Bridgeton Landfill, LLC

Monthly Data Submittals

November, 2015

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

December 20, 2015

Commentary on Data

December 20, 2015

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

Gas Volume

- As seen in Attachment B-1, gas collection volumetric rate in for this month averaged 3,364 SCFM, as normalized per the MDNR weekly flow and TRS sampling results. As seen in the flare table in Attachment B-1 and flare graphs within Attachment B-2, the facility has optimized the configuration of the flare station so that under regular operating conditions only one flare runs (FL-140), thereby providing control device redundancy.

Gas Quality

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

- Attachment E-2 contains gas temperatures as measured at the wellheads. Ten (10) vertical wells (excluding GIW wells) decreased by 30°F during this reporting period. Additionally, seven (7) vertical wells (excluding GIW wells) increased by 30°F or more. All remaining 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.

- Attachment E-1 details vertical wells which had oxygen levels over 5% at one or more weekly monitoring events during this reporting period. These consisted of 9 older GEW wells (<#-120) that are experiencing low flows; 11 new GEW wells (>#-120) that are experiencing restricted flows; 4 GIW wells that have low gas flow. By the end of the month, the majority of these wells still exhibited oxygen at the wellhead at or greater than 5%. All these wells, except the new GEWs 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. These wells are in the south quarry area where the flexible membrane liner cap is in place to prevent atmospheric intrusion into the waste mass.

- A detailed review of the gas extraction wells in the neck area was conducted. Maximum temperatures are consistent with previous months in each of the gas extraction wells in vicinity to the neck. Carbon monoxide (CO) results during this reporting period showed stable month-over-month based on historic levels within the Neck Area wells.

- All wells in the North Quarry during this reporting period exhibited a maximum wellhead temperature under 145° F. The only North Quarry well that had detections of carbon monoxide during this reporting period was GEW-053 (55 ppm). Carbon monoxide (CO) results showed non-detect (ND) for all other North quarry wells.

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

Settlement

- The South Quarry exhibited monthly maximum settlement up to **1.58 feet (see Attachment F)** for this reporting period; which is comparable to last month's rate. The rate of settlement directly south of the neck continues to be small and stable compared to previous months.

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.

ATTACHMENT A

WORK COMPLETED AND PLANNED

Bridgeton Landfill, LLC
Monthly Summary of Work Completed and Planned

Work Completed in November 2015

Gas Collection and Control System

- Continued operation and maintenance of GCCS System and GIW wells.
- Continued additional GCCS System enhancements.
- Completed above ground 18 inch header line from CT-3 to CT-30.
- Installed above grade LFG header between CT-1 and CT-2.

Alternative Heat Extraction System

- Continued operation and maintenance of the HES.

Leachate Management System

- Continued routine operation of previously installed and upgraded features.

Pre-Treatment Facility

- Continued ongoing operation of facility.
- Continued to optimize operation efficiency of pre-treatment facility.

Other Projects

- Begin North Quarry cap enhancements.

Work Planned for December 2015

Gas Collection and Control System

- Continue operation and maintenance of GCCS system.
- Continue upgrades to GCCS system as required.
- Continue winterization processes.
- Regrade header from CT-8 to GEW-148.
- Install an additional GEW in North and South Quarry.
- Install replacement sumps CT-31, 32, 33, 81.
- Abandon CT-1, 2, 3, 7B.

Alternative Heat Extraction System

- Continued operation and maintenance of the HES.

Leachate Management System

- Continued routine operation of previously installed and upgraded features.

Pre-Treatment Facility

- Ongoing operation of facility.
- Continue to optimize operation efficiency of pre-treatment facility.

Other Projects:

- Prep fill projects for north slope of south quarry and low area on east slope
- Begin acceptance of clean fill materials for future fill projects.
- Complete north quarry cap enhancement project (weather permitting).

ATTACHMENT B

DAILY FLARE MONITORING DATA

ATTACHMENT B-1

FLOW DATA TABLE

Daily Flare Monitoring Data - Bridgeton Landfill
November 2015

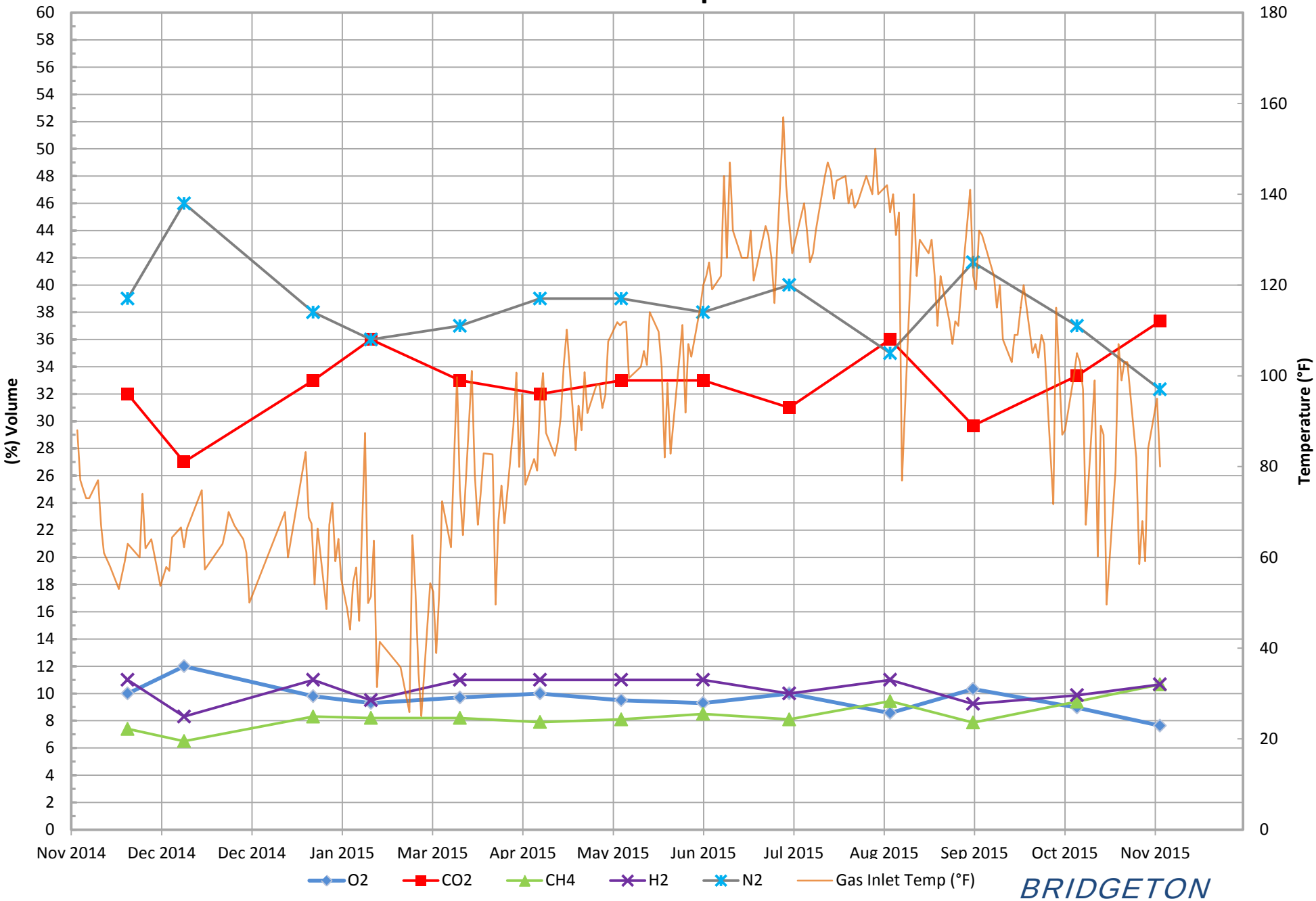
Date	Average Device Flow* (scfm)				Total Avg. Flow** (scfm)
	Utility Flare (FL-100)	Utility Flare (FL-120)	Utility Flare (FL-140)	Aux. Utility Flare	
11/1/2015	0	1,864	1,709		3,573
11/2/2015	0	1,879	1,859		3,738
11/3/2015	0	1,682	1,755	0	3,438
11/4/2015	0	1,624	1,723		3,347
11/5/2015	0	1,645	1,558		3,203
11/6/2015	0	1,628	1,487		3,115
11/7/2015	0	1,737	1,537		3,274
11/8/2015	0	1,736	1,564		3,300
11/9/2015	0	773	2,524		3,297
11/10/2015	0	0	2,463	65	2,528
11/11/2015	0	0	3,553	27	3,580
11/12/2015	0	0	2,571	480	3,051
11/13/2015	0	0	3,608		3,608
11/14/2015	0	0	3,528		3,528
11/15/2015	0	0	3,506		3,506
11/16/2015	0	0	3,522		3,522
11/17/2015	0	0	3,542		3,542
11/18/2015	0	0	3,486	4	3,489
11/19/2015	0	0	3,526		3,526
11/20/2015	0	0	3,249	19	3,268
11/21/2015	0	0	3,827		3,827
11/22/2015	0	0	3,752		3,752
11/23/2015	0	0	3,723	24	3,747
11/24/2015	0	0	3,434		3,434
11/25/2015	396	0	2,778		3,174
11/26/2015	1,679	0	1,581		3,260
11/27/2015	1,478	0	1,684		3,162
11/28/2015	1,452	0	1,297	344	3,092
11/29/2015	1,404	0	1,550		2,954
11/30/2015	493	0	2,582	2	3,078
				Average	**3,364**

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

ATTACHMENT B-2

FLOW DATA GRAPHS

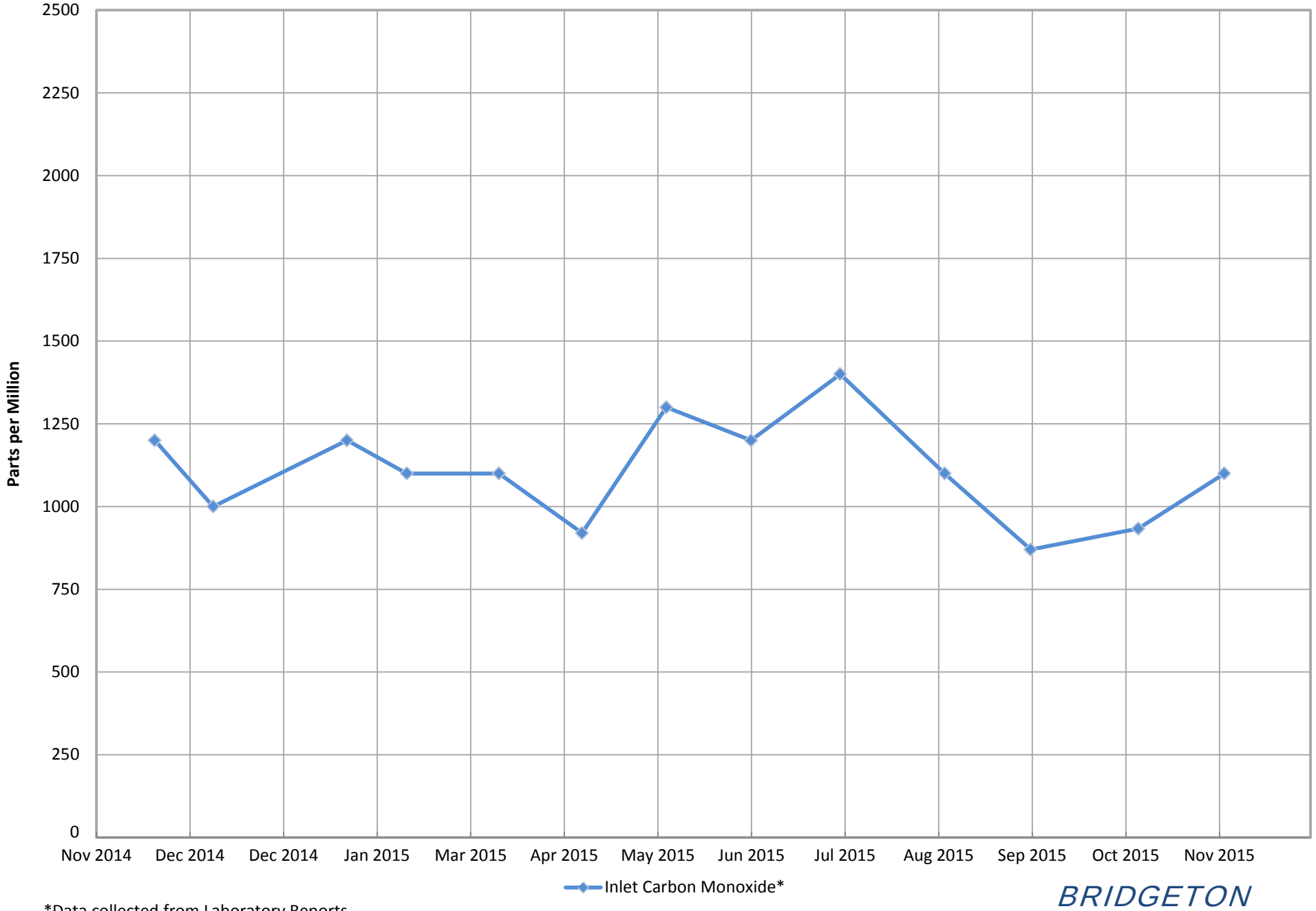
Inlet Gas and Temperature*



*Gas data collected from Laboratory Reports. Temperature data collected from GEM 2000 field readings.

BRIDGETON LANDFILL

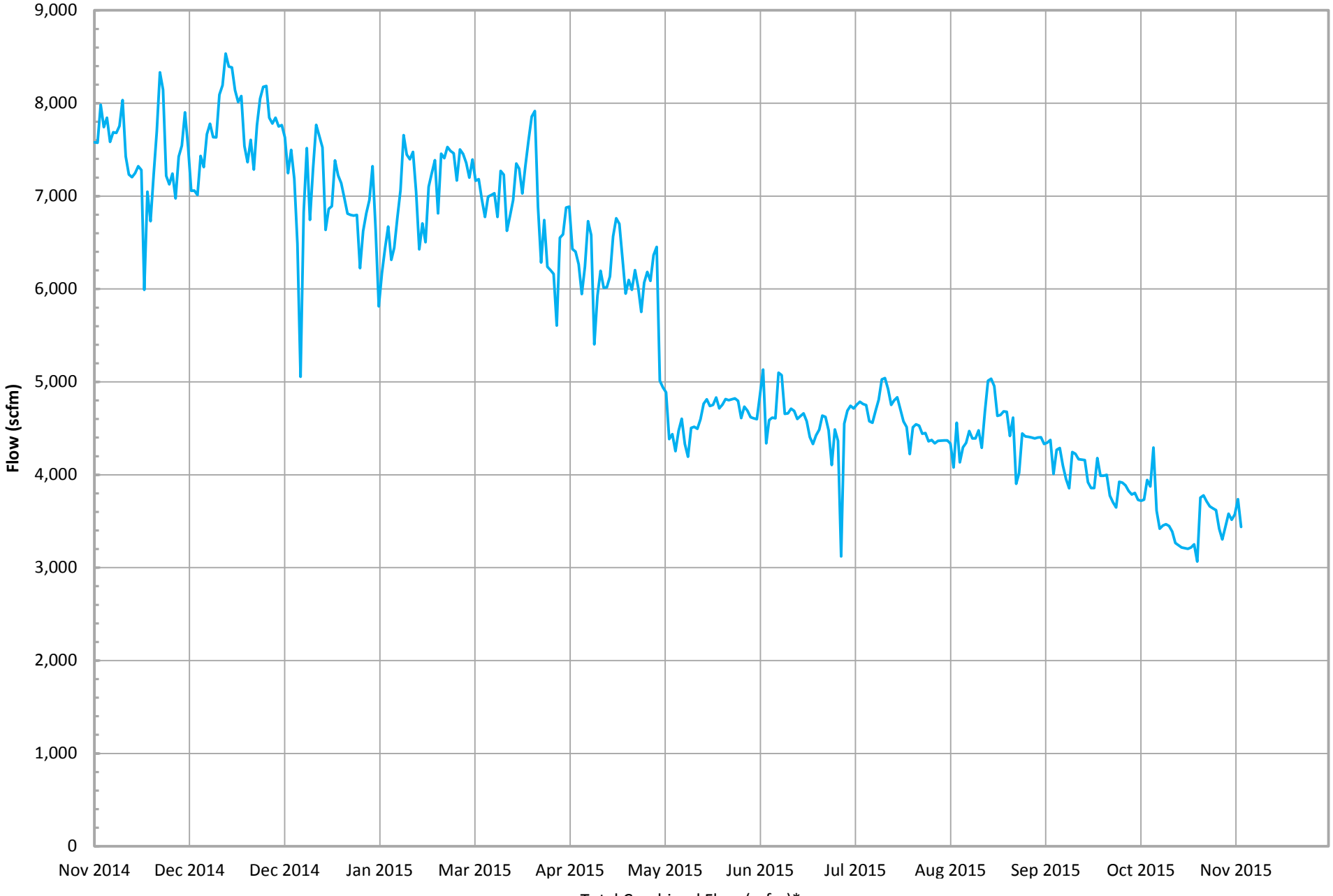
Inlet Carbon Monoxide*



*Data collected from Laboratory Reports.

BRIDGETON LANDFILL

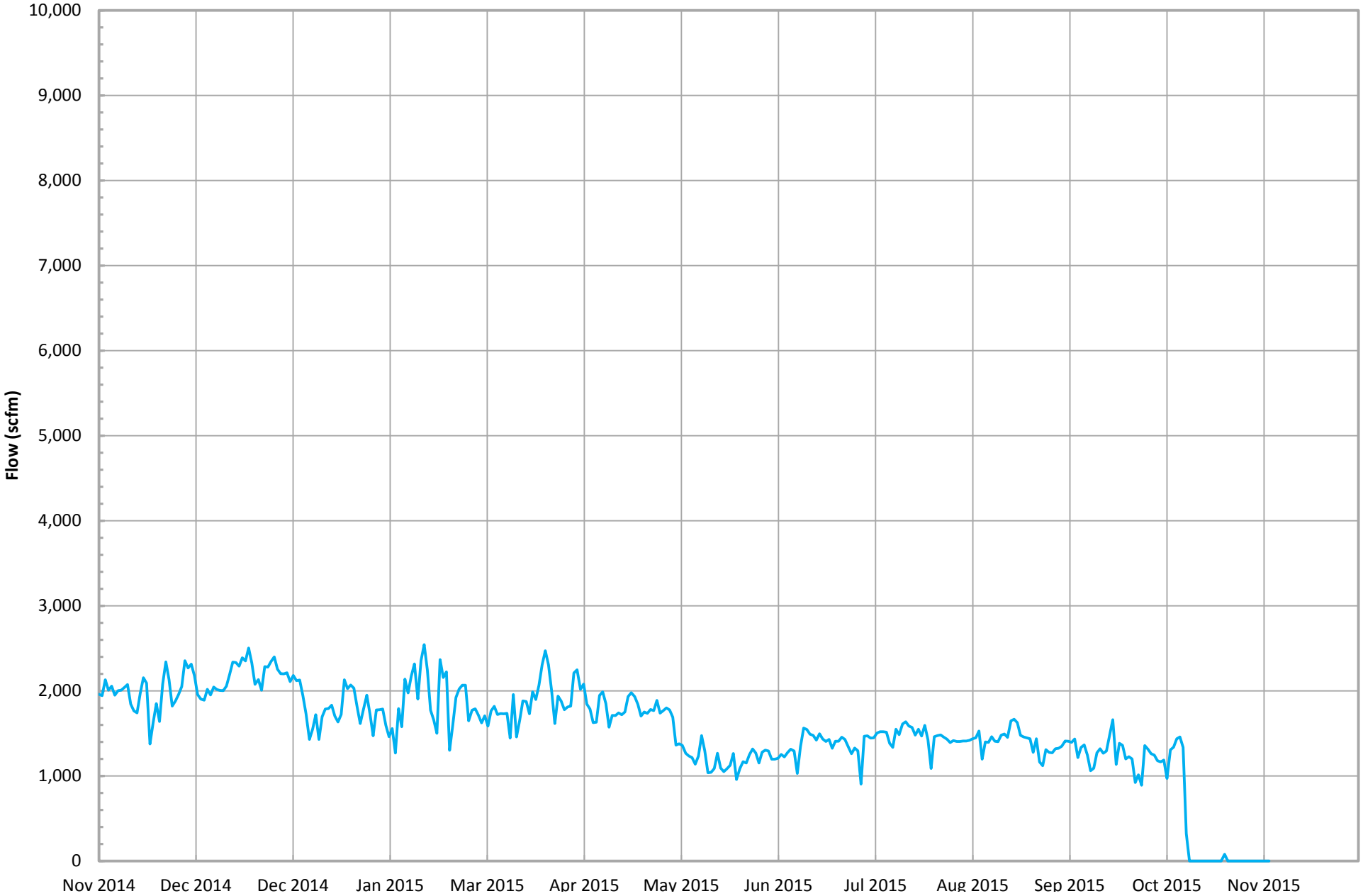
Total Combined Flow (scfm)*



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

BRIDGETON LANDFILL

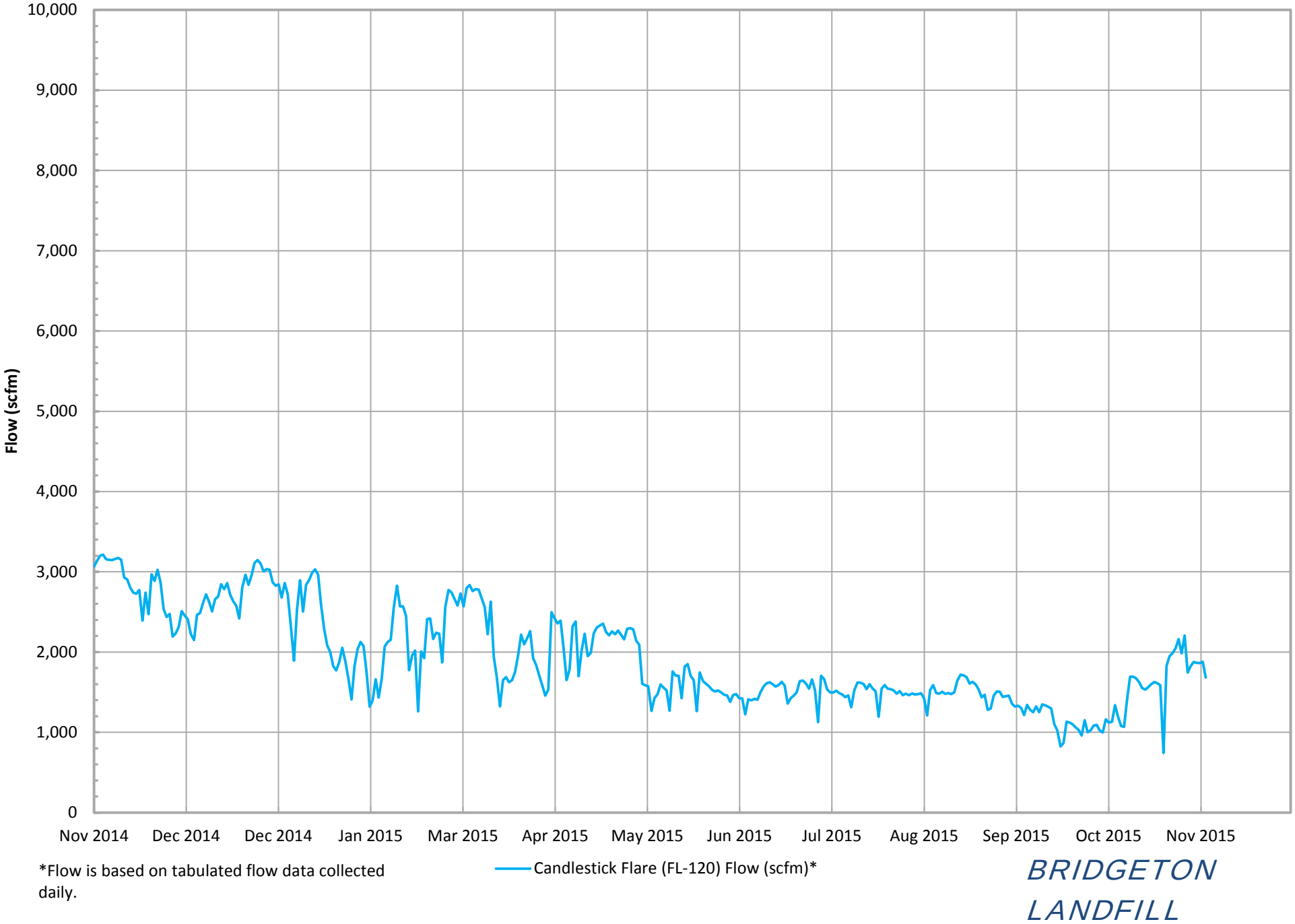
Candlestick Flare (FL-100) Flow (scfm)*



*Flow is based on tabulated flow data collected daily.

BRIDGETON LANDFILL

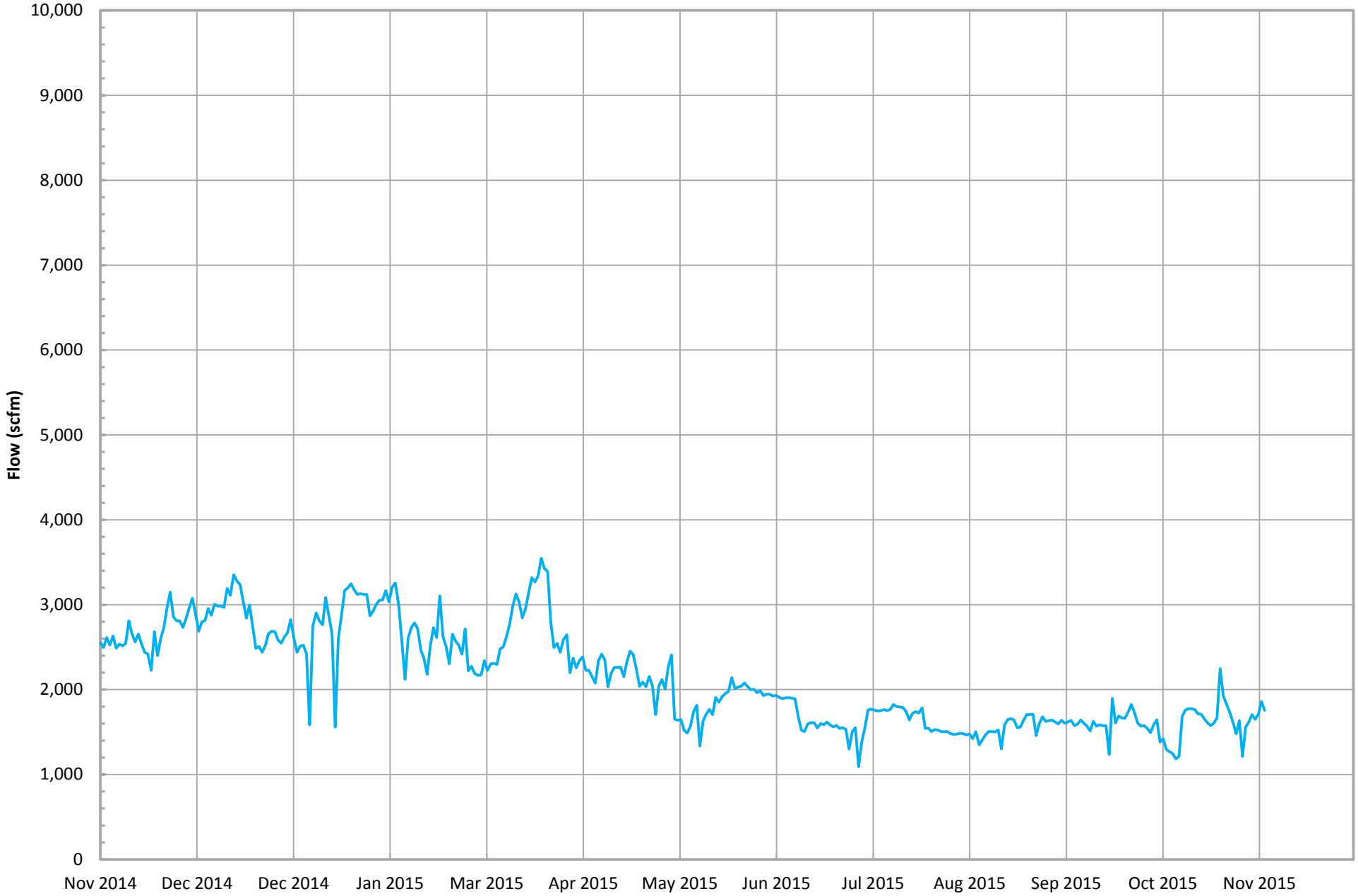
Candlestick Flare (FL-120) Flow (scfm)*



*Flow is based on tabulated flow data collected daily.

BRIDGETON LANDFILL

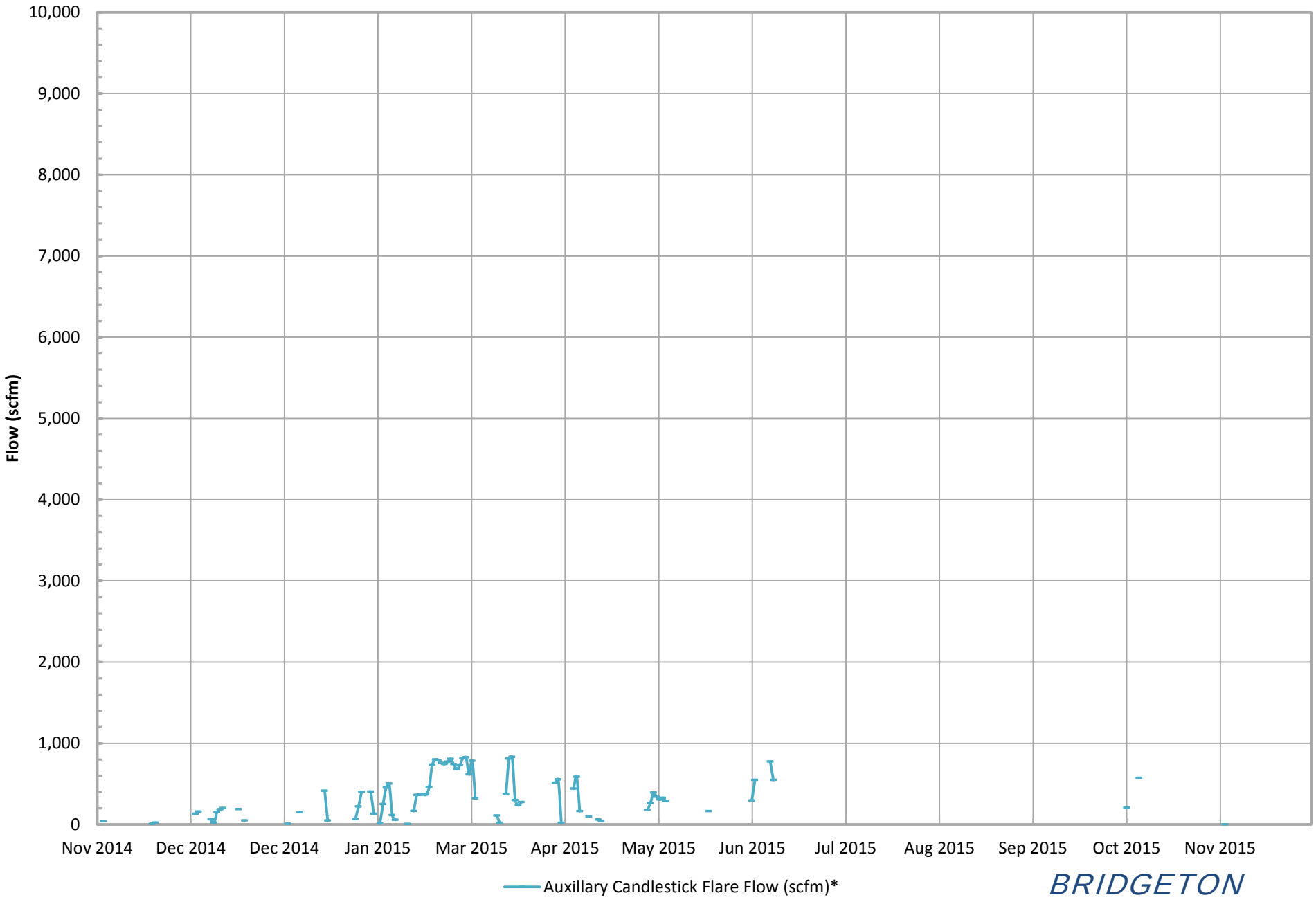
Candlestick Flare (FL-140) Flow (scfm)*



*Flow is based on tabulated flow data collected daily.

BRIDGETON LANDFILL

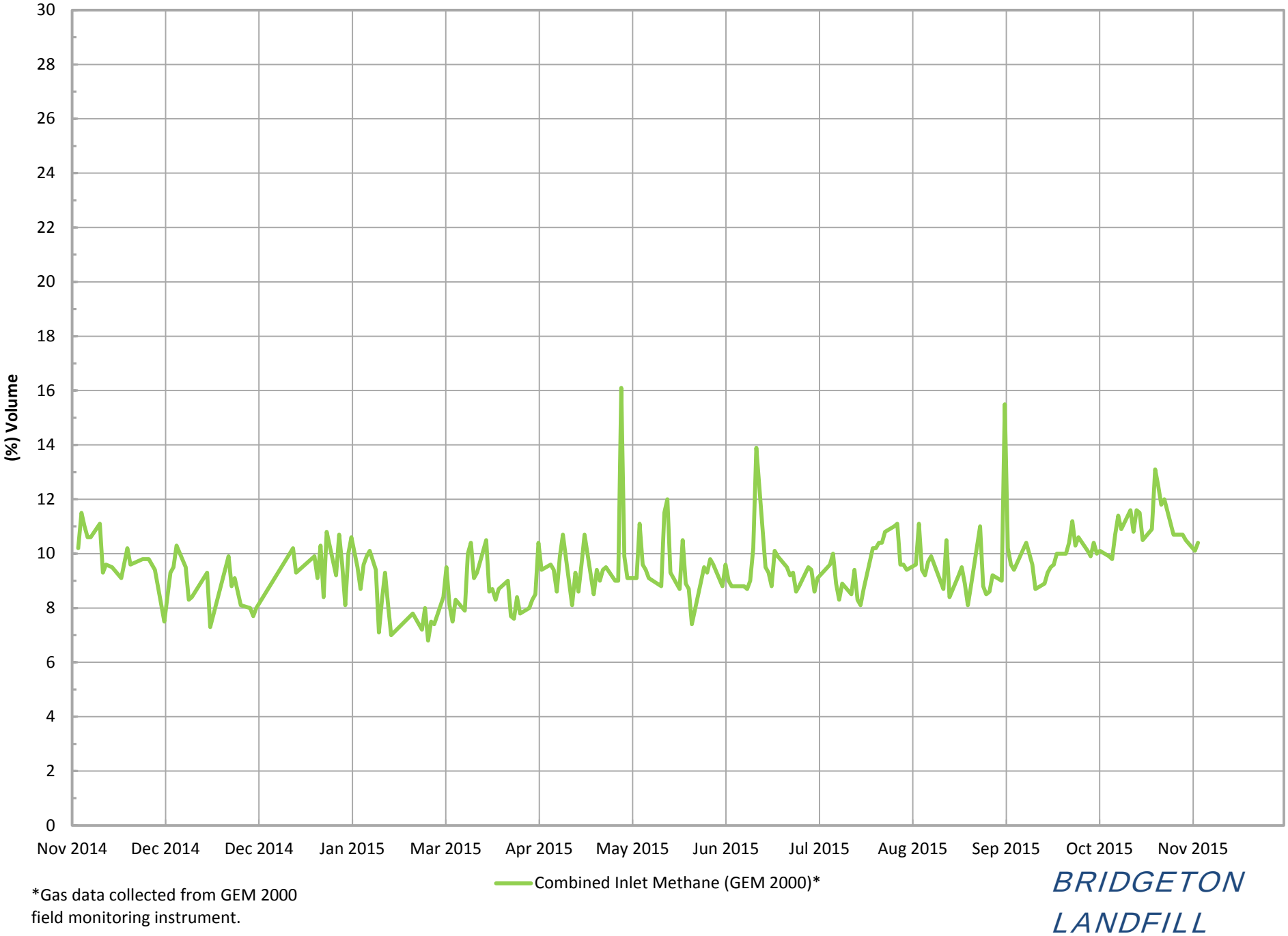
East Auxillary Candlestick Flare Flow (scfm)*



*Flow is based on tabulated flow data collected

BRIDGETON LANDFILL

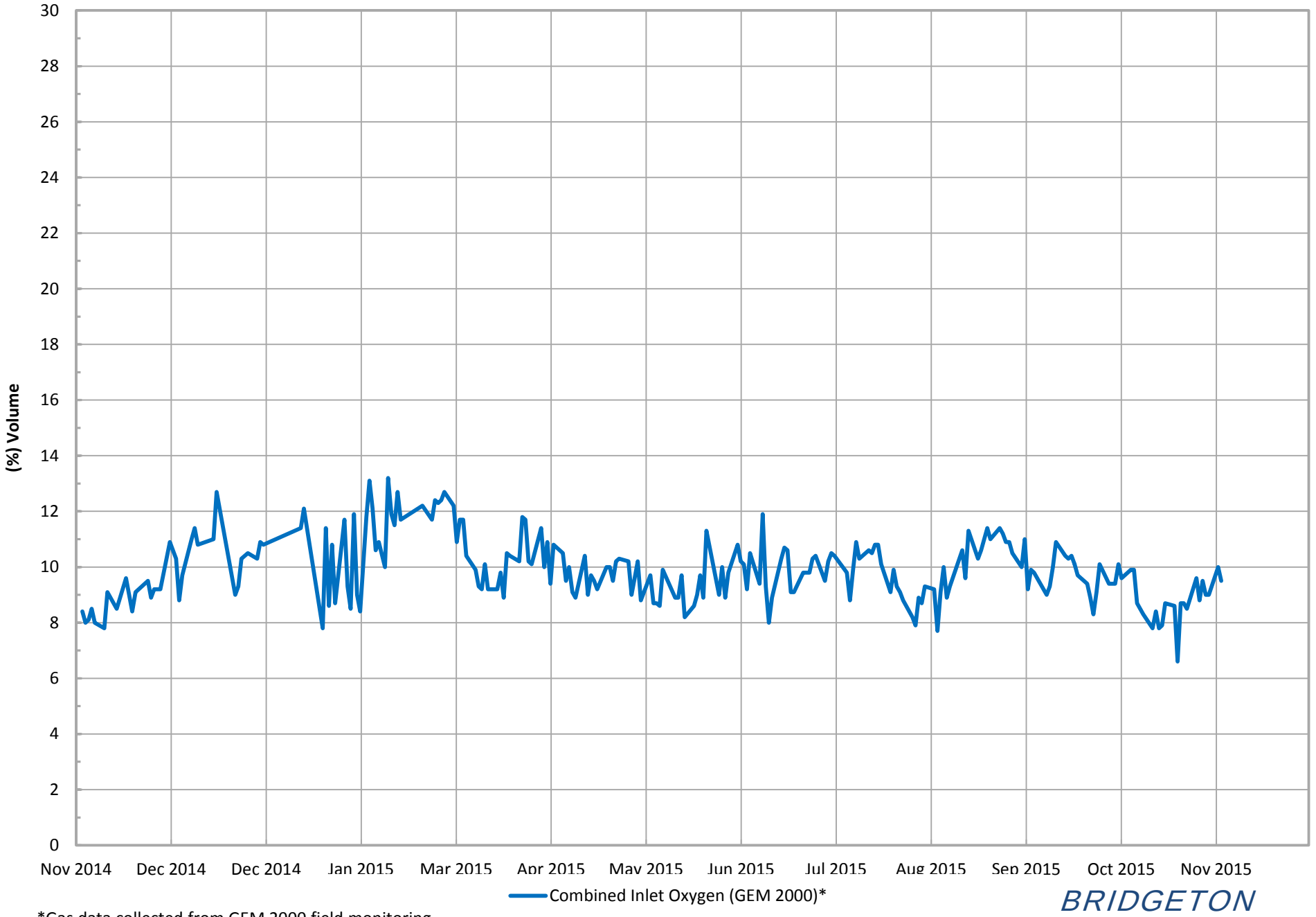
Combined Inlet Methane (GEM 2000)*



*Gas data collected from GEM 2000 field monitoring instrument.

BRIDGETON LANDFILL

Combined Inlet Oxygen (GEM 2000)*

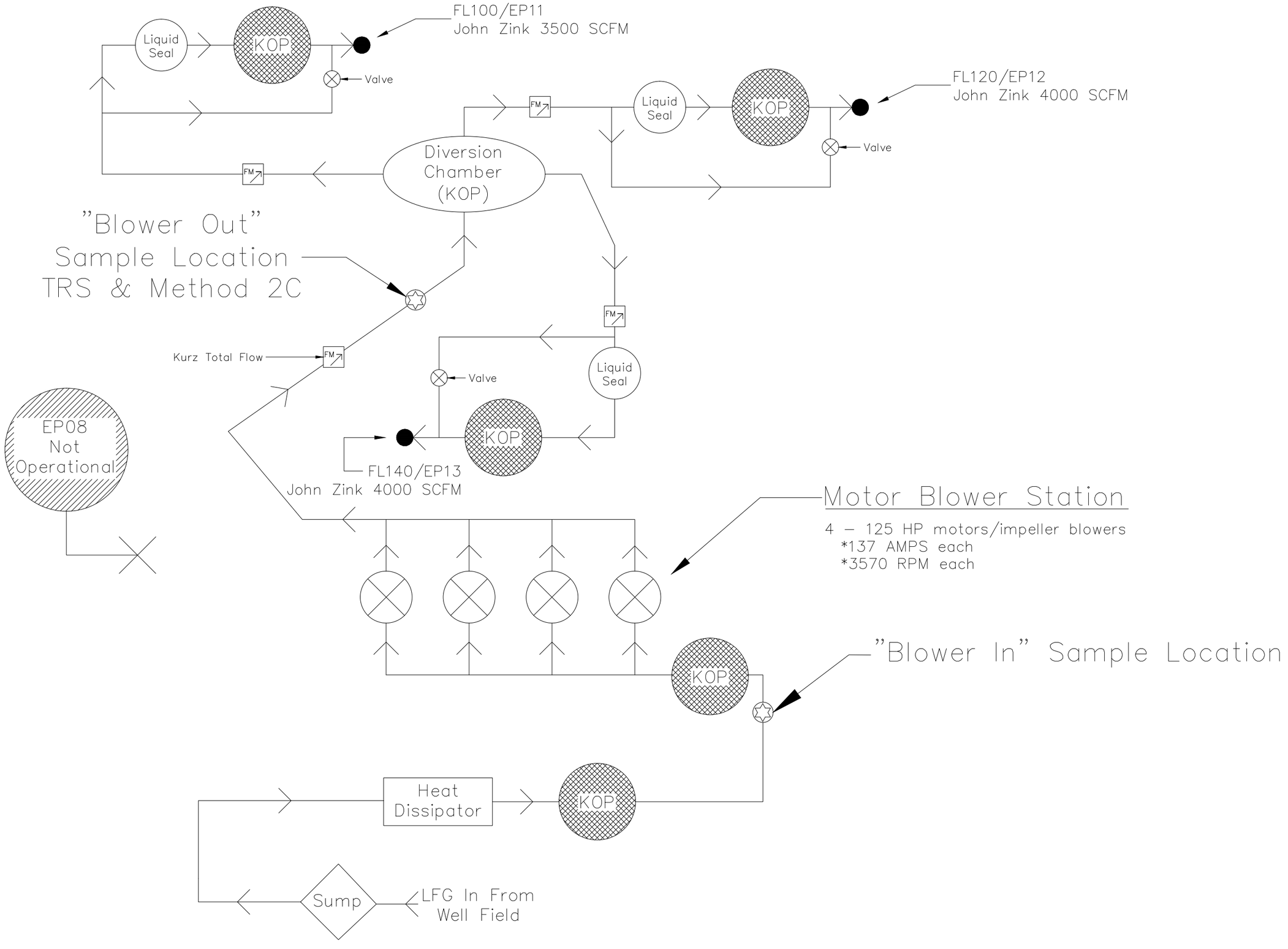


*Gas data collected from GEM 2000 field monitoring instrument.

BRIDGETON LANDFILL

ATTACHMENT B-3

FLARE TRS / FLARE STATION FLOW



PREPARED FOR:
BRIDGETON LANDFILL, LLC

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

No.	DATE	REVISION DESCRIPTION

Weaver Consultants Group

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

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

SHEET 1 OF 1

TABLE 1 **Bridgeton Landfill, LLC.**

Summary of Key LFG Tested Parameters **November 03 to December 01, 2015**

Flare Compound: *Blower Outlet*

SAMPLE EVENT #	DATE	VELOCITY ft/sec	FLOW dscfm	TRS[2] ppm_{vd}
39[1]	12/1/2015	38.00	3064	1400
				1600
38	11/25/2015	38.95	3155	1200
				1400
37[1]	11/18/2015	44.02	3430	1300
				1700
36[1]	11/11/2015	41.64	3244	1400
				1400
35[1]	11/3/2015	39.22	3197	1300
				1400

Notes:

[1] Flow based on EPA Method 2C data collection from "Blower Outlet"

[2] TRS analyzed per EPA method 15/16 from samples collected from the collected from "Blower Outlet"

	PARAMETER	Blower Out
Date	Test Date	12/1/15
Start	Run Start Time	11:00
	Run Finish Time	11:50
	Net Traversing Points	16 (2 x 8)
Θ	Net Run Time, minutes	0:49:55
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.38
% H_2O	Moisture Content of LFG, %	1.65
% RH	Relative Humidity, %	51.40
M_{fd}	Dry Mole Fraction	0.983
%CH_4	Methane, %	10.10
%CO_2	Carbon Dioxide, %	35.20
%O_2	Oxygen, %	8.60
%Balance	Assumed as Nitorgen, %	34.90
%H_2	Hydrogen, %	10.10
%CO	Carbon Monoxide, %	0.10
M_d	Dry Molecular Weight, lb/lb-Mole	29.84
M_s	Wet Molecular weight, lb/lb-Mole	29.65
P_g	Flue Gas Static Pressure, inches of H_2O	14.40
P_s	Absolute Flue Gas Pressure, inches of Mercury	30.50
t_s	Average Stack Gas Temperature, °F	73
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.342
v_s	Average LFG Velocity, feet/second	38.00
A_s	Stack Crossectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	3,064
Q_s	Standard Volumetric Flow Rate, scfm	3,114
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	3,084
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	14,239
NHV	Net Heating Value, Btu/scf	142
LFG_{CH4}	Methane, lb/hr	773.3
	Methane, grains/dscf	29.45
LFG_{CO2}	Carbon Dioxide, lb/hr	7,393.5
	Carbon Dioxide, grains/dscf	281.53
LFG_{O2}	Oxygen, lb/hr	1313.4
	Oxygen, grains/dscf	50.01
LFG_{N2}	Balance gas as Nitrogen, lb/hr	4,666.1
	Balance gas as Nitrogen, grains/dscf	177.68
LFG_{H4}	Hydrogen, lb/hr	97.2
	Hydrogen, grains/dscf	3.70
LFG_{CO}	Carbon Monoxide, lb/hr	13.4
	Carbon Monoxide, grains/dscf	0.51

		Blower Out Sample #1	Blower Out Sample #2
H_2S	Hydrogen Sulfide Concentration, ppmd	56.00	51.00
	Hydrogen Sulfide Rate, lb/hr	0.91	0.83
	Hydrogen Sulfide Rate, grains/dscf	0.035	0.032
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carboynl Sulfide Rate, lb/hr	0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	170.00	170.00
	Methyl Mercaptan Rate, lb/hr	3.90	3.90
	Methyl Mercaptan Rate, grains/dscf	0.149	0.149
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.40	2.50
	Ethyl Mercaptan Rate, lb/hr	0.07	0.07
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,000.00	1,100.00
	Dimethyl Sulfide Rate, lb/hr	29.65	32.62
	Dimethyl Sulfide Rate, grains/dscf	1.129	1.242
CS_2	Carbon Disulfide Concentration, ppmd	0.56	0.56
	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	88.00	120.00
	Dimethyl Disulfide Rate, lb/hr	3.96	4.36
	Dimethyl Disulfide Rate, grains/dscf	0.151	0.166

❶ **$E_{TRS-SO2}$**	TRS-->SO2 Emission Concentration, ppmd	1,400.00	1,600.00
	TRS-->SO2 Emission Rate, lb/hr	42.81	48.92
	TRS-->SO2 Emission Rate, grains/dscf	1.630	1.863

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, December 01, 2015

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz
		Method 2	FleetZoom	Kurz FM		
BLOWER OUT	11:00	3,114	3,286	3,053	-5.5%	2.0%

AirTECHNOLOGY
Laboratories, Inc.

December 8, 2015

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: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G120201 -01/05

Enclosed are results for sample(s) received 12/02/15 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 Jim Getting, Mike Lambrich, Ryan Ayers and David Randall, Weaver Consultants Group, on 12/04/15 (ASTM D1946) and 12/07/15 (EPA 15/16, EPA 25C, EPA TO15).

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 Landfill
Report To:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Jim Getting
	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 & ASTM1946 + H2+ CO	ASTM 1946, BTU/SCF	EPA TO15 & 25C			
G120201-01	5196	-21.75	-3.67	-2	MSDPS1 Outlet	12/1/2015	903	C	LFG	NA	X	X	X			
-02	5198	-19.94	-3.98	-3	Blower Outlet 1	12/1/2015	1058	C	LFG	NA	X	X	X			
-03	1287	-21.97	-5.91	-4	MSDPS1 Inlet	12/1/2015	903	C	LFG	NA	X	X	X			
-04	5223	-21.37	-3.97	-3	Blower Outlet 2	12/1/2015	1120	C	LFG	NA	X	X	X			
-05	3725	-20.87	-3.99	-3	LFG CSU EP14	12/1/2015	1008	C	LFG	NA		X				

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS 3 cans not filled
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY	DATE	RECEIVED BY	DATE/TIME
RELINQUISHED BY FED EX	12-1-15 1400 DATE	RECEIVED BY	DATE/TIME 12/2/15 0941
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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**12/02/15**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	G120201-01		G120201-02		G120201-03		G120201-04	
Client Sample I.D.:	MSDPS1 Outlet		Blower Outlet 1		MSDPS1 Inlet		Blower Outlet 2	
Date/Time Sampled:	12/1/15 9:03		12/1/15 10:58		12/1/15 9:03		12/1/15 11:20	
Date/Time Analyzed:	12/4/15 12:02		12/4/15 12:31		12/4/15 12:17		12/4/15 12:46	
QC Batch No.:	151203GC8A3		151203GC8A3		151203GC8A3		151203GC8A3	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.7		2.8		3.0		2.8	
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	2.7	9.7	2.8	ND	3.0	11.3	2.8
Carbon Dioxide	0.7	0.027	33.5	0.028	0.8	0.030	38.8	0.028
Oxygen/Argon	21.6	1.3	9.1	1.4	21.4	1.5	7.1	1.4
Nitrogen	76.8	2.7	36.8	2.8	77.0	3.0	30.4	2.8
Methane	0.6	0.0027	9.9	0.0028	0.6	0.0030	11.3	0.0028
Carbon Monoxide	ND	0.0027	0.1	0.0028	ND	0.0030	0.1	0.0028
Net Heating Value (BTU/ft3)	6.4	2.7	137.2	2.8	6.4	3.0	158.6	2.8
Gross Heating Value (BTU/ft3)	7.2	2.7	155.5	2.8	7.1	3.0	179.8	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** 12/4/15

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/02/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G120201-05							
Client Sample I.D.:	LFG CSU EP14							
Date/Time Sampled:	12/1/15 10:08							
Date/Time Analyzed:	12/4/15 9:46							
QC Batch No.:	151203GC8A3							
Analyst Initials:	AS							
Dilution Factor:	2.8							
ANALYTE	Result % v/v	RL % v/v						
Hydrogen	12.0	2.8						
Carbon Dioxide	35.3	0.028						
Oxygen/Argon	8.7	1.4						
Nitrogen	36.1	2.8						
Methane	6.8	0.0028						
Carbon Monoxide	0.1	0.0028						
Net Heating Value (BTU/ft3)	117.3	2.8						
Gross Heating Value (BTU/ft3)	134.2	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 12/4/15
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.: 151203GC8A3
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	12/3/15 18:58		12/3/15 17:58		12/3/15 18:14			
Analyst Initials:	AS		AS		AS			
Datafile:	03dec062		03dec058		03dec059			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	108	70-130%	107	70-130%	1.0	<30
Carbon Dioxide	ND	0.010	97	70-130%	96	70-130%	1.3	<30
Oxygen/Argon	ND	0.50	99	70-130%	98	70-130%	0.4	<30
Nitrogen	ND	1.0	98	70-130%	98	70-130%	0.2	<30
Methane	ND	0.0010	96	70-130%	97	70-130%	0.3	<30
Carbon Monoxide	ND	0.0010	112	70-130%	112	70-130%	0.2	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ **Date:** 12/4/15

Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting

Project Name: Bridgeton Landfill
Project Number: NA
Date Received: 12/2/2015
Matrix: Vapor

TNMOC by EPA METHOD 25C

Lab Number:		G120201-01		G120201-02		G120201-03		G120201-04			
Client Sample ID:		MSDPS1 Outlet		Blower Outlet 1		MSDPS1 Inlet		Blower Outlet 2			
Date/Time Collected:		12/1/15 9:03		12/1/15 10:58		12/1/15 9:03		12/1/15 11:20			
Date/Time Analyzed:		12/4/15 16:16		12/4/15 19:10		12/4/15 18:27		12/4/15 20:23			
Analyst Initials:		AS		AS		AS		AS			
QC Batch:		151204GC8A1		151204GC8A1		151204GC8A1		151204GC8A1			
Dilution Factor:		2.7		2.8		3.0		6.0			
ANALYTE	Units	Result	RL	Result	RL	Result	RL	Result	RL		
TNMOC	ppmv C	NA	27	58,000	28	NA	30	152,000	60		
TNMOC uncorr*	ppmv C	58	27	27,000	28	89	30	34,000	60		

ND = Not detected at or above reporting limit.
TNMOC = Total Non-Methane Organic Carbon.
TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.
NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By: _____ **Date:** 12/7/15
Mark Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/02/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G120201-01		G120201-02		G120201-03		G120201-04	
Client Sample I.D.:	MSDPS1 Outlet		Blower Outlet 1		MSDPS1 Inlet		Blower Outlet 2	
Date/Time Sampled:	12/1/15 9:03		12/1/15 10:58		12/1/15 9:03		12/1/15 11:20	
Date/Time Analyzed:	12/2/15 15:01		12/2/15 15:26		12/2/15 15:12		12/2/15 16:00	
QC Batch No.:	151202GC3A1		151202GC3A1		151202GC3A1		151202GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.7		2.8		3.0		2.8	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	ND	0.53	56 d	5.6	ND	0.59	51 d	5.6
Carbonyl Sulfide	ND	0.53	ND	0.56	ND	0.59	ND	0.56
Methyl Mercaptan	ND	0.53	170 d	5.6	ND	0.59	170 d	5.6
Ethyl Mercaptan	ND	0.53	2.4	0.56	ND	0.59	2.5	0.56
Dimethyl Sulfide	ND	0.53	1,000 d	56.0	ND	0.59	1,100 d	56.0
Carbon Disulfide	ND	0.53	ND	0.56	ND	0.59	ND	0.56
Dimethyl Disulfide	ND	0.53	88 d	5.6	ND	0.59	120 d	5.6
Total Reduced Sulfur	0.93	0.53	1,400	0.56	1.2	0.59	1,600	0.56

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

Reviewed/Approved By: _____ Date 12/7/15
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 151202GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	12/2/15 11:15		12/2/15 10:51		12/2/15 11:04			
Analyst Initials:	AS		AS		AS			
Datafile:	02dec003		02dec001		02dec002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	91	70-130%	90	70-130%	0.8	<30
Carbonyl Sulfide	ND	0.20	108	70-130%	104	70-130%	3.7	<30
Methyl Mercaptan	ND	0.20	98	70-130%	98	70-130%	0.3	<30
Ethyl Mercaptan	ND	0.20	111	70-130%	113	70-130%	1.7	<30
Dimethyl Sulfide	ND	0.20	90	70-130%	89	70-130%	0.2	<30
Carbon Disulfide	ND	0.20	93	70-130%	93	70-130%	0.7	<30
Dimethyl Disulfide	ND	0.20	94	70-130%	96	70-130%	2.7	<30

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

Reviewed/Approved By: _____ Date: 12/7/15
Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/02/15
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	G120201-01		G120201-02		G120201-03		G120201-04	
Client Sample I.D.:	MSDPS1 Outlet		Blower Outlet 1		MSDPS1 Inlet		Blower Outlet 2	
Date/Time Sampled:	12/1/15 9:03		12/1/15 10:58		12/1/15 9:03		12/1/15 11:20	
Date/Time Analyzed:	12/2/15 19:45		12/2/15 20:25		12/2/15 21:04		12/2/15 21:42	
QC Batch No.:	151202MS2A1		151202MS2A1		151202MS2A1		151202MS2A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	2.7		840		5.9		560	
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Dichlorodifluoromethane (12)	ND	2.7	ND	840	8.7	5.9	ND	560
Chloromethane	ND	5.3	6,800	1,700	ND	12	6,900	1,100
1,2-Cl-1,1,2,2-F ethane (114)	ND	2.7	ND	840	ND	5.9	ND	560
Vinyl Chloride	ND	2.7	ND	840	ND	5.9	ND	560
Bromomethane	ND	2.7	860	840	ND	5.9	640	560
Chloroethane	ND	2.7	ND	840	ND	5.9	1,300	560
Trichlorofluoromethane (11)	ND	2.7	ND	840	ND	5.9	ND	560
1,1-Dichloroethene	ND	2.7	ND	840	ND	5.9	ND	560
Carbon Disulfide	17	13	ND	4,200	ND	30	ND	2,800
1,1,2-Cl 1,2,2-F ethane (113)	ND	2.7	ND	840	ND	5.9	ND	560
Acetone	9,400 d	13	290,000 d1	4,200	8,700 d1	30	320,000 d1	2,800
Methylene Chloride	ND	2.7	ND	840	ND	5.9	ND	560
t-1,2-Dichloroethene	ND	2.7	ND	840	ND	5.9	ND	560
1,1-Dichloroethane	ND	2.7	ND	840	ND	5.9	ND	560
Vinyl Acetate	ND	13	ND	4,200	ND	30	ND	2,800
c-1,2-Dichloroethene	ND	2.7	ND	840	ND	5.9	ND	560
2-Butanone	7.1	2.7	260,000 d1	840	46	5.9	300,000 d1	560
t-Butyl Methyl Ether (MTBE)	ND	2.7	ND	840	ND	5.9	610	560
Chloroform	ND	2.7	ND	840	ND	5.9	ND	560
1,1,1-Trichloroethane	ND	2.7	ND	840	ND	5.9	ND	560
Carbon Tetrachloride	ND	2.7	ND	840	ND	5.9	ND	560
Benzene	ND	2.7	180,000	840	840	5.9	180,000 d1	560
1,2-Dichloroethane	ND	2.7	ND	840	ND	5.9	ND	560
Trichloroethene	ND	2.7	ND	840	ND	5.9	ND	560
1,2-Dichloropropane	ND	2.7	ND	840	ND	5.9	ND	560
Bromodichloromethane	ND	2.7	ND	840	ND	5.9	ND	560
c-1,3-Dichloropropene	ND	2.7	ND	840	ND	5.9	ND	560
4-Methyl-2-Pentanone	ND	2.7	9,200	840	ND	5.9	11,000	560
Toluene	3.4	2.7	32,000	840	120	5.9	38,000	560
t-1,3-Dichloropropene	ND	2.7	ND	840	ND	5.9	ND	560
1,1,2-Trichloroethane	ND	2.7	ND	840	ND	5.9	ND	560

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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**12/02/15**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	G120201-01		G120201-02		G120201-03		G120201-04	
Client Sample I.D.:	MSDPS1 Outlet		Blower Outlet 1		MSDPS1 Inlet		Blower Outlet 2	
Date/Time Sampled:	12/1/15 9:03		12/1/15 10:58		12/1/15 9:03		12/1/15 11:20	
Date/Time Analyzed:	12/2/15 19:45		12/2/15 20:25		12/2/15 21:04		12/2/15 21:42	
QC Batch No.:	151202MS2A1		151202MS2A1		151202MS2A1		151202MS2A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	2.7		840		5.9		560	
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Tetrachloroethene	ND	2.7	ND	840	ND	5.9	ND	560
2-Hexanone	ND	2.7	4,400	840	ND	5.9	5,700	560
Dibromochloromethane	ND	2.7	ND	840	ND	5.9	ND	560
1,2-Dibromoethane	ND	2.7	ND	840	ND	5.9	ND	560
Chlorobenzene	ND	2.7	ND	840	34	5.9	700	560
Ethylbenzene	ND	2.7	12,000	840	58	5.9	15,000	560
p,&m-Xylene	ND	2.7	20,000	840	120	5.9	25,000	560
o-Xylene	ND	2.7	7,200	840	56	5.9	9,700	560
Styrene	ND	2.7	ND	840	6.3	5.9	1,100	560
Bromoform	ND	2.7	ND	840	ND	5.9	ND	560
1,1,2,2-Tetrachloroethane	ND	5.3	ND	1,700	ND	12	ND	1,100
Benzyl Chloride	ND	2.7	ND	840	ND	5.9	ND	560
4-Ethyl Toluene	ND	2.7	3,400	840	31	5.9	5,200	560
1,3,5-Trimethylbenzene	ND	5.3	ND	1,700	17	12	2,100	1,100
1,2,4-Trimethylbenzene	6.0	5.3	3,400	1,700	36	12	5,800	1,100
p-Isopropyltoluene	39	2.7	13,000	840	110	5.9	21,000	560
1,3-Dichlorobenzene	ND	2.7	ND	840	ND	5.9	ND	560
1,4-Dichlorobenzene	4.6	2.7	1,200	840	7.8	5.9	2,600	560
1,2-Dichlorobenzene	ND	2.7	ND	840	ND	5.9	ND	560
1,2,4-Trichlorobenzene	ND	5.3	ND	1,700	ND	12	ND	1,100
Hexachlorobutadiene	ND	2.7	ND	840	ND	5.9	ND	560

ND = Not Detected (below RL)
RL = Reporting Limit
d = Result obtained from a secondary dilution.
d1 = Result obtained from a secondary dilution. QC Batch ID: 151203MS2A1

Reviewed/Approved By: _____ **Date** 12/7/15

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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**12/02/15**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	METHOD BLANK		METHOD BLANK					
Client Sample I.D.:	--		--					
Date/Time Sampled:	--		--					
Date/Time Analyzed:	12/2/15 17:20		12/3/15 15:26					
QC Batch No.:	151202MS2A1		151203MS2A1					
Analyst Initials:	VM		VM					
Dilution Factor:	0.20		0.20					
ANALYTE	**Result ppbv**	**RL ppbv**	**Result ppbv**	**RL ppbv**				
Dichlorodifluoromethane (12)	ND	0.20	ND	0.20				
Chloromethane	ND	0.40	ND	0.40				
1,2-Cl-1,1,2,2-F ethane (114)	ND	0.20	ND	0.20				
Vinyl Chloride	ND	0.20	ND	0.20				
Bromomethane	ND	0.20	0.20	0.20				
Chloroethane	ND	0.20	ND	0.20				
Trichlorofluoromethane (11)	ND	0.20	ND	0.20				
1,1-Dichloroethene	ND	0.20	ND	0.20				
Carbon Disulfide	ND	1.0	ND	1.0				
1,1,2-Cl 1,2,2-F ethane (113)	ND	0.20	ND	0.20				
Acetone	ND	1.0	ND	1.0				
Methylene Chloride	ND	0.20	ND	0.20				
t-1,2-Dichloroethene	ND	0.20	ND	0.20				
1,1-Dichloroethane	ND	0.20	ND	0.20				
Vinyl Acetate	ND	1.0	ND	1.0				
c-1,2-Dichloroethene	ND	0.20	ND	0.20				
2-Butanone	ND	0.20	ND	0.20				
t-Butyl Methyl Ether (MTBE)	ND	0.20	ND	0.20				
Chloroform	ND	0.20	ND	0.20				
1,1,1-Trichloroethane	ND	0.20	ND	0.20				
Carbon Tetrachloride	ND	0.20	ND	0.20				
Benzene	ND	0.20	ND	0.20				
1,2-Dichloroethane	ND	0.20	ND	0.20				
Trichloroethene	ND	0.20	ND	0.20				
1,2-Dichloropropane	ND	0.20	ND	0.20				
Bromodichloromethane	ND	0.20	ND	0.20				
c-1,3-Dichloropropene	ND	0.20	ND	0.20				
4-Methyl-2-Pentanone	ND	0.20	ND	0.20				
Toluene	ND	0.20	ND	0.20				
t-1,3-Dichloropropene	ND	0.20	ND	0.20				
1,1,2-Trichloroethane	ND	0.20	ND	0.20				

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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**12/02/15**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	METHOD BLANK		METHOD BLANK					
Client Sample I.D.:	--		--					
Date/Time Sampled:	--		--					
Date/Time Analyzed:	12/2/15 17:20		12/3/15 15:26					
QC Batch No.:	151202MS2A1		151203MS2A1					
Analyst Initials:	VM		VM					
Dilution Factor:	0.20		0.20					
ANALYTE	**Result ppbv**	**RL ppbv**	**Result ppbv**	**RL ppbv**				
Tetrachloroethene	ND	0.20	ND	0.20				
2-Hexanone	ND	0.20	ND	0.20				
Dibromochloromethane	ND	0.20	ND	0.20				
1,2-Dibromoethane	ND	0.20	ND	0.20				
Chlorobenzene	ND	0.20	ND	0.20				
Ethylbenzene	ND	0.20	ND	0.20				
p,&m-Xylene	ND	0.20	ND	0.20				
o-Xylene	ND	0.20	ND	0.20				
Styrene	ND	0.20	ND	0.20				
Bromoform	ND	0.20	ND	0.20				
1,1,2,2-Tetrachloroethane	ND	0.40	ND	0.40				
Benzyl Chloride	ND	0.20	ND	0.20				
4-Ethyl Toluene	ND	0.20	ND	0.20				
1,3,5-Trimethylbenzene	ND	0.40	ND	0.40				
1,2,4-Trimethylbenzene	ND	0.40	ND	0.40				
p-Isopropyltoluene	ND	0.20	ND	0.20				
1,3-Dichlorobenzene	ND	0.20	ND	0.20				
1,4-Dichlorobenzene	ND	0.20	ND	0.20				
1,2-Dichlorobenzene	ND	0.20	ND	0.20				
1,2,4-Trichlorobenzene	ND	0.40	ND	0.40				
Hexachlorobutadiene	ND	0.20	ND	0.20				

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

Reviewed/Approved By: _____ **Date** 12/7/15
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

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 151202MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	12/2/15 17:20		12/2/15 9:19		12/2/15 9:57						
Data File ID:	02DEC006.D		02DEC003.D		02DEC004.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	10.1	101	10.0	100	0.8	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.2	102	10.2	102	0.6	70	130	30	Pass
Trichloroethene	0.0	10.0	10.6	106	10.8	108	1.8	70	130	30	Pass
Toluene	0.0	10.0	10.4	104	10.2	102	1.5	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.3	103	10.2	102	1.0	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 12/7/15

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 151203MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	12/3/15 15:26		12/3/15 11:03		12/3/15 11:42						
Data File ID:	03DEC010.D		03DEC006.D		03DEC007.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	9.8	98	9.7	97	1.1	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.0	100	9.7	97	3.6	70	130	30	Pass
Trichloroethene	0.0	10.0	10.4	104	10.3	103	1.7	70	130	30	Pass
Toluene	0.0	10.0	10.0	100	9.7	97	2.4	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.1	101	9.8	98	2.6	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 12/7/15

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Bridgeton Landfill, LLC.
Weeklty TRS Sampling Summary

Kurz FM =	**3,321**	**scfm**
Fleetzoom Total =	**3,555**	**scfm**

$\Delta =$ **7%**

	PARAMETER	Blower Out #1	Blower Out #2
Date	Test Date		11/24/15
Time	Start - Finish	11:58	12:08
%CH_4	Methane, %	10.00	10.70
%CO_2	Carbon Dioxide, %	33.20	34.80
%O_2	Oxygen, %	9.30	8.50
%Balance	Assumed as Nitorgen, %	37.60	35.20
%H_2	Hydrogen, %	8.60	9.60
%CO	Carbon Monoxide, %	0.10	0.10
P_g	Flue Gas Static Pressure, inches of H_2O	18.74	18.74
t_s	Blower Outlet LFG Temperature, °F	69	69
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	3,155	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	3,321	
NHV	Net Heating Value, Btu/scf	141.5	141.9
LFG_{CH4}	Methane, lb/hr	788.5	843.7
	Methane, grains/dscf	29.15	31.20
LFG_{CO2}	Carbon Dioxide, lb/hr	7,181.2	7,527.3
	Carbon Dioxide, grains/dscf	265.53	278.33
LFG_{O2}	Oxygen, lb/hr	1,462.6	1,336.8
	Oxygen, grains/dscf	54.08	49.43
LFG_{N2}	Balance gas as Nitrogen, lb/hr	5,176.9	4,846.4
	Balance gas as Nitrogen, grains/dscf	191.42	179.20
LFG_{H4}	Hydrogen, lb/hr	85.2	95.1
	Hydrogen, grains/dscf	3.15	3.52
LFG_{CO}	Carbon Monoxide, lb/hr	13.8	13.8
	Carbon Monoxide, grains/dscf	0.48	0.48

		Blower Out #1	Blower Out #2
H_2S	Hydrogen Sulfide Concentration, ppmd	67.00	64.00
	Hydrogen Sulfide Rate, lb/hr	1.12	1.07
	Hydrogen Sulfide Rate, grains/dscf	0.041	0.040
COS	Carbonyl Sulfide Concentration, ppmd	0.58	0.58
	Carboynl Sulfide Rate, lb/hr	0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	180.00	170.00
	Methyl Mercaptan Rate, lb/hr	4.26	4.02
	Methyl Mercaptan Rate, grains/dscf	0.157	0.149
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.00	2.30
	Ethyl Mercaptan Rate, lb/hr	0.06	0.07
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	750.00	980.00
	Dimethyl Sulfide Rate, lb/hr	22.90	29.93
	Dimethyl Sulfide Rate, grains/dscf	0.847	1.107
CS_2	Carbon Disulfide Concentration, ppmd	0.58	0.58
	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	100.00
	Dimethyl Disulfide Rate, lb/hr	5.09	4.63
	Dimethyl Disulfide Rate, grains/dscf	0.188	0.171

❶**$E_{TRS-SO2}$**	TRS-->SO2 Emission Concentration, ppmd	1,200.00	1,400.00
	TRS-->SO2 Emission Rate, lb/hr	37.78	44.08
	TRS-->SO2 Emission Rate, grains/dscf	1.397	1.630

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.

December 2, 2015

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: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G112501 -01/02

Enclosed are results for sample(s) received 11/25/15 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 Jim Getting, Mike Lambrich, Ryan Ayers and David Randall, Weaver Consultants Group, on 12/01/15.

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:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING

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

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: EPA 15/16 + TRS & ASTM1946 + H2+ CO	ASTM 1946, BTU/SCF	EPA TO15 & 25C			
	Canister ID	Sample Start	Sample End	Lab Receive												
G112501-01	J1723	-19.5	-3.5		Outlet A	11/24/2015	1158	C	LFG	NA	X	X	X			
1 -02	J1719	-20.2	-3.5		Outlet B	11/24/2015	1208	C	LFG	NA	X	X	X			

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Ryan Ayers		COMPANY: Republic Services	DATE/TIME
RELINQUISHED BY: Ryan Ayers	11-24-15 1230	DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY: FEDEX	11/25/15 0920	DATE/ RECEIVED BY: ATLI	DATE/TIME: 11/25/15 0920
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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/25/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G112501-01		G112501-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/24/15 11:58		11/24/15 12:08					
Date/Time Analyzed:	11/27/15 13:22		11/27/15 14:26					
QC Batch No.:	151127GC8A1		151127GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.9		2.9					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	8.6	2.9	9.6	2.9				
Carbon Dioxide	33.2	0.029	34.8	0.029				
Oxygen/Argon	9.3	1.4	8.5	1.4				
Nitrogen	37.6	2.9	35.2	2.9				
Methane	10.0	0.0029	10.7	0.0029				
Carbon Monoxide	0.1	0.0029	0.1	0.0029				
Net Heating Value (BTU/ft3)	141.5	2.9	149.9	2.9				
Gross Heating Value (BTU/ft3)	159.8	2.9	169.5	2.9				

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

Reviewed/Approved By: _____ **Date** 11/30/15
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.: 151127GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/27/15 13:06		11/27/15 12:23		11/27/15 12:37			
Analyst Initials:	AS		AS		AS			
Datafile:	27nov050		27nov047		27nov048			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	101	70-130%	102	70-130%	0.3	<30
Carbon Dioxide	ND	0.010	95	70-130%	96	70-130%	1.9	<30
Oxygen/Argon	ND	0.50	95	70-130%	96	70-130%	0.8	<30
Nitrogen	ND	1.0	95	70-130%	96	70-130%	0.3	<30
Methane	ND	0.0010	105	70-130%	105	70-130%	0.1	<30
Carbon Monoxide	ND	0.0010	120	70-130%	120	70-130%	0.4	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11-30-15

Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting

Project Name: Bridgeton Landfill
Project Number: NA
Date Received: 11/25/2015
Matrix: Vapor

TNMOC by EPA METHOD 25C

Lab Number:		G112501-01		G112501-02							
Client Sample ID:		Outlet A		Outlet B							
Date/Time Collected:		11/24/15 11:58		11/24/15 12:08							
Date/Time Analyzed:		11/27/15 13:43		11/27/15 15:12							
Analyst Initials:		AS		AS							
QC Batch:		151127GC8A1		151127GC8A1							
Dilution Factor:		4.9		8.7							
ANALYTE	Units	Result	RL	Result	RL						
TNMOC	ppmv C	72,000	49	105,000	87						
TNMOC uncorr*	ppmv C	36,000	49	34,000	87						

ND = Not detected at or above reporting limit.
TNMOC = Total Non-Methane Organic Carbon.
TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.
NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By: _____ **Date:** 11-30-15

Mark Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/25/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G112501-01		G112501-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/24/15 11:58		11/24/15 12:08					
Date/Time Analyzed:	11/25/15 10:42		11/25/15 11:18					
QC Batch No.:	151125GC3A1		151125GC3A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.9		2.9					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv				
Hydrogen Sulfide	67 d	5.8	64 d	5.8				
Carbonyl Sulfide	ND	0.58	ND	0.58				
Methyl Mercaptan	180 d	5.8	170 d	5.8				
Ethyl Mercaptan	2.0	0.58	2.3	0.58				
Dimethyl Sulfide	750 d	58.0	980 d	58.0				
Carbon Disulfide	ND	0.58	ND	0.58				
Dimethyl Disulfide	110 d	5.8	100 d	5.8				
Total Reduced Sulfur	1,200	0.58	1,400	0.58				

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

Reviewed/Approved By: _____ Date 11-30-15
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 151125GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/25/15 8:58		11/25/15 8:12		11/25/15 8:46			
Analyst Initials:	AS		AS		AS			
Datafile:	25nov003		25nov001		25nov002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	96	70-130%	99	70-130%	3.0	<30
Carbonyl Sulfide	ND	0.20	104	70-130%	112	70-130%	6.7	<30
Methyl Mercaptan	ND	0.20	103	70-130%	107	70-130%	3.6	<30
Ethyl Mercaptan	ND	0.20	119	70-130%	125	70-130%	4.9	<30
Dimethyl Sulfide	ND	0.20	95	70-130%	99	70-130%	4.6	<30
Carbon Disulfide	ND	0.20	103	70-130%	104	70-130%	1.1	<30
Dimethyl Disulfide	ND	0.20	110	70-130%	116	70-130%	6.0	<30

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

Reviewed/Approved By: _____ Date: 11-30-15
Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/25/15
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	G112501-01		G112501-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/24/15 11:58		11/24/15 12:08					
Date/Time Analyzed:	11/27/15 13:30		11/27/15 21:19					
QC Batch No.:	151127MS2A1		151127MS2A1					
Analyst Initials:	VM		VM					
Dilution Factor:	2,900		290					
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv				
Dichlorodifluoromethane (12)	ND	2,900	ND	290				
Chloromethane	ND	5,800	ND	580				
1,2-Cl-1,1,2,2-F ethane (114)	ND	2,900	ND	290				
Vinyl Chloride	ND	2,900	ND	290				
Bromomethane	ND	2,900	ND	290				
Chloroethane	ND	2,900	1,300	290				
Trichlorofluoromethane (11)	ND	2,900	ND	290				
1,1-Dichloroethene	ND	2,900	ND	290				
Carbon Disulfide	ND	14,000	3,200	1,400				
1,1,2-Cl 1,2,2-F ethane (113)	ND	2,900	ND	290				
Acetone	1,600,000 d	14,000	510,000 d	1,400				
Methylene Chloride	ND	2,900	ND	290				
t-1,2-Dichloroethene	ND	2,900	ND	290				
1,1-Dichloroethane	ND	2,900	ND	290				
Vinyl Acetate	ND	14,000	ND	1,400				
c-1,2-Dichloroethene	ND	2,900	ND	290				
2-Butanone	300,000	2,900	410,000 d	290				
t-Butyl Methyl Ether (MTBE)	ND	2,900	670	290				
Chloroform	ND	2,900	ND	290				
1,1,1-Trichloroethane	ND	2,900	ND	290				
Carbon Tetrachloride	ND	2,900	ND	290				
Benzene	180,000	2,900	220,000 d	290				
1,2-Dichloroethane	ND	2,900	ND	290				
Trichloroethene	ND	2,900	ND	290				
1,2-Dichloropropane	ND	2,900	ND	290				
Bromodichloromethane	ND	2,900	ND	290				
c-1,3-Dichloropropene	ND	2,900	ND	290				
4-Methyl-2-Pentanone	8,700	2,900	11,000	290				
Toluene	30,000	2,900	35,000	290				
t-1,3-Dichloropropene	ND	2,900	ND	290				
1,1,2-Trichloroethane	ND	2,900	ND	290				

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/25/15
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	G112501-01		G112501-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/24/15 11:58		11/24/15 12:08					
Date/Time Analyzed:	11/27/15 13:30		11/27/15 21:19					
QC Batch No.:	151127MS2A1		151127MS2A1					
Analyst Initials:	VM		VM					
Dilution Factor:	2,900		290					
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv				
Tetrachloroethene	9,700	2,900	ND	290				
2-Hexanone	4,900	2,900	6,900	290				
Dibromochloromethane	ND	2,900	ND	290				
1,2-Dibromoethane	ND	2,900	ND	290				
Chlorobenzene	ND	2,900	780	290				
Ethylbenzene	12,000	2,900	16,000	290				
p,&m-Xylene	20,000	2,900	26,000	290				
o-Xylene	8,000	2,900	10,000	290				
Styrene	ND	2,900	1,100	290				
Bromoform	ND	2,900	ND	290				
1,1,2,2-Tetrachloroethane	ND	5,800	ND	580				
Benzyl Chloride	ND	2,900	ND	290				
4-Ethyl Toluene	4,400	2,900	6,900	290				
1,3,5-Trimethylbenzene	ND	5,800	2,700	580				
1,2,4-Trimethylbenzene	ND	5,800	8,200	580				
p-Isopropyltoluene	21,000	2,900	30,000	290				
1,3-Dichlorobenzene	ND	2,900	ND	290				
1,4-Dichlorobenzene	ND	2,900	3,900	290				
1,2-Dichlorobenzene	ND	2,900	ND	290				
1,2,4-Trichlorobenzene	ND	5,800	ND	580				
Hexachlorobutadiene	ND	2,900	ND	290				

ND = Not Detected (below RL)
RL = Reporting Limit
d = Result obtained from a secondary dilution. QC Batch ID: 151130MS2A1

Reviewed/Approved By: _____ Date 12-1-15
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

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

Client:	**Republic Services**
Attn:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**11/25/15**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	METHOD BLANK		METHOD BLANK					
Client Sample I.D.:	--		--					
Date/Time Sampled:	--		--					
Date/Time Analyzed:	11/27/15 12:42		11/30/15 18:51					
QC Batch No.:	151127MS2A1		151130MS2A1					
Analyst Initials:	VM		VM					
Dilution Factor:	0.20		0.20					
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv				
Dichlorodifluoromethane (12)	ND	0.20	ND	0.20				
Chloromethane	ND	0.40	ND	0.40				
1,2-Cl-1,1,2,2-F ethane (114)	ND	0.20	ND	0.20				
Vinyl Chloride	ND	0.20	ND	0.20				
Bromomethane	ND	0.20	ND	0.20				
Chloroethane	ND	0.20	ND	0.20				
Trichlorofluoromethane (11)	ND	0.20	ND	0.20				
1,1-Dichloroethene	ND	0.20	ND	0.20				
Carbon Disulfide	ND	1.0	ND	1.0				
1,1,2-Cl 1,2,2-F ethane (113)	ND	0.20	ND	0.20				
Acetone	ND	1.0	ND	1.0				
Methylene Chloride	ND	0.20	ND	0.20				
t-1,2-Dichloroethene	ND	0.20	ND	0.20				
1,1-Dichloroethane	ND	0.20	ND	0.20				
Vinyl Acetate	ND	1.0	ND	1.0				
c-1,2-Dichloroethene	ND	0.20	ND	0.20				
2-Butanone	ND	0.20	ND	0.20				
t-Butyl Methyl Ether (MTBE)	ND	0.20	ND	0.20				
Chloroform	ND	0.20	ND	0.20				
1,1,1-Trichloroethane	ND	0.20	ND	0.20				
Carbon Tetrachloride	ND	0.20	ND	0.20				
Benzene	ND	0.20	ND	0.20				
1,2-Dichloroethane	ND	0.20	ND	0.20				
Trichloroethene	ND	0.20	ND	0.20				
1,2-Dichloropropane	ND	0.20	ND	0.20				
Bromodichloromethane	ND	0.20	ND	0.20				
c-1,3-Dichloropropene	ND	0.20	ND	0.20				
4-Methyl-2-Pentanone	ND	0.20	ND	0.20				
Toluene	ND	0.20	ND	0.20				
t-1,3-Dichloropropene	ND	0.20	ND	0.20				
1,1,2-Trichloroethane	ND	0.20	ND	0.20				

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/25/15
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	METHOD BLANK		METHOD BLANK					
Client Sample I.D.:	--		--					
Date/Time Sampled:	--		--					
Date/Time Analyzed:	11/27/15 12:42		11/30/15 18:51					
QC Batch No.:	151127MS2A1		151130MS2A1					
Analyst Initials:	VM		VM					
Dilution Factor:	0.20		0.20					
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv				
Tetrachloroethene	ND	0.20	ND	0.20				
2-Hexanone	ND	0.20	ND	0.20				
Dibromochloromethane	ND	0.20	ND	0.20				
1,2-Dibromoethane	ND	0.20	ND	0.20				
Chlorobenzene	ND	0.20	ND	0.20				
Ethylbenzene	ND	0.20	ND	0.20				
p,&m-Xylene	ND	0.20	ND	0.20				
o-Xylene	ND	0.20	ND	0.20				
Styrene	ND	0.20	ND	0.20				
Bromoform	ND	0.20	ND	0.20				
1,1,2,2-Tetrachloroethane	ND	0.40	ND	0.40				
Benzyl Chloride	ND	0.20	ND	0.20				
4-Ethyl Toluene	ND	0.20	ND	0.20				
1,3,5-Trimethylbenzene	ND	0.40	ND	0.40				
1,2,4-Trimethylbenzene	ND	0.40	ND	0.40				
p-Isopropyltoluene	ND	0.20	ND	0.20				
1,3-Dichlorobenzene	ND	0.20	ND	0.20				
1,4-Dichlorobenzene	ND	0.20	ND	0.20				
1,2-Dichlorobenzene	ND	0.20	ND	0.20				
1,2,4-Trichlorobenzene	ND	0.40	ND	0.40				
Hexachlorobutadiene	ND	0.20	ND	0.20				

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

Reviewed/Approved By: _____ Date 12-1-15

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

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 151127MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	11/27/15 12:42		11/27/15 11:19		11/27/15 12:01						
Data File ID:	27NOV005.D		27NOV003.D		27NOV004.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	10.1	101	10.0	100	0.6	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.1	101	10.1	101	0.4	70	130	30	Pass
Trichloroethene	0.0	10.0	10.6	106	10.9	109	2.5	70	130	30	Pass
Toluene	0.0	10.0	10.5	105	10.4	104	0.9	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.7	107	10.4	104	3.5	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 12-1-15

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 151130MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	11/30/15 18:51		11/30/15 17:30		11/30/15 18:10						
Data File ID:	30NOV010.D		30NOV008.D		30NOV009.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	10.4	104	10.2	102	1.9	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.2	102	10.3	103	0.9	70	130	30	Pass
Trichloroethene	0.0	10.0	10.8	108	10.9	109	0.4	70	130	30	Pass
Toluene	0.0	10.0	11.4	114	11.0	110	3.6	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.4	104	10.4	104	0.4	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 12-1-15

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

	PARAMETER				Blower Out
Date	Test Date				11/18/15
Start	Run Start Time				12:02
	Run Finish Time				12:24
	Net Traversing Points				16 (2 x 8)
Θ	Net Run Time, minutes				0:22:39
C_p	Pitot Tube Coeficient				0.99
P_{Br}	Barometric Pressure, inches of Mercury				29.38
% H_2O	Moisture Content of LFG, %				2.62
% RH	Relative Humidity, %				52.30
M_{fd}	Dry Mole Fraction				0.974
%CH_4	Methane, %				10.10
%CO_2	Carbon Dioxide, %				35.20
%O_2	Oxygen, %				8.60
%Balance	Assumed as Nitorgen, %				34.90
%H_2	Hydrogen, %				10.10
%CO	Carbon Monoxide, %				0.10
M_d	Dry Molecular Weight, lb/lb-Mole				29.84
M_s	Wet Molecular weight, lb/lb-Mole				29.53
P_g	Flue Gas Static Pressure, inches of H_2O				20.33
P_s	Absolute Flue Gas Pressure, inches of Mercury				30.44
t_s	Average Stack Gas Temperature, °F				85
ΔP_{avg}	Average Velocity Head, inches of H_2O				0.446
v_s	Average LFG Velocity, feet/second				44.02
A_s	Stack Crossectional Area, square feet				1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm				3,430
Q_s	Standard Volumetric Flow Rate, scfm				3,520
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm				3,574
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr				15,942
NHV	Net Heating Value, Btu/scf				142
LFG_{CH4}	Methane, lb/hr				865.8
	Methane, grains/dscf				29.45
LFG_{CO2}	Carbon Dioxide, lb/hr				8,277.8
	Carbon Dioxide, grains/dscf				281.53
LFG_{O2}	Oxygen, lb/hr				1470.5
	Oxygen, grains/dscf				50.01
LFG_{N2}	Balance gas as Nitrogen, lb/hr				5,224.2
	Balance gas as Nitrogen, grains/dscf				177.68
LFG_{H4}	Hydrogen, lb/hr				108.8
	Hydrogen, grains/dscf				3.70
LFG_{CO}	Carbon Monoxide, lb/hr				15.0
	Carbon Monoxide, grains/dscf				0.51

				Blower Out Sample #1	Blower Out Sample #2
H_2S	Hydrogen Sulfide Concentration, ppmd			61.00	42.00
	Hydrogen Sulfide Rate, lb/hr			1.11	0.76
	Hydrogen Sulfide Rate, grains/dscf			0.038	0.026
COS	Carbonyl Sulfide Concentration, ppmd			0.56	0.59
	Carboynl Sulfide Rate, lb/hr			0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf			0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd			160.00	170.00
	Methyl Mercaptan Rate, lb/hr			4.11	4.37
	Methyl Mercaptan Rate, grains/dscf			0.140	0.149
C_2H_6S	Ethyl Mercaptan Concentration, ppmd			2.30	2.00
	Ethyl Mercaptan Rate, lb/hr			0.08	0.07
	Ethyl Mercaptan Rate, grains/dscf			0.003	0.002
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd			950.00	1,200.00
	Dimethyl Sulfide Rate, lb/hr			31.54	39.84
	Dimethyl Sulfide Rate, grains/dscf			1.073	1.355
CS_2	Carbon Disulfide Concentration, ppmd			0.56	0.59
	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			83.00	110.00
	Dimethyl Disulfide Rate, lb/hr			4.18	4.48
	Dimethyl Disulfide Rate, grains/dscf			0.142	0.152

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd			1,300.00	1,700.00
	TRS-->SO2 Emission Rate, lb/hr			44.50	58.20
	TRS-->SO2 Emission Rate, grains/dscf			1.514	1.979

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, November 18, 2015

LOCATION	TIME	Q -SCFM		Δ	KURZ	Method 2 vs KURZ
		METHOD 2	FLEETZOOM			
BLOWER OUT	12:02	3,520	3,590	1.9%	3,400	-3.5%
FL100						
FL120						
FL 140						

Air TECHNOLOGY
Laboratories, Inc.

November 24, 2015

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: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G111904-01/02

Enclosed are results for sample(s) received 11/19/15 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 Jim Getting, Mike Lambrich, Ryan Ayers and David Randall, Weaver Consultants Group, on 11/23/15.

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

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

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

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

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

BILLING

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

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: EPA 15/16 + TRS & ASTM1946 + H2+ CO	ASTM 1946, BTU/SCF	EPA TO15 & 25C			
	Canister ID	Sample Start	Sample End	Lab Receive												
G111904-01	1614	-19.5	-3.5	-3	Outlet A	11/18/2015	1203	C	LFG	NA	X	X	X			
↓ -02	1540	-19.5	-3.5	-4	Outlet B	11/18/2015	1214	C	LFG	NA	X	X	X			

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Ryan Ayers		COMPANY: Republic Services	DATE/TIME
RELINQUISHED BY	11-18-15 1300	DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY FedEx		DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY		DATE/ RECEIVED BY	DATE/TIME

COMMENTS

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/19/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111904-01		G111904-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/18/15 12:03		11/18/15 12:14					
Date/Time Analyzed:	11/20/15 11:23		11/20/15 12:41					
QC Batch No.:	151120GC8A1		151120GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.8		3.0					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	10.1	2.8	10.1	3.0				
Carbon Dioxide	35.2	0.028	35.2	0.030				
Oxygen/Argon	8.6	1.4	8.6	1.5				
Nitrogen	34.9	2.8	34.9	3.0				
Methane	10.1	0.0028	10.1	0.0030				
Carbon Monoxide	0.1	0.0028	0.1	0.0030				
Net Heating Value (BTU/ft3)	141.7	2.8	142.7	3.0				
Gross Heating Value (BTU/ft3)	160.7	2.8	161.7	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 11-24-15

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.: 151120GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/20/15 11:08		11/20/15 10:24		11/20/15 10:39			
Analyst Initials:	AS		AS		AS			
Datafile:	20nov011		20nov008		20nov009			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	111	70-130%	111	70-130%	0.2	<30
Carbon Dioxide	ND	0.010	100	70-130%	101	70-130%	0.7	<30
Oxygen/Argon	ND	0.50	97	70-130%	97	70-130%	0.2	<30
Nitrogen	ND	1.0	97	70-130%	96	70-130%	0.6	<30
Methane	ND	0.0010	97	70-130%	95	70-130%	2.4	<30
Carbon Monoxide	ND	0.0010	113	70-130%	113	70-130%	0.4	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11-23-15

Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting

Project Name: Bridgeton Landfill
Project Number: NA
Date Received: 11/19/2015
Matrix: Vapor

TNMOC by EPA METHOD 25C

Lab Number:		G111904-01		G111904-02							
Client Sample ID:		Outlet A		Outlet B							
Date/Time Collected:		11/18/15 12:03		11/18/15 12:14							
Date/Time Analyzed:		11/20/15 11:56		11/20/15 13:18							
Analyst Initials:		AS		AS							
QC Batch:		151120GC8A1		151120GC8A1							
Dilution Factor:		14		15							
ANALYTE	Units	Result	RL	Result	RL						
TNMOC	ppmv C	57,000	140	76,000	150						
TNMOC uncorr*	ppmv C	28,000	140	29,000	150						

ND = Not detected at or above reporting limit.
TNMOC = Total Non-Methane Organic Carbon.
TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.
NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By: _____ **Date:** 11-23-15

Mark Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/19/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G111904-01		G111904-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/18/15 12:03		11/18/15 12:14					
Date/Time Analyzed:	11/20/15 8:54		11/20/15 9:31					
QC Batch No.:	151120GC3A1		151120GC3A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.8		3.0					
ANALYTE	**Result ppmv**	**RL ppmv**	**Result ppmv**	**RL ppmv**				
Hydrogen Sulfide	61 d	5.6	42 d	5.9				
Carbonyl Sulfide	ND	0.56	ND	0.59				
Methyl Mercaptan	160 d	5.6	170 d	5.9				
Ethyl Mercaptan	2.3	0.56	2.0	0.59				
Dimethyl Sulfide	950 d	56.0	1,200 d	59.0				
Carbon Disulfide	ND	0.56	ND	0.59				
Dimethyl Disulfide	83 d	5.6	110 d	5.9				
Total Reduced Sulfur	1,300	0.56	1,700	0.59				

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

Reviewed/Approved By: _____ Date 11/23/15
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 151120GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/20/15 8:43		11/20/15 8:18		11/20/15 8:30			
Analyst Initials:	AS		AS		AS			
Datafile:	20nov003		20nov001		20nov002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	88	70-130%	92	70-130%	4.0	<30
Carbonyl Sulfide	ND	0.20	108	70-130%	108	70-130%	0.3	<30
Methyl Mercaptan	ND	0.20	97	70-130%	97	70-130%	0.2	<30
Ethyl Mercaptan	ND	0.20	114	70-130%	118	70-130%	3.0	<30
Dimethyl Sulfide	ND	0.20	92	70-130%	92	70-130%	0.7	<30
Carbon Disulfide	ND	0.20	95	70-130%	95	70-130%	0.0	<30
Dimethyl Disulfide	ND	0.20	98	70-130%	99	70-130%	0.2	<30

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

Reviewed/Approved By: _____ Date: 11/23/15
Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/19/15
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	G111904-01		G111904-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/18/15 12:03		11/18/15 12:14					
Date/Time Analyzed:	11/21/15 20:30		11/21/15 21:10					
QC Batch No.:	151121MS2A1		151121MS2A1					
Analyst Initials:	VM		VM					
Dilution Factor:	560		590					
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv				
Dichlorodifluoromethane (12)	ND	560	ND	590				
Chloromethane	4,800	1,100	4,900	1,200				
1,2-Cl-1,1,2,2-F ethane (114)	ND	560	ND	590				
Vinyl Chloride	ND	560	ND	590				
Bromomethane	ND	560	ND	590				
Chloroethane	1,000	560	900	590				
Trichlorofluoromethane (11)	ND	560	ND	590				
1,1-Dichloroethene	ND	560	ND	590				
Carbon Disulfide	ND	2,800	ND	3,000				
1,1,2-Cl 1,2,2-F ethane (113)	ND	560	ND	590				
Acetone	450,000 d	2,800	480,000 d	3,000				
Methylene Chloride	ND	560	ND	590				
t-1,2-Dichloroethene	ND	560	ND	590				
1,1-Dichloroethane	ND	560	ND	590				
Vinyl Acetate	ND	2,800	ND	3,000				
c-1,2-Dichloroethene	ND	560	ND	590				
2-Butanone	330,000 d	560	350,000 d	590				
t-Butyl Methyl Ether (MTBE)	ND	560	ND	590				
Chloroform	ND	560	ND	590				
1,1,1-Trichloroethane	ND	560	ND	590				
Carbon Tetrachloride	ND	560	ND	590				
Benzene	180,000 d	560	280,000 d	590				
1,2-Dichloroethane	ND	560	ND	590				
Trichloroethene	ND	560	ND	590				
1,2-Dichloropropane	ND	560	ND	590				
Bromodichloromethane	ND	560	ND	590				
c-1,3-Dichloropropene	ND	560	ND	590				
4-Methyl-2-Pentanone	8,900	560	9,500	590				
Toluene	24,000	560	28,000	590				
t-1,3-Dichloropropene	ND	560	ND	590				
1,1,2-Trichloroethane	ND	560	ND	590				

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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**11/19/15**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	G111904-01		G111904-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/18/15 12:03		11/18/15 12:14					
Date/Time Analyzed:	11/21/15 20:30		11/21/15 21:10					
QC Batch No.:	151121MS2A1		151121MS2A1					
Analyst Initials:	VM		VM					
Dilution Factor:	560		590					
ANALYTE	**Result ppbv**	**RL ppbv**	**Result ppbv**	**RL ppbv**				
Tetrachloroethene	ND	560	ND	590				
2-Hexanone	4,400	560	4,700	590				
Dibromochloromethane	ND	560	ND	590				
1,2-Dibromoethane	ND	560	ND	590				
Chlorobenzene	ND	560	ND	590				
Ethylbenzene	9,700	560	11,000	590				
p,&m-Xylene	16,000	560	18,000	590				
o-Xylene	6,100	560	6,600	590				
Styrene	610	560	610	590				
Bromoform	ND	560	ND	590				
1,1,2,2-Tetrachloroethane	ND	1,100	ND	1,200				
Benzyl Chloride	ND	560	ND	590				
4-Ethyl Toluene	3,700	560	3,100	590				
1,3,5-Trimethylbenzene	1,500	1,100	ND	1,200				
1,2,4-Trimethylbenzene	4,300	1,100	2,900	1,200				
p-Isopropyltoluene	18,000	560	11,000	590				
1,3-Dichlorobenzene	ND	560	ND	590				
1,4-Dichlorobenzene	2,500	560	870	590				
1,2-Dichlorobenzene	ND	560	ND	590				
1,2,4-Trichlorobenzene	ND	1,100	ND	1,200				
Hexachlorobutadiene	ND	560	ND	590				

ND = Not Detected (below RL)
RL = Reporting Limit
d = Result obtained from secondary dilution

Reviewed/Approved By: _____ **Date** 11/23/15

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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**11/19/15**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	METHOD BLANK							
Client Sample I.D.:	--							
Date/Time Sampled:	--							
Date/Time Analyzed:	11/21/15 15:00							
QC Batch No.:	151121MS2A1							
Analyst Initials:	VM							
Dilution Factor:	0.20							

ANALYTE	Result ppbv	RL ppbv						
Dichlorodifluoromethane (12)	ND	0.20						
Chloromethane	ND	0.40						
1,2-Cl-1,1,2,2-F ethane (114)	ND	0.20						
Vinyl Chloride	ND	0.20						
Bromomethane	ND	0.20						
Chloroethane	ND	0.20						
Trichlorofluoromethane (11)	ND	0.20						
1,1-Dichloroethene	ND	0.20						
Carbon Disulfide	ND	1.0						
1,1,2-Cl 1,2,2-F ethane (113)	ND	0.20						
Acetone	ND	1.0						
Methylene Chloride	ND	0.20						
t-1,2-Dichloroethene	ND	0.20						
1,1-Dichloroethane	ND	0.20						
Vinyl Acetate	ND	1.0						
c-1,2-Dichloroethene	ND	0.20						
2-Butanone	ND	0.20						
t-Butyl Methyl Ether (MTBE)	ND	0.20						
Chloroform	ND	0.20						
1,1,1-Trichloroethane	ND	0.20						
Carbon Tetrachloride	ND	0.20						
Benzene	ND	0.20						
1,2-Dichloroethane	ND	0.20						
Trichloroethene	ND	0.20						
1,2-Dichloropropane	ND	0.20						
Bromodichloromethane	ND	0.20						
c-1,3-Dichloropropene	ND	0.20						
4-Methyl-2-Pentanone	ND	0.20						
Toluene	ND	0.20						
t-1,3-Dichloropropene	ND	0.20						
1,1,2-Trichloroethane	ND	0.20						

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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**11/19/15**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	METHOD BLANK							
Client Sample I.D.:	--							
Date/Time Sampled:	--							
Date/Time Analyzed:	11/21/15 15:00							
QC Batch No.:	151121MS2A1							
Analyst Initials:	VM							
Dilution Factor:	0.20							
ANALYTE	**Result ppbv**	**RL ppbv**						
Tetrachloroethene	ND	0.20						
2-Hexanone	ND	0.20						
Dibromochloromethane	ND	0.20						
1,2-Dibromoethane	ND	0.20						
Chlorobenzene	ND	0.20						
Ethylbenzene	ND	0.20						
p,&m-Xylene	ND	0.20						
o-Xylene	ND	0.20						
Styrene	ND	0.20						
Bromoform	ND	0.20						
1,1,2,2-Tetrachloroethane	ND	0.40						
Benzyl Chloride	ND	0.20						
4-Ethyl Toluene	ND	0.20						
1,3,5-Trimethylbenzene	ND	0.40						
1,2,4-Trimethylbenzene	ND	0.40						
p-Isopropyltoluene	ND	0.20						
1,3-Dichlorobenzene	ND	0.20						
1,4-Dichlorobenzene	ND	0.20						
1,2-Dichlorobenzene	ND	0.20						
1,2,4-Trichlorobenzene	ND	0.40						
Hexachlorobutadiene	ND	0.20						

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

Reviewed/Approved By: _____ **Date** 11/23/15

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

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 151121MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	11/21/15 15:00		11/21/15 12:59		11/21/15 13:39						
Data File ID:	21NOV006.D		21NOV003.D		21NOV004.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	8.9	89	8.8	88	1.3	70	130	30	Pass
Methylene Chloride	0.0	10.0	9.0	90	8.8	88	2.9	70	130	30	Pass
Trichloroethene	0.0	10.0	9.0	90	8.8	88	1.9	70	130	30	Pass
Toluene	0.0	10.0	8.9	89	8.8	88	1.5	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.0	100	9.5	95	4.3	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 11/23/15

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

	PARAMETER				Blower Out
Date	Test Date				11/11/15
Start	Run Start Time				11:31
	Run Finish Time				12:12
	Net Traversing Points				16 (2 x 8)
Θ	Net Run Time, minutes				0:41:00
C_p	Pitot Tube Coeficient				0.99
P_{Br}	Barometric Pressure, inches of Mercury				29.38
% H_2O	Moisture Content of LFG, %				3.11
% RH	Relative Humidity, %				50.50
M_{fd}	Dry Mole Fraction				0.969
%CH_4	Methane, %				11.10
%CO_2	Carbon Dioxide, %				38.15
%O_2	Oxygen, %				7.55
%Balance	Assumed as Nitorgen, %				31.45
%H_2	Hydrogen, %				11.00
%CO	Carbon Monoxide, %				0.10
M_d	Dry Molecular Weight, lb/lb-Mole				30.02
M_s	Wet Molecular weight, lb/lb-Mole				29.64
P_g	Flue Gas Static Pressure, inches of H_2O				23.00
P_s	Absolute Flue Gas Pressure, inches of Mercury				30.65
t_s	Average Stack Gas Temperature, °F				86
ΔP_{avg}	Average Velocity Head, inches of H_2O				0.403
v_s	Average LFG Velocity, feet/second				41.64
A_s	Stack Crossectional Area, square feet				1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm				3,244
Q_s	Standard Volumetric Flow Rate, scfm				3,345
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm				3,380
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr				15,166
NHV	Net Heating Value, Btu/scf				153
LFG_{CH4}	Methane, lb/hr				899.9
	Methane, grains/dscf				32.36
LFG_{CO2}	Carbon Dioxide, lb/hr				8,485.1
	Carbon Dioxide, grains/dscf				305.12
LFG_{O2}	Oxygen, lb/hr				1221.0
	Oxygen, grains/dscf				43.91
LFG_{N2}	Balance gas as Nitrogen, lb/hr				4,452.5
	Balance gas as Nitrogen, grains/dscf				160.11
LFG_{H4}	Hydrogen, lb/hr				112.1
	Hydrogen, grains/dscf				4.03
LFG_{CO}	Carbon Monoxide, lb/hr				14.2
	Carbon Monoxide, grains/dscf				0.51

				Blower Out Sample #1	Blower Out Sample #2
H_2S	Hydrogen Sulfide Concentration, ppmd			1.30	17.00
	Hydrogen Sulfide Rate, lb/hr			0.02	0.29
	Hydrogen Sulfide Rate, grains/dscf			0.001	0.011
COS	Carbonyl Sulfide Concentration, ppmd			0.56	0.56
	Carboynl Sulfide Rate, lb/hr			0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf			0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd			150.00	130.00
	Methyl Mercaptan Rate, lb/hr			3.65	3.16
	Methyl Mercaptan Rate, grains/dscf			0.131	0.114
C_2H_6S	Ethyl Mercaptan Concentration, ppmd			1.80	1.60
	Ethyl Mercaptan Rate, lb/hr			0.06	0.05
	Ethyl Mercaptan Rate, grains/dscf			0.002	0.002
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd			1,000.00	1,100.00
	Dimethyl Sulfide Rate, lb/hr			31.40	34.54
	Dimethyl Sulfide Rate, grains/dscf			1.129	1.242
CS_2	Carbon Disulfide Concentration, ppmd			0.56	0.56
	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			140.00	120.00
	Dimethyl Disulfide Rate, lb/hr			6.66	4.62
	Dimethyl Disulfide Rate, grains/dscf			0.240	0.166

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd			1,400.00	1,400.00
	TRS-->SO2 Emission Rate, lb/hr			45.33	45.33
	TRS-->SO2 Emission Rate, grains/dscf			1.630	1.630

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, November 11, 2015

LOCATION	TIME	Q -SCFM		Δ	KURZ	Method 2 vs KURZ
		METHOD 2	FLEETZOOM			
BLOWER OUT	11:31	3,400	3,094	-9.9%	3,484	2.4%
FL100						
FL120						
FL 140						

AirTECHNOLOGY
Laboratories, Inc.

November 19, 2015

ADE-1461
EPA Methods TO-3, 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: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G111601-01/02

Enclosed are results for sample(s) received 11/16/15 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 Jim Getting, Mike Lambrich and Ryan Ayers on 11/18/15.

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

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

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

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

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

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Jim Getting
	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 & ASTM1946 + H2+ CO	ASTM 1946, BTU/SCF				
G111601-01	1615	-20.25	-3.5	-3	Outlet A	11/11/2015	1153	C	LFG	NA	X	X				
1 -02	1537	-20.1	-3.5	-3	Outlet B	11/11/2015	1207	C	LFG	NA	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	DATE/TIME: 11-11-15 1400	RECEIVED BY: FED EX	DATE/TIME:
RELINQUISHED BY: FED EX	DATE/TIME:	RECEIVED BY: DJ	DATE/TIME: 11/16/15 0905
RELINQUISHED BY	DATE/TIME:	RECEIVED BY	DATE/TIME

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

COMMENTS

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

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111601-01		G111601-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/11/15 11:53		11/11/15 12:07					
Date/Time Analyzed:	11/16/15 17:36		11/16/15 17:50					
QC Batch No.:	151116GC8A2		151116GC8A2					
Analyst Initials:	AS		AS					
Dilution Factor:	2.8		2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	11.3	2.8	10.7	2.8				
Carbon Dioxide	39.0	0.028	37.3	0.028				
Oxygen/Argon	7.2	1.4	7.9	1.4				
Nitrogen	30.4	2.8	32.5	2.8				
Methane	10.9	0.0028	10.3	0.0028				
Carbon Monoxide	0.1	0.0028	0.1	0.0028				
Net Heating Value (BTU/ft3)	155.3	2.8	150.1	2.8				
Gross Heating Value (BTU/ft3)	176.2	2.8	170.1	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 11/18/15
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.: 151116GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/16/15 14:53		11/16/15 13:57		11/16/15 14:38			
Analyst Initials:	AS		AS		AS			
Datafile:	16nov021		16nov018		16nov020			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	109	70-130%	110	70-130%	0.8	<30
Carbon Dioxide	ND	0.010	101	70-130%	102	70-130%	0.6	<30
Oxygen/Argon	ND	0.50	98	70-130%	98	70-130%	0.4	<30
Nitrogen	ND	1.0	98	70-130%	98	70-130%	0.6	<30
Methane	ND	0.0010	95	70-130%	100	70-130%	4.2	<30
Carbon Monoxide	ND	0.0010	113	70-130%	117	70-130%	3.4	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ **Date:** 11/18/15

Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/16/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G111601-01		G111601-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/11/15 11:53		11/11/15 12:07					
Date/Time Analyzed:	11/16/15 14:00		11/16/15 14:34					
QC Batch No.:	151116GC3A1		151116GC3A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.8		2.8					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv				
Hydrogen Sulfide	1.3	0.56	17 d	5.6				
Carbonyl Sulfide	ND	0.56	ND	0.56				
Methyl Mercaptan	150 d	5.6	130 d	5.6				
Ethyl Mercaptan	1.8	0.56	1.6	0.56				
Dimethyl Sulfide	1,000 d	56.0	1,100 d	56.0				
Carbon Disulfide	ND	0.56	ND	0.56				
Dimethyl Disulfide	140 d	5.6	120 d	5.6				
Total Reduced Sulfur	1,400	0.56	1,400	0.56				

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

Reviewed/Approved By: _____ Date 11/18/15
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 151116GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/16/15 10:14		11/16/15 9:48		11/16/15 9:59			
Analyst Initials:	AS		AS		AS			
Datafile:	16nov003		16nov001		16nov002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	90	70-130%	89	70-130%	1.0	<30
Carbonyl Sulfide	ND	0.20	106	70-130%	104	70-130%	1.4	<30
Methyl Mercaptan	ND	0.20	93	70-130%	93	70-130%	0.5	<30
Ethyl Mercaptan	ND	0.20	111	70-130%	108	70-130%	2.4	<30
Dimethyl Sulfide	ND	0.20	87	70-130%	88	70-130%	1.4	<30
Carbon Disulfide	ND	0.20	95	70-130%	95	70-130%	0.6	<30
Dimethyl Disulfide	ND	0.20	95	70-130%	94	70-130%	1.2	<30

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

Reviewed/Approved By: _____ Date: 11/18/15
Mark J. Johnson
Operations Manager

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

	PARAMETER				Blower Out
Date	Test Date				11/3/15
Start	Run Start Time				10:27
	Run Finish Time				11:52
	Net Traversing Points				16 (2 x 8)
Θ	Net Run Time, minutes				1:25:00
C_p	Pitot Tube Coeficient				0.99
P_{Br}	Barometric Pressure, inches of Mercury				29.72
% H_2O	Moisture Content of LFG, %				2.24
% RH	Relative Humidity, %				52.20
M_{fd}	Dry Mole Fraction				0.978
%CH_4	Methane, %				10.00
%CO_2	Carbon Dioxide, %				36.00
%O_2	Oxygen, %				8.25
%Balance	Assumed as Nitorgen, %				34.50
%H_2	Hydrogen, %				10.50
M_d	Dry Molecular Weight, lb/lb-Mole				29.96
M_s	Wet Molecular weight, lb/lb-Mole				29.70
P_g	Flue Gas Static Pressure, inches of H_2O				23.63
P_s	Absolute Flue Gas Pressure, inches of Mercury				31.46
t_s	Average Stack Gas Temperature, °F				81
ΔP_{avg}	Average Velocity Head, inches of H_2O				0.371
v_s	Average LFG Velocity, feet/second				39.22
A_s	Stack Crossectional Area, square feet				1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm				3,197
Q_s	Standard Volumetric Flow Rate, scfm				3,269
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm				3,184
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr				14,916
LFG_{CH4}	Methane, lb/hr				798.9
	Methane, grains/dscf				29.15
LFG_{CO2}	Carbon Dioxide, lb/hr				7,889.5
	Carbon Dioxide, grains/dscf				287.93
LFG_{O2}	Oxygen, lb/hr				1314.6
	Oxygen, grains/dscf				47.98
LFG_{N2}	Balance gas as Nitrogen, lb/hr				4,812.6
	Balance gas as Nitrogen, grains/dscf				175.64
LFG_{H4}	Hydrogen, lb/hr				105.4
	Hydrogen, grains/dscf				3.85

				Blower Out Sample #1	Blower Out Sample #2
H_2S	Hydrogen Sulfide Concentration, ppmd			51.00	38.00
	Hydrogen Sulfide Rate, lb/hr			0.87	0.64
	Hydrogen Sulfide Rate, grains/dscf			0.032	0.024
COS	Carbonyl Sulfide Concentration, ppmd			0.56	0.56
	Carboynl Sulfide Rate, lb/hr			0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf			0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd			190.00	180.00
	Methyl Mercaptan Rate, lb/hr			4.55	4.31
	Methyl Mercaptan Rate, grains/dscf			0.166	0.157
C_2H_6S	Ethyl Mercaptan Concentration, ppmd			2.40	2.60
	Ethyl Mercaptan Rate, lb/hr			0.07	0.08
	Ethyl Mercaptan Rate, grains/dscf			0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd			840.00	980.00
	Dimethyl Sulfide Rate, lb/hr			25.99	30.32
	Dimethyl Sulfide Rate, grains/dscf			0.949	1.107
CS_2	Carbon Disulfide Concentration, ppmd			0.56	0.56
	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			93.00	85.00
	Dimethyl Disulfide Rate, lb/hr			4.36	3.22
	Dimethyl Disulfide Rate, grains/dscf			0.159	0.118

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd			1,300.00	1,400.00
	TRS-->SO2 Emission Rate, lb/hr			41.47	44.66
	TRS-->SO2 Emission Rate, grains/dscf			1.514	1.630

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, November 03, 2015

LOCATION	TIME	Q -SCFM		Δ	KURZ	Method 2 vs KURZ
		METHOD 2	FLEETZOOM			
BLOWER OUT	10:27	3,269	3,158	-3.5%	3,253	-0.5%
FL100						
FL120						
FL 140						

Air TECHNOLOGY Laboratories, Inc.

November 10, 2015

ADE-1461
EPA Methods TO-3, 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: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G110503-01/02

Enclosed are results for sample(s) received 11/05/15 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 Jim Getting, Mike Lambrich and Ryan Ayers on 11/09/15.

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 Landfill
Report To:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Jim Getting
	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 & ASTM1946 + H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
G110903-01	J1721	-20.2	-3.5	-3	Outlet A	11/3/2015	1056	C	LFG	NA	X					
↓ -02	1613	-20.4	-3.5	-3	Outlet B	11/3/2015	1107	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]	DATE: 11-3-15 1300 RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	DATE: RECEIVED BY [signature]	DATE/TIME: 11/5/15 0845	
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, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/05/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G110503-01		G110503-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/3/15 10:56		11/3/15 11:07					
Date/Time Analyzed:	11/9/15 10:40		11/9/15 10:54					
QC Batch No.:	151109GC8A1		151109GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.8		2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	10	2.8	11	2.8				
Carbon Dioxide	36	0.028	36	0.028				
Oxygen/Argon	8.5	1.4	8.0	1.4				
Nitrogen	35	2.8	34	2.8				
Methane	10	0.0028	10	0.0028				

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

Reviewed/Approved By: _____ Date 11/9/15
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.: 151109GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/9/15 10:21		11/9/15 9:36		11/9/15 9:51			
Analyst Initials:	AS		AS		AS			
Datafile:	09nov008		09nov005		09nov006			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	112	70-130%	112	70-130%	0.2	<30
Carbon Dioxide	ND	0.010	100	70-130%	101	70-130%	0.2	<30
Oxygen/Argon	ND	0.50	100	70-130%	99	70-130%	0.6	<30
Nitrogen	ND	1.0	100	70-130%	100	70-130%	0.4	<30
Methane	ND	0.0010	96	70-130%	96	70-130%	0.6	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11/9/15

Mark J. Johnson
Operations Manager

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

Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/05/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G110503-01		G110503-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	11/3/15 10:56		11/3/15 11:07					
Date/Time Analyzed:	11/5/15 13:52		11/5/15 14:27					
QC Batch No.:	151105GC3A1		151105GC3A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.8		2.8					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv				
Hydrogen Sulfide	51 d	5.6	38 d	5.6				
Carbonyl Sulfide	ND	0.56	ND	0.56				
Methyl Mercaptan	190 d	5.6	180 d	5.6				
Ethyl Mercaptan	2.4	0.56	2.6	0.56				
Dimethyl Sulfide	840 d	56	980 d	56				
Carbon Disulfide	ND	0.56	ND	0.56				
Dimethyl Disulfide	93 d	5.6	85 d	5.6				
Total Reduced Sulfur	1,300	0.56	1,400	0.56				

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

Reviewed/Approved By: _____ Date 11/9/15
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 151105GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/5/15 9:45		11/5/15 9:23		11/5/15 9:34			
Analyst Initials:	AS		AS		AS			
Datafile:	05nov003		05nov001		05nov002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	94	70-130%	94	70-130%	0.3	<30
Carbonyl Sulfide	ND	0.20	104	70-130%	103	70-130%	0.5	<30
Methyl Mercaptan	ND	0.20	101	70-130%	101	70-130%	0.4	<30
Ethyl Mercaptan	ND	0.20	125	70-130%	122	70-130%	2.9	<30
Dimethyl Sulfide	ND	0.20	103	70-130%	100	70-130%	3.4	<30
Carbon Disulfide	ND	0.20	91	70-130%	89	70-130%	1.6	<30
Dimethyl Disulfide	ND	0.20	109	70-130%	103	70-130%	5.1	<30

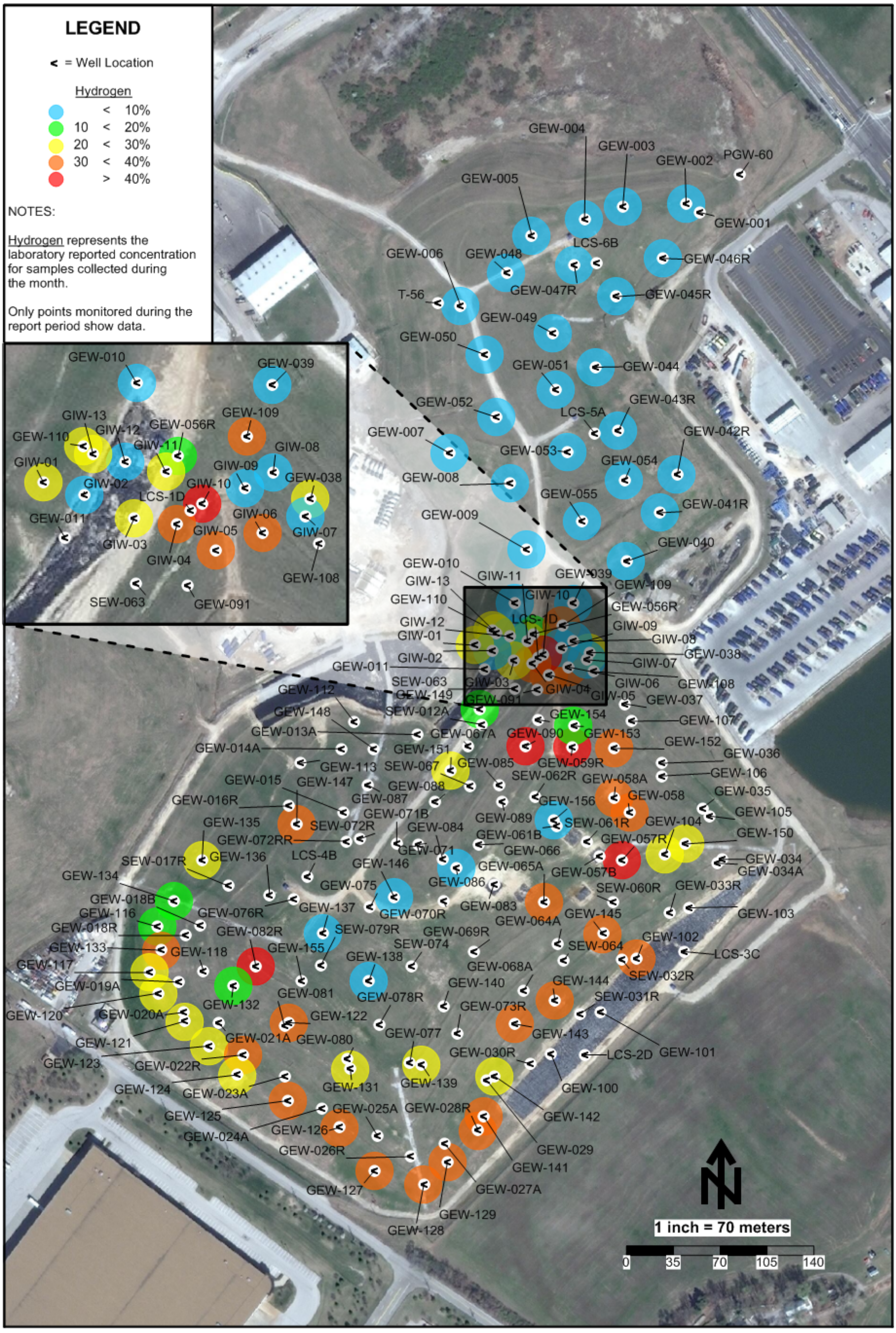
ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 11/9/15
Mark J. Johnson
Operations Manager

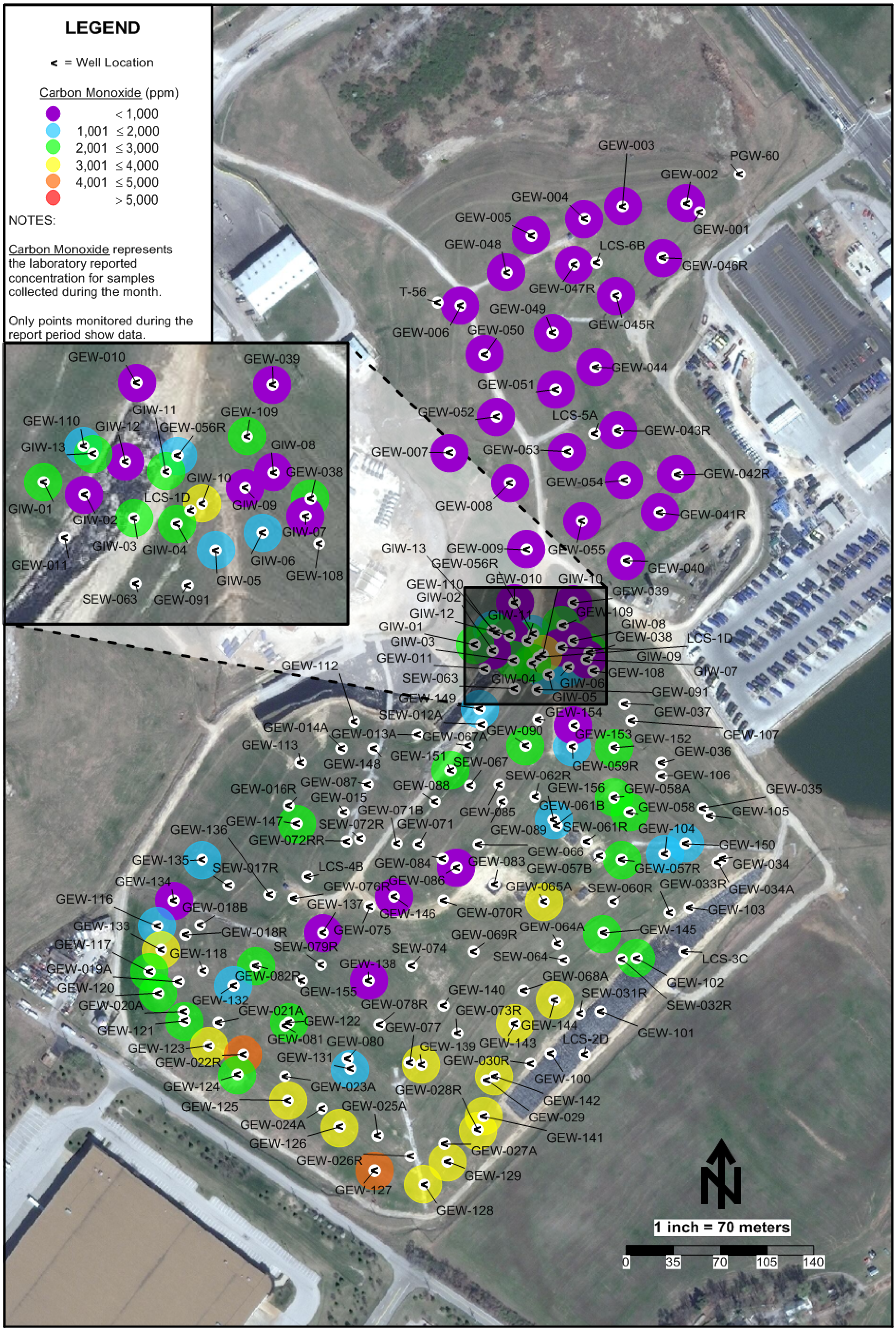
The cover letter is an integral part of this analytical report.

ATTACHMENT C

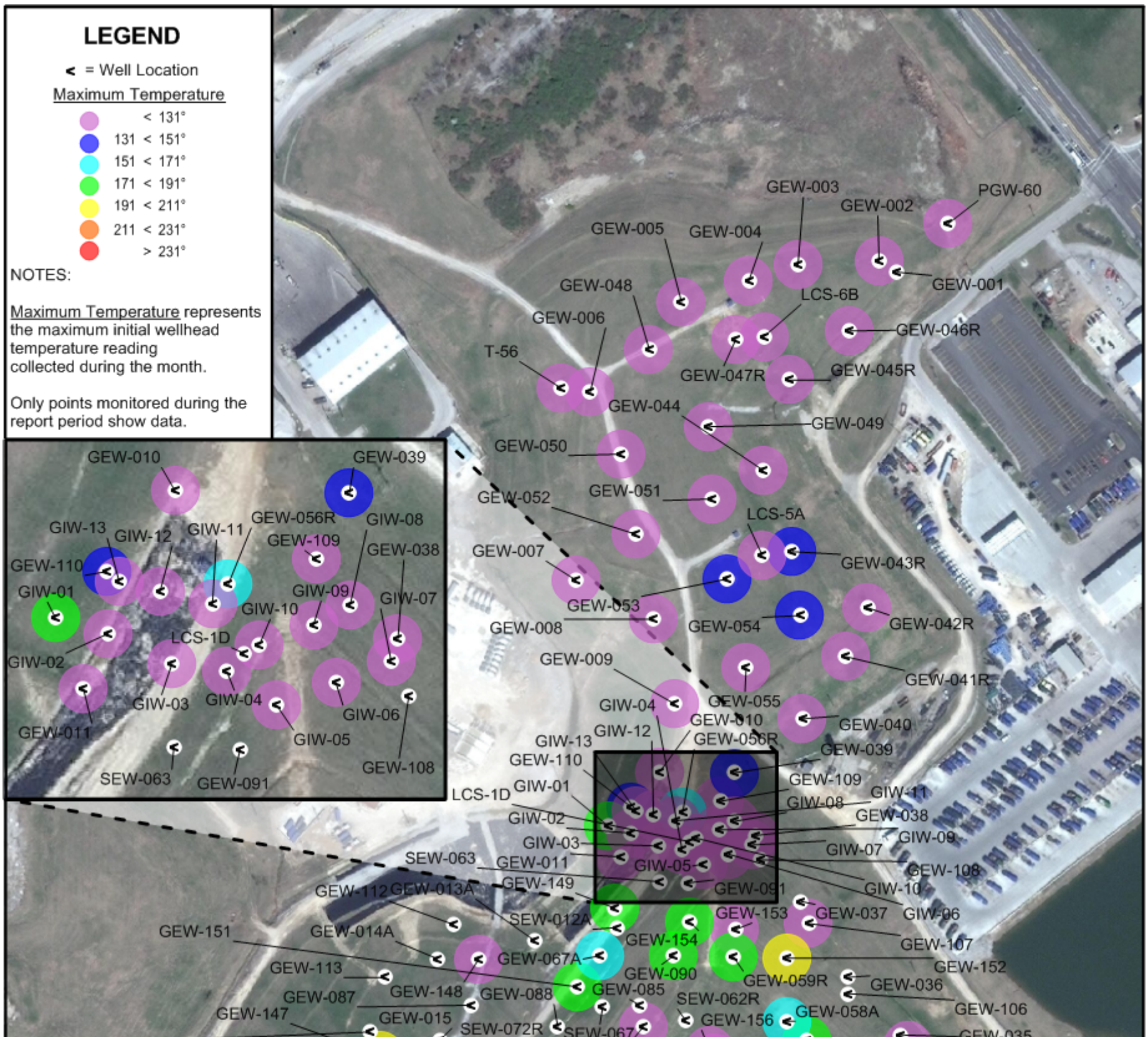
GAS WELL ANALYSIS MAPS



Hydrogen Data Map - November 2015 - Bridgeton Landfill



Carbon Monoxide Data Map - November 2015 - Bridgeton Landfill



Initial Temperature Maximums - November 2015 - Bridgeton Landfill

ATTACHMENT D

LABORATORY DATA

ATTACHMENT D-1

LAB ANALYSIS SUMMARY

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
North Quarry								
GEW-002	7/9/2015	46	36	4.1	15	ND	ND	See Note 1
GEW-002	7/22/2015	56	41	ND	ND	ND	ND	See Note 2
GEW-002	8/13/2015	57	40	ND	ND	ND	ND	
GEW-002	9/10/2015	55	41	ND	ND	ND	ND	
GEW-002	10/12/2015	56	41	ND	ND	ND	ND	
GEW-002	11/13/2015	54	43	ND	ND	ND	ND	
GEW-003	7/9/2015	51	39	ND	9.1	0.1	ND	
GEW-003	7/22/2015	54	40	ND	5.8	0.1	ND	See Note 2
GEW-003	8/13/2015	53	38	1.6	8.1	0.1	ND	
GEW-003	9/10/2015	49	36	2.8	13	0.1	ND	See Note 1
GEW-003	10/12/2015	47	35	2.9	15	0.1	ND	See Note 1 and 3
GEW-003	11/10/2015	50	40	ND	8.7	0.1	ND	
GEW-004	7/9/2015	53	40	ND	6.8	0.1	ND	
GEW-004	8/13/2015	53	39	ND	7.9	0.1	ND	
GEW-004	9/10/2015	53	40	ND	6.3	0.1	ND	
GEW-004	10/12/2015	54	40	ND	5.8	0.1	ND	
GEW-004	11/10/2015	49	40	ND	10.0	0.1	ND	
GEW-005	7/10/2015	24	21	9.5	46	ND	ND	See Note 1
GEW-005	8/13/2015	43	35	ND	21	ND	ND	
GEW-005	9/10/2015	52	38	ND	10	0.1	ND	
GEW-005	10/12/2015	47	35	1.7	16	ND	ND	See Note 3
GEW-005	11/10/2015	44	36	ND	19	0.03	ND	
GEW-006	9/10/2015	55	38	ND	6.5	ND	ND	
GEW-006	11/10/2015	51	40	ND	8.1	ND	ND	
GEW-007	7/9/2015	54	38	ND	6	ND	ND	
GEW-007	9/11/2015	57	40	ND	ND	ND	ND	
GEW-007	11/11/2015	56	41	ND	ND	ND	ND	
GEW-008	7/9/2015	46	41	2.4	8.4	1.8	ND	
GEW-008	8/13/2015	51	44	ND	ND	1.5	ND	
GEW-008	9/11/2015	49	47	ND	ND	0.7	ND	
GEW-008	10/12/2015	50	46	ND	ND	1.3	ND	
GEW-008	11/11/2015	49	47	ND	ND	2.1	ND	
GEW-009	7/9/2015	50	41	ND	6.6	0.6	ND	
GEW-009	8/13/2015	53	41	ND	4.3	0.5	ND	
GEW-009	9/11/2015	51	40	1.5	7	0.8	ND	See Note 1
GEW-009	10/12/2015	52	41	ND	5.1	0.8	ND	
GEW-009	11/11/2015	46	39	2	12	0.4	ND	See Note 1 and
GEW-040	7/9/2015	56	40	ND	ND	ND	ND	
GEW-040	8/13/2015	57	38	ND	3.4	ND	ND	
GEW-040	9/8/2015	56	40	ND	ND	ND	ND	
GEW-040	10/12/2015	57	40	ND	ND	ND	ND	
GEW-040	11/10/2015	52	37	2.4	8.5	ND	ND	See Note 1 and 3
GEW-041R	7/9/2015	48	34	3.7	14	ND	ND	See Note 1
GEW-041R	9/8/2015	56	40	ND	3.6	ND	ND	
GEW-041R	11/10/2015	47	37	1.6	15	ND	ND	See Note 3
GEW-042R	7/9/2015	49	35	3.3	12	ND	ND	
GEW-042R	8/13/2015	57	39	ND	3.2	ND	ND	
GEW-042R	9/8/2015	55	41	ND	ND	ND	ND	
GEW-042R	10/12/2015	56	41	ND	ND	ND	ND	
GEW-042R	11/10/2015	42	35	5	18	ND	ND	See Note 1 and 3
GEW-043R	7/9/2015	56	42	ND	ND	0.2	ND	
GEW-043R	9/8/2015	54	41	ND	ND	0.2	ND	
GEW-043R	11/11/2015	53	44	ND	ND	ND	ND	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-044	7/9/2015	43	31	4	22	ND	ND	See Note 1
GEW-044	9/10/2015	55	38	ND	5.9	ND	ND	
GEW-044	11/10/2015	47	37	ND	15	ND	ND	
GEW-045R	7/9/2015	57	38	ND	3	ND	ND	
GEW-045R	8/13/2015	57	37	ND	4.4	ND	ND	
GEW-045R	9/10/2015	58	39	ND	ND	ND	ND	
GEW-045R	10/12/2015	58	38	ND	ND	ND	ND	
GEW-045R	11/10/2015	58	39	ND	ND	ND	ND	
GEW-046R	7/9/2015	52	38	ND	8.2	0.1	ND	
GEW-046R	8/13/2015	54	39	ND	5.9	0.1	ND	
GEW-046R	9/10/2015	53	40	ND	5	0.1	ND	
GEW-046R	10/12/2015	56	41	ND	ND	0.1	ND	
GEW-046R	11/10/2015	53	41	ND	4.7	0.1	ND	
GEW-047R	7/9/2015	43	35	2	20	ND	ND	
GEW-047R	8/13/2015	41	35	ND	22	0.1	ND	
GEW-047R	9/10/2015	49	38	ND	12	0.1	ND	
GEW-047R	10/12/2015	47	37	ND	15	ND	ND	
GEW-047R	11/10/2015	41	37	ND	21	0.1	ND	
GEW-048	8/13/2015	54	38	ND	7.6	ND	ND	
GEW-048	9/10/2015	53	39	ND	7.5	ND	ND	
GEW-048	10/12/2015	55	39	ND	4.9	ND	ND	
GEW-048	11/10/2015	53	40	ND	5.7	ND	ND	
GEW-049	7/10/2015	33	27	6	34	ND	ND	See Note 1
GEW-049	8/13/2015	42	34	ND	23	ND	ND	
GEW-049	9/10/2015	50	35	2.9	12	0.1	ND	See Note 1
GEW-049	10/12/2015	54	39	ND	6.2	0.1	ND	
GEW-049	11/10/2015	46	37	ND	15	0.1	ND	
GEW-050	9/10/2015	56	39	ND	4.4	0.1	ND	
GEW-050	11/10/2015	48	37	ND	13	ND	ND	
GEW-051	7/10/2015	55	41	ND	ND	1	ND	
GEW-051	9/10/2015	54	41	ND	ND	1	ND	
GEW-051	11/10/2015	53	42	ND	3.3	1	ND	
GEW-052	7/10/2015	49	39	ND	11	ND	ND	
GEW-052	9/10/2015	52	39	ND	8.1	0.1	ND	
GEW-052	11/11/2015	43	37	1.7	18	0.04	ND	See Note 1 and 3
GEW-053	7/10/2015	49	40	2	6	3.3	41	
GEW-053	8/13/2015	51	41	ND	ND	5.2	59	
GEW-053	9/11/2015	49	41	ND	ND	5.7	63	
GEW-053	10/12/2015	50	41	ND	ND	5.7	64	
GEW-053	11/11/2015	49	42	ND	3.3	4.8	55	
GEW-054	7/10/2015	50	43	ND	ND	4.2	ND	
GEW-054	8/13/2015	54	41	ND	ND	3	33	
GEW-054	9/11/2015	51	41	ND	ND	4.3	34	
GEW-054	10/28/2015	52	41	ND	3.5	2.2	ND	
GEW-054	11/11/2015	52	43	ND	ND	2.6	ND	
GEW-055	7/10/2015	51	40	1.8	6.4	1.5	39	
GEW-055	8/13/2015	54	41	ND	ND	1.5	ND	
GEW-055	9/10/2015	48	39	2.6	9.4	1.4	ND	
GEW-055	10/12/2015	50	40	2	7.3	1.4	30	See Note 3
GEW-055	11/11/2015	52	43	ND	3.2	1.2	ND	

Notes: (1) Based on the comparison of field to laboratory readings, oxygen to balance gas ratios, and historical concentrations, the sample was determined to be suspect due to oxygen introduction which likely occurred during sample collection or laboratory analytical methods. (2) MDNR also collected duplicate LFG samples at these locations during this sampling period. (3) Based on the oxygen verification readings taken with an Envision meter, it was determined there is a sample train leak. (4) Based on the oxygen verification readings taken with an Envision meter, it was determined that the readings are accurate. (5) Flare station gas concentration data is an average of FL-100, FL-120, and FL-140.

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
South Quarry								
GEW-010	7/9/2015	52	43	ND	3.3	0.2	ND	
GEW-010	8/6/2015	49	36	2.9	11	0.2	ND	See Note 1
GEW-010	9/11/2015	40	39	4.3	16	0.6	78	
GEW-010	10/14/2015	42	44	2.9	11	0.6	79	See Note 4
GEW-010	11/11/2015	53	42	ND	3.9	0.6	50	
GEW-011	7/22/2015	3	61	ND	ND	32	2,300	See Note 2
GEW-022R	9/21/2015	0.9	65	ND	ND	29	4,100	
GEW-022R	11/12/2015	0.8	65	ND	ND	30	4,800	
GEW-028R	7/9/2015	0.4	40	8.1	29	22	2,700	
GEW-028R	7/22/2015	19	45	6.4	23	23	2,700	See Note 2
GEW-028R	11/13/2015	0.1	59	ND	4.9	34	3,600	
GEW-038	7/9/2015	0.4	45	5.8	21	27	2,400	
GEW-038	8/6/2015	0.2	47	4.5	16	31	3,100	
GEW-038	9/11/2015	0.3	46	5.4	19	28	3,000	
GEW-038	10/14/2015	0.3	45	5.6	20	28	3,000	See Note 4
GEW-038	11/11/2015	0.2	33	9.8	35	21	2,100	
GEW-039	7/9/2015	36	51	ND	7.2	4.2	280	
GEW-039	7/22/2015	37	51	ND	6.9	3.4	280	See Note 2
GEW-039	8/6/2015	40	52	ND	ND	4.2	200	
GEW-039	9/11/2015	39	52	ND	4.8	2.3	190	
GEW-039	10/14/2015	39	53	ND	3.9	2.4	170	
GEW-039	11/11/2015	39	55	ND	ND	2.7	170	
GEW-056R	7/9/2015	7.1	31	5.6	44	12	1,100	
GEW-056R	8/6/2015	2.2	52	ND	4.9	38	2,100	
GEW-056R	9/11/2015	0.6	56	ND	ND	39	2,400	
GEW-056R	10/14/2015	12	42	ND	23	22	1,300	
GEW-056R	11/11/2015	14	42	ND	24	18	1,100	
GEW-057R	7/9/2015	0.5	55	ND	ND	40	2,500	
GEW-057R	9/18/2015	0.4	52	ND	5.4	38	2,400	
GEW-057R	11/11/2015	0.5	53	ND	3.8	40	2,800	
GEW-058	7/9/2015	4	55	ND	ND	37	2,200	
GEW-058	9/18/2015	0.3	46	4	14	33	2,400	
GEW-058	11/11/2015	3.5	48	3.6	14	30	2,100	
GEW-058A	7/9/2015	0.4	49	2.3	8.2	39	2,700	
GEW-058A	9/18/2015	5.1	55	ND	3.6	34	2,400	
GEW-058A	11/11/2015	0.4	49	3.3	12	35	2,500	
GEW-059R	7/9/2015	0.4	52	ND	ND	43	1,900	
GEW-059R	9/18/2015	1.5	51	ND	ND	41	1,700	
GEW-059R	11/11/2015	0.8	51	ND	4.4	41	1,800	
GEW-065A	7/9/2015	0.4	45	5.5	20	28	2,800	
GEW-065A	7/22/2015	0.5	58	ND	ND	37	2,900	See Note 2
GEW-065A	9/21/2015	0.4	57	ND	3.7	36	3,100	
GEW-065A	11/12/2015	0.4	58	ND	ND	37	3,200	
GEW-082R	7/9/2015	1	55	ND	ND	40	2,100	
GEW-082R	9/21/2015	0.8	53	ND	3.7	40	2,200	
GEW-082R	11/12/2015	0.9	55	ND	ND	40	2,300	
GEW-086	7/9/2015	13	46	3.2	17	20	1,200	
GEW-086	9/18/2015	12	36	5.3	40	5.6	520	
GEW-086	11/12/2015	10	34	8.7	44	2.7	430	
GEW-090	7/9/2015	4.1	50	ND	3.4	41	2,100	
GEW-090	9/18/2015	5	51	ND	ND	40	2,200	
GEW-090	11/12/2015	5.5	49	ND	3.6	40	2,200	
GEW-102	11/13/2015	2.1	59	ND	3.3	34	2,100	
GEW-104	11/13/2015	0.4	43	5.7	21	29	1,500	
GEW-109	7/9/2015	4	52	ND	10	32	1,700	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-109	7/22/2015	4.2	52	ND	10	31	1,900	See Note 2
GEW-109	8/6/2015	2.7	50	ND	11	33	2,200	
GEW-109	9/11/2015	4.8	49	2.5	14	28	2,000	See Note 1
GEW-109	10/14/2015	5.3	50	ND	12	30	2,000	
GEW-109	11/11/2015	5.6	60	ND	ND	31	2,400	
GEW-110	8/6/2015	1.4	8.8	18	69	2.6	320	
GEW-110	9/11/2015	7.7	23	11	52	6.6	570	
GEW-110	10/15/2015	3.8	15	14	62	5.2	380	See Note 4
GEW-110	11/11/2015	7.8	43	4.1	23	22	1,400	
GEW-116	11/12/2015	2.8	50	6.2	22	17	1,800	
GEW-117	7/9/2015	10	65	ND	ND	20	1,900	
GEW-117	9/18/2015	4	69	ND	ND	22	2,700	
GEW-117	11/12/2015	3.7	66	ND	4.8	22	2,600	
GEW-120	7/15/2015	26	68	ND	ND	2.2	230	
GEW-120	9/15/2015	11	65	ND	5.1	17	1,600	
GEW-120	11/12/2015	7.6	68	ND	ND	21	2,100	
GEW-121	7/14/2015	2.4	58	ND	3.3	17	2,200	
GEW-121	9/15/2015	2.2	53	2.7	9.5	31	2,800	
GEW-121	11/12/2015	2.3	46	5	18	28	2,200	See Note 3
GEW-122	9/15/2015	5.2	50	2.3	8.3	32	2,500	
GEW-122	11/12/2015	5.3	55	ND	ND	35	2,800	
GEW-123	7/15/2015	5.6	61	ND	3.6	28	2,700	
GEW-123	7/22/2015	ND	64	ND	ND	25	2,800	See Note 2
GEW-123	9/15/2015	6.6	55	3.1	11	23	3,500	
GEW-123	11/12/2015	1.6	51	4.9	17	24	3,200	See Note 3
GEW-124	7/13/2015	16	61	ND	4.2	17	1,400	
GEW-124	7/22/2015	19	63	ND	ND	14	1,600	See Note 2
GEW-124	7/31/2015	22	65	ND	4.2	11	1,800	
GEW-124	9/15/2015	8.3	56	2.7	9.8	22	2,000	
GEW-124	11/13/2015	7	61	ND	ND	28	2,100	
GEW-125	9/18/2015	1.7	57	ND	ND	36	3,200	
GEW-125	11/12/2015	0.5	59	ND	ND	36	3,600	
GEW-126	9/15/2015	5.5	54	ND	ND	36	3,700	
GEW-126	11/12/2015	8.2	54	ND	ND	33	3,300	
GEW-127	7/14/2015	0.7	63	ND	ND	31	3,800	
GEW-127	11/13/2015	0.4	62	ND	ND	33	4,100	
GEW-128	7/14/2015	1.3	62	ND	ND	30	3,200	
GEW-128	11/13/2015	0.7	61	ND	ND	34	3,800	
GEW-129	7/14/2015	1.3	52	3.0	11	31	2,700	
GEW-129	9/15/2015	1.8	58	ND	3.4	34	3,500	
GEW-129	11/13/2015	0.7	58	ND	3.3	36	3,400	
GEW-131	7/14/2015	16	51	ND	3.6	27	1,700	
GEW-131	9/15/2015	20	44	2.4	8.8	23	1,500	
GEW-131	11/12/2015	20	47	ND	4.6	26	1,700	
GEW-132	7/15/2015	13	52	1.9	9.3	23	1,200	
GEW-132	11/12/2015	6.9	43	5.9	26	17	1,200	
GEW-133	11/12/2015	0.4	53	3	11	32	3,800	
GEW-134	7/14/2015	10	55	ND	9.7	22	1,700	
GEW-134	9/18/2015	17	57	ND	10	15	990	
GEW-134	11/12/2015	11	43	5.8	28	11	770	See Note 1 and 3
GEW-135	7/14/2015	3.9	57	ND	ND	33	1,900	
GEW-135	9/14/2015	3.8	51	2.7	9.8	31	1,900	
GEW-135	9/18/2015	4.7	56	ND	4.9	32	2,000	See Note 2
GEW-135	11/13/2015	4.8	47	4.2	15	28	1,500	See Note 3
GEW-137	11/12/2015	11	29	6.6	52	0.6	71	See Note 3

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-138	7/14/2015	4.9	42	3	28	20	2,000	
GEW-138	9/14/2015	11	49	1.7	21	16	1,400	
GEW-138	9/18/2015	11	43	2.4	31	11	960	See Note 2
GEW-138	11/12/2015	2.8	23	10	56	8	670	
GEW-139	7/14/2015	0.5	60	ND	ND	35	4,200	
GEW-139	9/14/2015	14	49	3.5	19	14	1,000	
GEW-139	9/15/2015	0.5	59	ND	4.1	34	4,600	See Note 2
GEW-139	11/13/2015	0.9	47	4	19	29	3,300	
GEW-140	7/14/2015	10	57	ND	ND	29	2,500	
GEW-140	7/22/2015	10	56	ND	ND	28	2,400	See Note 2
GEW-141	7/15/2015	4.2	64	ND	3.5	26	2,900	
GEW-141	9/15/2015	2	61	ND	ND	32	3,700	
GEW-141	11/13/2015	1.7	60	1.6	5.5	30	3,500	See Note 1 and 3
GEW-142	11/13/2015	0.2	51	4.1	15	29	3,500	
GEW-143	7/14/2015	0.2	53	ND	ND	40	3,300	
GEW-143	9/15/2015	0.3	46	2.5	9.1	41	3,500	
GEW-143	11/13/2015	0.2	49	3.3	12	35	3,200	
GEW-144	11/13/2015	0.8	56	1.9	6.6	33	3,500	
GEW-145	11/13/2015	1.7	52	2.9	10	32	2,700	See Note 3
GEW-146	11/12/2015	3.1	18	13	64	2	220	
GEW-147	7/14/2015	3	53	ND	5	36	2,200	
GEW-147	9/15/2015	4.9	52	ND	3.6	37	2,200	
GEW-147	11/13/2015	5.1	51	ND	3.6	38	2,300	
GEW-149	11/12/2015	9.6	55	2.4	14	18	1,600	
GEW-150	11/13/2015	9	60	2	7.9	20	1,600	
GEW-151	9/15/2015	5.7	50	3.4	14	26	1,800	
GEW-151	11/12/2015	11	56	ND	ND	28	2,200	
GEW-152	7/15/2015	5.8	52	ND	ND	37	2,900	
GEW-152	9/15/2015	5.9	51	ND	3.4	38	3,000	
GEW-152	11/13/2015	4.1	49	2.3	8.2	35	2,900	See Note 1 and 3
GEW-153	7/15/2015	20	47	2	15	15	920	
GEW-153	9/15/2015	20	38	ND	31	9.3	340	
GEW-153	11/13/2015	20	45	ND	19	15	580	
GEW-155	7/15/2015	5.8	49	2.5	21	21	1,100	
GEW-156	11/12/2015	4.6	37	9.1	40	9.4	1,100	
GIW-01	7/15/2015	1.6	67	ND	ND	28	3,000	
GIW-01	8/6/2015	1.6	66	ND	ND	28	3,300	
GIW-01	9/11/2015	2.7	67	ND	ND	25	2,600	
GIW-01	10/14/2015	1.4	56	3.7	13	24	2,800	See Note 1 and 3
GIW-01	11/13/2015	2.6	66	ND	4.4	25	2,700	
GIW-02	7/15/2015	0.6	65	ND	ND	31	3,400	
GIW-02	8/6/2015	0.4	59	3.4	12	24	2,900	
GIW-02	9/11/2015	5.2	63	ND	3.1	27	2,500	
GIW-02	10/14/2015	7.8	63	ND	ND	25	2,300	
GIW-02	11/13/2015	4.7	22	12	55	5.8	370	See Note 1
GIW-03	7/15/2015	0.3	37	9.5	34	19	2,200	
GIW-03	8/6/2015	0.3	50	4.5	16	28	2,900	
GIW-03	9/11/2015	0.4	60	ND	ND	36	3,400	
GIW-03	10/14/2015	0.3	41	7.5	27	24	2,300	See Note 4
GIW-03	11/13/2015	0.2	38	8.3	30	23	2,200	
GIW-04	7/15/2015	0.5	52	2	7.2	38	2,800	
GIW-04	8/6/2015	0.7	54	ND	ND	42	2,800	
GIW-04	9/11/2015	0.6	43	4.2	15	36	2,100	
GIW-04	10/14/2015	0.5	43	4.4	16	36	2,200	See Note 4

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GIW-04	11/13/2015	0.5	41	5	18	35	2,200	
GIW-05	7/15/2015	1.6	41	6.6	24	26	1,800	
GIW-05	8/6/2015	2.5	58	ND	ND	35	2,200	
GIW-05	9/11/2015	2.4	48	4.4	16	28	1,900	
GIW-05	10/14/2015	1.9	32	10.0	37	18	1,100	See Note 4
GIW-05	11/13/2015	2.6	58	ND	ND	37	1,900	
GIW-06	7/15/2015	0.8	63	ND	ND	33	1,800	
GIW-06	8/6/2015	0.8	61	ND	ND	34	2,100	
GIW-06	9/11/2015	0.9	59	ND	3.9	34	2,000	
GIW-06	10/14/2015	0.9	57	1.7	6.1	34	1,700	See Note 4
GIW-06	11/13/2015	0.9	56	1.8	6.2	34	1,700	
GIW-07	7/15/2015	21	65	ND	ND	11	990	
GIW-07	8/6/2015	23	60	ND	3.7	12	1,200	
GIW-07	9/11/2015	25	56	2.5	8.8	7.5	730	
GIW-07	10/14/2015	31	54	1.7	5.8	7.1	700	See Note 4
GIW-07	11/13/2015	30	53	2.2	7.9	6.9	660	
GIW-08	7/15/2015	17	53	5.5	23	2	460	
GIW-08	8/6/2015	18	48	6.9	25	2.4	590	
GIW-08	9/11/2015	13	45	3.6	37	1.1	300	
GIW-08	10/14/2015	19	62	2.8	12	5.0	740	See Note 4
GIW-08	11/13/2015	19	56	4	15	5.4	740	
GIW-09	7/15/2015	12	44	3.3	30	10	850	
GIW-09	8/6/2015	15	36	6.7	35	6.8	590	
GIW-09	9/11/2015	2.5	17	12	64	4.2	400	
GIW-09	10/14/2015	3	13	15	66	2.2	260	See Note 4
GIW-09	11/13/2015	3.9	13	16	64	2.4	220	
GIW-10	7/15/2015	0.3	35	7.2	26	31	3,500	
GIW-10	8/6/2015	0.4	38	5.6	21	35	3,500	
GIW-10	9/11/2015	0.3	54	ND	ND	43	3,300	
GIW-10	10/14/2015	3.6	51	ND	ND	42	2,900	
GIW-10	11/13/2015	1.3	50	ND	4.5	42	3,200	
GIW-11	7/15/2015	34	3.1	8	37	18	1,600	
GIW-11	8/6/2015	1.7	52	3.1	13	30	3,000	
GIW-11	9/11/2015	2.9	44	5.4	24	23	2,200	
GIW-11	10/14/2015	2.9	47	4.8	19	26	2,500	See Note 4
GIW-11	11/13/2015	3.2	48	4.2	17	27	2,500	
GIW-12	7/15/2015	5.1	20	11	60	4.1	490	
GIW-12	8/6/2015	6.7	24	8.9	54	5.3	470	
GIW-12	9/11/2015	7.1	23	9.4	55	5.2	440	
GIW-12	10/14/2015	5.2	20	11	57	5.9	510	See Note 4
GIW-12	11/13/2015	4.3	21	12	56	6.5	530	
GIW-13	7/15/2015	1.4	60	ND	ND	34	2,800	
GIW-13	8/6/2015	2.9	62	ND	ND	31	2,800	
GIW-13	9/11/2015	10	62	ND	5.6	20	1,600	
GIW-13	10/14/2015	8.5	57	ND	7	25	2,000	
GIW-13	11/13/2015	4.3	63	ND	3.2	28	2,500	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
Flare Station²	7/1/2015	8.1	31	10	40	10	1,400	
Flare Station²	8/11/2015	9.5	32	9.1	38	10	1,500	
Flare Station[2]	9/1/2015	7.9	29.7	10.3	41.7	9.2	870	See Note 5
Flare Station²	10/6/2015	9.4	33.3	9.0	37.0	9.9	933	See Note 5
Flare Station²	11/3/2015	10.7	37.3	8.0	32.0	10.7	1,100	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 FL-100, FL-120, and FL-140.

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.

November 6, 2015

ADE-1461
EPA Methods TO-3, 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

Weaver Consultants Group
ATTN: David Randall
6301 East Highway AB
Columbia, MO 65201

LABORATORY TEST RESULTS

Project Name: Bridgeton Monthly Permit Flare LFG Testing
Project Number: 0120-131-10-27
Lab Number: G110401-01/04

Enclosed are results for sample(s) received 11/04/15 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 for were e-mailed to David Randall on 11/05/15.

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

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

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

TURNAROUND TIME

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

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 1 OF 1

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

Project No.:	0120-131-10-27
Project Name:	Bridgeton Monthly Permit Flare LFG Testing
Report To:	David A. Randall
Company:	Weaver Consultants Group
Street:	6301 East Highway AB
City/State/Zip:	Columbia, MO 65201
Phone& Fax:	888-660-0346
e-mail:	drandall@weaverboos.com

BILLING

P.O. No.:	
Bill to:	Ms. Michele Clark
	<--Same

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ASTM 1946 + CO, H2, and Btu					
G110401-01	FL100 (EP11): Can # = 1477	11/3/2015	1153	C	LFG		X					
-02	FL120 (EP12): Can # = 1471	11/3/2015	1108	C	LFG		X					
-03	FL140 (EP13) Can # = 1046	11/3/2015	1127	C	LFG		X					
-04	LFG CSU (EP-14) Can # = 1469	11/3/2015	1021	C	LFG		X					

AUTHORIZATION TO PERFORM WORK	COMPANY	DATE/TIME
David A. Ranall	Weaver Boos Eng	10/11/2013
SAMPLED BY	**COMPANY**	**DATE/TIME**
J Holt & D Randall	Weaver Consultants Group	11/03/15 0800-1000

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
UPS	11/4/15 0940		11/4/15 0940
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME

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

COMMENTS

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

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

Rev. 03 - 5/7/09

Client:	**Weaver Consultants Group**
Attn:	**David Randall**
Project Name:	**Bridgeton Monthly Permit Flare LFG Testing**
Project No.:	**0120-131-10-27**
Date Received:	**11/04/15**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	G110401-01		G110401-02		G110401-03		G110401-04	
Client Sample I.D.:	FL100 (EP11) Can #1477		FL120 (EP12) Can #1471		FL140 (EP13) Can #1046		LFG CSU (EP-14) Can #1409	
Date/Time Sampled:	11/3/15 11:53		11/3/15 11:08		11/3/15 11:27		11/3/15 10:21	
Date/Time Analyzed:	11/4/15 13:51		11/4/15 14:06		11/4/15 14:20		11/4/15 14:35	
QC Batch No.:	151104GC8A1		151104GC8A1		151104GC8A1		151104GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		2.8		2.9		2.7	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	11	3.0	10	2.8	11	2.9	11	2.7
Carbon Dioxide	37	0.030	37	0.028	38	0.029	35	0.027
Oxygen/Argon	7.5	1.5	7.8	1.4	7.6	1.4	8.7	1.4
Nitrogen	32	3.0	33	2.8	32	2.9	37	2.7
Methane	11	0.0030	10	0.0028	11	0.0029	6.7	0.0027
Carbon Monoxide	0.11	0.0030	0.11	0.0028	0.11	0.0029	0.11	0.0027
Net Heating Value (BTU/ft3)	156	3.0	148	2.8	150	2.9	125	2.7
Gross Heating Value (BTU/ft3)	177	3.0	168	2.8	170	2.9	142	2.7

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** 11/5/15

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.: 151104GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/4/15 9:50		11/4/15 9:03		11/4/15 9:17			
Analyst Initials:	AS		AS		AS			
Datafile:	04nov007		04nov004		04nov005			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	107	70-130%	103	70-130%	3.8	<30
Carbon Dioxide	ND	0.010	102	70-130%	97	70-130%	4.9	<30
Oxygen/Argon	ND	0.50	100	70-130%	98	70-130%	2.4	<30
Nitrogen	ND	1.0	99	70-130%	98	70-130%	1.2	<30
Methane	ND	0.0010	103	70-130%	99	70-130%	3.8	<30
Carbon Monoxide	ND	0.0010	118	70-130%	117	70-130%	1.6	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11/5/15

Mark J. Johnson
Operations Manager

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

Air TECHNOLOGY Laboratories, Inc.

November 30, 2015

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: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G111804-01/88

Enclosed are results for sample(s) received 11/18/15 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 Jim Getting, Mike Lambrich, Ryan Ayers and David Randall, Weaver Consultants Group on 11/25/15 and 11/27/15 (with secondary hydrogen analysis results).

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

Sincerely,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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

Air TECHNOLOGY Laboratories, Inc.

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

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 10
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:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G111804-01	6158	-20.6	-5	-4	GEW-40	11/10/2015	945	C	LFG	NA	X					
-02	4644	-20.3	-5	-4	GEW-41R	11/10/2015	959	C	LFG	NA	X					
-03	A7813	-20.6	-5	-2	GEW-42R	11/10/2015	1039	C	LFG	NA	X					
-04	5918	-20.3	-5	-6	GEW-44	11/10/2015	1059	C	LFG	NA	X					
-05	A8072	-20.6	-5	-6	GEW-45R	11/10/2015	1115	C	LFG	NA	X					
-06	3126	-20.5	-5	-5	GEW-46R	11/10/2015	1129	C	LFG	NA	X					
-07	3440	-20.5	-5	-5	GEW-2	11/10/2015	1138	C	LFG	NA	X					
-08	3162	-20.5	-5	-5	GEW-3	11/10/2015	1159	C	LFG	NA	X					
-09	A8060	-20.3	-5	-5	GEW-4	11/10/2015	1207	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]	DATE: 11-17-15 0900 RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	DATE: RECEIVED BY [signature]	DATE/TIME: 11/18/ 0957	
RELINQUISHED BY	DATE: RECEIVED BY	DATE/TIME	

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

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

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

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

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

TURNAROUND TIME

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

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 2 **OF** 10

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

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

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G111884-10	5914	-20.4	-5	-5	GEW-47R	11/10/2015	1216	C	LFG	NA	X					
-11	5916	-20.3	-5	-5	GEW-5	11/10/2015	1422	C	LFG	NA	X					
-12	5837	-20.5	-5	-5	GEW-48	11/10/2015	1432	C	LFG	NA	X					
-13	3837	-20.3	-5	-6	GEW-6	11/10/2015	1441	C	LFG	NA	X					
-14	5309	-20.3	-5	-6	GEW-50	11/10/2015	1451	C	LFG	NA	X					
-15	3128	-20.2	-5	-6	GEW-49	11/10/2015	1505	C	LFG	NA	X					
-16	A7791	-20.4	-5	-5	GEW-51	11/10/2015	1514	C	LFG	NA	X					
-17	A8094	-20.3	-5	-6	GEW-43R	11/11/2015	838	C	LFG	NA	X					
-18	5817	-20.3	-5	-5	GEW-53	11/11/2015	849	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	DATE: 11-17-15 0900	RECEIVED BY	DATE/TIME
RELINQUISHED BY: FedEx	DATE:	RECEIVED BY	DATE/TIME 11/18/15 0957
RELINQUISHED BY	DATE:	RECEIVED BY	DATE/TIME

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

COMMENTS

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

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

AirTECHNOLOGY Laboratories, Inc.

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

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 3 OF 10
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:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G111804-19	4657	-20.2	-5	-5	GEW-54	11/11/2015	859	C	LFG	NA	X					
-20	A7803	-20.5	-5	-5	GEW-55	11/11/2015	909	C	LFG	NA	X					
-21	A7820	-20	-5	-5	GEW-52	11/11/2015	935	C	LFG	NA	X					
-22	5269	-20.2	-5	-6	GEW-7	11/11/2015	947	C	LFG	NA	X					
-23	5812	-20.4	-5	-5	GEW-8	11/11/2015	958	C	LFG	NA	X					
-24	6132	-19.5	-5	-6	GEW-9	11/11/2015	1008	C	LFG	NA	X					
-25	5906	-20	-5	-5	GEW-56R	11/11/2015	1044	C	LFG	NA	X					
-26	A7744	-20.1	-5	-5	GEW-10	11/11/2015	1109	C	LFG	NA	X					
-27	5831	-20	-5	-6	GEW-110	11/11/2015	1120	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: 11-17-15 0900 RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FedEx	DATE: RECEIVED BY	DATE/TIME: 11/18/15 0957	
RELINQUISHED BY	DATE: RECEIVED BY	DATE/TIME	

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

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

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

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

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

TURNAROUND TIME				DELIVERABLES		PAGE: 4 OF 10
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:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING	
P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G111804-28	A7666	-20.3	-5	-6	GEW-39	11/11/2015	1131	C	LFG	NA	X					
-29	A7814	-20	-5	-6	GEW-109	11/11/2015	1142	C	LFG	NA	X					
-30	3156	-18.5	-5	-5	GEW-38	11/11/2015	1324	C	LFG	NA	X					
-31	A7802	-20.1	-5	-5	GEW-59R	11/11/2015	1336	C	LFG	NA	X					
-32	5815	-20	-5	-5	GEW-58A	11/11/2015	1352	C	LFG	NA	X					
-33	6137	-18.2	-5	-6	GEW-58	11/11/2015	1400	C	LFG	NA	X					
-34	A7747	-20	-5	-5	GEW-57R	11/11/2015	1410	C	LFG	NA	X					
-35	5910	-20.4	-5	-5	GEW-90	11/12/2015	801	C	LFG	NA	X					
-36	A7815	-20.5	-5	-4	GEW-149	11/12/2015	817	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	11-17-15 0900	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY FEDEX		DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY		DATE/ RECEIVED BY	11/18/15 0857	

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*

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

TURNAROUND TIME				DELIVERABLES		PAGE: 5 OF 10
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:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G111804-37	6160	-20.3	-5	-4	GEW-156	11/12/2015	838	C	LFG	NA	X					
-38	3131	-20.4	-5	-4	GEW-65A	11/12/2015	854	C	LFG	NA	X					
-39	A7649	-20.7	-5	-2	GEW-86	11/12/2015	923	C	LFG	NA	X					
-40	A7818	-20.5	-5	-4	GEW-151	11/12/2015	935	C	LFG	NA	X					
-41	3826	-20.3	-5	-4	GEW-146	11/12/2015	959	C	LFG	NA	X					
-42	A7766	-20.5	-5	-4	GEW-138	11/12/2015	1011	C	LFG	NA	X					
-43	A7807	-20.3	-5	-2	GEW-137	11/12/2015	1059	C	LFG	NA	X					
-44	A8083	-20.7	-5	-5	GEW-82R	11/12/2015	1120	C	LFG	NA	X					
-45	A8055	-20.6	-5	-1	GEW-134	11/12/2015	1133	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	11-17-15 0900	DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY FedEx		DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY		DATE/ RECEIVED BY	11/18/15 0957 DATE/TIME

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

COMMENTS

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

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

CHAIN OF CUSTODY RECORD

AirTECHNOLOGY Laboratories, Inc.

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

TURNAROUND TIME

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

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 6 OF 10

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

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

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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					
G111804-46	A8066	-20.3	-5	-5	GEW-116	11/12/2015	1144	C	LFG	NA	X					
-47	6141	-20.5	-5	-4	GEW-133	11/12/2015	1325	C	LFG	NA	X					
-48	A7670	-20.8	-5	-5	GEW-117	11/12/2015	1336	C	LFG	NA	X					
-49	A7761	-20.7	-5	-5	GEW-120	11/12/2015	1346	C	LFG	NA	X					
-50	5825	-20.5	-5	-5	GEW-132	11/12/2015	1356	C	LFG	NA	X					
-51	A7816	-20.3	-5	-5	GEW-122	11/12/2015	1416	C	LFG	NA	X					
-52	A7779	-20.4	-5	-1	GEW-121	11/12/2015	1427	C	LFG	NA	X					
-53	A8073	-20.4	-5	-2	GEW-123	11/12/2015	1439	C	LFG	NA	X					
-54	A7643	-20.3	-5	-5	GEW-22R	11/12/2015	1450	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	DATE/	RECEIVED BY	DATE/TIME
RELINQUISHED BY: FEDEX 11-17-15 0500	DATE/	RECEIVED BY	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*

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

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

TURNAROUND TIME				DELIVERABLES		PAGE: 7 OF 10
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:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING	
P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G111804-55	5836	-20.3	-5	-5	GEW-125	11/12/2015	1513	C	LFG	NA	X					
-56	6131	-20.7	-5	-5	GEW-126	11/12/2015	1523	C	LFG	NA	X					
-57	A7792	-20.2	-5	-5	GEW-131	11/12/2015	1532	C	LFG	NA	X					
-58	5929	-20.8	-5	-4	GEW-139	11/13/2015	749	C	LFG	NA	X					
-59	6130	-20.8	-5	-4	GEW-143	11/13/2015	818	C	LFG	NA	X					
-60	A7771	-20	-5	-5	GEW-142	11/13/2015	829	C	LFG	NA	X					
-61	5927	-20.8	-5	-4	GEW-141	11/13/2015	903	C	LFG	NA	X					
-62	5313	-21	-5	-4	GEW-28R	11/13/2015	914	C	LFG	NA	X					
-63	A8078	-21	-5	-4	GEW-145	11/13/2015	946	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] 11-17-15 0900	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FED EX	DATE/ RECEIVED BY: [signature] 11/18/15 0957	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*

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CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 8 OF 10
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:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
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Phone& Fax:	314-683-3921
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BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G11854-64	A7648	-21	-5	-4	GEW-102	11/13/2015	956	C	LFG	NA	X					
-65	A8076	-20.7	-5	-4	GEW-144	11/13/2015	1037	C	LFG	NA	X					
-66	5936	-21	-5	-4	GEW-150	11/13/2015	1049	C	LFG	NA	X					
-67	A8071	-20.7	-5	-5	GEW-104	11/13/2015	1059	C	LFG	NA	X					
-68	A8068	-20.7	-5	-4	GEW-152	11/13/2015	1112	C	LFG	NA	X					
-69	A8090	-20.6	-5	-4	GEW-153	11/13/2015	1306	C	LFG	NA	X					
-70	6152	-20.7	-5	-4	GEW-128	11/13/2015	1320	C	LFG	NA	X					
-71	A7781	-20.8	-5	-4	GEW-129	11/13/2015	1331	C	LFG	NA	X					
-72	5928	-20.6	-5	-5	GEW-127	11/13/2015	1341	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	11-17-15 0900	DATE/RECEIVED BY	DATE/TIME	
RELINQUISHED BY		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*

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Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

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

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

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Jim Getting
Company:	Republic Services
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City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G11804-73	A7769	-20.4	-5	-5	GEW-147	11/13/2015	1419	C	LFG	NA	X					
-74	A8096	-20.9	-5	-1	GEW-135	11/13/2015	1430	C	LFG	NA	X					
-75	A8097	-21	-5	-5	GEW-124	11/13/2015	1442	C	LFG	NA	X					
-76	5305	-21	-5	-4	GIW-8	11/13/2015	918	C	LFG	NA	X					
-77	5818	-21	-5.2	-4	GIW-5	11/13/2015	945	C	LFG	NA	X					
-78	5840	-21.1	-5	-4	GIW-11	11/13/2015	1013	C	LFG	NA	X					
-79	4655	-20.7	-5.6	-5	GIW-12	11/13/2015	1029	C	LFG	NA	X					
-80	A7809	-20.8	-5.2	-4	GIW-13	11/13/2015	1046	C	LFG	NA	X					
-81	5829	-21	-5	-4	GIW-6	11/13/2015	1234	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	DATE/TIME: 11-17-15 0900	RECEIVED BY	DATE/TIME
RELINQUISHED BY FedEx	DATE/TIME	RECEIVED BY	DATE/TIME: 11/18/15 0957
RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME

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

COMMENTS

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

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

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

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

TURNAROUND TIME				DELIVERABLES		PAGE: 10 OF 10
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:	Jim Getting
Company:	Republic Services
Street:	13570 St. Charles Rock Rd.
City/State/Zip:	Bridgeton , MO 63044
Phone& Fax:	314-683-3921
e-mail:	JGetting@republicservices.com

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	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												
G11804-82	A7760	-20.9	-5	-4	GIW-7	11/13/2015	1249	C	LFG	NA	X					
-83	A8059	-20.8	-5.2	-5	GIW-9	11/13/2015	1305	C	LFG	NA	X					
-84	4648	-20.7	-5.1	-4	GIW-10	11/13/2015	1321	C	LFG	NA	X					
-85	A7795	-20.9	-5.1	-4	GIW-4	11/13/2015	1336	C	LFG	NA	X					
-86	A8057	-20.9	-4.6	-4	GIW-3	11/13/2015	1351	C	LFG	NA	X					
-87	A8098	-20.3	-5	-4	GIW-2	11/13/2015	1406	C	LFG	NA	X					
-88	3834	-20.9	-5	-4	GIW-1	11/13/2015	1420	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:	DATE/ RECEIVED BY	DATE/TIME	
11-17-15 0900			
RELINQUISHED BY: FEDEX	DATE/ RECEIVED BY	DATE/TIME	
	11/18/15 0957		
RELINQUISHED BY	DATE/ RECEIVED BY	DATE/TIME	

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

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

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-01		G111804-02		G111804-03		G111804-04	
Client Sample I.D.:	GEW-40		GEW-41R		GEW-42R		GEW-44	
Date/Time Sampled:	11/10/15 9:45		11/10/15 9:59		11/10/15 10:39		11/10/15 10:59	
Date/Time Analyzed:	11/23/15 13:34		11/23/15 13:48		11/23/15 14:03		11/23/15 14:18	
QC Batch No.:	151123GC8A1		151123GC8A1		151123GC8A1		151123GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		2.7		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	0.030	ND d	0.030	ND d	0.027	ND d	0.034
Carbon Dioxide	37	0.030	37	0.030	35	0.027	37	0.034
Oxygen/Argon	2.4	1.5	1.6	1.5	5.0	1.3	ND	1.7
Nitrogen	8.5	3.0	15	3.0	18	2.7	15	3.4
Methane	52	0.0030	47	0.0030	42	0.0027	47	0.0034
Carbon Monoxide	ND	0.0030	ND	0.0030	ND	0.0027	ND	0.0034

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis QC batch: 151127GC8A2

Reviewed/Approved By: _____ Date 11-27-15

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-05		G111804-06		G111804-07		G111804-08	
Client Sample I.D.:	GEW-45R		GEW-46R		GEW-2		GEW-3	
Date/Time Sampled:	11/10/15 11:15		11/10/15 11:29		11/10/15 11:38		11/10/15 11:59	
Date/Time Analyzed:	11/23/15 14:32		11/23/15 14:47		11/23/15 15:01		11/23/15 15:32	
QC Batch No.:	151123GC8A1		151123GC8A1		151123GC8A1		151123GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND d	0.034	0.11 d	0.032	ND d	0.032	0.092 d	0.032
Carbon Dioxide	39	0.034	41	0.032	43	0.032	40	0.032
Oxygen/Argon	ND	1.7	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.4	4.7	3.2	ND	3.2	8.7	3.2
Methane	58	0.0034	53	0.0032	54	0.0032	50	0.0032
Carbon Monoxide	ND	0.0034	ND	0.0032	ND	0.0032	ND	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
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d = Reported from a secondary analysis QC batch: 151127GC8A2

Reviewed/Approved By: _____ Date 11-27-15

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-09		G111804-10		G111804-11		G111804-12	
Client Sample I.D.:	GEW-4		GEW-47R		GEW-5		GEW-48	
Date/Time Sampled:	11/10/15 12:07		11/10/15 12:16		11/10/15 14:22		11/10/15 14:32	
Date/Time Analyzed:	11/23/15 15:48		11/23/15 16:02		11/23/15 16:17		11/23/15 16:31	
QC Batch No.:	151123GC8A1		151123GC8A1		151123GC8A1		151123GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	0.100 d	0.032	0.10 d	0.032	0.033 d	0.032	ND d	0.032
Carbon Dioxide	40	0.032	37	0.032	36	0.032	40	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	10	3.2	21	3.2	19	3.2	5.7	3.2
Methane	49	0.0032	41	0.0032	44	0.0032	53	0.0032
Carbon Monoxide	ND	0.0032	ND	0.0032	ND	0.0032	ND	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
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d = Reported from a secondary analysis QC batch: 151127GC8A2

Reviewed/Approved By: _____ Date 11-27-15

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-13		G111804-14		G111804-15		G111804-16	
Client Sample I.D.:	GEW-6		GEW-50		GEW-49		GEW-51	
Date/Time Sampled:	11/10/15 14:41		11/10/15 14:51		11/10/15 15:05		11/10/15 15:14	
Date/Time Analyzed:	11/23/15 16:46		11/24/15 8:29		11/23/15 17:15		11/23/15 17:30	
QC Batch No.:	151123GC8A1		151123GC8A2		151123GC8A1		151123GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		5.7		3.4		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	ND d	0.034	ND d	0.057	0.080 d	0.034	0.83 d	0.032
Carbon Dioxide	40	0.034	37	0.057	37	0.034	42	0.032
Oxygen/Argon	ND	1.7	ND	2.8	ND	1.7	ND	1.6
Nitrogen	8.1	3.4	13	5.7	15	3.4	3.3	3.2
Methane	51	0.0034	48	0.0057	46	0.0034	53	0.0032
Carbon Monoxide	ND	0.0034	ND	0.0057	ND	0.0034	ND	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis QC batch: 151127GC8A2

Reviewed/Approved By: _____ **Date** 11-27-15

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-17		G111804-18		G111804-19		G111804-20	
Client Sample I.D.:	GEW-43R		GEW-53		GEW-54		GEW-55	
Date/Time Sampled:	11/11/15 8:38		11/11/15 8:49		11/11/15 8:59		11/11/15 9:09	
Date/Time Analyzed:	11/23/15 17:44		11/23/15 17:59		11/23/15 18:13		11/23/15 18:28	
QC Batch No.:	151123GC8A1		151123GC8A1		151123GC8A1		151123GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND d	0.034	4.8	3.2	2.6 d	0.032	1.2 d	0.032
Carbon Dioxide	44	0.034	42	0.032	43	0.032	43	0.032
Oxygen/Argon	ND	1.7	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.4	3.3	3.2	ND	3.2	3.2	3.2
Methane	53	0.0034	49	0.0032	52	0.0032	52	0.0032
Carbon Monoxide	ND	0.0034	0.0055	0.0032	ND	0.0032	ND	0.0032

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis QC batch: 151127GC8A2

Reviewed/Approved By: _____ Date 11-27-15

Mark Johnson
Operations Manager

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-21		G111804-22		G111804-23		G111804-24	
Client Sample I.D.:	GEW-52		GEW-7		GEW-8		GEW-9	
Date/Time Sampled:	11/11/15 9:35		11/11/15 9:47		11/11/15 9:58		11/11/15 10:08	
Date/Time Analyzed:	11/23/15 20:39		11/23/15 20:54		11/23/15 21:08		11/23/15 21:23	
QC Batch No.:	151123GC8A2		151123GC8A2		151123GC8A2		151123GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.4		3.2		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	0.038 d	0.032	ND d	0.034	2.1 d	0.032	0.42 d	0.034
Carbon Dioxide	37	0.032	41	0.034	47	0.032	39	0.034
Oxygen/Argon	1.7	1.6	ND	1.7	ND	1.6	2.0	1.7
Nitrogen	18	3.2	ND	3.4	ND	3.2	12	3.4
Methane	43	0.0032	56	0.0034	49	0.0032	46	0.0034
Carbon Monoxide	ND	0.0032	ND	0.0034	ND	0.0032	ND	0.0034

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis QC batch: 151127GC8A2, 151127GC8A3

Reviewed/Approved By: _____ Date 11-27-15

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-25		G111804-26		G111804-27		G111804-28	
Client Sample I.D.:	GEW-56R		GEW-10		GEW-110		GEW-39	
Date/Time Sampled:	11/11/15 10:44		11/11/15 11:09		11/11/15 11:20		11/11/15 11:31	
Date/Time Analyzed:	11/23/15 21:38		11/23/15 21:52		11/23/15 22:07		11/23/15 22:21	
QC Batch No.:	151123GC8A2		151123GC8A2		151123GC8A2		151123GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		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	3.2	0.62 d	0.032	22	3.4	2.7 d	0.034
Carbon Dioxide	42	0.032	42	0.032	43	0.034	55	0.034
Oxygen/Argon	ND	1.6	ND	1.6	4.1	1.7	ND	1.7
Nitrogen	24	3.2	3.9	3.2	23	3.4	ND	3.4
Methane	14	0.0032	53	0.0032	7.8	0.0034	39	0.0034
Carbon Monoxide	0.11	0.0032	0.0050	0.0032	0.14	0.0034	0.017	0.0034

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary analysis QC batch: 151127GC8A3

Reviewed/Approved By: _____ Date 11-27-15

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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**11/18/15**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	G111804-29		G111804-30		G111804-31		G111804-32	
Client Sample I.D.:	GEW-109		GEW-38		GEW-59R		GEW-58A	
Date/Time Sampled:	11/11/15 11:42		11/11/15 13:24		11/11/15 13:36		11/11/15 13:52	
Date/Time Analyzed:	11/23/15 22:36		11/23/15 22:50		11/23/15 23:05		11/24/15 8:44	
QC Batch No.:	151123GC8A2		151123GC8A2		151123GC8A2		151123GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	31	3.4	21	3.2	41	3.2	35	3.2
Carbon Dioxide	60	0.034	33	0.032	51	0.032	49	0.032
Oxygen/Argon	ND	1.7	9.8	1.6	ND	1.6	3.3	1.6
Nitrogen	ND	3.4	35	3.2	4.4	3.2	12	3.2
Methane	5.6	0.0034	0.18	0.0032	0.83	0.0032	0.36	0.0032
Carbon Monoxide	0.24	0.0034	0.21	0.0032	0.18	0.0032	0.25	0.0032

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

Reviewed/Approved By: _____ Date 11-25-15

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-33		G111804-34		G111804-35		G111804-36	
Client Sample I.D.:	GEW-58		GEW-57R		GEW-90		GEW-149	
Date/Time Sampled:	11/11/15 14:00		11/11/15 14:10		11/12/15 8:01		11/12/15 8:17	
Date/Time Analyzed:	11/24/15 8:59		11/24/15 9:13		11/24/15 9:28		11/24/15 9:42	
QC Batch No.:	151123GC8A2		151123GC8A2		151123GC8A2		151123GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.2		3.2		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	30	3.4	40	3.2	40	3.2	18	3.0
Carbon Dioxide	48	0.034	53	0.032	49	0.032	55	0.030
Oxygen/Argon	3.6	1.7	ND	1.6	ND	1.6	2.4	1.5
Nitrogen	14	3.4	3.8	3.2	3.6	3.2	14	3.0
Methane	3.5	0.0034	0.49	0.0032	5.5	0.0032	9.6	0.0030
Carbon Monoxide	0.21	0.0034	0.28	0.0032	0.22	0.0032	0.16	0.0030

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

Reviewed/Approved By: _____ Date 11.25.15

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Operations Manager

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-37		G111804-38		G111804-39		G111804-40	
Client Sample I.D.:	GEW-156		GEW-65A		GEW-86		GEW-151	
Date/Time Sampled:	11/12/15 8:38		11/12/15 8:54		11/12/15 9:23		11/12/15 9:35	
Date/Time Analyzed:	11/24/15 9:57		11/24/15 10:11		11/24/15 10:26		11/24/15 13:18	
QC Batch No.:	151123GC8A2		151123GC8A2		151123GC8A2		151124GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		2.7		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	9.4	3.0	37	3.0	2.7 d	0.027	28	3.0
Carbon Dioxide	37	0.030	58	0.030	34	0.027	56	0.030
Oxygen/Argon	9.1	1.5	ND	1.5	8.7	1.3	ND	1.5
Nitrogen	40	3.0	ND	3.0	44	2.7	ND	3.0
Methane	4.6	0.0030	0.41	0.0030	10	0.0027	11	0.0030
Carbon Monoxide	0.11	0.0030	0.32	0.0030	0.043	0.0027	0.22	0.0030

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
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d = Reported from a secondary analysis QC batch: 151127GC8A3

Reviewed/Approved By: _____ Date 11-27-15

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-41		G111804-42		G111804-43		G111804-44	
Client Sample I.D.:	GEW-146		GEW-138		GEW-137		GEW-82R	
Date/Time Sampled:	11/12/15 9:59		11/12/15 10:11		11/12/15 10:59		11/12/15 11:20	
Date/Time Analyzed:	11/24/15 13:32		11/24/15 13:47		11/24/15 14:02		11/24/15 14:16	
QC Batch No.:	151124GC8A1		151124GC8A1		151124GC8A1		151124GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		2.7		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	2.0 d	0.030	8.0	3.0	0.64 d	0.027	40	3.2
Carbon Dioxide	18	0.030	23	0.030	29	0.027	55	0.032
Oxygen/Argon	13	1.5	10	1.5	6.6	1.3	ND	1.6
Nitrogen	64	3.0	56	3.0	52	2.7	ND	3.2
Methane	3.1	0.0030	2.8	0.0030	11	0.0027	0.87	0.0032
Carbon Monoxide	0.022	0.0030	0.067	0.0030	0.0071	0.0027	0.23	0.0032

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ND = Not Detected (below RL)
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d = Reported from a secondary analysis QC batch: 151127GC8A3

Reviewed/Approved By: _____ Date 11-27-15

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-45		G111804-46		G111804-47		G111804-48	
Client Sample I.D.:	GEW-134		GEW-116		GEW-133		GEW-117	
Date/Time Sampled:	11/12/15 11:33		11/12/15 11:44		11/12/15 13:25		11/12/15 13:36	
Date/Time Analyzed:	11/24/15 14:31		11/24/15 14:45		11/24/15 15:00		11/24/15 15:14	
QC Batch No.:	151124GC8A1		151124GC8A1		151124GC8A1		151124GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.5		3.2		3.0		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	11	2.5	17	3.2	32	3.0	22	3.2
Carbon Dioxide	43	0.025	50	0.032	53	0.030	66	0.032
Oxygen/Argon	5.8	1.3	6.2	1.6	3.0	1.5	ND	1.6
Nitrogen	28	2.5	22	3.2	11	3.0	4.8	3.2
Methane	11	0.0025	2.8	0.0032	0.38	0.0030	3.7	0.0032
Carbon Monoxide	0.077	0.0025	0.18	0.0032	0.38	0.0030	0.26	0.0032

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Reviewed/Approved By: _____ **Date** 11-25-15

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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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-49		G111804-50		G111804-51		G111804-52	
Client Sample I.D.:	GEW-120		GEW-132		GEW-122		GEW-121	
Date/Time Sampled:	11/12/15 13:46		11/12/15 13:56		11/12/15 14:16		11/12/15 14:27	
Date/Time Analyzed:	11/24/15 15:29		11/24/15 15:44		11/24/15 15:58		11/24/15 16:13	
QC Batch No.:	151124GC8A1		151124GC8A1		151124GC8A1		151124GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		2.5	
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	21	3.2	17	3.2	35	3.2	28	2.5
Carbon Dioxide	68	0.032	43	0.032	55	0.032	46	0.025
Oxygen/Argon	ND	1.6	5.9	1.6	ND	1.6	5.0	1.3
Nitrogen	ND	3.2	26	3.2	ND	3.2	18	2.5
Methane	7.6	0.0032	6.9	0.0032	5.3	0.0032	2.3	0.0025
Carbon Monoxide	0.21	0.0032	0.12	0.0032	0.28	0.0032	0.22	0.0025

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-53		G111804-54		G111804-55		G111804-56	
Client Sample I.D.:	GEW-123		GEW-22R		GEW-125		GEW-126	
Date/Time Sampled:	11/12/15 14:39		11/12/15 14:50		11/12/15 15:13		11/12/15 15:23	
Date/Time Analyzed:	11/24/15 16:27		11/24/15 16:42		11/24/15 16:56		11/24/15 17:11	
QC Batch No.:	151124GC8A1		151124GC8A1		151124GC8A1		151124GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.7		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	24	2.7	30	3.2	36	3.2	33	3.2
Carbon Dioxide	51	0.027	65	0.032	59	0.032	54	0.032
Oxygen/Argon	4.9	1.3	ND	1.6	ND	1.6	ND	1.6
Nitrogen	17	2.7	ND	3.2	ND	3.2	ND	3.2
Methane	1.6	0.0027	0.83	0.0032	0.47	0.0032	8.2	0.0032
Carbon Monoxide	0.32	0.0027	0.48	0.0032	0.36	0.0032	0.33	0.0032

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Reviewed/Approved By: _____ Date 11-25-15

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Operations Manager

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-57		G111804-58		G111804-59		G111804-60	
Client Sample I.D.:	GEW-131		GEW-139		GEW-143		GEW-142	
Date/Time Sampled:	11/12/15 15:32		11/13/15 7:49		11/13/15 8:18		11/13/15 8:29	
Date/Time Analyzed:	11/25/15 12:45		11/24/15 17:40		11/24/15 17:55		11/24/15 19:51	
QC Batch No.:	151125GC8A1		151124GC8A1		151124GC8A1		151124GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.0		3.0		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	26	3.2	29	3.0	35	3.0	29	3.2
Carbon Dioxide	47	0.032	47	0.030	49	0.030	51	0.032
Oxygen/Argon	ND	1.6	4.0	1.5	3.3	1.5	4.1	1.6
Nitrogen	4.6	3.2	19	3.0	12	3.0	15	3.2
Methane	20	0.0032	0.89	0.0030	0.17	0.0030	0.16	0.0032
Carbon Monoxide	0.17	0.0032	0.33	0.0030	0.32	0.0030	0.35	0.0032

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Reviewed/Approved By: _____ Date 11-25-15

Mark Johnson
Operations Manager

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AirTECHNOLOGY Laboratories, Inc.
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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-61		G111804-62		G111804-63		G111804-64	
Client Sample I.D.:	GEW-141		GEW-28R		GEW-145		GEW-102	
Date/Time Sampled:	11/13/15 9:03		11/13/15 9:14		11/13/15 9:46		11/13/15 9:56	
Date/Time Analyzed:	11/24/15 20:06		11/24/15 20:20		11/24/15 20:35		11/24/15 20:49	
QC Batch No.:	151124GC8A2		151124GC8A2		151124GC8A2		151124GC8A2	
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	30	3.0	34	3.0	32	3.0	34	3.0
Carbon Dioxide	60	0.030	59	0.030	52	0.030	59	0.030
Oxygen/Argon	1.6	1.5	ND	1.5	2.9	1.5	ND	1.5
Nitrogen	5.5	3.0	4.9	3.0	10	3.0	3.3	3.0
Methane	1.7	0.0030	0.12	0.0030	1.7	0.0030	2.1	0.0030
Carbon Monoxide	0.35	0.0030	0.36	0.0030	0.27	0.0030	0.21	0.0030

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Reviewed/Approved By: _____ **Date** 11-25-15

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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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-65		G111804-66		G111804-67		G111804-68	
Client Sample I.D.:	GEW-144		GEW-150		GEW-104		GEW-152	
Date/Time Sampled:	11/13/15 10:37		11/13/15 10:49		11/13/15 10:59		11/13/15 11:12	
Date/Time Analyzed:	11/24/15 21:04		11/24/15 21:19		11/24/15 21:33		11/24/15 21:48	
QC Batch No.:	151124GC8A2		151124GC8A2		151124GC8A2		151124GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.2		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	20	3.0	29	3.2	35	3.0
Carbon Dioxide	56	0.030	60	0.030	43	0.032	49	0.030
Oxygen/Argon	1.9	1.5	2.0	1.5	5.7	1.6	2.3	1.5
Nitrogen	6.6	3.0	7.9	3.0	21	3.2	8.2	3.0
Methane	0.82	0.0030	9.0	0.0030	0.44	0.0032	4.1	0.0030
Carbon Monoxide	0.35	0.0030	0.16	0.0030	0.15	0.0032	0.29	0.0030

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Operations Manager

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-69		G111804-70		G111804-71		G111804-72	
Client Sample I.D.:	GEW-153		GEW-128		GEW-129		GEW-127	
Date/Time Sampled:	11/13/15 13:06		11/13/15 13:20		11/13/15 13:31		11/13/15 13:41	
Date/Time Analyzed:	11/24/15 22:02		11/24/15 22:17		11/25/15 8:05		11/25/15 8:20	
QC Batch No.:	151124GC8A2		151124GC8A2		151125GC8A1		151125GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	15	3.0	34	3.0	36	3.0	33	3.2
Carbon Dioxide	45	0.030	61	0.030	58	0.030	62	0.032
Oxygen/Argon	ND	1.5	ND	1.5	ND	1.5	ND	1.6
Nitrogen	19	3.0	ND	3.0	3.3	3.0	ND	3.2
Methane	20	0.0030	0.74	0.0030	0.65	0.0030	0.44	0.0032
Carbon Monoxide	0.058	0.0030	0.38	0.0030	0.34	0.0030	0.41	0.0032

Results normalized including non-methane hydrocarbons
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Reviewed/Approved By: _____ Date 11-25-15
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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-73		G111804-74		G111804-75		G111804-76	
Client Sample I.D.:	GEW-147		GEW-135		GEW-124		GIW-8	
Date/Time Sampled:	11/13/15 14:19		11/13/15 14:30		11/13/15 14:42		11/13/15 9:18	
Date/Time Analyzed:	11/25/15 8:34		11/25/15 8:50		11/25/15 9:04		11/25/15 9:19	
QC Batch No.:	151125GC8A1		151125GC8A1		151125GC8A1		151125GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		2.5		3.2		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	38	3.2	28	2.5	28	3.2	5.4	3.0
Carbon Dioxide	51	0.032	47	0.025	61	0.032	56	0.030
Oxygen/Argon	ND	1.6	4.2	1.3	ND	1.6	4.0	1.5
Nitrogen	3.6	3.2	15	2.5	ND	3.2	15	3.0
Methane	5.1	0.0032	4.8	0.0025	7.0	0.0032	19	0.0030
Carbon Monoxide	0.23	0.0032	0.15	0.0025	0.21	0.0032	0.074	0.0030

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Reviewed/Approved By: _____ Date 11-25-15

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:	**Jim Getting**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**11/18/15**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	G111804-77		G111804-78		G111804-79		G111804-80	
Client Sample I.D.:	GIW-5		GIW-11		GIW-12		GIW-13	
Date/Time Sampled:	11/13/15 9:45		11/13/15 10:13		11/13/15 10:29		11/13/15 10:46	
Date/Time Analyzed:	11/25/15 10:05		11/25/15 9:48		11/25/15 10:19		11/25/15 10:34	
QC Batch No.:	151125GC8A1		151125GC8A1		151125GC8A1		151125GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.2		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	37	3.0	27	3.0	6.5	3.2	28	3.0
Carbon Dioxide	58	0.030	48	0.030	21	0.032	63	0.030
Oxygen/Argon	ND	1.5	4.2	1.5	12	1.6	ND	1.5
Nitrogen	ND	3.0	17	3.0	56	3.2	3.2	3.0
Methane	2.6	0.0030	3.2	0.0030	4.3	0.0032	4.3	0.0030
Carbon Monoxide	0.19	0.0030	0.25	0.0030	0.053	0.0032	0.25	0.0030

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-81		G111804-82		G111804-83		G111804-84	
Client Sample I.D.:	GIW-6		GIW-7		GIW-9		GIW-10	
Date/Time Sampled:	11/13/15 12:34		11/13/15 12:49		11/13/15 13:05		11/13/15 13:21	
Date/Time Analyzed:	11/25/15 10:48		11/25/15 11:03		11/25/15 11:17		11/25/15 11:32	
QC Batch No.:	151125GC8A1		151125GC8A1		151125GC8A1		151125GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.2		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	34	3.0	6.9	3.0	2.4 d	0.032	42	3.0
Carbon Dioxide	56	0.030	53	0.030	13	0.032	50	0.030
Oxygen/Argon	1.8	1.5	2.2	1.5	16	1.6	ND	1.5
Nitrogen	6.2	3.0	7.9	3.0	64	3.2	4.5	3.0
Methane	0.90	0.0030	30	0.0030	3.9	0.0032	1.3	0.0030
Carbon Monoxide	0.17	0.0030	0.066	0.0030	0.022	0.0032	0.32	0.0030

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d = Reported from a secondary analysis QC batch: 151127GC8A3

Reviewed/Approved By: _____ Date 11-27-15

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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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 11/18/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G111804-85		G111804-86		G111804-87		G111804-88	
Client Sample I.D.:	GIW-4		GIW-3		GIW-2		GIW-1	
Date/Time Sampled:	11/13/15 13:36		11/13/15 13:51		11/13/15 14:06		11/13/15 14:20	
Date/Time Analyzed:	11/25/15 11:46		11/25/15 12:01		11/25/15 12:16		11/25/15 12:30	
QC Batch No.:	151125GC8A1		151125GC8A1		151125GC8A1		151125GC8A1	
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	35	3.0	23	3.0	5.8	3.0	25	3.0
Carbon Dioxide	41	0.030	38	0.030	22	0.030	66	0.030
Oxygen/Argon	5.0	1.5	8.3	1.5	12	1.5	ND	1.5
Nitrogen	18	3.0	30	3.0	55	3.0	4.4	3.0
Methane	0.48	0.0030	0.23	0.0030	4.7	0.0030	2.6	0.0030
Carbon Monoxide	0.22	0.0030	0.22	0.0030	0.037	0.0030	0.27	0.0030

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

Reviewed/Approved By: _____ Date 11-25-15

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

QC Batch No.: 151123GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/23/15 13:14		11/23/15 12:16		11/23/15 12:30			
Analyst Initials:	AS		AS		AS			
Datafile:	23nov009		23nov006		23nov007			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	108	70-130%	110	70-130%	2.0	<30
Carbon Dioxide	ND	0.010	97	70-130%	101	70-130%	3.5	<30
Oxygen/Argon	ND	0.50	94	70-130%	97	70-130%	3.1	<30
Nitrogen	ND	1.0	95	70-130%	97	70-130%	2.4	<30
Methane	ND	0.0010	103	70-130%	101	70-130%	1.5	<30
Carbon Monoxide	ND	0.0010	112	70-130%	110	70-130%	1.3	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11-25-15

Mark J. Johnson
Operations Manager

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QC Batch No.: 151123GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/23/15 20:25		11/23/15 19:41		11/23/15 19:56			
Analyst Initials:	AS		AS		AS			
Datafile:	23nov038		23nov035		23nov036			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	110	70-130%	109	70-130%	0.7	<30
Carbon Dioxide	ND	0.010	104	70-130%	103	70-130%	0.9	<30
Oxygen/Argon	ND	0.50	99	70-130%	98	70-130%	0.5	<30
Nitrogen	ND	1.0	98	70-130%	97	70-130%	0.2	<30
Methane	ND	0.0010	108	70-130%	108	70-130%	0.4	<30
Carbon Monoxide	ND	0.0010	113	70-130%	112	70-130%	0.7	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11-25-15

Mark J. Johnson
Operations Manager

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QC Batch No.: 151124GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/24/15 12:56		11/24/15 12:13		11/24/15 12:27			
Analyst Initials:	AS		AS		AS			
Datafile:	24nov009		24nov006		24nov007			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	112	70-130%	112	70-130%	0.2	<30
Carbon Dioxide	ND	0.010	100	70-130%	100	70-130%	0.7	<30
Oxygen/Argon	ND	0.50	96	70-130%	97	70-130%	0.1	<30
Nitrogen	ND	1.0	97	70-130%	97	70-130%	0.4	<30
Methane	ND	0.0010	100	70-130%	98	70-130%	1.3	<30
Carbon Monoxide	ND	0.0010	113	70-130%	113	70-130%	0.5	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11-25-15

Mark J. Johnson
Operations Manager

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QC Batch No.: 151124GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/24/15 12:56		11/24/15 18:53		11/24/15 19:07			
Analyst Initials:	AS		AS		AS			
Datafile:	24nov009		24nov033		24nov034			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	110	70-130%	112	70-130%	1.4	<30
Carbon Dioxide	ND	0.010	100	70-130%	101	70-130%	0.6	<30
Oxygen/Argon	ND	0.50	97	70-130%	97	70-130%	0.5	<30
Nitrogen	ND	1.0	96	70-130%	96	70-130%	0.2	<30
Methane	ND	0.0010	100	70-130%	97	70-130%	3.4	<30
Carbon Monoxide	ND	0.0010	117	70-130%	115	70-130%	1.4	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11-25-15

Mark J. Johnson
Operations Manager

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QC Batch No.: 151125GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	11/25/15 7:51		11/24/15 23:15		11/24/15 23:30			
Analyst Initials:	AS		AS		AS			
Datafile:	25nov001		24nov051		24nov052			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	108	70-130%	109	70-130%	0.2	<30
Carbon Dioxide	ND	0.010	97	70-130%	97	70-130%	0.1	<30
Oxygen/Argon	ND	0.50	95	70-130%	95	70-130%	0.1	<30
Nitrogen	ND	1.0	96	70-130%	96	70-130%	0.0	<30
Methane	ND	0.0010	100	70-130%	97	70-130%	2.9	<30
Carbon Monoxide	ND	0.0010	117	70-130%	115	70-130%	1.3	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 11-25-15

Mark J. Johnson
Operations Manager

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QC Batch # 151127GC8A2
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	11/27/2015 8:06		11/27/2015 7:56		11/27/2015 8:01			
Analyst Initials:	AS		AS		AS			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.01	95	70-130	95	70-130	0.0	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By: _____ Date: 11-27-15

Mark Johnson
Operations Manager

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QC Batch # 151127GC8A3
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	11/27/2015 10:04		11/27/2015 9:55		11/27/2015 10:00			
Analyst Initials:	AS		AS		AS			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.01	97	70-130	94	70-130	2.8	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By: _____ Date: 11-27-15

Mark Johnson
Operations Manager

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ATTACHMENT E

GAS WELLFIELD DATA

ATTACHMENT E-1

WELLFIELD DATA TABLE

November 2015 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	11/4/2015 14:36	56.1	39.9	0.0	4.0	116.5		36	40	-0.4	-0.4	-8.6
GEW-002	11/4/2015 14:38	56.1	40.0	0.0	3.9	116.3		29	30	-0.2	-0.2	-8.5
GEW-002	11/10/2015 11:36	55.3	42.5	0.0	2.2	114.2		43	43	-0.7	-0.7	-7.8
GEW-002	11/10/2015 11:41	55.5	41.4	0.0	3.1	114.5		49	44	-0.7	-0.5	-7.9
GEW-002	11/17/2015 11:08	51.9	39.1	0.4	8.6	111.6		46	45	-0.1	-0.1	-6.7
GEW-002	11/23/2015 10:27	52.2	40.9	0.0	6.9	110.0	110.0	3	10	-1.3	-1.3	-13.6
GEW-002	11/30/2015 11:11	56.1	43.3	0.0	0.6	110.0	110.0	29	33	-1.0	-1.1	-14.3
GEW-003	11/4/2015 14:44	48.3	37.9	0.0	13.8	116.3		19	16	-0.7	-0.7	-7.9
GEW-003	11/4/2015 14:46	48.1	38.0	0.0	13.9	115.1		10	10	-0.5	-0.5	-8.5
GEW-003	11/10/2015 11:57	51.0	40.1	0.0	8.9	115.4		8	12	0.0	0.0	-7.6
GEW-003	11/10/2015 12:02	50.8	39.3	0.0	9.9	117.3		0	0	-0.1	-0.1	-7.5
GEW-003	11/17/2015 11:13	53.4	36.6	0.0	10.0	108.3		0	0	0.3	0.3	-6.2
GEW-003	11/17/2015 11:14	52.2	39.2	0.0	8.6	111.1		22	26	-0.1	-0.1	-5.8
GEW-003	11/23/2015 10:30	45.1	40.1	0.0	14.8	100.0	100.0	29	29	-3.4	-3.4	-13.0
GEW-003	11/23/2015 10:31	46.2	39.9	0.0	13.9	100.0	100.0	10	8	-2.9	-2.9	-13.3
GEW-003	11/30/2015 11:14	45.3	40.1	0.0	14.6	100.0	100.0		11	-0.7	-0.7	-13.7
GEW-003	11/30/2015 11:16	45.8	39.6	0.0	14.6	100.0	100.0			-0.5	-0.5	-14.2
GEW-004	11/4/2015 14:59	45.1	37.6	0.0	17.3	120.4		19	18	-0.7	-0.7	-8.3
GEW-004	11/4/2015 15:02	45.5	36.7	0.0	17.8	119.1		13	13	-0.5	-0.5	-9.1
GEW-004	11/10/2015 12:05	49.2	39.4	0.0	11.4	118.0		22	18	-0.1	-0.1	-7.5
GEW-004	11/10/2015 12:10	50.1	38.8	0.0	11.1	118.0		28	28	-0.1	-0.1	-7.0
GEW-004	11/17/2015 11:18	53.1	38.8	0.0	8.1	116.0		12	12	0.2	0.2	-5.9
GEW-004	11/17/2015 11:20	52.2	39.9	0.0	7.9	121.0		12	22	-0.1	-0.1	-5.6
GEW-004	11/23/2015 10:34	42.8	38.8	0.0	18.4	110.0	110.0	28	24	-3.0	-3.0	-13.7
GEW-004	11/23/2015 10:35	43.0	38.4	0.0	18.6	110.0	110.0			-2.4	-2.4	-13.9
GEW-004	11/30/2015 11:18	49.7	40.7	0.0	9.6	105.0	105.0	8	24	-0.4	-0.4	-14.2
GEW-005	11/4/2015 15:17	38.1	33.7	0.0	28.2	95.1		24	21	-0.4	-0.4	-8.7
GEW-005	11/4/2015 15:18					95.0		16	17	-0.4	-0.4	-9.0
GEW-005	11/10/2015 14:20	48.2	33.5	0.0	18.3	97.9		23	25	0.0	0.0	-7.2
GEW-005	11/10/2015 14:25	46.6	34.9	0.0	18.5	97.9		23	25	-0.1	-0.1	-7.0
GEW-005	11/17/2015 11:49	46.6	34.6	0.0	18.8	96.4		20	13	0.0	-0.1	-5.8
GEW-005	11/23/2015 10:46	30.8	33.9	0.0	35.3	80.0	80.0	27	21	-1.8	-1.7	-13.8
GEW-005	11/23/2015 10:47	31.0	33.5	0.0	35.5	80.0	80.0			-1.5	-1.5	-14.4
GEW-005	11/30/2015 13:35	37.3	35.4	0.0	27.3	80.0	80.0	25	30	-0.1	-0.1	-13.2
GEW-006	11/4/2015 10:46	42.6	35.2	0.0	22.2	91.1		22	24	-0.7	-0.7	-7.8
GEW-006	11/4/2015 10:49	43.1	34.9	0.0	22.0	90.5		6	12	-0.4	-0.4	-8.1
GEW-006	11/10/2015 14:38	53.0	39.0	0.0	8.0	94.8		16	16	-0.1	-0.1	-6.4
GEW-006	11/10/2015 14:43	53.3	37.5	0.0	9.2	95.0		20	26	-0.1	-0.2	-6.9
GEW-006	11/17/2015 11:57	50.9	38.6	0.0	10.5	92.7		23	7	0.0	0.0	-5.5
GEW-006	11/23/2015 10:54	33.9	35.0	0.0	31.1	70.0	7.0	28	22	-1.8	-1.8	-13.4
GEW-006	11/23/2015 10:55	34.1	35.2	0.0	30.7	70.0	70.0	11	16	-1.5	-1.5	-14.6
GEW-007	11/4/2015 11:08	57.8	40.1	0.0	2.1	89.5		0	0	0.8	0.8	-4.5

November 2015 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-007	11/4/2015 11:11	58.3	40.1	0.0	1.6	91.8		11	12	-0.1	-0.1	-5.6
GEW-007	11/11/2015 9:45	57.5	40.6	0.0	1.9	96.5		10	6	-1.0	-1.0	-11.0
GEW-007	11/11/2015 9:50	58.0	40.1	0.0	1.9	96.9		38	38	-1.0	-1.0	-10.9
GEW-007	11/17/2015 12:14	57.9	39.4	0.0	2.7	91.9		0	0	0.5	0.5	-6.3
GEW-007	11/17/2015 12:16	57.7	40.7	0.0	1.6	93.6		40	40	-0.2	-0.2	-5.4
GEW-007	11/23/2015 11:08	56.9	43.0	0.0	0.1	80.0	80.0			-5.0	-5.0	-15.1
GEW-007	11/30/2015 14:06	57.2	42.7	0.0	0.1	85.0	85.0	33	34	-3.1	-3.2	-14.3
GEW-008	11/4/2015 11:16	51.0	44.1	0.0	4.9	112.3		11	11	0.4	0.4	-3.6
GEW-008	11/4/2015 11:19	51.0	45.0	0.0	4.0	113.0		19	15	-0.1	-0.1	-6.5
GEW-008	11/11/2015 9:55	49.9	45.0	0.0	5.1	114.3		22	25	-1.1	-1.1	-10.5
GEW-008	11/11/2015 10:00	50.6	44.4	0.0	5.0	114.2		21	23	-1.1	-1.1	-10.6
GEW-008	11/17/2015 12:20	52.0	42.5	0.0	5.5	112.5		21	16	0.0	0.0	-5.7
GEW-008	11/23/2015 11:11	50.7	45.9	0.0	3.4	100.0	100.0	14	15	-2.3	-2.3	-14.9
GEW-008	11/30/2015 14:11	50.5	47.5	0.0	2.0	100.0	100.0	36	35	-1.3	-1.3	-14.0
GEW-009	11/4/2015 11:25	52.6	43.7	0.0	3.7	123.4		0	0	0.1	0.1	-12.3
GEW-009	11/4/2015 11:27	53.5	42.5	0.0	4.0	125.4		18	17	-0.1	-0.1	-13.1
GEW-009	11/11/2015 10:05	49.6	42.0	0.0	8.4	122.6		41	41	-0.5	-0.5	-20.6
GEW-009	11/11/2015 10:10	50.6	40.8	0.0	8.6	122.7		36	36	-0.5	-0.5	-20.0
GEW-009	11/17/2015 12:24	50.0	42.5	0.0	7.5	123.5		20	22	-0.1	-0.1	-11.3
GEW-009	11/23/2015 14:56	41.7	39.6	0.0	18.7	100.0	100.0	22	26	-0.6	-0.6	-15.9
GEW-009	11/23/2015 14:58	42.0	39.5	0.0	18.5	100.0	100.0	17	17	-0.4	-0.4	-16.1
GEW-009	11/30/2015 14:57	53.0	45.0	0.0	2.0	100.0	100.0	35	35	-0.1	-0.1	-9.1
GEW-010	11/4/2015 9:51	45.1	44.8	1.7	8.4	75.1				-2.1	-2.1	-10.3
GEW-010	11/11/2015 11:06	55.1	41.9	0.0	3.0	72.8				-2.9	-2.9	-5.7
GEW-010	11/11/2015 11:11	54.7	40.6	0.2	4.5	74.5				-4.3	-3.2	-6.1
GEW-010	11/19/2015 15:31	46.2	49.5	0.8	3.5	77.3				-10.7	-10.7	-14.2
GEW-010	11/23/2015 15:04	47.0	48.3	0.8	3.9	70.0	70.0	18	17	-10.5	-10.1	-15.8
GEW-010	11/30/2015 15:01	55.8	44.1	0.0	0.1	45.0	45.0		28	-0.7	-0.5	-12.7
GEW-011	11/12/2015 8:10	0.4	10.5	19.3	69.8	51.5				-18.7	-18.4	-18.7
GEW-018R	11/9/2015 9:06	0.5	61.9	0.6	37.0	150.1				-13.2	-13.2	-12.7
GEW-018R	11/16/2015 9:48	0.5	61.2	0.8	37.5	125.7				-13.1	-12.7	-13.0
GEW-020A	11/9/2015 9:43	0.9	56.0	1.9	41.2	145.1				-12.7	-13.2	-12.8
GEW-020A	11/9/2015 9:45	0.9	61.2	1.1	36.8	146.2				-13.2	-12.8	-13.1
GEW-020A	11/16/2015 10:16	1.0	59.3	1.6	38.1	114.0				-13.5	-13.6	-13.9
GEW-021A	11/9/2015 9:30	0.7	61.7	0.0	37.6	155.9				-13.3	-13.0	-12.7
GEW-021A	11/9/2015 9:31	0.5	60.1	0.0	39.4	156.2				-13.2	-13.2	-13.3
GEW-021A	11/16/2015 10:07	0.7	55.4	0.8	43.1	108.3				-14.1	-13.2	-13.9
GEW-022R	11/12/2015 14:47	0.7	62.9	0.0	36.4	192.5				-13.5	-15.5	-15.5
GEW-022R	11/12/2015 14:52	0.9	64.0	0.0	35.1	192.5				-15.9	-16.4	-16.6
GEW-028R	11/13/2015 9:11	0.1	62.9	0.1	36.9	195.1				-16.7	-16.7	-16.5
GEW-028R	11/13/2015 9:17	0.1	61.0	0.2	38.7	194.8				-16.7	-16.7	-17.0
GEW-038	11/4/2015 10:00	1.3	60.7	0.0	38.0	102.6				-12.8	-12.8	-12.8

November 2015 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-038	11/4/2015 10:00	0.6	62.8	0.1	36.5	108.6				-12.8	-13.2	-13.2
GEW-038	11/11/2015 13:21	0.3	54.8	3.8	41.1	72.3				-15.5	-15.1	-15.5
GEW-038	11/11/2015 13:27	0.3	40.0	8.0	51.7	71.7				-14.7	-14.5	-14.6
GEW-038	11/19/2015 14:50	0.7	39.2	7.6	52.5	69.0				-16.9	-16.5	-17.6
GEW-038	11/19/2015 14:53	0.2	43.2	7.0	49.6	69.0		6	3	-13.6	-13.6	-15.5
GEW-038	11/23/2015 15:34	0.2	42.1	8.3	49.4	50.0	50.0	14		-9.6	-9.5	-16.2
GEW-038	11/23/2015 15:37	0.2	39.4	9.0	51.4	50.0	50.0	12	17	-9.2	-9.2	-16.3
GEW-038	11/30/2015 15:10	0.4	45.5	6.1	48.0	30.0	30.0	30	24	-15.8	-16.1	-16.2
GEW-038	11/30/2015 15:11	0.5	49.5	5.5	44.5	30.0	30.0	28	27	-16.5	-16.5	-16.6
GEW-039	11/4/2015 15:26	36.1	52.6	0.0	11.3	134.3				0.1	0.1	-13.3
GEW-039	11/4/2015 15:30	36.5	53.0	0.0	10.5	136.6				-0.3	-0.3	-13.3
GEW-039	11/11/2015 11:28	38.5	54.8	0.0	6.7	132.7				-0.5	-0.5	-8.0
GEW-039	11/11/2015 11:33	40.9	51.3	0.0	7.8	133.4				-0.6	-0.6	-7.9
GEW-039	11/19/2015 15:00	31.9	46.8	0.6	20.7	134.6				-2.0	-1.9	-20.2
GEW-039	11/19/2015 15:01	32.1	45.6	0.5	21.8	134.6				-2.0	-2.1	-19.6
GEW-039	11/23/2015 15:41	29.8	47.1	1.0	22.1	120.0	120.0	82	82	-1.8	-1.8	-16.2
GEW-040	11/4/2015 13:50	58.1	38.7	0.0	3.2	93.4		25	27	-0.1	-0.1	-8.4
GEW-040	11/10/2015 9:42	58.6	40.0	0.0	1.4	92.0		31	31	-0.2	-0.2	-8.4
GEW-040	11/10/2015 9:49	58.0	39.8	0.0	2.2	92.5		5	7	-0.3	-0.3	-8.6
GEW-040	11/17/2015 9:51	55.9	40.4	0.0	3.7	89.0		6	6	-0.1	-0.1	-6.3
GEW-040	11/23/2015 9:42	56.6	43.3	0.0	0.1	70.0	70.0	29	28	-0.9	-0.9	-13.2
GEW-040	11/30/2015 9:34	56.7	43.2	0.0	0.1	70.0	70.0			-0.8	-0.8	-13.6
GEW-041R	11/4/2015 15:40	42.8	49.4	0.1	7.7	78.4		0	0	0.7	0.7	0.9
GEW-041R	11/4/2015 15:42	51.0	44.3	0.0	4.7	78.4		0	0	0.7	0.7	0.9
GEW-041R	11/10/2015 9:56	50.2	37.6	0.0	12.2	108.7		54	50	-2.8	-2.7	-6.4
GEW-041R	11/10/2015 10:02	50.0	37.8	0.0	12.2	108.7		48	47	-2.7	-2.7	-6.3
GEW-041R	11/17/2015 9:55	48.7	37.4	0.0	13.9	106.8		27	55	-2.2	-2.2	-4.5
GEW-041R	11/17/2015 9:57	49.0	37.7	0.0	13.3	103.4		10	10	-0.7	-0.7	-6.1
GEW-041R	11/23/2015 9:45	43.2	37.8	0.0	19.0	85.0	85.0		4	-1.6	-1.5	-12.9
GEW-041R	11/23/2015 9:47	44.1	37.8	0.0	18.1	85.0	85.0			-1.4	-1.4	-13.0
GEW-041R	11/30/2015 9:39	52.4	39.4	0.0	8.2	80.0	80.0			-0.6	-0.6	-13.4
GEW-041R	11/30/2015 9:42	53.3	39.9	0.0	6.8	80.0	80.0			-0.5	-0.5	-13.5
GEW-042R	11/4/2015 13:55	54.0	42.5	0.0	3.5	110.4		21	21	0.1	0.2	-2.1
GEW-042R	11/4/2015 14:00	53.7	42.7	0.0	3.6	108.6		67	67	-0.1	-0.1	-2.1
GEW-042R	11/10/2015 10:08	55.1	42.7	0.0	2.2	94.0		5	4	-0.4	-0.4	-1.4
GEW-042R	11/10/2015 10:43	54.8	42.9	0.0	2.3	99.3		32	33	-0.6	-0.7	-1.0
GEW-042R	11/17/2015 10:01	56.8	39.7	0.0	3.5	66.2		6	0	0.4	0.2	0.4
GEW-042R	11/18/2015 14:10	57.4	40.1	0.0	2.5	66.8		16	16	0.6	0.7	0.5
GEW-042R	11/23/2015 9:50	42.6	38.9	0.0	18.5	100.0	100.0	25	12	-8.3	-7.6	-7.8
GEW-042R	11/23/2015 9:52	41.4	38.4	0.0	20.2	100.0	100.0	4	2	-5.0	-5.0	-8.2
GEW-042R	11/30/2015 9:47	49.3	39.5	0.0	11.2	90.0	90.0	13	8	-3.7	-3.8	-7.5
GEW-042R	11/30/2015 9:51	48.7	39.3	0.0	12.0	90.0	90.0			-2.1	-2.2	-7.6

November 2015 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-043R	11/4/2015 14:11	55.8	40.3	0.0	3.9	129.3		44	44	-0.8	-0.8	-5.6
GEW-043R	11/10/2015 10:48	54.6	42.7	0.0	2.7	104.3		8	40	1.2	-0.3	-9.4
GEW-043R	11/11/2015 8:35	55.5	41.8	0.0	2.7	103.2		90	88	-1.3	-1.3	-8.0
GEW-043R	11/11/2015 8:42	55.7	41.5	0.0	2.8	101.9		15	16	-0.1	-0.1	-7.6
GEW-043R	11/17/2015 10:44	55.9	41.3	0.0	2.8	131.4		22	20	0.6	0.6	-6.7
GEW-043R	11/17/2015 10:46	55.3	42.1	0.0	2.6	138.3		25	26	-0.2	-0.2	-6.7
GEW-043R	11/23/2015 9:56	53.0	43.7	0.0	3.3	122.0	122.0	36	38	-4.0	-4.1	-12.8
GEW-043R	11/30/2015 9:56	53.5	43.5	0.0	3.0	125.0	125.0	53	61	-3.3	-3.4	-13.4
GEW-043R	11/30/2015 9:57	54.0	43.2	0.0	2.8	125.0	125.0	25	22	-2.2	-2.2	-13.4
GEW-044	11/4/2015 14:19	46.0	35.9	0.0	18.1	95.6		11	9	-0.3	-0.2	-5.1
GEW-044	11/4/2015 14:22	45.6	36.1	0.0	18.3	94.8		9	8	-0.1	-0.1	-4.6
GEW-044	11/10/2015 10:56	47.6	38.0	0.0	14.4	84.9		8	10	-0.1	0.0	-2.5
GEW-044	11/10/2015 11:01	48.2	36.6	0.0	15.2	83.6		6	8	0.0	0.0	-1.5
GEW-044	11/17/2015 10:50	54.8	41.5	0.0	3.7	65.8		5	6	0.4	0.4	0.0
GEW-044	11/18/2015 14:05	57.6	38.3	0.0	4.1	69.5		11	11	-0.1	-0.1	-0.4
GEW-044	11/23/2015 10:01	36.0	35.7	0.0	28.3	90.0	90.0	22		-6.6	-7.4	-7.2
GEW-044	11/23/2015 10:04	36.4	35.6	0.0	28.0	90.0	90.0	7		-4.7	-5.0	-10.4
GEW-044	11/30/2015 10:57	42.2	35.6	0.0	22.2	85.0	85.0	18	7	-3.5	-3.5	-7.6
GEW-044	11/30/2015 10:58	42.5	34.6	0.0	22.9	85.0	85.0			-2.7	-2.7	-8.9
GEW-045R	11/4/2015 14:26	58.9	38.4	0.0	2.7	92.0		11	9	-0.9	-0.9	-8.7
GEW-045R	11/4/2015 14:29	58.9	38.7	0.0	2.4	92.1		7	7	-0.5	-0.5	-8.5
GEW-045R	11/10/2015 11:13	59.2	39.0	0.0	1.8	87.2		6	10	-0.3	-0.3	-7.9
GEW-045R	11/10/2015 11:17	58.9	38.8	0.0	2.3	88.0		8	11	-0.3	-0.3	-7.9
GEW-045R	11/17/2015 10:54	58.7	40.2	0.0	1.1	77.3		0	0	0.5	0.5	-6.4
GEW-045R	11/17/2015 10:55	59.0	39.4	0.0	1.6	81.7		12	10	-0.5	-0.5	-6.4
GEW-045R	11/23/2015 10:08	58.1	41.8	0.0	0.1	70.0	70.0			-3.0	-3.1	-13.3
GEW-045R	11/30/2015 11:01	58.9	41.0	0.0	0.1	60.0	60.0			-2.3	-2.1	-13.8
GEW-046R	11/4/2015 14:32	55.1	38.6	0.0	6.3	99.4		11	13	-0.4	-0.4	-8.8
GEW-046R	11/10/2015 11:22	53.9	40.8	0.0	5.3	100.0		14	14	-0.3	-0.3	-8.1
GEW-046R	11/10/2015 11:32	53.9	40.9	0.0	5.2	100.1		0	0	-0.3	-0.3	-7.0
GEW-046R	11/17/2015 11:04	57.1	37.1	0.0	5.8	98.3		15	15	-0.1	-0.1	-6.4
GEW-046R	11/23/2015 10:12	52.4	42.2	0.0	5.4	80.0	80.0		7	-1.8	-1.8	-13.7
GEW-046R	11/30/2015 11:04	44.8	40.5	0.0	14.7	80.0	80.0	8	10	-0.9	-0.9	-13.9
GEW-046R	11/30/2015 11:06	45.0	40.6	0.0	14.4	80.0	80.0			-0.6	-0.6	-14.2
GEW-047R	11/4/2015 15:14	34.1	33.5	0.2	32.2	113.8		14	17	-0.4	-0.4	-8.9
GEW-047R	11/10/2015 12:13	41.4	36.4	0.0	22.2	114.0		18	14	-0.1	-0.1	-7.5
GEW-047R	11/10/2015 12:18	42.2	35.7	0.0	22.1	113.9		21	20	-0.1	-0.1	-6.6
GEW-047R	11/17/2015 11:29	48.6	39.2	0.0	12.2	112.5		10	6	0.2	0.2	-5.7
GEW-047R	11/17/2015 11:30	47.9	39.0	0.0	13.1	115.0		22	21	-0.1	0.0	-6.0
GEW-047R	11/23/2015 10:42	28.3	33.1	0.0	38.6	90.0	90.0	23	23	-2.3	-2.3	-14.1
GEW-047R	11/23/2015 10:43	28.4	33.0	0.0	38.6	90.0	90.0			-1.8	-1.8	-14.1
GEW-047R	11/30/2015 11:25	34.7	36.1	0.0	29.2	100.0	100.0	33	31	-0.4	-0.4	-14.0

November 2015 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	11/4/2015 15:47	50.8	39.2	0.0	10.0	104.5		20	25	-0.7	-0.7	-8.4
GEW-048	11/4/2015 15:50	50.5	38.5	0.0	11.0	104.3		18	14	-0.4	-0.4	-9.0
GEW-048	11/10/2015 14:29	55.0	40.0	0.0	5.0	105.6		0	0	0.0	0.0	-7.0
GEW-048	11/10/2015 14:34	55.0	39.2	0.0	5.8	105.8		0	0	-0.1	-0.1	-6.9
GEW-048	11/17/2015 11:52	56.4	38.2	0.0	5.4	104.3		0	0	0.1	0.1	-4.0
GEW-048	11/17/2015 11:53	56.0	40.0	0.0	4.0	104.2		8	0	0.0	0.0	-3.9
GEW-048	11/23/2015 10:50	46.3	39.2	0.0	14.5	90.0	90.0			-2.0	-2.0	-14.0
GEW-048	11/23/2015 10:51	46.6	38.8	0.0	14.6	90.0	90.0			-1.7	-1.7	-14.1
GEW-048	11/30/2015 13:37	49.1	39.4	0.0	11.5	90.0	90.0	19	19	-0.1	-0.1	-13.3
GEW-049	11/4/2015 13:33	48.4	31.1	0.2	20.3	109.9		37	37	-0.3	-0.3	-2.6
GEW-049	11/10/2015 15:03	48.8	36.5	0.0	14.7	112.5		34	35	-0.2	-0.2	-2.5
GEW-049	11/10/2015 15:08	48.2	37.3	0.0	14.5	112.5		0	0	-0.2	-0.2	-3.3
GEW-049	11/23/2015 11:16	31.1	32.2	1.3	35.4	90.0	90.0	22	9	-1.8	-1.9	-9.7
GEW-049	11/23/2015 11:17	30.9	31.8	1.5	35.8	90.0	90.0	17	18	-1.6	-1.6	-14.3
GEW-049	11/24/2015 17:35	30.1	30.3	0.7	38.9	108.3		11	15	-0.9	-0.9	-11.4
GEW-049	11/24/2015 17:36	30.9	30.3	0.5	38.3	104.7		0	0	-0.7	-0.7	-9.0
GEW-049	11/30/2015 14:21	44.8	38.8	0.0	16.4	90.0	90.0	29	31	-0.2	-0.1	-9.2
GEW-050	11/4/2015 10:56	50.1	34.8	0.0	15.1	107.8		20	23	-0.7	-0.8	-4.0
GEW-050	11/4/2015 10:57	50.3	37.0	0.0	12.7	105.8		9	9	-0.3	-0.3	-6.7
GEW-050	11/10/2015 14:49	54.6	40.1	0.0	5.3	109.2		15	15	-0.5	-0.5	-3.2
GEW-050	11/10/2015 14:54	55.2	38.9	0.0	5.9	109.7		8	4	-0.5	-0.3	-2.6
GEW-050	11/17/2015 12:04	56.5	36.4	0.0	7.1	108.1		15	22	-0.2	-0.3	-0.6
GEW-050	11/23/2015 10:59	43.9	38.5	0.0	17.6	90.0	90.0	50	51	-3.9	-3.9	-14.0
GEW-050	11/23/2015 11:00	44.7	38.5	0.0	16.8	90.0	90.0	43	48	-3.5	-3.5	-9.5
GEW-050	11/30/2015 13:51	42.7	37.7	0.0	19.6	90.0	90.0	49	55	-1.9	-2.0	-12.0
GEW-050	11/30/2015 13:52	42.8	37.8	0.0	19.4	90.0	90.0	43	43	-1.2	-1.2	-13.1
GEW-051	11/4/2015 13:36	56.0	37.5	0.0	6.5	124.6		12	15	-0.2	-0.2	-5.9
GEW-051	11/10/2015 15:12	54.9	41.1	0.0	4.0	125.7		24	27	-1.1	-1.1	-15.4
GEW-051	11/10/2015 15:17	55.1	40.8	0.0	4.1	125.8		18	27	-1.1	-1.1	-14.8
GEW-051	11/23/2015 11:20	56.4	43.5	0.0	0.1	110.0	110.0	15	22	-2.8	-2.8	-16.1
GEW-051	11/30/2015 14:41	54.9	42.9	0.0	2.2	110.0	110.0	33	35	-1.1	-1.1	-13.9
GEW-051	11/30/2015 14:43	54.8	43.2	0.0	2.0	110.0	110.0	30	28	-0.5	-0.5	-14.4
GEW-052	11/4/2015 11:03	44.3	37.6	0.0	18.1	111.3		38	38	-0.3	-0.3	-5.6
GEW-052	11/4/2015 11:04	44.8	37.6	0.0	17.6	111.1		15	11	-0.3	-0.3	-6.1
GEW-052	11/11/2015 9:33	46.6	37.6	0.0	15.8	113.1		18	20	-0.3	-0.3	-10.6
GEW-052	11/11/2015 9:38	47.0	37.3	0.0	15.7	113.0		23	16	-0.3	-0.3	-11.1
GEW-052	11/17/2015 12:07	50.5	38.6	0.0	10.9	113.3		0	0	0.0	0.0	-5.6
GEW-052	11/17/2015 12:09	50.1	39.0	0.0	10.9	114.7		0	0	0.0	0.0	-5.9
GEW-052	11/23/2015 11:03	38.0	36.2	0.0	25.8	90.0	90.0	22	16	-1.3	-1.3	-11.0
GEW-052	11/23/2015 11:04	37.8	36.5	0.0	25.7	90.0	90.0	20	14	-1.2	-1.2	-11.1
GEW-052	11/30/2015 14:00	35.4	36.4	0.0	28.2	95.0	95.0	27	25	-0.2	-0.2	-14.3
GEW-053	11/4/2015 13:40	51.7	39.8	0.0	8.5	139.3		15	15	-0.2	-0.2	-5.9

November 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GEW-053	11/4/2015 13:42	50.6	41.2	0.0	8.2	138.7		9	13	-0.2	-0.2	-6.1
GEW-053	11/11/2015 8:47	50.7	41.6	0.0	7.7	137.9		16	17	-0.8	-0.9	-7.9
GEW-053	11/11/2015 8:52	51.0	40.9	0.0	8.1	138.0		18	15	-0.8	-0.8	-7.7
GEW-053	11/17/2015 9:42	54.2	36.4	0.1	9.3	137.5		15	16	-0.2	-0.2	-5.7
GEW-053	11/17/2015 9:43	51.5	41.0	0.0	7.5	137.6		14	0	-0.2	-0.2	-5.8
GEW-053	11/23/2015 14:45	50.6	43.4	0.0	6.0	133.0	133.0	25	26	-2.0	-2.0	-14.7
GEW-053	11/23/2015 14:46	50.7	42.9	0.0	6.4	133.0	133.0	19	20	-1.8	-1.7	-15.0
GEW-053	11/30/2015 14:46	49.3	44.1	0.0	6.6	128.0	128.0	31	29	-0.3	-0.3	-14.8
GEW-054	11/4/2015 11:41	53.8	40.9	0.0	5.3	134.6		0	0	1.5	1.5	1.5
GEW-054	11/4/2015 11:42	53.3	41.9	0.0	4.8	136.0		0	0	1.5	1.5	1.5
GEW-054	11/11/2015 8:56	51.7	42.6	0.0	5.7	143.7		48	45	-4.1	-4.1	-4.6
GEW-054	11/11/2015 9:02	52.3	41.8	0.0	5.9	144.0		47	46	-4.1	-4.1	-4.6
GEW-054	11/17/2015 10:38	56.6	37.3	0.2	5.9	141.1		49	50	-4.4	-4.3	-5.4
GEW-054	11/17/2015 10:40	53.5	41.1	0.0	5.4	138.3		16	19	-1.3	-1.3	-6.6
GEW-054	11/23/2015 14:49	54.4	43.2	0.0	2.4	135.0	135.0	31	26	-2.9	-2.9	-14.7
GEW-054	11/23/2015 14:50	53.8	43.9	0.0	2.3	135.0	135.0	28	30	-2.3	-2.3	-15.0
GEW-054	11/30/2015 14:51	54.1	44.0	0.0	1.9	127.0	127.0	33	35	-1.0	-1.0	-14.8
GEW-055	11/4/2015 11:35	53.6	42.1	0.0	4.3	124.6		15	15	-0.4	-0.4	-8.2
GEW-055	11/11/2015 9:06	52.5	42.4	0.0	5.1	125.1		8	12	-0.9	-0.9	-7.0
GEW-055	11/11/2015 9:11	52.9	41.7	0.0	5.4	124.9		32	31	-0.9	-0.9	-6.8
GEW-055	11/17/2015 9:47	53.0	40.3	0.0	6.7	123.7		34	35	-0.5	-0.5	-6.2
GEW-055	11/23/2015 14:52	53.4	43.8	0.0	2.8	110.0	110.0	23	26	-1.5	-1.5	-15.4
GEW-055	11/23/2015 14:54	53.2	43.7	0.0	3.1	110.0	110.0	26	21	-1.2	-1.2	-15.4
GEW-055	11/30/2015 14:54	54.4	44.6	0.0	1.0	100.0	100.0	30	39	-0.1	-0.1	-14.9
GEW-056R	11/4/2015 9:48	12.6	39.4	0.4	47.6	167.3				-1.6	-1.6	-4.5
GEW-056R	11/4/2015 9:49	12.3	45.1	0.2	42.4	167.3				-1.5	-1.5	-6.9
GEW-056R	11/11/2015 10:41	16.1	43.5	0.0	40.4	168.3				-2.6	-2.7	-12.2
GEW-056R	11/11/2015 10:46	15.6	42.9	0.0	41.5	168.8				-2.6	-2.6	-11.7
GEW-056R	11/19/2015 15:25	10.0	40.1	0.2	49.7	166.2				-2.8	-2.8	-11.0
GEW-056R	11/19/2015 15:26	9.9	40.9	0.1	49.1	166.9				-2.8	-2.8	-10.0
GEW-056R	11/23/2015 15:22	7.5	41.6	0.2	50.7	150.0	150.0	99	101	-2.9	-3.0	-11.1
GEW-056R	11/23/2015 15:23	7.5	41.0	0.2	51.3	150.0	150.0	102	102	-3.1	-3.2	-11.7
GEW-056R	11/30/2015 15:06	8.7	43.1	0.3	47.9	150.0	150.0	98	98	-2.8	-2.8	-7.8
GEW-056R	11/30/2015 15:07	8.6	42.7	0.2	48.5	150.0	150.0	98	98	-2.8	-2.8	-9.5
GEW-057B	11/25/2015 10:20	0.5	49.8	3.9	45.8	80.0	80.0	211	193	-17.4	-11.4	-12.6
GEW-057R	11/11/2015 14:08	1.1	55.7	0.7	42.5	176.7				-17.6	-18.1	-17.6
GEW-057R	11/11/2015 14:13	0.8	56.6	0.5	42.1	176.2				-17.8	-17.8	-17.9
GEW-058	11/11/2015 13:58	6.3	58.3	0.0	35.4	185.7				-19.8	-19.2	-19.5
GEW-058	11/11/2015 14:03	6.6	57.8	0.0	35.6	185.7				-20.2	-20.0	-19.7
GEW-058A	11/11/2015 13:50	0.5	60.1	2.6	36.8	164.0				-14.7	-14.7	-18.7
GEW-058A	11/11/2015 13:55	0.8	58.7	3.0	37.5	163.6				-13.7	-13.5	-19.1
GEW-059R	11/11/2015 13:33	1.0	54.6	0.8	43.6	186.3				-11.2	-11.2	-21.4

November 2015 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-059R	11/11/2015 13:39	2.5	54.6	0.4	42.5	186.8				-11.2	-11.2	-20.4
GEW-061B	11/12/2015 8:45	0.1	13.1	21.3	65.5	55.3				-19.8	-19.4	-19.2
GEW-064A	11/27/2015 14:00											
GEW-065A	11/12/2015 8:52	0.6	62.3	0.1	37.0	191.3				-15.9	-17.8	-18.8
GEW-065A	11/12/2015 8:57	0.3	55.5	0.0	44.2	191.3				-17.4	-15.4	-18.7
GEW-067A	11/25/2015 9:40	0.9	37.4	9.6	52.1	160.0	160.0	126	111	-5.2	-3.9	-6.3
GEW-067A	11/25/2015 9:40	0.9	37.9	9.5	51.7	160.0	160.0	106	127	-3.9	-5.0	-4.1
GEW-077	11/25/2015 10:35	0.5	68.2	0.5	30.8	90.0	90.0	205	203	-13.4	-13.1	-13.4
GEW-080	11/25/2015 10:38	0.5	31.8	9.5	58.2	40.0	40.0	237	237	-14.0	-13.9	-14.0
GEW-080	11/25/2015 10:38	0.9	29.2	10.3	59.6	40.0	40.0	237	236	-13.9	-13.9	-14.1
GEW-082R	11/12/2015 11:18	1.1	55.4	0.0	43.5	194.9				-15.0	-15.0	-15.7
GEW-082R	11/12/2015 11:23	1.0	59.5	0.0	39.5	194.8				-15.0	-15.0	-15.9
GEW-086	11/12/2015 9:20	11.4	35.3	8.4	44.9	96.9				-6.2	-5.6	-19.8
GEW-086	11/12/2015 9:25	11.5	34.8	8.5	45.2	97.1				-6.2	-5.2	-21.5
GEW-089	11/25/2015 9:51	5.0	23.2	13.8	58.0	80.0	80.0	61	67	-2.1	-1.4	-18.4
GEW-089	11/25/2015 9:52	5.0	23.2	14.0	57.8	80.0	80.0	66	64	-1.8	-1.8	-20.3
GEW-090	11/12/2015 7:58	6.6	53.2	0.0	40.2	187.4				-17.8	-17.3	-18.2
GEW-090	11/12/2015 8:05	6.1	50.8	0.0	43.1	187.4				-17.8	-17.7	-18.2
GEW-102	11/13/2015 9:54	2.9	62.5	0.0	34.6	146.2				-17.7	-17.7	-17.5
GEW-102	11/13/2015 9:59	2.5	59.3	0.0	38.2	148.8				-19.6	-19.7	-19.3
GEW-104	11/13/2015 10:57	0.5	43.2	7.2	49.1	80.6				-18.7	-18.7	-18.7
GEW-104	11/13/2015 11:02	0.3	37.2	9.3	53.2	81.5				-19.2	-19.2	-18.9
GEW-105	11/25/2015 10:23	3.3	75.7	0.0	21.0	75.0	75.0	254	255	-20.5	-20.5	-20.7
GEW-107	11/25/2015 10:31	4.4	47.0	4.6	44.0	40.0	40.0	282	290	-20.4	-21.5	-21.4
GEW-109	11/4/2015 15:34	2.1	53.8	0.0	44.1	80.7				-7.6	-7.7	-12.9
GEW-109	11/4/2015 15:35	2.2	55.2	0.0	42.6	79.8				-5.8	-5.8	-12.9
GEW-109	11/11/2015 11:40	4.0	60.5	0.0	35.5	77.8				-2.0	-2.0	-7.8
GEW-109	11/11/2015 11:44	6.6	59.0	0.0	34.4	81.9				-8.5	-8.6	-14.4
GEW-109	11/19/2015 15:05	6.1	51.4	0.0	42.5	76.8				-12.9	-12.9	-13.8
GEW-109	11/19/2015 15:07	6.1	52.1	0.0	41.8	77.2		3	2	-13.1	-13.1	-16.4
GEW-109	11/23/2015 15:38	4.8	46.7	2.7	45.8	70.0	70.0		4	-10.7	-10.8	-16.0
GEW-110	11/4/2015 9:43	2.6	42.4	10.9	44.1	126.6				-0.1	-0.1	-9.7
GEW-110	11/4/2015 9:44	3.2	26.2	12.8	57.8	126.6				0.0	-0.1	-10.4
GEW-110	11/11/2015 11:18	10.4	50.1	2.0	37.5	128.0				-2.0	-1.4	-6.5
GEW-110	11/11/2015 11:23	8.3	42.5	4.4	44.8	133.0				-1.4	-1.3	-6.3
GEW-110	11/19/2015 15:39	1.2	14.6	16.2	68.0	107.4		23	23	-0.7	-0.6	-15.0
GEW-110	11/19/2015 15:40	1.1	13.6	16.4	68.9	107.0		22	22	-0.6	-0.6	-13.3
GEW-110	11/23/2015 15:07	0.2	5.8	19.0	75.0	70.0	70.0			-0.6	-0.6	-15.1
GEW-110	11/23/2015 15:08	0.3	5.9	19.0	74.8	70.0	70.0			-0.6	-0.6	-15.7
GEW-110	11/30/2015 15:03	2.8	15.6	15.0	66.6	80.0	80.0			-0.7	-0.7	-13.8
GEW-110	11/30/2015 15:04	3.1	15.3	15.6	66.0	80.0	80.0			-0.7	-0.7	-13.5
GEW-116	11/9/2015 8:59	4.6	67.2	0.0	28.2	81.3		1	2	1.0	1.0	-13.4

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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-116	11/9/2015 9:01	4.4	66.9	0.0	28.7	82.5		4	3	-10.4	-10.3	-13.1
GEW-116	11/12/2015 11:42	3.6	50.9	6.3	39.2	76.1		9	8	-13.0	-13.0	-17.7
GEW-116	11/12/2015 11:46	3.5	45.0	6.8	44.7	77.1		11	11	-12.5	-12.5	-17.9
GEW-116	11/16/2015 14:39	3.3	55.9	3.5	37.3	51.9		5	5	-9.8	-9.8	-13.4
GEW-117	11/9/2015 10:07	5.0	61.8	0.3	32.9	115.5				-12.7	-12.7	-12.8
GEW-117	11/12/2015 13:34	4.5	67.8	0.4	27.3	101.9				-17.6	-17.7	-17.9
GEW-117	11/12/2015 13:39	4.2	66.5	0.5	28.8	101.7				-17.8	-17.8	-18.4
GEW-117	11/16/2015 9:42	4.5	64.0	0.3	31.2	86.4				-13.1	-12.7	-13.3
GEW-120	11/5/2015 8:35	9.4	68.2	0.0	22.4	180.4				-0.7	-0.7	-0.4
GEW-120	11/5/2015 8:37	8.7	64.8	0.0	26.5	180.7				-0.8	-0.8	-0.6
GEW-120	11/9/2015 9:52	3.7	60.8	0.1	35.4	186.7				0.5	0.4	0.8
GEW-120	11/9/2015 9:53	4.0	62.7	0.1	33.2	186.8				0.0	-0.1	1.0
GEW-120	11/12/2015 13:44	8.1	68.0	0.0	23.9	184.1				-1.9	-1.9	-2.0
GEW-120	11/12/2015 13:49	8.5	65.0	0.0	26.5	184.2				-2.0	-1.9	-2.0
GEW-120	11/16/2015 10:20	6.0	61.9	0.2	31.9	185.7				-0.6	-0.6	-0.6
GEW-120	11/16/2015 10:21	6.1	63.8	0.0	30.1	185.7				-0.7	-0.7	-0.7
GEW-121	11/5/2015 8:40	3.2	64.2	0.0	32.6	189.1				-8.8	-8.8	-8.8
GEW-121	11/5/2015 8:48	2.3	53.8	0.1	43.8	189.1				-8.9	-7.9	-8.8
GEW-121	11/9/2015 9:37	4.0	58.5	0.0	37.5	187.4				-10.2	-11.2	-11.1
GEW-121	11/9/2015 9:39	3.5	56.5	0.0	40.0	187.4				-11.2	-11.3	-11.7
GEW-121	11/12/2015 14:25	3.3	62.3	0.0	34.4	187.9				-14.0	-14.0	-14.4
GEW-121	11/12/2015 14:30	2.7	60.5	0.0	36.8	187.9				-14.5	-14.5	-14.8
GEW-121	11/16/2015 10:10	3.9	57.2	0.2	38.7	187.4				-10.8	-10.8	-11.6
GEW-121	11/16/2015 10:12	4.0	57.4	0.1	38.5	187.4				-11.2	-11.2	-11.5
GEW-122	11/5/2015 9:48	9.5	58.9	0.1	31.5	177.4				-9.3	-9.3	-9.4
GEW-122	11/5/2015 9:49	9.2	59.5	0.0	31.3	177.2				-8.9	-8.9	-8.9
GEW-122	11/12/2015 14:14	6.5	60.3	0.0	33.2	184.6				-17.4	-17.4	-17.6
GEW-122	11/12/2015 14:19	5.6	57.7	0.0	36.7	184.6				-16.9	-17.0	-17.1
GEW-123	11/5/2015 8:51	20.7	44.3	4.4	30.6	81.1				-10.9	-11.8	-11.3
GEW-123	11/5/2015 8:52	23.2	51.1	2.6	23.1	81.5				-10.8	-10.4	-10.8
GEW-123	11/12/2015 14:36	2.5	69.2	0.0	28.3	193.7				-12.6	-12.6	-16.5
GEW-123	11/12/2015 14:42	2.3	58.3	0.1	39.3	193.7				-13.1	-13.0	-15.6
GEW-124	11/5/2015 8:55	9.3	64.8	0.1	25.8	162.7				-5.9	-6.9	-5.9
GEW-124	11/5/2015 8:56	9.5	65.7	0.0	24.8	163.2				-7.8	-6.4	-7.4
GEW-124	11/13/2015 14:40	9.5	62.6	0.0	27.9	151.6				-14.6	-14.7	-14.7
GEW-124	11/13/2015 14:45	9.1	60.2	0.0	30.7	152.1				-14.2	-14.2	-14.0
GEW-125	11/5/2015 9:03	0.5	60.7	0.3	38.5	150.9				-10.4	-10.4	-10.8
GEW-125	11/5/2015 9:07	0.5	62.8	0.3	36.4	151.3				-10.0	-10.0	-10.3
GEW-125	11/12/2015 15:10	0.5	62.5	0.0	37.0	191.9				-11.5	-11.6	-16.3
GEW-125	11/12/2015 15:15	0.4	62.3	0.0	37.3	191.9				-12.1	-12.0	-16.3
GEW-126	11/5/2015 9:14	9.8	53.0	0.1	37.1	188.7				-10.9	-10.9	-10.8
GEW-126	11/5/2015 9:18	10.5	57.0	0.0	32.5	188.6				-10.4	-9.4	-10.0

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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-126	11/12/2015 15:20	9.8	57.8	0.0	32.4	191.3				-15.9	-15.5	-16.2
GEW-126	11/12/2015 15:25	10.6	51.7	0.0	37.7	191.3				-15.5	-15.5	-15.6
GEW-127	11/5/2015 9:21	0.7	66.0	0.0	33.3	187.4				8.2	8.2	-9.1
GEW-127	11/5/2015 9:23	0.8	65.0	0.1	34.1	188.0				-8.4	-8.4	-9.2
GEW-127	11/13/2015 13:39	0.7	64.2	0.0	35.1	186.3				-14.5	-14.0	-13.9
GEW-127	11/13/2015 13:44	0.6	60.5	0.0	38.9	186.3				-14.2	-14.0	-13.9
GEW-128	11/5/2015 9:27	0.9	65.8	0.0	33.3	183.5				-5.8	-6.5	-11.3
GEW-128	11/5/2015 9:27	1.0	65.6	0.0	33.4	183.5				-6.3	-7.0	-10.5
GEW-128	11/13/2015 13:17	1.1	64.5	0.0	34.4	183.5				-11.3	-10.2	-14.3
GEW-128	11/13/2015 13:23	0.7	62.0	0.0	37.3	183.5				-10.5	-11.2	-13.8
GEW-129	11/5/2015 9:30	2.9	62.1	0.3	34.7	97.1				-6.9	-6.9	-12.3
GEW-129	11/5/2015 9:31	3.0	62.9	0.2	33.9	97.1				-5.6	-6.0	-10.4
GEW-129	11/13/2015 13:28	1.0	66.3	0.0	32.7	159.3				-14.2	-14.8	-13.8
GEW-129	11/13/2015 13:34	1.0	58.7	0.0	40.3	159.6				-14.4	-14.1	-13.9
GEW-130	11/27/2015 2:00											
GEW-130	11/27/2015 14:00											
GEW-131	11/5/2015 9:35	19.7	53.9	0.0	26.4	164.1				-6.5	-6.5	-10.3
GEW-131	11/5/2015 9:36	20.5	53.8	0.0	25.7	163.6				-5.9	-6.0	-8.3
GEW-131	11/12/2015 15:30	23.3	52.7	0.1	23.9	139.3				-14.0	-14.0	-15.3
GEW-131	11/12/2015 15:35	21.7	47.9	0.3	30.1	139.0				-14.0	-14.0	-15.5
GEW-132	11/5/2015 9:51	12.8	56.6	0.7	29.9	182.4				-4.7	-4.8	-9.2
GEW-132	11/5/2015 9:52	13.1	57.5	0.8	28.6	182.5				-4.9	-4.7	-9.4
GEW-132	11/9/2015 9:20	9.3	45.5	4.4	40.8	176.2				-9.8	-9.3	-10.4
GEW-132	11/9/2015 9:21	9.2	44.9	4.4	41.5	176.4				-9.8	-8.8	-10.3
GEW-132	11/12/2015 13:54	8.0	46.7	5.2	40.1	174.6				-16.0	-16.0	-17.7
GEW-132	11/12/2015 14:00	7.9	45.5	5.3	41.3	174.6				-15.9	-15.9	-17.4
GEW-132	11/16/2015 10:01	8.7	45.6	5.0	40.7	175.2				-11.2	-11.8	-12.1
GEW-132	11/16/2015 10:02	8.8	43.5	5.1	42.6	175.2				-12.1	-12.1	-12.9
GEW-133	11/5/2015 9:55	0.2	24.5	14.4	60.9	71.0		23	18	-11.3	-10.9	-10.3
GEW-133	11/5/2015 9:56	1.2	41.5	6.0	51.3	71.2		18	18	-10.8	-10.8	-10.3
GEW-133	11/12/2015 13:22	0.5	52.0	4.6	42.9	68.0		4	6	-17.9	-17.1	-18.1
GEW-133	11/12/2015 13:28	0.2	46.4	6.7	46.7	67.7		4	4	-17.4	-17.1	-17.9
GEW-133	11/16/2015 14:43	0.5	44.0	6.6	48.9	51.9		5	5	-13.7	-13.7	-13.8
GEW-133	11/16/2015 14:45	0.4	49.3	4.2	46.1	51.9		2	2	-12.7	-12.7	-12.8
GEW-134	11/5/2015 9:59	20.3	56.1	0.3	23.3	175.2				-9.8	-9.8	-10.3
GEW-134	11/5/2015 9:59	21.3	57.8	0.2	20.7	176.2				-9.9	-9.9	-9.8
GEW-134	11/9/2015 9:11	16.4	54.7	0.3	28.6	172.7				-12.5	-12.7	-12.8
GEW-134	11/9/2015 9:12	16.2	53.7	0.3	29.8	172.7				-12.4	-12.2	-12.9
GEW-134	11/12/2015 11:31	17.5	53.7	0.7	28.1	165.5				-17.9	-17.9	-17.7
GEW-134	11/12/2015 11:36	16.7	54.2	0.4	28.7	165.5				-17.9	-17.8	-17.8
GEW-134	11/16/2015 9:53	15.4	56.5	0.4	27.7	168.3				-12.9	-12.6	-13.0
GEW-134	11/16/2015 9:55	15.7	53.1	0.5	30.7	167.8				-12.2	-12.6	-12.4

November 2015 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-135	11/5/2015 10:01	9.5	56.7	0.1	33.7	186.8				-7.4	-6.9	-9.7
GEW-135	11/5/2015 10:01	8.9	59.7	0.1	31.3	186.8				-6.9	-6.5	-5.9
GEW-135	11/13/2015 14:28	7.7	61.2	0.0	31.1	178.2				-10.7	-10.3	-11.9
GEW-135	11/13/2015 14:33	6.4	54.2	0.0	39.4	178.3				-10.7	-11.2	-10.9
GEW-136	11/5/2015 10:03	5.2	24.7	16.5	53.6	121.2				-5.7	-5.4	-7.3
GEW-136	11/5/2015 10:04	3.8	13.7	17.0	65.5	121.2				-5.9	-6.0	-8.8
GEW-136	11/12/2015 11:07	6.7	56.1	0.0	37.2	74.5				0.4	0.4	2.1
GEW-136	11/18/2015 14:42	6.1	50.5	3.6	39.8	184.2				-7.8	-7.8	-11.6
GEW-136	11/18/2015 14:45	5.4	42.6	6.8	45.2	184.6				-10.7	-11.1	-10.8
GEW-137	11/5/2015 10:06	20.3	31.2	2.2	46.3	110.4				-7.9	-8.4	-8.0
GEW-137	11/12/2015 10:57	16.3	33.1	1.3	49.3	113.3				-15.9	-16.4	-16.2
GEW-137	11/12/2015 11:02	15.9	35.4	1.2	47.5	115.5				-16.4	-16.9	-16.2
GEW-138	11/5/2015 10:08	19.6	44.3	1.4	34.7	164.2				-2.0	-1.7	-6.1
GEW-138	11/5/2015 10:09	19.4	44.7	1.4	34.5	164.5				-1.8	-1.6	-6.9
GEW-138	11/12/2015 10:09	3.4	23.9	10.8	61.9	157.5				-2.5	-2.5	-10.2
GEW-138	11/12/2015 10:14	3.4	24.1	10.6	61.9	158.3				-1.8	-1.9	-6.8
GEW-139	11/5/2015 10:14	4.5	50.3	0.3	44.9	188.5				-6.4	-6.0	-8.3
GEW-139	11/5/2015 10:14	3.8	59.0	0.3	36.9	188.5				-6.9	-6.5	-9.2
GEW-139	11/13/2015 7:46	1.1	49.1	3.6	46.2	187.2				-10.0	-10.0	-11.7
GEW-139	11/13/2015 7:51	1.0	49.3	3.5	46.2	187.4				-10.0	-10.0	-11.8
GEW-140	11/5/2015 8:32	10.3	52.1	0.1	37.5	180.3				18.1	18.0	18.1
GEW-140	11/5/2015 8:33	10.6	55.9	0.0	33.5	185.7				14.4	14.5	14.8
GEW-140	11/18/2015 14:27	10.0	60.0	0.0	30.0	180.4				15.8	15.7	15.7
GEW-140	11/18/2015 14:28	9.8	61.9	0.0	28.3	178.7				13.8	13.8	14.3
GEW-141	11/5/2015 8:37	2.8	60.9	0.0	36.3	153.7				-13.7	-14.0	-10.3
GEW-141	11/13/2015 9:00	2.1	66.0	0.0	31.9	149.7				-17.7	-17.2	-17.4
GEW-141	11/13/2015 9:06	2.3	63.6	0.0	34.1	153.4				-17.3	-17.2	-17.4
GEW-142	11/5/2015 8:41	0.2	53.0	2.6	44.2	115.0				-6.9	-20.5	-7.2
GEW-142	11/13/2015 8:27	0.2	59.2	1.8	38.8	115.2				-15.3	-15.8	-15.5
GEW-142	11/13/2015 8:32	0.1	51.6	3.8	44.5	115.2				-15.3	-15.8	-15.2
GEW-143	11/5/2015 8:45	0.2	56.4	0.0	43.4	100.3				3.3	3.8	3.4
GEW-143	11/5/2015 8:46	0.2	57.1	0.0	42.7	100.0				3.9	4.1	3.9
GEW-143	11/13/2015 8:16	0.2	50.5	3.7	45.6	107.9				-17.3	-17.3	-17.3
GEW-143	11/13/2015 8:21	0.1	49.6	3.4	46.9	109.0				-18.7	-18.5	-18.7
GEW-144	11/13/2015 10:34	0.7	56.3	2.7	40.3	95.4				-13.8	-12.2	-12.5
GEW-144	11/13/2015 10:40	0.7	55.3	2.0	42.0	98.3				-13.4	-14.8	-15.2
GEW-145	11/5/2015 8:52	0.0	8.5	20.1	71.4	68.7				-23.9	-22.0	-24.0
GEW-145	11/5/2015 8:54	0.0	6.4	20.7	72.9	69.2				-16.2	-16.2	-20.1
GEW-145	11/13/2015 9:43	2.9	57.9	0.1	39.1	144.2				-18.3	-18.3	-18.2
GEW-145	11/13/2015 9:49	2.4	59.0	0.0	38.6	143.8				-20.6	-20.2	-20.6
GEW-146	11/5/2015 9:47	8.8	31.4	5.5	54.3	87.8				-6.5	-6.4	-7.3
GEW-146	11/5/2015 9:48	8.6	30.7	5.4	55.3	89.7				-6.4	-6.4	-7.3

November 2015 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-146	11/12/2015 9:57	3.5	18.0	14.0	64.5	82.0				-9.0	-9.0	-9.5
GEW-146	11/12/2015 10:02	3.6	17.6	13.8	65.0	83.4				-10.2	-10.1	-11.1
GEW-147	11/5/2015 9:30	4.3	54.7	0.1	40.9	191.1				-9.3	-9.6	-10.0
GEW-147	11/5/2015 9:31	4.0	55.2	0.0	40.8	191.3				-9.3	-9.4	-9.4
GEW-147	11/13/2015 14:16	6.3	57.4	0.0	36.3	187.9				-14.2	-14.6	-14.7
GEW-147	11/13/2015 14:22	6.4	53.1	0.0	40.5	188.0				-14.1	-14.1	-14.4
GEW-148	11/5/2015 9:23	0.2	10.2	18.7	70.9	71.2				-4.9	-5.4	-5.0
GEW-148	11/5/2015 9:25	0.2	9.3	18.6	71.9	71.4				-4.4	-4.3	-4.4
GEW-148	11/12/2015 9:46	0.9	30.4	10.2	58.5	58.1				0.2	0.2	0.1
GEW-148	11/18/2015 14:58	1.2	45.0	1.2	52.6	68.9				-0.1	-0.1	-0.4
GEW-148	11/18/2015 14:59	1.2	45.0	1.0	52.8	68.8				-0.2	-0.3	-0.4
GEW-149	11/5/2015 10:25	8.7	35.5	6.2	49.6	147.0				-0.8	-0.7	-9.5
GEW-149	11/5/2015 10:27	9.4	36.3	6.1	48.2	149.7				-2.3	-2.3	-9.3
GEW-149	11/12/2015 8:15	10.8	55.7	2.0	31.5	172.3				-0.4	-0.4	-3.2
GEW-149	11/12/2015 8:20	10.4	54.3	1.8	33.5	172.6				-0.4	-0.4	-3.1
GEW-150	11/5/2015 8:58	11.3	60.0	0.5	28.2	182.4				-4.5	-4.4	-4.8
GEW-150	11/13/2015 10:46	10.9	59.4	1.6	28.1	178.2				-1.7	-1.8	-1.8
GEW-150	11/13/2015 10:51	10.2	56.9	1.6	31.3	178.2				-1.7	-1.7	-1.7
GEW-151	11/5/2015 9:17	13.5	49.0	1.2	36.3	185.7				-13.2	-12.7	-19.1
GEW-151	11/5/2015 9:18	13.0	47.8	1.2	38.0	185.7				-12.9	-12.7	-18.6
GEW-151	11/12/2015 9:32	12.7	57.2	0.0	30.1	189.2				-14.5	-14.0	-18.0
GEW-151	11/12/2015 9:38	12.4	56.6	0.0	31.0	189.1				-12.6	-13.0	-17.2
GEW-152	11/5/2015 9:07	0.5	54.9	0.0	44.6	75.2		2	2	26.3	26.3	-25.7
GEW-152	11/5/2015 9:09	0.9	54.7	0.0	44.4	106.3		3	2	-22.4	-22.4	-24.9
GEW-152	11/13/2015 11:10	5.0	56.2	0.0	38.8	192.5				-16.8	-16.8	-16.8
GEW-152	11/13/2015 11:15	4.3	55.0	0.0	40.7	192.5				-16.3	-16.8	-16.7
GEW-153	11/5/2015 9:13	23.3	46.9	0.1	29.7	115.6				-23.4	-23.1	-23.2
GEW-153	11/13/2015 13:04	23.0	46.6	0.0	30.4	130.5				-21.4	-20.9	-25.2
GEW-153	11/13/2015 13:10	21.8	46.9	0.0	31.3	130.2				-19.5	-19.5	-22.1
GEW-154	11/5/2015 10:20	0.0	0.7	21.5	77.8	71.1		1	6	-9.6	-9.4	-11.7
GEW-154	11/5/2015 10:21	0.0	0.6	22.1	77.3	71.2		8	8	-8.4	-8.4	-8.4
GEW-154	11/12/2015 8:28	7.2	16.9	16.2	59.7	155.1				-14.5	-14.4	-15.5
GEW-154	11/18/2015 15:11	24.5	51.0	0.0	24.5	184.1				-0.5	-0.4	-14.2
GEW-154	11/18/2015 15:16	29.8	38.9	2.2	29.1	181.9		39	24	-6.8	-6.2	-12.5
GEW-155	11/5/2015 9:39	4.9	29.1	9.2	56.8	122.6				-4.0	-4.1	-4.6
GEW-155	11/5/2015 9:41	5.1	27.9	9.1	57.9	121.8				-4.5	-3.6	-5.0
GEW-155	11/12/2015 11:13	1.8	18.5	14.5	65.2	111.9				-10.0	-9.6	-9.9
GEW-155	11/18/2015 14:35	1.6	17.5	14.4	66.5	112.8				-6.7	-6.7	-6.9
GEW-155	11/18/2015 14:36	1.8	16.0	14.6	67.6	113.8				-6.5	-6.7	-6.4
GEW-156	11/12/2015 8:35	5.2	37.8	9.8	47.2	115.4				-2.8	-2.7	-19.5
GEW-156	11/12/2015 8:41	5.0	37.6	9.8	47.6	118.6				-2.7	-2.4	-17.7
GIW-01	11/4/2015 9:37	3.3	67.3	0.1	29.3	188.5		14	29	-2.3	-2.4	-7.9

November 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
GIW-01	11/4/2015 9:37	3.1	69.0	0.1	27.8	188.5		15	34	-3.1	-3.1	-8.7
GIW-01	11/13/2015 14:16	3.6	64.9	0.1	31.4	187.9		33	33	-9.2	-9.2	-15.2
GIW-01	11/13/2015 14:25	3.4	61.9	0.2	34.5	187.9		32	14	-9.0	-8.8	-14.7
GIW-01	11/20/2015 10:43	3.5	68.5	0.1	27.9	188.5		37	0	-6.5	-6.5	-14.7
GIW-01	11/20/2015 10:44	3.2	69.0	0.0	27.8	189.1		17	0	-6.4	-6.5	-14.3
GIW-01	11/23/2015 15:16	3.1	74.7	0.0	22.2	175.0	175.0	21	24	-8.4	-8.7	-16.0
GIW-02	11/4/2015 9:33	5.3	24.0	11.8	58.9	72.0		6	0	-4.2	-3.8	-15.9
GIW-02	11/4/2015 9:33	5.3	23.8	11.8	59.1	72.1		0	27	-3.5	-4.2	-16.4
GIW-02	11/13/2015 14:02	5.1	24.3	12.3	58.3	67.7		0	30	-3.4	-3.4	-14.4
GIW-02	11/13/2015 14:09	5.2	21.8	12.4	60.6	67.7		31	56	-3.2	-3.7	-14.4
GIW-02	11/20/2015 10:38	4.5	38.0	6.5	51.0	60.8		0	26	-4.4	-4.1	-13.5
GIW-02	11/20/2015 10:39	6.6	31.5	6.7	55.2	61.0		71	18	-4.5	-4.5	-13.6
GIW-02	11/23/2015 15:24	5.0	23.0	11.3	60.7	77.3		0	0	-3.8	-3.3	-16.0
GIW-02	11/23/2015 15:25	5.0	22.8	11.4	60.8	76.8		71	22	-3.6	-3.5	-15.7
GIW-03	11/4/2015 9:26	0.4	47.1	6.3	46.2	66.0		0	9	-1.8	-1.6	-16.2
GIW-03	11/4/2015 9:28	0.3	45.9	7.3	46.5	66.1		22	9	-1.8	-1.9	-15.4
GIW-03	11/13/2015 13:47	0.3	41.4	8.1	50.2	68.5		5	24	-2.4	-1.9	-15.2
GIW-03	11/13/2015 13:54	0.2	41.1	8.2	50.5	68.5		4	26	-2.3	-2.0	-14.7
GIW-03	11/20/2015 10:32	0.4	44.1	6.8	48.7	60.2		0	2	-1.4	-1.2	-12.8
GIW-03	11/20/2015 10:33	0.3	44.3	7.0	48.4	60.6		17	0	-1.3	-1.6	-12.8
GIW-03	11/23/2015 15:16	0.4	40.4	8.9	50.3	74.3		0	0	-2.8	-2.9	-15.2
GIW-03	11/23/2015 15:18	0.2	38.4	10.2	51.2	74.8		8	5	-4.5	-5.0	-15.7
GIW-04	11/4/2015 9:23	1.1	43.3	5.7	49.9	65.4		6	9	-15.7	-15.7	-15.7
GIW-04	11/4/2015 9:23	0.7	44.0	5.5	49.8	65.6		0	15	-16.2	-15.9	-16.2
GIW-04	11/13/2015 13:31	0.5	40.9	5.8	52.8	67.5		10	10	-15.1	-15.1	-15.1
GIW-04	11/13/2015 13:39	0.4	37.0	7.2	55.4	68.2		12	12	-14.6	-14.6	-14.8
GIW-04	11/20/2015 10:25	0.6	35.5	8.9	55.0	57.3		6	6	-12.3	-12.3	-12.4
GIW-04	11/20/2015 10:27	0.6	41.8	5.6	52.0	57.5		4	4	-12.4	-12.4	-14.3
GIW-04	11/23/2015 15:12	0.6	48.2	3.7	47.5	71.2		8	8	-15.1	-15.1	-15.5
GIW-05	11/13/2015 9:39	3.2	58.0	0.0	38.8	59.4		0	0	7.9	7.9	-13.5
GIW-05	11/13/2015 9:50	3.3	55.8	0.2	40.7	60.1		10	10	-7.9	-8.1	-13.6
GIW-05	11/19/2015 15:11	4.1	55.4	1.9	38.6	61.8		9	10	-11.7	-11.7	-12.6
GIW-05	11/23/2015 15:28	2.4	52.9	4.4	40.3	50.0	50.0	8	5	-2.1	-0.6	-14.9
GIW-06	11/4/2015 9:05	1.2	63.9	0.4	34.5	64.6		13	13	-15.1	-15.1	-15.7
GIW-06	11/13/2015 12:30	1.2	58.3	0.9	39.6	64.9		8	11	-13.7	-13.7	-14.2
GIW-06	11/13/2015 12:38	1.2	56.7	1.0	41.1	65.1		11	10	-14.1	-14.2	-14.7
GIW-06	11/20/2015 10:05	1.1	60.7	0.6	37.6	59.4		2	11	-11.4	-11.1	-12.4
GIW-06	11/23/2015 14:50	1.2	61.4	0.5	36.9	71.2		17	5	-15.1	-15.1	-16.0
GIW-06	11/23/2015 14:51	1.2	60.2	0.3	38.3	72.2		15	15	-15.5	-15.6	-16.0
GIW-07	11/4/2015 9:10	34.0	55.0	0.7	10.3	65.0		0	0	-22.0	-22.0	-23.5
GIW-07	11/13/2015 12:44	32.2	54.6	1.1	12.1	69.4		24	0	-21.3	-21.5	-21.0
GIW-07	11/13/2015 12:53	33.3	52.6	1.3	12.8	69.2		18	13	-20.9	-20.9	-21.0

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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		
GIW-07	11/20/2015 10:09	21.3	62.2	0.0	16.5	61.4		11	10	7.2	7.2	7.3
GIW-07	11/20/2015 10:10	21.4	63.6	0.0	15.0	62.7		11	15	7.1	7.1	7.0
GIW-07	11/23/2015 14:55	30.6	59.9	0.6	8.9	69.5		12	12	-22.0	-22.0	-22.3
GIW-08	11/4/2015 9:57	17.6	62.4	1.9	18.1	68.5		114	114	-2.5	-2.5	-11.6
GIW-08	11/13/2015 9:12	21.0	53.3	3.3	22.4	59.4				-3.2	-3.2	-15.2
GIW-08	11/13/2015 9:22	21.2	53.8	3.2	21.8	58.5				-3.2	-3.2	-14.8
GIW-08	11/19/2015 14:56	24.0	58.4	1.4	16.2	61.3		119	118	-2.6	-2.6	-17.6
GIW-08	11/23/2015 15:30	23.0	64.6	1.7	10.7	50.0	50.0	103	103	-2.7	-2.7	-16.2
GIW-09	11/4/2015 9:17	6.5	28.3	14.5	50.7	75.7				-5.9	-5.7	-25.0
GIW-09	11/4/2015 9:17	5.4	23.0	14.9	56.7	75.7				-6.0	-5.4	-24.1
GIW-09	11/13/2015 13:01	4.1	14.3	16.3	65.3	68.1				-3.8	-3.7	-15.7
GIW-09	11/13/2015 13:09	4.1	12.7	16.6	66.6	68.0				-3.6	-3.7	-16.1
GIW-09	11/20/2015 10:15	5.8	26.3	14.4	53.5	62.4				-3.9	-3.7	-17.2
GIW-09	11/20/2015 10:16	6.9	16.4	15.7	61.0	62.3				-3.7	-3.8	-17.9
GIW-09	11/23/2015 15:00	2.9	18.1	15.8	63.2	78.2				-3.4	-3.4	-16.8
GIW-09	11/23/2015 15:02	3.0	13.0	16.5	67.5	78.6				-4.5	-4.5	-16.9
GIW-10	11/4/2015 9:20	6.9	42.5	0.7	49.9	65.5		0	0	-6.0	-6.0	-15.2
GIW-10	11/13/2015 13:16	2.0	54.2	0.3	43.5	69.7		10	7	-12.1	-12.1	-14.7
GIW-10	11/13/2015 13:25	1.4	53.9	0.4	44.3	70.1		15	0	-12.1	-11.8	-14.7
GIW-10	11/20/2015 10:20	6.2	54.2	0.2	39.4	61.0		30	14	-3.8	-3.7	-12.4
GIW-10	11/23/2015 15:06	0.9	51.2	1.4	46.5	70.9		16	16	-14.2	-14.6	-15.5
GIW-10	11/23/2015 15:07	0.5	54.5	0.5	44.5	70.9		17	17	-14.1	-14.1	-15.8
GIW-11	11/4/2015 9:54	6.7	46.5	3.7	43.1	74.9		92	93	-1.6	-1.7	-7.4
GIW-11	11/13/2015 10:07	3.7	49.6	4.0	42.7	69.1				-3.5	-3.5	-13.5
GIW-11	11/13/2015 10:18	3.6	49.4	4.0	43.0	68.4				-3.5	-3.5	-14.0
GIW-11	11/19/2015 15:16	4.0	49.3	3.8	42.9	67.2				-3.5	-3.4	-14.1
GIW-11	11/23/2015 15:25	3.7	52.7	3.8	39.8	50.0	50.0	118	118	-3.7	-3.7	-15.6
GIW-12	11/4/2015 9:46	4.8	24.2	11.0	60.0	83.6		122	120	-2.9	-2.9	-9.2
GIW-12	11/4/2015 9:46	5.1	23.8	10.9	60.2	83.6		120	120	-2.9	-2.9	-9.1
GIW-12	11/13/2015 10:25	4.7	24.3	11.4	59.6	76.9				-4.6	-4.5	-14.0
GIW-12	11/13/2015 10:33	4.8	22.8	11.5	60.9	77.0				-4.8	-4.5	-13.7
GIW-12	11/19/2015 15:20	3.9	20.9	11.5	63.7	75.0		142	141	-3.9	-3.8	-12.5
GIW-12	11/19/2015 15:21	4.0	20.5	11.6	63.9	74.8				-3.8	-4.1	-12.2
GIW-12	11/23/2015 15:19	3.0	22.6	10.8	63.6	60.0	60.0	153	151	-5.6	-5.6	-14.5
GIW-12	11/23/2015 15:20	3.2	20.4	11.7	64.7	60.0	60.0	159	155	-5.9	-5.6	-14.8
GIW-13	11/4/2015 9:40	3.6	65.9	0.0	30.5	70.0		0	0	2.6	2.6	2.9
GIW-13	11/4/2015 9:41	3.6	65.6	0.0	30.8	68.7		0	0	2.6	2.7	2.9
GIW-13	11/6/2015 12:01	4.3	61.5	0.1	34.1	71.7				-7.1	-6.8	-6.7
GIW-13	11/13/2015 10:39	3.6	60.5	0.0	35.9	64.6				2.6	2.7	2.5
GIW-13	11/13/2015 10:51	6.0	62.3	0.1	31.6	63.8				-10.8	-11.3	-11.2
GIW-13	11/19/2015 15:44	12.3	57.3	0.7	29.7	65.2				-11.7	-13.6	-12.4
GIW-13	11/23/2015 15:10	11.7	61.6	1.3	25.4	50.0	5.0	210	238	-12.3	-13.1	-13.0

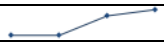
November 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H_2O		
LCS-5A	11/4/2015 13:45	58.1	40.0	0.0	1.9	94.7				-6.2	-6.6	-5.7
LCS-5A	11/17/2015 10:35	59.9	37.3	0.1	2.7	88.8				-6.0	-6.0	-6.3
LCS-5A	11/23/2015 11:25	57.6	42.2	0.0	0.2	80.0	80.0	264	267	-15.7	-15.7	-16.0
LCS-5A	11/30/2015 14:48	57.8	42.1	0.0	0.1	50.0	50.0	266	268	-14.7	-14.7	-14.8
LCS-6B	11/4/2015 15:07	52.4	39.3	0.6	7.7	79.8		8	8	-0.6	-0.6	-8.9
LCS-6B	11/4/2015 15:10	52.2	39.3	0.6	7.9	79.3		7	8	-0.2	-0.2	-8.4
LCS-6B	11/17/2015 11:23	56.4	41.0	0.0	2.6	64.5		6	6	0.4	0.4	-5.9
LCS-6B	11/17/2015 11:25	55.5	41.8	0.0	2.7	65.1		5	0	-0.5	-0.5	-6.2
LCS-6B	11/23/2015 10:38	48.6	39.7	1.5	10.2	50.0	50.0			-2.8	-3.1	-14.1
LCS-6B	11/23/2015 10:39	48.5	39.2	1.5	10.8	50.0	50.0			-1.7	-1.7	-14.0
LCS-6B	11/30/2015 11:23	54.5	45.4	0.0	0.1	35.0	35.0			-1.8	-2.0	-14.0
PGW-60	11/4/2015 11:55	51.5	35.3	1.0	12.2	81.9		9	6	-2.8	-2.9	-8.3
PGW-60	11/17/2015 12:32	55.3	40.5	0.0	4.2	74.0		18	13	-1.4	-1.3	-1.4
PGW-60	11/23/2015 10:18	59.0	40.5	0.3	0.2	40.0	40.0			-8.0	-7.9	-6.3
SEW-002	11/25/2015 10:51	0.3	7.4	17.7	74.6	53.9		11	12	-12.8	-12.8	-15.0
SEW-002	11/25/2015 10:52	0.3	15.5	14.9	69.3	54.3		7	14	-12.9	-12.9	-14.6
T-56	11/4/2015 10:52	34.6	31.1	0.2	34.1	69.4		13	15	-0.1	-0.1	-8.7
T-56	11/17/2015 12:00	55.0	37.8	0.0	7.2	63.5		0	11	-0.1	0.0	-6.4

ATTACHMENT E-2

MAXIMUM WELLHEAD TEMPERATURE TABLE

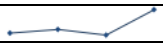
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	August 2015	September 2015	October 2015	November 2016		
GEW-001	--	--	--	--		
GEW-002	124.2	122.4	119.9	116.5		
GEW-003	118.3	118.3	119.4	117.3		
GEW-004	123.1	122.1	121.0	120.4		
GEW-005	102.1	100.2	97.3	97.9		
GEW-006	92.9	93.6	94.0	95.0		
GEW-007	102.3	102.4	99.2	96.9		
GEW-008	119.2	116.0	115.0	114.3		
GEW-009	126.9	126.3	126.3	125.4		
GEW-010	93.7	112.3	100.4	77.3		
GEW-011	--	--	--	51.5		
GEW-013A	--	--	--	--		
GEW-014A	--	--	--	--		
GEW-015	--	--	--	--		
GEW-016R	--	--	--	--		
GEW-018B	--	--	--	--		
GEW-018R	--	--	--	150.1		
GEW-019A	--	--	--	--		
GEW-020A	--	--	110.6	146.2		
GEW-021A	--	--	--	156.2		
GEW-022R	--	191.4	193.7	192.5		
GEW-023A	--	--	--	--		
GEW-024A	--	--	--	--		
GEW-025A	--	--	--	--		
GEW-026R	91.9	95.6	68.0	--		
GEW-027A	115.3	121.5	--	--		
GEW-028R	188.5	189.1	194.8	195.1		
GEW-029	--	--	--	--		
GEW-030R	--	--	--	--		
GEW-033R	--	--	--	--		
GEW-034	--	--	--	--		
GEW-034A	--	--	--	--		
GEW-035	--	--	--	--		
GEW-036	--	--	--	--		
GEW-037	--	--	--	--		
GEW-038	118.4	136.0	101.7	108.6		
GEW-039	134.3	134.0	136.0	136.6		
GEW-040	96.8	96.9	94.8	93.4		
GEW-041R	110.4	107.9	107.2	108.7		
GEW-042R	101.5	103.4	105.2	110.4		
GEW-043R	135.9	131.9	130.5	138.3		
GEW-044	96.0	98.7	90.3	95.6		
GEW-045R	100.6	97.1	92.9	92.1		
GEW-046R	101.8	101.5	100.0	100.1		

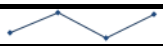
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	August 2015	September 2015	October 2015	November 2016		
GEW-047R	121.8	118.8	115.7	115.0		
GEW-048	108.5	107.4	107.0	105.8		
GEW-049	114.7	115.0	113.2	112.5		
GEW-050	111.1	109.7	108.6	109.7		
GEW-051	128.3	129.6	128.0	125.8		
GEW-052	115.8	118.1	115.0	114.7		
GEW-053	140.5	140.7	140.7	139.3		
GEW-054	150.6	143.6	150.9	144		
GEW-055	128.0	128.7	129.9	125.1		
GEW-056R	173.1	178.6	171.6	168.8		
GEW-057B	179.8	184.1	158.4	80.0		
GEW-057R	184.1	192.5	188.5	176.7		
GEW-058	189.6	188.5	187.9	185.7		
GEW-058A	181.4	182.0	181.9	164		
GEW-059R	185.2	186.8	186.3	186.8		
GEW-061B	89.9	96.8	92.8	55.3		
GEW-064A	--	--	--	--		
GEW-065A	196.0	195.4	194.2	191.3		
GEW-066	--	--	--	--		
GEW-067A	185.2	190.2	186.3	160.0		
GEW-068A	--	--	--	--		
GEW-069R	--	--	--	--		
GEW-070R	--	--	--	--		
GEW-071	--	--	--	--		
GEW-071B	--	--	--	--		
GEW-072RR	--	--	--	--		
GEW-073R	--	--	--	--		
GEW-075	--	--	--	--		
GEW-076R	--	--	--	--		
GEW-077	--	--	184.1	90.0		
GEW-078R	--	--	--	--		
GEW-080	--	--	90.7	40.0		
GEW-081	--	--	--	--		
GEW-082R	192.5	192.5	192.5	194.9		
GEW-083	--	--	--	--		
GEW-084	--	--	--	--		
GEW-085	--	--	--	--		
GEW-086	190.2	137.3	106.0	97.1		
GEW-087	--	--	--	--		
GEW-088	--	--	--	--		
GEW-089	84.9	101.5	93.6	80.0		
GEW-090	190.8	188.5	189.6	187.4		
GEW-091	--	--	--	--		
GEW-100	--	--	--	--		
GEW-101	--	--	--	--		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	August 2015	September 2015	October 2015	November 2016		
GEW-102	--	82.3	85.6	148.8		
GEW-103	--	--	--	--		
GEW-104	104.7	110.9	97.3	81.5		
GEW-105	94.4	100.2	95.2	75.0		
GEW-106	--	--	--	--		
GEW-107	94.8	99.6	89.5	40.0		
GEW-108	--	--	--	--		
GEW-109	175.8	180.8	180.9	81.9		
GEW-110	118.3	136.0	120.2	133.0		
GEW-112	--	--	--	--		
GEW-113	--	--	--	--		
GEW-116	93.6	105.0	88.9	82.5		
GEW-117	89.5	139.0	82.4	115.5		
GEW-118	--	--	--	--		
GEW-120	159.6	176.7	177.7	186.8		
GEW-121	191.8	189.1	189.1	189.1		
GEW-122	196.6	184.6	183.5	184.6		
GEW-123	186.3	183.5	190.7	193.7		
GEW-124	147.3	162.3	166.4	163.2		
GEW-125	194.2	191.3	91.3	191.9		
GEW-126	190.8	180.8	193.3	191.3		
GEW-127	189.1	95.6	176.2	188.0		
GEW-128	182.8	181.4	182.4	183.5		
GEW-129	164.5	162.6	162.2	159.6		
GEW-130	--	--	--	--		
GEW-131	154.9	149.1	175.8	161.1		
GEW-132	185.2	180.3	177.7	182.5		
GEW-133	--	81.9	103.2	71.2		
GEW-134	188.5	179.3	173.6	176.2		
GEW-135	192.3	189.6	186.3	186.8		
GEW-136	175.2	158.3	134.7	184.6		
GEW-137	123.7	113.8	120.2	115.5		
GEW-138	185.1	191.3	162.7	164.5		
GEW-139	193.7	190.8	188.3	188.5		
GEW-140	184.5	185.7	184.6	185.7		
GEW-141	140.7	148.1	147.7	153.7		
GEW-142	173.1	185.4	159.6	115.2		
GEW-143	197.9	149.7	118.3	109.0		
GEW-144	115.5	102.2	109.0	98.3		
GEW-145	90.3	98.3	85.6	144.2		
GEW-146	109.0	103.4	99.0	89.7		
GEW-147	193.6	191.8	190.2	191.3		
GEW-148	108.2	89.7	172.3	71.4		
GEW-149	147.7	145.1	153.3	172.6		
GEW-150	181.5	181.9	172.7	182.4		

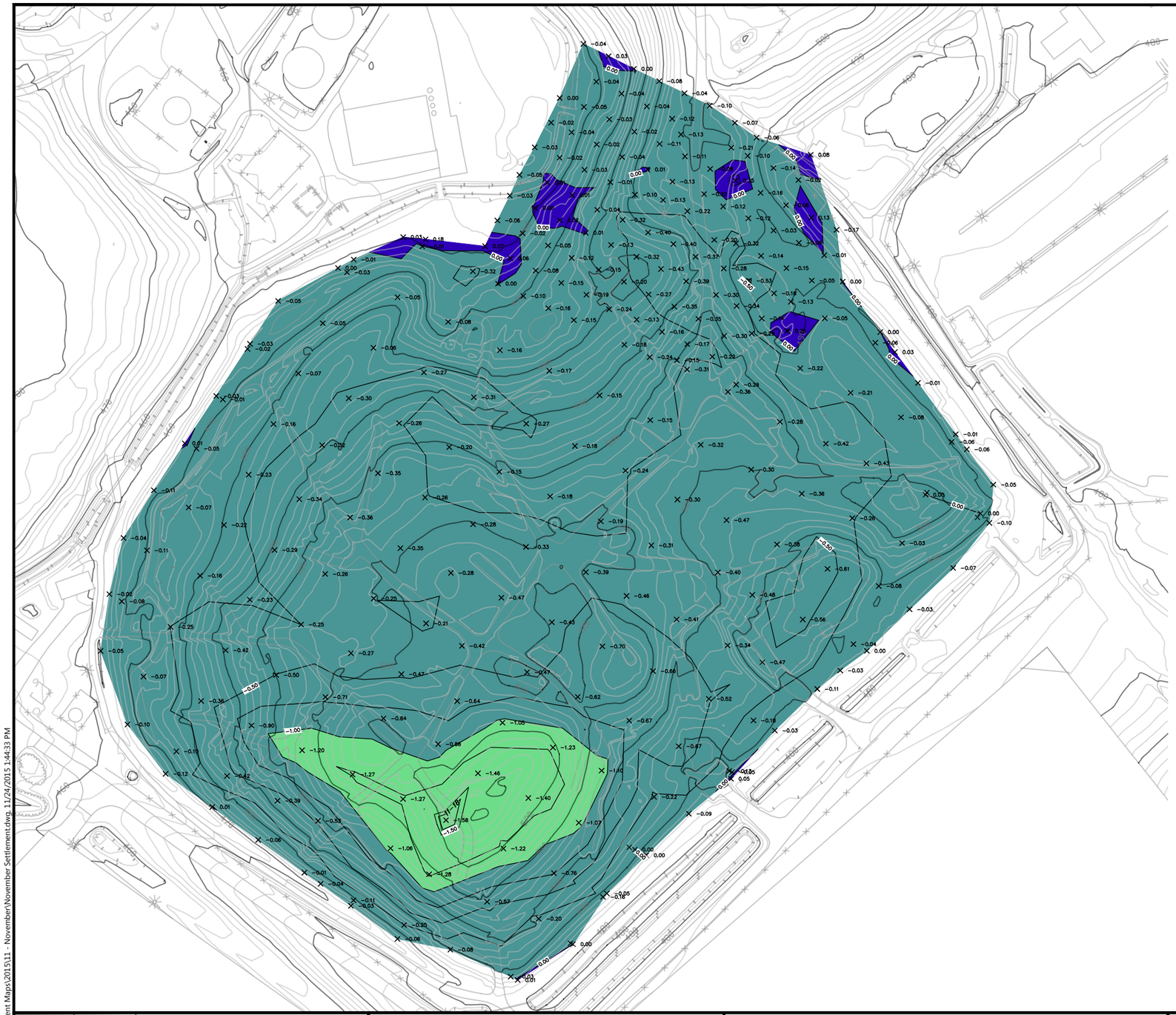
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	August 2015	September 2015	October 2015	November 2016		
GEW-151	114.5	196.0	93.6	189.2		
GEW-152	180.3	193.7	179.8	192.5		
GEW-153	121.5	131.4	136.2	130.5		
GEW-154	175.9	93.7	191.9	184.1		
GEW-155	179.8	146.2	120.4	122.6		
GEW-156	141.2	155.9	160.1	118.6		
GIW-01	189.1	189.6	188.5	189.1		
GIW-02	89.9	100.4	91.1	77.3		
GIW-03	91.3	96.7	89.6	74.8		
GIW-04	89.2	92.7	92.7	71.2		
GIW-05	91.9	97.9	88.7	61.8		
GIW-06	95.6	95.2	87.5	72.2		
GIW-07	92.7	95.0	89.5	69.5		
GIW-08	91.1	99.4	86.0	68.5		
GIW-09	95.4	98.4	88.3	78.6		
GIW-10	78.8	95.0	90.7	70.9		
GIW-11	98.7	101.3	93.2	74.9		
GIW-12	114.7	107.2	96.2	83.6		
GIW-13	124.9	144.4	87.8	71.7		
LCS-1D	--	--	--	--		
LCS-2D	--	--	--	--		
LCS-3C	--	--	--	--		
LCS-4B	--	--	--	--		
LCS-5A	96.7	94.8	94.6	94.7		
LCS-6B	98.2	99.7	88.8	79.8		
PGW-60	89.9	91.2	88.3	81.9		
SEW-002	138.7	--	78.0	54.3		
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	--	87.8	77.0	69.4		

-- = 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 10, 2015.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. ELEVATION DIFFERENCE DETERMINED BY SUBTRACTING SPOT ELEVATIONS SURVEYED ON 10-15-15 FROM SPOT ELEVATIONS SURVEYED ON 11-18-15.
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 (11-18-15 TO 10-15-15)
	MINOR ELEVATION CHANGE CONTOUR (0.25 FEET)
−0.50	MAJOR ELEVATION CHANGE CONTOUR (0.50 FEET)
11−18	SETTLEMENT FRONT CONTOUR FOR AREA WITH 1.35' PER 30 DAYS FOR CURRENT PERIOD OF DAYS (AREA REPRESENTS 1.53' OVER 34 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	103422.69	
5	−1.00	0.00	1411158.50	
6	0.00	1.00	26744.61	

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL

CB&I Environmental & Infrastructure, Inc.

STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

BRIDGETON LANDFILL
BRIDGETON, MO

SETTLEMENT MAP
OCTOBER 15, 2015 THROUGH NOVEMBER 18, 2015

DRAWN BY:	ORC	APPROVED BY:	JPV	PROJ. NO.:	155162	DATE:	DECEMBER 2015

T:\AutoCAD\Projects\Bridgeton LF\Settlement Maps\2015\11 - November\November Settlement.dwg, 11/24/2015 1:44:33 PM

ATTACHMENT G

SUMMARY OF ODOR COMPLAINTS

November 1, 2015 – November 30, 2015 / MDNR ODOR COMPLAINTS

Name: Loretta Copeland

Message: Odor logged November 1, 2015, at 4:52 am strength of 10

Follow-up: The following concern is part of a large number of concerns filed on November 1, 2015 that indicate no clear pattern as to the location of concerns with regards to wind direction with several concerns of significantly remote location, lacking location data, or with times that coincide with Bridgeton Landfill odor patrols that did not observe any odor. Winds were of persistent western and southern origins placing nearly all concerns well upwind of the Bridgeton Landfill. No odor related to the Bridgeton Landfill was observed during multiple odor patrols on this date. It is believed that the high number of concerns on this date was the product of community action group efforts. This is not believed to have been a Bridgeton Landfill odor.

Per the request of MDNR staff this response covers all November 1, 2015 concern submittals.

Name: Shelby Thompson

Message: Odor logged November 2, 2015, at 6:40 am strength of 6

Follow-up: Approximately 16 concerns were submitted on the date of November 2, 2015. 15 of these concerns were clustered around another known odor source with frequent off-site odor emissions observed over the last several months. The one outlier concern cites a location of significant distance from the Bridgeton, MO area. None of these concerns were believed to have been associated with a Bridgeton Landfill odor.

Per the request of MDNR staff this response covers all November 2, 2015 concern submittals.

Name: Christina Slaughter

Message: Odor logged November 3, 2015, at 10:23 am strength of 9

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

Name: Georgia Leek

Message: Odor logged November 3, 2015, at 10:23 am strength of 9

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

Name: Tim Houck

Message: Odor logged November 3, 2015, at 11:15 am strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location cited is directly adjacent to and downwind of another known odor source and upwind of the Bridgeton Landfill at the time of this concern. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 3, 2015, at 7:07 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time cited in this concern winds were of a southern origin, placing this location upwind of the Bridgeton Landfill and directly downwind of another known odor source. This was not a Bridgeton Landfill odor.

Name: David Blackwell

Message: Odor logged November 3, 2015, at 9:30 am strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time cited in this concern winds were of a southern origin, placing this location upwind of the Bridgeton Landfill and directly downwind of another known odor source. This was not a Bridgeton Landfill odor.

Name: Jen Solomon

Message: Odor logged November 3, 2015, at 4:25 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of a greater distance than any odor related to the Bridgeton Landfill has historically been observed. No technical disruptions occurred on this date that would be a source of this odor. No off site odor was observed during odor patrols on this date. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 3, 2015, at 4:15 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time cited in this concern winds were of a southern origin, placing this location upwind of the Bridgeton Landfill and directly downwind of another known odor source. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 3, 2015, at 4:20 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of a greater distance than any odor related to the Bridgeton Landfill has historically been observed. No technical disruptions occurred on this date that would be a source of this odor. No off site odor was observed during odor patrols on this date. This was not a Bridgeton Landfill odor.

Name: Sherron Duncan

Message: Odor logged November 3, 2015, at 6:10 pm strength of 5

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

Name: Tabitha Vaughn

Message: Odor logged November 3, 2015, at 12:31 pm strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of a greater distance than any odor related to the Bridgeton Landfill has historically been observed. No technical disruptions occurred on this date that would be a source of this odor. No off site odor was observed during odor patrols on this date. This was not a Bridgeton Landfill odor.

Name: Ed Horn

Message: Odor logged November 3, 2015, at 4:53 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of a greater distance than any odor related to the Bridgeton Landfill has historically been observed. No technical disruptions occurred on this date that would be a source of this odor. No off site odor related to the Bridgeton Landfill was observed during odor patrols on this date. Wind direction places this location downwind of another known odor source but at significant distance. This was not a Bridgeton Landfill odor.

Name: Israel Slaughter

Message: Odor logged November 4, 2015, at 12:22 am strength of 10

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

Name: NA

Message: Odor logged November 4, 2015, at 11:00 pm strength of 6

Follow-up: The following has been investigated by Bridgeton Landfill staff. The concern references a location that was upwind of the Bridgeton Landfill and downwind of other known odor sources throughout this date. Odor patrols performed approximately one to two hours prior to this concern did not observe any odor related to the Bridgeton Landfill around site perimeters. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 4, 2015, at 8:05 am strength of 10

Follow-up: The following has been investigated by Bridgeton Landfill staff. A Bridgeton Landfill odor patrol was performed shortly after the time cited in this concern. A solvent odor from an unknown source was observed between this location and the Bridgeton Landfill. No odor related to the Bridgeton Landfill was observed. This was not a Bridgeton Landfill odor.

Name: David Blackwell

Message: Odor logged November 4, 2015, at 7:15 am strength of 5

Follow-up: The following has been investigated by Bridgeton Landfill staff. The concern references a location that was upwind of the Bridgeton Landfill and downwind of other known odor sources throughout this date. An odor patrol performed shortly after receipt of this concern did not detect any Bridgeton Landfill related odor in the vicinity of this concern. This was not a Bridgeton Landfill odor.

Name: Kim Finoch

Message: Odor logged November 4, 2015, at 4:32 pm strength of 8

Follow-up: The following has been investigated by Bridgeton Landfill staff. The concern references a location that was upwind of the Bridgeton Landfill and downwind of other known odor sources throughout this date. An odor patrol performed shortly after the time cited in this concern did not detect any Bridgeton Landfill related odor in the vicinity of this concern. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 4, 2015, at 4:33 pm strength of 7

Follow-up: The following has been investigated by Bridgeton Landfill staff. The concern references a location that was upwind of the Bridgeton Landfill and downwind of other known

odor sources throughout this date. An odor patrol performed shortly after the time cited in this concern did not detect any Bridgeton Landfill related odor in the vicinity of this concern. This was not a Bridgeton Landfill odor.

Name: Kathy Bell

Message: Odor logged November 4, 2015, at 4:0 pm strength of 6

Follow-up: The following has been investigated by Bridgeton Landfill staff. An odor patrol performed shortly after the time cited in this concern did not detect any Bridgeton Landfill related odor in the vicinity of this concern. This is not believed to have been Bridgeton Landfill odor.

Name: Sharon Bishop

Message: Odor logged November 6, 2015, at 7:27 am strength of 8

Follow-up: The following is one of a large number of odor concerns received between November 6, 2015 and November 10, 2015. The origin of these concerns appears to relate to social media efforts to generate odor concern filings relating to the Bridgeton Landfill and have dubious real value in odor identification and prevention. The majority of the concerns cite one of the following: no location data, incomplete location data, a location of substantial distance from the Bridgeton Landfill, or a location well upwind of the Bridgeton Landfill. Per the request of MDNR these concerns will not be responded to individually and instead this serves as response to all concern filed on these dates. Review of these concerns did not conclude that any were likely to have been of a Bridgeton Landfill origin.

Name: Sharon Bishop

Message: Odor logged November 12, 2015, at 12:36 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed within an hour of receipt of this concern. No odor related to the Bridgeton Landfill was observed at multiple points near this location. Winds were of a persistently western origin. Odor patrols earlier in the day observed a weak asphaltic odor unassociated with the Bridgeton Landfill in close proximity to this location. This is not believed to have been a Bridgeton Landfill odor.

Name: Meagan

Message: Odor logged November 12, 2015, at 3:36 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent western origin, placing this location outside the

downwind pathway of the Bridgeton Landfill. Odor patrols before and after the time cited in this concern did not detect any off-site odor associated with the Bridgeton Landfill. This is not believed to have been a Bridgeton Landfill odor.

Name: Scott Schuchard

Message: Odor logged November 13, 2015, at 3:30 pm strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent west northwest origin placing this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor emissions, including observed emissions on this date during Bridgeton Landfill odor patrols. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 13, 2015, at 3:30 pm strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent west northwest origin placing this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor emissions, including observed emissions on this date during Bridgeton Landfill odor patrols. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 15, 2015, at 1:36 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent west northwest origin placing this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor emissions, including observed emissions on this date during Bridgeton Landfill odor patrols. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 15, 2015, at 1:23 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent west northwest origin placing this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor emissions, including observed emissions on this date during Bridgeton Landfill odor patrols. This was not a Bridgeton Landfill odor.

Name: Tim winningham

Message: Odor logged November 16, 2015, at 7:05 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent southern origin placing this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Tim winningham

Message: Odor logged November 16, 2015, at 4:35 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent southern origin placing this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 17, 2015, at 12:28 am strength of 10

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

Name: David

Message: Odor logged November 18, 2015, at 4:22 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent southwestern origin placing this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 18, 2015, at 5:50 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date of this concern winds were of a persistent southwestern origin placing this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 18, 2015, at 5:50 pm strength of 5

Follow-up: The following concern is a repeat of a previous concern in all aspects.

Name: Sharon Bishop

Message: Odor logged November 19, 2015, at 6:58 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was preformed shortly after this concern and no odor related to the Bridgeton Landfill was observed at multiple points in close proximity with this concern location. Winds were of a persistent western origin placing this location outside of the downwind pathway of the Bridgeton Landfill and in an area where odor from another known odor source has been observed during similar wind conditions in the past. It is possible the odor that generated this concern was from that source, but this was not a Bridgeton Landfill odor.

Name: Bob LaBeaume

Message: Odor logged November 19, 2015, at 5:55 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was being performed at the time this concern was received and no odor related to the Bridgeton Landfill was observed at multiple points in close proximity with this concern location. Winds were of a persistent western origin placing this location outside of the downwind pathway of the Bridgeton Landfill and in an area where odor from another known odor source has been observed during similar wind conditions in the past. It is possible the odor that generated this concern was from that source, but this was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 19, 2015, at 5:02 pm strength of 7

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

Name: NA

Message: Odor logged November 19, 2015, at 7:00 pm strength of 8

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

Name: NA

Message: Odor logged November 19, 2015, at 8:30 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Winds were of a persistent western origin on this date, placing this concern location outside the Bridgeton Landfill's downwind pathway and directly in the pathway of another known odor source. Bridgeton Landfill odor patrols on this date did not observe odor related to the Bridgeton Landfill at multiple observation points between the landfill and this location. No known technical disturbances with potential to have caused off-site odor occurred on this date. This was not a Bridgeton Landfill odor.

Name: Richard Chatfield

Message: Odor logged November 19, 2015, at 8:22 pm strength of 10

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

Name: NA

Message: Odor logged November 20, 2015, at 6:37 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date cited in this concern winds were of a persistent southeastern origin, placing this concern location outside of the downwind pathway of the Bridgeton Landfill and directly downwind of another odor source with frequent off-site odor. This is not believed to have been a Bridgeton Landfill odor.

Name: David Blackwell

Message: Odor logged November 19, 2015, at 10:15 pm strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Winds were of a persistent western origin on this date, placing this concern location upwind of the Bridgeton Landfill and directly downwind of another known odor source with frequent off-site odor. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 19, 2015, at 9:32 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Winds were of a persistent western origin on this date, placing this concern location outside the Bridgeton Landfill's downwind pathway and directly in the pathway of another known odor source. Bridgeton Landfill odor patrols on this date did not observe odor related to the Bridgeton Landfill at multiple observation points between the landfill and this location. No

known technical disturbances with potential to have caused off-site odor occurred on this date. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 19, 2015, at 9:32 pm strength of 9

Follow-up: The following concern is a repeat of a previous concern in all aspects.

Name: Todd NIckel

Message: Odor logged November 20, 2015, at 9:00 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date cited in this concern winds were of a persistent southeastern origin, placing this concern location outside of the downwind pathway of the Bridgeton Landfill and directly downwind of another odor source with frequent off-site odor. This is not believed to have been a Bridgeton Landfill odor.

Name: Trisha Bakula

Message: Odor logged November 21, 2015, at 7:02 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of substantial distance from the Bridgeton Landfill and in close proximity to another known odor source with frequent off-site odor. On the date and time of this concern the concern location was directly downwind of that other odor source. This was clearly not a Bridgeton Landfill odor.

Name: mb

Message: Odor logged November 22, 2015, at 3:59 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited the location given in this concern was well outside the Bridgeton Landfill downwind odor pathway and directly downwind of another known odor source that has exhibited frequent unchecked odor for the majority of the past year. This odor was clearly not a Bridgeton Landfill odor and likely from the same persistent odor source as the vast majority of odor concerns filed this month.

Name: David Blackwell

Message: Odor logged November 23, 2015, at 10:30 am strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited winds were of a southwestern origin placing the location given in this concern well outside the Bridgeton Landfill downwind odor pathway and directly downwind of another known odor source. This was not a Bridgeton Landfill odor.

Name:

Message: Odor logged November 23, 2015, at 10:30 am strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited winds were of a southwestern origin placing the location given in this concern directly upwind of the Bridgeton Landfill and downwind of another known odor source with frequent off-site odor emissions. This is not believed to have been a Bridgeton Landfill odor.

Name: NA

Message: Odor logged November 24, 2015, at 6:40 am strength of 7

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

Name: Barbara Moothart

Message: Odor logged November 24, 2015, at 10:08 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed approximately one hour after the stated time of this observation, no odor related to the Bridgeton Landfill was observed. This location is of significant distance from the Bridgeton Landfill. No technical disruptions occurred on this date with the potential to have created off-site odor. Winds were of a generally eastern to southeastern origin. The potential source of this odor is unknown but there is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Barbara Moothart

Message: Odor logged November 24, 2015, at 10:08 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed approximately one hour after the stated time of this observation, no odor related to the Bridgeton Landfill was observed. This location is of significant distance from the Bridgeton Landfill. No technical disruptions occurred on this date with the potential to have created off-site odor. Winds were of a generally eastern to southeastern origin. The potential source of this odor is unknown but there is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Tessa Gentile

Message: Odor logged November 24, 2015, at 11:54 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed overlapping with the stated time of this observation, no odor related to the Bridgeton Landfill was observed. This location is of significant distance from the Bridgeton Landfill. No technical disruptions occurred on this date with the potential to have created off-site odor. Winds were of a generally eastern to southeastern origin. The potential source of this odor is unknown but there is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kathy Bell

Message: Odor logged November 24, 2015, at 3:50 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time of this concern winds were of a primarily eastern origin, placing this concern location upwind of the Bridgeton Landfill and downwind of other potential odor sources in the industrialized park from which this concern was submitted. This is not believed to have been a Bridgeton Landfill odor.

Name: Greg Wortham

Message: Odor logged November 24, 2015, at 12:01 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. A Bridgeton Landfill odor patrol was performed shortly before this concern and no odor related to the Bridgeton Landfill was observed. No technical disruptions occurred between that patrol and this concern. This is not believed to have been a Bridgeton Landfill odor.

Name: August (Sonny) Hummert

Message: Odor logged November 21, 2015, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was submitted four days after the observed date. On that date the location cited was upwind of the Bridgeton Landfill and downwind of another known odor source throughout the day. Other concerns filed on that date indicate a persistent odor form this other source, unassociated with the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Rose Eichholz

Message: Odor logged November 25, 2015, at 6:49 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited in this concern winds were of a southeastern origin, placing this location upwind of the Bridgeton Landfill and downwind of another known odor source with frequent off-site odor. This was not a Bridgeton Landfill odor.

Name: Rose Eichholz

Message: Odor logged November 26, 2015, at 7:56 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited in this concern winds were of a southern origin, placing this location upwind of the Bridgeton Landfill and downwind of another known odor source with frequent off-site odor. This was not a Bridgeton Landfill odor.

Name: Greg Wortham

Message: Odor logged November 27, 2015, at 6:33 pm strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited in this concern winds were of high variability. Bridgeton Landfill odor patrols before and after this concern did not observe any odor related to the Bridgeton Landfill. As a result there is no clear indication of any off-site odor from the Bridgeton Landfill on this date but unpredictable wind conditions prevent any kind of conclusive source determination.

Name: Kathy Bell

Message: Odor logged November 28, 2015, at 7:54 m strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited in this concern winds were of high variability. Bridgeton Landfill odor patrols before and after this concern did not observe any odor related to the Bridgeton Landfill. As a result there is no clear indication of any off-site odor from the Bridgeton Landfill on this date but unpredictable wind conditions prevent any kind of conclusive source determination.

Name: Greg and Ellen Wortham

Message: Odor logged November 28, 2015, at 12:24 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited in this concern winds were of high variability. Bridgeton Landfill odor patrols before and after this concern did not observe any odor related to the Bridgeton Landfill. As a result there is no clear indication of any off-site odor from the Bridgeton Landfill on this date but unpredictable wind conditions prevent any kind of conclusive source determination.

Name: BrieAnn McCormick

Message: Odor logged November 28, 2015, at 3:17 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time cited in this concern winds were of high variability. Bridgeton Landfill odor patrols before and after this concern did not observe any odor related to the Bridgeton Landfill. As a result there is no clear indication of any off-site odor from the Bridgeton Landfill on this date but unpredictable wind conditions prevent any kind of conclusive source determination.

Name: Tonya Mason

Message: Odor logged November 28, 2015, at 8:50 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol as performed within an hour of receipt of this concern and did not observe any odor related to the Bridgeton Landfill at a location in the immediate vicinity of this concern. This was not a Bridgeton Landfill odor.

Name: Brieann McCormick

Message: Odor logged November 28, 2015, at 9:34 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol as performed within an hour of receipt of this concern and did not observe any odor related to the Bridgeton Landfill at a location in the immediate vicinity of this concern. This was not a Bridgeton Landfill odor.

Name: Robbin Dailey

Message: Odor logged November 29, 2015, at 1:30 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor patrols performed before and after this concern did not observe any odor related to the Bridgeton Landfill off-site. No technical disturbances with the potential to create odor occurred on this date. There is no indication that this was a Bridgeton Landfill odor.

Name: Margie Menke

Message: Odor logged November 29, 2015, at 5:00 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor patrols performed before and after this concern did not observe any odor related to the

Bridgeton Landfill off-site. No technical disturbances with the potential to create odor occurred on this date. There is no indication that this was a Bridgeton Landfill odor.

Name: Greg and Ellen Wortham

Message: Odor logged November 29, 2015, at 4:30 pm strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor patrols performed before and after this concern did not observe any odor related to the Bridgeton Landfill off-site. No technical disturbances with the potential to create odor occurred on this date. There is no indication that this was a Bridgeton Landfill odor.

Name: David Blackwell

Message: Odor logged November 28, 2015, at 11:15 am strength of 3

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was submitted approximately two days after the stated observation date. On that date an odor patrol by Bridgeton Landfill staff coincided with the time referenced in this concern and did not observe odor related to the Bridgeton Landfill at any point including points in close proximity to this concern location. This was not a Bridgeton Landfill odor.

ATTACHMENT H

LIQUID CHARACTERIZATION DATA AND DISCHARGE LOG

Bridgeton Landfill - Leachate PreTreatment Plant

November 2015

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
11/1/2015	LPTP Activated Sludge/ Permeate	Tank 1 (T1)	MBI	0
11/2/2015				0
11/3/2015				0
11/4/2015				0
11/5/2015				0
11/6/2015				0
11/7/2015				0
11/8/2015				0
11/9/2015				0
11/10/2015				0
11/11/2015				0
11/12/2015				0
11/13/2015				0
11/14/2015				0
11/15/2015				0
11/16/2015				0
11/17/2015				0
11/18/2015				0
11/19/2015				0
11/20/2015				0
11/21/2015				0
11/22/2015				0
11/23/2015				0
11/24/2015				0
11/25/2015				0
11/26/2015				0
11/27/2015				0
11/28/2015				0
11/29/2015				0
11/30/2015				0
			Total=	**0**

Direct Discharge to MSD

Date	Waste	Source	Quantity (gal)
11/1/2015	LPTP Permeate	Through Tank AST 97k (MSD Sampling Point 013)	236,820
11/2/2015			219,930
11/3/2015			241,326
11/4/2015			151,826
11/5/2015			248,902
11/6/2015			223,959
11/7/2015			321,733
11/8/2015			236,857
11/9/2015			236,096
11/10/2015			224,604
11/11/2015			230,109
11/12/2015			191,961
11/13/2015			234,043
11/14/2015			223,900
11/15/2015			215,087
11/16/2015			212,222
11/17/2015			190,121
11/18/2015			127,348
11/19/2015			127,095
11/20/2015			165,043
11/21/2015			216,491
11/22/2015			164,139
11/23/2015			211,782
11/24/2015			220,900
11/25/2015			221,395
11/26/2015			234,313
11/27/2015			242,043
11/28/2015			230,826
11/29/2015			224,313
11/30/2015			220,434
		Total =	**6,445,618**