



Draper Aden Associates

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November 8, 2010

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

RE: Watauga County Landfill
September Monthly Gas Monitoring Results, September 14, 2010
October Quarterly Gas Monitoring Results, October 1, 2010
DAA JN: 6520-27

Dear Mr. Potter:

Draper Aden Associates performed the monthly and quarterly gas monitoring events on September 14, 2010 and October 1, 2010, respectively. During both events, we found the facility in compliance. We attempted to sample six residential homes adjacent to Probe 2's boundary, but during both visits were unable to gain access to all of the residential properties. We detected no methane in the residences sampled.

We recorded the following methane levels in Probe 2. All tubes in Probe 2 showed a steady state reading of 0% methane by volume, during both sampling events. The deepest tube, 2G, showed a peak value of 0.8% methane, during the September sampling event. We detected no methane in any of the tubes in October.

The Maintenance Building's office outlet read 0% methane, by volume, in September, but demonstrated an increase to 1.0% methane, by volume, during the October event. We disconnected the buildings blower system during the September event. Draper Aden Associates loaned our blower to the landfill, in January, to conduct the test and the sampling results demonstrates the system's effectiveness. The blower directly injected ambient air into the building's foundation ventilation system, creating a positive pressure under the concrete pad and thus deterring gas migration under the building. We highly recommend that Watauga County purchase a blower and reinstate a dedicated blower system to the building's foundation for methane migration control.

We monitored the residential locations adjacent to the landfill late in the afternoon in September and in October. We were only able to gain access to three locations; 491 Green Briar Road; 425 Green Briar Road; 483 Green Briar Road in September and two locations; 491 Green

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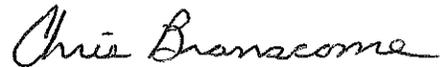
Briar Road; 425 Green Briar Road in October. During both events, we detected no methane at residences.

Attached is the following information summarizing our data:

1. Table 1 – September Monthly Gas Monitoring Results.
2. Table 2 – October Quarterly Gas Monitoring Results.
3. Table 3 - Historical table presenting the steady state methane concentrations for the gas probes and the Maintenance building's office outlet.

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

Sincerely,
DRAPER ADEN ASSOCIATES



Chris Branscome
Senior Technician

Attachments

CJB/cjb

cc: Mr. Don Marickovich, Project Engineer, DAA

Table 1

WATAUGA COUNTY LANDFILL

GAS MONITORING RESULTS

September Monthly Event, September 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 | 0.0 | 20.1 | -2.15 | |
| 2Y | 5 - 10 | 0.0 | 0.5 | 17.6 | 0.00 | |
| 2B | 10 - 20 | 0.0 | 0.0 | 19.7 | -0.02 | |
| 2G | 20 - 40 | 0.0 | 0.0 | 19.6 | -0.02 | Peak methane @ 100 sec = 0.8% |
| Transfer Station | | NR | | | | |
| New Scale House | | NR | | | | |
| Old Maintenance Building | | NR | | | | |
| New Maint. Bldg Office Outlet | | 0.0 | 0.0 | 20.8 | | |
| New Maint Bldg Caulked Crnr | | 0.0 | 0.0 | 20.8 | | |
| New Maintenance Building Rmdr | | NR | | | | |
| Animal Shelter | | NR | | | | |
| Swap Shop | | NR | | | | |
| Forest Service Building | | NR | | | | |
| Bailing Facility | | NR | | | | |
| 425 Green Briar Rd | | 0.0 | 0.0 | 20.8 | | Paul Suddreth |
| 483 Green Briar Rd | | NR | | | | Takako Ohashi |
| 491 Green Briar Rd | | 0.0 | 0.0 | 20.8 | | Archie Carroll - Sampled 4 crawl space locations |
| 513 Green Briar Rd | | NR | | | | Nancy Perry |
| 535 Green Briar Rd | | 0.0 | 0.0 | 20.8 | | Timothy Laraway (Rental - Appalachian Mngmt) |
| 149 Wild Rose Lane | | NR | | | | 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

30.21 in. of Hg

75 °F

Landtec Gem 2000 Plus

Table 2

WATAUGA COUNTY LANDFILL

GAS MONITORING RESULTS

Fourth Quarter Event, October 1, 2010

| Probe | Depth (ft.) | Methane (% vol.) | Carbon Dioxide (% vol.) | Oxygen (% vol.) | Static Pressure (in. of Water) | Comments |
|--------------------------------------|-------------|------------------|-------------------------|-----------------|--------------------------------|--|
| 1R | 0 - 5 | 0.0 | 0.0 | 20.9 | 0.00 | |
| 1Y | 5 - 10 | 0.0 | 2.3 | 19.0 | 0.06 | |
| 1B | 10 - 20 | 0.0 | 0.1 | 20.6 | 0.00 | |
| 1G | 20 - 40 | 0.0 | 0.0 | 20.8 | 0.00 | |
| 2R | 0 - 5 | 0.0 | 0.0 | 20.6 | 0.18 | |
| 2Y | 5 - 10 | 0.0 | 4.0 | 18.0 | 0.02 | |
| 2B | 10 - 20 | 0.0 | 6.1 | 16.5 | 0.00 | |
| 2G | 20 - 40 | 0.0 | 11.6 | 12.4 | 0.00 | |
| Transfer Station | | 0.0 | 0.0 | 20.8 | | |
| New Scale House | | 0.0 | 0.0 | 20.8 | | |
| Old Maintenance Building | | 0.0 | 0.0 | 20.8 | | |
| New Maint. Bldg Office Outlet | | 1.0 | 3.5 | 17.7 | | Peak methane = 1.0% at 30 seconds. |
| New Maint Bldg Caulked Crnr | | 0.0 | 0.0 | 20.8 | | |
| New Maintenance Building Rmdr | | 0.0 | 0.0 | 20.8 | | |
| Animal Shelter | | 0.0 | 0.0 | 20.8 | | |
| Swap Shop | | 0.0 | 0.0 | 20.8 | | |
| Forest Service Building | | 0.0 | 0.0 | 20.8 | | |
| Bailing Facility | | 0.0 | 0.0 | 20.8 | | |
| 425 Green Briar Rd | | 0.0 | 0.0 | 20.8 | | Paul Suddreth |
| 491 Green Briar Rd | | 0.0 | 0.0 | 20.8 | | Archie Carroll |
| 513 Green Briar Rd | | NR | Not Available | | | Nancy Perry |
| 535 Green Briar Rd | | NR | Not Available | | | Timothy Laraway (Rental - Appalachain Mngmt) |
| 149 Wild Rose Lane | | NR | Not Available | | | Norman Horton |
| 483 Green Briar Rd | | NR | Not Available | | | Takako Ohashi |

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

29.94 in. of Hg

61 °F

Landtec Gem 2000 Plus

Table 3
WATAUGA COUNTY LANDFILL
Steady State Methane Concentrations (%vol)

| 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 | 5/14/2010 | 6/15/2010 | 7/22/2010 | 8/4/2010 | 9/14/2010 | 10/1/2010 |
| 1R | 0 - 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NR | 0 | NR | NR | 0 | NR | NR | 0 |
| 1Y | 5 - 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NR | 0 | NR | NR | 0 | NR | NR | 0 | |
| 1B | 10 - 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NR | 0 | NR | NR | 0 | NR | NR | 0 | |
| 1G | 20 - 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NR | 0 | NR | NR | 0 | NR | NR | 0 | |
| 2R | 0 - 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15.2 | 0 | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | |
| 2B | 10 - 20 | 10.5 | 0 | 0 | 0 | 0 | 24.8 | 2.9 | 0 | 10.6 | 0 | 0 | 0 | 46.6 | 12.9 | 41.3 | 38.5 | 6.7 | 0 | 0 | 0 | |
| 2G | 20 - 40 | 22 | 3.6 | 0 | 0 | 0 | 39.6 | 15.5 | 0.2 | 22.1 | 0.9 | 0 | 1.7 | 60.7 | 31.0 | 52.9 | 43.6 | 25.6 | 7.8 | 5.1 | 0 | |
| 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 | 0 | 0 | NR | 0 | 1.0 |

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