



Draper Aden Associates

Engineering • Surveying • Environmental Services

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May 17, 2010

Mr. J. V. Potter
Watauga County Solid Waste Director
336 Landfill Road
Boone, NC 28607

RE: Watauga County Landfill
May Monthly Gas Monitoring Results, May 14, 2010
DAA JN: 6520-27

Dear Mr. Potter:

Draper Aden Associates performed the monthly gas monitoring event on May 14, 2010. We monitored for methane in Probe 2 and two out of six residences that adjoin the property boundary between Probe 1 and Probe 2. We found Probe 2 out of compliance, due to the flare station being inoperable for several weeks. As you mentioned in our discussion the flare station returned to operation on May 4, 2010, after being offline for several weeks.

The positive pressure system at the New Maintenance Building is operating properly. During our visit, we purchased and installed a 4" PVC cap on one of the two passive vent lines. The blower is connected to the other vent. Now with the other vent sealed, the positive pressure should increase and provide even greater protection against gas migrating under the buildings foundation. We found no methane or carbon dioxide coming from the foundation's ventilation system.

As the flare station is again operational, we recommend that you immediately increase the vacuum and flow from the gas wells located nearest Probe 2 as the methane levels at Probe 2 exceeded the 5% by volume limit.

We recorded the following methane levels from Probe 2. Tube 2R (0 to 5 feet) read 0% methane by volume; tube 2Y (5 to 10 feet) read 8.1% methane by volume; tube 2B (10 to 20 feet) read 38.5% methane by volume; and tube 2G (20 to 40 feet) read 43.6% methane by volume. Probes exceed the regulatory limit when they exceed 5% methane by volume.

We attempted to monitor six residential locations, to which the County mailed letters last week. We also sampled late on Friday evening with the hopes of finding more home owners on site. We were only able to gain access to two locations; Mrs. Takako Ohashi, 483 Green Briar

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Rd. and Mrs. Archie Carroll, 491 Green Briar Rd. No one answered their doors at the other residences. Methane was not detected at either monitored location.

Attached is the following information summarizing our data:

1. Table 1 – Monthly Gas Monitoring Results.
2. Table 2 - Historical table presenting the steady state methane concentrations for the gas probes.

Please contact either Don Marickovich or myself with any questions concerning this gas monitoring event.

Sincerely,
DRAPER ADEN ASSOCIATES



for

Chris Branscome
Senior Technician

CJB/cjb

cc: Mr. Don Marickovich, Project Engineer, DAA

Table 1						
WATAUGA COUNTY LANDFILL						
GAS MONITORING RESULTS						
May Monthly Event, May 14, 2010						
Probe	Depth (ft.)	Methane (% vol.)	Carbon Dioxide (% vol.)	Oxygen (% vol.)	Static Pressure (in. of Water)	Comments
1R	0 - 5	NR				
1Y	5 - 10	NR				
1B	10 - 20	NR				
1G	20 - 40	NR				
2R	0 - 5	0.0	10.4	7.9	0.01	Peak methane @ 0 sec = 0.0%
2Y	5 - 10	8.1	15.9	0.0	0.02	Peak methane @ 50 sec = 8.5%
2B	10 - 20	38.5	17.8	0.0	0.04	Peak methane @ 110 sec = 38.8%
2G	20 - 40	43.6	19.5	0.0	0.02	Peak methane @ 160 sec = 43.9%
Transfer Station		NR				
New Scale House		NR				
Old Maintenance Building		NR				
New Maint. Bldg Office Outlet		NR				
New Maint Bldg Caulked Crnr		NR				
New Maintenance Building Rmdr		NR				
Animal Shelter		NR				
Swap Shop		NR				
Forest Service Building		NR				
Bailing Facility		NR				
425 Green Briar Rd		NR	No Answer			Paul Suddreth
483 Green Briar Rd		0.0	0.0	20.8		Takako Ohashi
491 Green Briar Rd		0.0	0.0	20.8		Archie Carroll - Sampled 4 crawl space locations
513 Green Briar Rd		NR	No Answer			Nancy Perry
535 Green Briar Rd		NR	No Answer			Timothy Laraway (Rental - Appalachain Mngmt)
149 Wild Rose Lane		NR	No Answer			Norman Horton
Maint Bldg Foundation Vent		0.0	0.0	20.8		

Methane Levels Above the 5% by Volume Limit are Bold and Shaded.

R = Red

Y = Yellow

B = Blue

G = Green

NR - Not recorded or sampled.

Barometric Pres.

Air Temperature

Meter

30.2 in. of Hg

79 °F

Landtec Gem 2000 Plus

Table 2 WATAUGA COUNTY LANDFILL Steady State Methane Concentrations (%vol)		Page 1 of 2																					
Probe	Depth (ft.)	Methane Concentrations (in % by Volume)																					
		10/8/2001	2/14/2002	5/2/2002	8/14/2002	11/27/2002	1/22/2003	4/4/2003	7/2/2003	12/18/2003	3/17/2004	6/24/2004	9/29/2004	12/20/2004	3/22/2005	6/21/2005	9/21/2005	12/21/2005	2/23/2006	4/5/2006	9/27/2006	11/30/2006	1/3/2007
1R	0 - 5	0	0	0	0	0	Frozen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1Y	5 - 10	0	0	0	0	0	Frozen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1B	10 - 20	0	0	0	0	0	Frozen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1G	20 - 40	0	0	0	0	0	Frozen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2R	0 - 5	4.1	42.2	28.3	0	31.5	35	39.4	2.7	43.5	48.2	21.1	26.3	53.1	0	0	0	0	0	0	2.8	0	0
2Y	5 - 10	24.8	51	47.1	21.2	42.8	51.8	56.2	39.2	55.8	52.9	33.5	37.6	55	0	0	0	0	0	0	19.7	8.8	4.4
2B	10 - 20	45	56.8	54.8	46.2	50.3		62.8	50.4	60.5	57.2	47.1	59.2		2.3	0	0	0	0	0	28.4	16.5	10.5
2G	20 - 40	80.1	63.9	60.6	60.9	61.2	60.5	67.5	56.1	67.1	61.1	22.1	50.8	55.5	14.6	0	1.7	2.5	0	0	44.5	31	22

Table 2 WATAUGA COUNTY LANDFILL Steady State Methane Concentrations (%vol)		Page 2 of 2																				
Probe	Depth (ft.)	Methane Concentrations (in % by Volume)																				
		1/3/2007	5/14/2007	7/12/2007	11/20/2007	2/1/2008	5/1/2008	7/16/2008	10/27/2008	1/29/2009	4/14/2009	7/7/2009	10/8/2009	1/28/2010	3/17/2010	4/16/2010						
1R	0 - 5	0	0	0	0	0	0	0	0	0	0	0	0	0	NR	0	NR					
1Y	5 - 10	0	0	0	0	0	0	0	0	0	0	0	0	0	NR	0	NR					
1B	10 - 20	0	0	0	0	0	0	0	0	0	0	0	0	0	NR	0	NR					
1G	20 - 40	0	0	0	0	0	0	0	0	0	0	0	0	0	NR	0	NR					
2R	0 - 5	0	0	0	0	0	0	0	0	0	0	0	0	15.2	0	0						
2Y	5 - 10	4.4	0	0	0	0	8.8	0	0	1.4	0	0	0	31.9	3.8	11.5	8.1					
2B	10 - 20	10.5	0	0	0	0	24.8	2.5	0	10.6	0	0	0	46.6	12.9	41.3	38.5					
2G	20 - 40	22	3.6	0	0	0	39.6	15.5	0.2	22.1	0.9	0	1.7	50.7	31.0	52.9	43.6					
New Maint Bldg Office Outlet		1.8 to 2.4	0.1	7.9 to 8.4	2.4	0.3 to 2.5	0.2 to 0.8	0	2.9	0.1	1.1	1.0	0	0	NR	0	NR					

Note - Methane was not detected in the outlet until January 3, 2007
NR = Not recorded or sampled.