United States Environmental Protection Agency
Region V
POLLUTION REPORT

Date: Tuesday, January 22, 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.:	8	**Site #:**	B5MH
Reporting Period:	January9-17, 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

EPA's Emergency Response Branch was requested to assist the IEPA in March of 2007 at the Wayne Township Ground Water site in Northern DuPage County, Illinois. U.S. EPA upon reviewing available data and well logs from the Mallard Lake landfill discovered a boring conducted by BFI contractor Hearst and Assoc in April of 2006 with methane levels of 17.9% concentration within 50 feet of a residential neighborhood on the West perimeter of the landfill. U.S. EPA requested the operator of the landfill, BFI, and owner of the landfill, DuPage Forest District, to conduct an investigation outside the West boundary, South Boundary and on the Right-of Way to determine the extent of the gas migration off site. This landfill gas has historically contained high levels of Volatile Organic Compounds including vinyl chloride which was reported by the landfill operator to lead to ground water contamination exceeding the Maximum Concentration Limit (MCL) for vinyl chloride at the Western perimeter of the landfill.

During the first phase of the investigation conducted November 6-10, high levels of methane exceeding 75% in concentration were detected in temporary monitoring wells at locations within 30-50 feet from residential homes. The permeable zone containing this methane is 40-45 beneath the ground surface. BFI consultants STS, began installation of shallow monitoring wells on November 31, 2007.

Current Activities

During this reporting period, WESTON provided oversight of 18 Cone penetrometer (CPT) and three rotary drill probe installations and methane monitoring (CP25, 29, 30 intermediate and 30 deep, 33 deep and 33 shallow 39, 40, 41, 42, 42 deep, 43, 45, 46, 47, 54, 55, 56, CP20-2",CP5-2" and 12D,) installations. At these locations, the utilities were cleared by the Hanover Park Public Works Department vacuum truck. The depth of up to 6 feet was vacuum extracted to check for presence of subsurface utility at each location. Prior to starting the CPT installation each vacuum location was filled with sand. Refer to Table 2 and Figure 2, for information on CPT Installations. The following CP probe field data was documented during this reporting period:

• CP locations CP29, CP33 deep and CP33 shallow were pushed at Victor and Zeppelin Drive on January 9th; methane was detected at 0.6% at CP29; CP 33 deep and 33 shallow detected methane at 37.4% and 39.9 % respectively with low oxygen levels at 1.7% and 1.8%;

• CP probes CP40, CP43, and CP42 were installed on January 10th. These probes were monitored with a MultiRae five gas instrument due to a malfunction with the LandTech methane meter. CP43 detected an LEL of 2% and oxygen of 1.2% at a depth of 59 feet; CP42 displayed an LEL of 16%, carbon monoxide of 83 ppm and a low oxygen level of 11.9 % at a total push depth of 54.9 feet; CP40 at a total push depth of 52 feet, had an LEL of 25%;

• On January 11, 2008, STS abandoned existing probe CP26 due to inadequate PVC sealing during initial push. During probe push at CP30 alternating sandy silt and silty sand was observed at a depth of 25 to 38

feet; clay was observed at a depth of 38 to 47 feet; and sand was observed at a depth of 47 to 49 feet. The screen for the monitoring probe was set from 45 to 50 feet and 9.4% methane was measured in the open bore hole. Subsequent measurement after installation of the probe did not detect any methane at this location. An intermediate probe CP30I was installed just north of CP30 to monitor the permeable zone from 25 to 28 feet.

• On January 14th, drilling with a rotary drill HAS was completed at CP5-2" to 20 feet bgs; methane monitoring was not conducted;

• On January 15th, well probes CP45, CP47, CP54, and CP55 were pushed and installed in the southern portion of Hawk Hollow Forest Preserve (west of Morton Road); Methane was detected at CP47 at 25% at a depth of 53.6 feet. Gas probes CP54 and CP55 had methane detections of 6.2% and 6.4% respectively; no methane was detected at CP45; Probe CP12D was installed just south of CP12 using the rotary drill rig to a depth of 65 feet bgs.

• Gas probes CP56 and CP42D were installed on January 16th to respective depths of 48 and 72 feet; methane gas was not detected at neither locations during open borehole monitoring; Probe CP20-2" was installed near CP20 using the rotary drill rig to a depth of 50 ft; methane gas was not measured during initial installation.

• Methane was detected at CP47 at 25% at a depth of 53.6 feet. Additional locations CP54, CP55 and CP56 were proposed approximately 200-300 west of CP47(in Hawk Hollow Forest Preserve) to continue the westward gas migration investigation; CP54 and CP55 had methane detections of 6.2% and 6.4% respectively;

• CPT probes CP41, CP39, and CP25 were installed January 17th at respective depths of 55 and 54 feet; methane gas was not detected during open borehole monitoring.

The W1/W2 clay layer through which the methane is migrating has either sand, sandy silt or silty sand and the methane appears to be following a path of least resistance and/or perhaps not traveling in one direction. Because of this complexity the distance between CP probes has been adjusted to approximately 200 to 300 feet.

From January 14th-17th, STS and WESTON conducted a comprehensive round of methane gas probe monitoring. Refer to Figure 2 for partial methane gas results. Approximately 4.9% methane was detected at CP43 (on Green Bridge Lane) on January 14th. In light of this detection, three additional CP probes (CP 53, 52 and 51) were proposed for push and installation west of CP43 location. An LEL of 2% was initially detected at CP43 on January 10th, though no methane was measured.

From November 26, 2007 through January 17, 2008, approximately 79 methane gas probes (CPT probes and shallow wells) have been installed in the investigation areas west of the Mallard Lake Landfill. Approximately 54 of the 79 probes initially had no methane detection during installation. STS along with the CPT crew and WESTON will continue CPT probe installations and monitoring in the subdivisions west of County Farm Road during the next week (Refer to Figure 2). These probe installations will provide additional information to further assess the westward extent of methane landfill gas migration. Based on Figure 2, the westward investigation area is bound by Green Bridge Lane

Residential screening continued during this reporting period with a total of six homes screened and no explosive gases detected. Refer to Figure 1- Residential Screening Summary. In addition, explosive gas detectors were installed at four of the six homes screened. The detectors were installed after obtaining consent from the respective residents. The homes were located along Zeppelin Drive, McCormick and Goddard Lane. These detectors are similar in size and operation to a smoke detector, and can detect the presence of methane, propane and other explosive gases. The detectors sound an audible alarm when the gases reach a concentration that is 25% LEL. All residents are given written and verbal instructions on what to do when the alarm sounds. BFI has prepared a contingency plan with emergency contact information if an alarm sounds. In the contingency plan, residents are advised to call 911 which will notify the Hanover Park Fire Department.

On January 10th, an explosive gas meter alarmed at 1802 Goddard Lane. The resident notified the Hanover Park Fire Department (HPFD) and followed instructions to vacate the home. Investigation by the HPFD revealed potential maintenance issues with the furnace and advised the owner to have the unit assessed. On January 11th, STS and WESTON personnel re-screened the residence living room and utility room with a MultiRae and TVA 1000 FID. The screening resulted in no LEL detections and normal oxygen levels. However, the FID level slightly increased around the furnaces gas coupler.

To date, the U.S. EPA, STS (BFI contractors) and WESTON have screened 138 homes, installed 114 explosive gas detectors and visited a total of 213 homes (See Figure 1-Residential Screening Summary). BFI's public relations consultants, Reputation Partners continue to schedule the residential screening and gas meter installations with field support by STS and WESTON personnel.

No slam-bar sampling was conducted during this reporting period, but STS continues to offer the investigation to residents during residential screening and gas meter installation.
U.S. EPA is meeting weekly on Monday's at 2:00 PM to inform and update pertinent parties and agencies involved. The next meeting will be held January 22, 2008.

Planned Removal Actions

U.S. EPA along with state and local representatives held a public meeting on Thursday, January 17, 2008 at the Horizon Elementary School at 1701 Greenbrook Boulevard, Hanover Park, Illinois to discuss the Administrative Settlement with the Mallard Lake Landfill site (See Mallard Lake AOC Advertisement).

Next Steps

• BFI and STS will continue screening homes and installing explosive gas meters based on appointments scheduled by Reputation Partners public relations; and
• BFI and STS will continue methane gas migration investigation using the CPT rig and conducting weekly methane gas monitoring of existing and newly installed probes; and
• BFI and STS will conduct soil gas sampling at designated shallow gas probe locations; and
• BFI and STS will install and sample shallow soil gas near residential homes (based on access); and
• BFI and STS will install and sample sub-slab sampling ports (based on access); and
• BFI and STS, will prepare a plan to improve and expand the methane recovery system and to address methane that has migrated off the property and;
• STS to conduct pump test and Shut-Ins Test; and
• U.S.EPA and WESTON will continue to provide oversight of the work performed by BFI and STS.

Key Issues

• Obtaining access to private homes to install shallow soil gas monitoring probes and sub-slab ports has been problematic;
• Clearing utilities along the right of ways in ample time for CPT installations

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