JOYCE
ENGINEERING

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November 8, 2013

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
Fourth Quarter Sampling Event of 2013
Granville County – Butner Closed MSW Landfill, Permit No. 39-02
JOYCE Project No. 660.1302.12, Task No. 08

Dear Ms. Drummond,

Attached please find the Landfill Gas Monitoring Log and Gas Probe Location Map, for the monitoring event that occurred on November 8, 2013 at the Granville County Butner Landfill (Permit number 39-02) for inclusion in your records. Methane was detected above the LEL in gas probe, GP-4, during this event. Two bar-hole probes (BP-1 and BP-2) were monitored within the vicinity of GP-4 and no methane was detected.

Landfill gas monitoring will continue on a quarterly basis for the Butner Landfill. If you have any questions, please contact me or Van Burbach at (336) 323-0092.

Sincerely,
JOYCE ENGINEERING

Adam Cox

Adam Cox
Field Consultant

Attachments: LFG monitoring log, Environmental Monitoring Report Form, and Location Map
Copy: Jason Falls, Granville County

Landfill Gas Monitoring Data Form

Facility Name: Butner Landfill, Granville County
Date of Sampling: November 8, 2013
Gas Monitor Type & Serial Number: GEM 2000 #5194
Field Calibration Date & Time: 11/8/2013 10:04
General Weather Conditions: Sunny, 50's F

Permit Number: 39-02
Personnel: A. Cox/JOYCE
Calibration Date: 9/20/2013
Calibration Gas Type: 50% CH4, exp. 5-2014
Barometer : 30.21 In-Hg

Location or ID	Time	Probe Pressure (In-Wg)	Instr. sample tube purged	Time Pumped (sec.)	Initial %LEL	Stable %LEL	CH_4 (%Vol)	% LEL Limit	Comments
GP-1	1009	0.000	Y	45	0	0	0	100	
GP-2	1015	0.00	Y	45	0	0	0	100	
GP-3	1020	0.000	Y	45	0	0	0	100	
GP-4	1033	-0.040	Y	45	192	192	9.6	100	
BP-1	1036	-	Y	45	0	0	0	100	25ft West of GP-4
BP-2	1040	-	Y	45	0	0	0	100	25ft North of GP-4
GP-5	1028	0.000	Y	45	0	0	0	100	
GP-6	1025	0.000	Y	45	0	0	0	100	
GP-8	1044	-	Y	180	0	0	0	25	scalehouse/office building

Notes: GP-7 could not be located and may be damaged & missing.
BP: Barhole Probe

DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

Environmental Monitoring Reporting Form

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: G. Van Ness Burbach, Ph.D., P.G. Phone: (336) 323-0092

E-mail: vburbach@joyceengineering.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Butner Landfill	State Road 1004 Butner, NC	39-02	.1600	November 8, 2013

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
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☐ Surface water monitoring data
☒ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify) _____

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. VanNess Burbach, Ph.D., PG — Technical Consultant — (336) 323-0092

Facility Representative Name (Print) — Title — (Area Code) Telephone Number

Signature — Date 11/11/13

Affix NC Licensed/ Professional Geologist Seal

LICENSED SEAL 1349 GEOLOGIST G. VAN NESS BURBACH

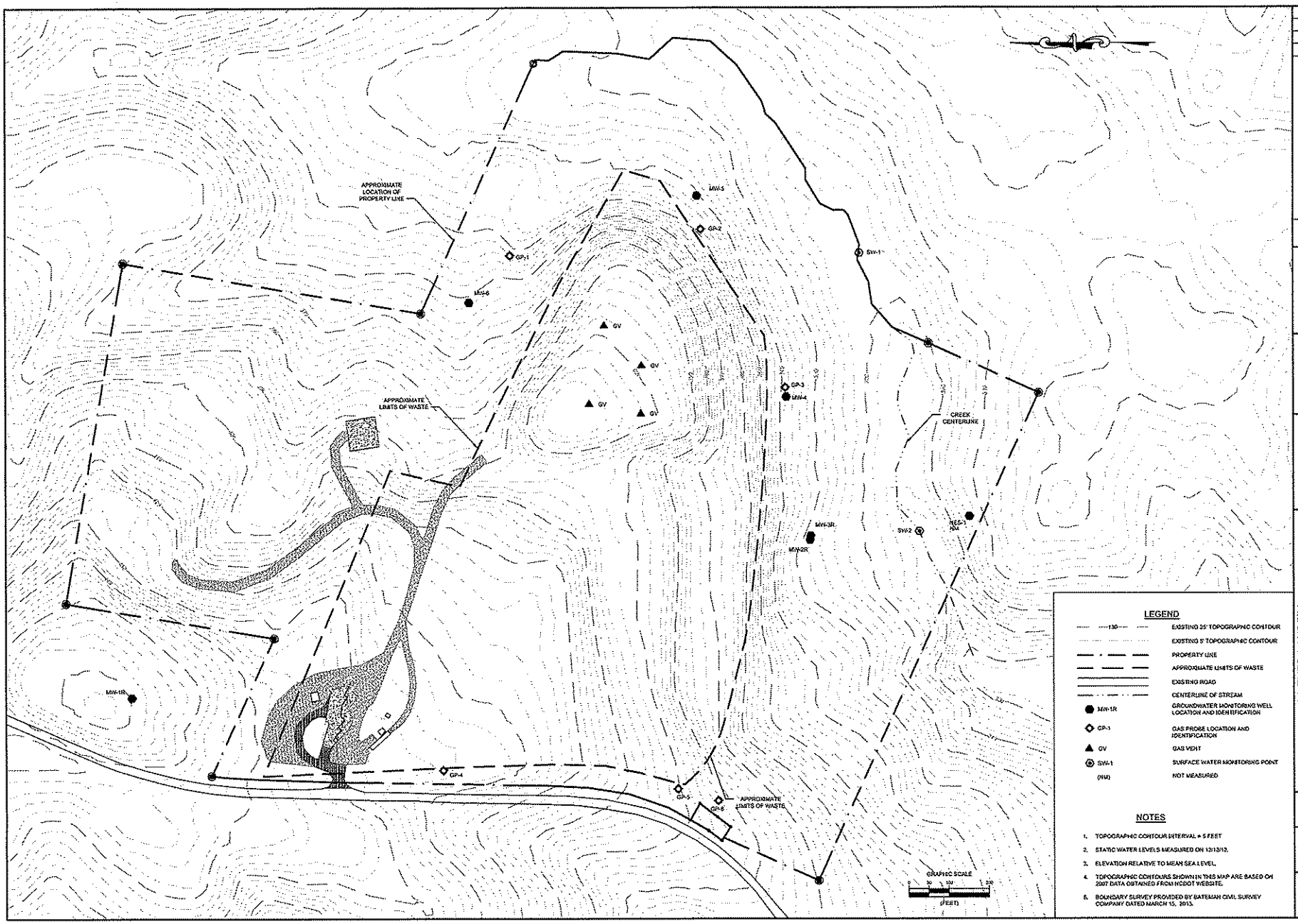
2211 W. Meadowview Rd., Ste. 101 Greensboro, NC 27407

Facility Representative Address

C-0782

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009



LEGEND

130	EXISTING 25' TOPOGRAPHIC CONTOUR
	EXISTING 5' TOPOGRAPHIC CONTOUR
	PROPERTY LINE
	APPROXIMATE LIMITS OF WASTE
	EXISTING ROAD
	CENTERLINE OF STREAM
MW-1R	GROUNDWATER MONITORING WELL LOCATION AND IDENTIFICATION
GP-1	GAS PROBE LOCATION AND IDENTIFICATION
GV	GAS VENT
SW-1	SURFACE WATER MONITORING POINT
(NM)	NOT MEASURED

NOTES

1. TOPOGRAPHIC CONTOUR INTERVAL = 5 FEET
2. STATIC WATER LEVELS MEASURED ON 12/13/12.
3. ELEVATION RELATIVE TO MEAN SEA LEVEL.
4. TOPOGRAPHIC CONTOURS SHOWN IN THIS MAP ARE BASED ON 2007 DATA OBTAINED FROM NCDOT WEBSITE.
5. BOUNDARY SURVEY PROVIDED BY BATEMAN CIVIL SURVEY COMPANY DATED MARCH 15, 2013.

DATE	REVISIONS AND RECORD OF ISSUE	NO	BY	CK	APP

DESIGNED AJC
DRAWN HRW
CHECKED AJC
APPROVED GVB
DATE 05/02/13

JOYCE ENGINEERING
2211 W. MEADOWVIEW ROAD
GREENSBORO, NC 27407
PHONE: (336) 323-0092
NC CORP LIC: E-0782

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BUTNER LANDFILL
GRANVILLE COUNTY, NORTH CAROLINA

QUARTERLY LFG MONITORING LOCATIONS

PROJECT NO.
660.1201.12

SCALE
AS NOTED

DRAWING NO.
1