

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)).
- In Accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- 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):

S&ME, Inc (Consultant)

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Julie Petersen, P.G., Project Manager

Phone: 704-523-4726

E-mail: jpetersen@smeinc.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Owl's Den Landfill	701 Owl's Den Road, Lincolnton, NC 28092	55-02		November 10, 2010 December 17, 2010 January 25, 2011

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 or explosive methane gas limits 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.

Julie Petersen

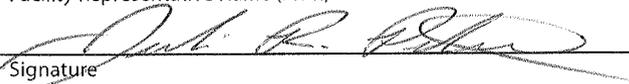
Project Manager

704-523-4726

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Signature 

Date 2/10/11

Affix NC Licensed/ Professional Geologist/Engineer Seal here:





February 10, 2011

North Carolina Department of Environment and Natural Resources (NCDENR)
Division of Waste Management – Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Attention: Ms. Jaclynne Drummond

Reference: November 2010, December 2010 and January 2011 Monthly Methane Monitoring

Owl's Den Landfill (Permit No. 55-02)
Lincolnton, North Carolina
S&ME Project No. 1356-10-021

Dear Ms. Drummond:

S&ME, Inc. (S&ME), on behalf of Lincoln County, is submitting methane gas monitoring data collected November 10, 2010, December 17, 2010, and January 25, 2010 at the Owl's Den Landfill in Lincolnton, North Carolina. Please find attached to this letter:

- Completed Environmental Monitoring Report Form;
- Field Forms for Monitoring Events;
- Figure 1 – Methane Monitoring Well Locations;
- Table 1 – Methane Gas Measurements; and
- Charts – Methane Gas Measurements.

It should be noted that monthly monitoring has been performed since June 2010 following the issuance of your letter dated May 20, 2010 entitled "October 2009 Semiannual Monitoring of Groundwater, Surface Water, and Methane" requiring monthly monitoring of methane gas at the above referenced site. Both S&ME and Lincoln County are aware that monthly monitoring at the site will be required until NCDENR deems otherwise.

The attached data includes measurements from the Methane Monitoring Wells which are currently part of the approved monitoring regime (MMW-2, MMW-4, MMW-5, MMW-6, MMW-7, MMW-8, and MMW-9).

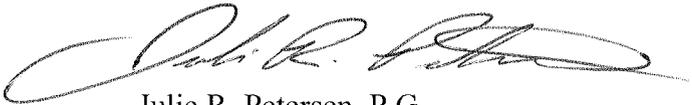
Measurements from the methane wells were collected by Lincoln County personnel using a GEM 2000 combustible gas meter that was field calibrated prior to data collection. Measurements indicate that concentrations exceed the lower explosive limit (LEL) for methane (5% CH₄) in Methane Monitoring Wells MMW-2 and MMW-4.

Please note that the methane concentration in MMW-5 was below the lower explosive limit during this monitoring event; however, because measurements of methane in MMW-5 exceeded the lower explosive limit (LEL) previously, the site is operating under the Contingency Plan of the approved Methane Monitoring Plan dated June 18, 2010. In accordance with the Contingency Plan, Lincoln County has issued a letter and personally contacted the adjacent property owner of 659 Owl's Den Road and gained permission to monitor for the presence of methane on the property. Lincoln County will proceed with monitoring of the property, once a designated date can be scheduled with the property owner.

Please call us at (704) 523-4726 if you have any questions or comments regarding this report.

Sincerely,

S&ME, Inc.



Julie R. Petersen, P.G.
Project Manager/Senior Geologist

Senior Reviewed by M. Neal McElveen, P.E., Environmental Services Manager

cc: Nancy Rickard - Lincoln County Solid Waste Manager

**Landfill Gas Monitoring Form
Owl's Den Landfill (Permit #55-02)**

Date: 11/10/2010

Field Personnel: Mark Bivins, Steven Brown

Ambient Outside Temperature: 73°F

Ambient Barometric Pressure: 28.87

General Weather Conditions: Clear, Warm

Meter Name and Model Number: GEM 2000

Meter Calibration Date: 11/10/10, prior to field measurements

Field Measurements:

Well Identification	Time of Measurement	Measurements			
		% LEL	% CH ₄	% CO ₂	% O ₂
MMW-2	14:40	>100	11	18.2	2.4
MMW-4	14:11	>100	6.8	4.3	15.2
MMW-5	14:20	82	4.1	15.6	2.8
MMW-6	14:28	0	0	13.5	7.1
MMW-7	14:58	0	0	1.5	17.3
MMW-8	15:02	0	0	2.8	17.1
MMW-9	15:03	0	0	2.5	16.7

**Landfill Gas Monitoring Form
Owl's Den Landfill (Permit #55-02)**

Date: 12/17/2010

Field Personnel: Mark Bivins

Ambient Outside Temperature: 45°F

Ambient Barometric Pressure: 29.91

General Weather Conditions: Clear, Cold

Meter Name and Model Number: GEM 2000

Meter Calibration Date: 12/17/10, prior to field measurements

Field Measurements:

Well Identification	Time of Measurement	Measurements			
		% LEL	% CH ₄	% CO ₂	% O ₂
MMW-2	11:56	98	4.6	11.3	18.4
MMW-4	11:28	3	0.1	0.5	19
MMW-5	11:39	74	3.7	14.3	3.1
MMW-6	11:45	0	0	0.1	19.7
MMW-7	12:09	0	0	0.3	19.1
MMW-8	12:21	0	0	0.1	19.7
MMW-9	12:29	0	0	0.2	19.7

**Landfill Gas Monitoring Form
Owl's Den Landfill (Permit #55-02)**

Date: 1/25/2011

Field Personnel: Mark Bivins, Jim Rudisill

Ambient Outside Temperature: 32°F

Ambient Barometric Pressure: 30.16

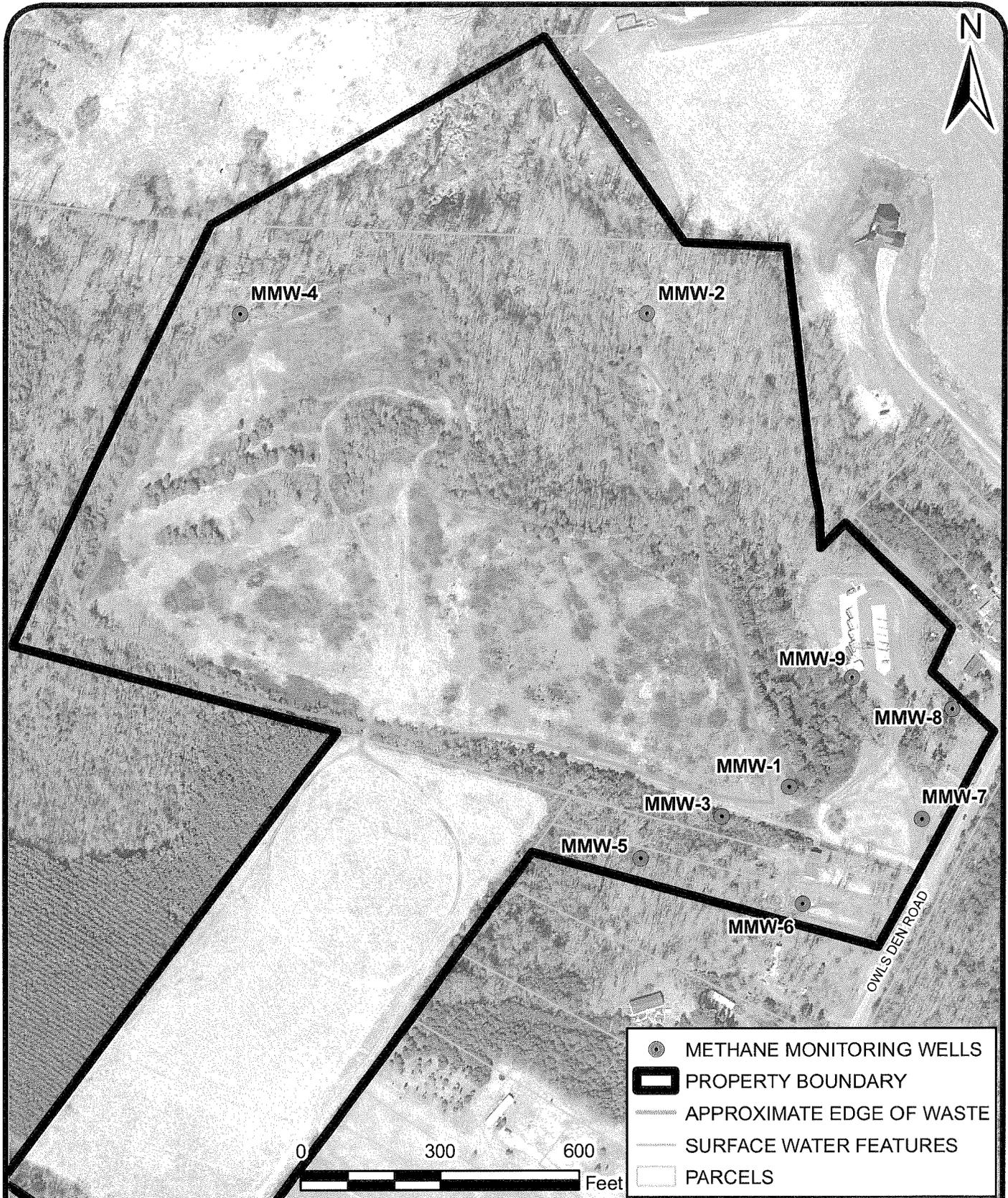
General Weather Conditions: Overcast and Cool

Meter Name and Model Number: GEM 2000

Meter Calibration Date: 01/25/11, prior to field measurements

Field Measurements:

Well Identification	Time of Measurement	Measurements			
		% LEL	% CH ₄	% CO ₂	% O ₂
MMW-2	10:07	>100	12.6	18.1	0.7
MMW-4	9:56	>100	41.2	18	3.2
MMW-5	10:21	67	3.4	12.7	4.3
MMW-6	10:25	4	0.2	9.9	7.9
MMW-7	10:45	0	0	2.8	16
MMW-8	10:55	0	0	2.9	17.4
MMW-9	10:50	0	0	5.8	14.1



-  METHANE MONITORING WELLS
-  PROPERTY BOUNDARY
-  APPROXIMATE EDGE OF WASTE
-  SURFACE WATER FEATURES
-  PARCELS

REFERENCE:
 THE ABOVE GIS BACKGROUND LAYERS OBTAINED FROM THE LINCOLN COUNTY GEOGRAPHIC INFORMATION SYSTEMS (GIS) DEPARTMENT. MONITORING WELL LOCATIONS AND APPROXIMATE EDGE OF WASTE WERE GENERATED BY S&ME INC. PLEASE NOTE THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON THIS INFORMATION.

SCALE: 1" = 300'
 DATE: 6-7-2010
 DRAWN BY: DDH
 CHECKED BY: JP



METHANE MONITORING WELL LOCATIONS
 OWLS DEN LANDFILL
 LINCOLNTON, NORTH CAROLINA
 PROJECT NO: 1356-10-021 PHASE 05

FIGURE NO. **1**

Table 1 - Methane Gas Measurements

Data Tracking

Owl's Den Landfill (Permit #55-02)



Percent Methane Gas by Date

Date	Well Identification								
	MMW-1	MMW-2	MMW-3	MMW-4	MMW-5	MMW-6	MMW-7	MMW-8	MMW-9
Apr-03	0	35	0	62	N/A	N/A	N/A	N/A	N/A
Oct-03	63	38	31	56	N/A	N/A	N/A	N/A	N/A
Apr-04	0	10	0	0	N/A	N/A	N/A	N/A	N/A
Oct-04	0	8	10	38	N/A	N/A	N/A	N/A	N/A
Apr-05	5	30	44	68	N/A	N/A	N/A	N/A	N/A
Oct-05	36	30	18	58	N/A	N/A	N/A	N/A	N/A
Apr-06	30	36	0	0	N/A	N/A	N/A	N/A	N/A
Oct-06	38	38	0	58	N/A	N/A	N/A	N/A	N/A
Apr-07	100	100	20	100	N/A	N/A	N/A	N/A	N/A
Oct-07	6	12	20	55	N/A	N/A	N/A	N/A	N/A
Apr-08	0.8	20	0	0	N/A	N/A	N/A	N/A	N/A
Jul-08	14.4	42	73	0.2	10.6	0	0	0	0
Oct-08	0	15.4	36	12.6	6.2	3.1	0	0	0
Apr-09	8.5	20.6	46	0	6.6	0.2	0	0	0
Oct-09	16.5	17.7	59.3	61.3	4.2	0	0	0	0
Apr-10	N/A	27	N/A	0.2	8.5	0	0	0	0
Jun-10	N/A	27.6	N/A	68.4	9.9	1.5	0	0	0
Jul-10	N/A	19.6	N/A	66.9	9.4	1.7	0	0	0
Aug-10	N/A	13.8	N/A	48.4	6	0	0	0	0
Sep-10	N/A	13	N/A	0	5.3	0	0	0	0
Oct-10	N/A	10.7	N/A	58.5	4.3	0	0	0	0
Nov-10	N/A	10	N/A	6.8	4.1	0	0	0	0
Dec-10	N/A	4.6	N/A	0.1	3.7	0	0	0	0
Jan-11	N/A	12.6	N/A	41.2	3.4	0.2	0	0	0

Notes:

- (1) Recorded measurements are in percent methane.
- (2) Methane monitoring wells 5 through 9 were installed during the 2008 assessment activities.
- (3) Methane monitoring wells 1 and 3 were removed from the monitoring plan following the 2008 assessment activities due to their close proximity to the edge of waste.
- (4) Highlighted data are above 100 percent of the lower explosive limit.
- (5) Lower explosive limit for methane is 5 percent.
- (6) Upper explosive limit for methane is 15 percent.
- (7) N/A = Not Available

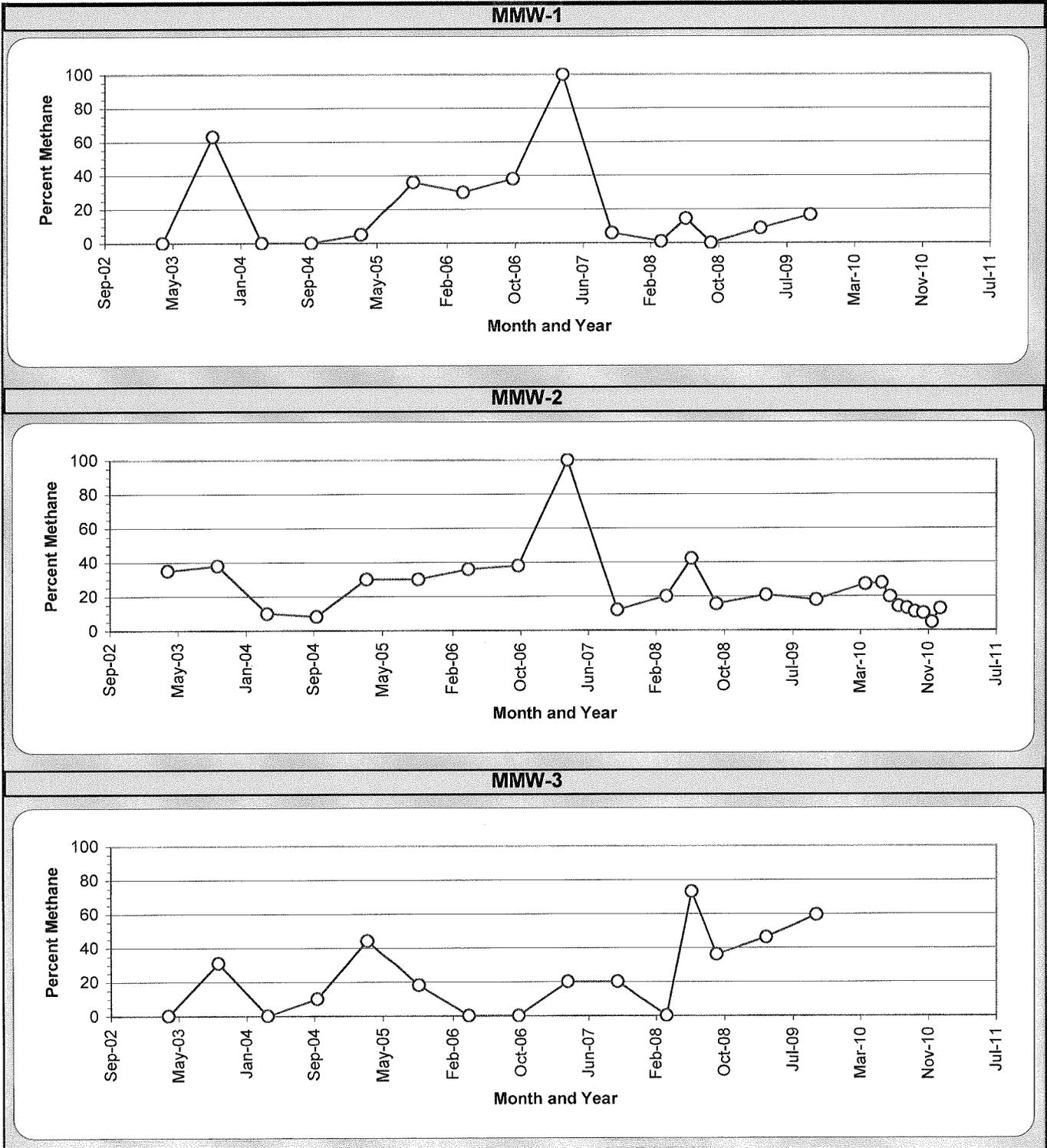
Charts - Methane Gas Measurements

Data Tracking

Owl's Den Landfill (Permit #55-02)



Percent Methane Gas by Date



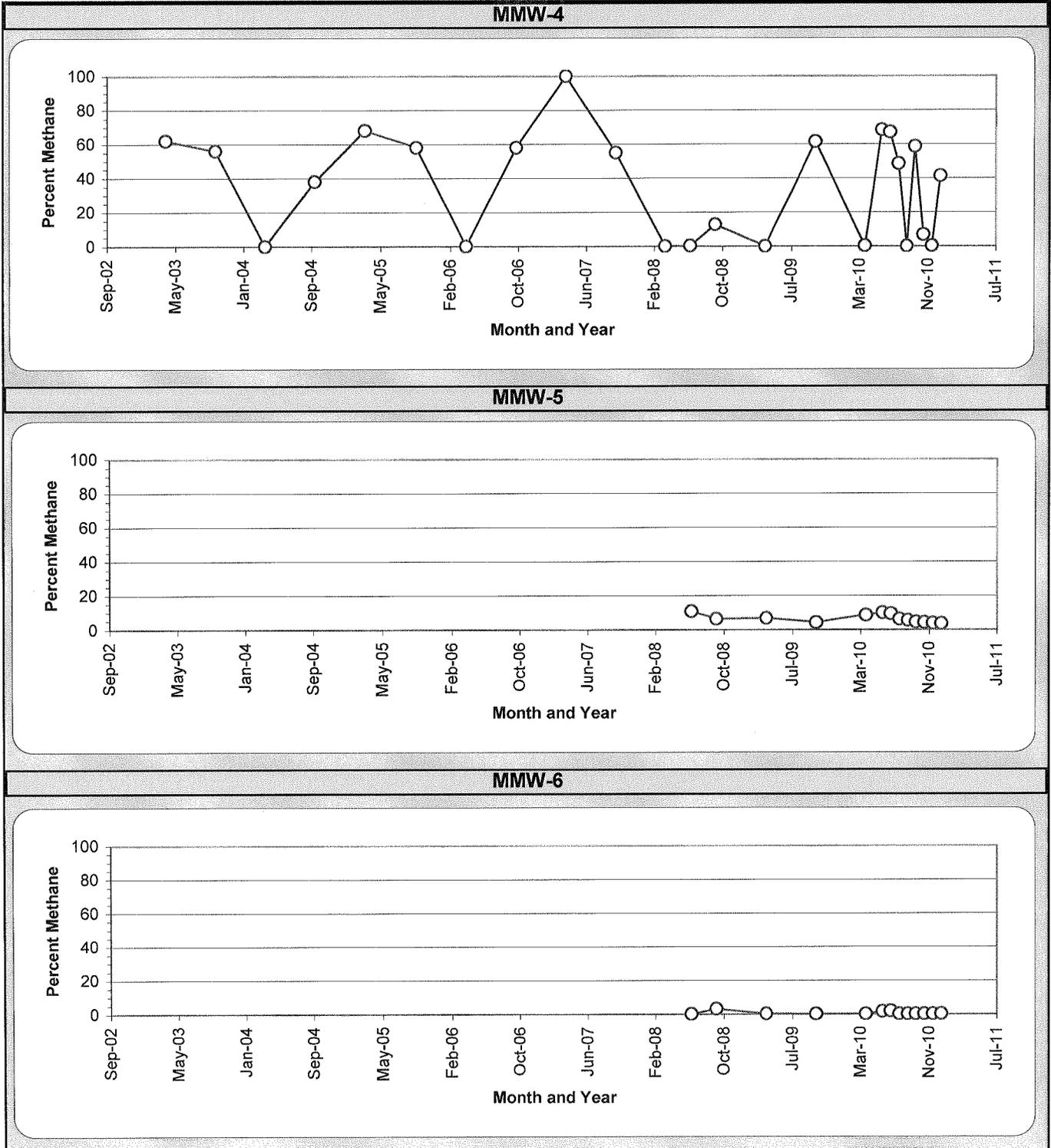
Charts - Methane Gas Measurements

Data Tracking

Owl's Den Landfill (Permit #55-02)



Percent Methane Gas by Date



Charts - Methane Gas Measurements

Data Tracking

Owl's Den Landfill (Permit #55-02)



Percent Methane Gas by Date

