 10:38	3.9	48.0	5.1	43.0	176.4	176.4	11	10	-0.2	-0.2	-10.4
GEW-167	1/11/2017 10:45	3.7	46.8	5.1	44.4	176.4	176.4	13	12	-0.2	-0.1	-10.7
GEW-167	1/20/2017 8:28	3.9	40.6	5.8	49.7	172.2		28	23	-0.5	-0.5	-16.1
GEW-167	1/20/2017 8:29	3.9	41.1	5.8	49.2	172.2		30	25	-0.6	-0.5	-16.4
GEW-167	1/27/2017 15:57	3.1	41.6	5.5	49.8	175.8	175.9	35	20	-0.7	-0.4	-13.5
GEW-167	1/27/2017 15:58	2.9	42.4	5.4	49.3	175.9	176.4	39	22	-0.8	-0.5	-13.8
GEW-168	1/7/2017 16:51	5.0	57.4	0.5	37.1	179.3		139	146	-8.1	-7.9	-13.7
GEW-168	1/7/2017 16:52	5.0	57.8	0.5	36.7	178.7		147	151	-8.2	-8.2	-14.9
GEW-168	1/11/2017 11:45	4.5	70.8	0.4	24.3	179.2	179.2	155	144	-6.5	-6.4	-14.1
GEW-168	1/11/2017 11:50	4.5	71.3	0.4	23.8	179.2	179.2	139	161	-6.2	-6.2	-12.7
GEW-168	1/20/2017 8:34	5.7	52.5	0.5	41.3	179.8		155	156	-7.7	-7.7	-15.4
GEW-168	1/20/2017 8:36	5.0	57.6	0.4	37.0	179.8		155	158	-8.0	-8.0	-15.1
GEW-168	1/27/2017 16:02	5.2	57.2	0.0	37.6	176.4	176.4	158	157	-7.2	-7.3	-14.7
GEW-168	1/27/2017 16:03	5.3	58.1	0.0	36.6	176.4	176.4	156	161	-7.3	-7.3	-14.4
GEW-169	1/7/2017 16:55	4.2	53.0	4.6	38.2	191.4		48	52	-4.1	-4.1	-14.7
GEW-169	1/7/2017 16:57	3.9	52.0	4.7	39.4	191.3		55	47	-4.1	-4.1	-14.9
GEW-169	1/11/2017 13:11	3.8	62.4	4.0	29.8	193.6	193.6	22	30	-3.5	-3.4	-12.6
GEW-169	1/11/2017 13:17	3.8	60.1	4.0	32.1	193.6	193.6	17	24	-3.5	-3.4	-13.3
GEW-169	1/20/2017 8:40	3.7	51.0	4.7	40.6	189.6		53	58	-4.8	-4.8	-17.5
GEW-169	1/20/2017 8:41	3.7	50.5	4.8	41.0	189.6		56	50	-4.6	-4.6	-16.4
GEW-169	1/27/2017 16:07	2.6	36.5	11.3	49.6	168.5	168.5	58	44	-11.2	-11.0	-16.1
GEW-169	1/27/2017 16:08	2.7	35.6	11.5	50.2	168.5	168.5	48	55	-11.0	-11.0	-14.9
GEW-170	1/11/2017 14:34	4.9	58.0	5.2	31.9	175.8	175.9	54	50	-3.0	-3.0	-0.9
GEW-170	1/11/2017 14:40	5.1	56.2	5.1	33.6	176.4	176.4	46	46	-3.0	-3.1	-0.8
GEW-170	1/27/2017 16:12	4.4	44.8	7.8	43.0	171.8	171.6	55	52	-4.6	-4.6	-10.4
GEW-170	1/27/2017 16:13	4.4	45.5	7.8	42.3	171.0	171.0	42	47	-4.6	-4.6	-10.1
GEW-172	1/12/2017 10:20	1.0	71.0	0.1	27.9	195.6	195.3	2	34	-1.7	-1.3	-2.0
GEW-172	1/12/2017 10:26	0.6	69.6	0.0	29.8	195.0	195.0	31	36	-1.2	-1.0	-2.0
GEW-172	1/27/2017 16:21	4.2	55.0	0.0	40.8	183.9	183.9	33	33	-1.9	-1.8	0.2
GEW-172	1/27/2017 16:22	4.2	54.9	0.0	40.9	183.9	183.9	38	35	-2.0	-2.1	-2.0
GEW-173	1/12/2017 9:58	4.4	20.6	15.8	59.2	101.1	101.1	5	30	-0.6	-0.6	-15.1
GEW-173	1/12/2017 10:03	4.4	17.0	15.9	62.7	101.5	101.1	37	7	-0.6	-0.6	-15.9
GEW-173	1/27/2017 16:27	6.7	32.4	9.0	51.9	86.5	86.3	22	41	-0.6	-0.6	-16.5
GEW-173	1/27/2017 16:27	7.0	31.2	9.1	52.7	86.3	86.3	28	48	-0.6	-0.7	-16.7
GEW-174	1/12/2017 10:42	5.3	43.7	4.5	46.5	178.2		27	27	-0.5	-0.5	-13.8
GEW-174	1/12/2017 10:50	5.4	42.5	4.5	47.6	178.7		22	32	-0.4	-0.4	-12.7
GEW-174	1/27/2017 16:31	6.3	44.3	2.2	47.2	178.7	178.6	34	42	-1.3	-1.4	-13.4
GEW-174	1/27/2017 16:32	5.9	44.6	2.1	47.4	178.7	179.2	29	38	-1.3	-1.3	-13.8

January 2017 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-175	1/11/2017 15:56	19.3	49.9	2.4	28.4	129.9		58	76	-1.3	-1.3	-20.4
GEW-175	1/11/2017 16:03	18.9	47.9	2.6	30.6	129.6		67	67	-1.3	-1.3	-19.2
GEW-175	1/27/2017 16:37	16.6	46.4	3.7	33.3	137.1	137.1	53	43	-1.5	-1.5	-18.7
GEW-175	1/27/2017 16:38	17.2	47.2	3.8	31.8	137.1	136.8	66	58	-1.2	-1.2	-18.8
GEW-176	1/11/2017 14:58	24.5	47.6	1.3	26.6	117.8		46	46	-1.3	-1.1	-19.0
GEW-176	1/11/2017 15:06	24.3	48.7	1.3	25.7	117.2		45	36	-1.0	-1.2	-18.7
GEW-176	1/27/2017 16:41	20.6	49.8	2.1	27.5	104.8	104.8	42	64	-1.0	-1.3	-18.9
GEW-177	1/12/2017 8:42	0.1	64.7	3.6	31.6	35.3	35.3	19	12	-14.5	-14.2	-14.5
GEW-177	1/12/2017 8:47	0.1	60.9	4.8	34.2	35.3	35.3	32	24	-14.8	-14.8	-15.1
GEW-177	1/27/2017 16:16	0.2	37.5	11.3	51.0	45.8	45.8	28	6	-14.5	-15.6	-13.5
GEW-177	1/27/2017 16:18	0.2	41.5	9.3	49.0	45.9	45.9	38	16	-15.5	-15.1	-15.1
GEW-1A	1/5/2017 12:12	1.4	13.6	20.0	65.0	27.5	27.4	5	4	-7.2	-7.2	-12.0
GEW-1A	1/5/2017 12:14	0.2	1.6	21.3	76.9	25.6	25.5	3	4	-7.8	-7.8	-12.5
GEW-1A	1/9/2017 14:48	0.7	9.4	19.8	70.1	44.1		7	7	-11.2	-11.2	-14.6
GEW-1A	1/9/2017 14:49	0.5	2.9	20.6	76.0	43.9		5	5	-11.5	-11.5	-14.4
GEW-1A	1/16/2017 15:01	2.0	16.6	18.9	62.5	54.9		5	3	-9.4	-9.4	-14.0
GEW-1A	1/16/2017 15:01	0.9	7.8	20.1	71.2	54.9		0	6	-10.2	-9.6	-13.7
GEW-1A	1/24/2017 15:19	0.7	7.1	19.9	72.3	55.5		5	5	-7.7	-7.3	-13.8
GEW-1A	1/24/2017 15:20	0.7	3.3	20.2	75.8	55.5		5	5	-7.7	-7.6	-13.9
GEW-2S	1/5/2017 12:28	60.8	36.0	0.0	3.2	26.4	26.4	3	7	-2.9	-2.9	-12.3
GEW-2S	1/9/2017 15:00	59.6	37.0	0.1	3.3	43.8		11	15	-6.1	-6.1	-14.3
GEW-2S	1/9/2017 15:10	58.0	38.1	0.2	3.7	44.1		7	3	2.4	2.2	-14.3
GEW-2S	1/16/2017 15:11	58.8	37.7	0.0	3.5	55.2		5	5	2.8	2.8	-13.7
GEW-2S	1/16/2017 15:14	57.8	39.2	0.0	3.0	55.1		3	4	-3.5	-3.5	-13.7
GEW-2S	1/24/2017 15:26	62.0	33.6	0.0	4.4	53.4		1	3	-9.7	-9.8	-13.8
GIW-01	1/7/2017 16:12	4.3	61.2	1.5	33.0	179.3		13	13	-4.9	-4.9	-19.3
GIW-01	1/7/2017 16:29	4.3	62.9	1.3	31.5	178.3		14	15	-4.9	-5.0	-19.4
GIW-01	1/11/2017 10:47	4.9	56.7	1.6	36.8	174.3		5	2	-3.7	-3.7	-19.5
GIW-01	1/11/2017 10:54	5.0	64.2	0.1	30.7	174.2		8	6	-3.9	-3.8	-19.2
GIW-01	1/17/2017 10:48	9.7	45.6	6.3	38.4	126.6		13	6	-17.1	-17.1	-19.6
GIW-01	1/17/2017 10:50	9.4	46.4	6.1	38.1	127.8		13	7	-17.2	-17.2	-19.8
GIW-01	1/27/2017 10:44	8.6	55.5	0.5	35.4	173.6	173.7	4	6	-4.2	-4.1	-19.9
GIW-01	1/27/2017 10:47	5.3	64.6	0.3	29.8	172.1	172.1	13	13	-4.3	-4.3	-20.0
GIW-02	1/6/2017 9:41	10.0	53.7	6.9	29.4	16.9		2	3	-0.2	-0.2	-18.4
GIW-02	1/6/2017 9:43	10.1	54.1	7.0	28.8	17.1		3	3	-0.2	-0.2	-18.2
GIW-02	1/11/2017 11:00	13.3	61.8	0.0	24.9	53.4		1	4	0.0	0.0	-18.5
GIW-02	1/11/2017 11:18	13.4	60.4	0.0	26.2	55.2		5	3	-0.1	-0.1	-19.0
GIW-02	1/17/2017 10:53	6.3	38.6	11.2	43.9	50.5		10	9	-0.3	-0.3	-19.6
GIW-02	1/17/2017 10:55	6.4	37.8	11.2	44.6	50.3		9	9	-0.2	-0.2	-19.5
GIW-02	1/27/2017 10:51	11.1	41.6	6.6	40.7	33.4	33.4	5	1	-0.3	-0.3	-19.1
GIW-02	1/27/2017 10:53	11.2	40.0	6.7	42.1	33.1	33.1	5	3	-0.3	-0.2	-19.2
GIW-03	1/7/2017 16:26	2.0	55.0	4.5	38.5	34.9		5	5	-2.2	-2.2	-9.3
GIW-03	1/11/2017 11:22	1.2	63.5	0.0	35.3	55.9		5	2	3.1	3.1	-9.4

January 2017 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-03	1/11/2017 11:30	1.2	63.6	0.0	35.2	57.7		7	7	0.2	0.2	-9.0
GIW-03	1/17/2017 10:58	2.9	51.4	2.9	42.8	50.5		8	8	-1.2	-1.2	-10.6
GIW-03	1/27/2017 10:56	2.8	57.9	2.0	37.3	32.5	32.5	5	2	-0.7	-0.7	-10.2
GIW-04	1/6/2017 11:12	1.2	64.4	2.0	32.4	23.0		5	4	-3.7	-3.7	-8.1
GIW-04	1/11/2017 11:34	1.3	55.1	0.5	43.1	60.2		4	1	-0.1	-0.1	-9.1
GIW-04	1/11/2017 11:44	1.4	53.2	0.1	45.3	61.8		3	3	-0.7	-0.7	-9.1
GIW-04	1/17/2017 11:01	0.9	51.3	1.9	45.9	50.2		9	9	-3.5	-3.5	-10.3
GIW-04	1/27/2017 11:00	1.1	51.5	1.9	45.5	31.5	31.5	5	5	-4.4	-4.4	-9.9
GIW-05	1/6/2017 8:59	0.1	13.9	21.1	64.9	9.5		0	0	0.1	0.1	-7.1
GIW-05	1/6/2017 9:01	0.1	8.3	22.2	69.4	10.1		0	0	0.0	0.0	-7.1
GIW-05	1/11/2017 9:28	0.3	11.8	20.9	67.0	44.8		0	0	-0.2	-0.2	-9.0
GIW-05	1/11/2017 9:36	0.0	1.4	22.4	76.2	44.5		5	5	-0.3	-0.3	-9.0
GIW-05	1/17/2017 10:29	0.2	7.2	21.7	70.9	48.4		0	0	-0.7	-0.7	-10.0
GIW-05	1/17/2017 10:30	0.1	2.8	22.3	74.8	48.3		0	0	-0.8	-0.7	-9.6
GIW-05	1/27/2017 14:04	0.0	13.5	19.3	67.2	31.8	31.8	0	0	-0.6	-0.5	-9.4
GIW-05	1/27/2017 14:05	0.0	3.9	20.9	75.2	31.6	31.6	0	0	-0.7	-0.5	-9.3
GIW-06	1/6/2017 8:37	2.3	38.9	2.0	56.8	7.9		4	4	-7.6	-7.6	-9.3
GIW-06	1/11/2017 8:34	3.9	41.4	0.4	54.3	43.0		5	5	-8.0	-7.9	-10.3
GIW-06	1/11/2017 8:41	3.6	38.2	0.5	57.7	43.1		2	2	-10.2	-10.2	-10.2
GIW-06	1/17/2017 10:12	28.9	47.1	0.1	23.9	49.4		9	8	-10.3	-10.4	-10.6
GIW-06	1/26/2017 14:54	28.1	47.8	0.1	24.0	36.4	36.4	0	5	-9.9	-9.8	-10.3
GIW-07	1/6/2017 8:41	37.6	57.3	0.5	4.6	8.5		5	3	-1.4	-1.4	-9.3
GIW-07	1/11/2017 8:45	37.0	47.2	0.9	14.9	44.4		4	4	-1.6	-1.6	-10.0
GIW-07	1/11/2017 8:51	38.2	46.5	0.9	14.4	44.9		3	5	-1.8	-1.8	-9.6
GIW-07	1/17/2017 10:15	33.6	48.7	1.1	16.6	49.6		8	8	-2.1	-2.1	-10.3
GIW-07	1/26/2017 14:59	31.2	46.4	2.5	19.9	35.0	35.0	8	6	-3.1	-3.1	-10.7
GIW-08	1/6/2017 8:44	38.8	51.5	0.0	9.7	11.5		4	4	-4.1	-4.1	-9.3
GIW-08	1/11/2017 8:55	29.2	40.6	3.3	26.9	46.0		4	2	-4.0	-4.0	-10.2
GIW-08	1/11/2017 9:02	35.0	44.5	0.0	20.5	46.2		2	3	-4.0	-3.9	-9.3
GIW-08	1/17/2017 10:18	41.1	48.5	0.0	10.4	51.5		8	9	-4.2	-4.2	-10.2
GIW-08	1/26/2017 15:05	41.1	50.9	0.0	8.0	36.4	36.3	6	4	-4.3	-4.3	-10.3
GIW-09	1/6/2017 8:51	28.2	42.2	3.0	26.6	13.4		1	4	-0.2	-0.2	-9.3
GIW-09	1/11/2017 9:16	21.5	30.0	5.4	43.1	46.9		3	2	-0.1	-0.1	-10.0
GIW-09	1/11/2017 9:22	24.4	34.6	3.9	37.1	46.1		3	4	-0.1	-0.1	-10.7
GIW-09	1/17/2017 10:24	24.9	39.8	3.4	31.9	48.9		8	9	-0.1	-0.1	-10.3
GIW-09	1/26/2017 15:11	12.4	30.0	7.1	50.5	35.0	35.1	6	5	-0.2	-0.2	-10.4
GIW-09	1/26/2017 15:13	13.1	26.3	7.2	53.4	35.3	35.3	5	5	-0.2	-0.2	-10.4
GIW-10	1/6/2017 8:54	13.1	61.9	0.0	25.0	13.4		2	3	-1.9	-1.9	-9.1
GIW-10	1/11/2017 9:40	7.4	47.6	1.5	43.5	45.7		4	4	-0.8	-0.8	-11.7
GIW-10	1/11/2017 9:46	8.0	50.8	0.1	41.1	45.8		3	3	-0.7	-0.7	-10.7
GIW-10	1/17/2017 10:34	8.9	49.3	0.1	41.7	48.9		7	8	-1.7	-1.7	-10.2
GIW-10	1/27/2017 14:10	11.2	51.4	0.0	37.4	33.8	33.8	5	5	-1.7	-1.7	-9.8
GIW-11	1/7/2017 16:23	2.2	63.3	0.0	34.5	31.3		3	1	-0.7	-0.7	-19.4

January 2017 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-11	1/11/2017 13:33	1.8	61.6	0.0	36.6	73.2		6	8	0.2	0.2	-18.1
GIW-11	1/11/2017 13:46	2.1	60.2	0.0	37.7	73.1		9	9	-0.8	-0.8	-18.6
GIW-11	1/17/2017 11:18	6.7	59.3	0.1	33.9	50.6		9	9	-1.6	-1.6	-20.2
GIW-11	1/27/2017 14:13	9.5	52.4	0.2	37.9	35.0	35.1	3	3	-1.7	-1.6	-18.9
GIW-12	1/7/2017 16:20	2.1	54.7	0.8	42.4	33.3		2	0	-0.1	-0.1	-17.3
GIW-12	1/11/2017 13:19	3.4	59.0	0.6	37.0	73.4		5	7	0.1	0.1	-15.7
GIW-12	1/11/2017 13:28	3.6	59.4	0.0	37.0	74.1		6	7	0.0	0.0	-16.7
GIW-12	1/17/2017 11:10	10.3	49.0	6.3	34.4	49.9		9	9	-0.3	-0.3	-17.4
GIW-12	1/17/2017 11:12	10.9	41.8	6.6	40.7	49.9		9	9	-0.3	-0.2	-18.0
GIW-12	1/27/2017 14:17	10.0	38.9	7.0	44.1	35.3	35.3	18	20	-0.5	-0.6	-17.2
GIW-12	1/27/2017 14:18	10.2	38.0	7.0	44.8	35.9	35.9	12	14	-0.4	-0.4	-16.1
GIW-13	1/7/2017 16:17	13.8	61.7	0.0	24.5	37.2		NFD		-1.8	-1.8	-13.6
GIW-13	1/11/2017 13:09	11.8	57.2	0.0	31.0	71.4		6	5	-1.1	-1.1	-14.0
GIW-13	1/11/2017 13:15	11.6	62.1	0.0	26.3	71.4		6	7	-1.1	-1.1	-13.3
GIW-13	1/17/2017 11:08	14.0	61.1	0.0	24.9	49.6		7	8	-1.7	-1.7	-14.8
GIW-13	1/27/2017 14:22	13.2	65.3	0.0	21.5	36.0	36.0	4	3	-1.7	-1.7	-15.1
LCS-1D	1/20/2017 8:50	50.1	45.0	0.0	4.9	98.7		6	15	-17.8	-17.9	-19.7
LCS-1D	1/31/2017 15:54	53.9	46.1	0.0	0.0	64.9	64.7	3	0	-18.1	-18.1	-18.9
LCS-5A	1/5/2017 10:17	51.9	27.1	0.6	20.4	85.9	84.4	NFD		-12.2	-12.2	-12.0
LCS-5A	1/9/2017 9:32	56.7	39.0	0.0	4.3	80.4		NFD		-15.5	-15.7	-15.1
LCS-5A	1/16/2017 13:37	53.6	38.2	0.0	8.2	75.5		NFD		-13.5	-13.5	-13.7
LCS-5A	1/24/2017 14:29	57.0	38.7	0.0	4.3	80.7		NFD		-13.8	-13.8	-13.4
LCS-6B	1/5/2017 14:34	54.2	39.5	0.1	6.2	30.2	30.2	0	0	-0.4	-0.4	-12.1
LCS-6B	1/9/2017 16:04	52.6	38.9	0.0	8.5	51.2		0	0	-0.4	-0.3	-14.7
LCS-6B	1/16/2017 15:34	55.6	38.6	0.0	5.8	62.1		0	0	0.1	0.1	-13.7
LCS-6B	1/16/2017 15:35	54.5	39.3	0.1	6.1	64.1		9	10	-2.1	-2.2	-13.7
LCS-6B	1/24/2017 15:45	53.4	39.2	0.0	7.4	82.8		0	0	-1.7	-1.7	-13.8
PGW-60	1/5/2017 12:19	57.8	23.5	2.4	16.3	27.6	27.6	18	21	-12.2	-12.2	-12.0
PGW-60	1/9/2017 14:55	61.6	31.0	0.5	6.9	44.5		9	13	-14.3	-14.6	-14.3
PGW-60	1/16/2017 15:05	48.8	25.6	5.5	20.1	54.3		9	0	-13.8	-13.9	-13.9
PGW-60	1/16/2017 15:07	47.4	28.5	5.6	18.5	54.3		9	9	-13.7	-13.7	-14.1
PGW-60	1/24/2017 15:23	58.3	22.9	3.0	15.8	55.0		6	9	-13.8	-13.8	-13.8
SEW-002	1/20/2017 11:25	3.4	62.1	0.0	34.5	57.4		6	12	1.2	1.3	-13.8
T-56	1/5/2017 15:02	38.8	33.3	1.1	26.8	44.1	44.3	0	22	-0.2	-0.1	-11.6
T-56	1/10/2017 13:15	53.6	36.1	0.2	10.1	48.5		23	20	-0.1	-0.1	-13.2
T-56	1/16/2017 16:00	56.1	35.7	0.0	8.2	45.9		27	27	-0.1	-0.1	-12.8
T-56	1/24/2017 17:02	51.6	34.5	0.0	13.9	49.0		20	19	-0.2	-0.1	-14.1

Notes: NFD = No flow device installed
NR = Flow information was not recorded due to data collection error

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
	October 2016	November 2016	December 2016	January 2017		
GEW-001	--	--	--	--		
GEW-002	123.1	121.2	124.7	121.8		
GEW-003	117.9	116.6	116	113.3		
GEW-004	122.3	121.5	116.6	113.7		
GEW-005	96.1	94.1	91.9	91.1		
GEW-006	90.5	89.4	88.8	90.4		
GEW-007	97.9	94.6	89.7	88.7		
GEW-008	114.5	114	110.7	109.9		
GEW-009	125.5	125	122.6	123.2		
GEW-010	88.2	100.6	63.6	52.1		
GEW-011	--	--	--	--		
GEW-013A	180.3	191.6	118	182.4		
GEW-014A	--	--	--	--		
GEW-015	--	--	181.7	178.6		
GEW-016R	--	191.2	188.3	187.6		
GEW-018B	--	196.7	190.2	177.1		
GEW-018R	--	--	--	--		
GEW-019A	--	--	--	--		
GEW-020A	--	--	--	--		
GEW-021A	--	--	--	--		
GEW-022R	63	67.9	--	113.5		
GEW-023A	--	--	--	--		
GEW-024A	--	--	--	--		
GEW-025A	--	--	--	--		
GEW-026R	--	--	--	--		
GEW-027A	--	--	--	--		
GEW-028R	70.9	--	--	--		
GEW-029	--	--	--	--		
GEW-030R	--	--	--	--		
GEW-033R	--	--	--	--		
GEW-034	--	--	--	--		
GEW-034A	--	--	--	--		
GEW-035	--	--	--	--		
GEW-036	--	--	--	--		
GEW-037	--	--	--	--		
GEW-038	86.8	86.3	58.5	48.6		
GEW-039	124.6	121.6	105.2	103.2		
GEW-040	93.6	91.7	79.6	82.5		
GEW-041R	104.5	100.8	87.3	98.9		
GEW-042R	103.8	106.5	82.1	94.2		
GEW-043R	129.4	128.9	118.1	128.1		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	October 2016	November 2016	December 2016	January 2017		
GEW-044	92.7	84.5	78	76.9		
GEW-045R	89.8	92.7	75.2	59.3		
GEW-046R	101.6	98.4	94	100.4		
GEW-047R	113.2	110.5	114	110		
GEW-048	104.7	104.3	100.8	100.8		
GEW-049	114.3	111.2	105.1	107.2		
GEW-050	108.2	108.5	106.7	105.9		
GEW-051	126.9	126.1	128.6	124		
GEW-052	113.7	113.7	110.7	112.1		
GEW-053	142.9	141.8	133.8	132.7		
GEW-054	144.9	144.9	148	145.5		
GEW-055	129.4	127.5	124.5	121.5		
GEW-056R	126.6	126.9	101.8	92.5		
GEW-057B	73	82.1	39.6	53.7		
GEW-057R	119.6	105	40	63.3		
GEW-058	130.2	175.9	65.4	78.9		
GEW-058A	107	145.6	94.6	104.2		
GEW-059R	186.4	185.7	173.1	174.1		
GEW-061B	--	--	--	--		
GEW-064A	--	--	--	51.3		
GEW-065A	--	--	--	--		
GEW-066	--	--	--	--		
GEW-067A	161.6	171.6	--	73.4		
GEW-068A	--	--	--	--		
GEW-069R	--	--	--	--		
GEW-070R	--	--	--	--		
GEW-071	--	--	--	--		
GEW-071B	--	--	--	--		
GEW-072RR	--	--	--	--		
GEW-073R	--	--	--	--		
GEW-075	--	--	--	--		
GEW-076R	--	--	--	--		
GEW-077	176.4	156.5	83.4	79.8		
GEW-078R	185.1	183.9	178.6	172.6		
GEW-080	67	--	--	--		
GEW-081	67.1	194.3	193	188.9		
GEW-082R	96.7	182.4	187.7	186.4		
GEW-083	--	--	--	--		
GEW-084	--	--	--	--		
GEW-085	--	--	--			
GEW-086	90.1	91.2	71.4	54.7		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	October 2016	November 2016	December 2016	January 2017		
GEW-087	--	196.4	191.2	195		
GEW-088	194.6	122.6	110.6	61		
GEW-089	59.4	--	--	--		
GEW-090	181.5	174.7	154.5	160.1		
GEW-091	--	196.4	193.2	192.1		
GEW-100	--	--	--	--		
GEW-101	93.9	93.2	69.1	71.4		
GEW-102	194.3	196.4	192.9	141.8		
GEW-103	--	--	--	--		
GEW-104	72.1	85.4	--	--		
GEW-105	180.4	197.9	141.8	177.5		
GEW-106	--	100.6	88	83.8		
GEW-107	--	81.7	46.9	59.4		
GEW-108	130.6	79.4	44.5	102.3		
GEW-109	123.7	121.8	78.5	78.8		
GEW-110	115.8	89.3	74.6	59.4		
GEW-112	--	--	--	--		
GEW-113	173.6	171	155.2	175.3		
GEW-116	--	--	--	94.1		
GEW-117	73.6	82.8	42.7	57.9		
GEW-118	195	193.7	173.6	195.7		
GEW-120	149.7	78.9	45.2	48.2		
GEW-121	180.4	177.2	174.2	171		
GEW-122	188.3	183.3	177.5	179.7		
GEW-123	150.9	176.2	56.5	45.5		
GEW-124	95	--	35.5	47		
GEW-125	190.8	192.3	191.6	182.7		
GEW-126	178.2	103.2	164.7	134.7		
GEW-127	188.9	187.1	179.2	178.6		
GEW-128	176.6	172.6	174.2	172.3		
GEW-129	180.1	174.2	170.6	47.5		
GEW-130	177.4	176.4	190.2	195		
GEW-131	98.5	71.6	55.9	180.3		
GEW-132	166.4	166.4	158.3	174.6		
GEW-133	93.2	72.9	46	44.6		
GEW-134	135.6	121.8	120.5	148.7		
GEW-135	173.3	161.5	47.3	49		
GEW-136	127.6	115.8	104.5	100.6		
GEW-137	96.6	75	55.2	50.3		
GEW-138	164.1	155.4	149.8	47.9		
GEW-139	177.5	151.3	164.3	149.7		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	October 2016	November 2016	December 2016	January 2017		
GEW-140	88.8	146.3	135.3	101.3		
GEW-141	189.6	155.7	176	35		
GEW-142	153.3	55.5	36.8	37.2		
GEW-143	80.3	65.7	48.5	34.6		
GEW-144	91.5	81.2	62.1	38.5		
GEW-145	82.8	160.2	149.9	32.5		
GEW-146	100.6	90.1	73.6	69.3		
GEW-147	185.3	189.6	169.5	178.1		
GEW-148	97.8	75.3	52.1	36.8		
GEW-149	170	165.5	153.7	152.5		
GEW-150	184.7	183.3	171	155.7		
GEW-151	141.2	76.2	52.4	35.5		
GEW-152	179.2	180.3	45.6	77.7		
GEW-153	142.2	137.7	60	124		
GEW-154	120.2	62.2	43	51.8		
GEW-155	140.9	126.4	116.4	45		
GEW-156	127.5	101	87	76.4		
GEW-157	120.7	70.4	47.3	38.3		
GEW-158	199.3	183.3	39.8	76.5		
GEW-159	81.9	62.3	49.1	74.9		
GEW-160	185.7	169	49.6	40.6		
GEW-161	110.4	63.8	44.6	39.5		
GEW-162	175.8	165	112.7	44.6		
GEW-163	197.4	192.9	187	187.3		
GEW-164	152.5	170.2	163.3	171.2		
GEW-165	194.4	195.1	195	194.4		
GEW-166	197.2	196.8	170	179.3		
GEW-167	191.9	189.6	180.3	176.7		
GEW-168	183	177.9	177.5	179.8		
GEW-169	179.8	191.6	185	193.6		
GEW-170	164.6	188.9	165.5	176.4		
GEW-171	193.6	142.2	129.9	--		
GEW-172	89.2	70.6	52.1	195.6		
GEW-173	120.7	123.4	98.3	101.5		
GEW-174	171.6	171.6	159.4	178.7		
GEW-175	142.8	138.3	143.2	137.1		
GEW-176	161	141.2	123.7	117.8		
GEW-177	184.5	65.8	54.7	45.9		
GEW-1A	94.3	86.3	49.1	55.5		
GEW-2S	94.8	90.8	48.2	55.2		
GIW-01	185.7	183.9	174.7	179.3		

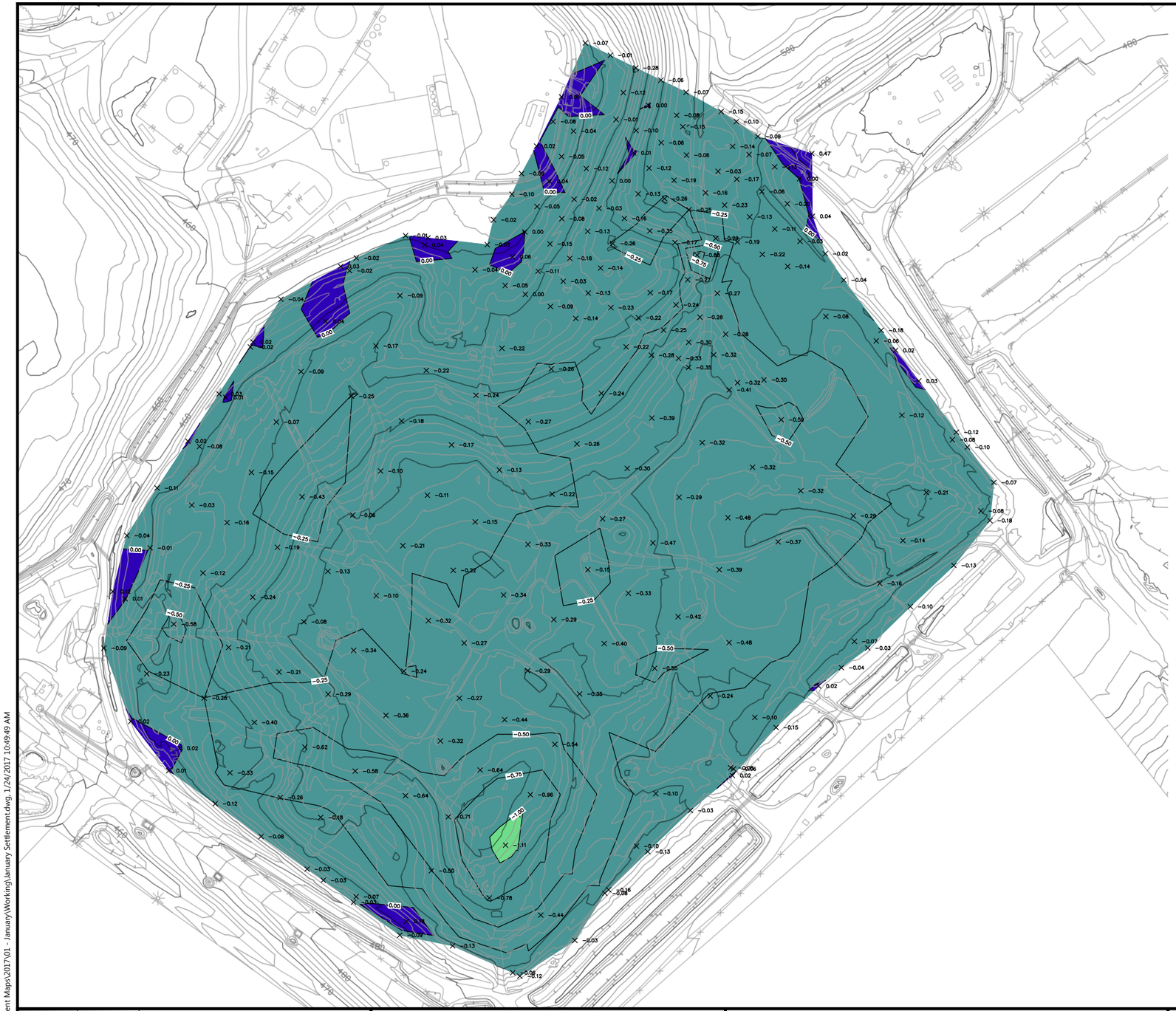
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	October 2016	November 2016	December 2016	January 2017		
GIW-02	90.6	75	59.1	55.2		
GIW-03	93.3	82.2	61.1	57.7		
GIW-04	90.5	80.3	63.4	61.8		
GIW-05	87.7	76.4	57.5	48.4		
GIW-06	84.4	83	58.7	49.4		
GIW-07	87.4	75	59	49.6		
GIW-08	88	76.8	59.2	51.5		
GIW-09	99	80.3	60.2	48.9		
GIW-10	86.8	79.8	59	48.9		
GIW-11	87.7	83.4	59.6	73.2		
GIW-12	87.8	84.1	60.8	74.1		
GIW-13	87.6	80	61.4	71.4		
LCS-1D	87.9	107.5	49.9	98.7		
LCS-2D	--	--	--	--		
LCS-3C	68.1	--	--	--		
LCS-4B	--	--	--	--		
LCS-5A	94.9	94.4	89.8	85.9		
LCS-6B	98.9	96.2	94.1	82.8		
PGW-60	94.1	81.9	50.1	55		
SEW-002	64	81	49.4	57.4		
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	76.4	71.6	52.7	49		

-- = 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 12-16-16 FROM SPOT ELEVATIONS SURVEYED ON 1-20-17.
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 (1-20-17 TO 12-16-16)
———	MINOR ELEVATION CHANGE CONTOUR (0.25 FEET)
———−0.50———	MAJOR ELEVATION CHANGE CONTOUR (0.50 FEET)
———1–20———	SETTLEMENT FRONT CONTOUR FOR AREA WITH 1.35' PER 30 DAYS FOR CURRENT PERIOD OF DAYS (AREA REPRESENTS 1.575' OVER 35 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	3143.10	
5	−1.00	0.00	1497631.04	
6	0.00	1.00	35736.03	

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL

CB&I Environmental & Infrastructure, Inc.

STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

BRIDGETON LANDFILL
BRIDGETON, MO

SETTLEMENT MAP
DECEMBER 16, 2016 THROUGH JANUARY 20, 2017

DRAWN BY:	ORC	APPROVED BY:	DJD	PROJ. NO.:	155162	DATE:	FEBRUARY 2017

T:\AutoCAD\Projects\Bridgeton LF\Settlement Maps\2017\01 - January\Working\January Settlement.dwg 1/24/2017 10:49:49 AM

ATTACHMENT G

SUMMARY OF ODOR COMPLAINTS

January 1, 2017 – January 31, 2017 / MDNR ODOR COMPLAINTS

Name: Kirbi Pemberton

Message: Odor logged January 2, 2017, at 8:41 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time of this concern winds were calm. This was not a Bridgeton Landfill odor.

Name: Bob Labeaume

Message: Odor logged January 3, 2017, at 12:07 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time of this concern winds were calm. This was not a Bridgeton Landfill odor.

Name: Dawn Chapman

Message: Odor logged January 4, 2017, at 4:57 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time of this concern winds were of a west northwestern origin placing this location 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: Karen Nickel

Message: Odor logged January 4, 2017, at 5:02 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. A septic/chemical odor was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time of this concern winds were of a west northwestern origin placing this location directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: M Stoeker

Message: Odor logged January 4, 2017, at 5:11 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time of this concern winds were of a west northwestern origin placing this location 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: Laura Jo Vincent

Message: Odor logged January 5, 2017, at 6:15 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 2 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time of this concern winds were of a west northwestern origin placing this location upwind of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Sharon Bishop

Message: Odor logged January 7, 2017, at 6:03 pm strength of 9

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. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time of this concern winds were calm. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged January 9, 2017, at 7:25 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 this concern. An odor patrol performed within an hour of the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Sharon Bishop

Message: Odor logged January 10, 2017, at 4:17 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Martina Sandheinrich

Message: Odor logged January 12, 2017, at 7:33 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 this concern. An odor patrol performed concurrently with the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a northwestern origin placing this location 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 January 14, 2017, at 7:58 pm 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 this concern. An odor patrol performed within an hour of the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a northern origin placing this location 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: Sara Kitchen

Message: Odor logged January 16, 2017, at 8:23 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged January 17, 2017, at 3:19 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. A smoky/exhaust odor was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. This was not a Bridgeton Landfill odor.

Name: Bob Labeaume

Message: Odor logged January 17, 2017, at 6:00 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location just over an hour after the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a western origin placing this location 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 January 20, 2017, at 7:31 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged January 19, 2017, at 3:45 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 15 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of an eastern 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: Bruce Neuman

Message: Odor logged January 20, 2017, at 8:43 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. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a southeastern 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: Kirbi Pemberton

Message: Odor logged January 21, 2017, at 7:37 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a southeastern 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: Robbin Dailey

Message: Odor logged January 21, 2017, at 7:43 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were calm. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged January 21, 2017, at 11:18 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. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a northeastern 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: Robbin Dailey

Message: Odor logged January 22, 2017, at 9:45 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over an hour after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Robbin Dailey

Message: Odor logged January 22, 2017, at 11:04 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Robbin Dailey

Message: Odor logged January 23, 2017, at 3:50 pm strength of 10

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

Name: Michael Dailey

Message: Odor logged January 23, 2017, at 3:50 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. A smoky odor was observed at this location just over an hour after the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor at multiple observation 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 January 23, 2017, at 10:08 pm strength of 10

Follow-up: 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 Bridgeton Landfill odor at multiple observation points between this location and the Bridgeton Landfill. At the time cited in this concern winds were of a northwestern 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: Anna Werner

Message: Odor logged January 23, 2017, at 10:00 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor at multiple observation points between this location and the Bridgeton Landfill. At the time cited in this concern winds were of a northwestern origin placing this location 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: No date, time, or odor strength was provided.

Follow-up: The following concern did not provide any information therefore Bridgeton Landfill staff could not follow up.

Name: N/A

Message: No date, time, or odor strength was provided.

Follow-up: The following concern did not provide any information therefore Bridgeton Landfill staff could not follow up.

Name: Christie Hart

Message: Odor logged January 24, 2017, at 9:05 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of an east southeastern origin placing this location directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged January 25, 2017, at 6:27 am strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions was observed near this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a southwestern origin placing this location upwind of the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Sharon Bishop

Message: Odor logged January 25, 2017, at 10:53 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged January 25, 2017, at 1:33 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a western origin placing this location directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: James Galati

Message: Odor logged January 25, 2017, at 10:03 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 36 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Debi Disser

Message: Odor logged January 30, 2017, at 9:27 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions was observed in the vicinity of this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. This location is in close proximity to another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Debi Disser

Message: Odor logged January 30, 2017, at 9:28 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. This location 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 January 29, 2017, at 4:00 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 40 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a northwestern origin placing this location 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 January 31, 2017, at 2:43 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 6 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in 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: Rhonda Marsala

Message: Odor logged January 31, 2017, at 6:17 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged January 31, 2017, at 6:00 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were calm. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Jackie Cantwell

Message: Odor logged January 31, 2017, at 6:46 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 2 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were calm. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged January 31, 2017, at 9:00 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a northern origin placing this location directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Maria

Message: Odor logged January 31, 2017, at 10:51 pm 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 this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

ATTACHMENT H

LIQUID CHARACTERIZATION DATA AND DISCHARGE LOG

Bridgeton Landfill - Leachate PreTreatment Plant

January 2017

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
1/1/2017	LPTP Activated Sludge/ Permeate	Tank 1 (T1)	MBI	0
1/2/2017				0
1/3/2017				0
1/4/2017				0
1/5/2017				0
1/6/2017				0
1/7/2017				0
1/8/2017				0
1/9/2017				0
1/10/2017				0
1/11/2017				0
1/12/2017				0
1/13/2017				0
1/14/2017				0
1/15/2017				0
1/16/2017				0
1/17/2017				0
1/18/2017				0
1/19/2017				0
1/20/2017				0
1/21/2017				0
1/22/2017				0
1/23/2017				0
1/24/2017				0
1/25/2017				0
1/26/2017				0
1/27/2017				0
1/28/2017				0
1/29/2017				0
1/30/2017				0
1/31/2017				0
			Total=	**0**

Direct Discharge to MSD

Date	Waste	Source	Quantity (gal)
1/1/2017	LPTP Permeate	Through Tank AST 97k (MSD Sampling Point 013)	166,762
1/2/2017			247,006
1/3/2017			259,726
1/4/2017			256,012
1/5/2017			247,608
1/6/2017			167,974
1/7/2017			107,682
1/8/2017			95,758
1/9/2017			99,066
1/10/2017			103,248
1/11/2017			111,398
1/12/2017			116,886
1/13/2017			117,116
1/14/2017			125,572
1/15/2017			230,408
1/16/2017			224,072
1/17/2017			225,140
1/18/2017			226,076
1/19/2017			171,416
1/20/2017			161,016
1/21/2017			230,156
1/22/2017			230,620
1/23/2017			197,952
1/24/2017			145,368
1/25/2017			216,204
1/26/2017			129,012
1/27/2017			107,612
1/28/2017			103,784
1/29/2017			99,016
1/30/2017			184,620
1/31/2017			185,652
		Total =	**5,289,938**

ATTACHMENT I

LOW FILL PROJECT AREA

ATTACHMENT I-1

LOW FILL AREA BOUNDARY

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.
4. NO FILL ADDED BETWEEN SURVEY DATES 12-16-16 AND 1-20-17

LEGEND

BOUNDARY OF FILL AREA FOR 12-16-16 THROUGH 1-20-17

BOUNDARY OF STOCKPILE AREA FOR 12-16-16 THROUGH 1-20-17

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL

CB&I Environmental & Infrastructure, Inc.
STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

BRIDGETON LANDFILL
BRIDGETON, MO

LOW FILL AREA BOUNDARY
DECEMBER 16, 2016 THROUGH JANUARY 20, 2017

DRAWN BY:	APPROVED BY:	PROJ. NO.:	DATE:
ORC	DJD	155162	FEBRUARY 2017

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