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January 13, 2010

Mr. David Ellis  
Department of Environmental Protection  
Southeast Regional Office  
20 Riverside Drive  
Lakeville, Massachusetts 02347

Subject: Summary of Landfill Gas Sampling Results  
Nantucket Landfill - January 2010

Dear Mr. Ellis:

On January 7, 2010 personnel from Camp Dresser & McKee Inc. (CDM) conducted environmental monitoring at the Nantucket Landfill. The environmental monitoring included field screening for landfill gas. The environmental sampling was conducted in accordance with the approved Environmental Monitoring Plan, prepared by SECOR International Inc. in July 1999 and in conformance with the Solid Waste Management Regulations (310 CMR 19.132).

As part of the closure construction at the landfill, the environmental monitoring network was expanded by the addition of seventeen landfill gas wells (LGW-1 through LGW-17). See the site plan for locations of the landfill gas monitoring locations.

Landfill gas wells were screened in the field for the following parameters:

- Hydrogen Sulfide (H<sub>2</sub>S);
- Methane (CH<sub>4</sub>)
- Lower Explosive Limit (LEL);
- Carbon Dioxide (CO<sub>2</sub>);
- Oxygen (O<sub>2</sub>) and
- Volatile Organics (VOCs)

## Evaluation of Results

Landfill gas wells were screened for the parameters indicated previously in this report. Prior to purging the wells, initial readings were taken at each location. Following recording of the





Mr. David Ellis  
January 13, 2010  
Page 2

initial readings, approximately 10 minutes was allowed for purging before final readings were recorded.

Methane was only detected in one perimeter landfill gas well (LGW-9). Methane was detected at a concentration of 438% of the LEL. LGW-9 is not located at the property line of the site. CDM conducted a probe (PROBE-1) approximately 6 feet from LGW-9. Methane was detected in PROBE-1 at a concentration of 6% of the LEL. CDM also conducted a second probe (PROBE-2) approximately 25 feet from well LGW-9. Methane was not detected in PROBE-2. Each of the two probes was conducted at a depth of approximately 8 feet below grade. Landfill gas is not currently migrating across the property line.

Methane was detected in wells LGW-14 through LGW-17 at concentrations ranging from 962% to 1556% of the LEL. Wells LGW-14 through LGW-17 are located between Phase I and Phase 2A of the landfill. These wells are most likely located in waste or immediately adjacent to waste. LGW-1, LGW-10 and LGW-11 are located between the landfill and property line/buildings. Methane was not detected in these wells, indicating landfill gas migration is not currently violating solid waste regulations.

Carbon dioxide was detected in most well locations at concentrations ranging from 0.3 to 32.6 percent. Hydrogen sulfide was detected in sampling locations LGW-15 and LGW-16 at concentrations of 5.4 ppm and 1.2 ppm, respectively. VOCs were detected in several sampling locations at concentrations ranging from 0.1 ppm to 15.4 ppm. Sampling locations are shown on the attached plan and complete sampling results are summarized in Table 1.

The next quarterly landfill gas screening is scheduled for March 2010.

Please do not hesitate to call me at (617) 452-6659 if you have any questions or require additional information.

Very truly yours,

Vincent M. Recchia, P.E.  
Camp Dresser & McKee Inc.

Attachments

cc: Jeff Willet, Nantucket  
Tracy Sundell, Nantucket  
Whitney Hall, Waste Options



TABLE 5  
 NANTUCKET LANDFILL  
 NANTUCKET, MASSACHUSETTS  
 GAS WELL MONITORING - JANUARY 2010

Gas Well No.	Type	Date	OVM (ppm)		H <sub>2</sub> S (ppm)		CH <sub>4</sub> (%)		%LEL		CO <sub>2</sub> (%)		O <sub>2</sub>	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
LGW-1	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.3	18.7	18.5
LGW-2	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.2	18.1	17.5
LGW-3	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	20.5	19.9
LGW-4	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.1	20.2
LGW-5	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.9	20.4
LGW-6	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.2	13.0	9.1
LGW-7	Well	1/7/2010	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	4.6	4.5	16.7	15.1
LGW-8	Well	1/7/2010	7.2	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.6	20.7
LGW-9	Well	1/7/2010	0.0	0.0	0.0	0.0	22.7	21.9	454.0	438.0	28.4	27.6	2.5	3.1
LGW-10	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	19.7	19.2
LGW-11	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.6	20.5
LGW-12	Well	1/7/2010	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.1	19.3	19.0
LGW-13	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.2
LGW-14	Well	1/7/2010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.1	18.1	4.1	2.1
LGW-15	Well	1/7/2010	0.0	0.0	0.0	0.0	48.5	48.1	970.0	962.0	25.8	25.5	0.2	0.0
LGW-16	Well	1/7/2010	11.0	15.4	2.0	1.2	69.0	69.1	1380.0	1382.0	9.6	9.7	0.6	0.0
LGW-17	Well	1/7/2010	8.8	14.6	0.3	0.0	78.0	77.8	1560.0	1556.0	32.5	32.6	0.5	0.0
PROBE-1	Well	1/7/2010	0.0	0.0	0.0	0.0	64.6	64.2	1292.0	1284.0	3.1	2.5	17.6	18.1
PROBE-2	Well	1/7/2010	0.0	0.0	0.0	0.0	0.4	0.3	8.0	6.0	0.5	0.4	19.6	19.9

Notes:  
 1. Wells and probes were purged for approximately 10 minutes before final readings were recorded.  
 2. Methane measured with combustible gas indicator.