

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

Date: Friday, March 21, 2008

From: Steven Faryan

Subject: On-going Site Activities

Mallard Lake Landfill

26W580 Schick Road, Hanover Park, IL

Latitude: 41.9525000

Longitude: -88.1442000

POLREP No.: 12

Site #: B5MH

Reporting Period: February 21, 2008-March 21, 2008

D.O. #:

Start Date: 11/6/2007

Response Authority:

Mob Date: 11/6/2007

Response Type: Time-Critical

Demob Date:

NPL Status:

Completion Date:

Incident Category: Removal Action

CERCLIS ID #:

Contract #

RCRIS ID #:

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. The GRS plant is currently down for the next 2 weeks due to ComEd line maintenance. The 2 flares are operational and the collection and burning of methane gas is on-going.

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 correction action procedures (radius of influence, pump test and VOC gas and groundwater sampling at the probes). STS has completed the off-site nature and extent of contamination sampling and is preparing the final report due for submission on April 4, 2008. The landfill gas migration has been defined as far west as Hawk Hollow Forest Preserve and Green Bridge Lane and as far south as Schick Road. The Phase I investigation area is bounded by Green Bridge Lane to the west, Discovery Park to the east, Schick Road to the far south and Hawk Hollow Preserve to the north.

BFI and STS are currently working on emergency corrective action measures to capture current and prevent future methane gas releases (Phase II). Provisional procedures such as radius of influence study, pump tests, and soil gas sampling have already began to assess the efficiency of the current extraction system, to alleviate gas pressures and determine the most efficient correction action. In addition, large diameter wells are being installed on the West and South Perimeter in an attempt to prevent the migration of landfill gas off-site. Gas probes GP-E and GX-9 have been hooked into the mallard lake methane recovery manifold to remove gas at the south perimeter and determine the Radius of Influence in this area. Radius of influence analysis has been completed on the western and southern perimeter. Preliminary data indicates that draw down of groundwater below the W1/W2 clay layer creates a vadose zone which could allow vapor gas to migrate to extraction wells. Large diameter wells LDE-1 and LDE-2 were installed the week of March 21 and will be connected into the existing methane recovery system. It appears that the wells will have to be de-watered with pumps and the liquid will be piped into the leachate collection 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. \

Water levels contours of the W1/W2 have been completed by STS and results will be in the temporary probes the week of March 24.

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 are pending.

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 are pending.

BFI and their public relations contractors Reputation Partners, Inc. have scaled back residential screening scheduling due to repetitive efforts to contact residents within the investigation area. During this reporting period, nine homes were screened and had explosive gas meters installed (at the discretion of the residents). To date, 239 homes have been screened, 205 explosive gas detectors installed and 309 total homes have been visited. Refer to Figure 1-Residential Screening Summary_031408 and Table 1 – Residential Screening Summary_031408).

Residential slam-bar sampling has been deferred due to weather restrictions, however, STS has access to over 40 properties to conduct the sampling as a result of residential screening and gas meter installation. Sampling is schedule to resume once weather and ground conditions are favorable.

The next project update meeting with BFI, U.S. EPA and other agencies will be held March 31, 2008 and April 10, 2008 at 2:00 pm to allow STS and BFI to continue analyzing and defining the extent and nature of the landfill gas migration as well as proposed corrective action measures. Field data obtain during this period (from radius of influence, pump tests, shut-in tests, and groundwater sampling results) will be interpreted and incorporated into the final landfill gas corrective action and mitigation plan.

Planned Removal Actions

- STS has requested approval from USEPA to conduct a Shut-In Test on original CPT probes with methane detection to determine the radius of influence and potential hydraulic continuity of the methane gas. Summa can results of the VOC found in the landfill gas will be evaluated by U.S. EPA and IEPA prior to allowing BFI to vent any gas or conduct the shut in test.
- 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.

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 complete installation of the large diameter wells on the west and south side of the landfill.
- STS collected a composite landfill gas sample using summa canister from the gas to energy plant.
- STS will install a replacement well at CP-12D location.
- 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 install and sample shallow soil gas (slam bar method) near residential homes (based on access); and
 - BFI and STS may install and sample sub-slab sampling ports (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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