



2211 W. Meadowview Road, Suite 101
Greensboro, NC 27407
tel: 336/ 323-0092
fax: 336/ 323-0093
www.JoyceEngineering.com

December 28, 2015

Ms. Jackie Drummond
North Carolina Department of Environment and Natural Resources
Division of Waste Management, Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

**RE: Landfill Gas Monitoring Report
LFG Monitoring – December 2015
Town of Kernersville Closed Landfill, Permit No. 34-04
JOYCE Project No. 838.1601.12, Task No. 03**

Dear Ms. Drummond:

Please find the attached Environmental Monitoring Reporting Form (EMRF) and Landfill Gas Monitoring Log for the monthly monitoring event that occurred on December 28, 2015, at the Closed Town of Kernersville Landfill (Permit number 34-04). Methane monitoring for this event was conducted by Joyce Engineering (JOYCE) on behalf of the Town of Kernersville in accordance with the approved *Landfill Gas Monitoring Plan* dated July 17, 2012. Methane was detected in gas monitoring wells GW-1, GW-2R, GW-8, and GP-10 above the Lower Explosive Limit (LEL) during this monitoring event.

During this event three probes belonging to the adjacent Waste Management Piedmont landfill GP-9, GP-10, and GP-11 were also monitored for methane gas.

Additional monthly monitoring will provide additional data to demonstrate whether the methane migration is being reduced by the three passive vents installed on the Kernersville Landfill in November 2013. A map has been included with this report to illustrate the proximity of the two landfills and the locations of the gas probes. If you have any further questions, please contact me or Van Burbach at (336) 323-0092. Thank you.

Sincerely,
JOYCE ENGINEERING

A handwritten signature in blue ink that reads "Haley Seaton".

Haley Seaton
Field Consultant

Attachments: EMRF
Table of Detections and Table of Eceedances
Landfill Gas Monitoring Log
Site Map

Copy: Thad Buck, Town of Kernersville

NC DENR **Environmental Monitoring Reporting Form**
 Division of Waste Management - Solid Waste

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

- Instructions:**
- Prepare one form for each individually monitored unit.
 - Please type or print legibly.
 - Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
 - Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
 - Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i)).
 - Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):
 Joyce Engineering, Inc.

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:
 Name: Daniel Girdner Phone: (336)-323-0092
 E-mail: dgirdner@joyceengineering.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Town of Kernersville Landfill	Freeman Road Kernersville, NC 27284	34-04	.0500	December 28, 2015

Environmental Status: (Check all that apply)
 Initial/Background Monitoring Detection Monitoring Assessment Monitoring Corrective Action

Type of data submitted: (Check all that apply)
 Groundwater monitoring data from monitoring wells Methane gas monitoring data
 Groundwater monitoring data from private water supply wells Corrective action data (specify) _____
 Leachate monitoring data Other(specify) _____
 Surface water monitoring data

Notification attached?
 No. No groundwater or surface water standards were exceeded.
 Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
 Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

G. Van Burbach, Ph.D., P.G. Sr. Technical Consultant (336)-323-0092
 Facility Representative Name (Print) Title (Area Code) Telephone Number
 Signature Date Affix NC Licensed/ Professional Geologist Seal

2211 W. Meadowview Rd. Ste. 101, Greensboro, NC 27407
 Facility Representative Address
 C-0782
 NC PE Firm License Number (if applicable effective May 1, 2009)



TABLE 1: Methane Detections

Date	Location	CH₄ (% LEL)	CH₄ (% Volume)
12/28/2015	GW-1	604	30.2
12/28/2015	GW-2R	1038	51.9
12/28/2015	GW-8	380	19.0
12/28/2015	GP-10	612	30.6

TABLE 2: Exceedances of the LEL

Date	Location	CH₄ (% LEL)	CH₄ (% Volume)
12/28/2015	GW-1	604	30.2
12/28/2015	GW-2R	1086	51.9
12/28/2015	GW-8	380	19.0
12/28/2015	GP-10	612	30.6

CH₄ = Methane

LEL = Lower Explosive Limit for Methane

LEL = 5% by volume at standard temperature and pressure

Landfill Gas Monitoring Data Form

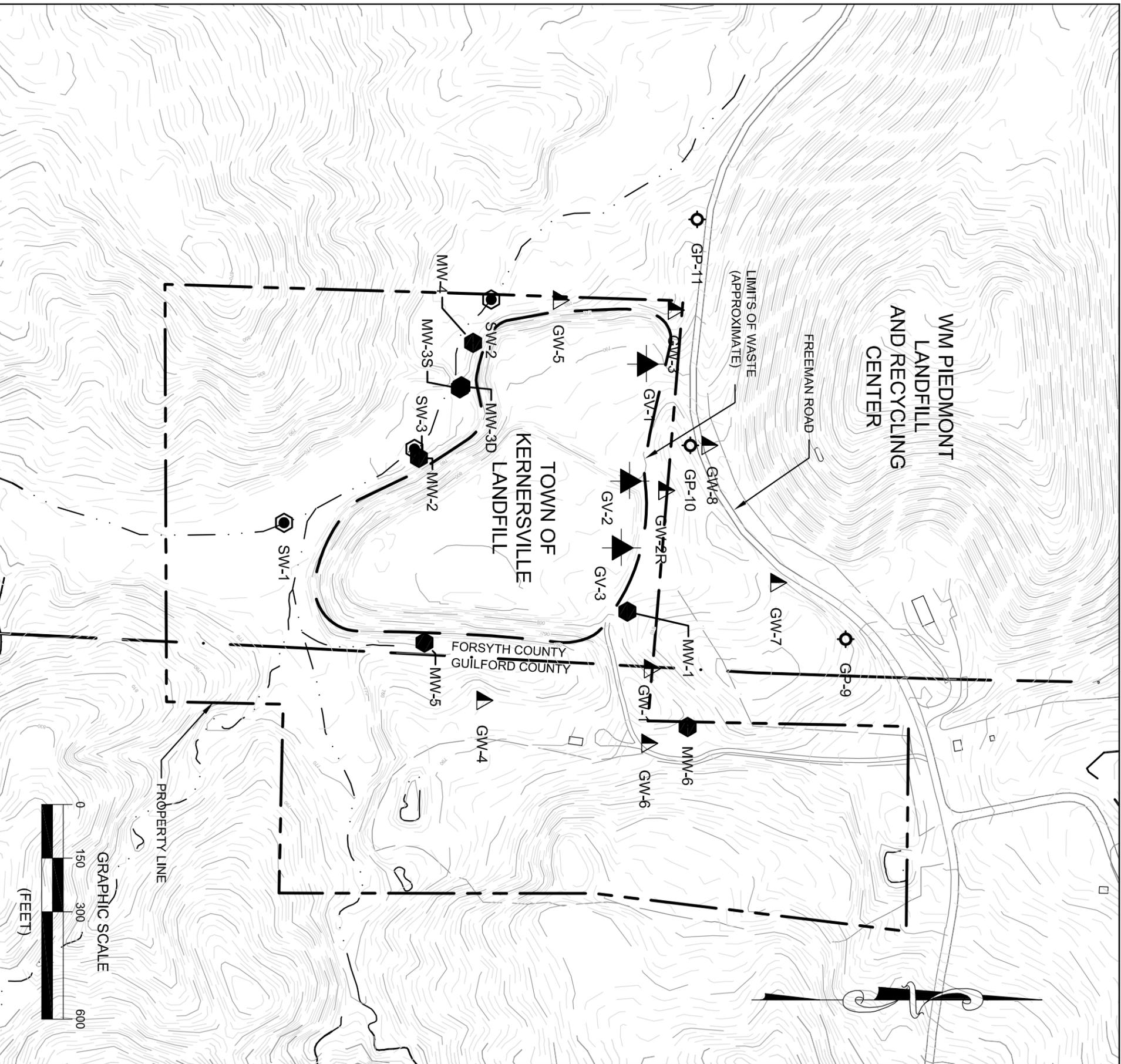
Facility Name: Town of Kernersville Landfill - Closed
 Date of Sampling: December 28, 2015
 Gas Monitor Type & Serial Number: GEM 2000 SN.5194
 Field Calibration Date & Time: 12/28/15 11:51 AM
 Field Calibration Gas Type: 15% CH₄, 15% CO₂
 General Weather Conditions: rainy, 50's° F

Permit Number: 34-04
 Personnel: H. Seaton
 Calibration Date December 18, 2015
 Cal. Gas Lot: Landtec 43253-09, exp. 9-16
 Barometer : 29.27 In-Hg

Location or ID	Time	Probe Pressure (In-Wg)	Instr. sample tube purged	Time Pumped (sec.)	CH ₄ (%LEL)	CH ₄ (%Vol)	Notes
GW-1	12:41	0.00	Y	60	604	30.2	Over LEL
GW-2R	12:45	0.30	Y	60	1038	51.9	Over LEL
GW-3	13:14	-0.10	Y	60	0	0.0	
GW-4	12:59	-3.20	Y	60	0	0.0	
GW-5	13:19	-0.20	Y	60	0	0.0	
GW-6	12:35	0.00	Y	60	0	0.0	
GW-7	13:28	0.10	Y	60	0	0.0	
GW-8	13:42	0.20	Y	60	380	19.0	Over LEL
GP-9	13:32	0.00	Y	60	0	0.0	
GP-10	13:25	0.40	Y	60	612	30.6	Over LEL
GP-11	13:09	0.00	Y	60	0	0.0	

Notes: GW = Gas Well- Town of Kernersville LFG monitoring location.

GP = Gas Probe- LFG monitoring location shared with WM Piedmont site.



LEGEND

1130	EXISTING 10' TOPOGRAPHIC CONTOUR
---	EXISTING 2' TOPOGRAPHIC CONTOUR
---	PROPERTY LINE
---	EXISTING ROAD
---	APPROXIMATE LIMITS OF WASTE
---	CENTERLINE OF STREAM
○	APPROXIMATE SURFACE WATER SAMPLING POINT LOCATION AND IDENTIFICATION
●	MONITORING WELL IDENTIFICATION
▲	GW- 1 LANDFILL GAS WELL - TOWN OF KERNERSVILLE
○	GP- 1 LANDFILL GAS PROBE - WM PIEDMONT
▲	GV-1 LANDFILL PASSIVE GAS VENT

- NOTES:**
1. SURVEY DATA FOR GUILFORD COUNTY DATED SEPTEMBER 2009, AND MARCH 2010.
 2. SURVEY DATA FOR FORSYTH COUNTY DATED OCTOBER, 2010.
 3. ALL SURVEY DATA OBTAINED FROM COUNTY GIS FILES.
 4. LIMITS OF WASTE ARE APPROXIMATE.

PROJECT NO. 838.1301.12	TOWN OF KERNERSVILLE LANDFILL FORSYTH COUNTY, NORTH CAROLINA	2211 W. MEADOWVIEW ROAD GREENSBORO, NC 27407 PHONE: (336) 323-0092 NO CORP LIC: C-0782	DESIGNED _____ DRAWN CADD/ CHECKED _____ APPROVED _____ DATE _____	REVISIONS AND RECORD OF ISSUE			
			SCALE AS SHOWN	DRAWING NO. 1	DATE _____	NO _____	BY _____