Macon County Department of Solid Waste Management

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APR 29 2011

SOLID WASTE SECTION
ASHEVILLE REGIONAL OFFICE

April 25, 2011

Mr. Troy Harrison
Environmental Senior Specialist
NC-DENR, Solid Waste Section
Western District Office
2090 U.S. Highway 70
Swannanoa, NC 28778

Mr. Harrison;

The following letter and attachments are submitted in response to a comprehensive landfill audit report resulting from an inspection of the closed Highlands C&D Landfill on November 18, 2010. The more specific item of concern (Item 6) was the need to conduct an investigation of landfill gas generation at the landfill to ensure compliance with 15A NCAC 13B .0503(2)(a) The concentration of explosive gases generated by the site shall not exceed: (i) twenty five percent of the limit for the gases in site structures; and (ii) the lower explosive limit for the gases at the property boundary.

To that end, a survey of landfill gas was conducted at the site on April 8, 2011. The survey was conducted by Chris Stahl, Solid Waste Director, and Tommy Keener, Lead Operator at the facility. The survey consisted of four existing water wells, and seven shallow probes interspersed around the closed landfill. The sampling results as well as an aerial map are attached with the approximate locations of the wells/probes noted. The deep (water quality monitoring) wells have a casing diameter of two inches. At each well, the caps were removed and replaced by a two inch cap with a quarter-turn valve to create a closed loop for sampling. The temporary shallow probes were hand bored with a two inch auger to a depth of approximately three feet. The temporary probes were then plugged with a 1-liter soda bottle. At the time of sampling, the plugs were replaced with another bottle in which a hole was drilled through the bottom that the sampling hose was inserted through, again to create a closed sampling loop.

As you can see from the attached field worksheet, methane was not detected in the scalehouse or at ten of the well/probe samples. One probe (TGP-6), did have a detection of 8% of the lower explosive limit for methane. This probe was installed approximately 30 feet from the edge of waste, and approximately 400 feet from the nearest property boundary. I believe that the result of this survey demonstrates that the closed Highlands C&D Landfill is in compliance with 15A NCAC 13B .0503(2)(a).

The remaining areas of comment and concern are being addressed as weather allows. Trees noted on two areas of the Old Highlands Landfill cap have been removed. Seeding and fertilizing of both

landfills will be completed within the next few weeks. Repairs to areas of settlement (entrapped water), and washing of the landfill caps are ongoing as part of our routine cap maintenance.

If you have any questions regarding any of the items in this report, or any other concerns, please do not hesitate to contact me at your convenience.

Sincerely,

M. Chris Stahl
Director, Macon County Solid Waste Management

Landfill Gas Measurements Field Worksheet

Highlands C&D Landfill - Macon County North Carolina

Name of Person Taking Readings: Chris Stahl **Date:** April 8, 2011

Weather Conditions: Overcast, 48% Humidity **Ambient Temp:** 68° F

Atmospheric Pressure: Not Read

Gas Monitoring Equipment: Land-Tec GEM 2000 **Serial #:** GM05480

Factory Calibration Date: Sept 2010 **Field Calibration 50% Methane:** April 8, 2011

Gas Readings Field Worksheet

Well or Probe ID	Pump Time	Time Installed	Depth	Time Sampled	%LEL	$\%CH_4$	$\%CO_2$	$\%O_2$
Scalehouse	120 sec	NA	NA	10:55	0	0.0	0.0	19.6
MW-A	120 sec	NA	19.54 ft.	12:51	0	0.0	0.3	19.9
MW-B	120 sec	NA	20.15 ft.	12:58	0	0.0	0.0	20.1
MW-3	120 sec	NA	*	11:18	0	0.0	0.0	19.6
MW-4	120 sec	NA	25 ft.	13:12	0	0.0	0.0	20.1
TGP-1	120 sec	11:11	36 in.	12:17	0	0.0	0.0	19.9
TGP-2	120 sec	11:19	36 in.	12:21	0	0.0	0.2	19.7
TGP-3	120 sec	11:31	33 in.	12:30	0	0.0	0.0	19.8
TGP-4	120 sec	12:00	36 in.	12:36	0	0.0	0.1	20.1
TGP-5	120 sec	12:08	39 in.	13:02	0	0.0	0.1	20.1
TGP-6	120 sec	11:45	36 in.	12:54	8	0.4	1.4	19.1
TGP-7	120 sec	11:53	37 in.	12:43	0	0.0	0.4	19.6

* MW-3 depth is unknown, the well was removed from the semi-annual water quality monitoring plan several years ago because it was dry. The well was replaced for water quality monitoring purposes by MW-8.

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  - Soils
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  - Elevation (feet)
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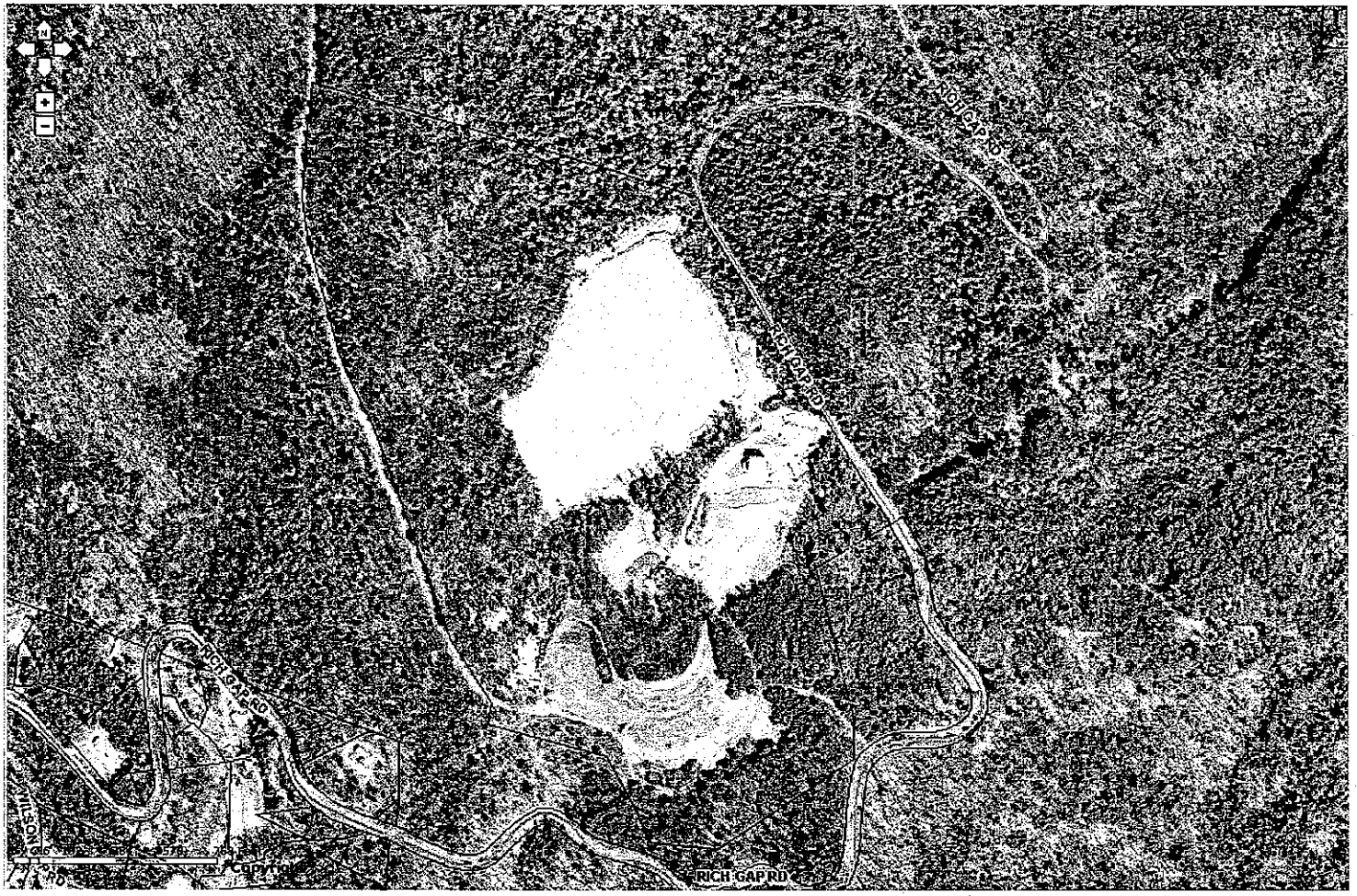

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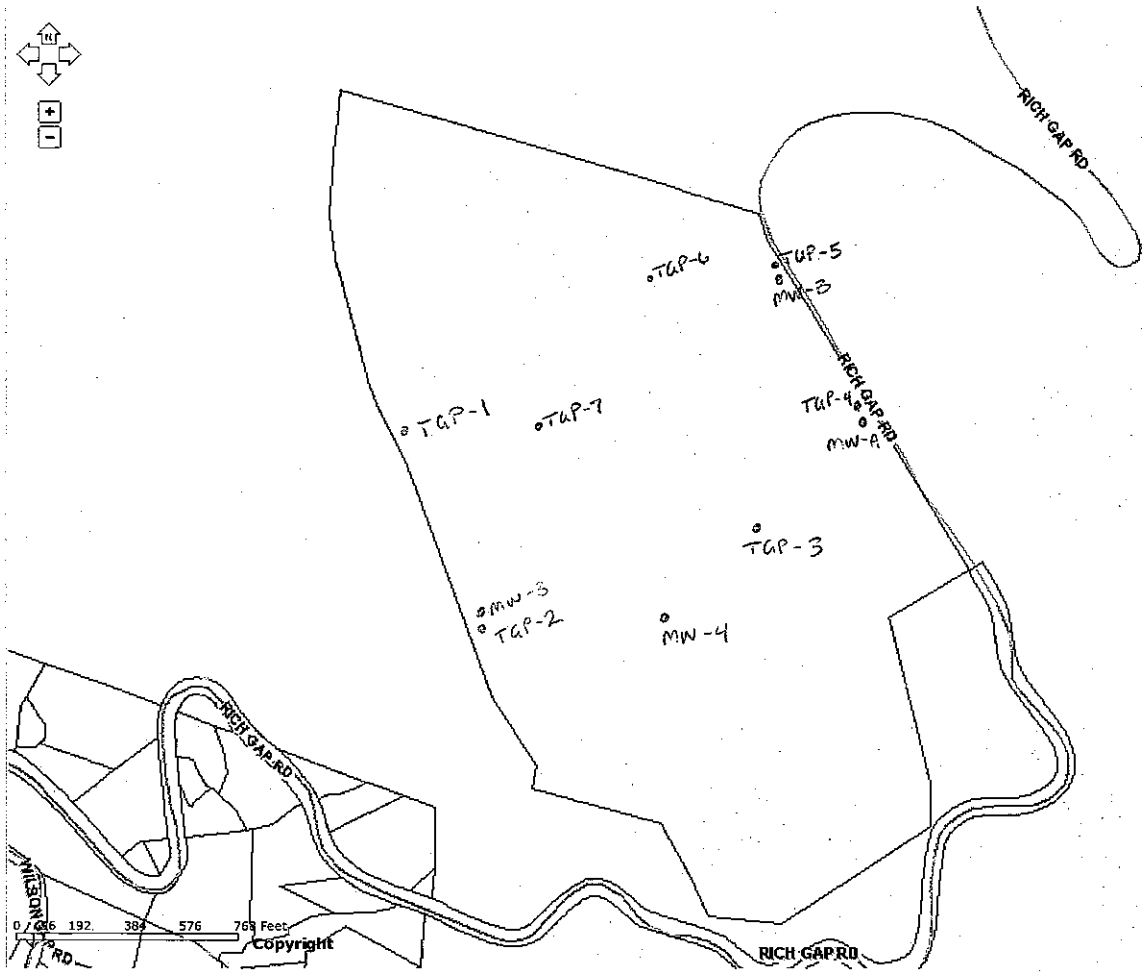
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  - Soils
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