

**LANCASTER COUNTY**  
**SOLID WASTE MANAGEMENT**  
**AUTHORITY**

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December 24, 2008

Mr. Tom Hanlon  
Pennsylvania Department of Environmental Protection  
Bureau of Waste Management  
909 Elmerton Avenue  
Harrisburg, PA 17110-8200

RE: Creswell Landfill GCMP; BWM Permit #100008

Dear Mr. Hanlon:

Submitted herein is the data associated with the Gas Control and Monitoring Plan (GCMP) for the above referenced facility for the 4<sup>th</sup> Quarter of 2008. Lancaster County Solid Waste Management Authority (LCSWMA) personnel performed the monitoring in accordance with the GCMP that was prepared by R. E. Wright Environmental, Inc. and submitted to your office in October 1988.

Attached, and included by reference are the following:

▪ **Attachment A**

Table 1, which is a summary of historical results for all eleven (11) gas well locations, including percent by volume information and other gas constituent data. You will note that location GP-1D has been replaced by GP-W4 and location GP-2S has been replaced by GP-C3. These "new" locations are in the same physical position as their predecessors, but were "re-installed" as part of the Sub-Surface Investigation work completed in conjunction with our Creswell Re-Use Study during the summer of 2002. Additionally, and as approved by the Department, location GP-10 was removed from the GCMP in March 1998. Also included in Attachment A are seven (7) graphs which depict recent historical results for locations GP-4, GP-5, GP-6, GP-7, GP-8, GP-9 and GP-11.

▪ **Attachment B**

Contains quarterly results of the site perimeter locations monitored for percent L.E.L.

In summary:

#### Field Data

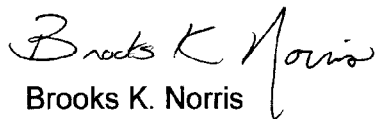
- Samples taken from wells were analyzed for methane, carbon dioxide, oxygen, and "balance" (usually inferred to mean nitrogen) gases. "Balance" results, as always, are reported as a calculation based upon the measured values of the three (3) other landfill gas constituents.

#### Sample Analysis

- Peripheral wells GP-8 (south of landfilled areas), GP-5 (east of landfilled areas) and GP-11 (north of landfilled areas) contained 0 percent by volume (%V) methane.
- Intermediate location (between refuse areas and the property line) GP-9 (at 62.2%) and GP-4 (at 21.4%) indicated methane levels approximate to historic and/or seasonal average values; locations GP-6, and GP-7 were noted at 0%/V methane.

We will continue quarterly GCMP monitoring and reporting with our next monitoring event (1<sup>st</sup> quarter report) currently scheduled to occur early next year. Feel free to call if you have any questions or comments.

Sincerely,



Brooks K. Norris  
Senior Manager; Technical Services

Enclosures

cc: Jim Warner  
Bob Zorbaugh  
Bob Eshbach (w/enc.)  
Jeff Musser (w/enc.)  
Randy Weiss (PaDEP-Lancaster)  
Dave Linton (PaDEP-Lancaster; w/enc.)

# **ATTACHMENT A**

Historic Results  
Well Locations GP-4 through GP-11  
(not including GP-10)

Table 1

**SUMMARY OF CRESWELL LANDFILL GAS CONTROL & MONITORING SAMPLING**

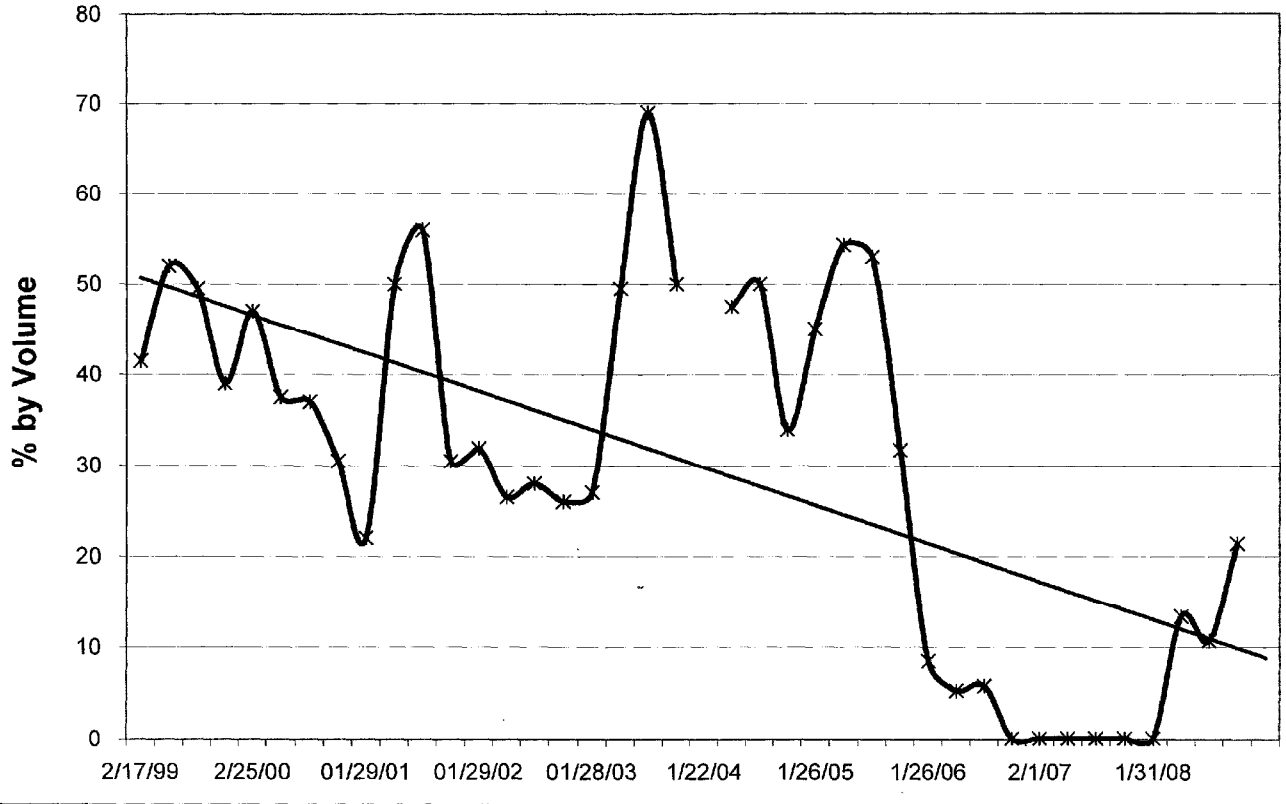
Location	# of Sampling Events	Methane (% / vol.) (historical avg.)	CO-2 (% / vol.) (historical avg.)	Balance (% / vol.) (historical avg.)	Oxygen (% / vol.) (historical avg.)
CWGP-01DW <sup>(1)</sup>	52	56.0	38.4	5.7	0.4
CWGP-02SW <sup>(2)</sup>	49	55.8	39.3	5.1	0.3
CWGP-03DW	29	57.5	41.3	2.1	0.1
CWGP-004W	89	30.1	28.5	38.5	3.0
CWGP-005W	56	0.4	4.2	80.1	15.5
CWGP-006W	90	22.4	25.7	48.7	3.3
CWGP-007W	85	1.1	7.6	79.9	11.7
CWGP-008W	86	0.2	2.6	81.8	15.5
CWGP-009W	85	53.3	30.0	14.8	2.0
CWGP-011W	84	0.2	2.7	79.2	18.0

(1) Beginning 11/02 location ID CWGPW04W

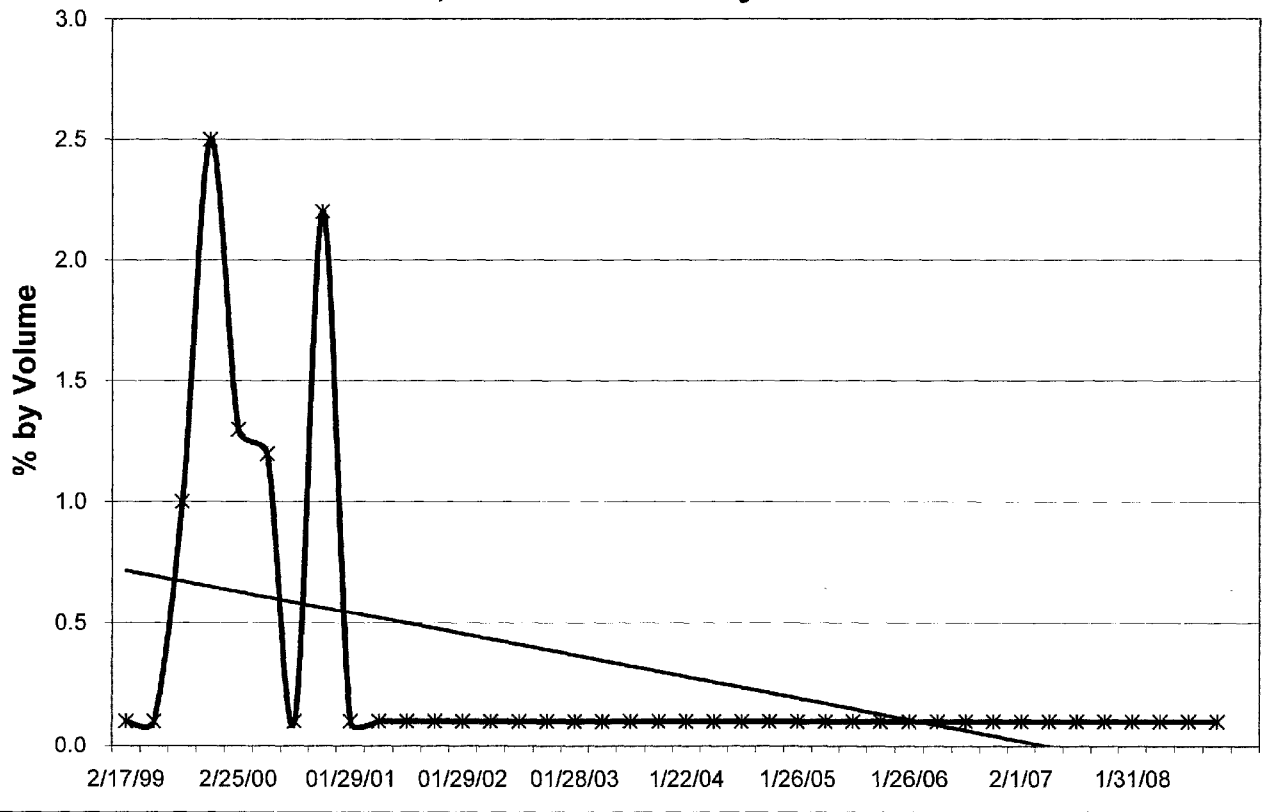
(2) Beginning 11/02 location ID CWGPC03W

note that the value "0.1" represents "not detected"

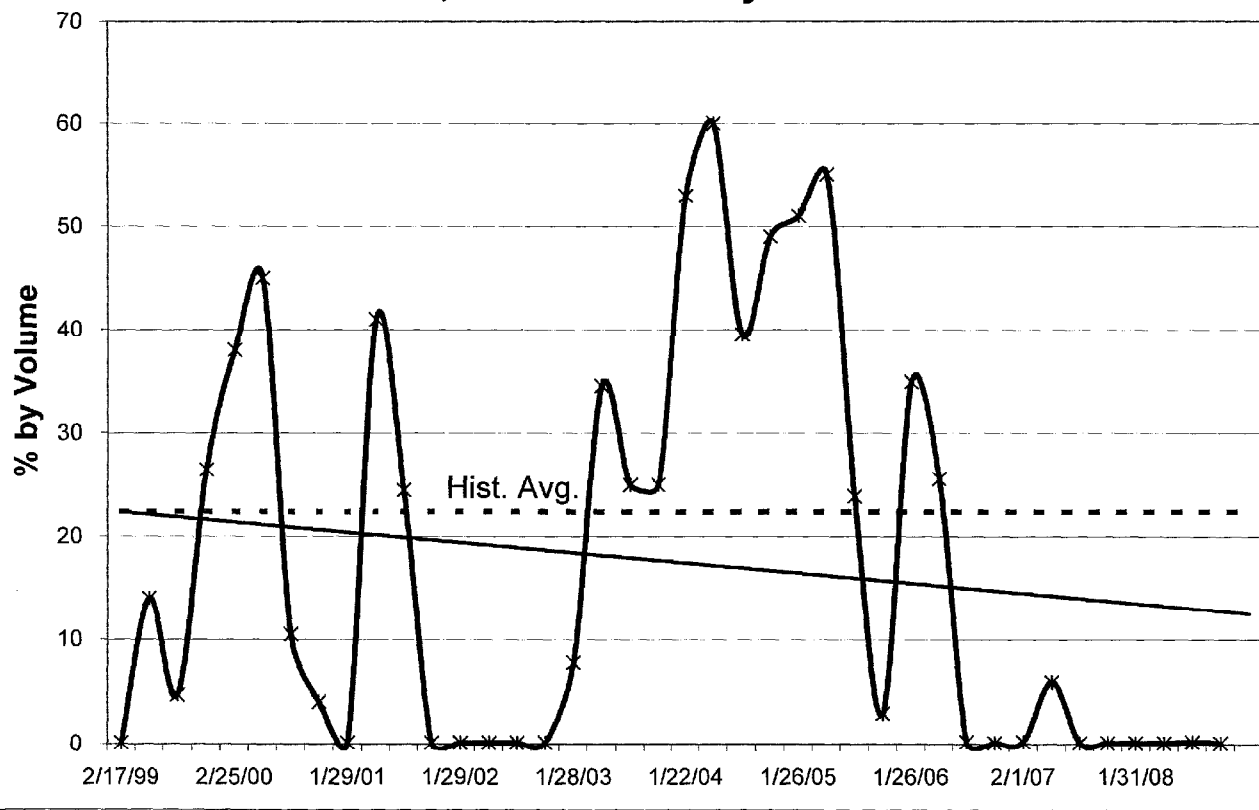
GP-4; Methane as % by Volume



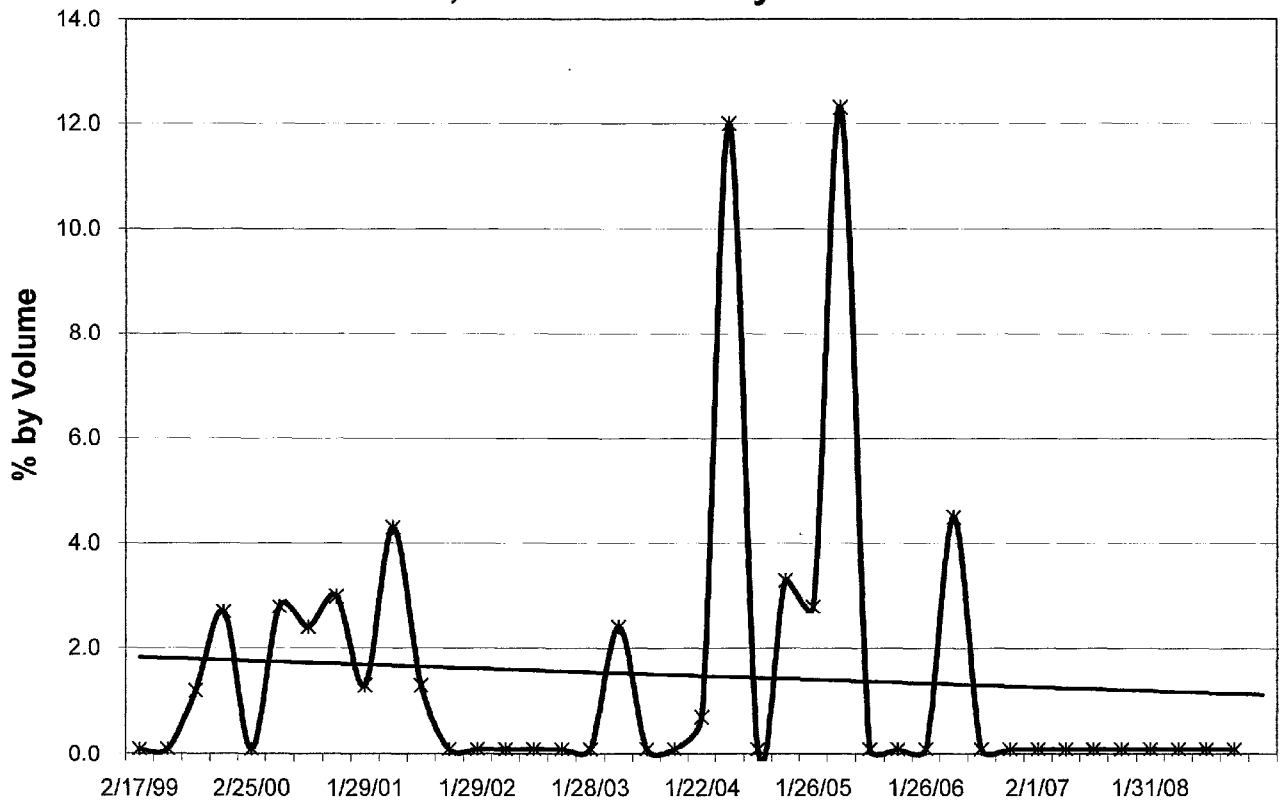
GP-5; Methane as % by Volume



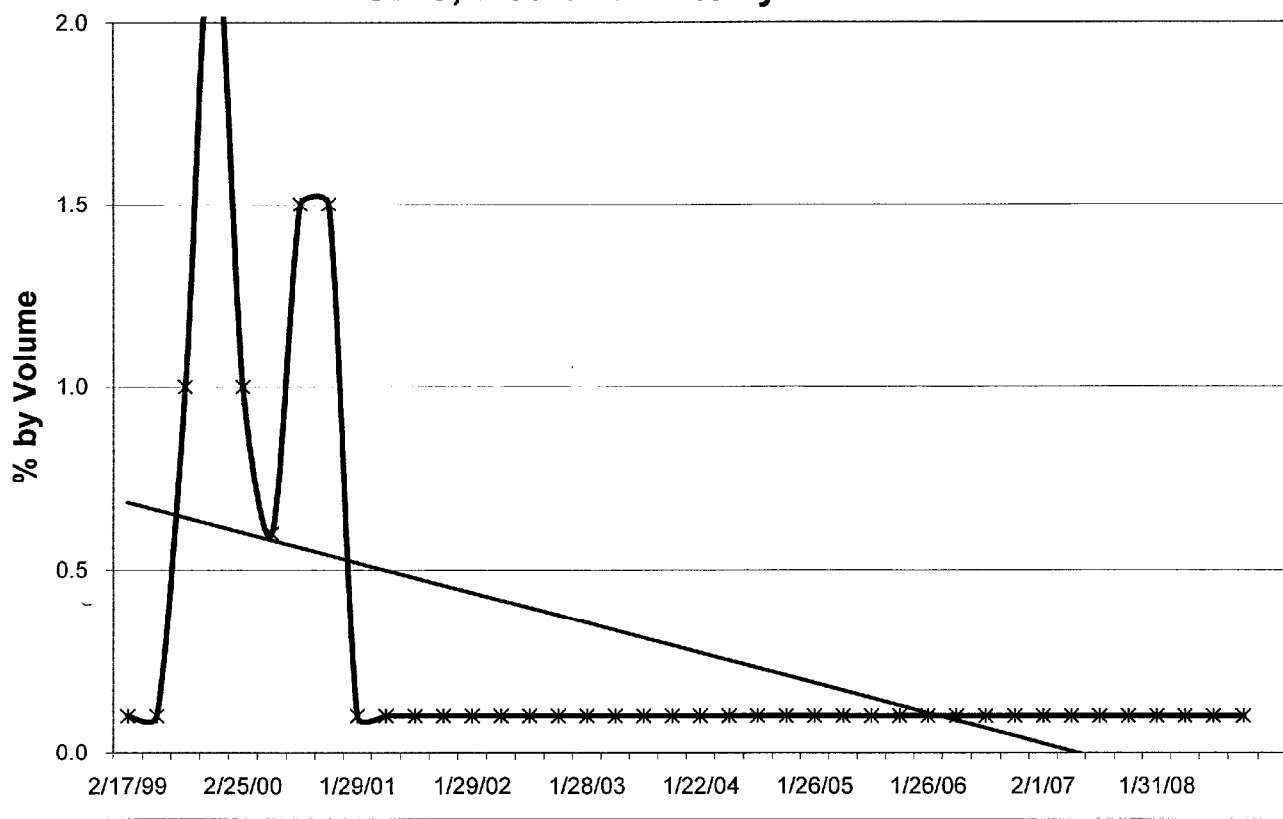
### GP-6; Methane as % by Volume



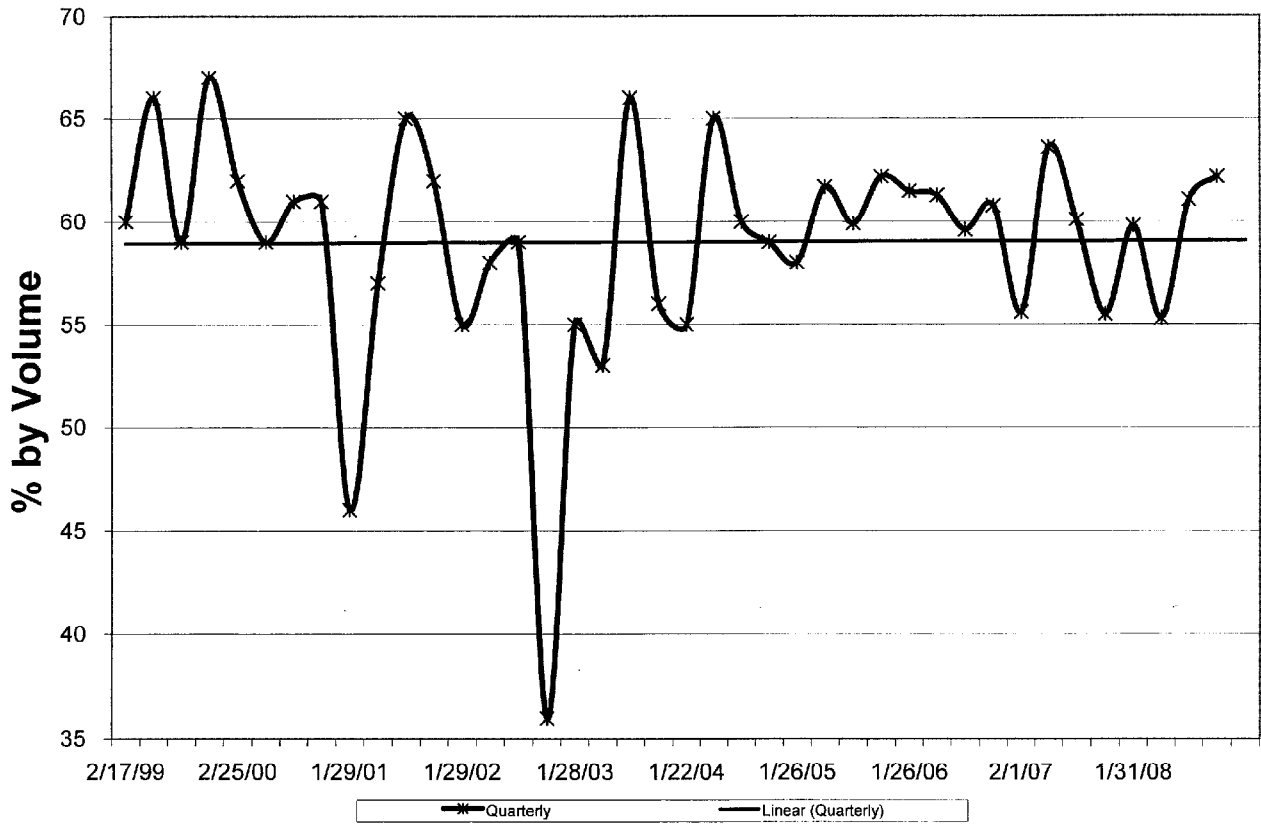
GP-7; Methane as % by Volume



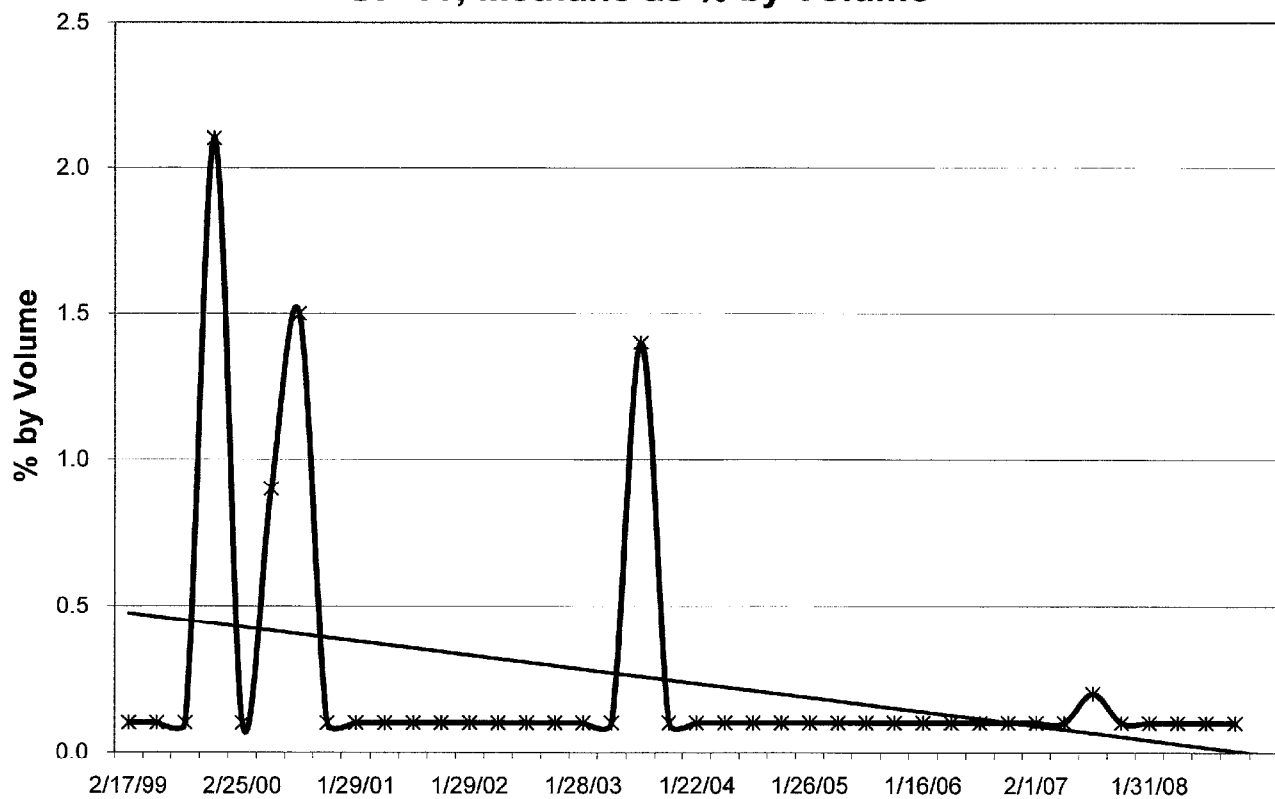
### GP-8; Methane as % by Volume



GP-9; Methane as % by Volume



### GP-11; Methane as % by Volume



# **ATTACHMENT B**

Quarterly Results  
Percent L.E.L. Peripheral Monitoring



**CRESWELL METHANE MONITORING PROGRAM  
SAMPLE POINT INSPECTION FORM**

SAMPLE POINT NUMBER	DESCRIPTION	METHANE LEVEL (as % lél)			
		DATE 2/7/08	DATE 5/13/08	DATE 9/25/08	DATE 11/12/08
1 to 15	GP WELLS	Not included with this monitoring			
16	CONTROL BUILDING LAB	0	0	0	0
17	CONTROL BUILDING COMPRESSOR ROOM	0	0	0	0
18	CONTROL BUILDING LOCKER ROOM	0	0	0	0
19	NTHW PIT	0	0	0	0
20	OTHW PIT	0	0	0	0
21	LTS AERATION PIT AT WEATHER STATION #1	0	0	0	11
22	LTS AERATION PIT AT WEATHER STATION #2	0	1	0	5
23	LTS WIRE TRENCH VENTS 1	0	0	0	0
24	LTS WIRE TRENCH VENTS 2	0	0	0	0
25	LTS WIRE TRENCH VENTS 3	No longer exists			
26	PUMP HOUSE	0	0	0	0
27	PUMP HOUSE WET WELL	0	0	0	0
28	MH #1	91	41	64	15
29	MH #2	210	31	339	291
30	INLET; MURRY'S RUN PIPE	0	0	0	0
31	OUTLET; MURRY'S RUN PIPE	0	0	0	0
32	UPPER END; RAVINE LEACHATE COLLECTION C.O.	No longer exists			
33	SEE MAP	0	0	0	0
34	SEE MAP	0	0	0	0
35	SEE MAP	0	0	0	0
36	SEE MAP	0	0	0	0
37	SEE MAP	0	0	0	0
38	SEE MAP	0	0	0	0
39	SEE MAP	0	0	0	0
40	SEE MAP	0	0	0	0
41	SEE MAP	0	0	0	0
42	SEE MAP	0	0	0	0
43	SEE MAP	0	0	0	0
44	SEE MAP	0	0	0	0
45	SEE MAP	0	0	0	0
46	SEE MAP	0	0	0	0
47	SEE MAP	0	0	0	0
48	SEE MAP	0	0	0	0
49	SEE MAP	0	0	0	0
50	SEE MAP	0	0	0	0
	Atmospheric Pressure (in. Hg)	29.09 "	29.33 "	29.49 "	29.62 "
	Air Temperature (Deg. C)	5.4 °C	19.4 °C	22.1 °C	8.5 °C

Revised Date: February 2006

Revisions: added points 62 through 74