

2012 Fact Sheet

AUBURN ROAD LANDFILL

LONDONDERRY, NEW HAMPSHIRE



1. SITE DESCRIPTION

The Auburn Road Landfill is located on Auburn Road in the Town of Londonderry, New Hampshire (Site). Located within the property boundaries are three separate disposal areas that received a mix of domestic wastes and various hazardous wastes until the landfill was closed in 1980. These areas include the former Londonderry Town Dump, the former Tire Disposal Area, and the former Solid Waste Landfill.

2. SUMMARY OF MONITORING RESULTS FOR 2012

The Long-Term Environmental Monitoring Program (LTEMP) and Groundwater Management Zone (GMZ) permit designate monitoring points and laboratory analysis for the 2012 monitoring program, which was implemented during two monitoring events (July and October of 2012).

2.1 JULY 2012 MONITORING EVENT

The July 2012 monitoring event consisted of the following:

- Twenty five monitoring wells sampled for arsenic.
- Two monitoring wells sampled for volatile organic compounds (VOCs).
- Four piezometers sampled for both arsenic and VOCs.
- Four surface water locations sampled for total arsenic.
- Water table elevation measurements in 43 monitoring wells.

2.2 OCTOBER 2012 MONITORING EVENT

The October 2012 monitoring event consisted of the following:

- Thirty four monitoring wells sampled for arsenic.
- Five monitoring wells sampled for VOCs.
- Four piezometers sampled for both arsenic and VOCs.
- Five surface water locations sampled for total arsenic.
- One surface water location sampled for dissolved arsenic.
- Four sediment locations sampled for arsenic and sediment toxicity.
- Water table elevation measurements in 47 monitoring wells.

2.3 ANALYTICAL RESULTS-JULY 2012

Arsenic was detected in 14 of the 29 groundwater monitoring locations (monitoring wells and piezometers) and in 1 of the 4 surface water samples. Volatile organic compounds were detected in 5 of the 6 monitoring wells and piezometers sampled.

2.4 ANALYTICAL RESULTS-OCTOBER 2012

Arsenic was detected in 20 of the 38 monitoring locations (monitoring wells and piezometers), in 1 of the 5 surface water samples (dissolved arsenic was not detected), and in 3 of the 4 sediment samples. Volatile organic compounds were detected in 8 of the 9 monitoring wells and piezometers sampled.

Summaries of groundwater, surface water, and sediment sampling data are presented in the following tables.

Summary of Arsenic Detections in Groundwater and Surface Water Auburn Road Landfill (2012)

Well ID	Arsenic Concentration (µg/L)	
	July	October
GZ-1-2R	51.2	61.1/59.5
GZ-6-2R	ND	5.0
GZ-6-3R	167	161
GZ-9-4R	ND	88.2
MW-104B	117/112	104/103
MW-303B	39.4	38.5
NUS-1-2	167	174
NUS-2-2	NS	91.7
PZ-218	376	214
MW-211B	618	366
MW-212B	31.7	33.8/33.1
MW-213	130/124	115
C-1	ND	281
MW-212A	27.1	28.1
GZ-1-3R	11.5	10.9
MW-302A	11.3	23.7
MW-210A	5.2	4.9
MW-106B	NS	5.7
WPP1	6.5	7.2
CB1	88.9	100

Notes:

ND = not detected

NS = not sampled

µg/L = micrograms per liter

RESULT/RESULT = primary sample result/duplicate sample result

Concentrations shown in **BOLD** exceed the regulatory criteria of 10 µg/L for groundwater.

Summary of Volatile Organic Compound Detected in Groundwater Auburn Road Landfill (2012)

VOC		Benzene	Chlorobenzene	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	Cis-1,2-Dichloroethene	Ethyl ether	Tetrachloroethene	Tetrahydrofuran	1,1,1-Trichloroethane	Trichloroethene	Vinyl chloride
GZ-1-3R	July	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	October	0.55	ND	2.8	ND	4.2	ND	ND	7.1	ND	18.6	ND	ND	ND
MW-102A	July	ND	ND	ND	ND	ND	ND	17.2	ND	71.1	ND	ND	52.2	ND
	October	ND/ ND	ND/ ND	ND/ ND	ND/ ND	ND/ ND	ND/ ND	18.2/ 18.0	ND/ ND	57.3/ 61.3	ND/ ND	ND/ ND	46.5/ 51.4	ND/ ND
NUS-1-2	July	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	October	0.98	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NUS-2-2	July	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	October	0.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-303A	July	ND	ND	ND	12.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
	October	ND	ND	ND	13.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
WPP-1	July	ND	ND	4.0	ND	ND	ND	3.6	ND	ND	ND	ND	ND	1.8
	October	ND	ND	2.8	ND	ND	ND	3.2	ND	ND	ND	ND	ND	3.5
WPP-2	July	ND	ND	ND	30.8	ND	10.4	ND	ND	1.0	ND	3.4	1.7	ND
	October	ND	ND	ND	31.7	ND	7.8	ND	ND	ND	ND	3.4	ND	ND
WPP-3	July	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
	October	ND	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	1.3	ND

Notes: Concentrations reported in micrograms/liter (µg/L)
NS = not sampled
ND = not detected
RESULT/RESULT = Primary sample result/duplicate sample result
Concentrations in **BOLD** exceed regulatory criteria

Summary of Arsenic Detections in Sediment Auburn Road Landfill (2012)

Station ID	Sample Type	Arsenic Concentration (mg/kg)	
		July	October
SD-2	Sediment	NS	3.4
SD-4	Sediment	NS	ND
SD-5	Sediment	NS	4.7/3.6
SD-9	Sediment	NS	373

Notes: NS = Not Sampled
 ND = Not Detected
 RESULT/RESULT = Primary sample result/duplicate sample result

3. ACTIVITIES CONDUCTED DURING 2012

The following activities were conducted during 2012:

- The spring sampling event was conducted in July 2012 as outlined in Section 2. A data submittal was prepared for the United States Environmental Protection Agency (EPA), the New Hampshire Department of Environmental Services (NHDES), and the Town of Londonderry.
- The fall sampling event was conducted in October 2012 as outlined in Section 2. The *2012 Annual LTEMP Report*, dated 12 September 2013, was prepared and submitted to EPA, NHDES, and the Town of Londonderry.
- Operation and maintenance inspections were conducted in June and November 2012. The inspections included evaluation of the drainage swales, beaver activity, integrity of the landfill surface, and the conditions of the gas monitoring wells and vents, site fencing, and access roads. Results of the inspection can be found in the *2012 Source Control Operation and Maintenance Report* submitted to EPA and the Town of Londonderry on 22 February 2013.
- Two rounds of soil gas monitoring were conducted in April 2012 and November 2012. Soil gas monitoring involved the measurement of soil gas parameters from three gas vents at each of the landfills and at four boundary gas wells located along Auburn Road. The following parameters are measured at each of the 10 locations:
 - Percentage of methane by volume of air;
 - Lower explosive limit for methane;
 - Percentage of carbon dioxide by volume of air;

- Percentage of oxygen by volume of air;
- Concentration of hydrogen sulfide in parts per million (ppm); and
- Concentration of VOCs (ppm).

Results of soil gas monitoring indicated that the waste materials in the three landfills continue to produce methane and hydrogen sulfide; however, these gases are not migrating off-site. Results of the inspection can be found in the *2012 Source Control Operation and Maintenance Report* submitted to EPA and the Town of Londonderry on 22 February 2013.

- Throughout the year, Town officials inspected the property and periodically repaired fencing, removed debris, vegetation, and beaver dams from drainage swales, performed maintenance on the access roads, and cut the grass on the three landfills.
- The fifth Five-Year Review of the Site was completed by the EPA in September 2012. The Five-Year Review conducted in 2012 identified several issues and associated action items that, could help establish whether the current groundwater remedy is protective of human health in the long-term. Issues and their associated action items included the following:

Issue 1: Timeframe to reach Site-wide Interim Cleanup Levels (ICLs) is expected to be considerably longer than originally projected, and groundwater interactions with nearby surface waters/sediments need further investigation.

Recommendation: Schedule a meeting between the Agencies, Auburn Road Performing Parties Group (ARPPG), and the United States Geologic Survey (USGS) to discuss the required follow-up actions necessary to expedite the time to reach groundwater cleanup levels, and further investigate groundwater interactions with nearby surface waters/sediments.

Activity to date: Referenced meeting is scheduled for 3 October 2013.

Issue 2: Arsenic exceeds 10 ppb MCL/ICL beyond the current GMZ boundary in a shallow piezometer

Recommendation: Expand the institutional control (GMZ) boundary north of Auburn Road.

Activity to date: On 12 October 2012, ARPPG submitted an application for the renewal of the existing GMZ Permit GWP-198803001-L-001. The GMZ boundary was modified to include an additional property owned by the Town of Londonderry (Tax Map 18 Lot 34) located directly to the north of Auburn Road. On 13 December 2012, NHDES issued

GMZ Permit GWP-198803007-L-002 to ARPPG to continue monitoring the past discharge of arsenic and VOCs at the Site.

Issue 3: Limited groundwater data and new toxicity values for several VOCs identified at the Site requires reassessment.

Recommendation: Gather additional VOC data from the Site in order to reassess potential vapor intrusion pathway, and achievement of ICLs.

Activity to date: None at this time.

4. PROGRESS TOWARDS REMEDIATION

Groundwater arsenic concentrations remain variable across the Site. Groundwater containing VOCs at concentrations in excess of regulatory criteria is limited to one monitoring well (MW-102A) and one piezometer (WWP-2). Concentrations of trichloroethene and tetrachloroethene in MW-102A and 1,1-dichloroethene in WWP-2 remain above their respective water quality standards.

Arsenic in surface water does not represent a significant concern due to the low/non-detect concentrations observed. Sediment toxicity sampling has indicated that while adverse impacts are observed in sediment collected from the Site, they do not appear to be the result of arsenic contamination in sediment as concentrations of arsenic observed during the 2012 monitoring program were below historical concentrations. Furthermore, consistent adverse impacts have not been observed at specific sample locations throughout the Site.

5. CHANGES TO THE CONSENT DECREE AND/OR SCOPE OF WORK

Deviations and/or modifications to the Consent Decree and/or the Scope of Work during the year 2012 include the following:

- Four piezometers (CB-1, WPP-1, WPP-2, WPP-3) installed by USGS were included in the 2012 monitoring program and sampled for both total arsenic and VOCs.

- The Spring sampling effort, typically performed in April, was delayed until July to allow additional time to coordinate access to monitoring and sampling locations on the Whispering Pines Mobile Home Park property. Access to the monitoring and sampling locations on the Whispering Pines Mobile Home Park property was not granted in time for the spring monitoring round; therefore, those wells were not sampled.

6. SITE REPOSITORIES

Information on the site activities, including reports, can be accessed at the Leach Library, 276 Mammoth Road, Londonderry, NH 03053, and the EPA New England Records Center, 5 Post Office Square, Suite 100, Boston, MA 02109.

7. CONTACTS

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8. SCHEDULE FOR PUBLIC MEETINGS

No public meetings have been requested by EPA or NHDES at this time.