

**United States Environmental Protection Agency  
Region V  
POLLUTION REPORT**

**Date:** Thursday, June 5, 2008

**From:** Steven Faryan

**Subject:** Mallard Lake Landfill

26W580 Schick Road, Hanover Park, IL

Latitude: 41.9525000

Longitude: -88.1442000

<b>POLREP No.:</b>	13	<b>Site #:</b>	B5MH
<b>Reporting Period:</b>		<b>D.O. #:</b>	
<b>Start Date:</b>	11/6/2007	<b>Response Authority:</b>	
<b>Mob Date:</b>	11/6/2007	<b>Response Type:</b>	Time-Critical
<b>Demob Date:</b>		<b>NPL Status:</b>	
<b>Completion Date:</b>		<b>Incident Category:</b>	Removal Action
<b>CERCLIS ID #:</b>		<b>Contract #</b>	
<b>RCRIS ID #:</b>			

#### **Site Description**

The Mallard Lake Landfill is located near the intersection of Schick Road and County Farm Road in unincorporated DuPage County, Illinois. The landfill is owned by the DuPage Forest District and is operated by BFI. The landfill is maintained and monitored under the post closure requirements of their RCRA permit that Illinois Environmental Protection Agency oversees. The methane gas that is being recovered at the Mallard Lake landfill is recovered and sent via piping to the GRS facility that is located on the property to burn the gas for energy recovery. US EPA, BFI and DuPage Forest District have signed a RCRA Section 7003 Consent Order to have BFI and the Forest District fully characterize landfill gas that has migrated off site from the facility and to provide corrective action measures to correct the migration and collect gas that has migrated off-site. The investigation work and emergency corrective action are being over-seen by U.S. EPA and their contractor Weston Solutions.

#### **Current Activities**

During this reporting period, Weston and US EPA provided oversight on various corrective action procedures (installation of large diameter wells, radius of influence testing). STS submitted the off-site nature and extent of contamination report, Landfill Gas Extraction System Operating Data and Blower Evaluation Report. U.S. EPA is currently reviewing these reports.

STS conducted a sub-slab sampling at one private residential home. The results shows presence of low levels of VOCs well below the screening levels.

BFI and their public relations contractors Reputation Partners, Inc. have scaled back residential screening scheduling following slow to no response during repetitive efforts to contact residents within the investigation area. During this reporting period, four homes were screened and had explosive gas meters installed (at the discretion of the residents). To date, 243 homes have been screened, 209 explosive gas detectors installed and 313 total homes have been visited. Refer to Figure 1-Residential Screening Summary\_031408 and Table 1 – Residential Screening Summary\_031408).

Residential slam-bar sampling was deferred due to weather restrictions. STS has access to over 40 properties to conduct the sampling as a result of residential screening and gas meter installation. However, instead of slam bar testing, sub-slab sampling will be performed at the homes (where access is available from owners of the residential properties) in close proximity of the site. In addition to this limited shallow monitoring probes will be installed on selected number of residential properties to check for landfill gas (methane and VOCs).

During this reporting period replacement well was installed and sampled at monitoring well 12D.

BFI and STS are currently working on emergency corrective action measures to capture current and prevent future methane gas releases (Phase II). Testing such as radius of influence study, pump tests, and

soil gas sampling have already begun to assess the efficiency of the current extraction system, to alleviate gas pressures and determine the most efficient correction action. In addition, four large diameter wells have been installed on the West and one large diameter well has been installed on the South Perimeter in an attempt to prevent the migration of landfill gas off-site. Need for additional wells will be evaluated based on the performance results of these wells. The large diameter wells have been connected to the existing gas collection system. Groundwater pumped to lower the water table is collected and discharged into a existing leachate header.

During this reporting period landfill fire has been detected in the vicinity of extraction well EW-70. As a result of the subsurface landfill fire approximately 20 extraction wells have been taken offline. Landfill fire situation is being monitored by a GRS (BFI subcontractor) employee.

The blower for the flare system needs to be repaired/replaced. BFI has ordered the blower and the lead time for the blower is at least 14 weeks.

STS conducted soil gas sampling using summa canisters on February 22, 2008 at 17 various cone penetrometer and existing landfill gas monitoring probes (Refer to Table 2, Soil Gas Sampling Field Data). Each probe selected was based on elevated methane gas concentrations detected during initial CPT push or frequent monitoring. Each probe was purged for 2-5 minutes using the LandTech GEM-500 methane detector and sampled using a -30 Hg summa canister for up to one hour or until the pressure gauge indicated the canister was full. CP55 (an original sampling locations) did not detect any methane gas during purging and STS instead sampled CP47. The 17 probe samples, two duplicates and one ambient air were shipped to Con-Test Laboratories of East Longmeadow, MA for analysis of TO-15 VOCs and methane. Analytical results for this sampling have been received and are being reviewed by U.S. EPA.

STS also conducted groundwater sampling from March 6-12, 2008 at specific CPT monitoring probes to determine the extent of VOCs present in the landfill gas. Twenty-one monitoring probes (CP1, 2, 4, 12, 12D, 14, 18, 20S, 26, 28, 30I, 33S, 35, 38, 47, 55, RW-4, 5, 6, 8 and 26) were chosen for groundwater sampling based on previous methane gas monitoring concentrations. Refer to Figure 2 – Groundwater Sampling Locations. Of the 21 wells, only 18 (CP4, 12, 26, 2, 38, 35, 33S, 15, 19, 28, 30, 47, 55, RW-26, 4, 5, 6 and 8) were sampled due to inefficient amount of available water and/or dry wells. Dry wells were replaced with wells providing sufficient amount of water for sampling. STS purged each well with sufficient water column using bailers and measured water quality parameters including turbidity, pH, conductivity, temperature and oxidation reduction potential (ORP). WESTON provided oversight support during the sampling event and collected four split groundwater samples (at CP4, 26, 2 and RW-8). All groundwater samples collected will be analyzed for VOCs using EPA SW 846 Method 8260; analytical results for this sampling has been received and are being reviewed by the U.S. EPA.

#### **Planned Removal Actions**

- BFI and the DuPage Forest District have submitted an Emergency Corrective Action Plan to alleviate the migration of methane from the Landfill on the Western and Southern boundaries. US EPA has approved of the installation of large diameter methane recovery wells on the West and South Perimeter.
- BFI and the DuPage Forest District have submitted a landfill gas operation and maintenance plan to evaluate, replace and add additional methane recovery wells in the landfill.
- BFI and the DuPage Forest District will submit a Comprehensive Corrective Action Plan to prevent methane gas from migrating off-site and to collect gas that has already migrated into the residential areas.
- BFI and the Dupage Forest District is working to address the landfill fire in the area of EW-70.

#### **Next Steps**

- BFI and STS will continue screening homes and installing explosive gas meters based on appointments scheduled by Reputation Partners public relations; and
- STS will continue to assess effectiveness including radius of influence for the landfill gas migration on the west and south side of the landfill. Note: Landfill gas has not been detected beyond the southern property boundary.
- On-going radius of influence and pump test will continue until enough data is available to interpret the efficiency and ability of the existing landfill gas extraction system to capture migrating gas; and
- STS will continue radius of influence analysis on the western, southern and northern perimeter of the investigation area (which includes installation of large diameter wells) in order to design emergency corrective action measures. These wells will be piped into the existing methane recovery system. A backup blower and oxidizer will be designed and installed if the landfill gas from the large diameter wells is not consistent with operational limits at the gas to energy plant.
- BFI and STS have installed 10 pressure transducers and will conduct daily and weekly methane gas monitoring of existing probes/wells. This additional monitoring is due to the GRS plant being taken off line for the next two weeks due to ComEd line maintenance. The two flares are operational at the GRS plant to continue the collection and removal of methane from the landfill.
- BFI and STS will address the landfill fire in the vicinity of EW-70, and contain the fire so that it does

not spread.

- BFI and STS will install sub-slab sampling ports at selected residential properties in the vicinity of the landfill (based on access); and
- BFI and STS may install and sample shallow gas monitoring probes (based on access); and
- U.S.EPA and WESTON will continue to provide oversight of the work performed by BFI and STS.

### **Key Issues**

USEPA and IEPA have agreed that corrective actions can be conducted at the Mallard Lake landfill under the existing permit. Air permits will be required if additional oxidizers or flares are needed to burn off the additional landfill gas that is collected.

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