

Table 1-1
Contaminants of Concern (COC) Cleanup Level
Shepley's Hill Landfill
Devens, Massachusetts

COC	Cleanup Level (µg/L)	Selection Basis
Arsenic	10	MCL ⁽¹⁾
Chromium	100	MCL
1,2-Dichlorobenzene	600	MCL
1,4-Dichlorobenzene	5	MCL
1,2-Dichloroethane	5	MCL
Lead	15	Action Level
Manganese	1715	Background ⁽²⁾
Nickel	100	MCL
Sodium	20000	Health Advisory
Aluminum	6870	Background
Iron	9100	Background

Notes:

1) Revised from ROD clean-up level of 50 µg/L

2) Revised ROD clean-up level based on background evaluation

MCL = Maximum Contaminant Level

Table 2-1
Annual Landfill Gas Monitoring
Shepley's Hill Landfill
Devens, Massachusetts
November 2013

Date: 11-13-12

Weather: Sunny, 40 Degrees F

Field Team: Jonathan Chaffee / Matt Bedford

ID	Time	Initial Readings							Purge Rate (lpm)	Purge Time (sec)	Post Purge Readings							Bar. Pres. ("Hg)
		VOC (ppm)	O ₂ (%)	H ₂ S (ppm)	LEL (%)	CO (ppm)	CO ₂ (%)	CH ₄ (%)			VOC (ppm)	O ₂ (%)	H ₂ S (ppm)	LEL (%)	CO (ppm)	CO ₂ (%)	CH ₄ (%)	
GV-1	8:46	0.0	20.9	0	0	0	0.1	0.0	4	167	0.0	20.9	0	0	0	0.2	0.0	29.98
GV-2	8:56	0.0	20.9	0	0	0	0.1	0.0	4	167	0.0	20.9	0	0	0	0.1	0.0	29.98
GV-3	9:09	0.1	20.9	0	0	0	0.1	0.0	4	167	0.0	20.9	0	0	0	0.1	0.0	29.98
GV-4	9:18	0.0	20.9	0	0	0	0.1	0.0	4	167	0.0	20.9	0	0	0	0.1	0.0	29.98
GV-5	9:48	0.0	20.9	0	0	0	0.1	0.0	4	167	0.0	20.9	0	0	0	0.1	0.0	29.98
GV-6	9:29	0.0	20.9	0	0	0	0.1	0.0	4	167	0.0	20.9	0	0	0	0.1	0.0	29.98
GV-7	9:57	0.0	20.7	0	0	0	0.1	0.0	4	167	0.0	20.5	0	0	0	0.1	0.0	29.98
GV-8	10:04	0.0	20.3	0	0	0	0.1	0.0	4	167	0.0	20.2	0	0	0	0.1	0.0	29.98
GV-9	9:39	0.0	20.9	0	0	0	0.1	0.0	4	167	0.0	20.9	0	0	0	0.1	0.0	29.98
GV-10	10:22	0.0	20.7	0	0	0	0.2	0.0	4	167	0.0	20.6	0	0	0	0.1	0.0	29.98
GV-11	10:14	0.0	20.6	0	0	0	0.1	0.0	4	167	0.0	20.6	0	0	0	0.2	0.0	29.98
GV-12	11:00	0.0	20.4	0	0	0	0.2	0.0	4	167	0.0	20.6	0	0	0	0.2	0.0	29.98
GV-13	11:11	0.1	20.6	0	0	0	0.4	0.0	4	167	0.0	20.5	0	6	0	0.4	0.0	29.98
GV-14	12:30	0.2	11.2	0	>100	0	6.3	7.9	4	167	0.3	8.1	0	>100	0	8.3	10.3	29.91
GV-15	14:39	0.3	6.4	0	75	0	10.5	7.9	4	375	0.2	4.8	0	>100	0	11.4	8.6	29.91
GV-16	10:45	0.0	20.8	0	0	0	0.3	0.0	4	375	0.0	20.0	0	0	0	0.3	0.0	29.98
GV-17	10:30	0.0	20.5	0	0	0	0.3	0.0	4	375	0.0	20.0	0	0	0	0.3	0.0	29.98
GV-18	14:23	0.2	5.9	0	>100	0	15.5	16.2	4	375	0.2	3.2	0	>100	0	17.9	18.9	29.91
LGP-01-01X	7:36	0.0	20.8	0	0	0	0.4	0.0	2	83	0.0	20.9	0	0	0	0.5	0.0	29.98
LGP-09-01XA	7:42	0.0	20.9	0	0	0	0.7	0.0	2	157	0.0	20.9	0	0	0	0.7	0.0	29.98
LGP-09-01XB	7:50	0.2	20.9	0	0	0	0.2	0.0	2	259	0.0	20.9	0	0	0	1.0	0.0	29.98
LGP-01-02X	8:02	0.0	20.9	0	0	0	0.9	0.0	2	83	0.0	20.8	0	0	0	0.9	0.0	29.98
LGP-09-02X	8:07	0.2	20.9	0	0	0	1.1	0.0	2	204	0.1	20.6	0	0	0	1.3	0.0	29.98
LGP-01-03X	8:15	0.0	20.8	0	0	0	0.9	0.0	2	83	0.0	20.7	0	0	0	0.9	0.0	29.98
LGP-09-03X	8:20	0.1	20.7	0	0	0	1.2	0.0	2	167	0.0	20.6	0	0	0	1.3	0.0	29.98
LGP-01-04X	8:27	0.0	20.9	0	0	0	0.5	0.0	2	83	0.0	20.9	0	0	0	0.5	0.0	29.98
LGP-09-04X	8:33	0.1	20.9	0	0	0	0.6	0.0	2	120	0.0	20.8	0	0	0	0.7	0.0	29.98
LGP-05-05X	14:10	0.2	17.1	0	13	0	7.6	0.4	2	93	0.1	18.1	0	2	0	5.6	0.0	29.91
LGP-09-05X	14:15	0.8	10.4	0	42	0	14.2	2.4	2	167	0.1	11.4	0	0	0	13.0	0.0	29.91
LGP-05-06X	14:01	0.1	18.7	0	2	0	2.6	0.0	2	93	0.1	19.7	0	2	0	2.7	0.0	29.91
LGP-09-06X	14:06	0.1	15.5	0	1	0	5.8	0.0	2	120	0.1	15.7	0	1	0	5.8	0.0	29.91
LGP-05-07X	13:55	0.1	19.8	0	1	0	2.0	0.0	2	65	0.0	19.6	0	0	0	2.7	0.0	29.91
LGP-05-08X	13:42	0.1	17.7	0	0	0	5.2	0.0	2	93	0.0	14.1	0	0	0	8.6	0.0	29.91
LGP-09-08X	13:48	0.2	7.7	0	7	0	14.6	0.2	2	185	0.1	1.8	0	3	0	18.7	0.0	29.91

Table 2-1
Annual Landfill Gas Monitoring
Shepley's Hill Landfill
Devens, Massachusetts
November 2013

ID	Time	Initial Readings							Purge Rate (lpm)	Purge Time (sec)	Post Purge Readings							Bar. Pres. ("Hg)
		VOC (ppm)	O ₂ (%)	H ₂ S (ppm)	LEL (%)	CO (ppm)	CO ₂ (%)	CH ₄ (%)			VOC (ppm)	O ₂ (%)	H ₂ S (ppm)	LEL (%)	CO (ppm)	CO ₂ (%)	CH ₄ (%)	
LGP-05-09X	13:27	0.0	16.9	0	0	0	6.0	0.0	2	93	0.0	18.1	0	0	0	5.4	0.0	29.91
LGP-09-09X	13:32	0.2	11.9	0	0	0	10.2	0.0	2	185	0.0	5.2	0	0	0	15.0	0.0	29.91
LGP-05-10X	13:15	0.0	20.2	0	0	0	1.9	0.0	2	93	0.0	19.0	0	0	0	4.1	0.0	29.91
LGP-09-10X	13:20	0.1	15.0	0	0	0	8.3	0.0	2	148	0.0	14.3	0	0	0	8.9	0.0	29.91
LGP-05-11X	13:02	0.1	19.2	0	0	0	2.8	0.0	2	83	0.1	16.1	0	0	0	6.5	0.0	29.91
LGP-09-11X	13:10	0.4	12.2	0	0	0	9.1	0.0	2	139	0.1	14.0	0	0	0	8.7	0.0	29.91
LGP-05-13X	12:43	0.1	19.5	0	0	0	1.6	0.0	2	56	0.0	19.8	0	0	0	2.4	0.0	29.91
LGP-05-14X	12:53	0.1	15.2	0	0	0	7.2	0.0	2	93	0.0	14.2	0	0	0	8.7	0.0	29.91
LGP-09-15X	11:25	0.0	16.4	0	0	0	5.8	0.0	2	111	0.0	16.4	0	0	0	5.9	0.0	29.98

Notes:

VOC = Volatile Organic Compounds

O₂ = Oxygen

LEL = Lower Explosive Limit

CO = Carbon Monoxide

CO₂ = Carbon Dioxide

CH₄ = Methane

H₂S = Hydrogen Sulfide

"Hg = inches of Mercury

lpm = Liters per minute

sec = Seconds

ppm = Parts per million

% = Percentage

Table 2-2
Landfill Gas Probe
Construction Details
Shepley's Hill Landfill
Devens, Massachusetts

Gas Probe ID	Gas Probe Screen Interval (ft)	Screen Length (ft)
LGP-01-01X	6.4-7.4	1
LGP-09-01XA	7.0-17.0	10
LGP-09-01XB	19.0-28.0	9
LGP-01-02X	5.0-6.0	1
LGP-09-02X	6.0-21.0	15
LGP-01-03X	5.0-6.0	1
LGP-09-03X	6.0-18.0	12
LGP-01-04X	3.0-4.0	1
LGP-09-04X	4.0-9.0	5
LGP-05-05X	6.0-7.0	1
LGP-09-05X ⁽¹⁾	7.0-14.5	7.5
LGP-05-06X	6.0-7.0	1
LGP-09-06X	7.0-12.0	5
LGP-05-07X ⁽²⁾	3.0-4.0	1
LGP-05-08X	6.0-7.0	1
LGP-09-08X	7.0-19.0	12
LGP-05-09X	6.0-7.0	1
LGP-09-09X	7.0-19.0	12
LGP-05-10X	6.0-7.0	1
LGP-09-10X	7.0-14.0	7
LGP-05-11X	5.0-6.0	1
LGP-09-11X	7.0-14.0	7
LGP-05-13X	2.0-3.0	1
LGP-05-14X	6.0-7.0	1
LGP-09-15X	4.0-10.0	6

Notes:

(1) Bedrock was encountered at a depth of 15'. Proposed total depth (19.60') was unattainable due to refusal.

(2) Bedrock was encountered at a depth of 4'. Installation of additional gas probe was unattainable due to refusal.

Table 3-1
Operations Summary
Shepley's Hill Landfill GWTP
January 2013

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
1/1/2013	24	72,000	50.0	System online and operating
1/2/2013	8.5	27,200	53.3	Collected monthly sample. Offline at 0830 for CIP
1/3/2013	8.3	27,700	55.6	Global onsite to vac out FBRO. Replace broken air line fitting located inside air compressor. Top off oil in air compressor. Calibrate effluent pH probe, replace fill solution. Replace both bag filters. Restarted after CIP at 1447
1/4/2013	24	71,000	49.3	System online and operating. Primed polyer pump. Cleaned turbidity meter housing.
1/5/2013	24	71,600	49.7	System online and operating.
1/6/2013	24	72,000	50.0	System online and operating.
1/7/2013	24	71,600	49.7	System online and operating. Calibrate effluent pH probe. Flush out polymer skid. Inspect fire exit.
1/8/2013	24	71,400	49.6	System online and operating.
1/9/2013	23.9	71,600	49.9	System online and operating. System offline at due to MF Alarm.
1/10/2013	24	71,700	49.8	System online and operating.
1/11/2013	24	71,500	49.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
1/12/2013	24	71,500	49.7	System online and operating.
1/13/2013	24	71,700	49.8	System online and operating.
1/14/2013	24	71,400	49.6	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Calibrated effluent pH probe.
1/15/2013	24	71,500	49.7	System online and operating.
1/16/2013	24	71,700	49.8	System online and operating.
1/17/2013	24	71,400	49.6	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Global onsite for FBRO vac out.
1/18/2013	24	71,400	49.6	System online and operating. Chagned both bag filters. Adjusted sodium chlorite rotameter.
1/19/2013	24	71,900	49.9	System online and operating.
1/20/2013	24	71,400	49.6	System online and operating.
1/21/2013	24	71,900	49.9	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
1/22/2013	24	71,500	49.7	System online and operating.
1/23/2013	9.1	28,100	51.5	System offline at 0907 for CIP.
1/24/2013	1.0	4,900	81.7	System restarted after CIP at 1642. System offline at 1742 due to broken solenoid valve on potable water booster pump on ClO2 skid
1/25/2013	0	0	0.0	System offline due to broken solenoid valve.
1/26/2013	0	0	0.0	System offline due to broken solenoid valve.
1/27/2013	0	0	0.0	System offline due to broken solenoid valve.
1/28/2013	14	41,300	49.2	New solenoid valve on ClO2 skid installed and sytem online at 1000.
1/29/2013	24	72,500	50.3	System online and operating. Clean turbidity meter.
1/30/2013	24	71,500	49.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Replaced both bag filters
1/31/2013	24	71,100	49.4	System online and operating.

Total	592.8	1,776,000	
Total Available Hours	744	Average On-line Flow	49.9
Percent Online	80		

Note:

Flowrate in Gallons per Minute (GPM)

CIP - Clean in Place - Microfilters

FBRO - Filter Bed Roll Off

IPC - Inclined Plate Clarifier

MF - Micro-filter

ClO2 - chlorine dioxide

Table 3-1
Operations Summary - GWTP
February 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
2/1/2013	22.9	69,300	50.4	System offline at 1023 due to effluent sump high level alarm, effluent sump pump motor starter tripped out. Reset pump breakers. System online at 1033.
2/2/2013	24	72,000	50.0	System online and operating
2/3/2013	24	71,500	49.7	System online and operating
2/4/2013	23.2	68,400	49.1	System offline to clean chlorine gas rotameter.
2/5/2013	13.5	45,700	56.4	System offline at 0024 due to thickener level high alarm. Changed both bag filters, pumped down supernatant side of IPC. System online at 1000.
2/6/2013	10.2	32,700	53.4	Global onsite to vac out FBRO. System offline at 1048 due to contract issues. System prepared for short term shutdown
2/7/2013	0	0	0.0	System offline due to contract issues.
2/8/2013	0	0	0.0	System offline due to contract issues.
2/9/2013	0	0	0.0	System offline due to contract issues.
2/10/2013	0	0	0.0	System offline due to contract issues.
2/11/2013	0	0	0.0	System offline due to contract issues.
2/12/2013	0	0	0.0	System offline due to contract issues.
2/13/2013	0	0	0.0	System offline due to contract issues/started extended CIP.
2/14/2013	0	0	0.0	System offline for extended CIP.
2/15/2013	9.2	27,600	50.0	Removed ball valve located below pressure relief valve on compressed air tank. Changed both bag filters. System online at 1433 after CIP. System offline at 1503 due to effluent sump high level alarm. System online at 1519.
2/16/2013	24	72,300	50.2	System online and operating
2/17/2013	24	71,200	49.4	System online and operating
2/18/2013	24	71,400	49.6	System online and operating
2/19/2013	23.6	70,100	49.5	Sludge underdosing. Reprime polymer pump and increase polymer pump speed and stroke until dose is corrected. System offline at 1009 due to low effluent pH alarm. Alarm triggered during probe calibration. Replace pH probe internal fill solution. System online at 1030.
2/20/2013	22.6	68,400	50.4	System offline at 0722 due to effluent pump disagreement alarm. Drained effluent sump. Reset pump breakers. System online at 0847
2/21/2013	24	71,200	49.4	System online and operating
2/22/2013	24	71,900	49.9	System online and operating.
2/23/2013	24	71,600	49.7	System online and operating
2/24/2013	24	72,600	50.4	System online and operating
2/25/2013	24	71,800	0.0	System online and operating. Clean effluent T-pump ON/OFF/High Level floats located in Effluent sump. Calibrate effluent pH meter. Clean turbidity meter. Set effluent pump #2 as lead pump. Gilbride Electric onsite to inspect effluent pump motor starters. Cleaned motor starter contacts for both pumps. Motor starter for each effluent pump needs to be replaced. Breaker for one heater inspected, needs to be replaced.
2/26/2013	22.8	68,600	0.0	System offline at 0447 due effluent sump high level alarm. Effluent pump #2 had tripped on motor over load. Return effluent pump #1 to lead pump position. System online at 0556
2/27/2013	24	71,000	0.0	System online and operating. Global onsite to vac out FBRO. Replace broken PVC fittings on FBRO drain closest to polymer skid. Cleaned all accessible pipes during repair.
2/28/2013	24	71,400	49.6	System online and operating

Total	436	1,310,700	
Total Available Hours	672	Average On-line Flow	50.1
Percent Online	65		

Note:

Flowrate in Gallons per Minute (GPM)
CIP - Clean in Place - Microfilters
FBRO - Filter Bed Roll Off
IPC -Inclined Plate Clarifier
MF - Micro-filter

Table 3-1
Operations Summary - GWTP
March 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
3/1/2013	24	71,400	49.6	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
3/2/2013	24	71,500	49.7	System online and operating
3/3/2013	24	71,700	49.8	System online and operating
3/4/2013	8.8	28,300	53.6	System offline at 0848 for CIP. Calibrated Effluent pH probe.
3/5/2013	9.8	30,400	51.7	System restarted at 1412 following CIP. Changed left bag filter.
3/6/2013	24	71,200	49.4	System online and operating
3/7/2013	24	71,900	49.9	System online and operating
3/8/2013	16.2	48,700	50.1	System offline at 0148 due to Effluent pump alarm. Reset Effluent pump breakers. System restarted at 0940. Repalced both bag filters.
3/9/2013	24	71,800	49.9	System online and operating
3/10/2013	24	68,000	47.2	System online and operating
3/11/2013	24	71,700	49.8	System online and operating. Calibrated Effluent pH probe. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
3/12/2013	24	72,300	50.2	System online and operating
3/13/2013	24	71,600	49.7	System online and operating
3/14/2013	24	71,200	49.4	System online and operating. Global onsite for FBRO vac out. Repalced both bag filters. Cleaned MF basket strainer and air spraged IPC. Manually pumped excess sludge.
3/15/2013	24	71,700	49.8	System online and operating
3/16/2013	22.1	67,000	50.5	System offline at 2245 due Effluent Sump alarm.
3/17/2013	23.1	69,100	49.9	Pump breakers reset. System restarted at 0055.
3/18/2013	22.4	68,500	51.0	System offline at 1037 due to Effluent Sump alarm. Effluent pump breakers reset. System restarted at 1046. Cleaned MF basker strainer and air sparged IPC. Manually pumped excess sludge. System offline at 1354 due to Effluent Sump alarm. Effluent pump breakers reset. System restarted at 1441
3/19/2013	7.5	21,800	48.4	System offline at 0730 due to Effluent Sump Alarm. SCADA system did not notify operator of alarm.
3/20/2013	16.3	48,800	49.9	Effluent pump breakers reset. System restarted at 0743. Cleaned MF basket strainer.
3/21/2013	20.6	64,700	52.3	System offline at 1906 due to Effluent Sump alarm. Effluent pump breakers reset. System restarted at 2108. Left bag filter replaced.
3/22/2013	24	71,900	49.9	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Left bag filter replaced.
3/23/2013	24	71,900	49.9	System online and operating
3/24/2013	24	71,700	49.8	System online and operating
3/25/2013	24	70,700	49.1	Sytem online and operating. Effluent pH probe cleaned and calibrated. Manually pumped excess sludge. Gilbride Electric replaces motor starters and overloads on Effluent pumps. Clean MF basket strainer. Replace both bag filters.
3/26/2013	24	72,100	50.1	System online and operating
3/27/2013	7.9	25,300	53.4	System offline at 0752 for CIP. Global on site for FBRO vac out.
3/28/2013	8.3	25,000	50.2	System restarted at 1543 following CIP.
3/29/2013	24	71,200	49.4	System online and operating. Repalce right bag filter. Clean MF basket strainer and air spraged IPC. Clean turbidity meter housing. Manually pump excess sludge.
3/30/2013	24	71,200	49.4	System online and operating
3/31/2013	24	72,100	50.1	System online and operating

Total	643	1,926,400	
Total Available Hours	744	Average On-line Flow	49.9
Percent Online	86		

Note:

Flowrate in Gallons per Minute (GPM)

CIP - Clean in Place - Microfilters

FBRO - Filter Bed Roll Off

IPC - Inclined Plate Clarifier

MF - Micro-filter

Table 3-1
Operations Summary - GWTP
April 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
4/1/2013	23.6	70,000	49.4	System offline to clean ClO2 parker valve. Effluent pH probe cleaned and calibrated. Clean MF basket strainer and air sparged IPC. Manually pumped excess sludge.
4/2/2013	24	71,500	49.7	System online and operating.
4/3/2013	24	72,100	50.1	System online and operating. Cleaned MF basket strainer and air sprage IPC. Manually pumped excess sludge.
4/4/2013	24	71,200	49.4	System online and operating.
4/5/2013	24	71,800	49.9	System online and operating. Cleaned MF basket strainer and air spraged IPC. Manually pumped excess sludge. Replaced both bag filters.
4/6/2013	24	71,600	49.7	System online and operating.
4/7/2013	24	71,700	49.8	System online and operating.
4/8/2013	24	72,200	50.1	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
4/9/2013	24	71,400	49.6	System online and operating.
4/10/2013	23.1	71,100	51.3	System online and operating. Global onsite for FBRO vac out. System offline to inspect Cl2 regulators. Manually pumped excess sludge and air sparged IPC.
4/11/2013	24	75,000	52.1	System online and operating.
4/12/2013	23.5	69,300	49.1	System periodically offline to inspect and repair Cl2 regulators. Both bag filters replaced.
4/13/2013	24	72,100	50.1	System online and operating.
4/14/2013	24	71,900	49.9	System online and operating.
4/15/2013	24	70,800	49.2	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
4/16/2013	23.6	70,200	49.6	System offline for installation of rebuilt Cl2 regulator.
4/17/2013	9.8	30,200	51.4	System offline at 0945 for CIP.
4/18/2013	7.5	22,100	49.1	System online at 1629 following CIP. MF turbidity meter housing and strainer basket cleaned.
4/19/2013	24	71,800	49.9	System online and operating.
4/20/2013	24	72,400	50.3	System online and operating.
4/21/2013	24	71,400	49.6	System online and operating.
4/22/2013	24	72,000	50.0	System online and operating. Cleaned and calibrated effluent pH meter. Clean turbidity meter housing. Air sparged IPC and manually pumped excess sludge.
4/23/2013	24	71,100	49.4	System online and operating.
4/24/2013	23.9	70,800	49.4	System online and operating. Cleaned MF basket strainer and air sparged IPC. Global onsite for FBRO vac out. ATP offline for testing of emergency stop.
4/25/2013	24	71,600	49.7	System online and operating.
4/26/2013	24	71,800	49.9	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Replaced both bag filters.
4/27/2013	24	71,500	49.7	System online and operating.
4/28/2013	24	71,600	49.7	System online and operating.
4/29/2013	23.8	71,100	49.8	System offline during replacment of air fitting on MF basket strainer. Effluent pH probe cleaned and calibrated.
4/30/2013	24	72,300	50.2	System online and operating.

Total	686.8	2,055,600	
Total Available Hours	720	Average On-line Flow	49.9
Percent Online	95		

Note:

Flowrate in Gallons per Minute (GPM)
CIP - Clean in Place - Microfilters
FBRO - Filter Bed Roll Off
IPC - Inclined Plate Clarifier
MF - Micro-filter
ClO2 - chlorine dioxide
Cl2 - chlorine gas

Table 3-1
Operations Summary - GWTP
May 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
5/1/2013	24	71,600	49.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
5/2/2013	24	71,100	49.4	System online and operating.
5/3/2013	24	72,100	50.1	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Repalced both bag filters.
5/4/2013	24	71,300	49.5	System online and operating.
5/5/2013	24	72,400	50.3	System online and operating.
5/6/2013	8.5	26,000	51.0	System offline at 0831 for extended CIP.
5/7/2013	0	0	0.0	System offline for extended CIP.
5/8/2013	8.9	25,700	48.1	Global onsite for FBRO vac out. System restarted at 1507 following CIP. Cleaned MF basket strainer and air sparged IPC.
5/9/2013	24	72,100	50.1	System online and operating.
5/10/2013	24	71,200	49.4	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manully pumped excess sludge. Repalced both bag filters.
5/11/2013	24	72,200	50.1	System online and operating.
5/12/2013	24	71,100	49.4	System online and operating.
5/13/2013	24	72,000	50.0	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Repalced left bag filter.
5/14/2013	24	70,900	49.2	System online and operating.
5/15/2013	23.8	71,600	50.1	System offline for ClO2 regulator repairs. Cleaned MF basket strainer. Manually pumped excess sludge. Replaced both bag filters.
5/16/2013	24	71,200	49.4	System online and operating.
5/17/2013	15.5	26,600	28.6	System offline at 0833 for extended CIP.
5/18/2013	0	0	0.0	System offline for extended CIP.
5/19/2013	0	0	0.0	System offline for extended CIP.
5/20/2013	7.6	22,100	48.5	System restarted at 1624 following CIP activities. Inspected and cleaned SDV valve.
5/21/2013	24	72,100	50.1	System online and operating.
5/22/2013	22.8	68,000	49.7	Global onsite for FBRO vac out. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. System offline from 1350-1501 to inspect ClO2 skid and replace check valve below on ClO2 skid.
5/23/2013	24	71,200	49.4	System online and operating.
5/24/2013	10.3	31,300	50.6	Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. System offline at 1019 to inspect air header issues.
5/25/2013	0	0	0.0	System offline while waiting for air header replacement parts.
5/26/2013	0	0	0.0	System offline while waiting for air header replacement parts.
5/27/2013	0	0	0.0	System offline while waiting for air header replacement parts.
5/28/2013	2.6	8,100	51.9	System online at 2122 following repairs to air header.
5/29/2013	24	71,700	49.8	System online and operating.
5/30/2013	24	71,200	49.4	System online and operating.
5/31/2013	22.5	67,300	49.9	System offline to trouble shoot Cl2 flow issues. Clean ClO2 skid eductor and replace Cl2 hose ends. Clean and calibrate effluent pH meter.

Total	506.5	1,492,100	
Total Available Hours	744	Average On-line Flow	49.1
Percent Online	68		

Note:

Flowrate in Gallons per Minute (GPM)
CIP - Clean in Place - Microfilters
FBRO - Filter Bed Roll Off
IPC -Inclined Plate Clarifier
MF - Micro-filter
ClO2 - chlorine dioxide
Cl2 - chlorine gas

Table 3-1
Operations Summary - GWTP
June 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
6/1/2013	24	71,200	49.4	System online and operating.
6/2/2013	24	72,000	50.0	System online and operating.
6/3/2013	24	71,800	49.9	System online and operating. Clean and calibrated MF and effluent pH meters. Air sparged IPC and manually pumped excess sludge.
6/4/2013	24	71,900	49.9	System online and operating.
6/5/2013	21.4	61,500	47.9	Global onsite for FBRO vac out. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. System offline for cleaning of Cl2 and Sodium Chlorite parker valves inspection and cleaning.
6/6/2013	24	71,300	49.5	System online and operating.
6/7/2013	24	71,300	49.5	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Replaced left bag filter.
6/8/2013	24	71,900	49.9	System online and operating.
6/9/2013	24	72,100	50.1	System online and operating.
6/10/2013	24	71,600	49.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Replaced left bag filter. Manually pumped excess sludge.
6/11/2013	24	71,200	49.4	System online and operating.
6/12/2013	11.4	35,200	51.5	System offline at 1125 for CIP.
6/13/2013	8.0	24,200	50.4	System online at 1559 following completion of CIP activities.
6/14/2013	24	71,100	49.4	System online and operating. Replace both bag filters and clean MF basket strainer. Clean turbidity meter housing.
6/15/2013	24	72,300	50.2	System online and operating.
6/16/2013	24	72,000	50.0	System online and operating.
6/17/2013	24	71,000	49.3	System online and operating. Clean and calibrated effluent pH
6/18/2013	24	72,000	50.0	System online and operating.
6/19/2013	24	72,900	50.6	Global onsite for FBRO vac out. Cleaned MF basket strainer and air sparged IPC.
6/20/2013	24	72,700	50.5	System online and operating.
6/21/2013	24	71,500	49.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Replaced both bag filters.
6/22/2013	24	71,900	49.9	System online and operating.
6/23/2013	24	72,000	50.0	System online and operating.
6/24/2013	23.9	70,800	49.4	System offline for inspection and testing of potable water line. Cleaned and calibrated effluent pH meter. Air sparged IPC. Manually pumped excess sludge.
6/25/2013	24	72,100	50.1	System online and operating.
6/26/2013	24	72,000	50.0	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
6/27/2013	24	71,200	49.4	System online and operating.
6/28/2013	23.1	68,900	49.7	System offline for installation of new Cl2 regulator and cleaning of Cl2 piping. Cleaned MF basket strainer and air sparged IPC. Replaced both bag filters. Manually pumped excess sludge.
6/29/2013	24	72,100	50.1	System online and operating.
6/30/2013	24	72,000	50.0	System online and operating.

Total	687.8	2,055,700	
Total Available Hours	720	Average On-line Flow	49.8
Percent Online	96		

Note:

Flowrate in Gallons per Minute (GPM)
CIP - Clean in Place - Microfilters
FBRO - Filter Bed Roll Off
IPC - Inclined Plate Clarifier
MF - Micro-filter
Cl2 - chlorine gas

Table 3-1
Operations Summary - GWTP
July 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
7/1/2013	8.8	26,500	50.2	Clean and calibrate effluent pH meter. System offline at 0846 for CIP activities.
7/2/2013	8.3	25,000	50.2	System online at 1541 following completion of CIP activities.
7/3/2013	24	71,500	49.7	System online and operating. Global onsite of FBRO vac out. Cleaned MF basket strainer and air sparged IPC. Cleaned turbidity meter housing. Replaced left bag filter.
7/4/2013	24	70,900	49.2	System online and operating.
7/5/2013	24	72,500	50.3	System online and operating.
7/6/2013	24	71,000	49.3	System online and operating.
7/7/2013	24	72,300	50.2	System online and operating.
7/8/2013	23.5	68,900	48.9	System offline to inspect and clean Cl2 piping. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
7/9/2013	24	71,800	49.9	System online and operating.
7/10/2013	24	71,800	49.9	System online and operating. Air spraged IPC and manually pumped excess sludge.
7/11/2013	24	71,900	49.9	System online and operating.
7/12/2013	23.6	70,600	49.9	Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. System offline to inspect ClO2 piping.
7/13/2013	24	70,900	49.2	System online and operating.
7/14/2013	24	72,300	50.2	System online and operating.
7/15/2013	22.8	68,400	50.0	Cleaned MF basket strainer and air sparged IPC. System offline to install new Cl2 regulator and cylinders. Manually pumped excess sludge.
7/16/2013	24	71,200	49.4	System online and operating.
7/17/2013	24	71,900	49.9	System online and operating. Global onsite of FBRO vac out. Cleaned MF basket strainer and air sparged IPC.
7/18/2013	24	71,700	49.8	System online and operating.
7/19/2013	24	71,900	49.9	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
7/20/2013	24	71,500	49.7	System online and operating.
7/21/2013	24	71,800	49.9	System online and operating.
7/22/2013	24	71850*	49.9	System online and operating.
7/23/2013	24	71,900	49.9	System online and operating.
7/24/2013	8.7	26,400	50.6	System offline at 0844 to conduct CIP.
7/25/2013	8.7	26,200	50.2	System online at 1515 following completion of CIP activities.
7/26/2013	24	72,000	50.0	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Replaced left bag filter.
7/27/2013	24	71,100	49.4	System online and operating.
7/28/2013	24	72,400	50.3	System online and operating.
7/29/2013	24	72,000	50.0	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Replaced left bag filter. Manually pumped excess sludge.
7/30/2013	22.3	66,200	49.5	System offline to repair piping on ClO2 skid.
7/31/2013	22.4	66,700	49.6	Global onsite for FBRO vac out. System offline to replace piping on ClO2 skid. Clean MF basket strainer and air sparged IPC. Calibrated effluent pH meter.

Total	677.1	2,020,050	
Total Available Hours	744	Average On-line Flow	49.7
Percent Online	91		

Note:

Flowrate in Gallons per Minute (GPM)
CIP - Clean in Place - Microfilters
FBRO - Filter Bed Roll Off
IPC - Inclined Plate Clarifier
MF - Micro-filter
Cl2 - chlorine gas
ClO2 - chlorine dioxide

* Gallons discharged on 7/22/13 is an estimate due to computer system failure. Estimated value was calculated by averaging the gallons discharged on 7/21/13 and 7/23/13 as the plant was operating for a full 24 hrs from 7/21/13 through 7/23/13.

Table 3-1
Operations Summary - GWTP
August 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
8/1/2013	24	70,900	49.2	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Effluent pH probe calibrated.
8/2/2013	24	71,900	49.9	System online and operating.
8/3/2013	24	71,800	49.9	System online and operating.
8/4/2013	24	72,100	50.1	System online and operating.
8/5/2013	24	71,700	49.8	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Effluent pH probe calibrated.
8/6/2013	24	71,000	49.3	System online and operating.
8/7/2013	24	71,800	49.9	System online and operating.
8/8/2013	24	71,800	49.9	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Replaced left bag filter.
8/9/2013	24	72,100	50.1	System online and operating.
8/10/2013	24	71,900	49.9	System online and operating.
8/11/2013	24	71,200	49.4	System online and operating.
8/12/2013	23.99	72,500	50.4	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Effluent pH probe calibrated. System offline to conduct reset of alarm points on pH meter.
8/13/2013	24	70,900	49.2	System online and operating.
8/14/2013	24	71,400	49.6	System online and operating. Global onsite for FBRO vac out. Clean basket strainer and air sparge IPC. Cleaned turbidity meter housing.
8/15/2013	24	71,500	49.7	System online and operating.
8/16/2013	24	71,700	49.8	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
8/17/2013	24	71,700	49.8	System online and operating.
8/18/2013	24	71,600	49.7	System online and operating.
8/19/2013	24	71,800	49.9	System online and operating.
8/20/2013	15.7	47,900	50.8	System offline from 0847 to 1706 for CIP activities.
8/21/2013	24	71,900	49.9	System online and operating. Cleaned MF basket strainer and air sparged IPC. Effluent pH probe calibrated. Manually pumped excess sludge.
8/22/2013	24	71,600	49.7	System online and operating.
8/23/2013	24	71,800	49.9	System online and operating. Clean basket strainer and air sparge IPC. Manually pumped excess sludge. Cleaned turbidity meter housing.
8/24/2013	24	71,700	49.8	System online and operating.
8/25/2013	24	71,800	49.9	System online and operating.
8/26/2013	24	71,600	49.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Effluent pH probe cleaned and calibrated.
8/27/2013	24	71,800	49.9	System online and operating.
8/28/2013	19.68	58,100	49.2	Global onsite for FBRO vac out. Cleaned MF basket strainer and air sparged IPC. System offline to install repaired T-1 on MF skid and replace all fittings on ClO2 skid.
8/29/2013	24	72,000	50.0	System online and operating.
8/30/2013	24	71,400	49.6	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
8/31/2013	24	72,100	50.1	System online and operating.

Total	731.37	2,185,000	
Total Available Hours	744	Average On-line Flow	49.8
Percent Online	98		

Note:

Flowrate in Gallons per Minute (GPM)
CIP - Clean in Place - Microfilters
FBRO - Filter Bed Roll Off
IPC - Inclined Plate Clarifier
MF - Micro-filter
ClO2 - chlorine dioxide

Table 3-1
Operations Summary - GWTP
September 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
9/1/2013	24	71,100	49.4	System online and operating
9/2/2013	24	71,700	49.8	System online and operating.
9/3/2013	24	71,600	49.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Changed both bag filters. Cleaned and calibrated effluent pH probe.
9/4/2013	24	71,900	49.9	System online and operating.
9/5/2013	24	71,900	49.9	System online and operating.
9/6/2013	24	71,900	49.9	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Changed both bag filters. Cleaned and calibrated effluent pH probe.
9/7/2013	24	72,100	50.1	System online and operating.
9/8/2013	24	71,100	49.4	System online and operating.
9/9/2013	24	71,700	49.8	System online and operating.
9/10/2013	16	48,500	50.5	System offline to conduct a 1 day abbreviated CIP. Global on site to conduct FBRO vac out. Calibrated effluent pH probe.
9/11/2013	14	39,000	46.4	System offline due to power failure caused by tree damage to Devens Electric powerlines.
9/12/2013	0	0	0.0	System offline due to power failure causing program failure to system level transducers. Level transducer programmer on order.
9/13/2013	0	0	0.0	System offline due to power failure causing program failure to system level transducers. Level transducer programmer on order.
9/14/2013	0	0	0.0	System offline due to power failure causing program failure to system level transducers. Level transducer programmer on order.
9/15/2013	0	0	0.0	System offline due to power failure causing program failure to system level transducers. Level transducer programmer on order.
9/16/2013	9.8	28,400	48.3	System online at 1410 following re-programming of system level transducers. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
9/17/2013	24	72,400	50.3	System online and operating.
9/18/2013	24	71,700*	49.8	System online and operating.
9/19/2013	24	72,000	50.0	System online and operating.
9/20/2013	24	71,400	49.6	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Cleaned and calibrated effluent pH probe.
9/21/2013	24	71,600	49.7	System online and operating.
9/22/2013	24	71,900	49.9	System online and operating.
9/23/2013	24	71,800	49.9	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
9/24/2013	24	71,900	49.9	System online and operating.
9/25/2013	11.4	34,400	50.3	System offline at 1120 due to effluent line clean-out repairs.
9/26/2013	7.9	23,000	48.5	System online following completion of effluent line clean-out repairs.
9/27/2013	24	71,700*	49.8	System online and operating.
9/28/2013	24	71,700*	49.8	System online and operating.
9/29/2013	24	71,400	49.6	System online and operating.
9/30/2013	24	71,500	49.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.

Total	563.1	1,679,300	
Total Available Hours	720	Average On-line Flow	49.7
Percent Online	78		

Note:

Flowrate in Gallons per Minute (GPM)

CIP - Clean in Place - Microfilters

FBRO - Filter Bed Roll Off

IPC -Inclined Plate Clarifier

MF - Micro-filter

* Gallons discharged on 9/18/13, 9/27/13, and 9/28

are estimate values due to computer system malfunction.

Estimated discharge values were calculated by averaging the discharge values for all days the plant was operating for a complete 24 hours.

Table 3-1
Operations Summary - GWTP
October 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
10/1/2013	24	68,900	47.8	System online and operating.
10/2/2013	20.5	58,800	47.8	System offline for air compressor oil change and discharge line repairs. Cleaned MF basket strainer and air sparged IPC. Cleaned and calibrated effluent pH meter. Manually pumped excess sludge.
10/3/2013	24	68,900	47.8	System online and operating.
10/4/2013	24	68,900	47.8	System online and operating. Air sparged IPC and manually pumped excess sludge.
10/5/2013	24	68,900	47.8	System online and operating.
10/6/2013	24	68,800	47.8	System online and operating.
10/7/2013	19.2	55,500	48.2	System offline at 1914 due to power failure.
10/8/2013	0	0	0.0	System offline for CIP activities. Global onsite for FBRO vac out. New liner installed in FBRO.
10/9/2013	9.3	26,400	47.3	System online at 1440 following completion of CIP activities.
10/10/2013	24	68,600	47.6	System online and operating.
10/11/2013	24	68,700	47.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Cleaned effluent turbidity meter housing. Replaced both bag filters.
10/12/2013	24	68,700	47.7	System online and operating.
10/13/2013	24	68,700	47.7	System online and operating.
10/14/2013	24	68,800	47.8	System online and operating.
10/15/2013	24	68,700	47.7	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Cleaned and calibrated effluent pH meter.
10/16/2013	24	68,700	47.7	System online and operating.
10/17/2013	24	68,900	47.8	System online and operating.
10/18/2013	24	68,800	47.8	System online and operating. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
10/19/2013	14.9	43,200	48.3	System offline at 1455 due to air compressor failure.
10/20/2013	0	0	0.0	System offline due to air compressor failure.
10/21/2013	9.1	25,500	46.7	System online at 1456 following temporary repairs to air compressor.
10/22/2013	22.8	65,100	47.6	Global onsite for FBRO vac out. Cleaned MF basket strainer and air sparged IPC. System offline for cleaning of air compressor filters.
10/23/2013	11.9	33,700	47.2	System offline at 0340 due to air compressor failure. Repairs made to air compressor. System online at 1341 following repairs. System offline at 2131 due to air compressor failure.
10/24/2013	12.6	35,900	47.5	System restarted at 1122 following air compressor repairs. Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
10/25/2013	19.2	55,100	47.8	System offline at 0817 for air compressor repairs. System online at 1307 following air compressor repairs by Atlas Copco.
10/26/2013	24	68,900	47.8	System online and operating.
10/27/2013	24	69,000	47.9	System online and operating.
10/28/2013	15.9	46,000	48.2	System offline at 1155 due to ClO2 low flow alarm. System online at 1415 following ClO2 skid inspection. No major issues observed during inspection. System offline at 1811 due to ClO2 trouble alarm.
10/29/2013	7.1	20,800	48.8	System online following repairs at 1651 following repairs to ClO2 piping and replacement of ClO2 actuator ball. Cleaned and calibrated effluent pH meter.
10/30/2013	24	69,000	47.9	System online and operating.
10/31/2013	21.3	61,800	48.4	System offline at 2118 due to ClO2 low flow alarm.

Total	591.8	1,697,700	
Total Available Hours	744	Average On-line Flow	47.8
Percent Online	80		

Note:

Flowrate in Gallons per Minute (GPM)

CIP - Clean in Place - Microfilters

FBRO - Filter Bed Roll Off

IPC -Inclined Plate Clarifier

MF - Micro-filter

ClO2 -Chlorine Dioxide

Table 3-1
Operations Summary - GWTP
November 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
11/1/2013	12.9	38,300	49.5	System offline for partial cleaning of influent line, cleaning of ClO2 dosing line, and cleaning of ClO2 educator valve. Sytem online at 1105 following cleaning activities.Cleaned MF bakset strainer and air sparged IPC.
11/2/2013	15.4	46,200	50.0	System offline at 1522 due to ClO2 trouble alarm.
11/3/2013	0	0	0.0	System offline due to ClO2 flow problems.
11/4/2013	0	0	0.0	System offline for CIP activities.
11/5/2013	7.8	23,700	50.6	System offline for CIP activities. Global onsite for FBRO vac out. During downtime for CIP complete influent line was cleaned and re-piped to remove build-up of precipitate. Cleaned MF basket strainer and air sparged IPC. System online at 1610.
11/6/2013	24	74,500	51.7	System online and operating.
11/7/2013	24	71,800	49.9	System online and operating.
11/8/2013	24	71,800	49.9	System online and operating.Cleaned MF basket strainer and air sparged IPC. Replaced both bag filters.
11/9/2013	24	71,100	49.4	System online and operating.
11/10/2013	24	71,400	49.6	System online and operating.
11/11/2013	24	71,800	49.9	System online and operating.
11/12/2013	24	72,100	50.1	System online and operating.Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge. Cleaned and calibrated effluent pH meter.
11/13/2013	24	71,000	49.3	System online and operating.
11/14/2013	24	72,400	50.3	System online and operating.
11/15/2013	24	71,600	49.7	System online and operating.Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
11/16/2013	24	71,800	49.9	System online and operating.
11/17/2013	24	71,400	49.6	System online and operating.
11/18/2013	24	71,500	49.7	System online and operating.
11/19/2013	24	71,700	49.8	System online and operating. Global onsite for FBRO vac out. Cleaned MF basket strainer and air sparged IPC. Cleaned and calibrated effluent pH meter.
11/20/2013	24	71,600	49.7	System online and operating.
11/21/2013	24	71,500	49.7	System online and operating.
11/22/2013	24	71,400	49.6	System online and operating.Cleaned MF basket strainer and air sparged IPC. Manually pumped excess sludge.
11/23/2013	11.5	35,100	50.9	System offline at 0600 due to ClO2 trouble alarm. Adjusted ClO2 flow control valve. Replace check valve in Cl2 parker valve. Manually pump sludge and air sprage IPC. System online at 1805. System offline at 1909 to make repairs to actuator on V-3 on the MF skid. System online at 1933 after completion of repairs.
11/24/2013	24	71,600	49.7	System online and operating.
11/25/2013	24	71,300	49.5	System online and operating.
11/26/2013	24	71,600	49.7	System online and operating.
11/27/2013	24	71,600	49.7	System online and operating.Air sparged IPC. Manually pumped excess sludge.
11/28/2013	24	72,200	50.1	System online and operating.
11/29/2013	24	71,800	49.9	System online and operating.
11/30/2013	24	71,800	49.9	System online and operating.

Total	623.6	1,865,600	
Total Available Hours	720	Average On-line Flow	49.9

Percent Online	87
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Note:

Flowrate in Gallons per Minute (GPM)

CIP - Clean in Place - Microfilters

FBRO - Filter Bed Roll Off

IPC -Inclined Plate Clarifier

MF - Micro-filter

ClO2 - Chlorine Dioxide

Table 3-1
Operations Summary - GWTP
December 2013
Shepley's Hill Landfill
Devens, Massachusetts

Date	Hours Online	Gallons Discharged	Average Effluent Flowrate	Status
12/1/2013	24	71,500	49.7	System online and operating
12/2/2013	10.1	31,800	52.5	System offline at 1008 to start CIP activities.
12/3/2013	9.3	28,000	50.2	Global onsite for FBRO vac-out. System online at 1443 following completion of CIP activities.
12/4/2013	24	71,200	49.4	System online and operating
12/5/2013	24	71,600	49.7	System online and operating. Air sparged IPC. Manually pumped excess sludge. Clean turbidity meter housing.
12/6/2013	24	72,200	50.1	System online and operating
12/7/2013	24	71,300	49.5	System online and operating
12/8/2013	24	71,600	49.7	System online and operating
12/9/2013	23.9	73,800	51.5	System online and operating. Air sparged IPC. Manually pumped excess sludge. System offline to replace actuator on V-3 on MF skid.
12/10/2013	24	71,700	49.8	System online and operating
12/11/2013	24	72,300	50.2	System online and operating
12/12/2013	24	71,000	49.3	System online and operating
12/13/2013	24	72,200	50.1	System online and operating. Air sparged IPC. Manually pumped excess sludge. Clean and calibrated pH meter.
12/14/2013	24	71,500	49.7	System online and operating
12/15/2013	24	72,000	50.0	System online and operating
12/16/2013	24	71,200	49.4	System online and operating
12/17/2013	12.5	37,000	49.3	Global onsite for FBRO vac-out. Cleaned MF basket strainer and air sparged IPC. System offline due to broken bushing on ploymer skid line.
12/18/2013	12.1	38,000	52.3	System online at 1154 following repairs the polymer skid line. Air sparged IPC and manually pumped excess sludge.
12/19/2013	24	73,800	51.3	System online and operating
12/20/2013	24	71,300	49.5	System online and operating. Air sparged IPC. Manually pumped excess sludge. Clean and calibrated pH meter.
12/21/2013	24	71,000	49.3	System online and operating
12/22/2013	24	71,800	49.9	System online and operating
12/23/2013	24	71,200	49.4	System online and operating
12/24/2013	24	71,900	49.9	System online and operating. Air sparged IPC. Manually pumped excess sludge. Replace bag filters.
12/25/2013	24	72,000	50.0	System online and operating
12/26/2013	24	71,300	49.5	System online and operating
12/27/2013	24	71,500	49.7	System online and operating. Air sparged IPC. Manually pumped excess sludge.
12/28/2013	24	72,100	50.1	System online and operating
12/29/2013	24	71,500	49.7	System online and operating
12/30/2013	24	72,200	50.1	System online and operating
12/31/2013	17.5	52,800	50.3	System offline from 0813 to 1445 for abbreviated CIP activities. Calibrated pH probe.

Total	685.4	2,054,300	
Total Available Hours	744	Average On-line Flow	50.0
Percent Online	92		

Note:

Flowrate in Gallons per Minute (GPM)
CIP - Clean in Place - Microfilters
FBRO - Filter Bed Roll Off
IPC -Inclined Plate Clarifier
MF - Micro-filter
ClO2 - Chlorine Dioxide

Table 3-2
Monthly Discharge Totals - GWTP
Shepley's Hill Landfill
Devens, Massachusetts

Month	Discharge Flow (gallons)	Month	Discharge Flow (gallons)
startup 8&9/2005	213,900	Feb-10	1,695,500
Mar-06	555,800	Mar-10	1,922,900
Apr-06	833,600	Apr-10	1,986,900
May-06	941,700	May-10	1,997,200
Jun-06	979,000	Jun-10	1,882,400
Jul-06	646,600	Jul-10	1,606,700
Aug-06	327,200	Aug-10	1,552,700
Sep-06	453,500	Sep-10	1,207,200
Oct-06	597,500	Oct-10	1,768,600
Nov-06	562,500	Nov-10	1,869,600
Dec-06	606,800	Dec-10	1,833,600
Jan-07	739,600	Jan-11	1,907,600
Feb-07	0	Feb-11	1,766,400
Mar-07	672,400	Mar-11	1,413,900
Apr-07	854,000	Apr-11	1,834,200
May-07	974,700	May-11	2,064,700
Jun-07	942,200	Jun-11	1,872,000
Jul-07	970,500	Jul-11	1,642,500
Aug-07	1,563,400	Aug-11	1,904,500
Sep-07	1,809,100	Sep-11	1,825,500
Oct-07	1,616,000	Oct-11	1,438,700
Nov-07	1,436,200	Nov-11	1,907,200
Dec-07	1,629,200	Dec-11	1,843,300
Jan-08	1,589,100	Jan-12	1,814,900
Feb-08	1,418,100	Feb-12	1,641,400
Mar-08	1,596,600	Mar-12	1,530,400
Apr-08	1,586,500	Apr-12	1,512,300
May-08	1,616,300	May-12	1,374,700
Jun-08	1,424,400	Jun-12	1,938,100
Jul-08	1,591,800	Jul-12	1,557,500
Aug-08	1,101,700	Aug-12	1,595,800
Sep-08	1,652,800	Sep-12	1,807,400
Oct-08	1,238,900	Oct-12	1,729,100
Nov-08	1,649,500	Nov-12	1,979,100
Dec-08	1,521,400	Dec-12	1,915,900
Jan-09	1,602,500	Jan-13	1,776,000
Feb-09	1,625,700	Feb-13	1,310,700
Mar-09	909,400	Mar-13	1,926,400
Apr-09	1,292,500	Apr-13	2,055,600
May-09	1,631,000	May-13	1,492,100
Jun-09	1,793,400	Jun-13	2,055,700
Jul-09	1,830,700	Jul-13	2,023,050
Aug-09	1,935,700	Aug-13	2,185,000
Sep-09	1,879,100	Sep-13	1,679,300
Oct-09	1,832,600	Oct-13	1,697,700
Nov-09	1,909,100	Nov-13	1,865,600
Dec-09	1,773,100	Dec-13	2,054,300
Jan-10	2,030,000		

Cummulative Total

143,219,150

Table 3-3
Shepley's Hill Landfill GWTP
2013 Filter Bed Roll-Off Disposal Totals

Date	Sludge Removed for Disposal (Tons)
1/3/2013	9.86
1/17/2013	10.13
2/6/2013	10.77
2/27/2013	10.73
3/14/2013	10.38
3/27/2013	9.65
4/10/2013	9.56
4/24/2013	10.23
5/8/2013	9.05
5/22/2013	7.72
6/5/2013	9.91
6/19/2013	9.89
7/3/2013	8.62
7/17/2013	9.46
7/31/2013	8.88
8/14/2013	10.60
8/28/2013	9.95
9/10/2013	8.99
9/26/2013	7.43
10/8/2013	8.30
10/22/2013	6.63
11/5/2013	6.42
11/19/2013	10.22
12/3/2013	8.69
12/17/2013	9.25
12/31/2013	5.63
YEARLY TOTAL	236.95

Note:

All Filter Bed Roll-off disposal activities completed by Global Remediation Services Inc. (East Taunton, MA)

All Filter Bed Roll-off sludge disposed of at Waste Management Turnkey Landfill (Rochester, NH)

Table 3-4
As/Fe/Mn Influent Concentrations -GWTP
Shepley's Hill Landfill
Devens, Massachusetts

Date	Flow	EW-01			EW-04			Total (Average)			Total
		As	Fe	Mn	As	Fe	Mn	As	Fe	Mn	
12/6/2006	40	2.77	92	2.47	5.00	72	1.75	3.89	82	2.11	88.00
12/6/2006	50	2.76	90	2.45	5.24	72	1.73	4.00	81	2.09	87.09
12/7/2006	25	2.64	87	2.43	4.93	70	1.71	3.79	79	2.07	84.36
8/7/2007	55	2.40	88	2.46	4.09	67	1.71	3.25	78	2.09	82.83
9/11/2007	55	2.58	80	2.32	4.04	54	1.52	3.31	67	1.92	72.23
12/27/2007	51	2.45	77	2.29	3.88	56	1.66	3.17	67	1.98	71.64
3/6/2008	52	2.43	74	2.2	3.74	50	1.55	3.09	62	1.88	66.96
6/17/2008	52	2.43	75	2.20	3.59	50	1.60	3.01	63	1.90	67.41
9/10/2008	52	2.22	78	2.22	3.60	54	1.78	2.91	66	2.00	70.91
12/2/2008	52	2.33	78	2.25	3.63	50	1.73	2.98	64	1.99	68.97
4/13/2009	53	2.51	81	2.37	3.77	55	1.90	3.14	68	2.14	73.28
6/24/2009	53	2.41	78	2.22	3.91	48	1.73	3.16	63	1.98	68.14
9/15/2009	54	2.32	76	2.14	3.72	41	1.56	3.02	59	1.85	63.37
12/15/2009	52	2.36	72	1.99	3.53	40	1.51	2.95	56	1.75	60.70
3/16/2010	52	2.37	73	2.19	3.54	38	1.66	2.96	56	1.93	60.38
6/23/2010	52	2.4	72	2.09	3.78	39	1.67	3.09	56	1.88	60.47
9/24/2010	50	2.79	81	3.3	4.29	56	2.19	3.54	69	2.75	74.79
12/22/2010	55	2.21	81	2.17	3.81	48	1.99	3.01	65	2.08	69.59
3/16/2011	55	2.14	76	2.22	4.38	42	1.96	3.26	59	2.09	64.35
6/20/2011	56	2.08	72	2.12	4.36	50	2.17	3.22	61	2.15	66.37
9/13/2011	56	2.04	74	2.05	3.75	46	2.16	2.90	60	2.11	65.00
12/20/2011	56	2.19	77	2.26	3.91	45	2.26	3.05	61	2.26	66.31
3/6/2012	49	2.23	81	2.26	3.71	47	2.22	2.97	64	2.24	69.21
6/7/2012	50	2.28	74	2.03	3.66	48	2.13	2.97	61	2.08	66.05
9/14/2012	50	2.31	76	2.13	3.15	43	2.04	2.73	60	2.09	64.31
12/5/2012	50	2.04	78	2.25	3.25	45	2.12	2.64	62	2.19	66.33
3/1/2013	50	2.29	73	2.04	3.85	45	2.00	3.07	59	2.02	64.09
6/3/2013	50	2.05	63	1.86	3.67	47	2.26	2.86	55	2.06	59.92
9/10/2013	50	1.91	65	1.97	3.44	37	1.98	2.68	51	1.98	55.65
12/9/2013	52	2.13	78	2.33	3.82	42	2.19	2.97	60	2.26	65.23

Note:

Concentrations reported in mg/l (ppm)

Flow reported in gallons per a minute (gpm)

Table 3-5
Influent VOC Dissolved Gasses Concentrations - GWTP
Shepley's Hill Landfill
Devens, Massachusetts
September 10, 2013

EW-01		EW-04	
Analyte	Result	Analyte	Result
Methylene Chloride	ND	Methylene Chloride	ND
1,1-Dichloroethane	0.4 J	1,1-Dichloroethane	ND
Chloroform	ND	Chloroform	ND
Carbon Tetrachloride	ND	Carbon Tetrachloride	ND
1,2-Dichloropropane	ND	1,2-Dichloropropane	ND
Dibromochloromethane	ND	Dibromochloromethane	ND
1,1,2-Trichloroethene	ND	1,1,2-Trichloroethene	ND
Tetrachloroethene	ND	Tetrachloroethene	ND
Chlorobenzene	0.87 J	Chlorobenzene	0.53 J
Trichlorofluoromethane	ND	Trichlorofluoromethane	ND
1,2-Dichloroethane	ND	1,2-Dichloroethane	ND
1,1,1-Trichloroethane	ND	1,1,1-Trichloroethane	ND
Bromodichloromethane	ND	Bromodichloromethane	ND
trans-1,3-Dichloropropene	ND	trans-1,3-Dichloropropene	ND
cis-1,3-Dichloropropene	ND	cis-1,3-Dichloropropene	ND
1,1-Dichloropropene	ND	1,1-Dichloropropene	ND
Bromoform	ND	Bromoform	ND
1,1,2,2-Tetrachloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Benzene	1.1	Benzene	0.40 J
Toluene	ND	Toluene	ND
Ethylbenzene	ND	Ethylbenzene	ND
Chloromethane	ND	Chloromethane	ND
Bromomethane	ND	Bromomethane	ND
Vinyl chloride	0.30 J	Vinyl chloride	0.14 J
Chloroethane	0.55 J	Chloroethane	0.34 J
1,1-Dichloroethene	ND	1,1-Dichloroethene	ND
trans-1,2-Dichloroethene	ND	trans-1,2-Dichloroethene	ND
Trichloroethene	ND	Trichloroethene	ND
1,2-Dichlorobenzene	ND	1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND	1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	1.0	1,4-Dichlorobenzene	0.35 J
Methyl tert butyl ether	ND	Methyl tert butyl ether	ND
p/m-Xylene	1.5 J	p/m-Xylene	ND
o-Xylene	ND	o-Xylene	ND
cis-1,2-Dichloroethene	1.0	cis-1,2-Dichloroethene	0.21 J
Dibromomethane	ND	Dibromomethane	ND
1,2,3-Trichloropropane	ND	1,2,3-Trichloropropane	ND
Styrene	ND	Styrene	ND
Dichlorodifluoromethane	ND	Dichlorodifluoromethane	ND
Acetone	ND	Acetone	ND
Carbon disulfide	ND	Carbon disulfide	ND
2-Butanone	ND	2-Butanone	ND
4-Methyl-2-pentanone	ND	4-Methyl-2-pentanone	ND
2-Hexanone	ND	2-Hexanone	ND
Bromochloromethane	ND	Bromochloromethane	ND
Tetrahydrofuran	1.4 J	Tetrahydrofuran	ND
2,2-Dichloropropane	ND	2,2-Dichloropropane	ND
1,2-Dibromoethane	ND	1,2-Dibromoethane	ND
1,3-Dichloropropane	ND	1,3-Dichloropropane	ND
1,1,1,2-Tetrachloroethane	ND	1,1,1,2-Tetrachloroethane	ND
Bromobenzene	ND	Bromobenzene	ND
n-Butylbenzene	ND	n-Butylbenzene	ND
sec-Butylbenzene	0.22 J	sec-Butylbenzene	ND
tert-Butylbenzene	ND	tert-Butylbenzene	ND
o-Chlorotoluene	ND	o-Chlorotoluene	ND
p-Chlorotoluene	ND	p-Chlorotoluene	ND
1,2-Dibromo-3-chloropropane	ND	1,2-Dibromo-3-chloropropane	ND
Hexachlorobutadiene	ND	Hexachlorobutadiene	ND
Isopropylbenzene	0.26 J	Isopropylbenzene	ND
p-Isopropyltoluene	ND	p-Isopropyltoluene	ND
Naphthalene	ND	Naphthalene	ND
n-Propylbenzene	ND	n-Propylbenzene	ND
1,2,3-Trichlorobenzene	ND	1,2,3-Trichlorobenzene	ND
1,2,4-Trichlorobenzene	ND	1,2,4-Trichlorobenzene	ND
1,3,5-Trimethylbenzene	ND	1,3,5-Trimethylbenzene	ND
1,2,4-Trimethylbenzene	ND	1,2,4-Trimethylbenzene	ND
Ethyl ether	8.1	Ethyl ether	3.9
Isopropyl Ether	ND	Isopropyl Ether	ND
Ethyl-tert-butyl-ether	ND	Ethyl-tert-butyl-ether	ND
Tertiary-amyl Methyl Ether	ND	Tertiary-amyl Methyl Ether	ND
1,4-Dioxane	ND	1,4-Dioxane	ND
EW-01 Totals	16.7	EW-04 Totals	5.87

EW-01		EW-04	
Analyte	Result	Analyte	Result
Methane	3,630	Methane	1,550
Ethane	1.26	Ethane	ND

Notes:

J = Value is below the reportable detection limit but greater than the method detection limits, the value is estimated

ND = Non-detect at laboratory detection limit. All detection limits are below discharge limits.

All units in µg/L.

Table 3-6
Monthly Effluent Arsenic Sampling Results - GWTP
Shepley's Hill Landfill
Devens, Massachusetts

Date	Effluent Arsenic Concentration (ppb)	Date	Effluent Arsenic Concentration (ppb)
8/29/2005	1.5	8/18/2009	9.7
8/30/2005	1.2	9/15/2009	3.5
8/31/2005	17.1	10/20/2009	15.5
9/1/2005	1	11/17/2009	11.6
9/2/2005	1	12/15/2009	43
9/6/2005	1	12/22/2009	9.4
9/8/2005	0.9	1/7/2010	25.2
9/9/2005	3	2/18/2010	33.1
3/10/2006	0.9	3/16/2010	3.2
3/15/2006	2	4/21/2010	14.4
3/23/2006	1	5/13/2010	10.4
4/7/2006	2	6/23/2010	24.6
4/14/2006	1.3	7/15/2010	17.5
4/20/2006	9	8/19/2010	29
4/27/2006	2	9/24/2010	13.9
5/22/2006	2	10/27/2010	22.3
6/27/2006	ND	11/23/2010	26.1
7/12/2006	2	12/22/2010	10.3
8/31/2006	13	1/24/2011	55.8
9/28/2006	28	2/16/2011	9.8
10/16/2006	4	3/16/2011	14.1
11/14/2006	2	4/21/2011	17.4
12/26/2006	34	5/16/2011	7.7
1/5/2007	19	6/20/2011	5.2
1/16/2007	2	7/22/2011	4.6
1/23/2007	4	8/11/2011	2.3
1/30/2007	1	9/13/2011	38.1
3/22/2007	1	10/24/2011	20.3
4/11/2007	ND	11/21/2011	12.5
5/16/2007	1.2	12/20/2011	15.1
6/13/2007	1.3	1/24/2012	18.2
7/12/2007	1.4	2/7/2012	28.1
8/7/2007	1.5	3/6/2012	16.1
9/11/2007	1.3	4/13/2012	269.3
10/10/2007	1.2	4/30/2012	14.9
11/6/2007	1.3	5/14/2012	90.5
12/27/2007	1.2	5/25/2012	8.7
1/10/2008	3	6/7/2012	12.7
2/13/2008	1	7/2/2012	23.0
3/6/2008	1.1	8/3/2012	17.1
4/10/2008	1	9/14/2012	23.9
5/15/2008	1	10/10/2012	15.6
6/17/2008	1	11/6/2012	32.9
7/8/2008	1.25	12/5/2012	11.9
8/6/2008	1	1/2/2013	14.3
9/10/2008	5.3	2/6/2013	15.7
10/14/2008	1.1	3/1/2013	15.1
11/4/2008	1	4/3/2013	14.1
12/2/2008	0.87	5/1/2013	13.9
1/13/2009	1.3	6/3/2013	20.5
2/3/2009	1.6	7/8/2013	15.5
3/5/2009	1.1	8/5/2013	15.0
4/13/2009	24.7	9/10/2013	11.0
5/26/2009	6.1	10/2/2013	13.9
6/24/2009	25.2	11/12/2013	19.2
7/16/2009	6.3	12/9/2013	20.7

Notes:

Tables Includes all daily/weekly (when required) Arsenic sampling results
 ND - Non-detect

Table 3-7
Quarterly Effluent Sampling Results - GWTP
Shepley's Hill Landfill
Devens, Massachusetts

Sample Date	9/2/2005	3/15/2006	6/27/2006	9/2/2006	12/26/2006	3/22/2007	6/13/2007	9/11/2007	12/27/2007	3/6/2008	6/17/2008	9/10/2008	12/2/2008	4/13/2009	6/24/2009	9/15/2009
Analyte																
BOD	NA	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
Solids, Total Suspended	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Total	ND	ND	0.007	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
Chloride	54	44	50	100	50	68	56	60	67	80	60	58	62	63	58	58
pH	6.7	5.8	6.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrogen, Nitrate	ND	ND	ND	ND	ND	ND	0.18	0.32	0.21	0.36	0.26	0.16	0.3	0.19	0.14	0.14
Sulfate	ND	ND	ND	2.6	160	70	2.2	2.7	3.3	3	3.1	2.8	3.2	3.3	7.9	7.9
Oil & Grease	ND	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Metals																
Aluminium	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
Antimony	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
Arsenic	0.001	0.002	ND	0.028	0.034	0.002	0.0013	0.0013	0.0012	0.0011	0.00094	0.0053	0.00087	0.0247	0.0252	0.0035
Barium	ND	0.02	0.03	0.02	0.015	0.029	0.023	0.023	0.023	0.023	0.022	0.024	0.022	0.022	0.023	0.024
Beryllium	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	ND	ND	NA	NA	NA	ND
Chromium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	ND	ND	ND	ND	0.026	0.017	0.015	0.0049	0.0076 J	0.015	0.13	0.0096 J	0.011	0.0054 J	0.0059 J	0.01
Lead	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0022 J
Magnesium	ND	8.5	8.8	9.1	8.4	8.1	7.5	7.1	7.6	6.9	6.9	7.1	6.8	6.8	6.9	6.6
Manganese	ND	0.87	2.1	0.26	0.876	0.709	0.001	0.0026	0.0011 J	0.0008 J	ND	0.0026 J	ND	0.017	0.02	0.0041 J
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	0.0002 J	0.0002 J	0.0005 J	ND	ND	ND	ND	0.00003 J
Nickel	ND	ND	ND	ND	ND	0.010	0.005	--	--	--	--	--	--	--	--	--
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	0.0009 J	ND	ND	ND	ND	ND	ND	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
Zinc	ND	ND	ND	ND	ND	0.007	0.005	--	--	--	--	--	--	--	--	--
VOCs																
Bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--

Notes:

All unit in mg/l, except for pH (standard pH units)

NA: Not Analyzed

ND: Non-detect at laboratory detection limit

--: Parameter no longer required per Discharge Permit # 020

** : Metal is no longer required as part of quarterly sampling. Metal sampled as part of annual sampling per Discharge Permit # 020

All detection limits are below discharge limits

J: Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)

Table 3-7
Quarterly Effluent Sampling Results - GWTP
Shepley's Hill Landfill
Devens, Massachusetts

Sample Date	12/8/2009	3/16/2010	6/23/2010	9/24/2010	12/22/2010	3/16/2011	6/20/2011	9/13/2011	12/20/2011	3/6/2012	6/7/2012	9/14/2012	12/5/2012	3/1/2013	6/3/2013	9/10/2013	12/9/2013
Analyte																	
BOD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Solids, Total Suspended	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cyanide, Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloride	62	68	67	59	73	44	28	44	42	46	36	28	43	41.2	28	35	39
pH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nitrogen, Nitrate	0.18	0.38	0.69	0.15	0.35	0.06	0.12	0.09 J	0.09 J	0.06 J	0.07 J	0.099 J	0.12	ND	0.081 J	0.10	0.054 J
Sulfate	4.3	4.6	5.3	4.4	3.9	4	3.5	3.6	3.5	3.4	2.6	58	3.9	3.35	2.97	3.64	4.30
Oil & Grease	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Metals																	
Aluminium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Antimony	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	0.043	0.0032	0.0246	0.0139	0.0103	0.0141	0.0052	0.0381	0.0151	0.0161	0.0127	0.0239	0.0119	0.0151	0.0205	0.0110	0.0207
Barium	0.021	0.022	0.018	0.025	0.021	0.024	0.018	0.023	0.023	0.023	0.022	0.020	0.023	0.023	0.020	0.021	0.023
Beryllium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	NA	NA	NA	ND	**	**	**	ND	**	**	**	**	**	**	**	**	**
Chromium	ND	ND	ND	ND	**	**	**	ND	**	**	**	**	**	**	**	**	**
Copper	0.015	0.0088 J	0.013	0.0063 J	**	**	**	0.009 J	**	**	**	**	**	**	**	**	**
Lead	ND	ND	ND	ND	**	**	**	ND	**	**	**	**	**	**	**	**	**
Magnesium	6.5	6.4	5.7	5.7	6	6	5.9	5.8	6.2	6.2	5.9	5.2	6.2	5.6	5.5	5.1	5.8
Manganese	0.029	0.0026 J	0.017	0.656	0.007	1.09	0.912	0.66	1.1	0.757	1.15	0.031	0.279	1.27	1.19	1.40	0.908
Mercury	0.00002 J	ND	ND	ND	**	**	**	ND	**	**	**	**	**	**	**	**	**
Nickel	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	ND	ND	ND	ND	**	**	**	ND	**	**	**	**	**	**	**	**	**
Silver	ND	ND	ND	ND	**	**	**	ND	**	**	**	**	**	**	**	**	**
Thallium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Zinc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VOCs																	
Bis(2-ethylhexyl)phthalate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

All unit in mg/l, except for pH (standard pH units)

NA: Not Analyzed

ND: Non-detect at laboratory detection limit

--: Parameter no longer required per Discharge Permit # 020

** : Metal is no longer required as part of quarterly sampling. Metal sampled as part of annual sampling per Discharge Permit # 020

All detection limits are below discharge limits

J: Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)

Table 3-8
Annual Effluent Sampling Results - GWTP
Shepley's Hill Landfill
Devens, Massachusetts
September 10, 2013

Analyte	Conc. (mg/l)	Analyte	Conc. (mg/l)	Analyte	Conc. (mg/l)	Analyte	Conc. (mg/l)
VOCs		Semi-volatiles		Pesticides and PCBs		Metals and TPH	
Methylene chloride	ND	Acenaphthene	ND	Delta-BHC	ND	Chromium (Total)	0.002 J
1,1-Dichloroethane	ND	Benzidine	ND	Lindane	ND	Cadmium	ND
Chloroform	0.0011 J	1,2,4-Trichlorobenzene	ND	Alpha-BHC	ND	Copper	0.003 J
Carbon tetrachloride	ND	Hexachlorobenzene	ND	Beta-BHC	ND	Lead	ND
1,2-Dichloropropane	ND	Bis(2-chloroethyl)ether	ND	Heptachlor	ND	Silver	ND
Dibromochloromethane	ND	2-Chloronaphthalene	ND	Aldrin	ND	Selenium	ND
1,1,2-Trichloroethane	ND	3,3'-Dichlorobenzidine	ND	Heptachlor epoxide	ND	Mercury	ND
2-Chloroethylvinyl ether	ND	2,4-Dinitrotoluene	ND Q	Endrin	ND		
Tetrachloroethene	ND	2,6-Dinitrotoluene	ND	Endrin aldehyde	ND	TPH	ND
Chlorobenzene	0.00068 J	Azobenzene	ND	Endrin ketone	ND		
Trichlorofluoromethane	ND	Fluoranthene	ND	Dieldrin	ND		
1,2-Dichloroethane	ND	4-Chlorophenyl phenyl ether	ND	4,4'-DDE	ND		
1,1,1-Trichloroethane	ND	4-Bromophenyl phenyl ether	ND	4,4'-DDD	ND		
Bromodichloromethane	ND	Bis(2-chloroisopropyl)ether	ND	4,4'-DDT	ND		
trans-1,3-Dichloropropene	ND	Bis(2-chloroethoxy) methane	ND	Endosulfan I	ND		
cis-1,3-Dichloropropene	ND	Hexachlorobutadiene	ND	Endosulfan II	ND		
Bromoform	ND	Hexachlorocyclopentadiene	ND	Endosulfan sulfate	ND		
1,1,2,2-Tetrachloroethane	ND	Hexachloroethane	ND	Methoxychlor	ND		
Benzene	0.00080 J	Isophorone	ND	Toxaphene	ND		
Toluene	ND	Naphthalene	ND	Chlordane	ND		
Ethylbenzene	ND	Nitrobenzene	ND	cis-Chlordane	ND		
Chloromethane	ND	NDPA/DPA	ND	trans-Chlordane	ND		
Bromomethane	ND	n-Nitrosodi-n-propylamine	ND				
Vinyl chloride	ND	Bis(2-ethylhexyl)phthalate	ND	Aroclor 1016	ND		
Chloroethane	ND	Butyl benzyl phthalate	ND	Aroclor 1221	ND		
1,1-Dichloroethene	ND	Di-n-butylphthalate	ND	Aroclor 1232	ND		
trans-1,2-Dichloroethene	ND	Di-n-octylphthalate	ND	Aroclor 1242	ND		
cis-1,2-Dichloroethene	ND	Diethyl phthalate	ND	Aroclor 1248	ND		
Trichloroethene	ND	Dimethyl phthalate	ND	Aroclor 1254	ND		
1,2-Dichlorobenzene	ND	Benzo(a)anthracene	ND	Aroclor 1260	ND		
1,3-Dichlorobenzene	ND	Benzo(a)pyrene	ND				
1,4-Dichlorobenzene	ND	Benzo(b)fluoranthene	ND				
p/m-Xylene	0.00072 J	Benzo(k)fluoranthene	ND				
o-Xylene	ND	Chrysene	ND				
Xylene (Total)	0.00072 J	Acenaphthylene	ND				
Styrene	ND	Anthracene	ND				
Acetone	ND	Benzo(ghi)perylene	ND				
Carbon disulfide	ND	Flourene	ND				
2-Butanone	ND	Phenanthrene	ND				
Vinyl acetate	ND	Dibenzo(a,h)anthracene	ND				
4-Methyl-2-pentanone	ND	Indeno(1,2,3-cd)pyrene	ND				
2-Hexanone	ND	Pyrene	ND				
Acrylonitrile	ND	Aniline	ND				
Dibromomethane	ND	4-Chloroaniline	ND				
		1-Methylnaphthalene	ND				
		2-Nitroaniline	ND				
		3-Nitroaniline	ND				
		4-Nitroaniline	ND				
		Dibenzofuran	ND				
		2-Methylnaphthalene	ND				
		n-Nitrosodimethylamine	ND				
		2,4,6-Trichlorophenol	ND				
		p-Chloro-m-cresol	ND Q				
		2-Chlorophenol	ND				
		2,4-Dichlorophenol	ND				
		2,4-Dimethylphenol	ND				
		2-Nitrophenol	ND				
		4-Nitrophenol	ND				
		4,6-Dinitro-o-cresol	ND				
		Pentachlorophenol	ND Q				
		Phenol	ND				
		2-Methylphenol	ND				
		3-Methylphenol/4-Methylphenol	ND				
		2,4,5-Trichlorophenol	ND				
		Benzoic Acid	ND				
		Benzyl Alcohol	ND				
		Carbazole	ND				

Notes:

ND - Non-detect

J: Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)

Q: The quality control sample exceeds the associated criteria.

TABLE 4-1
GROUNDWATER PROFILE SAMPLE RESULTS
Spring 2013
Shepley's Hill Landfill, Devens, MA

Location	Sample ID	Date	Time	Depth (ft)	Dissolved Arsenic	Turbidity	DO	pH	Temp	Spec Cond	ORP	Notes
					ug/L	NTU	mg/L		Celcius	uS/cm	mV	
SHM-13-01	GP-13-01-015	5/7/2013	11:00	15	<1.0	0.98	8.95	5.98	12.07	696	93.9	Geoprobe Profiling Refusal Depth = 51 feet
	GP-13-01-025	5/7/2013	12:05	25	<1.0	10.3	5.84	5.96	11.74	729	88.7	Rotosonic Bedrock Confirmation Depth = 51 feet
	DUP-050713-F	5/7/2013	12:05	25	<1.0	10.3	5.84	5.96	11.74	729	88.7	
	GP-13-01-035	5/7/2013	13:05	35	<1.0	4.23	8.69	6.48	14.62	428	53.4	
	GP-13-01-045	5/7/2013	14:05	45	<1.1	Max	2.61	6.24	11.45	350	12.0	
	GP-13-01-051	5/7/2013	15:05	51	<1.3	Max	0.83	7.50	15.82	438	-206.7	
SHM-13-02	GP-13-02-015	4/15/2013	10:20	15	0.93 J	19.7	4.06	4.93	9.46	124	108.2	Geoprobe Profiling Refusal Depth = 71 feet
	GP-13-02-025	4/15/2013	11:20	25	0.82 J	37.0	3.24	5.58	11.72	250	84.7	Rotosonic Bedrock Confirmation Depth = 71 feet
	GP-13-02-035	4/15/2013	12:50	35	0.93 J	76.3	1.74	5.76	12.17	338	60.1	
	DUP-041513-F	4/15/2013	12:30	35	0.99 J	76.3	1.74	5.76	12.17	338	60.1	
	GP-13-02-045	4/15/2013	13:45	45	0.95 J	14.2	0.23	5.96	12.78	465	-4.5	
	GP-13-02-055	4/15/2013	14:45	55	0.89 J	3.88	0.23	6.09	12.53	280	-10.1	
	GP-13-02-065	4/15/2013	16:16	65	0.95 J	12.0	0.45	6.55	12.59	251	-85.9	
	GP-13-02-071	4/16/2017	10:05	71	1.2	40.1	0.41	6.65	12.09	223	-69.1	
SHM-13-03	GP-13-03-010	4/16/2013	12:45	10	0.6 J	0.15	9.44	6.10	11.86	761	59.3	Geoprobe Profiling Refusal Depth = 55 feet
	GP-13-03-020	4/16/2013	13:50	20	1.7	760	0.35	6.09	11.21	639	-25.4	Rotosonic Bedrock Confirmation Depth = 53 feet
	GP-13-03-030	4/16/2013	15:55	30	17.6	0.82	0.46	5.79	11.69	343	-35.0	
	GP-13-03-040	4/17/2013	09:30	40	22.6	35.3	2.08	6.07	12.03	492	-15.0	
	GP-13-03-050	4/17/2013	10:55	50	357	42.8	2.68	6.52	12.33	622	-70.3	
SHM-13-04	GP-13-04-025	4/8/2013	14:00	25	3,510	5.10	0.45	6.25	12.27	322	-56.7	Geoprobe Profiling Refusal Depth = 45 feet
	GP-13-04-035	4/8/2013	15:00	35	21.1	39.7	0.46	5.93	12.60	83	60.0	Rotosonic Bedrock Confirmation Depth = 45feet
	DUP-040813-F	4/8/2013	15:00	35	21.6	39.7	0.46	5.93	12.60	83	60.0	
	GP-13-04-045	4/9/2013	11:30	45	3	1,431	5.39	5.95	13.46	106	-7.2	
	DUP-040913-F	4/9/2013	11:30	45	--	1,431	5.39	5.95	13.46	106	-7.2	
SHM-13-05	GP-13-05-020	4/9/2013	15:25	20	0.6 J	1.35	0.70	5.01	10.91	165	55.9	Geoprobe Profiling Refusal Depth = 84 feet
	GP-13-05-030	4/10/2013	15:55	30	0.55 J	28.1	0.25	6.28	11.48	328	-428.6	Rotosonic Bedrock Confirmation Depth = 85 feet
	GP-13-05-040	4/10/2013	15:00	40	0.67 J	4.89	0.30	5.83	10.93	230	-338.7	
	GP-13-05-050	4/10/2013	14:10	50	33.5	11.5	0.32	6.33	11.01	327	-176.6	
	GP-13-05-060	4/10/2013	13:25	60	69.4	50.8	0.32	6.71	10.93	639	-168.3	
	GP-13-05-070	4/10/2013	12:25	70	2.4	70.4	0.36	6.23	10.72	716	-317.3	
	GP-13-05-080	4/10/2013	11:25	80	56.8	74.4	0.31	6.63	10.85	1,169	-154.4	
	DUP-041013-F	4/10/2013	11:25	80	57.9	74.4	0.31	6.63	10.85	1,169	-154.4	
	GP-13-05-084	4/10/2013	10:40	84	96.5	83.0	0.35	6.85	11.13	1,152	-126.2	
SHM-13-06	GP-13-06-020	4/17/2013	14:25	20	<1.0	1.37	4.02	5.38	12.96	1,442	75.2	Geoprobe Profiling Refusal Depth = 58 feet
	GP-13-06-030	4/17/2013	15:35	30	236	39.7	0.51	5.74	13.14	560	-3.7	Rotosonic Bedrock Confirmation Depth = 57 feet
	DUP-041713-F	4/17/2013	15:35	30	244	39.7	0.51	5.74	13.14	560	-3.7	
	GP-13-06-040	4/18/2013	10:55	40	3,380	2,471	0.11	6.87	12.79	388	-123.4	
	DUP-041813-F	4/18/2013	10:55	40	--	2,471	0.11	6.87	12.79	388	-123.4	
	GP-13-06-050	4/18/2013	11:55	50	1,650	3,652	0.23	6.5	12.55	179	-60.7	
	GP-13-06-058	4/18/2013	13:15	58	85	2,531	0.26	6.69	13.48	187	-51.5	
SHM-13-07	GP-13-07-021	4/18/2017	15:25	21	<1.8	2.65	4.41	6.21	11.83	2,069	119.5	Geoprobe Profiling Refusal Depth = 48 feet
	GP-13-07-031	4/19/2013	09:30	31	3,170	3.06	1.23	6.64	13.09	310	-87.1	
	GP-13-07-041	4/19/2013	10:35	41	1,650	742	0.26	7.09	14.64	635	-156.8	
	GP-13-07-048	4/19/2013	11:35	48	135	Max	0.13	6.62	14.46	477	-84.2	
SHM-13-08	GP-13-08-025	4/22/2013	10:25	25	1.7	1.38	0.73	6.04	11.69	1898	1.3	Geoprobe Profiling Refusal Depth = 71 feet
	DUP-042213-F	4/22/2013	10:25	25	1.7	1.38	0.73	6.04	11.69	1898	1.3	Rotosonic Bedrock Confirmation Depth = 71 feet
	GP-13-08-035	4/22/2013	11:25	35	1.5	2,015	0.7	6.41	12.93	732	-217.1	
	GP-13-08-045	4/22/2013	12:30	45	2	946	0.08	5.98	12.39	563	-233.8	
	GP-13-08-055	4/22/2013	13:45	55	288	Max	0.05	6.87	12.75	301	-203.8	
	GP-13-08-065	4/22/2013	14:45	65	1,080	Max	0.05	6.71	12.74	534	-124.6	
	DUP-042213-F (EPA dup)	4/22/2013	14:45	65	--	Max	0.05	6.71	12.74	534	-124.6	
	GP-13-08-071	4/22/2013	15:55	71	20.6	1,287	0.11	6.98	11.74	687	-175.2	

TABLE 4-1
GROUNDWATER PROFILE SAMPLE RESULTS
Spring 2013
Shepley's Hill Landfill, Devens, MA

Location	Sample ID	Date	Time	Depth (ft)	Dissolved Arsenic	Turbidity	DO	pH	Temp	Spec Cond	ORP	Notes
					ug/L	NTU	mg/L		Celcius	uS/cm	mV	
SHM-13-09	GP-13-09-025	4/23/2013	10:10	25	<1.3	19.8	0.23	6.32	9.89	637	-16.4	Geoprobe Profiling Refusal Depth = 100 feet
	GP-13-09-035	4/23/2013	11:05	35	152	2,310	0.07	6.63	10.12	611	-122.7	
	GP-13-09-045	4/23/2013	12:05	45	77.2 J	Max	0.10	6.98	9.84	515	-168.5	
	DUP-042313-F	4/23/2013	12:05	45	165 J	Max	0.10	6.98	9.84	515	-168.5	
	GP-13-09-055	4/23/2013	13:25	55	4.2	Max	0.15	6.91	9.74	301	-124.5	
	GP-13-09-065	4/23/2013	14:40	65	59.5	Max	0.13	6.72	10.1	250	-143.4	
	GP-13-09-075	4/23/2013	15:50	75	12.2	Max	0.08	6.77	10.62	399	-164.1	
	GP-13-09-085	4/24/2013	10:15	85	9.6	Max	0.06	6.76	14.51	564	-450.1	
	GP-13-09-095	4/24/2013	11:50	95	12.1	Max	0.07	6.94	19.02	980	-527.5	
SHM-13-10	GP-13-10-25	4/24/2013	14:45	25	0.78 J	6.61	0.64	5.03	12.9	261	-4.6	Geoprobe Profiling Refusal Depth = 83 feet
	GP-13-10-35	4/24/2013	15:40	35	1.6	Max	0.07	5.91	14.35	399	-331.2	
	GP-13-10-45	4/25/2013	09:00	45	12.5	Max	0.10	6.57	12.46	646	-139.5	
	DUP-042413-F	4/25/2013	09:00	45	14.7	Max	0.10	6.57	12.46	646	-139.5	
	GP-13-10-55	4/25/2013	10:40	55	17.5	Max	1.74	6.62	13.99	953	-93.0	
	GP-13-10-65	4/25/2013	11:50	65	3.9	726	0.63	6.42	15.87	782	-65.4	
	GP-13-10-75	4/25/2013	13:00	75	3	2,538	1.45	6.08	13.41	1,036	-24.3	
	DUP-042413A-F	4/25/2013	13:00	75	2.9	2,538	1.45	6.08	13.41	1,036	-24.3	
	GP-13-10-83	4/25/2013	14:25	83	5.8	Max	0.36	6.99	13.23	1,123	-166.6	
SHM-13-11	GP-13-11-025	5/8/2013	10:27	25	<1.0	1.68	7.40	6.31	11.98	349	69.0	Geoprobe Profiling Refusal Depth = 58 feet
	GP-13-11-035	5/8/2013	12:26	35	<1.0	181	7.69	6.75	11.94	313	66.1	
	DUP-050813-F	5/8/2013	12:26	35	<1.0	181	7.69	6.75	11.94	313	66.1	
	GP-13-11-045	5/8/2013	13:52	45	<1.0	157	6.42	6.54	11.81	304	58.4	
	GP-13-11-055	5/8/2013	15:10	55	<1.6	Max	0.29	6.55	12.12	130	-62.0	
SHM-13-12	GP-13-12-008	4/12/2013	12:00	8	0.89 J	6.30	4.47	5.82	5.76	117	-54	Geoprobe Profiling Refusal Depth = 87 feet
	GP-13-12-17	4/12/2013	10:40	17	0.82 J	5.67	0.30	6.22	8.07	366	-214	
	GP-13-12-27	4/12/2013	09:40	27	0.76 J	1.69	4.35	6.25	9.9	249	-693	
	DUP-041213-F	4/12/2013	09:40	27	0.86 J	1.69	4.35	6.25	9.9	249	-693	
	GP-13-12-37	4/11/2013	15:25	37	0.61 J	51	6.59	6.00	10.71	937	55.4	
	GP-13-12-47	4/11/2013	14:25	47	0.95 J	1,775	6.26	5.75	10.67	864	76.6	
	GP-13-12-57	4/11/2013	13:25	57	1.6	3,568	4.56	5.86	10.27	467	36.6	
	GP-13-12-67	4/11/2013	12:25	67	0.71 J	103	6.65	5.54	10.79	515	90.7	
	GP-13-12-77	4/11/2013	11:22	77	0.84 J	24.50	4.29	5.87	10.69	464	NM	
	GP-13-12-87	4/11/2013	10:15	87	24.1	4.48	0.30	7.39	10.86	443	-164.8	
SHM-13-13	GP-13-13-025	5/9/2013	10:05	25	0.81 J	79.80	6.56	6.18	11.03	662	49.3	Geoprobe Profiling Refusal Depth = 41 feet
	DUP-050913-F	5/9/2013	10:05	25	--	79.80	6.56	6.18	11.03	662	49.3	
	GP-13-13-035	5/9/2013	11:05	35	0.61 J	Max	6.69	6.01	11.48	315	65.0	
	GP-13-13-041	5/9/2013	12:32	41	0.83 J	109.80	3.20	6.57	12.89	276	-33.4	

Notes

The data has been validated.
 NA - Not Applicable
 NM - Not Measured
 ug/L is micrograms per liter
 mg/l - miligrams per liter
 J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
 All samples were field filtered prior to laboratory submittal.

TABLE 4-2 PRELIMINARY GROUNDWATER PROFILE SAMPLE RESULTS January/February 2014 Shepley's Hill Landfill, Devens, MA													
Location	Sample ID	Date	Time	Depth (ft)	Arsenic Test Kit	Dissolved Arsenic	Turbidity	DO	pH	Temp	Spec Cond	ORP	Notes
					ppb	ug/L	NTU	mg/L		Celcius	uS/cm	mV	
SHM-13-14S/D	GP-13-14-010	1/30/2014	1030	10	0	<2.0	0.98	0.27	5.96	7.46	390	51.5	Geoprobe Profiling Refusal Depth = 68 feet
	GP-13-14-020	1/30/2014	1135	20	0	<2.0	87.9	1.38	5.82	9.97	341	-60.6	Deep Well Screen = 45-55 feet
	DUP-013014-F	1/30/2014	0000	20	NA	<2.0	NA	NA	NA	NA	NA	NA	Shallow Well Screen = 5-15 feet
	GP-13-14-030	1/30/2014	1235	30	0	<2.0	75	1.00	6.06	10.21	415	-325.4	
	GP-13-14-040	1/30/2014	1335	40	0	<2.0	43.6	0.36	6.22	10.87	711	-335.6	
	GP-13-14-050	1/30/2014	1440	50	50-60	48.9	898	0.22	6.87	10.39	352	-275.3	MS/MSD collected from 10 feet
	GP-13-14-060	1/30/2014	1540	60	0-5	2.4 J	47.2	1.44	6.37	10.16	461	-367.1	
	GP-13-14-068	1/30/2014	1630	68	0	3.6 J	3965	0.61	7.15	9.96	637	-424.7	
SHM-13-15	GP-13-15-010	2/3/2014	1320	10	0	<2.0	2.30	0.90	6.11	9.57	510	17.6	Geoprobe Profiling Refusal Depth = 60 feet
	DUP-020314-F	2/3/2014	0000	10	NA	<2.0	NA	NA	NA	NA	NA	NA	Well Screen = 50-60 feet
	GP-13-15-020	2/3/2014	1425	20	0	<2.0	850	0.78	6.21	10.38	398	-77.8	Bedrock was confirmed with rollerbit at 60 feet below grade. Due to broken rods, profiling samples GP-13-15-060 and GP-13-15-070 were both collected from the 60-foot interval. See note below.
	GP-13-15-030	2/3/2014	1530	30	0	<2.0	87	0.92	6.22	10.39	340	-69.8	
	GP-13-15-040	2/4/2014	1015	40	0	<2.0	64.8	0.94	6.64	10.74	463	-154.0	
	GP-13-15-050	2/4/2014	1113	50	0	<2.0	103	3.93	6.72	10.49	385	-62.1	
	GP-13-15-060	2/4/2014	1220	60	10-20	35.5	OVR	1.34	6.85	10.45	899	-139.6	
	GP-13-15-070	2/4/2014	1355	60	50-60	34.0	2643	1.03	6.92	10.65	914	-157.4	

Notes

The data has been validated.

NA - Not Applicable

NM - Not Measured

ug/L is micrograms per liter

mg/l - miligrams per liter

ppb - parts per billion

OVR - out of range

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

All samples were field filtered prior to laboratory submittal.

*During profiling activities at SHM-13-15, Geoprobe rods were advanced to what was initially believed to be refusal at 70 feet below grade. However, upon rod retrieval, the first 10-foot section of rods was missing, and only 60 feet of rods were recovered. During well installation, a rollerbit was used to confirm bedrock at 60 feet. Consequently, it was determined that the first 10 feet of rods were broken against bedrock at 60 feet while attempting to advance deeper, and the 60-foot profiling interval was sampled twice (GP-13-15-060 and GP-13-15-070).

Table 5-1
Long Term Monitoring Network
Shepley's Hill Landfill, Devens, Massachusetts

Well ID	Surface (ft msl)	Screen Interval (ft bgs)	Screen Elevation (ft msl)	Interval Description	Field Parameters	Field Parameters & Chemistry			Hydraulics
					Bi-Annually ¹	Bi-Annually (Fall)	Fall	Spring	Fall/Spring
DOWNGRADIANT - MOLUMCO ROAD									
SHM-05-40X	224.6	32.0 - 34.0	192.6 - 190.6	Mid-Depth Overburden/Till	-	-	X	-	X
SHM-05-39A	222.9	37.0 - 39.0	185.9 - 183.9	Mid-Depth Overburden	-	-	X	-	X
SHM-05-39B	222.9	66.0 - 68.0	156.9 - 154.9	Deep Overburden	-	-	X	-	X
SHP-99-31A	213.8	4.0 - 14.0	209.8 - 199.8	Shallow Overburden/WT	-	-	X	-	X
SHP-99-31B	213.5	50.0 - 60.0	163.5 - 153.5	Mid-Depth Overburden	-	-	X	-	X
SHP-99-31C	213.5	68.0 - 78.0	145.5 - 135.5	Deep Overburden	-	-	X	-	X
SHX-99-32X	220.1	72.0 - 82.0	148.1 - 138.1	Deep Overburden	-	-	X	-	X
SHP-05-48A,B	--	--	--	Water Table	-	-	-	-	X
SHP-05-49A,B	--	--	--	Water Table	-	-	-	-	X
SHP-99-34 A	223.6	12.5 - 17.5	211.1 - 206.1	Shallow Overburden/WT	-	-	-	-	X
SHP-99-34 B	223.6	74.5 - 79.5	149.1 - 144.1	Deep Overburden	-	-	-	-	X
DOWNGRADIANT - WOODS									
SHM-05-41A	223.8	42.0 - 44.0	181.8 - 179.8	Shallow Overburden	-	-	X	X	X
SHM-05-41B	223.6	62.0 - 64.0	161.6 - 159.6	Mid-Depth Overburden	-	-	X	X	X
SHM-05-41C	224	88.0 - 93.0	136.0 - 131.0	Deep Overburden/ Till	-	-	X	X	X
SHM-05-42A	214.5	40.0 - 42.0	174.5 - 172.5	Shallow Overburden	-	-	X	X	X
SHM-05-42B	214.5	70.0 - 72.0	144.5 - 142.5	Mid-Depth Overburden	-	-	X	X	X
NEARFIELD AREA									
SHL-23	240.4	23.0 - 33.0	217.4 - 207.4	Shallow Overburden/WT	X	X	-	-	X
SHL-9	222.9	15.0 - 25.0	207.9 - 197.9	Shallow Overburden/WT	-	-	X	X	X
SHL-22	219.6	105.0 - 115.0	114.6 - 104.6	Deep Overburden	-	-	X	X	X
SHM-93-22B	219.9	82.3 - 92.3	137.6 - 127.6	Mid-Depth Overburden	-	-	X	X	X
SHM-93-22C	217.9	124.3 - 134.3	93.6 - 83.6	Bedrock	-	-	X	X	X
SHL-5	216.4	3.0 - 13.0	213.4 - 203.4	Shallow Overburden/WT	-	-	X	X	X
SHM-96-5B	218.5	80.0 - 90.0	138.5 - 128.5	Base of Sand/ Till	-	-	X	X	X
SHM-96-5C	218.7	50.0 - 60.0	168.7 - 158.7	Mid-Depth Overburden	-	-	X	X	X
SHL-8S	220.1	52.0 - 54.0	168.1 - 166.1	Mid-Depth Overburden	-	-	X	X	X
SHL-8D*	220.1	68.0 - 70.0	152.1 - 150.1	Deep Overburden	-	-	X	X	X
SHL-21	257.9	42.0 - 52.0	215.9 - 205.9	Shallow Overburden/WT	X	X	-	-	X
SHP-05-45A	227.3	20.0 - 25.0	207.3 - 202.3	Shallow Overburden	-	-	-	-	X
SHP-05-45B	227.7	65.0 - 75.0	162.7 - 152.7	Mid-Depth Overburden	-	-	-	-	X
SHP-05-46A	227.3	65.0 - 75.0	162.1 - 152.1	Mid-Depth Overburden	-	-	-	-	X
SHP-05-46B	227.1	20.0 - 25.0	207.3 - 202.3	Shallow Overburden	-	-	-	-	X
SHP-05-43	259.4	50.5 - 60.5	208.9 - 198.9	Shallow Overburden	-	-	-	-	X
SHP-05-44	256.4	51.0 - 61.0	205.4 - 195.4	Mid-Depth Overburden	-	-	-	-	X
POND AREA									
SHL-13	220.1	5.0 - 20.0	215.1 - 200.1	Shallow Overburden/WT	-	-	X	-	X
SHP-01-36X	221.1	3.0 - 8.0	218.1 - 213.1	Shallow Overburden/WT	-	-	X	-	X
SHP-01-37X	219.5	1.0 - 6.0	218.5 - 213.5	Shallow Overburden/WT	-	-	X	-	X
SHP-01-38A	219.8	1.5 - 6.5	218.3 - 213.3	Shallow Overburden/WT	-	-	X	-	X
PSP-01	--	--	--	Pond Stage	-	-	-	-	X
SHP-05-47A,B	--	--	--	Water Table	-	-	-	-	X
N1-P1	228.8			Deep Overburden	-	-	-	-	X
N1-P2	228.8			Mid-Depth Overburden	-	-	-	-	X
N1-P3	228.8			Shallow Overburden/WT	-	-	-	-	X
N2-P1	221.6			Deep Overburden	-	-	-	-	X
N2-P2	221.6			Mid-Depth Overburden	-	-	-	-	X
SHP-01-38B	219.9	18.0 - 23.0	201.9 - 196.9	Deep Overburden	-	-	-	-	X
N3-P1*	219.8	33.0 - 35.0	186.8 - 184.8	Bedrock	-	-	-	-	X
N3-P2*	219.8	4.0 - 9.0	215.8 - 210.8	Water Table	-	-	-	-	X
UPGRADIANT AREA									
SHL-15	260.1			Shallow Overburden/WT	-	-	X	-	X
N5-P1*	241.7	144.0 - 149.0	97.7 - 92.7	Bedrock	-	-	X	-	X
N5-P2*	241.7	20.0 - 25.0	221.7 - 216.7	Shallow Overburden/WT	-	-	X	-	X
SHP-99-29X	242.5	19.0 - 29.0	223.5 - 213.5	Shallow Overburden/WT	-	-	X	-	X
SHL-20	235.4	39.0 - 49.0	196.4 - 186.4	Deep Overburden/ Till	-	-	X	-	X
SHL-11	235	12.0 - 27.0	223.0 - 208.0	Shallow Overburden/WT	-	-	X	-	X
SHL-4	226.4	3.0 - 13.0	223.4 - 213.4	Shallow Overburden/WT	-	-	X	-	X
SHL-19	239.5	20.0 - 30.0	219.5 - 209.5	Shallow Overburden/WT	-	-	X	-	X
SHL-10	249.1	24.0 - 39.0	225.1 - 210.1	Shallow Overburden/WT	X	X	-	-	X
SHM-93-10C	247.1	44.0 - 54.0	202.7 - 192.7	Bedrock	X	X	-	-	X
SHL-3	247.4	24.0 - 34.0	223.4 - 213.4	Shallow Overburden/WT	-	-	-	-	X
SHP-99-35X	257.5	30.2 - 40.2	227.3 - 217.3	Shallow Overburden/WT	-	-	-	-	X
SHL-18	236.8			Shallow Overburden/WT	-	-	-	-	X
SHM-93-18B	236.2	78.5 - 88.5	157.7 - 147.7	Deep Overburden/ Till	-	-	-	-	X
SHP-95-27X	236.3			Shallow Overburden/WT	-	-	-	-	X
N6-P1*	257.1	84.0 - 88.0	173.1 - 169.1	Bedrock	-	-	-	-	X
N7-P1*	254.4	65.0 - 69.0	189.4 - 185.4	Bedrock	-	-	-	-	X
N7-P2*	254.4	29.0 - 35.0	225.4 - 219.4	Shallow Overburden/WT	-	-	-	-	X
SHL-24*	237.8	110.0 - 120.0	127.8 - 117.8	Deep Overburden	-	-	-	-	X
EW-01 pilot				Overburden	-	-	-	-	X
EW-04 pilot				Overburden	-	-	-	-	X

Notes:

ft bgl = feet below ground level

ft msl = feet mean sea level

* Includes estimated values derived from Supplemental Groundwater Investigation (Harding ESE, 2003).

¹ In years not sampled for full chemistry.

Adapted from Final Revised Long Term Monitoring and Maintenance Plan (CH2MHill, 2007).

Table 5-2
Barrier Wall Hydraulic Monitoring Data
Shepley's Hill Landfill, Devens, Massachusetts

Date: 11-5-12 - Day 53 after Barrier Construction Completion

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ
PZ-12-01	237.54	20.51	217.03	
PZ-12-02	237.77	20.47	217.3	0.27
PZ-12-03	236.4	19.37	217.03	
PZ-12-04	238.2	20.42	217.78	0.75
PZ-12-05	238.7	21.49	217.21	
PZ-12-06	242.22	24.24	217.98	0.77
PZ-12-07	244.63	26.89	217.74	
PZ-12-08	244.88	26.26	218.62	0.88
PZ-12-09	241.93	23.03	218.9	
PZ-12-10	242.28	22.35	219.93	1.03

Date: 11-16-12 - Day 64 after Barrier Construction Completion

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ	Δ from 11/5/12
PZ-12-01	237.54	20.63	216.91		
PZ-12-02	237.77	20.52	217.25	0.34	0.07
PZ-12-03	236.4	19.52	216.88		
PZ-12-04	238.2	20.42	217.78	0.90	0.15
PZ-12-05	238.7	21.66	217.04		
PZ-12-06	242.22	24.26	217.96	0.92	0.15
PZ-12-07	244.63	27.34	217.29		
PZ-12-08	244.88	26.31	218.57	1.28	0.4
PZ-12-09	241.93	23.76	218.17		
PZ-12-10	242.28	22.62	219.66	1.49	0.46

Date: 11-21-12 - Day 69 after Barrier Construction Completion

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ	Δ from 11/5/12	Δ from 11/16/12
PZ-12-01	237.54	20.59	216.95			
PZ-12-02	237.77	20.49	217.28	0.33	0.06	-0.01
PZ-12-03	236.4	19.45	216.95			
PZ-12-04	238.2	20.37	217.83	0.88	0.13	-0.02
PZ-12-05	238.7	21.59	217.11			
PZ-12-06	242.22	24.20	218.02	0.91	0.14	-0.01
PZ-12-07	244.63	27.32	217.31			
PZ-12-08	244.88	26.29	218.59	1.28	0.4	0
PZ-12-09	241.93	23.89	218.04			
PZ-12-10	242.28	22.69	219.59	1.55	0.52	0.06

Table 5-2
Barrier Wall Hydraulic Monitoring Data
Shepley's Hill Landfill, Devens, Massachusetts

Date: 11-28-12 - Day 76 after Barrier Construction Completion

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ	Δ from 11/5/12	Δ from 11/16/12	Δ from 11/21/12
PZ-12-01	237.54	20.72	216.82				
PZ-12-02	237.77	20.56	217.21	0.39	0.12	0.05	0.06
PZ-12-03	236.4	19.64	216.76				
PZ-12-04	238.2	20.42	217.78	1.02	0.27	0.12	0.14
PZ-12-05	238.7	21.77	216.93				
PZ-12-06	242.22	24.24	217.98	1.05	0.28	0.13	0.14
PZ-12-07	244.63	27.42	217.21				
PZ-12-08	244.88	26.35	218.53	1.32	0.44	0.04	0.04
PZ-12-09	241.93	24.01	217.92				
PZ-12-10	242.28	22.77	219.51	1.59	0.56	0.1	0.04

Date: 12-13-12 - Day 91

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ	Δ from 11/5/12	Δ from 11/16/12	Δ from 11/21/12	Δ from 11/28/12
PZ-12-01	237.54	21.00	216.54					
PZ-12-02	237.77	20.83	216.94	0.4	0.13	0.06	0.07	0.01
PZ-12-03	236.4	19.91	216.49					
PZ-12-04	238.2	20.68	217.52	1.03	0.28	0.13	0.15	0.01
PZ-12-05	238.7	22.05	216.65					
PZ-12-06	242.22	24.51	217.71	1.06	0.29	0.14	0.15	0.01
PZ-12-07	244.63	27.77	216.86					
PZ-12-08	244.88	26.63	218.25	1.39	0.51	0.11	0.11	0.07
PZ-12-09	241.93	24.37	217.56					
PZ-12-10	242.28	23.06	219.22	1.66	0.63	0.17	0.11	0.07

Date: 1-16-13 - Day 125

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ	Δ from 11/5/12	Δ from 11/16/12	Δ from 11/21/12	Δ from 11/28/12	Δ from 12/13/12
PZ-12-01	237.54	20.65	216.89						
PZ-12-02	237.77	20.61	217.16	0.27	0	-0.07	-0.06	-0.12	-0.13
PZ-12-03	236.4	19.42	216.98						
PZ-12-04	238.2	20.50	217.70	0.72	-0.03	-0.18	-0.16	-0.3	-0.31
PZ-12-05	238.7	21.57	217.13						
PZ-12-06	242.22	24.33	217.89	0.76	-0.01	-0.16	-0.15	-0.29	-0.3
PZ-12-07	244.63	27.30	217.33						
PZ-12-08	244.88	26.44	218.44	1.11	0.23	-0.17	-0.17	-0.21	-0.28
PZ-12-09	241.93	23.11	218.82						
PZ-12-10	242.28	22.58	219.70	0.88	-0.15	-0.61	-0.67	-0.71	-0.78

Table 5-2
Barrier Wall Hydraulic Monitoring Data
Shepley's Hill Landfill, Devens, Massachusetts

Date: 2-14-13 - Day 154

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ	Δ from 11/5/12	Δ from 11/16/12	Δ from 11/21/12	Δ from 11/28/12	Δ from 12/13/12	Δ from 1/16/13
PZ-12-01	237.54	20.89	216.65							
PZ-12-02	237.77	20.72	217.05	0.4	0.13	0.06	0.07	0.01	0	0.13
PZ-12-03	236.4	19.79	216.61							
PZ-12-04	238.2	20.57	217.63	1.02	0.27	0.12	0.14	0	-0.01	0.3
PZ-12-05	238.7	21.92	216.78							
PZ-12-06	242.22	24.42	217.80	1.02	0.25	0.1	0.11	-0.03	-0.04	0.26
PZ-12-07	244.63	27.68	216.95							
PZ-12-08	244.88	26.55	218.33	1.38	0.5	0.1	0.1	0.06	-0.01	0.27
PZ-12-09	241.93	24.19	217.74							
PZ-12-10	242.28	22.83	219.45	1.71	0.68	0.22	0.16	0.12	0.05	0.83

Date: 3-12-13 - Day 180

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ	Δ from 11/5/12	Δ from 11/16/12	Δ from 11/21/12	Δ from 11/28/12	Δ from 12/13/12	Δ from 1/16/13	Δ from 2/14/13
PZ-12-01	237.54	20.57	216.97								
PZ-12-02	237.77	20.46	217.31	0.34	0.07	0	0.01	-0.05	-0.06	0.07	-0.06
PZ-12-03	236.4	19.43	216.97								
PZ-12-04	238.2	20.36	217.84	0.87	0.12	-0.03	-0.01	-0.15	-0.16	0.15	-0.15
PZ-12-05	238.7	21.58	217.12								
PZ-12-06	242.22	24.21	218.01	0.89	0.12	-0.03	-0.02	-0.16	-0.17	0.13	-0.49
PZ-12-07	244.63	27.27	217.36								
PZ-12-08	244.88	26.27	218.61	1.25	0.37	-0.03	-0.03	-0.07	-0.14	0.14	-0.13
PZ-12-09	241.93	23.67	218.26								
PZ-12-10	242.28	22.19	220.09	1.83	0.8	0.34	0.28	0.24	0.17	0.95	0.12

Date: 4-22-13 - Day 221

Well ID	Top of Casing Elev.	DTW (ft)	WT Elev.	Current Δ	Δ from 11/5/12	Δ from 11/16/12	Δ from 11/21/12	Δ from 11/28/12	Δ from 12/13/12	Δ from 1/16/13	Δ from 2/14/13	Δ from 3/12/13
PZ-12-01	237.54	20.80	216.74									
PZ-12-02	237.77	20.41	217.36	0.62	-0.66	0.28	0.29	0.23	0.22	0.35	0.22	0.28
PZ-12-03	236.4	19.81	216.59									
PZ-12-04	238.2	20.14	218.06	1.47	0.72	0.57	0.59	0.45	0.44	0.75	0.45	0.6
PZ-12-05	238.7	21.91	216.79									
PZ-12-06	242.22	23.99	218.23	1.44	0.67	0.52	0.53	0.39	0.38	0.68	0.42	0.19
PZ-12-07	244.63	27.62	217.01									
PZ-12-08	244.88	26.05	218.83	1.82	0.94	0.54	0.54	0.5	0.43	0.71	0.44	0.57
PZ-12-09	241.93	24.11	217.82									
PZ-12-10	242.28	22.69	219.59	1.77	0.74	0.28	0.22	0.18	0.11	0.89	0.06	-0.06

Even Numbered Piezometers - East of the Barrier Wall

Odd Numbered Piezometers - West of the Barrier Wall

Station Locations are approximate for spacial orientation only.

Barrier Wall Construction Completion Date - 9/13/12

TABLE 5-3
HYDRAULIC MONITORING RESULTS
Shepley's Hill Landfill, Devens, Massachusetts

Location ID (Well/Peizometer/Staff description) (Reference Elevation)	Gauge Date Date	Depth to Water (ft)	Groundwater / Surface Water Elevation (ft)
N-1, P-1 3/4 inch, stickup 230.01	11/5/2012	14.24	215.77
	5/15/2013	14.39	215.62
	6/11/2013	13.31	216.70
	10/21/2013	17.44	212.57
N-1, P-2 3/4 inch, stickup 230.03	11/5/2012	13.89	216.14
	5/15/2013	14.34	215.69
	6/11/2013	13.26	216.77
	10/21/2013	17.44	212.59
N-1, P-3 3/4 inch, stickup 230.18	11/5/2012	13.48	216.70
	5/15/2013	13.81	216.37
	6/11/2013	13.80	216.38
	10/21/2013	17.48	212.70
N-2, P-1 3/4 inch, stickup 222.16	11/5/2012	5.30	216.86
	5/15/2013	5.59	216.57
	6/11/2013	4.49	217.67
	10/21/2013	9.08	213.08
N-2, P-2 3/4 inch, stickup 222.0	11/5/2012	5.15	216.85
	5/15/2013	5.35	216.65
	6/11/2013	4.31	217.69
	10/21/2013	8.09	213.91
N-3, P-1 3/4 inch, stickup 220.86	11/5/2012	3.93	216.93
	5/15/2013	4.20	216.66
	6/11/2013	3.18	217.68
	10/21/2013	7.70	213.16
N-3, P-2 3/4 inch, stickup 220.86	11/5/2012	3.96	216.90
	5/15/2013	4.22	216.64
	6/11/2013	3.12	217.74
	10/21/2013	8.70	212.16
N-5, P-1 3/4 inch, stickup 242.62	11/5/2012	24.36	218.26
	5/15/2013	23.54	219.08
	6/11/2013	23.27	219.35
	10/21/2013	24.70	217.92
N-5, P-2 3/4 inch, stickup 242.67	11/5/2012	24.88	217.79
	5/15/2013	23.70	218.97
	6/11/2013	23.47	219.20
	10/21/2013	24.40	218.27
N-6, P-1 3/4 inch, stickup 258.46	11/5/2012	37.95	220.51
	5/15/2013	37.04	221.42
	6/11/2013	36.94	221.52
	10/21/2013	37.88	220.58
N-7, P-1 3/4 inch, stickup 255.6	11/5/2012	31.70	223.90
	5/15/2013	31.29	224.31
	6/11/2013	30.83	224.77
	10/21/2013	31.81	223.79
N-7, P-2 3/4 inch, stickup 256.07	11/5/2012	31.85	224.22
	5/15/2013	31.49	224.58
	6/11/2013	31.09	224.98
	10/21/2013	32.00	224.07
SHL-1 2 inch, stickup 271.66	6/11/2013 10/21/2013	Obstruction at 7.53' Dry at 7.85'	
SHL-3 2 inch, stickup 246.89	11/5/2012	29.05	217.84
	5/15/2013	29.70	217.19
	6/11/2013	28.71	218.18
	10/21/2013	32.00	214.89
SHL-4 2 inch, stickup 227.51	11/5/2012	10.29	217.22
	5/15/2013	10.62	216.89
	6/11/2013	9.89	217.62
	10/21/2013	13.75	213.76
SHL-5 2 inch, stickup 217.62	11/5/2012	2.86	214.76
	5/15/2013	4.79	212.83
	6/11/2013	1.50	216.12
	10/21/2013	6.60	211.02
SHL-8S 2 inch, stickup 220.99	11/5/2012	7.54	213.45
	5/15/2013	8.21	212.78
	6/11/2013	6.81	214.18
	10/21/2013	9.70	211.29
SHL-8D 2 inch, stickup 220.79	11/5/2012	7.46	213.33
	5/15/2013	8.11	212.68
	6/11/2013	6.80	213.99
	10/21/2013	9.55	211.24
SHL-9 2 inch, stickup 221.99	11/5/2012	9.68	212.31
	5/15/2013	10.31	211.68
	6/11/2013	16.09	205.90
	10/21/2013	11.10	210.89

TABLE 5-3
HYDRAULIC MONITORING RESULTS
Shepley's Hill Landfill, Devens, Massachusetts

Location ID (Well/Peizometer/Staff description) (Reference Elevation)	Gauge Date Date	Depth to Water (ft)	Groundwater / Surface Water Elevation (ft)
SHL-10 2 inch, stickup 247.95	11/5/2012	30.28	217.67
	5/15/2013	31.04	216.91
	6/11/2013	30.01	217.94
	10/21/2013	33.70	214.25
SHL-11 2 inch, stickup 235.48	11/5/2012	18.55	216.93
	5/15/2013	18.70	216.78
	6/11/2013	17.81	217.67
	10/21/2013	21.70	213.78
SHL-12 248.67			
SHL-13 2 inch, stickup 220.71	11/5/2012	6.61	214.10
	5/15/2013	7.30	213.41
	6/11/2013	5.58	215.13
	10/21/2013	9.23	211.48
SHL-15 4 inch, stickup 259.93	11/5/2012	18.87	241.06
	5/15/2013	17.58	242.35
	6/11/2013	17.44	242.49
	10/21/2013	20.32	239.61
SHL-17 233.83			
SHL-18 4 inch, stickup 237.56	11/5/2012	18.61	218.95
	5/15/2013	19.39	218.17
	6/11/2013	18.30	219.26
	10/21/2013	21.55	216.01
SHL-19 4 inch, stickup 240.52	11/5/2012	22.61	217.91
	5/15/2013	23.39	217.13
	6/11/2013	22.14	218.38
	10/21/2013	26.25	214.27
SHL-20 4 inch, stickup 235.96	11/5/2012	18.48	217.48
	5/15/2013	18.30	217.66
	6/11/2013	17.84	218.12
	10/21/2013	20.30	215.66
SHL-21 4 inch, stickup 259.94	11/5/2012	45.24	214.70
	5/15/2013	45.89	214.05
	6/11/2013	44.94	215.00
	10/21/2013	47.85	212.09
SHL-22 4 inch, stickup 219.59	11/5/2012	7.32	212.27
	5/15/2013	8.09	211.50
	6/11/2013	6.67	212.92
	10/21/2013	8.70	210.89
SHL-23 4 inch, stickup 241.26	11/5/2012	28.35	212.91
	5/15/2013	28.69	212.57
	6/11/2013	27.70	213.56
	10/21/2013	29.70	211.56
SHL-24 4 inch, stickup 239.6	11/5/2012	15.74	223.86
	5/15/2013	16.27	223.33
	6/11/2013	14.93	224.67
	10/21/2013	16.98	222.62
SHL-25 258.05			
SHM-05-39A 2 inch w/roadbox 221.54	11/5/2012	11.41	210.13
	5/15/2013	11.92	209.62
	6/11/2013	10.93	210.61
	10/21/2013	12.49	209.05
SHM-05-39B 2 inch w/roadbox 221.52	11/5/2012	12.32	209.20
	5/15/2013	12.71	208.81
	6/11/2013	11.77	209.75
	10/21/2013	13.08	208.44
SHM-05-40X 2 inch w/roadbox 223.34	11/5/2012	14.21	209.13
	5/15/2013	14.65	208.69
	6/11/2013	13.86	209.48
	10/21/2013	15.10	208.24
SHM-05-41A 2 inch w/roadbox 222.45	11/5/2012	10.60	211.85
	5/15/2013	11.29	211.16
	6/11/2013	9.95	212.50
	10/21/2013	11.90	210.55
SHM-05-41B 2 inch w/roadbox 222.3	11/5/2012	10.40	211.90
	5/15/2013	11.09	211.21
	6/11/2013	9.79	212.51
	10/21/2013	11.70	210.60
SHM-05-41C 2 inch w/roadbox 222.56	11/5/2012	10.67	211.89
	5/15/2013	11.42	211.14
	6/11/2013	10.09	212.47
	10/21/2013	11.95	210.61
SHM-05-42A 3/4 inch, stickup 216.84	11/5/2012	4.71	212.13
	5/15/2013	5.45	211.39
	6/11/2013	4.00	212.84
	10/21/2013	6.16	210.68

TABLE 5-3
HYDRAULIC MONITORING RESULTS
Shepley's Hill Landfill, Devens, Massachusetts

Location ID (Well/Peizometer/Staff description) (Reference Elevation)	Gauge Date Date	Depth to Water (ft)	Groundwater / Surface Water Elevation (ft)
SHM-05-42B 3/4 inch, stickup 216.82	11/5/2012	4.73	212.09
	5/15/2013	5.45	211.37
	6/11/2013	4.04	212.78
	10/21/2013	6.14	210.68
SHM-93-10C 4 inch, stickup 247.61	11/5/2012	28.93	218.68
	5/15/2013	29.45	218.16
	6/11/2013	28.47	219.14
	10/21/2013	31.50	216.11
SHM-93-10D 4 inch, stickup 247.94	11/5/2012	29.90	218.04
	5/15/2013	30.55	217.39
	6/11/2013	29.84	218.10
	10/21/2013	32.80	215.14
SHM-93-18B 4 inch, stickup 237.32	11/5/2012	18.35	218.97
	5/15/2013	19.12	218.20
	6/11/2013	17.96	219.36
	10/21/2013	21.20	216.12
SHM-93-22B 4 inch, stickup 219.42	11/5/2012	7.15	212.27
	5/15/2013	8.92	210.50
	6/11/2013	6.53	212.89
	10/21/2013	8.50	210.92
SHM-93-22C 4 inch, stickup 220.7	11/5/2012	8.33	212.37
	5/15/2013	9.10	210.32
	6/11/2013	7.81	211.61
	10/21/2013	9.96	209.46
SHM-96-5B 4 inch, stickup 218.95	11/5/2012	6.26	212.69
	5/15/2013	7.01	211.94
	6/11/2013	6.56	212.39
	10/21/2013	7.80	211.15
SHM-96-5C 4 inch, stickup 218.4	11/5/2012	5.69	212.71
	5/15/2013	6.46	211.94
	6/11/2013	5.04	213.36
	10/21/2013	7.30	211.10
SHP-99-31A 2 inch, stickup 214.35	11/5/2012	2.10	212.25
	5/15/2013	3.81	210.54
	6/11/2013	3.90	210.45
	10/21/2013	4.42	209.93
SHP-99-31B 2 inch, stickup 214.4	11/5/2012	3.86	210.54
	5/15/2013	4.43	209.97
	6/11/2013	3.29	211.11
	10/21/2013	4.98	209.42
SHP-99-31C 2 inch, stickup 214.72	11/5/2012	4.13	210.59
	5/15/2013	4.71	210.01
	6/11/2013	3.58	211.14
	10/21/2013	5.31	209.41
SHM-99-32X 2 inch, stickup 221.37	11/5/2012	9.70	211.67
	5/15/2013	10.32	211.05
	6/11/2013	9.09	212.28
	10/21/2013	11.15	210.22
SHP-01-36X 3/4 inch, stickup 224.02	11/5/2012	7.27	216.75
	5/15/2013	7.55	216.47
	6/11/2013	6.43	217.59
	10/21/2013	11.15	212.87
SHP-01-37X 3/4 inch, stickup 222.84	11/5/2012	5.98	216.86
	5/15/2013	6.21	216.63
	6/11/2013	5.15	217.69
	10/21/2013	9.95	212.89
SHP-01-38A 3/4 inch, stickup 220.9	11/5/2012	3.85	217.05
	5/15/2013	4.11	216.79
	6/11/2013	3.06	217.84
	10/21/2013	7.30	213.60
SHP-01-38B 3/4 inch, stickup 221.06	11/5/2012	4.00	217.06
	5/15/2013	4.23	216.83
	6/11/2013	3.19	217.87
	10/21/2013	7.45	213.61
SHP-05-43 3/4 inch, stickup 260.66	11/5/2012	44.68	215.98
	5/15/2013	45.15	215.51
	6/11/2013	44.39	216.27
	10/21/2013	47.65	213.01
SHP-05-44 3/4 inch, stickup 258.08	11/5/2012	41.68	216.40
	5/15/2013	42.04	216.04
	6/11/2013	41.20	216.88
	10/21/2013	44.90	213.18
SHP-05-45A 2 inch, stickup 228.47	11/5/2012	16.12	212.35
	5/15/2013	16.82	211.65
	6/11/2013	15.57	212.90
	10/21/2013	17.07	211.40
SHP-05-45B 2 inch, stickup 229.1	11/5/2012	16.85	212.25
	5/15/2013	17.53	211.57
	6/11/2013	16.25	212.85
	10/21/2013	17.65	211.45

TABLE 5-3
HYDRAULIC MONITORING RESULTS
Shepley's Hill Landfill, Devens, Massachusetts

Location ID (Well/Peizometer/Staff description) (Reference Elevation)	Gauge Date Date	Depth to Water (ft)	Groundwater / Surface Water Elevation (ft)
SHP-05-46A 2 inch, stickup 227.63	11/5/2012	14.79	212.84
	5/15/2013	15.56	212.07
	6/11/2013	14.26	213.37
	10/21/2013	16.00	211.63
SHP-05-46B 2 inch, stickup 228.22	11/5/2012	15.48	212.74
	5/15/2013	16.23	211.99
	6/11/2013	14.91	213.31
	10/21/2013	16.68	211.54
SHP-05-47A 1 inch, no standpipe 217.53	11/5/2012	4.79	212.74
	5/15/2013	5.39	212.14
	6/11/2013	Inaccessible (High Water Level)	
	10/21/2013	Dry @ 5.75'	
SHP-05-47B 1 inch, no standpipe 215.4	11/5/2012	2.63	212.77
	5/15/2013	2.82	212.58
	6/11/2013	Inaccessible (High Water Level)	
	10/21/2013	3.95	211.45
SHP-05-48A 1 inch, no standpipe 217.3	11/5/2012	5.94	211.36
	5/15/2013	Dry	
	6/11/2013	Inaccessible (Under Water)	
	10/21/2013	Dry @ 5.25'	
SHP-05-48B 1 inch, no standpipe 215.93	11/5/2012	3.53	212.40
	5/15/2013	4.03	211.90
	6/11/2013	Inaccessible (Under Water)	
	10/21/2013	Dry @ 5.00'	
SHP-05-49A 1 inch, no standpipe 216.67	11/5/2012	5.63	211.04
	5/15/2013	Dry	
	6/11/2013	Inaccessible (Under Water)	
	10/21/2013	Dry @ 5.76'	
SHP-05-49B 1 inch, no standpipe 215.15	11/5/2012	3.95	211.20
	5/15/2013	4.42	210.73
	6/11/2013	Inaccessible (Under Water)	
	10/21/2013	4.33	210.82
SHP-95-27X 3/4 inch, stickup 237.46	11/5/2012	14.23	223.23
	5/15/2013	16.45	221.01
	6/11/2013	13.88	223.58
	10/21/2013	17.88	219.58
SHP-99-29X 2 inch, stickup 243.32	11/5/2012	24.58	218.74
	5/15/2013	22.79	220.53
	6/11/2013	22.73	220.59
	10/21/2013	24.50	218.82
SHP-99-34A NSVD	11/5/2012	Damaged	
	5/15/2013	Damaged	
	6/11/2013	Damaged	
SHP-99-34B 1 inch, stickup 224.58	11/5/2012	13.26	211.32
	5/15/2013	13.29	211.29
	6/11/2013	12.66	211.92
	10/21/2013	14.20	210.38
SHP-99-35X 2 inch, stickup 257.92	11/5/2012	37.50	220.42
	5/15/2013	36.85	221.07
	6/11/2013	36.87	221.05
	10/21/2013	36.90	221.02
EW-01 8 inch extraction, vault 226.8	5/15/2013	27.86 (ATP on-line)	198.94
	6/11/2013	14.17 (ATP on-line)	212.63
	10/21/2013	15.51 (ATP off-line)	211.29
EW-04 8 inch extraction, vault 227.05	5/15/2013	37.53 (ATP on-line)	189.52
	6/11/2013	14.19 (ATP on-line)	212.86
	10/21/2013	15.85 (ATP off-line)	211.2
PZ-12-01 2 inch, stickup 237.55	11/5/2012	20.51	217.04
	5/15/2013	20.67	216.88
	6/11/2013	19.90	217.65
	10/21/2013	23.50	214.05
	11/19/2013	21.55	216.00
PZ-12-02 2 inch, stickup 237.81	11/5/2012	20.47	217.34
	5/15/2013	20.37	217.44
	6/11/2013	19.88	217.93
	10/21/2013	22.50	215.31
	11/19/2013	21.51	216.30
PZ-12-03 2 inch, stickup 236.42	11/5/2012	19.37	217.05
	5/15/2013	19.63	216.79
	6/11/2013	19.55	216.87
	10/21/2013	22.80	213.62
	11/19/2013	20.34	216.08
PZ-12-04 2 inch, stickup 238.22	11/5/2012	20.42	217.80
	5/15/2013	20.10	218.12
	6/11/2013	19.73	218.49
	10/21/2013	21.85	216.37
	11/19/2013	22.31	215.91
PZ-12-05 2 inch, stickup 238.81	11/5/2012	21.49	217.32
	5/15/2013	21.73	217.08
	6/11/2013	20.70	218.11
	10/21/2013	24.77	214.04
	11/19/2013	22.45	216.36

TABLE 5-3
HYDRAULIC MONITORING RESULTS
Shepley's Hill Landfill, Devens, Massachusetts

Location ID (Well/Peizometer/Staff description) (Reference Elevation)	Gauge Date Date	Depth to Water (ft)	Groundwater / Surface Water Elevation (ft)
PZ-12-06 2 inch, stickup 242.24	11/5/2012	24.24	218.00
	5/15/2013	23.91	218.33
	6/11/2013	23.54	218.70
	10/21/2013	25.70	216.54
	11/19/2013	25.53	216.71
PZ-12-07 2 inch, stickup 244.63	11/5/2012	26.89	217.74
	5/15/2013	27.49	217.14
	6/11/2013	26.95	217.68
	10/21/2013	30.43	214.20
	11/19/2013	28.49	216.14
PZ-12-08 2 inch, stickup 244.88	11/5/2012	26.26	218.62
	5/15/2013	26.02	218.86
	6/11/2013	25.59	219.29
	10/21/2013	27.50	217.38
	11/19/2013	27.22	217.66
PZ-12-09 2 inch, stickup 241.94	11/5/2012	23.03	218.91
	5/15/2013	24.32	217.62
	6/11/2013	22.80	219.14
	10/21/2013	25.20	216.74
	11/19/2013	24.70	217.24
PZ-12-10 2 inch, stickup 242.29	11/5/2012	22.35	219.94
	5/15/2013	22.89	219.40
	6/11/2013	23.16	219.13
	10/21/2013	23.55	218.74
	11/19/2013	23.76	218.53
SHM-10-01 1.5 inch, stickup 209.52	11/5/2012	4.15	205.37
	5/15/2013	3.52	206.00
	6/11/2013	2.45	207.07
	10/21/2013	4.02	205.50
SHM-10-02 1.5 inch, stickup 223.07	11/5/2012	17.25	205.82
	5/15/2013	18.64	204.43
	6/11/2013	16.50	206.57
	10/21/2013	18.35	204.72
SHM-10-03 1.5 inch, stickup 232.06	11/5/2012	26.16	205.90
	5/15/2013	26.38	205.68
	6/11/2013	25.47	206.59
	10/21/2013	26.97	205.09
SHM-10-04 1.5 inch, stickup 212.63	11/5/2012	6.25	206.38
	5/15/2013	6.11	206.52
	6/11/2013	5.26	207.37
	10/21/2013	6.18	206.45
SHM-10-05A 1.5 inch w/ roadbox 235.07	11/5/2012	25.18	209.89
	5/15/2013	25.56	209.51
	6/11/2013	24.67	210.40
	10/21/2013	26.14	208.93
SHM-10-06 1.5 inch, stickup 232.91	11/5/2012	18.84	214.07
	5/15/2013	19.46	213.45
	6/11/2013	19.18	213.73
	10/21/2013	20.80	212.11
SHM-10-06A 1.5 inch, stickup 248.55	11/5/2012	34.29	214.26
	5/15/2013	34.93	213.62
	6/11/2013	33.64	214.91
	10/21/2013	36.50	212.05
SHM-10-07 2 inch, stickup 246.87	11/5/2012	28.76	218.11
	5/15/2013	27.07	219.80
	6/11/2013	26.95	219.92
	10/21/2013	28.20	218.67
SHM-10-08 1.5 inch, stickup 214.41	11/5/2012	8.59	205.82
	5/15/2013	9.01	205.40
	6/11/2013	7.78	206.63
	10/21/2013	9.81	204.60
SHM-10-10 1.5 inch, stickup 217.12	11/5/2012	10.51	206.61
	5/15/2013	10.63	206.49
	6/11/2013	9.74	207.38
	10/21/2013	10.76	206.36
SHM-10-11 2 inch, stickup 263.2	11/5/2012	41.14	222.06
	5/15/2013	40.36	222.84
	6/11/2013	33.62	229.58
	10/21/2013	41.00	222.20
SHM-10-12 2 inch, stickup 254.6	11/5/2012	34.80	219.80
	5/15/2013	33.09	221.51
	6/11/2013	40.22	214.38
	10/21/2013	34.61	219.99
SHM-10-13 2 inch, stickup 244.75	11/5/2012	26.51	218.24
	5/15/2013	25.73	219.02
	6/11/2013	25.47	219.28
	10/21/2013	26.86	217.89
SHM-10-14 2 inch, stickup 237.61	11/5/2012	20.49	217.12
	5/15/2013	19.93	217.68
	6/11/2013	19.46	218.15
	10/21/2013	21.20	216.41

**TABLE 5-3
HYDRAULIC MONITORING RESULTS
Shepley's Hill Landfill, Devens, Massachusetts**

Location ID (Well/Peizometer/Staff description) (Reference Elevation)	Gauge Date Date	Depth to Water (ft)	Groundwater / Surface Water Elevation (ft)
SHM-10-15 2 inch, stickup 243.76	11/5/2012	25.09	218.67
	5/15/2013	23.86	219.90
	6/11/2013	24.74	219.02
	10/21/2013	25.15	218.61
SHM-10-16 2 inch, stickup 219.24	11/5/2012	7.31	211.93
	5/15/2013	8.03	211.21
	6/11/2013	7.70	211.54
	10/21/2013	8.64	210.60
SHM-11-02 Bedrock, standpipe 240.77	11/5/2012	22.81	217.96
	5/15/2013	22.74	218.03
	6/11/2013	22.10	218.67
	10/21/2013	24.79	215.98
SHM-11-06 2 inch, stickup 236.2	11/5/2012	19.82	216.38
	5/15/2013	20.11	216.09
	6/11/2013	19.39	216.81
	10/21/2013	22.30	213.90
SHM-11-07 3/4 inch, stickup 240.86	11/5/2012	22.95	217.91
	5/15/2013	22.61	218.25
	6/11/2013	22.19	218.67
	10/21/2013	24.28	216.58
SHM-13-01 2 inch, stickup 208.07	6/11/2013	Inaccessible (High Water Level)	
	10/21/2013	3.22	204.85
SHM-13-02 2 inch, stickup 218.7	5/15/2013	12.50	206.20
	6/11/2013	11.50	207.20
	10/21/2013	12.91	205.79
SHM-13-03 2 inch, stickup 211.7	5/15/2013	5.10	206.60
	6/11/2013	4.23	207.47
	10/21/2013	5.08	206.62
SHM-13-04 2 inch, stickup 227.01	5/15/2013	19.15	207.86
	6/11/2013	18.49	208.52
	10/21/2013	19.45	207.56
SHM-13-05 2 inch, stickup 225.11	5/15/2013	16.78	208.33
	6/11/2013	15.99	209.12
	10/21/2013	17.06	208.05
SHM-13-06 2 inch w/ roadbox 223.89	6/11/2013	16.39	207.50
	10/21/2013	17.50	206.39
SHM-13-07 2 inch w/ roadbox 225.61			
SHM-13-08 2 inch w/ roadbox 227.9	6/11/2013	19.71	208.19
	10/21/2013	20.05	207.85
SHM-07-03 2 inch w/ roadbox 227.86	5/15/2013	19.85	208.01
	6/11/2013	19.24	208.62
	10/21/2013	20.50	207.36
SHP-07-03A 217.85	6/11/2013	11.13	206.72
	10/21/2013	13.21	204.64
SHM-07-05X 2 inch w/ roadbox 223.41	5/15/2013	14.57	208.84
	6/11/2013	14.39	209.02
	10/21/2013	14.85	208.56
SHP-99-01C 2 inch, stickup 273.56	5/15/2013	11.00	262.56
	6/11/2013	9.25	264.31
	10/21/2013	24.33	249.23
SHP-99-01B 2 inch, stickup 272.55	5/15/2013	5.91	266.64
	6/11/2013	4.84	267.71
	10/21/2013	Dry @ 9.80'	
SHM-93-24A 4 inch, stickup 239.28	5/15/2013	16.64	222.64
	6/11/2013	15.00	224.28
	10/21/2013	17.41	221.87
PSP-01 staff gauge 214.83	11/5/2012	2.00	216.83
	5/15/2013	1.75	216.58
	6/11/2013	3.85	218.68
	7/20/2013	1.50	216.33
	10/21/2013	Dry due to pond construction	
SHSG-13-01G staff gauge 201.63	7/20/2013	3.50	205.13
	10/21/2013	Unable to read - muddy staff	
SHSG-13-02G staff gauge 205.01	7/20/2013	2.12	207.13
	10/21/2013	Unable to read - muddy staff	
SHSG-13-03G staff gauge 204.41	7/20/2013	2.86	207.27
	10/21/2013	Unable to read - muddy staff	
EPA-PZ-1A EPA pizometer 222.75	5/15/2013	11.59	234.34

TABLE 5-3
HYDRAULIC MONITORING RESULTS
Shepley's Hill Landfill, Devens, Massachusetts

Location ID (Well/Piezometer/Staff description) (Reference Elevation)	Gauge Date Date	Depth to Water (ft)	Groundwater / Surface Water Elevation (ft)
EPA-PZ-1B EPA pizometer 222.5	5/15/2014	11.34	233.84
EPA-PZ-2A EPA pizometer 222.34	5/15/2014	11.11	233.45
EPA-PZ-2B EPA pizometer 222.32	5/15/2014	11.10	233.42
EPA-PZ-3A EPA pizometer 222.6	5/15/2014	11.03	233.63
EPA-PZ-3B EPA pizometer 222.51	5/15/2014	10.95	233.46
EPA-PZ-4A EPA pizometer 226.54	5/15/2014	15.18	241.72
EPA-PZ-4B EPA pizometer 226.34	5/15/2014	15.09	241.43
EPA-PZ-5B EPA pizometer 218.31	5/15/2014	7.68	225.99
EPA-PZ-6A EPA pizometer 234.21	5/15/2014	22.82	257.03
EPA-PZ-6B EPA pizometer 234.03	5/15/2014	22.78	256.81
EPA-PZ-7B EPA pizometer 233.92	5/15/2013	22.72	256.64

Notes:

Reference elevations based on the survey performed in June 2013 and/or February 2014

EPA Piezometer water level data was based off of the transducer reading at 12:00 PM on the day noted

Dry - Well dry at time of gauging event

NSVD - No survey data available for location

TOC - Top of casing

TABLE 5-4
SITE-WIDE SURVEY DATA
Shepley's Hill Landfill, Devens, Massachusetts

Location ID	Latitude	Longitude	Ground Elevation	Roadbox or Standpipe Elevation	Top of Casing or Staff Elevation
DEP-08-05	3,028,333.87	628,608.01	207.96	N/A	208.78
EW-01	3,027,960.18	629,942.49	226.95	226.8	226.77
EW-04	3,027,990.84	629,895.19	227.4	227.05	227.06
N-1 P-1	3,027,867.76	630,723.38	227.78	230.44	230.01
N-1 P-2	3,027,867.76	630,723.38	227.78	230.44	230.03
N-1 P-3	3,027,867.76	630,723.38	227.78	230.44	230.18
N-2 P-1	3,027,311.16	630,658.52	220.53	222.82	222.16
N-2 P-2	3,027,311.16	630,658.52	220.53	222.82	222
N-3 P-1	3,027,130.24	630,777.88	218.73	221.57	220.86
N-3 P-2	3,027,130.24	630,777.88	218.73	221.57	220.86
N-5 P-1	3,027,173.21	629,805.75	240.39	243.65	242.62
N-5 P-2	3,027,173.21	629,805.75	240.39	243.65	242.67
N-6 P-1	3,026,338.61	630,017.06	255.78	258.52	258.46
N-7 P-1	3,025,618.25	629,990.92	253.51	256.53	255.6
N-7 P-2	3,025,618.25	629,990.92	253.51	256.53	256.07
PZ-12-01	3,027,384.39	630,488.32	233.78	237.73	237.55
PZ-12-02	3,027,384.00	630,467.48	233.68	237.93	237.81
PZ-12-03	3,027,193.61	630,474.29	232.76	236.53	236.42
PZ-12-04	3,027,194.22	630,452.75	234.97	238.4	238.22
PZ-12-05	3,027,087.35	630,479.09	236.05	238.91	238.81
PZ-12-06	3,027,082.18	630,454.66	238.35	242.38	242.24
PZ-12-07	3,026,971.76	630,568.41	240.79	244.82	244.63
PZ-12-08	3,026,962.26	630,546.01	241.7	245.29	244.88
PZ-12-09	3,026,801.33	630,740.71	238.26	242.16	241.94
PZ-12-10	3,026,778.24	630,723.91	238.83	242.45	242.29
SHL-09	3,028,146.90	630,009.59	220.88	222.53	221.99
SHL-1	3,026,531.80	629,259.23	270.13	272.28	271.66
SHL-10	3,026,867.43	630,877.10	246.58	248.67	247.95
SHL-11	3,027,316.46	630,495.93	233.97	235.93	235.48
SHL-13	3,028,105.48	630,540.06	218.48	221.2	220.71
SHL-15	3,025,829.38	629,326.44	258.83	260.24	259.93
SHL-18	3,026,475.16	631,186.42	235.71	237.81	237.56
SHL-19	3,026,945.67	630,664.79	238.43	240.79	240.52
SHL-20	3,027,329.51	630,463.22	234.69	236.02	235.96
SHL-21	3,027,884.35	630,363.98	258.11	260.14	259.94
SHL-22	3,028,162.75	630,056.48	219.06	219.38	219.59
SHL-23	3,027,916.82	629,712.69	239.36	241.48	241.26
SHL-24	3,025,638.53	631,302.97	236.7	239.77	239.6
SHL-3	3,026,705.40	630,911.03	246.36	247.66	246.89
SHL-4	3,027,057.36	630,575.73	225.5	227.78	227.51
SHL-5	3,028,125.05	630,192.11	216.81	217.86	217.62
SHL-8 D	3,028,127.50	630,407.22	218.95	221.24	220.79
SHL-8 S	3,028,127.50	630,407.22	218.95	221.24	220.99
SHM-05-39A	3,028,544.28	629,761.38	221.79	221.78	221.54
SHM-05-39B	3,028,543.68	629,765.33	221.78	221.78	221.52
SHM-05-40X	3,028,514.20	629,636.82	223.55	223.53	223.34
SHM-05-41A	3,028,290.82	629,796.11	222.78	222.74	222.45
SHM-05-41B	3,028,299.22	629,796.25	222.6	222.56	222.3
SHM-05-41C	3,028,285.47	629,795.79	222.94	222.9	222.56
SHM-05-42A	3,028,376.14	630,017.63	213.66	216.93	216.84
SHM-05-42B	3,028,376.14	630,017.63	213.66	216.93	216.82
SHM-07-03	3,028,444.64	629,410.99	228.01	228	227.86
SHM-07-05X	3,028,513.39	629,631.98	223.62	N/A	223.41
SHM-10-01	3,028,617.32	628,868.44	206.64	209.74	209.52
SHM-10-02	3,028,700.13	628,381.41	220.12	223.23	223.07
SHM-10-03	3,029,000.27	628,436.33	229.7	232.26	232.06
SHM-10-04	3,029,485.34	628,959.21	209.73	212.81	212.63
SHM-10-05A	3,028,943.39	630,441.84	235.24	235.39	235.07
SHM-10-06	3,027,882.86	630,215.55	229.99	233.08	232.91
SHM-10-06A	3,027,895.73	630,300.71	246	248.74	248.55
SHM-10-07	3,026,889.84	630,301.76	244.76	N/A	N/A
SHM-10-08	3,028,526.47	628,351.74	211.68	214.54	214.41
SHM-10-10	3,028,873.64	629,105.25	215.43	217.25	217.12
SHM-10-11	3,025,971.51	629,990.62	260.86	263.46	263.2
SHM-10-12	3,026,718.54	629,717.49	252.02	254.77	254.6
SHM-10-13	3,027,156.89	629,906.12	241.41	244.87	244.75
SHM-10-14	3,027,372.85	629,784.78	234.81	237.75	237.61
SHM-10-15	3,027,489.15	630,744.35	241.91	243.76	243.76

TABLE 5-4
SITE-WIDE SURVEY DATA
Shepley's Hill Landfill, Devens, Massachusetts

Location ID	Latitude	Longitude	Ground Elevation	Roadbox or Standpipe Elevation	Top of Casing or Staff Elevation
SHM-10-16	3,028,355.25	629,834.23	216.72	219.45	219.24
SHM-11-02	3,027,075.57	630,457.57	238.63	240.77	N/A
SHM-11-06	3,027,590.18	630,411.28	233.27	236.39	236.2
SHM-11-07	3,027,132.35	630,414.39	238.19	241.01	240.86
SHM-13-01	3,028,294.76	628,556.66	205.79	208.32	208.07
SHM-13-02	3,028,713.88	628,980.64	216.88	219.01	218.7
SHM-13-03	3,028,990.91	629,173.39	209.83	212.17	211.7
SHM-13-04	3,028,606.18	629,479.56	228.25	227.28	227.01
SHM-13-05	3,028,776.73	629,829.47	225.57	225.37	225.11
SHM-13-06	3,028,694.87	629,245.10	224.23	224.23	223.89
SHM-13-07	3,028,760.82	629,331.42	225.69	N/A	N/A
SHM-13-08	3,028,837.54	629,515.32	228.17	228.18	227.9
SHM-13-09	3,028,911.60	629,631.24	227.36	N/A	N/A
SHM-13-10	3,028,954.59	629,718.31	227.57	N/A	N/A
SHM-13-11	3,028,459.48	629,058.34	223.1	N/A	N/A
SHM-13-12	3,028,587.71	628,952.96	208.3	N/A	N/A
SHM-13-13	3,028,537.40	629,134.58	224.44	N/A	N/A
SHM-93-10C	3,026,845.85	630,886.07	245.8	248.1	247.61
SHM-93-10D	3,026,828.78	630,894.48	245.36	248.16	247.94
SHM-93-18B	3,026,453.24	631,180.16	235.29	237.66	237.32
SHM-93-22B	3,028,169.62	630,071.79	218.92	220.62	219.42
SHM-93-22C	3,028,158.24	630,045.82	219.02	221.02	220.7
SHM-93-24A	3,025,647.36	631,308.05	236.08	239.53	239.28
SHM-96-5B	3,028,112.90	630,158.12	217.43	219.12	218.95
SHM-96-5C	3,028,105.43	630,172.69	217.41	218.62	218.4
SHM-99-32X	3,028,574.64	630,168.76	219.07	221.46	221.27
SHP-01-36X	3,027,688.84	630,737.88	220.1	224.02	N/A
SHP-01-37X	3,027,498.37	630,696.92	218.64	222.84	N/A
SHP-01-38A	3,027,171.48	630,545.54	218.77	220.9	N/A
SHP-01-38B	3,027,178.16	630,544.01	218.87	221.06	N/A
SHP-05-43	3,027,747.03	630,532.51	258.33	261.3	260.66
SHP-05-44	3,027,588.88	630,586.00	255.49	258.5	258.08
SHP-05-45A	3,027,961.96	629,995.28	226.33	228.68	228.47
SHP-05-45B	3,027,956.95	629,995.37	226.73	229.27	229.1
SHP-05-46A	3,027,946.44	630,041.53	226.1	227.79	227.63
SHP-05-46B	3,027,941.11	630,041.25	226.35	228.37	228.22
SHP-05-47A	3,028,226.53	630,523.15	213.5	N/A	217.53
SHP-05-47B	3,028,226.47	630,523.79	213.47	N/A	215.4
SHP-05-48A	3,028,569.63	630,046.35	213.09	N/A	217.3
SHP-05-48B	3,028,569.69	630,045.57	213.03	N/A	215.93
SHP-05-49A	3,028,663.85	630,250.05	212.26	N/A	216.67
SHP-05-49B	3,028,663.65	630,250.63	212.16	N/A	215.15
SHP-95-27X	3,026,164.53	630,752.70	235.44	237.71	237.46
SHP-99-01B	3,026,537.28	629,226.62	271.13	272.74	272.55
SHP-99-01C	3,026,540.97	629,215.98	271.36	273.84	273.56
SHP-99-29X	3,027,143.23	629,539.01	241.38	243.52	243.32
SHP-99-31A	3,028,559.08	629,895.03	212.76	214.75	214.35
SHP-99-31B	3,028,559.47	629,901.16	212.44	214.38	214.4
SHP-99-31C	3,028,561.83	629,908.75	209.97	214.9	214.72
SHP-99-34A	3,028,552.44	630,294.37	222.5	BROKEN	BROKEN
SHP-99-34B	3,028,552.43	630,291.14	222.55	224.58	N/A
SHP-99-35X	3,026,547.20	629,722.70	256.19	257.91	257.92
SHP-07-03A	3,028,553.08	628,346.17	N/A	N/A	217.85
PSP-01	3,028,156.83	630,618.86	N/A	N/A	218.16
SHMSG-13-01G	3,028,450.26	628,521.28	N/A	N/A	208.29
SHMSG-13-03G	3,029,540.87	629,804.73	N/A	N/A	211.07
SHMSG-13-02G	3,029,055.69	629,127.28	N/A	N/A	211.67

Notes:

Reference elevations based on the survey performed in June 2013

The survey was conducted on the Massachusetts State Plane Coordinate System and vertically on North American Vertical Datum (NAVD) 1988 datum

N/A - not applicable, indicating the element was not included in the survey

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHM-10-01	SHM-10-01-071310	7/13/2010	1.16 J	0.68 J	42400	42700	508	373	3700	3680	10500 J	10600	2300	2290	9340	9160
	SHM-10-01	8/12/2010	NA	3.51 J	NA	41600	NA	886	NA	3530	NA	10700	NA	2230	NA	11100
	SHM-10-01-090810	9/8/2010	8.15	7.87	43100	43500	1740	1680	3680	3780	10200	10300	2220	2280	8880	8770
	SHM-10-01-102412	10/24/2012	NA	1.4	NA	21500	NA	210	NA	1900 J	NA	NA	NA	1800 J	NA	7200
SHM-10-02	SHM-10-01-052913	5/29/2013	NA	1.3	NA	18900	NA	124	NA	1690 J	NA	5970 J	NA	1770 J	NA	6900
	SHM-10-02-071510	7/15/2010	0.74	0.43 J	113000	117000	1190	881	15700	16100	2110	2180	3880	4010	49500	53300
	Dup-071510	7/15/2010	0.59	0.45 J	114000	117000	1170	890	15600	16100	2130	2170	3980	4000	51400	53100
	SHM010-02-090710	9/7/2010	1.11	1.07	115000 J	114000 J	973	843	16000	16000	2190	2190	4020	4040	48100	50700
	SHM-10-02-102212	10/22/2012	NA	1.1	NA	133000	NA	100 UJ	NA	18200	NA	NA	NA	4100 J	NA	37400
	Duplicate-102212	10/22/2012	NA	<1.0	NA	135000 b	NA	60.7 J	NA	18500	NA	NA	NA	4100 J	NA	37600 Q
SHM-10-03	SHM-10-02-052913	5/29/2013	NA	1.5	NA	137000	NA	33.7 J	NA	20100	NA	2450	NA	4300 J	NA	41200
	SHM-10-03-071410	7/14/2010	2.36	0.78 J	112000	109000	1630	866	12900	12600	122	153	6490	6000	474000	473000
	DUP-071410	7/14/2010	4.59	0.5 J	112000	111000	2440	843	13000	127000	151	134	6580	6060	483000	474000
	SHM-10-03-090710	9/7/2010	1.47 J	0.51 J	153000	157000	1420	1030	18200	18500	72.8	44	6920	6880	536000	536000
	DUP-090710	9/7/2010	1.51 J	0.71 J	149000	154000	1480	1040	17700	18000	70.2	51.7	6670	6840	510000	526000
	SHM-10-03-102312	10/23/2012	NA	1.0 U	NA	129000	NA	79 J	NA	15200	NA	NA	NA	6000	NA	359000
	SHM-10-03-052413	5/24/2013	NA	1.5	NA	145000	NA	50.6 J	NA	17200	NA	37	NA	6270	NA	432000
SHM-10-04	DUP-01-052413	5/24/2013	NA	1.5	NA	136000	NA	131	NA	16100	NA	194	NA	6190	NA	405000
	SHM-10-04-071410	7/14/2010	1.62	0.64	60300 J	57800	3800 J	5190	12300 J	11800	2190	2500	4230	5220	33400 J	35400
	SHM-10-04-090710	9/7/2010	1.0 J	0.79 J	72100	72800	1880	1650	14500	14600	3210	3100	4050	3990	35800	35200
	SHM-10-04-102212	10/22/2012	NA	1.0 U	NA	57100	NA	100 U	NA	12600	NA	NA	NA	3200 J	NA	37500
	SHM-10-04-052913	5/29/2013	NA	1.0	NA	61500	NA	<100	NA	13700	NA	622	NA	<5000	NA	39300
SHM-10-05A	DUP-052913	5/29/2013	NA	0.95 J	NA	61200	NA	<100	NA	14000	NA	660	NA	<5000	NA	39000
	SHM-10-05A-071510	7/15/2010	4.7	4.6	14200	14500	1970	1880	1660	1670	590	620	1990	1990	22800	23900
	SHM-10-05A-090810	9/8/2010	5.68	5.21	14100	14200	790	677	1600	1600	105	122	1770	1830	19600	19700
	SHM-10-05A-102312	10/23/2012	NA	3.0	NA	15300	NA	68 J	NA	1800 J	NA	NA	NA	1700 J	NA	16100
	SHM-10-05 (EPA)	10/24/2012	<20	NA	16000	NA	5700	NA	2100	NA	21	NA	1400	NA	20000	NA
	SHM-10-05A-052213	5/22/2013	NA	3.1	NA	13800	NA	30 U	NA	1720 J	NA	16.1	NA	1610 J	NA	18900
SHM-10-06	DUP-052213	5/22/2013	NA	3.1	NA	14100	NA	30 U	NA	1720 J	NA	15.4	NA	1580 J	NA	19400
	SHM-10-06-070810	7/8/2010	2210 J	1680 J	40900	41000 J	130000 J	117000	7360	7140	724	699	11700	11800	18200	17900
	DUP-070810	7/8/2010	2520	1520	46500	41100	149000	117000	8400	7200	829	712	13100	12300	20700	19000
	SHM-10-06-090810	9/8/2010	2580	2710	48200	50300	144000	145000	8270	8800	9.54	9.63	13500	13800	22800	23700
	SHM-10-06-102312	10/23/2012	NA	2300	NA	36100	NA	111000	NA	6300	NA	NA	NA	11300	NA	17200
	SHM-10-06 (EPA)	10/23/2012	1900	NA	37000	NA	110000	NA	6600	NA	1900	NA	11000	NA	22000	NA
SHM-10-06A	SHM-10-06-052313	5/23/2013	NA	1980	NA	36100	NA	107000	NA	6500	NA	1890	NA	11500	NA	17000
	SHM-10-06A-070710	7/7/2010	64.8	61	15700	15300 J	20900 J	19900 J	2090	2030	1650 J	1620	4700	4520	7490	7260
	DUP-070710	7/7/2010	65.1	60.1	15800	15500	21200	20200	2080	2070	1660	1650	4740	4680	7640	7560
	SHM-1--06A-090910	9/9/2010	102	94.2	33000	33300	44600	42900	4940	4640	3940	4080	8130	7640	13200	13200
	DUP-090910	9/9/2010	102	83	31800	25300	42700	32300	4810	3280	3820	3130	7970	5990	12900	9240
	SHM-10-06A-102412	10/24/2012	NA	72	NA	13200	NA	19900	NA	2600 J	NA	NA	NA	3600 J	NA	5800
	SHM-10-06A (EPA)	10/24/2012	80	NA	14000	NA	20000	NA	2700	NA	2100	NA	3100	NA	9400	NA
	SHM-10-06A-052213	5/22/2013	NA	72.8	NA	9380	NA	11400	NA	1700 J	NA	1430	NA	3060 J	NA	3860 J
SHM-10-07	SHM-10-06A-112013	11/20/2013	NA	22.9	NA	8330	NA	3410	NA	933 J	NA	1960	NA	3430 J	NA	2940 J
	SHM-10-07-052710	5/27/2010	816 J	818 J	62200 J	60600 J	75800 J	70600 J	12200	9590	3230 J	3110 J	17900	16000	36400	35100 J
	DUP-052710	5/27/2010	827	825	62600	61100	75800	71800	12100	9660	3280	3130	18100	16100	36900	35700
	SHM-10-07-090910	9/9/2010	979	918	47400	43200	62300	56800	6360	5610	2050	1940	13200	11400	26400	24400
	SHM-10-07-102212	10/22/2012	NA	1100	NA	43700	NA	69000	NA	5300	NA	NA	NA	11400	NA	23900
	SHM-10-07 (EPA)	10/22/2012	990	NA	48000	NA	66000	NA	5700	NA	2200	NA	11000	NA	29000	NA
SHM-10-07	SHM-10-07-052313	5/23/2013	NA	1210	NA	56000	NA	94900	NA	6700	NA	2670	NA	13300	NA	28500

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHM-10-08	SHM-10-08-071510	7/15/2010	2.72	0.73 J	160000	152000	2610	1310 J	21100	19900 J	910	885 J	5370	4590	44300 J	44500
	SHM-10-08-090710	9/7/2010	1.4	1.55	182000	195000	1270	1260	23600	25000	359	376	5240	5470	46400	NA
	SHM-10-08-102212	10/22/2012	NA	1.9	NA	137000	NA	37 J	NA	16800	NA	NA	NA	4500 J	NA	35900
	SHM-10-08-052113	5/21/2013	NA	1.9	NA	152000	NA	42.8 J	NA	19500	NA	242	NA	4800 J	NA	40200
SHM-10-10	SHM-10-10-071310	7/13/2010	2.0 J	1.25 J	95100	92800	1020	799	12100	11900	24600	24200	3580	3600	26500	26100
	DUP-071310	7/13/2010	1.34 J	1.13 J	92400	94600	925	804	11800	12100	24100	24800	3490	3610	26500	27500
	SHM-10-10	8/12/2010	NA	3.62 J	NA	83800	NA	1180	NA	10700	NA	22000	NA	3590	NA	28500
	SHM-10-10-090810	9/8/2010	2.57 J	2.4 J	107000	96800	833	700	13200	12000	27400	25200	3750	3410	29600	27100
	DUP-090810	9/8/2010	2.58 J	6.66	96300	101000	825	929	11900	12600	27400	25800	3380	3560	26600	28500
	SHM-10-10-102412	10/24/2012	NA	1.0	NA	74500	NA	180	NA	8100	NA	NA	NA	2700 J	NA	21300
	Duplicate	10/24/2012	NA	1.1	NA	75200	NA	179	NA	8260	NA	NA	NA	2830 J	NA	21400 Q
	SHM-10-10-052913	5/29/2013	NA	1.7	NA	83000	NA	82.5 J	NA	9460	NA	26400	NA	3040 J	NA	32100
SHM-10-11	SHM-10-11	8/30/2010	356	342 J	23900	21200 J	60600	55700	2770	2530	2490	2320	5410	5150	12400	11800
	SHM-10-11-101910	10/19/2010	470	463	21900	22200	60500	61000	2840	2900	2160	2260	5310	5390	12700	13000
	SHM-10-11-102312	10/23/2012	NA	440	NA	20900	NA	56100	NA	2700 J	NA	NA	NA	4700 J	NA	12600
	SHM-10-11(EPA)	10/23/2012	460	NA	22000	NA	56000	NA	3000	NA	2200	NA	4400	NA	17000	NA
	SHM-10-11-052313	5/23/2013	NA	460	NA	22500	NA	65100	NA	3160 J	NA	2510	NA	4820 J	NA	14300
	DUP-052313	5/23/2013	NA	464	NA	22500	NA	64400	NA	2990 J	NA	2480	NA	4730 J	NA	13700
	SHM-10-11-111913	11/19/2013	NA	432	NA	23400	NA	60400	NA	2630 J	NA	2400	NA	4880 J	NA	13900
	DUPLICATE-111913	11/19/2013	NA	444	NA	24100	NA	60500	NA	2690 J	NA	2450	NA	4990 J	NA	14200
SHM-10-12	SHM-10-12	8/30/2010	2880	3560	25000	33000	78600	104000	1940	2500	5400	7000	5480	7040	7090	8780
	DUP-083010	8/30/2010	3210	3410	27900	30600	89700	96000	2190	2360	6120	6520	6190	6480	7880	8610
	SHM-10-12-102010	10/20/2010	2980	3120	29000	29000	88700	90000	2180	2200	6070	6200	482-	4900	5220	5060
	DUP-102010	10/20/2010	3160	3000	29200	28300	90900	87400	2240	2120	6320	6030	4940	4670	5210	4870
	SHM-10-12-102312	10/23/2012	NA	4100	NA	21900	NA	78600	NA	1800 J	NA	NA	NA	4300 J	NA	3500 J
	SHM-10-12 (EPA)	10/23/2012	3100	NA	23000	NA	76000	NA	1900	NA	5700	NA	4100	NA	7200	NA
	SHM-10-12 D (EPA)	10/23/2012	3100	NA	23000	NA	77000	NA	1900	NA	5800	NA	4100	NA	7300	NA
	SHM-10-12-052313	5/23/2013	NA	3580	NA	29700	NA	56300	NA	2720 J	NA	6450	NA	3630 J	NA	5440
SHM-10-13	GP-10-13-090110	9/1/2010	619 J	575	68000	61400	88600	84100	10500	9900	1900	1850 J	12500	12200	15300	14500
	SHM-10-13-101910	10/19/2010	700	672	67200	65000	95500	94600	9840	10100	2100	2060	12300	12500	15600	15900
	DUP-101910	10/19/2010	648	674	60300	64200	87500	94700	8720	9920	1960	2090	11000	12200	13900	16100
	SHM-10-13-102312	10/23/2012	NA	670	NA	76300	NA	68800	NA	9500	NA	NA	NA	10500	NA	14900
	SHM-10-13 (EPA)	10/23/2012	630	NA	80000	NA	66000	NA	9800	NA	2200	NA	10000	NA	18000	NA
	SHM-10-13-052313	5/23/2013	NA	565	NA	65500	NA	83400 J	NA	8960	NA	1130	NA	11600	NA	14600
SHM-10-14	SHM-10-14-090210	9/2/2010	4280	4100	69300	55300	75200	73000	4310	4150	4700	4720	18800	17600 J	15500	15200
	SHM-10-14-101910	10/19/10	5990 J	5860	70800	57900	98300	92700	3980	3720	4350 J	4180	11400	101000	8500	8080
	SHM-10-14-102312	10/23/2012	NA	6200 J	NA	43100	NA	94400	NA	3300 J	NA	NA	NA	6700	NA	5100
	SHM-10-14 (EPA)	10/23/2012	5900	NA	44000	NA	87000	NA	3300	NA	3900	NA	6200	NA	9000	NA
	SHM-10-14-052313	5/23/2013	NA	5540	NA	44300	NA	83100	NA	3420 J	NA	2800	NA	7020	NA	5610
SHM-10-15	GP-10-15-090110	9/1/2010	7930	8110	61300	61500	62500	63300	7700	7880	10400	10700	6910	6880	13700	13900
	SHM-10-15-090110	9/1/2010	7930	8110	61300	61500	62500	63300	7700	7880	10400	10700	6910	6880	13700	13900
	DUP-090110	9/1/2010	7610	6460	58500	46800	58700	48900	7470	6050	9900	8240	6390	5200	13100	11200
	SHM-10-15-102010	10/20/2010	6090	6230	51200	51800	50400	52000	6440	6530	8440	8680	5350	5500	11600	12400
	SHM-10-15-102312	10/23/2012	NA	7000	NA	46800	NA	46600	NA	5800	NA	NA	NA	5100	NA	10400
	Duplicate-102312	10/23/2012	NA	7810	NA	45400 b	NA	44900	NA	5690	NA	NA	NA	4920 J	NA	10300 Q
	SHM-10-15 (EPA)	10/23/2012	5800	NA	49000	NA	45000	NA	6100	NA	8000	NA	4700	NA	14	NA
	SHM-10-15-052413	5/24/2013	NA	1090	NA	77200	NA	8290	NA	<5000	NA	1960	NA	6450	NA	6720
	SHM-10-15-112013	11/20/2013	NA	5740	NA	48800	NA	47400	NA	6030	NA	8210	NA	5070	NA	10700

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHM-10-16	SHM-10-16-090210	9/2/2010	487	495	69700	73900	50200	53100	13800	14100	1710	1790	14600	15500	30800	31400
	DUP-090210	9/2/2010	542	489	76800	70700	55100	51100	15000	13500	1860	1680	15800	14700	33400	0.05
	SHM-10-16-102010	10/20/2010	1180	1090	73200	68100	51800	46900	13100	12000	1250	1150	12500	11800	31500	30700
	SHM-10-16-102312	10/23/2012	NA	1600	NA	71200	NA	41700	NA	11100	NA	NA	NA	9800	NA	25300
	SHM-10-16 (EPA)	10/24/2012	1500	NA	74000	NA	<40	NA	12000	NA	<20	NA	9500	NA	31000	NA
	SHM-10-16-052813	5/28/2013	NA	1350	NA	72900	NA	42700	NA	11600	NA	1280	NA	10600	NA	26500
	SHM-10-16-112013	11/20/2013	NA	1530	NA	78800	NA	44500	NA	11800	NA	1480	NA	10300	NA	29400
SHM-11-02	SHM-11-02-102212	10/22/2012	NA	7.1	NA	82700	NA	2000	NA	5900	NA	NA	NA	4700 J	NA	18000
	SHM-11-02-112013	11/20/2013	NA	3.2 J	NA	32900	NA	2470	NA	2960 J	NA	146	NA	7470	NA	21300
SHM-11-06	SHM-11-06-102212	10/22/2012	NA	920	NA	51500	NA	84100	NA	7200	NA	NA	NA	12300	NA	15500
	SHM-11-06-052813	5/28/2013	NA	1020	NA	45900	NA	73200	NA	7250	NA	990	NA	11100	NA	17000
	SHM-11-06-112013	11/20/2013	NA	1000	NA	45500	NA	74600	NA	6460	NA	938	NA	10800	NA	18200
SHM-05-40X	SHM-05-40X-101807	10/18/2007	4445	NA	50000	NA	58000	NA	7500	NA	1330	NA	7300	NA	19000	NA
	SHM-05-40X-103107	10/31/2007	4058	2620	51000	48000	57900	43500	7800	7300	1427	1244	7600	7560	20000	19900
	SHM-05-40X-100710	10/7/2010	3637	NA	34000	NA	35000	NA	4900	NA	828	NA	5600	NA	14000	NA
	SHM-05-40X100511	10/5/2011	3703	NA	29000	NA	30000	NA	3800	NA	804	NA	5500	NA	13000	NA
	SHM-05-40X-101712	10/17/2012	2974	NA	32000	NA	3000	NA	4800	NA	0.829	NA	5400	NA	13000	NA
	SHM-05-40X-102413	10/24/2013	NA	3100	NA	37500	NA	28800	5610	NA	911	NA	NA	6590	NA	15100
SHM-05-39A	SHM-05-39A-101707	10/17/2007	2.415	NA	29000	NA	52000	NA	38000	NA	1250	NA	8200	NA	10000	NA
	SHM-05-39A-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-05-39A	8/12/2010	NA	236	NA	16600	NA	24500	NA	1860	NA	680	NA	6530	NA	12300
	SHM-05-39A-101310	10/13/2012	246.3	NA	18000	NA	26000	NA	1900	NA	744	NA	6000	NA	10000	NA
	SHM-05-39A-100411	10/4/2011	227.1	NA	16000	NA	17000	NA	1600	NA	541	NA	5500	NA	6600	NA
	SHL-05-39A-101612	10/16/2012	76.3	NA	14000	NA	3900	NA	1400	NA	52	NA	4900	NA	13000	NA
	SHL-05-39A-102413	10/24/2013	NA	146	NA	15800	NA	14700	NA	1770 J	NA	575	NA	5290	NA	5080
SHM-05-39B	SHM-05-39B-101707	10/17/2007	3.094	NA	99000	NA	10000	NA	14000	NA	5920	NA	9300	NA	47000	NA
	SHM-05-39B-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-05-39B-101310	10/13/2010	162	NA	92000	NA	3200	NA	12000	NA	5510	NA	7000	NA	130000	NA
	DUP-02-101310	10/13/2010	174.7	NA	91000	NA	3300	NA	11000	NA	5450	NA	6600	NA	120000	NA
	SHM-05-39B-100511	10/5/2011	308.1	NA	100000	NA	5000	NA	13000	NA	6130	NA	6500	NA	60000	NA
	DUP02-100511	10/5/2011	311.4	NA	100000	NA	5100	NA	13000	NA	6250	NA	6600	NA	60000	NA
	SHM-05-39B-101612	10/16/2012	364.4	NA	100000	NA	6100	NA	14000	NA	6320	NA	6400	NA	40000	NA
	SHM-05-39B-102413	10/24/2013	NA	113	NA	16500	NA	9580	NA	1660 J	NA	1230	NA	3040 J	NA	61900
SHP-99-31A	SHP-99-31A-101707	10/17/2007	22.7	NA	12000	NA	12000	NA	800	NA	798	NA	680 J	NA	13000	NA
	SHP-99-31A-011008	1/10/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHP-99-31A-101310	10/13/2010	17.4	NA	15000	NA	13000	NA	1200	NA	675	NA	1000 J	NA	16000	NA
	SHP-99-31A-100511	10/5/2011	18.4	NA	11000	NA	8100	NA	790	NA	427	NA	<2500	NA	9700	NA
	SHP-99-31A-101812	10/18/2012	17.7	NA	16000	NA	11000	NA	1500	NA	519	NA	840 J	NA	15000	NA
	SHP-99-31A-102313	10/23/2013	NA	14.2	NA	10600	NA	4210	NA	971 J	NA	311	NA	500 U	NA	11900
	DUP01-102313	10/23/2013	NA	14.6	NA	10600	NA	4250	NA	960 J	NA	308	NA	500 U	NA	11900
SHP-99-31B	SHP-99-31B-101707	10/17/2007	85.5	NA	44000	NA	28000	NA	5100	NA	1210	NA	6800	NA	16000	NA
	SHP-99-31B-011008	1/10/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-99-31B	8/12/2010	NA	28.8	NA	16500	NA	14600	NA	1930	NA	478	NA	3860	NA	8460
	SHP-99-31B-101310	10/13/2010	39.2	NA	18000	NA	11000	NA	1800	NA	481		3400	NA	5800	NA
	SHP-99-31B-100511	10/5/2011	59.3	NA	17000	NA	10000	NA	1700	NA	460	NA	3000	NA	4600	NA
	SHP-99-31B-101812	10/18/2012	60.1	NA	17000	NA	9400	NA	1800	NA	405	NA	3000	NA	3700	NA
	SHP-99-31B-102313	10/23/2013	NA	61.6	NA	16900	NA	9460	NA	1880 J	NA	448	NA	3030 J	NA	3510 J

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHP-99-31C	SHP-99-31C-101707	10/17/2007	292.1	NA	86000	NA	44000	NA	13000	NA	4050	NA	16000	NA	38000	NA
	SHP-99-31C-011008	1/10/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-99-31C-101310	10/13/2010	239.4	NA	87000	NA	22000	NA	11000	NA	5250	NA	8500	NA	32000	NA
	SHM-99-31C-100511	10/5/2011	244	NA	90000	NA	22000	NA	12000	NA	6040	NA	7900	NA	31000	NA
	SHP-99-31C-101812	10/18/2012	206.4	NA	83000	NA	17000	NA	11000	NA	5450	NA	7200	NA	30000	NA
	SHP-99-31C-102313	10/23/2013	NA	205	NA	90900	NA	16400	NA	12800	NA	6160	NA	7220	NA	30600
SHM-99-32X	SHP-99-32X-101707	10/17/2007	206.2	NA	78000	NA	60000	NA	11000	NA	3480	NA	12000	NA	34000	NA
	SHP-99-32X-011008	1/10/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-99-32X-101310	10/13/2010	173.4	NA	100000	NA	25000	NA	14000	NA	8600	NA	6600	NA	38000	NA
	SHM-99-32X-100411	10/4/2011	172.8	NA	98000	NA	24000	NA	13000	NA	10100	NA	6200	NA	38000	NA
	DUP01-100411	10/4/2011	174.6	NA	100000	NA	25000	NA	13000	NA	10400	NA	6400	NA	39000	NA
	SHM-99-32X-101712	10/17/2012	130.6	NA	87000	NA	23000	NA	12000	NA	10700	NA	5800	NA	34000	NA
	DUP-101712	10/17/2012	134.4	NA	86000	NA	23000	NA	12000	NA	10700	NA	5800	NA	35000	NA
	SHM-99-32X-102313	10/23/2013	NA	107	NA	83700	NA	18400	NA	11500	NA	10900	NA	5250	NA	33400
SHM-05-41A	SHM-05-41A-101707	10/17/2007	24.9	NA	8200	NA	3400	NA	1700	NA	356	NA	1800 J	NA	3400	NA
	SHM-05-41A-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-05-41A-042110	4/21/2010	26.9	NA	9200	NA	2900	NA	1400	NA	388	NA	2100 J	NA	2100	NA
	SHM-05-41A-100710	10/7/2010	66.7	NA	10000	NA	4900	NA	1600	NA	395	NA	2000 J	NA	1800 J	NA
	SHM-05-41A-040411	4/4/2011	20.9	NA	10000	NA	2800	NA	1600	NA	539	NA	<2500	NA	1900 J	NA
	SHM-05-41A-100411	10/4/2011	18.4	NA	12000	NA	3200	NA	1900	NA	636	NA	2000 J	NA	2100	NA
	SHM-05-41A-04112	4/11/2012	15.5	NA	8500	NA	2400	NA	1300	NA	424	NA	1600 J	NA	2200	NA
	SHM-05-41A-101712	10/17/2012	10.3	NA	97000	NA	2300	NA	1500	NA	592	NA	1600 J	NA	2000	NA
	SHM-05-41A-052213	5/22/2013	NA	12.3	NA	9930	NA	5530	NA	1440 J	NA	569	NA	1630 J	NA	2610 J
SHM-05-41B	SHM-05-41A-102313	10/23/2013	NA	12.5	NA	9230	NA	4560	NA	1390 J	NA	534	NA	1660 J	NA	2680 J
	SHM-05-41B-101707	10/17/2007	2591	NA	48000	NA	100000	NA	6000	NA	1770	NA	12000	NA	14000	NA
	SHM-05-41A-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	DUP-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-05-041B	8/9/2010	1440	1130	16000	14500 J	35200	28000	2400	2080	736	656 J	10000	8770 J	14900	12800 J
	SHM-05-41B-042110	4/21/2010	1372	NA	14000	NA	32000	NA	2000	NA	662	NA	8600	NA	11000	NA
	SHM-05-41B-100710	10/7/2010	1036	NA	12000	NA	27000	NA	1700	NA	605	NA	8400	NA	7500	NA
	SHM-05-41B-040411	4/4/2011	1045	NA	12000	NA	27000	NA	1800	NA	605	NA	9000	NA	5900	NA
	SHM-05-41B-100411	10/4/2011	1369	NA	9900	NA	26000	NA	1400	NA	494	NA	8700	NA	5600	NA
	SHM-05-41B-04112	4/11/2012	770.8	NA	6800	NA	13000	NA	1000	NA	304	NA	6700	NA	5000	NA
	SHM-05-41B-101712	10/17/2012	859.5	NA	13000	NA	26000	NA	2100	NA	629	NA	8500	NA	3500	NA
	SHM-05-41B-52213	5/22/2013	NA	812	NA	18400	NA	32300	NA	3450 J	NA	780	NA	9330	NA	5150
SHM-05-41C	SHM-05-41B-102313	10/23/2013	NA	716	NA	12700	NA	21400	NA	2430 J	NA	583	NA	7500	NA	3780 J
	SHM-05-41C-101707	10/17/2007	684.5	NA	97000	NA	18000	NA	13000	NA	3260	NA	4200	NA	36000	NA
	SHM-05-41C-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-05-41C-042110	4/21/2010	896	NA	92000	NA	18000	NA	11000	NA	2860	NA	3500	NA	34000	NA
	SHM-05-41C-100710	10/7/2010	787	NA	97000	NA	19000	NA	12000	NA	3100	NA	3500	NA	33000	NA
	SHM-05-41C-040411	4/4/2011	749.8	NA	98000	NA	16000	NA	12000	NA	3170	NA	<3700	NA	100000	NA
	SHM-05-41C-100411	10/4/2011	917	NA	98000	NA	19000	NA	11000	NA	3240	NA	3600	NA	33000	NA
	SHM-05-41C-041112	4/11/2012	764.8	NA	94000	NA	18000	NA	11000	NA	3160	NA	3700	NA	35000	NA
	SHM-05-41C-101812	10/18/2012	782.2	NA	95000	NA	17000	NA	12000	NA	3190	NA	3500	NA	33000	NA
	SHM-05-41C-052113	5/21/2013	NA	709	NA	102000	NA	14700	NA	13400	NA	2530	NA	3490 J	NA	118000
	SHM-05-41C-102313	10/23/2013	NA	890	NA	106000	NA	16200	NA	13000	NA	2940	NA	3580 J	NA	33700

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHM-05-42A	SHM-05-42A-101707	10/17/2007	1.01 J	NA	5600	NA	180	NA	1200	NA	8.1 J	NA	1900 J	NA	1000 J	NA
	SHM-05-42A	8/12/2010	NA	1.25	NA	6700	NA	388	NA	1160	NA	140	NA	1470	NA	2040
	SHM-05-42A-042210	4/22/2010	2.5	NA	5200	NA	1200	NA	980	NA	153	NA	1200 J	NA	1900 J	NA
	SHM-05-42A-101310	10/13/2010	1.2	NA	7600	NA	250	NA	1300	NA	138	NA	1600 J	NA	2000	NA
	SHM-05-42A-040511	4/5/2011	1.1	NA	7100	NA	200	NA	1100	NA	105	NA	<2500	NA	<2500	NA
	SHM-05-42A-100711	10/7/2011	0.8	NA	6200	NA	100	NA	1000	NA	15	NA	1600 J	NA	1600 J	NA
	SHM-05-42A-041112	4/11/2012	2.3	NA	5400	NA	500	NA	880	NA	29	NA	1600 J	NA	1600 J	NA
	SHM-05-42A-101812	10/18/2012	0.7	NA	8100	NA	45 J	NA	1400	NA	42 J	NA	2200 J	NA	2100	NA
SHM-05-42B	SHM-05-42A-052213	5/22/2013	NA	0.89 J	NA	6420	NA	224	NA	981 J	NA	103	NA	2060 J	NA	2350 J
	SHM-05-42A-102313	10/23/2013	NA	2.0 U	NA	6520	NA	111	NA	976 J	NA	66	NA	1880 J	NA	2420 J
	SHM-05-42B-101707	10/17/2007	304.4	NA	77000	NA	94000	NA	12000	NA	1700	NA	20000	NA	39000	NA
	SHM-05-42B-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-05-42B-042210	4/22/2010	72.2	NA	56000	NA	37000	NA	7800	NA	2540	NA	11000	NA	26000	NA
	SHM-05-42B-101310	10/13/2010	197.2	NA	56000	NA	47000	NA	7300	NA	2710	NA	11000	NA	24000	NA
	SHM-05-42B	4/1/2011	188.9	NA	59000	NA	61000	NA	8500	NA	3070	NA	12000	NA	29000	NA
	SHM-05-42B-100711	10/7/2011	230	NA	59000	NA	61000	NA	9000	NA	2790	NA	11000	NA	32000	NA
SHL-23	SHL-22-101707	10/17/2007	0.73 J	NA	2800	NA	210	NA	250	NA	14	NA	990 J	NA	1000 J	NA
	SHL-23	8/12/2010	NA	0.14 J	NA	2230	NA	16.9 J	NA	163	NA	6.87	NA	990	NA	1400
	SHL-23-101310	10/13/2010	<0.5	NA	2500	NA	28 J	NA	180	NA	8.5 J	NA	1000 J	NA	1500 J	NA
	SHL-23-101512	10/15/2012	<0.5	NA	2300	NA	20 J	NA	190	NA	0.011	NA	980 J	NA	1600 J	NA
	DUP-101512	10/15/2012	<0.5	NA	2300	NA	20 J	NA	190	NA	9.0 J	NA	980 J	NA	1600 J	NA
SHL-9	DUP02-101607	10/16/2007	33.5	NA	27000	NA	11000	NA	1700	NA	518	NA	2500	NA	4100	NA
	SHL-9-042110	4/21/2010	25.2	NA	20000	NA	6300	NA	1600	NA	447	NA	2000 J	NA	3900	NA
	SHL-9-101210	10/12/2010	38.4	NA	23000	NA	11000	NA	1900	NA	442	NA	2400 J	NA	6700	NA
	SHL-9-040611	4/6/2011	25.7	NA	21000	NA	7500	NA	1600	NA	467	NA	2000 J	NA	4600	NA
	SHL-9-100711	10/7/2011	39.8	NA	23000	NA	9500	NA	1900	NA	409	NA	2600	NA	5900	NA
	SHL-9-041012	4/10/2012	29.5	NA	23000	NA	9500	NA	1900	NA	354 J	NA	2400 J	NA	7000	NA
	SHL-9-101712	10/17/2012	36.4	NA	24000	NA	8300	NA	2100	NA	357	NA	2500	NA	6500	NA
	SHL-9-052813	5/28/2013	NA	30.0	NA	25400	NA	9590 J	NA	1440 J	NA	497	NA	2470 J	NA	6560
SHL-22	SHL-9-102313	10/23/2013	NA	33.1	NA	26300	NA	8890	NA	2520 J	NA	439	NA	2550 J	NA	6280
	SHL-22-101607	10/16/2007	55.1	NA	100000	NA	370	NA	13000	NA	4320	NA	5400	NA	34000	NA
	SHL-22-042110	4/21/2010	69.6	NA	100000	NA	580	NA	12000	NA	6670	NA	4800	NA	30000	NA
	SHL-22-101210	10/12/2010	46.5	NA	110000	NA	430	NA	13000	NA	7510	NA	4600	NA	31000	NA
	DUP-01-101210	10/12/2010	49.0	NA	111000	NA	480	NA	13000	NA	12000	NA	4600	NA	31000	NA
	SHL-22-040611	4/6/2011	57.9	NA	110000	NA	650	NA	13000	NA	8020	NA	4900	NA	31000	NA
	SHL-22-100711	10/7/2011	45.7	NA	110000	NA	580	NA	13000	NA	8280	NA	4700	NA	28000	NA
	SHL-22-041012	4/10/2012	41.9	NA	100000	NA	610	NA	12000	NA	8180 J	NA	5000	NA	29000	NA
	DUP-01012	4/10/2012	43.6	NA	110000	NA	600	NA	12000	NA	8340 J	NA	5000	NA	29000	NA
	SHL-22-101712	10/17/2012	16.5	NA	100000	NA	340	NA	12000	NA	8570	NA	4500	NA	2600	NA
	SHL-22-052813	5/28/2013	NA	34.1	NA	114000	NA	453	NA	14400	NA	9200	NA	5070	NA	27800
	DUP-052813	5/28/2013	NA	33.3	NA	114000	NA	440	NA	14100	NA	8580	NA	<5000	NA	27300
SHL-22-102313	SHL-22-102313	10/23/2013	NA	53.1	NA	114000	NA	615	NA	13700	NA	9700	NA	4790 J	NA	27400
	DUP02-102313	10/23/2013	NA	54.3	NA	112000	NA	610	NA	13500	NA	10300	NA	4830 J	NA	26700

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHM-93-22B	SHM-93-22B-042110	4/21/2010	947.5	NA	73000	NA	48000	NA	11000	NA	6210	NA	9200	NA	27000	NA
	DUP-042110	4/21/2010	980.3	NA	73000	NA	48000	NA	10000	NA	6220	NA	9100	NA	27000	NA
	SHM-93-22B-101110	10/11/2010	827.6	NA	80000	NA	37000	NA	11000	NA	8280	NA	8000	NA	28000	NA
	SHM-93-22B-040611	4/6/2011	1039	NA	80000	NA	45000	NA	11000	NA	8620	NA	8500	NA	29000	NA
	SHM-93-22B-101111	10/11/2011	1072	NA	79000	NA	38000	NA	11000	NA	8540	NA	9000	NA	26000	NA
	SHM-93-22B-041012	4/10/2012	1271	NA	74000	NA	35000	NA	10000	NA	8100 J	NA	9500	NA	26000	NA
	SHM-93-22B-101712	10/17/2012	879	NA	74000	NA	23000	NA	10000	NA	9020	NA	8100	NA	2800	NA
	SHM-93-22B-052813	5/28/2013	NA	1150	NA	77800	NA	30000	NA	12200	NA	9680	NA	8480	NA	28300
	SHM-93-22B-102313	10/23/2013	NA	1150	NA	78200	NA	31300	NA	11300	NA	9450	NA	8040	NA	28000
SHM-93-22C	SHM-93-22C-101607	10/16/2007	72.5	NA	89000	NA	1700	NA	15000	NA	494	NA	4800	NA	25000	NA
	DUP01-101607	10/16/2007	72	NA	87000	NA	1600	NA	14000	NA	478	NA	4600	NA	24000	NA
	SHM-93-22C-042110	4/21/2010	14.6	NA	34000	NA	280	NA	3400	NA	105	NA	4700	NA	9300	NA
	SHM-93-22C-101210	10/12/2010	15.8	NA	39000	NA	290	NA	3600	NA	58	NA	4500	NA	10000	NA
	SHM-93-22C-040611	4/6/2011	13.9	NA	45000	NA	350	NA	3500	NA	36	NA	4200	NA	9000	NA
	SHM-99-22C-100511	10/5/2011	13.9	NA	40000	NA	380	NA	3100	NA	84	NA	3700	NA	7900	NA
	SHM-93-22C-041112	4/11/2012	25.4	NA	41000	NA	980	NA	3500	NA	136	NA	4200	NA	9400	NA
	SHM-93-22C-101712	10/17/2012	21.7	NA	39000	NA	590	NA	3400	NA	140	NA	4000	NA	9000	NA
	SHM-99-22C-052813	5/28/2013	NA	19.7	NA	40000	NA	568	NA	<5000	NA	140	NA	<5000	NA	9550
	SHM-99-22C-102313	10/23/2013	NA	25.1	NA	41900	NA	555	NA	3920 J	NA	154	NA	4170 J	NA	9830
SHL-5	SHL-5-101807	10/18/2007	16.2	NA	9400	NA	6300	NA	1700	NA	362	NA	1900 J	NA	1400 J	NA
	SHL-5-042210	4/22/2010	3.4	NA	7400	NA	1200	NA	1200	NA	237	NA	1400 J	NA	2200	NA
	SHL-5-101110	10/11/2010	4.8	NA	15000	NA	610	NA	2100	NA	425	NA	2400 J	NA	3300	NA
	SHL-5-040511	4/5/2011	1	NA	6400	NA	170	NA	1000	NA	157	NA	<2500	NA	1600 J	NA
	SHL-5-101111	10/11/2011	5.5	NA	9100	NA	700	NA	1200	NA	193	NA	1500 J	NA	2800	NA
	SHL-5041012	4/10/2012	3.7	NA	7700	NA	1500	NA	1100	NA	233 J	NA	1200 J	NA	2100	NA
	SHL-5-101512	10/15/2012	4.5	NA	11000	NA	1000	NA	1600	NA	310	NA	1700 J	NA	2600	NA
	SHL-5-052113	5/21/2013	NA	3.7	NA	10900	NA	999	NA	1500 J	NA	286	NA	1390	NA	2140
	SHL-5-102213	10/22/2013	NA	15.1	NA	11500	NA	2380	NA	1650 J	NA	429	NA	1780 J	NA	3590 J
SHM-96-5B	SHM-96-5B-101707	10/17/2007	750	NA	81000	NA	5000	NA	12000	NA	11400	NA	9200	NA	28000	NA
	SHM-96-5B-010808	1/8/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SHM-96-5B-042210	4/22/2010	1504 J	NA	70000 J	NA	21000 J	NA	11000	NA	9840 J	NA	8600	NA	24000	NA
	SHM-96-5B-101110	10/11/2010	846.2	NA	81000	NA	9300	NA	11000	NA	11500	NA	7900	NA	27000	NA
	SHM-96-5B-040511	4/5/2011	2030	NA	71000	NA	30000	NA	11000	NA	9510	NA	<8500	NA	23000	NA
	SHM-96-5B-100611	10/6/2011	1895	NA	80000	NA	17000	NA	12000	NA	11000	NA	8600	NA	26000	NA
	SHM-96-5B-041012	4/10/2012	1681	NA	76000	NA	19000	NA	10000	NA	10300 J	NA	9000	NA	28000	NA
	SHM-96-5B-101512	10/15/2012	1376	NA	66000	NA	13000	NA	10000	NA	9160	NA	7100	NA	22000	NA
	SHM-96-5B-052113	5/21/2013	NA	1400	NA	75300	NA	20000	NA	12700	NA	9670	NA	7970	NA	23700
	SHM-96-5B-102213	10/22/2013	NA	1660	NA	76500	NA	24700	NA	11600	NA	9980	NA	8000	NA	24000
SHM-96-5C	SHM-96-5C-101707	10/17/2007	61.1	NA	69000	NA	60000	NA	11000	NA	3980	NA	13000	NA	30000	NA
	SHM-96-5C-042210	4/22/2010	31.2	NA	75000	NA	15000	NA	9300	NA	6860	NA	13000	NA	36000	NA
	SHM-96-5C-101110	10/11/2010	26.4	NA	71000	NA	15000	NA	8600	NA	7160	NA	13000	NA	34000	NA
	SHM-96-5C-040511	4/5/2011	35	NA	70000	NA	22000	NA	9500	NA	8890	NA	14000	NA	32000	NA
	SHM-96-5C-100611	10/6/2011	24.5	NA	70000	NA	13000	NA	9700	NA	8140	NA	14000	NA	31000	NA
	SHM-96-5C-041012	4/10/2012	8.7	NA	67000	NA	4400	NA	9300	NA	13600 J	NA	18000	NA	33000	NA
	SHM-96-5C-101712	10/17/2012	7.7	NA	66000	NA	1100	NA	9800	NA	15000	NA	15000	NA	29000	NA
	SHM-96-5C-052813	5/28/2013	NA	10.4	NA	68800	NA	2200	NA	11800	NA	12600	NA	14100	NA	29700
	SHM-96-5C-102213	10/22/2013	NA	5.5	NA	67300	NA	609	NA	9910	NA	12900	NA	17400	NA	32300

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHL-8S	SHL-8S-101807	10/18/2007	22.6	NA	3600	NA	80	NA	660	NA	56	NA	1300 J	NA	5900	NA
	SHL-8S-0422210	4/22/2010	0.6	NA	5600	NA	<50	NA	960	NA	<10	NA	1300 J	NA	6200	NA
	SHL-8S-101110	10/11/2010	<0.5	NA	6000	NA	<50	NA	1000	NA	3.8 J	NA	1300 J	NA	6300	NA
	SHL-8S-040511	4/5/2011	<0.5	NA	6200	NA	50	NA	1100	NA	16	NA	1300 J	NA	6100	NA
	SHL-8S-100611	10/6/2011	<0.5	NA	6700	NA	60	NA	1200	NA	14	NA	1400 J	NA	6200	NA
	SHL-8S-041012	4/10/2012	0.6	NA	6000	NA	30 J	NA	970	NA	32 J	NA	1300 J	NA	6100	NA
	SHL-8S-101512	10/15/2012	<0.5	NA	5200	NA	30 J	NA	960	NA	35	NA	1100 J	NA	4900	NA
	SHL-8S-052813	5/28/2013	NA	0.93 J	NA	6800	NA	<100	NA	<5000	NA	<15	NA	<5000	NA	5970
	SHL-8S-102213	10/22/2013	NA	2 U	NA	6730	NA	30 U	NA	1180 J	NA	2.5 U	NA	1330 J	NA	6060
SHL-8D	SHL-8D-101807	10/18/2007	11.8	NA	18000	NA	22 J	NA	2600	NA	80	NA	970 J	NA	9100	NA
	SHL-8D-042210	4/22/2010	0.6	NA	12000	NA	17 J	NA	1800	NA	<10	NA	<2500	NA	7400	NA
	SHL-8D-101110	10/11/2010	<0.5	NA	8800	NA	<50	NA	1200	NA	13	NA	970 J	NA	7300	NA
	SHL-8D-040511	4/5/2011	<0.5	NA	11000	NA	<50	NA	1400	NA	<10	NA	950 J	NA	9200	NA
	DUP-040511	4/5/2011	<0.5	NA	6300	NA	40 J	NA	1100	NA	14	NA	1400 J	NA	6200	NA
	SHL-8D-100611	10/6/2011	<0.5	NA	8100	NA	60	NA	1100	NA	<10	NA	<2500	NA	7400	NA
	SHL-8D-041112	4/11/2012	<0.5	NA	14000	NA	<50	NA	1700	NA	<10	NA	<2500	NA	8000	NA
	SHL-8D-101512	10/15/2012	<0.5	NA	10000	NA	<50	NA	1600	NA	4 J	NA	810 J	NA	7500	NA
SHL-21	SHL-8D-052113	5/21/2013	NA	0.72 J	NA	9730	NA	30 U	NA	1490 J	NA	2.5 U	NA	1070 J	NA	14800
	SHL-8D-102213	10/22/2013	NA	2.0 U	NA	8190	NA	30 U	NA	1260 J	NA	2.5 U	NA	759 J	NA	7350
SHL-21	SHL-21-101607	10/16/2007	0.81 J	NA	5100	NA	40 J	NA	580	NA	4.6 J	NA	1000 J	NA	2600	NA
	SHL-21-101310	10/13/2012	0.9	NA	4700 J	NA	<50	NA	500	NA	<10	NA	890 J	NA	2500	NA
	SHL-21-101512	10/15/2012	1.1	NA	5300	NA	<50	NA	700	NA	6 J	NA	970 J	NA	2200	NA
SHL-13	SHL-13-101807	10/18/2007	1.6	NA	6900	NA	110	NA	1500	NA	503	NA	980 J	NA	24000	NA
	SHL-13-101110	10/11/2010	<0.5	NA	11000	NA	<50	NA	2000	NA	11	NA	1300 J	NA	45000	NA
	SHL-13-100611	10/6/2011	2.8	NA	8700	NA	520	NA	1900	NA	179	NA	920 J	NA	36000	NA
	SHL-13-101512	10/15/2012	1.0	NA	10000	NA	400	NA	1800	NA	484	NA	1300 J	NA	30000	NA
	SHL-13-102213	10/22/2013	NA	2.0 U	NA	11300	NA	43.3 J	NA	2290 J	NA	29.6	NA	1360 J	NA	40100
SHP-01-36X	SHL-13-102213	10/22/2013	NA	2.0 U	NA	11300	NA	43.3 J	NA	2290 J	NA	29.6	NA	1360 J	NA	40100
	SHP-01-36X-101607	10/16/2007	16.7	NA	8900	NA	6900	NA	1700	NA	309	NA	1500 J	NA	25000	NA
	SHP-01-36X-101410	10/14/2010	14.2	NA	9700	NA	2300	NA	1600	NA	168	NA	1000 J	NA	25000	NA
	SHP-01-36X-101011	10/10/2011	30.8	NA	10000	NA	2700	NA	2000	NA	53	NA	<2500	NA	24000	NA
	SHP-01-36X-101612	10/16/2012	17.8	NA	15000	NA	2600	NA	2600	NA	83	NA	1800 J	NA	33000	NA
SHP-01-37X	SHP-01-36X-111913	11/19/2013	NA	4.8	NA	17400	NA	75.2 J	NA	2540 J	NA	23.4	NA	2230 J	NA	42000
	SHP-01-37X-101607	10/16/2007	26.6	NA	10000	NA	8200	NA	1600	NA	588	NA	2200 J	NA	28000	NA
	SHP-01-37X-101410	10/14/2010	22.5	NA	12000	NA	6700	NA	1700	NA	761	NA	1500 J	NA	32000	NA
	SHP-01-37X-101612	10/16/2012	10.2	NA	11000	NA	3900	NA	2200	NA	321	NA	1600 J	NA	29000	NA
SHP-01-38A	SHP-01-37X-111913	11/19/2013	NA	4.7	NA	28700	NA	1430	NA	2840 J	NA	569	NA	3970 J	NA	42500
	SHP-01-38A-101607	10/16/2007	781.4	NA	32000	NA	37000	NA	5400	NA	848	NA	12000	NA	24000	NA
	SHP-01-38A-101410	10/14/2010	651.8	NA	28000	NA	28000	NA	3500	NA	716	NA	8300	NA	20000	NA
	SHP-01-38A-101211	10/12/2011	557.9	NA	38000	NA	31000	NA	4500	NA	892	NA	11000	NA	19000	NA
	SHP-01-38A-101512	10/15/2012	660.6	NA	33000	NA	3000	NA	4200	NA	710	NA	8700	NA	22000	NA
	SHP-01-38A-052313	5/23/2013	NA	412	NA	11800	NA	10200	NA	1260 J	NA	254	NA	4390 J	NA	8320
SHP-01-38B	SHP-01-38A-111913	11/19/2013	NA	247	NA	39800	NA	17900	NA	2450 J	NA	2200	NA	8410	NA	23000
	SHP-01-38B-052313	5/23/2013	NA	900	NA	53400	NA	47100	NA	8140	NA	2240	NA	9270	NA	23500
SHL-15	SHL-15-101607	10/16/2007	42	NA	21000	NA	3400	NA	2800	NA	570	NA	4900	NA	7600	NA
	SHL-15-101410	10/14/2010	25	NA	26000	NA	2800	NA	3400	NA	342	NA	5300	NA	8400	NA
	SHL-15-100611	10/6/2011	70.4	NA	25000	NA	8200	NA	2300	NA	512	NA	4600	NA	2100	NA
	SHL-15-101612	10/16/2012	24.2	NA	29000	NA	3200	NA	3800	NA	271	NA	7100	NA	1200	NA
	SHL-15-102213	10/22/2013	NA	34.9	NA	27000	NA	6610	NA	3340 J	NA	437	NA	6480	NA	12100
N5-P1	N-5,P-1-101210	10/12/2010	3488	NA	81000	NA	20000	NA	10000	NA	7010	NA	4400	NA	19000	NA
	N-5,P-1-101011	10/10/2011	4942	NA	62000	NA	40000	NA	8100	NA	6440	NA	5200	NA	14000	NA
	N-5,P-1-101812	10/18/2012	2286	NA	83000	NA	6500	NA	11000	NA	671	NA	3900	NA	17000	NA
	N-5,P-1-101812	10/22/2013	NA	2500	NA	89500	NA	7520	NA	11600	NA	8570	NA	4330 J	NA	17300

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
N5-P2	N-5,P-2-101210	10/12/2010	24.5	NA	150000	NA	70000	NA	13000	NA	422	NA	16000	NA	18000	NA
	N-5,P-2-101011	10/10/2011	27.4	NA	150000	NA	72000	NA	13000	NA	476	NA	16000	NA	15000	NA
	N-5,P-2-101712	10/17/2012	26.1	NA	140000	NA	66000	NA	12000	NA	421	NA	1500	NA	15000	NA
	N-5,P-2-102213	10/22/2013	NA	21.2	NA	162000	NA	75400	NA	14400	NA	459	NA	15400	NA	15200
SHP-99-29X	SHP-99-29X-101807	10/18/2007	2953	NA	11000	NA	44000	NA	990	NA	10400	NA	530 J	NA	2600	NA
	SHP-99-29X-102907	10/29/2007	2800	NA	12000	11000	42000	41000	980	960	10000	10000	700	NA	2800	NA
	SHP-99-29X-101210	10/12/2010	3156	NA	12000	NA	44000	NA	1100	NA	9310	NA	<2500	NA	3200	NA
	SHP-99-29X-101112	10/11/2012	1457	NA	11000	NA	50000	NA	1300	NA	4210	NA	2100 J	NA	2900	NA
	SHP-99-29X-101712	10/17/2012	2739	NA	8400	NA	32000	NA	760	NA	5510	NA	<2500	NA	2200	NA
	SHP-99-29X-102213	10/22/2013	NA	2760	NA	9970	NA	43300	NA	889 J	NA	6430	NA	638 J	NA	2500 J
SHL-20	SHL-20-101607	10/16/2007	3.362	NA	66000	NA	7200	NA	9300	NA	6540	NA	6100	NA	28000	NA
	SHL-20-101310	10/13/2010	4.4	NA	43000	NA	250	NA	5900	NA	544	NA	7300	NA	21000	NA
	SHL-20-100611	10/6/2011	7.3	NA	40000	NA	350	NA	5700	NA	820	NA	6400	NA	18000	NA
	SHL-20-101512	10/15/2012	139.2	NA	36000	NA	1800	NA	4900	NA	3000	NA	7000.0	NA	15000	NA
	SHL-20-052213	5/22/2013	NA	621	NA	32700	NA	17700	NA	3890 J	NA	2150	NA	7240	NA	24900
	SHL-20-102213	10/22/2013	NA	632	NA	22200	NA	38500	NA	2530 J	NA	1590	NA	8310	NA	22100
	DUP-102213	10/22/2013	NA	641	NA	22200	NA	38900	NA	2510 J	NA	1590	NA	8310	NA	22200
SHL-11	SHL-11-101607	10/16/2007	686.5	NA	34000	NA	48000	NA	5200	NA	2320	NA	9500	NA	23000	NA
	SHL-11-101310	10/13/2010	694	NA	39000	NA	60000	NA	5300	NA	2620	NA	9100	NA	21000	NA
	SHL-11-100611	10/6/2011	654.9	NA	42000	NA	50000	NA	5600	NA	2250	NA	9200	NA	15000	NA
	SHL-11-101512	10/15/2012	647.0	NA	35000	NA	34000	NA	5500	NA	1540	NA	6800	NA	16000	NA
	SHL-11-052313	5/23/2013	NA	496	NA	47800	NA	19800	NA	6490	NA	2430	NA	6480	NA	24400
	SHL-11-102213	10/22/2013	NA	752	NA	45000	NA	27600	NA	5900	NA	3610	NA	8470	NA	27300
SHL-4	SHL-4-101607	10/16/2007	7.5	NA	35000	NA	1800	NA	7000	NA	631	NA	4900	NA	13000	NA
	SHL-4-101410	10/14/2010	3.1	NA	36000	NA	180	NA	4600	NA	255	NA	7500	NA	14000	NA
	SHL-4-101111	10/7/2011	1.4	NA	8100	NA	30 J	NA	2000	NA	31	NA	1800 J	NA	2100	NA
	SHL-4-101612	10/16/2012	3.8	NA	18000	NA	880	NA	2900	NA	125	NA	4000.0	NA	2800	NA
	SHL-4-052413	5/24/2013	NA	2.6	NA	30500	NA	57.8 J	NA	4300 J	NA	481	NA	4460 J	NA	18200
	DUP-02-052413	5/24/2013	NA	2.7	NA	30900	NA	59.6 J	NA	4300 J	NA	478	NA	4440 J	NA	18600
	SHL-4-111913	11/19/2013	NA	6.2	NA	28300	NA	637	NA	3860 J	NA	1830	NA	5910	NA	45700
SHL-19	SHL-19-101607	10/16/2007	8.851	NA	24000	NA	50000	NA	3800	NA	2700	NA	3600	NA	4200	NA
	SHL-19-101410	10/14/2010	234.8	NA	25000	NA	23000	NA	3500	NA	3260	NA	3700	NA	2800	NA
	SHL-19-100711	10/7/2011	62.9	NA	11000	NA	7700	NA	1900	NA	1460	NA	2800	NA	2100	NA
	SHL-19-101612	10/16/2012	138.3	NA	21000	NA	10000	NA	3800	NA	1060	NA	3400	NA	3200	NA
	DUP-101612	10/16/2012	133.0	NA	21000	NA	10000	NA	3800	NA	1070	NA	3500	NA	3300	NA
	SHL-19-052413	5/24/2013	NA	3.8	NA	18300	NA	1460	NA	3150 J	NA	580	NA	2710 J	NA	2930 J
	SHL-19-102413	10/24/2013	NA	33.6	NA	22200	NA	8380	NA	3670 J	NA	1630	NA	3260 J	NA	2970 J
SHL-10	SHL-10-101607	10/16/2007	0.59 J	NA	5800	NA	45 J	NA	790	NA	14	NA	830 J	NA	1200 J	NA
	SHL-10-101410	10/14/2010	0.9	NA	11000	NA	<50	NA	1500	NA	<10	NA	1700 J	NA	1200 J	NA
	SHL-10-101612	10/16/2012	0.7	NA	86000	NA	<50	NA	1100	NA	<10	NA	1300 J	NA	1200 J	NA
	SHL-10-052213	5/22/2013	NA	1.2	NA	8260	NA	30.0 J	NA	877 J	NA	2.5 U	NA	1320 J	NA	1220 J
SHM-93-10C	SHM-93-10C-101607	10/16/2007	9.8	NA	72000	NA	140	NA	4000	NA	67	NA	5200	NA	9200	NA
	SHM-93-10C-101410	10/14/2010	8.7	NA	70000	NA	26 J	NA	3600	NA	38	NA	4700	NA	8300	NA
	SHL-93-10C-101612	10/16/2012	8.1	NA	66000	NA	30 J	NA	3600	NA	6 J	NA	4800	NA	8400	NA
SHM-07-03	SHM-07-03	10/31/2007	44.4 J	<0.5	9300	8300	10700	73 J	2900	830	494.4	210.9	2200 J	1060 J	4100	3210
	SHM-07-03	8/12/2010	NA	0.29 J	NA	6580	NA	53.8	NA	550	NA	9.68	NA	841	NA	11600
	DUP2-081210	8/12/2010	NA	0.77	NA	6860	NA	58	NA	568	NA	9.66	NA	893	NA	12100
	SHM-07-03-052813	5/28/2013	NA	1.0	NA	5930	NA	<100	NA	<5000	NA	<15	NA	<5000	NA	23800

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Arsenic		Calcium		Iron		Magnesium		Manganese		Potassium		Sodium	
			Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)	Total (ug/L)	Dissolved (ug/L)
SHM-07-05X	SHM-07-05	10/31/2007	14.7	NA	21000	NA	391	NA	2900	NA	81.1	NA	15000	NA	32000	NA
	SHM-07-05	8/12/2010	NA	3180	NA	21500	NA	22500	NA	2990	NA	544	NA	4530	NA	11500
	DUP-081210	8/12/2010	NA	3220	NA	21700	NA	22700	NA	2960	NA	545	NA	4540	NA	11500
SHP-05-045A	SHP-05-045A	8/9/2010	36.4	33.7	NA	NA	21600	22100	NA	NA	NA	NA	NA	NA	NA	NA
SHP-05-046B	SHP-05-046B	8/9/2010	50.6	81.4	NA	NA	26800	34800	NA	NA	NA	NA	NA	NA	NA	NA
PZ-12-01	PZ-12-01-052813	5/28/2013	NA	441	NA	54500	NA	27100	NA	7200	NA	3930	NA	<5000	NA	27400
PZ-12-02	PZ-12-02-052113	5/21/2013	NA	627	NA	50900	NA	58600	NA	5760	NA	1330	NA	11100	NA	20500
PZ-12-03	PZ-12-03-052413	5/24/2013	NA	659	NA	59500	NA	40100	NA	8110	NA	2950	NA	8340	NA	45500
PZ-12-04	PZ-12-04-052413	5/24/2013	NA	610	NA	40900	NA	56300	NA	5160	NA	1310	NA	10500	NA	24900
PZ-12-05	PZ-13-05-052213	5/22/2013	NA	741	NA	47000	NA	67700	NA	5140	NA	1710	NA	9110	NA	16500
PZ-12-06	PZ-12-06-052413	5/24/2013	NA	244	NA	67300	NA	54600	NA	8140	NA	1350	NA	17100	NA	21800
PZ-12-07	PZ-12-07-052413	5/24/2013	NA	484	NA	24600	NA	29000	NA	2980 J	NA	1620	NA	3300 J	NA	9640
PZ-12-08	PZ-12-08-052413	5/24/2013	NA	1.9	NA	14000	NA	174	NA	2570 J	NA	361	NA	2810 J	NA	6580
PZ-12-09	PZ-12-09-052113	5/21/2013	NA	1.1	NA	20000	NA	30 U	NA	2550 J	NA	176	NA	2460	NA	11200
PZ-12-10	PZ-12-10-052213	5/22/2013	NA	0.69 J	NA	5370	NA	30 U	NA	845 J	NA	2.5 U	NA	1490 J	NA	1060 J
SHM-13-01	SHM-13-01-112113	11/21/2013	NA	2.2 J	NA	3750 J	NA	30 U	NA	415 J	NA	7.4 J	NA	801 J	NA	31100
	DUPLICATE-112113	11/21/2013	NA	2.2 J	NA	3810 J	NA	30 U	NA	402 J	NA	7.6 J	NA	818 J	NA	31700
SHM-13-02	SHM-13-02-052913	5/29/2013	NA	2.5	NA	44200	NA	30 U	NA	3970 J	NA	7960	NA	3690 J	NA	10600
	SHM-13-02-112113	11/21/2013	NA	2.7 J	NA	40600	NA	250	NA	3740 J	NA	9490	NA	2390 J	NA	12300
SHM-13-03	SHM-13-03-052913	5/29/2013	NA	318	NA	97700	NA	13600	NA	15000	NA	6740	NA	9460	NA	35400
	SHM-13-03-112013	11/20/2013	NA	137	NA	112000	NA	11200	NA	15300	NA	9640	NA	6970	NA	34700
SHM-13-04	SHM-13-04-052813	5/28/2013	NA	2060	NA	33100	NA	40900	NA	<5000	NA	2130	NA	<5000	NA	80200
SHM-13-05	SHM-13-05-052813	5/28/2013	NA	8.9	NA	111000	NA	597	NA	22800	NA	4680	NA	11000	NA	42400
	SHM-13-05-112113	11/21/2013	NA	6.8	NA	116000	NA	1860	NA	19800	NA	5720	NA	8910	NA	40000
SHM-13-06	SHM-13-06-061313	6/13/2013	NA	3180 J	NA	21400	NA	19700 J	NA	1440 J	NA	1830	NA	3210 J	NA	16300
	SHM-13-06-112113	11/21/2013	NA	2540	NA	18600	NA	39900 J	NA	1911 J	NA	2490	NA	3920 J	NA	59400
SHM-13-07	SHM-13-07-112113	11/21/2013	NA	1340	NA	20900	NA	30000	NA	2720 J	NA	2710	NA	5310	NA	126000
SHM-13-08	SHM-13-08-061313	6/13/2013	NA	928	NA	23200	NA	35900	NA	3540 J	NA	941	NA	8360	NA	14200
	DUPLICATE-061313	6/13/2013	NA	972	NA	23200	NA	36600	NA	3580 J	NA	958	NA	8530	NA	14400
	SHM-13-08-112113	11/21/2013	NA	994	NA	23200	NA	35400	NA	4080 J	NA	826	NA	8600	NA	11600
SHM-13-14S	SHM-13-14S	2/19/2014	NA	2.0 U	NA	22200	NA	241	NA	2720 J	NA	55.5	NA	3600 J	NA	63900
SHM-13-14D	SHM-13-14D	2/19/2014	NA	7.9	NA	10100	NA	11800	NA	1170 J	NA	1190	NA	4340 J	NA	55200
SHM-13-15	SHM-13-15	2/19/2014	NA	3.8 J	NA	86900	NA	623	NA	12700	NA	4860	NA	5450	NA	29200
	DUP	2/19/2014	NA	3.9 J	NA	86900	NA	633	NA	12700	NA	4870	NA	5390	NA	29200
RB	RB-112013	9/6/2010	NA	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	RB-112113	11/21/2013	NA	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Rinse Blank	2/19/2014	NA	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: NA: Not Applicable
ug/L: micrograms per liter
mg/l: milligrams per liter
J: Estimated Results
B: Analyte was detected in the associated me
Q: Absoulte value of concentration is greater
b: Absoulte value of concentration is greater

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHM-10-01	SHM-10-01-071310	7/13/2010	3.34	0.18	6.19	12.38	297	63.5	130	0.264	< 0.002	< 0.01	NA	< 0.1	11 J	1.3	12	6.8	NA	NA	Test Kit (Filtered) < 5
	SHM-10-01	8/12/2010	NA	0.49	6.61	11.86	291	42.2	130	0.241	<0.002	<0.01	NA	<0.10	<7.0	NA	14	7.0	1.5	31	
	SHM-10-01-090810	9/8/2010	0.15	0.12	6.31	12.68	299	11.3	140	0.344	< 0.002	< 0.01	NA	< 0.1	12 J	1.6	11	8.7	1.6	37	
	SHM-10-01-102412	10/24/2012	0.95	0.40	6.39	11.51	143	48.3	88.6	0.10 U	<0.010	0.1 U	NA	2.0 U	NA	NA	8.5	6.2 U	NA	NA	
	SHM-10-01-052913	5/29/2013	0.00	0.16	6.53	10.58	160	51.2	72.9	0.26	0.004 U	0.079 U	NA	1.4 U	NA	NA	4.0	6.5	5.3	NA	
SHM-10-02	SHM-10-02-071510	7/15/2010	3.47	0.45	6.42	12.24	836	80.8	250	0.248	< 0.002	< 0.01	NA	< 0.1	< 7	2.4	160	20	NA	NA	
	Dup-071510	7/15/2010	NA	NA	NA	NA	NA	NA	250	0.231	< 0.002	< 0.01	NA	< 0.1	< 7	2.5	160	21	NA	NA	
	SHM010-02-090710	9/7/2010	0.64	0.87	5.94	12.45	881	-258.3	260	0.238	< 0.002	< 0.01	NA	< 0.1	< 7	2.6	120	19	2.5	62	
	SHM-10-02-102212	10/22/2012	1.78	0.48	6.52	12.18	726	40.2	448	0.13 J	<0.010	0.10 U	NA	2.0 U	NA	NA	61.5	7.4 U	NA	NA	
	Duplicate-102212	10/22/2012	1.78	0.48	6.52	12.18	726	40.2	448	0.65	<0.010	<0.11	NA	<2.0	NA	NA	60.0	7.2	NA	NA	
	SHM-10-02-052913	5/29/2013	1.04	0.2	6.53	11.37	537	73.2	444	0.35	0.004 U	0.079 U	NA	1.4 U	NA	NA	61.5	8.8	3.8	NA	
SHM-10-03	SHM-10-03-071410	7/14/2010	31.7	1.47	6.60	16.09	3331	75.7	96	0.035 J	0.02	0.52	NA	< 0.1	25	0.64	1000	38	NA	NA	
	DUP-071410	7/14/2010	NA	NA	NA	NA	NA	NA	95	0.0269 J	0.02	0.51	NA	< 0.1	47	0.73	1000	36	NA	NA	
	SHM-10-03-090710	9/7/2010	13.4	1.72	6.31	11.93	3341	148.1	78	0.0392 J	< 0.002	0.55	NA	< 0.1	43	0.66	1100	39	< 1	26	
	DUP-090710	9/7/2010	NA	NA	NA	NA	NA	NA	75	0.0204 J	< 0.002	0.6	NA	< 0.1	31	0.66	1100	39	NA	NA	
	SHM-10-03-102312	10/23/2012	21.9	1.45	6.51	13.75	2230	-3.6	57.2	0.10 U	<0.010	0.47	NA	2.0 U	NA	NA	900	38.2	NA	NA	
	SHM-10-03-052413	5/24/2013	3.68	0.61	6.54	11.49	1981	61.5	71.8	0.081 U	0.004 J	0.47	NA	1.4 U	NA	NA	870	35.4	0.72 J	NA	
	DUP-01-052413	5/24/2013	NA	NA	NA	NA	NA	NA	66.3	0.081 U	0.004 U	0.47	NA	1.4 U	NA	NA	870	39.7	0.64 U	NA	
SHM-10-04	SHM-10-04-071410	7/14/2010	17.7	0.23	6.37	10.82	630	9.9	99	0.0666 J	0.11	3.8	NA	< 0.1	13 J	2.7	74	84	NA	NA	
	SHM-10-04-090710	9/7/2010	4.28	0.23	5.99	12.1	656	43.7	100	0.0585 J	0.5	3.7	NA	< 0.1	< 7	2.6	92	87	2.7	43	
	SHM-10-04-102212	10/22/2012	4.15	0.27	5.89	11.64	460	65	81.4	0.10 U	0.023	6.6	NA	2.0 U	NA	NA	82.5	70.9	NA	NA	
	SHM-10-04-052913	5/29/2013	1.67	0.16	6.01	10.18	382	180.1	99.5	0.13	0.012	6.5	NA	1.4 U	NA	NA	83.0	81.7	1.9	NA	
	DUP-052913	5/29/2013	NA	NA	NA	NA	NA	NA	93.9	0.13	0.013	6.9	NA	1.4 U	NA	NA	82.0	82.3	1.7	NA	
SHM-10-05A	SHM-10-05A-071510	7/15/2010	5.12	1.42	6.29	19.06	186	31.7	43	0.0184 J	0.01 J	0.38	NA	< 0.1	< 7	0.93	34	10	NA	NA	
	SHM-10-05A-090810	9/8/2010	8.92	3.2	5.27	20.2	200	-29	36	0.0335 J	< 0.002	0.46	NA	< 0.1	55	0.96	29	11	< 1	20	
	SHM-10-05A-102312	10/23/2012	4.3	4.84	6.04	14.43	208	164.8	42.1	0.10 U	<0.010	1.2	NA	2.0 U	NA	NA	30.5	8	NA	NA	
	SHM-10-05 (EPA)	10/24/2012	NA	NA	NA	NA	NA	NA	48	NA	NA	NA	NA	NA	NA	NA	4.0	3.3	NA	NA	
	SHM-10-05A-052213	5/22/2013	2.47	1.31	6.26	13.51	145	158.1	38.7	0.081 U	0.004 U	0.62	NA	1.4 U	NA	NA	30.7	7.2	0.79 J	NA	
	DUP-052213	5/22/2013	NA	NA	NA	NA	NA	NA	38.7	0.081 U	0.004 U	0.64	NA	1.4 U	NA	NA	30.7	7.3	0.69 J	NA	
SHM-10-06	SHM-10-06-070810	7/8/2010	21.4	0.55	6.62	21.74	754	-93.8	360	5.5	< 0.002	0.03	NA	< 0.1	29	4.8	17	0.89	NA	NA	
	DUP-070810	7/8/2010	NA	NA	NA	NA	NA	NA	370	5.58	< 0.002	0.033	NA	< 0.1	25	4.7	17	0.84	NA	NA	
	SHM-10-06-090810	9/8/2010	3.72	2.83	6.16	11.59	783	-64.3	300	5.13	< 0.002	0.13	NA	< 0.1	33	4.2	15	0.49 J	5	93	
	SHM-10-06-102312	10/23/2012	3.38	1.18	6.57	15.78	587	-122.1	184	6.1	<0.010	0.13	NA	2.0 U	NA	NA	16.5	5.0 U	NA	NA	
	SHM-10-06 (EPA)	10/23/2012	NA	NA	NA	NA	NA	NA	117	NA	NA	NA	NA	NA	NA	NA	14	0.99	NA	NA	
	SHM-10-06-052313	5/23/2013	4.66	0.86	6.60	13.22	473	-120.7	227	8.5	0.004 U	0.29	NA	1.4 U	NA	NA	16.2	4.5 U	3.7	NA	
SHM-10-06A	SHM-10-06A-070710	7/7/2010	5.38	1.49	6.51	19.74	209	-22.6	100	2.69	< 0.002	0.03 J	NA	< 0.1	16 J	3.4	3.4	2.5 B	NA	NA	
	DUP-070710	7/7/2010	NA	NA	NA	NA	NA	NA	97	2.59	< 0.002	0.032 J	NA	< 0.1	20	3.3	3.4	2.9 B	NA	NA	
	SHM-1--06A-090910	9/9/2010	40.6	0.39	5.94	10.65	431	-157.3	190	3.9	< 0.002	< 0.01	NA	< 0.1	17 J	4	11	3.2	3.3	58	
	DUP-090910	9/9/2010	NA	NA	NA	NA	NA	NA	150	5.05	< 0.002	< 0.01	NA	< 0.1	19 J	4.4	11	3.2	NA	NA	
	SHM-10-06A-102412	10/24/2012	13.91	0.63	5.9	10.98	190	-203	67	0.10 U	<0.010	0.24	NA	2.0 U	NA	NA	4.5	5.9 U	NA	NA	
	SHM-10-06A (EPA)	10/24/2012	NA	NA	NA	NA	NA	NA	46	NA	NA	NA	NA	NA	NA	NA			NA	NA	
	SHM-10-06A-052213	5/22/2013	3.67	0.55	6.57	12.60	90	-12.3	48.6	1.5	0.004 U	0.52	NA	1.4 U	NA	NA	1.8	4.5 U	1.9	NA	
	SHM-10-06A-112013	11/20/2013	0.44	0.22	6.49	9.34	107	-61.6	53.9	1.1	0.0051 U	0.14	NA	1.5 U	NA	NA	1.5	2.1 J	1.8	NA	
SHM-10-07	SHM-10-07-052710	5/27/2010	237	0.15	6.97	13.43	751	-195	300	6.02	< 0.002	0.008 J	NA	< 0.1	45	3.6	48	8.6	NA	NA	
	DUP-052710	5/27/2010	NA	NA	NA	NA	NA	NA	280	5.78	< 0.002	0.013 J	NA	< 0.1	58	3.5	48	9.3	NA	NA	
	SHM-10-07-090910	9/9/2010	15.4	0.43	6.54	12.39	635	-105.6	240	5.6	< 0.002	< 0.01	NA	< 0.1	29	3.8	41	2.3	3.5	52	
	SHM-10-07-102212	10/22/2012	21.3	0.13	6.45	12.10	516	-86	191	6.2	<0.010	0.16	NA	2.0 U	NA	NA	46.5	5.0 U	NA	NA	
	SHM-10-07 (EPA)	10/22/2012	NA	NA	NA	NA	NA	NA	143	NA	NA	NA	NA	NA	NA	NA	58	0.14	NA	NA	
	SHM-10-07-052313	5/23/2013	4.60	1.23	6.5	12.03	561	-109.6	243	7.6	0.004 U	0.26	NA	1.4 U	NA	NA	61.7	5.6	3.5	NA	

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHM-10-08	SHM-10-08-071510	7/15/2010	7.15	0.21	6.73	10.95	917	33.7	480	< 0.017	< 0.002	< 0.01	NA	< 0.1	< 7	4	71	15	NA	NA	
	SHM-10-08-090710	9/7/2010	1.37	3.61	6.19	12.1	1079	-233	500	0.084	< 0.002	< 0.01	NA	< 0.1	17 J	4.1	79	15	3.8	110	
	SHM-10-08-102212	10/22/2012	0.0	0.40	6.63	11.59	713	45.1	459	0.10 U	<0.010	0.10 U	NA	2.0 U	NA	NA	53.5	7.8 U	NA	NA	
	SHM-10-08-052113	5/21/2013	1.7	0.49	6.73	11.86	721	7.8	499	0.18	0.004 U	0.079 U	NA	1.4 U	NA	NA	55.7	10.4	3.2	NA	
SHM-10-10	SHM-10-10-071310	7/13/2010	4.52	0.85	6.61	12.10	658	28.7	350	0.155	< 0.002	< 0.01	NA	< 0.1	29	3.6	19	0.56 J	NA	NA	
	DUP-071310	7/13/2010	NA	NA	NA	NA	NA	NA	350	0.145	< 0.002	< 0.01	NA	< 0.1	40	3.6	18	0.38 J	NA	NA	
	SHM-10-10	8/12/2010	NA	0.76	6.57	11.27	622	-9.1	320	0.201	<0.002	<0.01	NA	<0.10	25	NA	23	0.79 J	3.9	70	
	SHM-10-10-090810	9/8/2010	0.71	0.16	6.55	13.13	617	63.3	320	0.148	< 0.002	< 0.01	NA	< 0.1	55	3.7	17	0.34 J	3.8	76	
	DUP-090810	9/8/2010	NA	NA	NA	NA	NA	NA	330	0.168	< 0.02	0.019 J	NA	< 0.1	45	3.9	17	0.26 J	NA	NA	
	SHM-10-10-102412	10/24/2012	3.25	0.28	6.55	12.06	464	37.6	295	0.10 U	<0.010	0.10 U	NA	2.0 U	NA	NA	21	5.0 U	NA	NA	
	Duplicate	10/24/2012	NA	NA	NA	NA	NA	NA	305	<0.10	<0.010	<0.11	NA	<2.0	NA	NA	21	<5.0	NA	NA	
	SHM-10-10-052913	5/29/2013	0.46	3.07	6.62	11.22	579	48.8	343	0.25	0.004 U	0.079 U	NA	1.4 U	NA	NA	18.5	4.5 U	2.9	NA	
SHM-10-11	SHM-10-11	8/30/2010	4.05	1.68	6.12	13.19	419	-32	160	2.79	<0.002	0.019 J	NA	<0.10	22	NA	24	19	3.3	62	
	SHM-10-11-101910	10/19/2010	4.28	0.41	6.28	11.57	4.14	-42.1	140	3.13	0.01 J	< 0.01	NA	< 0.10	19	NA	23	19 J	3.4	71	
	SHM-10-11-102312	10/23/2012	1.1	1.78	6.27	11.18	304	-34	76.7	3.4	<0.010	0.19	NA	2.0 U	NA	NA	26	29.3	NA	NA	
	SHM-10-11(EPA)	10/23/2012	NA	NA	NA	NA	NA	NA	67	NA	NA	NA	NA	NA	NA	NA	25	28	NA	NA	
	SHM-10-11-052313	5/23/2013	2.01	0.80	6.15	11.25	287	-46.1	102	3.9	0.004 U	0.31	NA	1.4 U	NA	NA	21.2	30.3	2.9	NA	
	DUP-052313	5/23/2013	NA	NA	NA	NA	NA	NA	126	3.8	0.004 U	0.24	NA	1.4 U	NA	NA	21.2	31.6	2.8	NA	
	SHM-10-11-111913	11/19/2013	0.45	0.33	6.41	10.63	421	-43.5	121	3.9	0.0051 U	0.088 J	NA	1.5 U	NA	NA	30	34.7	2.7	NA	
	DUPLICATE-111913	11/19/2013	NA	NA	NA	NA	NA	NA	130	3.9	0.0051 U	0.11	NA	1.5 U	NA	NA	29.5	35	2.7	NA	
SHM-10-12	SHM-10-12	8/30/2010	8.43	3.55	6.04	14.41	460	-34.9	240	3.7	<0.002	0.035 J	NA	<0.10	31	NA	3.7	1.7	4.1	110	
	DUP-083010	8/30/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-10-12-102010	10/20/2010	1.6	0.32	5.93	10.92	432	-14.5	240	3.8	< 0.02	< 0.01	NA	< 0.10	33	NA	4.4	1.4	4.3	130	
	DUP-102010	10/20/2010	NA	NA	NA	NA	NA	NA	230	3.61	< 0.002	< 0.01	NA	< 0.10	41	NA	4.4	1.3	4.5	140	
	SHM-10-12-102312	10/23/2012	0.2	0.29	5.74	11.49	322	8.4	131	4.3	<0.010	0.14	NA	2.0 U	NA	NA	2.5	<5.0	NA	NA	
	SHM-10-12 (EPA)	10/23/2012	NA	NA	NA	NA	NA	NA	65	NA	NA	NA	NA	NA	NA	NA	3.5	1.8	NA	NA	
	SHM-10-12 D (EPA)	10/23/2012	NA	NA	NA	NA	NA	NA	65	NA	NA	NA	NA	NA	NA	NA	3.5	1.8	NA	NA	
	SHM-10-12-052313	5/23/2013	4.36	0.26	6.09	11.84	302	-44.9	171	3.2	0.004 U	0.41	NA	1.4 U	NA	NA	7.3	7.9	23.9	NA	
SHM-10-13	SHM-10-12-111913	11/19/2013	0.16	0.72	6.35	10.49	428	-19.3	210	3.5	0.0051 U	0.41	NA	1.5 U	NA	NA	4	3.8 J	3.5	NA	
	GP-10-13-090110	9/1/2010	18.8	2.76	6.32	13.57	782	-68.6	380	9.7	< 0.002	0.01 J	NA	< 0.1	33	NA	18	< 0.12	5.6	140	
	SHM-10-13-101910	10/19/2010	12	0.12	6.27	12.48	743	-52.5	360	9.36	0.01 J	< 0.01	NA	< 0.10	36	NA	21	< 0.12	8.7	140	
	DUP-101910	10/19/2010	NA	NA	NA	NA	NA	NA	360	9.13	< 0.002	< 0.01	NA	< 0.10	36	NA	20	0.25 J	6.8	150	
	SHM-10-13-102312	10/23/2012	14.2	0.11	6.42	12.49	597	-44.5	296	9.1	<0.010	0.19	NA	2.0 U	NA	NA	17	5.3 U	NA	NA	
	SHM-10-13 (EPA)	10/23/2012	NA	NA	NA	NA	NA	NA	240	NA	NA	NA	NA	NA	NA	NA	18.0	0.11 J	NA	NA	
	SHM-10-13-052313	5/23/2013	14.4	0.22	6.35	12.59	571	-91.7	292	9.0	0.004 U	0.14	NA	1.4 U	NA	NA	19.7	4.5 U	5.1	NA	
SHM-10-14	SHM-10-14-090210	9/2/2010	34.7	0.18	6.35	14.48	645	-87.4	360	3.96	< 0.002	< 0.01	NA	< 0.10	43	NA	6.3	3.7	8.7	120	
	SHM-10-14-101910	10/19/10	34.5	0.36	6.35	11.99	693	-38.6	320	5.28	0.01 J	0.08	NA	< 0.10	62	NA	4.8	0.67 J	62	140	
	SHM-10-14-102312	10/23/2012	4.88	0.13	6.26	12.4	445	-41	194	3.0	<0.010	0.15	NA	2.0 U	NA	NA	5.0	5.0 U	NA	NA	
	SHM-10-14 (EPA)	10/23/2012	NA	NA	NA	NA	NA	NA	124	NA	NA	NA	NA	NA	NA	NA	4.5	1.1	NA	NA	
	SHM-10-14-052313	5/23/2013	10.08	0.20	6.24	11.43	467	-67.0	241	7.4	0.004 U	0.19	NA	1.4 U	NA	NA	5.8	6.4	21.3	NA	
SHM-10-15	GP-10-15-090110	9/1/2010	16.3	0.25	6.21	16.02	503	-52.7	210	2.67	0.01	<0.01	NA	<0.10	33	NA	5.7	3.8	4.2	82	
	SHM-10-15-090110	9/1/2010	16.3	0.25	6.21	16.02	503	-52.7	240	2.26	< 0.002	< 0.01	NA	< 0.10	22	NA	11.0	8.4	3.2	NA	
	DUP-090110	9/1/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-10-15-102010	10/20/2010	59.5	0.36	5.94	11.95	510	-10.9	230	2.15	0.01 J	< 0.01	NA	< 0.10	64	NA	12.0	10	4	95	
	SHM-10-15-102312	10/23/2012	5.1	0.2	6.43	11.98	376	-49	172	2.2	<0.010	0.12	NA	2.0 U	NA	NA	10.0	9.5 U	NA	NA	
	Duplicate-102312	10/23/2012	NA	NA	NA	NA	NA	NA	213	2.5	<0.010	0.19	NA	<2.0	NA	NA	11.0	9.7	NA	NA	
	SHM-10-15 (EPA)	10/23/2012	NA	NA	NA	NA	NA	NA	147	NA	NA	NA	NA	NA	NA	NA	9.5	10	NA	NA	
	SHM-10-15-052413	5/24/2013	11.97	0.49	6.37	15.1	440	-73.9	196	1.4	0.004 U	0.079 U	NA	1.4 U	NA	NA	7.5	7.4	3.4	NA	
SHM-10-15	SHM-10-15-112013	11/20/2013	10.31	0.38	6.51	10.41	48	-65.9	210	2.8	0.0051 U	0.28	NA	1.5 U	NA	NA	9.5	10.9	2.8	NA	

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHM-10-16	SHM-10-16-090210	9/2/2010	78.5	0.17	6.98	11.4	784	-233.8	330	3.31	< 0.002	< 0.01	NA	< 0.1	36	NA	31	2.9	5.3	91	
	DUP-090210	9/2/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-10-16-102010	10/20/2010	34.6	0.34	6.77	10.63	793	-129.2	320	3.34	< 0.002	< 0.01	NA	< 0.10	57	NA	28	3.2	10	100	
	SHM-10-16-102312	10/23/2012	0.65	0.26	6.64	10.15	533	-86.2	281	4.3	<0.010	0.14	NA	2.0 U	NA	NA	24.5	6.8 U	NA	NA	
	SHM-10-16 (EPA)	10/24/2012	NA	NA	NA	NA	NA	NA	247	NA	NA	NA	NA	NA	NA	NA	24	3	NA	NA	
	SHM-10-16-052813	5/28/2013	0.08	0.15	6.71	9.39	632	-128.0	309	5.4	0.004 U	0.18	NA	1.4 U	NA	NA	21	4.7 J	3.8	NA	
	SHM-10-16-112013	11/20/2013	0.84	0.19	6.75	9.39	677	-115.6	312	3.2	0.0051 U	0.25	NA	1.5 U	NA	NA	24	2.9 J	3.7	NA	
SHM-11-02	SHM-11-02-102212	10/22/2012	19.6	0.21	7.32	14.43	468	-135	228	0.10 U	<0.010	0.15	NA	2.0 U	NA	NA	42	15.9	NA	NA	
	SHM-11-02-112013	11/20/2013	21.3	0.3	8.38	10.82	241	-279.2	92.4	0.087 U	0.0051 U	0.34	NA	1.5 U	NA	NA	35	9.9 J	37.9	NA	
SHM-11-06	SHM-11-06-102212	10/22/2012	4.24	1.8	6.41	13.11	561	-83	287	0.19	<0.010	0.19	NA	2.0 U	NA	NA	20.5	5.0 U	NA	NA	
	SHM-11-06-052813	5/28/2013	3.19	0.34	6.54	12.08	495	-105.7	262	8.3	0.004 U	0.40	NA	1.4 U	NA	NA	20.0	6.8	3.1	NA	
	SHM-11-06-112013	11/20/2013	2.23	0.36	6.45	9.29	578	-104.4	220	2.2	0.0051 U	0.22	NA	1.5 U	NA	NA	23.0	6.8 J	3.2	NA	
SHM-05-40X	SHM-05-40X-101807	10/18/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-40X-103107	10/31/2007	7.89	1.62	6.71	11.02	565	-134.1	220	NA	NA	N	NA	0.1 U	NA	0.5 U	13	1.7	NA	NA	
	SHM-05-40X-100710	10/7/2010	0.34	0.22	6.47	10.68	409	-106.1	160	NA	NA	0.14	NA	NA	NA	NA	12	5.8	NA	NA	
	SHM-05-40X100511	10/5/2011	4.1	0.24	6.48	10.52	3.95	-77.3	159	NA	NA	<0.10	NA	NA	NA	NA	11	4.2	NA	NA	
	SHM-05-40X-101712	10/17/2012	40	0.19	6.71	10.62	374	-133.2	150	NA	NA	0.15	NA	NA	NA	NA	9.7	5.9	NA	NA	
	SHM-05-40X-102413	10/24/2013	2.21	0.32	6.87	10.62	253	-136.3	165	NA	0.0053 J	0.28	NA	NA	NA	NA	13.3	4.8 J	NA	NA	
SHM-05-39A	SHM-05-39A-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-39A-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-39A	8/12/2010	NA	0.35	6.45	11.37	263	-52.9	100	4.01	<0.002	0.009 J	NA	<0.10	11 J	NA	7.1	6	2.9	27	Test Kit (Filtered) 100
	SHM-05-39A-101310	10/13/2012	0.17	0.2	6.63	11.29	297	-92	110	NA	NA	<0.10	NA	NA	NA	NA	13	4.3	NA	NA	
	SHM-05-39A-100411	10/4/2011	2	0.16	6.62	12.05	213	-66	87	NA	NA	<0.10	NA	NA	NA	NA	3.6	3.8	NA	NA	
	SHL-05-39A-101612	10/16/2012	40	0.37	6.28	14.29	149	69.6	50	NA	NA	2.1	NA	NA	NA	NA	17	4.8	NA	NA	
	SHL-05-39A-102413	10/24/2013	0.35	0.23	6.7	11.9	133	-94.3	51.5	NA	0.0051 U	0.3	NA	NA	NA	NA	19.2	4.0 J	NA	NA	
SHM-05-39B	SHM-05-39B-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-39B-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-39B-101310	10/13/2010	3.54	0.19	6.75	12.93	896	-68.1	300	NA	NA	<0.10	NA	NA	NA	NA	130 J	4.0 J	NA	NA	
	DUP-02-101310	10/13/2010	3.54	0.19	6.75	12.93	896	-68.1	300	NA	NA	0.36	NA	NA	NA	NA	190	6.2	NA	NA	
	SHM-05-39B-100511	10/5/2011	3	0.11	6.85	13.12	919	-66	420	NA	NA	<0.10	NA	NA	NA	NA	93 J	3.2	NA	NA	
	DUP02-100511	10/5/2011	3	0.11	6.85	13.12	919	-66	350	NA	NA	<0.10	NA	NA	NA	NA	39	1.8	NA	NA	
	SHM-05-39B-101612	10/16/2012	55	1.67	6.91	15.3	1365	-126.7	420	NA	NA	0.08 J	NA	NA	NA	NA	37	1.97 J	NA	NA	
	SHM-05-39B-102413	10/24/2013	0.97	0.40	6.93	10.76	278	-95.3	71.2	NA	0.0051 U	0.16	NA	NA	NA	NA	88.7	3.8 J	NA	NA	
SHP-99-31A	SHP-99-31A-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-99-31A-011008	1/10/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-99-31A-101310	10/13/2010	0.24	0.11	5.83	13.63	241	6.4	32	NA	NA	<0.10	NA	NA	NA	NA	46	5.6	NA	NA	
	SHP-99-31A-100511	10/5/2011	1.8	0.28	5.55	15.55	151	3.2	38	NA	NA	<0.10	NA	NA	NA	NA	3	6.6	NA	NA	
	SHP-99-31A-101812	10/18/2012	2.2	0.42	5.78	13.71	169	-6.0	22	NA	NA	0.07 J	NA	NA	NA	NA	46	15	NA	NA	
	SHP-99-31A-102313	10/23/2013	3.79	1.02	5.83	12.48	145	41.9	15.3	NA	0.0051 U	0.059 U	NA	NA	NA	NA	25.7	9.7 J	NA	NA	
	DUP01-102313	10/23/2013	NA	NA	NA	NA	NA	NA	15.3	NA	0.0051 U	0.059 U	NA	NA	NA	NA	25.7	9.7 J	NA	NA	
SHP-99-31B	SHP-99-31B-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-99-31B-011008	1/10/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-99-31B	8/12/2010	NA	0.19	6.03	10.74	186	33.9	86	4.1	<0.002	<0.01	NA	<0.10	11 J	NA	4	3	6.5	28	Test Kit (Filtered) 5
	SHP-99-31B-101310	10/13/2010	0.19	0.15	6.27	10.58	211	-71	86	NA	NA	<0.10	NA	NA	NA	NA	3.4	3.8	NA	NA	
	SHP-99-31B-100511	10/5/2011	0.19	0.22	6.22	11.8	201	-46	83	NA	NA	<0.10	NA	NA	NA	NA	3.3	4.1	NA	NA	
	SHP-99-31B-101812	10/18/2012	1.3	0.31	6.31	10.42	175	-85.0	73	NA	NA	0.09 J	NA	NA	NA	NA	2.3	5.3	NA	NA	
	SHP-99-31B-102313	10/23/2013	1.02	2.42	6.56	11.15	176	-57.7	63.5	NA	0.0051 U	0.20	NA	NA	NA	NA	4.3	7.6 J	NA	NA	

TABLE 5-5 GROUNDWATER MONITORING WELL RESULTS Shepley's Hill Landfill, Devens Massachusetts																					
Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHP-99-31C	SHP-99-31C-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-99-31C-011008	1/10/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-99-31C-101310	10/13/2010	0.25	0.16	6.46	10.61	811	-80	350	NA	NA	<0.10	NA	NA	NA	NA	30	3.5	NA	NA	
	SHM-99-31C-100511	10/5/2011	1.9	0.27	6.5	11.61	809	-59.2	340	NA	NA	<.300	NA	NA	NA	NA	27	3.9	NA	NA	
	SHP-99-31C-101812	10/18/2012	19	0.64	6.75	13.81	641	-117.1	310	NA	NA	0.12	NA	NA	NA	NA	28	5.2	NA	NA	
	SHP-99-31C-102313	10/23/2013	3.71	0.23	6.7	11.13	737	-95.7	348	NA	0.0051 U	0.22	NA	NA	NA	NA	32.2	5.7 J	NA	NA	
SHM-99-32X	SHP-99-32X-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-99-32X-011008	1/10/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-99-32X-101310	10/13/2010	0.42	0.16	6.51	10.49	879	-77	390	NA	NA	<0.10	NA	NA	NA	NA	39	3.9	NA	NA	
	SHM-99-32X-100411	10/4/2011	5	0.33	6.42	11.54	825	-36	380	NA	NA	.040 J	NA	NA	NA	NA	32	2.4	NA	NA	
	DUP01-100411	10/4/2011	5	0.33	6.42	11.54	825	-36	380	NA	NA	<0.10	NA	NA	NA	NA	32	2.5	NA	NA	
	SHM-99-32X-101712	10/17/2012	28	0.63	6.54	10.52	469	-136.4	370	NA	NA	0.14	NA	NA	NA	NA	36	2.8	NA	NA	
	DUP-101712	10/17/2012	24	NA	NA	NA	NA	NA	360	NA	NA	0.31	NA	NA	NA	NA	36	2.5	NA	NA	
	SHM-99-32X-102313	10/23/2013	0.37	0.17	6.45	11.17	704	-77.9	342	NA	0.0051 U	0.27	NA	NA	NA	NA	32.2	2.9 J	NA	NA	
SHM-05-41A	SHM-05-41A-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-41A-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-41A-042110	4/21/2010	0.15	0.09	6.6	9.53	121	-34	37	NA	NA	0.075 J	NA	NA	NA	NA	1.4	7.9	NA	NA	
	SHM-05-41A-100710	10/7/2010	0.67	0.26	6.09	10.18	95	1.3	31	NA	NA	0.053 J	NA	NA	NA	NA	3.0	7.3	NA	NA	
	SHM-05-41A-040411	4/4/2011	2.7	0.32	6.46	8.44	100	1.8	37	NA	NA	0.13	NA	NA	NA	NA	2.5	6.7	NA	NA	
	SHM-05-41A-100411	10/4/2011	3.9	0.48	5.76	10.99	107	44.9	41	NA	NA	<0.10	NA	NA	NA	NA	2.2	5.2	NA	NA	
	SHM-05-41A-04112	4/11/2012	1200	0.52	6.2	9.56	111	18.4	30	NA	NA	0.020 J	NA	NA	NA	NA	3.0	<6.2	NA	NA	
	SHM-05-41A-101712	10/17/2012	1.4	0.35	6.25	12.98	90	-33.5	34	NA	NA	0.08 J	NA	NA	NA	NA	2.0	6.1	NA	NA	
	SHM-05-41A-052213	5/22/2013	3.79	0.76	6.27	10.43	101	17.6	33.2	0.081 U	0.004 U	0.079 U	NA	1.4 U	NA	NA	3.3	7.9	1.2	NA	
	SHM-05-41A-102313	10/23/2013	0.66	0.35	6.42	10.17	69	-18.0	40.5	NA	0.0051 U	0.059 U	NA	NA	NA	NA	2.8	5.8 J	NA	NA	
SHM-05-41B	SHM-05-41B-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-41A-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	DUP-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-041B	8/9/2010	NA	0.32	6.43	11.75	310	42.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.6	32	Test Kit (Filtered) 500
	SHM-05-41B-042110	4/21/2010	9.6	0.08	6.74	9.6	392	-124	120	NA	NA	0.12	NA	NA	NA	NA	7.0	5	NA	NA	
	SHM-05-41B-100710	10/7/2010	1.64	0.35	6.65	10.29	259	-86.8	100	NA	NA	0.10	NA	NA	NA	NA	2.9	5.3	NA	NA	
	SHM-05-41B-040411	4/4/2011	0.5	0.16	6.73	8.44	266	-80.4	120	NA	NA	0.23	NA	NA	NA	NA	1.5	5.7	NA	NA	
	SHM-05-41B-100411	10/4/2011	5.8	0.35	6.29	10.92	209	-61.2	83	NA	NA	<0.10	NA	NA	NA	NA	1.5	3.5	NA	NA	
	SHM-05-41B-04112	4/11/2012	8400	0.14	6.44	10.02	199	-57.2	66	NA	NA	0.14	NA	NA	NA	NA	3.0	<3.3	NA	NA	
	SHM-05-41B-101712	10/17/2012	41	0.22	6.58	12.23	259	-150.1	100	NA	NA	0.16	NA	NA	NA	NA	3.1	4.1	NA	NA	
	SHM-05-41B-52213	5/22/2013	3.03	0.26	6.55	9.98	302	-94.0	97.2	0.16	0.004 U	0.40	NA	1.4 U	NA	NA	5.8	8.7	2.8	NA	
	SHM-05-41B-102313	10/23/2013	4.49	0.46	6.88	10.05	155	-120.4	81	NA	0.0051 U	0.26	NA	NA	NA	NA	4.3	4.7 J	NA	NA	
SHM-05-41C	SHM-05-41C-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-41C-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-41C-042110	4/21/2010	0.8	0.11	7.17	10.06	963	-167	350	NA	NA	0.079 J	NA	NA	NA	NA	30	<1.0	NA	NA	
	SHM-05-41C-100710	10/7/2010	0.43	0.29	7.01	10.71	753	-132	350	NA	NA	0.11	NA	NA	NA	NA	29	<1.0	NA	NA	
	SHM-05-41C-040411	4/4/2011	19	0.28	7.03	8.67	1132	-99	250	NA	NA	0.18	NA	NA	NA	NA	130	2.9	NA	NA	
	SHM-05-41C-100411	10/4/2011	4.8	0.36	6.28	11.14	775	-88.7	340	NA	NA	<0.10	NA	NA	NA	NA	28	.30 J	NA	NA	
	SHM-05-41C-041112	4/11/2012	150000	0.19	7	9.2	929	-116.8	330	NA	NA	<0.10	NA	NA	NA	NA	30	<2.1	NA	NA	
	SHM-05-41C-101812	10/18/2012	170	0.7	6.93	9.02	714	-164.5	350	NA	NA	0.08 J	NA	NA	NA	NA	28	0.81 J	NA	NA	
	SHM-05-41C-052113	5/21/2013	2.7	0.26	6.98	11.50	1081	-98.5	375	0.081 U	0.004 U	0.45	NA	1.4 U	NA	NA	153	4.5 U	3.9	NA	
	SHM-05-41C-102313	10/23/2013	0.44	0.93	7.16	10.08	511	-165.9	364	NA	0.0051 U	0.28	NA	NA	NA	NA	28.7	1.4 J	NA	NA	

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHM-05-42A	SHM-05-42A-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-42A	8/12/2010	NA	1.20	6.50	10.39	61	89.5	18	0.0189 J	<0.002	<0.01	NA	<0.10	<7.0	NA	1.6	5.6	<1.0	9.4	Test Kit (Filtered) < 5
	SHM-05-42A-042210	4/22/2010	3.5	5.11	6.08	9.63	0.071	-95	160	NA	NA	0.12	NA	NA	NA	NA	2.0	5.8	NA	NA	
	SHM-05-42A-101310	10/13/2010	1	0.31	5.75	9.82	70	102.7	230	NA	NA	<0.10	NA	NA	NA	NA	2.2	5.9	NA	NA	
	SHM-05-42A-040511	4/5/2011	0	0.16	6.05	8.76	70	95.2	210	NA	NA	0.12	NA	NA	NA	NA	2.3	6.4	NA	NA	
	SHM-05-42A-100711	10/7/2011	0.08	1.95	5.23	10.27	61	156.3	190	NA	NA	0.24	NA	NA	NA	NA	1.8	4.5	NA	NA	
	SHM-05-42A-041112	4/11/2012	2700	6.09	5.6	9	63	186.2	170	NA	NA	0.11	NA	NA	NA	NA	2.7	<3.8	NA	NA	
	SHM-05-42A-101812	10/18/2012	0.73 B	0.54	6.04	9.87	66	125.5	23	NA	NA	<0.10	NA	NA	NA	NA	3.3	4.3	NA	NA	
SHM-05-42B	SHM-05-42A-052213	5/22/2013	0.00	0.38	6.06	9.61	62	86.2	23.2	0.081 U	0.004 U	0.079 U	NA	1.4 U	NA	NA	2.8	5.6	0.65 J	NA	
	SHM-05-42A-102313	10/23/2013	0.28	2.53	6.09	7.97	61	73.2	23	NA	0.0051 U	0.11	NA	NA	NA	NA	2.8	6.3 J	NA	NA	
	SHM-05-42B-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-42B-010908	1/9/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-05-42B-042210	4/22/2010	6	0.19	6.52	9.77	863	-272	290	NA	NA	0.13	NA	NA	NA	NA	23	5.2	NA	NA	
	SHM-05-42B-101310	10/13/2010	1	0.53	6.52	9.89	691	-64.6	300	NA	NA	<0.10	NA	NA	NA	NA	25	3.9	NA	NA	
	SHM-05-42B	4/1/2011	0	0.25	6.44	8.79	759	-63	340	NA	NA	0.29	NA	NA	NA	NA	32	3.3	NA	NA	
	SHM-05-42B-100711	10/7/2011	0.3	0.26	6.36	10.42	755	-44.1	330	NA	NA	0.12	NA	NA	NA	NA	31	3.4	NA	NA	
SHL-23	SHM-05-42B-041112	4/11/2012	37000	0.54	6.45	9.55	895	-59	320	NA	NA	0.60 J	NA	NA	NA	NA	26	<2.4	NA	NA	
	SHM-05-42B-101812	10/18/2012	48	0.69	6.53	10.17	643	-116.8	300	NA	NA	0.21	NA	NA	NA	NA	25	3.2	NA	NA	
	SHM-05-42B-052213	5/22/2013	1.2	0.37	6.58	9.92	655	-49.9	318	9.5	0.004 U	0.28	NA	1.4 U	NA	NA	27.7	4.5 U	3.4	NA	
	SHM-05-42B-102313	10/23/2013	0.96	0.16	6.48	10.79	654	-105.7	313	NA	0.0051 U	0.18	NA	NA	NA	NA	20.7	3.3 J	NA	NA	
	SHL-22-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SHL-23	SHL-23	8/12/2010	NA	10.06	6.45	10.42	25	209.8	4.3	0.0496 J	<0.002	0.07	NA	<0.10	<7.0	NA	1.3	4.9	<1.0	< 8	Test Kit (Filtered) < 5
	SHL-23-101310	10/13/2010	1	10.43	4.98	11.53	31	264.1	4.3	NA	NA	<0.10	NA	NA	NA	NA	1.9	5.5	NA	NA	
	SHL-23-101512	10/15/2012	1.1 B	11.55	5.32	11.31	24	290.1	4.8	NA	NA	0.08 J	NA	NA	NA	NA	2.1	4.8	NA	NA	
	DUP-101512	10/15/2012	1.2 B	NA	NA	NA	NA	NA	4.7	NA	NA	0.07 J	NA	NA	NA	NA	2.1	4.8	NA	NA	
SHL-9	DUP02-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-9-042110	4/21/2010	4.1	0.12	6.58	8.38	204	-74	580	NA	NA	0.066 J	NA	NA	NA	NA	6.3	6.6	NA	NA	
	SHL-9-101210	10/12/2010	0.89	0.21	6.35	10.20	204	-70	770	NA	NA	<0.10	NA	NA	NA	NA	7.3	4.3	NA	NA	
	SHL-9-040611	4/6/2011	24	0.27	6.48	7.65	0.16	-38.7	580	NA	NA	<0.10	NA	NA	NA	NA	3.4	<6.8	NA	NA	
	SHL-9-100711	10/7/2011	-55	0.27	6.26	11.78	223	-55.1	670	NA	NA	<0.10	NA	NA	NA	NA	14	7.8	NA	NA	
	SHL-9-041012	4/10/2012	4600	0.34	6.2	8.47	268	-19.3	860	NA	NA	0.040 J	NA	NA	NA	NA	5.0	4.4	NA	NA	
	SHL-9-101712	10/17/2012	0.72 B	0.36	6.94	9.12	210	-80.3	85	NA	NA	0.17	NA	NA	NA	NA	4.4	6.8	NA	NA	
	SHL-9-052813	5/28/2013	1.71	0.27	6.51	9.04	199	-54.1	88.4	0.61	0.15	0.15	NA	1.4 U	NA	NA	5.5	4.5 U	4.6	NA	
SHL-22	SHL-9-102313	10/23/2013	0.58	0.22	6.52	10.87	160	-76.4	63.5	NA	0.0051 U	0.25	NA	NA	NA	NA	22.7	2.1 J	NA	NA	
	SHL-22-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-22-042110	4/21/2010	0.05	0.10	6.77	9.19	933	-40	340	NA	NA	0.066 J	NA	NA	NA	NA	21	5.9	NA	NA	
	SHL-22-101210	10/12/2010	0.03	0.31	6.47	9.75	783	-14.1	380	NA	NA	<0.10	NA	NA	NA	NA	23	5.9	NA	NA	
	DUP-01-101210	10/12/2010	0.03	0.31	6.47	9.75	783	-14.1	370	NA	NA	0.12	NA	NA	NA	NA	22	5.8	NA	NA	
	SHL-22-040611	4/6/2011	0	0.22	6.67	8.16	0.75	-43.6	370	NA	NA	<210	NA	NA	NA	NA	22	<5.3	NA	NA	
	SHL-22-100711	10/7/2011	0	0.27	6.54	11.06	776	15.3	380	NA	NA	<0.10	NA	NA	NA	NA	22	5.3	NA	NA	
	SHL-22-041012	4/10/2012	2000 J	2.13	6.42	8.8	981	-20.6	380	NA	NA	0.066 J	NA	NA	NA	NA	22	<2.2	NA	NA	
	DUP-01012	4/10/2012	1300 J	2.13	6.42	8.8	981	-20.6	380	NA	NA	0.40 J	NA	NA	NA	NA	20	<1.4	NA	NA	
	SHL-22-101712	10/17/2012	0.85 B	0.45	6.72	9.76	705	-20.2	360	NA	NA	<0.10	NA	NA	NA	NA	21	6.0	NA	NA	
	SHL-22-052813	5/28/2013	0.91	1.28	6.68	9.22	492	18.7	400	0.27	0.004 U	0.079 U	NA	1.4 U	NA	NA	19.5	5.8	2.2	NA	
	DUP-052813	5/28/2013	NA	NA	NA	NA	NA	NA	396	0.28	0.004 U	0.079 U	NA	1.4 U	NA	NA	20.5	5.5	2.2	NA	
SHL-22	SHL-22-102313	10/23/2013	0.00	0.39	6.7	10.6	511	-6.9	388	NA	0.0051 U	0.059 U	NA	NA	NA	NA	20.2	6.6 J	NA	NA	
	DUP02-102313	10/23/2013	NA	NA	NA	NA	NA	NA	389	NA	0.0051 U	0.059 U	NA	NA	NA	NA	19.7	6.6 J	NA	NA	

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHM-93-22B	SHM-93-22B-042110	4/21/2010	5.2	0.11	6.71	8.10	953	-125	380	NA	NA	0.13	NA	NA	NA	NA	22	4.4	NA	NA	
	DUP-042110	4/21/2010	140	0.11	6.71	8.10	953	-125	350	NA	NA	0.13	NA	NA	NA	NA	21	3.9	NA	NA	
	SHM-93-22B-101110	10/11/2010	1.18	0.29	6.52	9.52	745	-83.2	350	NA	NA	<0.10	NA	NA	NA	NA	24	3.7	NA	NA	
	SHM-93-22B-040611	4/6/2011	8.6	0.23	6.57	6.96	749	-78.8	330	NA	NA	<0.17	NA	NA	NA	NA	26	<3.5	NA	NA	
	SHM-93-22B-101111	10/11/2011	5	0.16	6.36	11.13	704	-63	330	NA	NA	0.12	NA	NA	NA	NA	23	3.6	NA	NA	
	SHM-93-22B-041012	4/10/2012	95000	0.37	6.25	8.73	908	-59.8	340 J	NA	NA	0.090 J	NA	NA	NA	NA	19	<1.9	NA	NA	
	SHM-93-22B-101712	10/17/2012	39	0.55	6.54	10.83	415	-141.4	340	NA	NA	0.14	NA	NA	NA	NA	22	4.4	NA	NA	
	SHM-93-22B-052813	5/28/2013	71.0	0.22	6.57	8.92	471	80.4	337	1.3	0.004 U	0.36	NA	1.4 U	NA	NA	21.5	4.5 U	2.9	NA	
	SHM-93-22B-102313	10/23/2013	1.2	0.39	6.59	10.17	485	1.8	334	NA	0.0051 U	0.26	NA	NA	NA	NA	20.7	4.4 J	NA	NA	
SHM-93-22C	SHM-93-22C-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	DUP01-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-93-22C-042110	4/21/2010	2.2	1.10	8.23	11.33	321	-38	110	NA	NA	0.29	NA	NA	NA	NA	10	6.1	NA	NA	
	SHM-93-22C-101210	10/12/2010	1.05	0.58	7.82	10.86	286	-103.1	110	NA	NA	<0.10	NA	NA	NA	NA	12	5.8	NA	NA	
	SHM-93-22C-040611	4/6/2011	0	0.78	8.84	9.93	284	-1	120	NA	NA	<0.23	NA	NA	NA	NA	10	<6.0	NA	NA	
	SHM-99-22C-100511	10/5/2011	1	0.14	7.5	12.07	282	-42	120	NA	NA	0.21	NA	NA	NA	NA	8.4	6.1	NA	NA	
	SHM-93-22C-041112	4/11/2012	1600	1.26	7.46	8.17	361	-105.3	120	NA	NA	<0.10	NA	NA	NA	NA	9.9	<6.6	NA	NA	
	SHM-93-22C-101712	10/17/2012	0.30 B	0.41	8.04	8.4	140	-163.1	120	NA	NA	0.07 J	NA	NA	NA	NA	10	6.9	NA	NA	
SHL-5	SHL-5-101807	10/18/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-5-042210	4/22/2010	0.56	0.09	5.86	7.21	90	-254	25	NA	NA	0.053 J	NA	NA	NA	NA	3.6	<1.0	NA	NA	
	SHL-5-101110	10/11/2010	0.44	0.34	5.39	13.90	123	108	20	NA	NA	<0.10	NA	NA	NA	NA	2.9	2.1	NA	NA	
	SHL-5-040511	4/5/2011	0.2	0.34	5.78	4.28	60	85.2	12	NA	NA	0.14	NA	NA	NA	NA	3.7	2.2	NA	NA	
	SHL-5-101111	10/11/2011	1	0.14	5.28	15.15	78	130	33	NA	NA	<0.10	NA	NA	NA	NA	0.6	1.1	NA	NA	
	SHL-5041012	4/10/2012	2100	0.54	5.54	7.73	84	111.8	24	NA	NA	0.040 J	NA	NA	NA	NA	3.3	<1.7	NA	NA	
	SHL-5-101512	10/15/2012	4.1	0.49	5.42	13.98	99	82.4	37	NA	NA	0.07 J	NA	NA	NA	NA	2.9	4.7	NA	NA	
	SHL-5-052113	5/21/2013	3.36	0.36	5.59	10.81	100	82.9	23.2	0.18	0.004 U	0.079 U	NA	1.4 U	NA	NA	16.2	4.5 U	4.1	NA	
SHM-96-5B	SHM-96-5B-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-96-5B-010808	1/8/2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-96-5B-042210	4/22/2010	0.18	0.16	6.51	10.22	883	-278	330 J	NA	NA	0.073 J	NA	NA	NA	NA	19	4.4	NA	NA	
	SHM-96-5B-101110	10/11/2010	0.24	0.13	6.34	11.16	685	-35	320	NA	NA	<0.10	NA	NA	NA	NA	21	4.5	NA	NA	
	SHM-96-5B-040511	4/5/2011	1	0.19	6.54	10.15	681	-60	340	NA	NA	0.23	NA	NA	NA	NA	17	3.8	NA	NA	
	SHM-96-5B-100611	10/6/2011	4.4	0.38	6.15	12.86	702	-19.8	310	NA	NA	<0.10	NA	NA	NA	NA	20	4.1	NA	NA	
	SHM-96-5B-041012	4/10/2012	42000	0.25	6.35	9.83	869	-43	330	NA	NA	0.060 J	NA	NA	NA	NA	18	<1.6	NA	NA	
	SHM-96-5B-101512	10/15/2012	52	0.69	6.56	14.74	475	-71.6	320	NA	NA	0.11	NA	NA	NA	NA	18	5.4	NA	NA	
SHM-96-5C	SHM-96-5B-052113	5/21/2013	9.01	0.36	6.42	10.75	652	-43.7	315	2.3	0.004 U	0.079 U	NA	1.4 U	NA	NA	18.7	5.4	2.7	NA	
	SHM-96-5B-102213	10/22/2013	0.58	1.31	6.55	11.55	560	-69.0	315	NA	0.0051 U	0.31	NA	NA	NA	NA	17.7	5.0 J	NA	NA	
	SHM-96-5C-101707	10/17/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-96-5C-042210	4/22/2010	0.19	0.14	6.31	9.84	1008	-267	30	NA	NA	0.1	NA	NA	NA	NA	34	<1.0	NA	NA	
	SHM-96-5C-101110	10/11/2010	0.49	0.12	6.19	10.55	712	-51	310	NA	NA	<0.10	NA	NA	NA	NA	31	2.0	NA	NA	
	SHM-96-5C-040511	4/5/2011	15	0.20	6.33	9.38	744	-32.2	340	NA	NA	0.22	NA	NA	NA	NA	28	1.6	NA	NA	
	SHM-96-5C-100611	10/6/2011	4.6	0.22	6.16	12.15	721	-3.1	310	NA	NA	<0.60	NA	NA	NA	NA	28	1.7	NA	NA	
	SHM-96-5C-041012	4/10/2012	6600	0.11	6	9.48	885	32.7	310	NA	NA	<0.100	NA	NA	NA	NA	27	<2.0	NA	NA	
SHM-96-5C	SHM-96-5C-101712	10/17/2012	0.62 B	0.84	6.3	11.96	396	-71.0	300	NA	NA	<0.10	NA	NA	NA	NA	27	2.6	NA	NA	
	SHM-96-5C-052813	5/28/2013	4.82	0.18	6.29	9.98	482	-64.9	318	3.8	0.004 U	0.079 U	NA	1.4 U	NA	NA	24.0	4.5 U	3.8	NA	
	SHM-96-5C-102213	10/22/2013	0.10	1.41	6.21	11.63	529	-20.1	315	NA	0.0051 U	0.059 U	NA	NA	NA	NA	19.2	3.4 J	NA	NA	

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHL-8S	SHL-8S-101807	10/18/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-8S-0422210	4/22/2010	0.01	2.39	6.28	9.85	101	-91	20	NA	NA	0.17	NA	NA	NA	NA	6.7	6.6	NA	NA	
	SHL-8S-101110	10/11/2010	0.47	1.72	6.15	10.20	78	145	20	NA	NA	<0.10	NA	NA	NA	NA	7.5	5.0	NA	NA	
	SHL-8S-040511	4/5/2011	0	4.37	6.15	10.24	77	138	21	NA	NA	0.22	NA	NA	NA	NA	6.4	6.1	NA	NA	
	SHL-8S-100611	10/6/2011	0	2.24	6.06	10.38	82	175	21	NA	NA	<0.10	NA	NA	NA	NA	7.1	5.4	NA	NA	
	SHL-8S-041012	4/10/2012	<580	6.9	6.21	9.98	97	139.8	20	NA	NA	0.16	NA	NA	NA	NA	5200	<4.0	NA	NA	
	SHL-8S-101512	10/15/2012	1.1 B	4.56	6.37	12.55	51	110.1	19	NA	NA	0.15	NA	NA	NA	NA	7.4	4.3	NA	NA	
	SHL-8S-052813	5/28/2013	1.33	5.94	6.4	10.32	74	146.2	22.1	0.081 J	0.004 U	0.24	NA	1.4 U	NA	NA	6.0	6.2	16.2	NA	
	SHL-8S-102213	10/22/2013	0.7	2.49	6.2	10.77	75	230	17.5	NA	0.0051 U	0.18	NA	NA	NA	NA	6.8	6.4 J	NA	NA	
SHL-8D	SHL-8D-101807	10/18/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-8D-042210	4/22/2010	0.03	1.50	6.28	10.25	167	-121	36	NA	NA	0.16	NA	NA	NA	NA	12	7.5	NA	NA	
	SHL-8D-101110	10/11/2010	0.98	3.65	6.02	11.31	102	14.3	23	NA	NA	<0.10	NA	NA	NA	NA	9.6	8.0	NA	NA	
	SHL-8D-040511	4/5/2011	0	3.47	6.13	10.18	0.124	88	20	NA	NA	0.08 J	NA	NA	NA	NA	19	7.0	NA	NA	
	DUP-040511	4/5/2011	0	3.47	6.13	10.18	0.124	88	21	NA	NA	0.22	NA	NA	NA	NA	6.3	5.7	NA	NA	
	SHL-8D-100611	10/6/2011	0	5.39	6.13	10.55	91	43	22	NA	NA	<0.10	NA	NA	NA	NA	7.9	7.6	NA	NA	
	SHL-8D-041112	4/11/2012	<130	0.83	5.89	9.45	164	89.6	5	NA	NA	0.09 J	NA	NA	NA	NA	12	<5.8	NA	NA	
	SHL-8D-101512	10/15/2012	1.2 B	2.19	6.17	12.99	92	60.5	18	NA	NA	0.05 J	NA	NA	NA	NA	24	6.4	NA	NA	
SHL-21	SHL-21-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-21-101310	10/13/2012	1	9.01	5.59	11.85	46	178.3	12	NA	NA	<0.10	NA	NA	NA	NA	1.4	6.0	NA	NA	
	SHL-21-101512	10/15/2012	1.8	4.97	6.26	11.32	39	185.9	18	NA	NA	0.09 J	NA	NA	NA	NA	1.3	5.1	NA	NA	
SHL-13	SHL-13-101807	10/18/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-13-101110	10/11/2010	3.08	2.54	5.62	15.52	317	169	19	NA	NA	<0.10	NA	NA	NA	NA	82	6.5	NA	NA	
	SHL-13-100611	10/6/2011	0	0.25	5.72	14.61	0.273	42	18	NA	NA	0.05 U	NA	NA	NA	NA	66	4.7	NA	NA	
	SHL-13-101512	10/15/2012	0.23 B	0.67	5.91	16.26	254	61.5	23	NA	NA	0.28	NA	NA	NA	NA	61	5.5	NA	NA	
	SHL-13-102213	10/22/2013	0.2	0.35	6.08	13.87	269	127	23	NA	0.0051 U	0.059 U	NA	NA	NA	NA	61	8.0 J	NA	NA	
SHP-01-36X	SHP-01-36X-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-01-36X-101410	10/14/2010	1	0.12	6.5	15.80	218	-78	24	NA	NA	<0.10	NA	NA	NA	NA	40	9.2	NA	NA	
	SHP-01-36X-101011	10/10/2011	1	0.18	5.82	19.76	208	-43	28	NA	NA	<0.10	NA	NA	NA	NA	46	4.3	NA	NA	
	SHP-01-36X-101612	10/16/2012	23	0.36	6.52	15	379	-73.4	40	NA	NA	0.07 J	NA	NA	NA	NA	63	5.1	NA	NA	
	SHP-01-36X-111913	11/19/2013	0.63	7.07	6.42	6.79	351	118.8	24.2	0.093 J	0.0051 U	0.064 J	NA	1.5 U	NA	NA	75.5	23.7	NA	2.8	
SHP-01-37X	SHP-01-37X-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-01-37X-101410	10/14/2010	0.29	0.42	6.21	16.68	300	-43	44	NA	NA	<0.10	NA	NA	NA	NA	60	<1.0	NA	NA	
	SHP-01-37X-101612	10/16/2012	1.6	0.38	6.4	14.67	287	-105.8	37	NA	NA	0.42	NA	NA	NA	NA	62	3.0	NA	NA	
	SHP-01-37X-111913	11/19/2013	0.43	3.12	5.64	6.85	433	123.3	4.4 J	0.087 U	0.0051 U	0.059 U	NA	1.5 U	NA	NA	75.5	78.1	2.0 U	NA	
SHP-01-38A	SHP-01-38A-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-01-38A-101410	10/14/2010	1	0.91	6.37	12.81	433	-70	140	NA	NA	<0.10	NA	NA	NA	NA	28	18	NA	NA	
	SHP-01-38A-101211	10/12/2011	3	0.21	5.95	13.44	500	-39	200	NA	NA	<0.08	NA	NA	NA	NA	24	11	NA	NA	
	SHP-01-38A-101512	10/15/2012	30	0.36	6.19	12.84	499	-73.1	180	NA	NA	0.15	NA	NA	NA	NA	44	18	NA	NA	
	SHP-01-38A-052313	5/23/2013	4.3	0.12	6.66	10.79	156	-70.1	64.1	2.9	0.004 U	0.35	NA	1.4 U	NA	NA	5.3	6.3	2.1	NA	
	SHP-01-38A-111913	11/19/2013	0.31	1.25	6.14	12.33	435	-20.7	79.2	1.2	0.0051 U	1.1	NA	1.5 U	NA	NA	7	115	2.2	NA	
SHP-01-38B	SHP-01-38B-052313	5/23/2013	0.0	0.30	6.62	10.78	583	-109.1	190	5.2	0.004 U	0.26	NA	1.4 U	NA	NA	51.7	4.5 U	3.6	NA	
SHL-15	SHL-15-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-15-101410	10/14/2010	1	0.21	5.73	11.49	241	-0.3	70	NA	NA	0.68	NA	NA	NA	NA	11	20	NA	NA	
	SHL-15-100611	10/6/2011	0.9	0.27	6.17	12.36	403	66.1	140	NA	NA	1.8	NA	NA	NA	NA	22	14	NA	NA	
	SHL-15-101612	10/16/2012	1.3	3.27	5.98	13.11	348	-18.7	84	NA	NA	0.58	NA	NA	NA	NA	26	14	NA	NA	
	SHL-15-102213	10/22/2013	2.08	0.31	5.91	13.48	266	-23.6	90.9	NA	0.0051 U	0.56	NA	NA	NA	NA	16.7	10.1	NA	NA	
N5-P1	N-5,P-1-101210	10/12/2010	1	0.31	6.06	12.27	1353	-61.8	300	NA	NA	<0.10	NA	NA	NA	NA	20	<11	NA	NA	
	N-5,P-1-101011	10/10/2011	2	0.18	6.6	12.71	548	-60	280	NA	NA	0.10	NA	NA	NA	NA	16	9.5	NA	NA	
	N-5,P-1-101812	10/18/2012	18	0.55	6.79	11.67	386	-100	270	NA	NA	0.10	NA	NA	NA	NA	20	11	NA	NA	
	N-5,P-1-101812	10/22/2013	0.46	0.57	6.73	13.56	620	-69.5	313	NA	0.0051 U	0.059 U	NA	NA	NA	NA	17.7	11	NA	NA	

TABLE 5-5 GROUNDWATER MONITORING WELL RESULTS Shepley's Hill Landfill, Devens Massachusetts																					
Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
N5-P2	N-5,P-2-101210	10/12/2010	1	0.35	6.43	12.08	519	-60.7	700	NA	NA	<0.10	NA	NA	NA	NA	14	1.0	NA	NA	
	N-5,P-2-101011	10/10/2011	2	0.17	6.2	12.83	1080	-32	690	NA	NA	0.14	NA	NA	NA	NA	14	1.0	NA	NA	
	N-5,P-2-101712	10/17/2012	82	1.21	6.25	14.87	850	-132.4	640	NA	NA	0.09 J	NA	NA	NA	NA	13	<2.0	NA	NA	
	N-5,P-2-102213	10/22/2013	3.36	0.72	6.34	14.15	1271	-71.6	652	NA	0.0051 U	0.46	NA	NA	NA	NA	15.3	0.67 J	NA	NA	
SHP-99-29X	SHP-99-29X-101807	10/18/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-99-29X-102907	10/29/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHP-99-29X-101210	10/12/2010	1	0.13	5.67	11.90	270	-8.8	130	NA	NA	<0.10	NA	NA	NA	NA	2.5	4.9	NA	NA	
	SHP-99-29X-101112	10/11/2012	6	0.27	5.54	12.07	287	-1	110	NA	NA	0.17	NA	NA	NA	NA	4.1	3.0 J	NA	NA	
	SHP-99-29X-101712	10/17/2012	3.6	0.29	5.82	11.32	191	-75.7	92	NA	NA	0.13	NA	NA	NA	NA	1.6	4.8	NA	NA	
	SHP-99-29X-102213	10/22/2013	4.29	0.90	6.02	13.10	230	-48.3	101	NA	0.0051 U	0.16	NA	NA	NA	NA	2.3	5.6 J	NA	NA	
SHL-20	SHL-20-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-20-101310	10/13/2010	1.71	0.20	6.43	12.04	395	88	140	NA	NA	1.2	NA	NA	NA	NA	20	8.8	NA	NA	
	SHL-20-100611	10/6/2011	1.6	0.27	6.17	12.36	403	66.1	140	NA	NA	1.8	NA	NA	NA	NA	22	14	NA	NA	
	SHL-20-101512	10/15/2012	16	2.43	6.36	12.74	277	50.1	120	NA	NA	0.34	NA	NA	NA	NA	22	22	NA	NA	
	SHL-20-052213	5/22/2013	0.54	0.19	6.75	12.18	414	-85.6	111	5.3	0.004 U	0.37	NA	1.4 U	NA	NA	35.7	30.5	1.4	NA	
	SHL-20-102213	10/22/2013	4.10	1.87	6.51	12.80	443	-93.6	81	NA	0.006 J	0.39	NA	NA	NA	NA	49.7	23.0	NA	NA	
	DUP-102213	10/22/2013	NA	NA	NA	NA	NA	NA	81	NA	0.0051 U	0.37	NA	NA	NA	NA	49.7	23.1	NA	NA	
SHL-11	SHL-11-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-11-101310	10/13/2010	0.72	0.24	6.38	12.66	580	-70	230	NA	NA	<0.10	NA	NA	NA	NA	19	6.1	NA	NA	
	SHL-11-100611	10/6/2011	4	0.3	6.2	13.13	597	-41.2	240	NA	NA	<0.16	NA	NA	NA	NA	15	1.6	NA	NA	
	SHL-11-101512	10/15/2012	79	0.35	6.71	14.82	365	-108.2	200	NA	NA	0.15	NA	NA	NA	NA	20	19	NA	NA	
	SHL-11-052313	5/23/2013	8.5	0.18	6.75	12.24	462	-96.0	160	2.5	0.004 U	0.30	NA	1.4 U	NA	NA	41.2	19.5	2.1	NA	
	SHL-11-102213	10/22/2013	0.43	0.42	6.54	12.75	530	-97.6	164	NA	0.0051 U	0.34	NA	NA	NA	NA	42.7	20.2	NA	NA	
SHL-4	SHL-4-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-4-101410	10/14/2010	0.03	0.46	6.01	12.20	334	47	110	NA	NA	<0.10	NA	NA	NA	NA	25	7.2	NA	NA	
	SHL-4-101111	10/7/2011	0	1.44	5.65	12.55	82	274	32	NA	NA	0.33	NA	NA	NA	NA	1.6	2.3	NA	NA	
	SHL-4-101612	10/16/2012	0.84 B	0.34	5.69	13.55	162	47	55	NA	NA	0.02 J	NA	NA	NA	NA	13	0.65 J	NA	NA	
	SHL-4-052413	5/24/2013	0.36	0.27	6.1	10.39	278	107.1	123	1.4	0.004 U	0.079 U	NA	1.4 U	NA	NA	12.8	14.6	2.4	NA	
	DUP-02-052413	5/24/2013	NA	NA	NA	NA	NA	NA	129	8.9	0.004 U	0.079 U	NA	1.4 U	NA	NA	13.3	15.1	2.5	NA	
	SHL-4-111913	11/19/2013	0.06	0.33	6.13	11.52	427	35.2	112	1.3	0.0051 U	0.24	NA	1.5 U	NA	NA	18	69.3	3.3	NA	
SHL-19	SHL-19-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-19-101410	10/14/2010	40	0.57	5.86	11.03	240	22	80	NA	NA	<0.10	NA	NA	NA	NA	2.2	22	NA	NA	
	SHL-19-100711	10/7/2011	13	3.66	4.97	13.12	107	128	38	NA	NA	0.22	NA	NA	NA	NA	1.2	13	NA	NA	
	SHL-19-101612	10/16/2012	79	0.27	5.67	10.52	194	22	66	NA	NA	0.18	NA	NA	NA	NA	2.3	22	NA	NA	
	DUP-101612	10/16/2012	59	NA	NA	NA	NA	NA	66	NA	NA	0.17	NA	NA	NA	NA	2.3	22	NA	NA	
	SHL-19-052413	5/24/2013	17.0	1.01	5.86	10.83	137	98.9	55.3	0.094 J	0.004 U	0.32	NA	1.4 U	NA	NA	1.0	12.6	1.8	NA	
	SHL-19-102413	10/24/2013	123	0.5	6.76	11.54	110	-85.9	64.6	NA	0.0051 U	0.4	NA	NA	NA	NA	2.8	16.6	NA	NA	
SHL-10	SHL-10-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHL-10-101410	10/14/2010	1	9.16	6.51	12.8	89	136.9	31	NA	NA	0.35	NA	NA	NA	NA	1.3	6.0	NA	NA	
	SHL-10-101612	10/16/2012	0.36 B	0.87	6.89	9.75	73	59.1	26	NA	NA	0.35	NA	NA	NA	NA	1.1	4.2	NA	NA	
	SHL-10-052213	5/22/2013	1.22	10.05	6.62	11.46	55	149.8	24.3	0.081 U	0.004 U	0.18	NA	1.4 U	NA	NA	5.8	4.6 J	1.6	NA	
SHM-93-10C	SHM-93-10C-101607	10/16/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-93-10C-101410	10/14/2010	1	0.3	7.31	12.1	469	-30.7	170	NA	NA	<0.10	NA	NA	NA	NA	23	1.9	NA	NA	
	SHL-93-10C-101612	10/16/2012	1.0 B	1.23	7.28	9.45	434	16.3	180	NA	NA	<0.10	NA	NA	NA	NA	23	18	NA	NA	
SHM-07-03	SHM-07-03	10/31/2007	NA	NA	NA	NA	NA	NA	21.2	<0.075	0.006 J	<0.05	NA	<0.1	<20	NA	6.4	24	NA	NA	Test Kit (Filtered) < 5
	SHM-07-03	8/12/2010	NA	6.61	5.81	12.25	81	133.9	18	0.0239 J	<0.002	0.59	NA	<0.10	<7.0	NA	8.2	10	<1.0	12	
	DUP2-081210	8/12/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	SHM-07-03-052813	5/28/2013	12.02	4.82	5.81	12.84	147	139.2	16.6	0.081 U	0.004 U	0.87	NA	1.4 U	NA	NA	28.5	6.4	1.3	NA	

TABLE 5-5
GROUNDWATER MONITORING WELL RESULTS
Shepley's Hill Landfill, Devens Massachusetts

Well ID	Sample ID	Date	Turbidity NTU	DO mg/L	pH	Temp Celcius	Spec Cond uS/cm	ORP mV	Alkalinity mg CaCO3/L	Ammonia mg/l	Nitrite mg/l	Nitrate mg/l	Nitrogen (Nitrite +Nitrate) mg/l	Sulfide mg/l	COD mg/l	TOC mg/l	Chloride mg/l	Sulfate mg/l	DOC mg/l	DIC mg/l	Notes
SHM-07-05X	SHM-07-05	10/31/2007	5.01	1.85	7.61	11.1	429	19	46	0.278	0.01 J	<0.05	NA	<0.1	<20	NA	60	12	NA	NA	Test Kit (Filtered) > 500
	SHM-07-05	8/12/2010	NA	0.40	6.45	11.43	256	-21.5	94	2.42	0.01 J	0.06	NA	<0.10	<7.0	NA	8.9	8.1	2	24	
	DUP-081210	8/12/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
SHP-05-045A	SHP-05-045A	8/9/2010	NA	0.30	6.20	13.97	294	-32.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.6	48	Test Kit (Filtered) 10
SHP-05-046B	SHP-05-046B	8/9/2010	NA	0.81	5.71	12.93	662	3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14	150	Test Kit (Filtered) 80
PZ-12-01	PZ-12-01-052813	5/28/2013	4.19	0.23	6.50	12.41	421	-86.3	201	1.4	0.004 U	0.32	NA	1.4 U	NA	NA	38.0	13.6	2.4	NA	
PZ-12-02	PZ-12-02-052113	5/21/2013	4.58	0.15	6.37	12.33	665	-87.0	213	12.1	0.004 U	0.46	NA	1.4 U	NA	NA	42.2	4.5 U	2.8	NA	
PZ-12-03	PZ-12-03-052413	5/24/2013	1.94	0.23	6.6	12.21	563	-105.4	227	2.9	0.004 U	0.51	NA	1.4 U	NA	NA	52.7	20.8	3.3	NA	
PZ-12-04	PZ-12-04-052413	5/24/2013	4.29	0.29	6.53	13.29	447	-86.9	171	6.4	0.004 U	0.38	NA	1.4 U	NA	NA	50.7	5.0	3.5	NA	
PZ-12-05	PZ-13-05-052213	5/22/2013	0.87	0.31	6.46	12.24	571	-99.6	188	0.081 U	0.004 U	0.34	NA	1.4 U	NA	NA	31.2	4.5 U	2.4	NA	
PZ-12-06	PZ-12-06-052413	5/24/2013	2.9	1.57	6.23	13.02	700	-71.6	293	14.9	0.004 U	0.32	NA	1.4 U	NA	NA	51.0	10.4	29.5	NA	
PZ-12-07	PZ-12-07-052413	5/24/2013	18	0.29	6.41	11.54	276	-390	105	1.1	0.004 U	0.5	NA	1.4 U	NA	NA	6.3	12.7	2.2	NA	
PZ-12-08	PZ-12-08-052413	5/24/2013	9.2	2.68	5.90	10.63	125	131.7	46.4	0.087 J	0.004 U	0.95	NA	1.4 U	NA	NA	5.8	7.4	6.9	NA	
PZ-12-09	PZ-12-09-052113	5/21/2013	3.46	3.83	6.34	13.24	187	112.6	55.3	0.081 U	0.004 U	0.34	NA	1.4 U	NA	NA	4.3	27.0	1.1	NA	
PZ-12-10	PZ-12-10-052213	5/22/2013	1.1	10.37	5.88	10.19	43	191.3	15.5	0.081 U	0.004 U	0.19	NA	1.4 U	NA	NA	1.8	4.5 U	2.0	NA	
SHM-13-01	SHM-13-01-112113	11/21/2013	0.31	6.48	6.46	10.15	163	165.1	25.3	0.087 U	0.0051 U	0.46	NA	1.5 U	NA	NA	32	11.9	0.82 J	NA	
	DUPLICATE-112113	11/21/2013	NA	NA	NA	NA	NA	NA	26.4	0.087 U	0.0051 U	0.45	NA	1.5 U	NA	NA	33	11.7	0.75 J	NA	
SHM-13-02	SHM-13-02-052913	5/29/2013	0.22	0.16	7.23	11.5	311	-107.7	160	0.13	0.004 U	0.079 U	NA	1.4 U	NA	NA	9.5	6.5	33.6	NA	
	SHM-13-02-112113	11/21/2013	1.84	0.1	6.99	10.89	24	-17	161	0.14	0.0051 U	0.059 U	NA	1.5 U	NA	NA	8	5.7 J	1.9	NA	
SHM-13-03	SHM-13-03-052913	5/29/2013	1.20	0.14	6.56	11.72	730	-99.2	372	0.71	0.004 U	0.35	NA	1.4 U	NA	NA	39	5.6	4.4	NA	
	SHM-13-03-112013	11/20/2013	0.54	0.4	6.5	10.26	563	-41.8	391	0.2	0.0051 U	0.059 U	NA	1.5 U	NA	NA	38	5.0 J	4.3	NA	
SHM-13-04	SHM-13-04-052813	5/28/2013	3.63	0.71	6.46	11.7	717	-73.6	39.8	1.2	0.020	0.57	NA	1.4 U	NA	NA	200	10	1.8	NA	
SHM-13-05	SHM-13-05-052813	5/28/2013	2.05	0.27	6.88	11.14	629	-136.0	423	0.70	0.004 U	0.079 U	NA	1.4 U	NA	NA	37	12.3	4.7	NA	
	SHM-13-05-112113	11/21/2013	2.11	0.44	7.94	10.27	44	-154.6	425	0.095 J	0.0051 U	0.059 U	NA	1.5 U	NA	NA	41.5	11.4	4.5	NA	
SHM-13-06	SHM-13-06-061313	6/13/2013	4.07	0.14	7.16	12.43	287	-154.4	84	2.1	0.004 U	0.22	NA	1.4 U	NA	NA	19	6.4	1.0	NA	
	SHM-13-06-112113	11/21/2013	1.24	0.25	6.84	11.33	587	-119.4	33	2.8	0.0051 U	0.24	NA	1.5 U	NA	NA	145	11.4	1.5	NA	
SHM-13-07	SHM-13-07-112113	11/21/2013	4.7	0.14	6.8	12.5	773	-97.4	45	2.4	0.0052 J	0.26	NA	1.5 U	NA	NA	225	12.1	1.6	NA	
SHM-13-08	SHM-13-08-061313	6/13/2013	2.92	0.74	6.84	12.75	378	-122.4	141	6.1	0.004 U	0.32	NA	1.4 U	NA	NA	8.5	7.3	2.8	NA	
	DUPLICATE-061313	6/13/2013	NA	NA	NA	NA	NA	NA	140	6.2	0.004 U	0.40	NA	1.4 U	NA	NA	8.5	7.4	2.8	NA	
	SHM-13-08-112113	11/21/2013	0.98	0.24	6.84	11.32	323	-131.1	116	5.1	0.0051 U	0.15	NA	1.5 U	NA	NA	8	3.7 J	3.2	NA	
SHM-13-14S	SHM-13-14S	2/19/2014	1.97	0.59	5.88	6.53	440	96.3	58.0	0.60	NA	NA	1.5	1.3 U	NA	NA	91.0	9.6 J	1.2	NA	
SHM-13-14D	SHM-13-14D	2/19/2014	26.0	0.09	6.85	9.18	349	-82	81.0	1.8	NA	NA	0.22	1.3 U	NA	NA	48.0	12.3	1.9	NA	
SHM-13-15	SHM-13-15	2/19/2014	42.3	0.44	6.59	9.16	642	-172.7	273	0.68	NA	NA	0.050 U	1.3 U	NA	NA	46.0	7.7 J	2.9	NA	
	DUP	2/19/2014	NA	NA	NA	NA	NA	NA	278	0.65	NA	NA	0.050 U	1.3 U	NA	NA	46.5	5.2 J	2.9		
RB	RB-112013	9/6/2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	RB-112113	11/21/2013	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Rinse Blank	2/19/2014	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

NA: Not Applicable
ug/L: micrograms per liter
mg/l: milligrams per liter
J: Estimated Results
B: Analyte was detected in the associated me
Q: Absoulte value of concentration is greater
b: Absoulte value of concentration is greater

Table 5-6
Summary of Historical Arsenic Concentrations
Shepley's Hill Landfill
Devens, Massachusetts

Well ID	Total or Dissolved	IPC (T)	IPC FIL (D)	N-5, P-1 (T)	N-5, P-1 (D)	N-5, P-2 (T)	N-5, P-2 (D)	PSP-01 (T)	SHL-10 (T)	SHL-10 (D)	SHL-11 (T)	SHL-11 (D)	SHL-13 (T)	SHL-13 (D)	SHL-15 (T)	SHL-15 (D)	SHL-19 (T)	SHL-19 (D)	SHL-20 (T)	SHL-20 (D)	SHL-21 (T)	SHL-22 (T)	SHL-22 (D)	SHL-23 (T)	SHL-3 (T)	SHL-4 (T)	SHL-4 (D)	SHL-5 (T)	SHL-5 (D)	SHL-8D (T)	SHL-8D (D)	SHL-8S (T)	SHL-8S (D)	
Sample Month-Year	Units																																	
August-91	ug/l								67		320						340		98			27			35	260		23						
Dec-91	ug/l								120		320						710		89			25			120	140		38						
Mar-93	ug/l								280		340						390		330			32.9			6.5	2.54		11.4						
Jun-93	ug/l																																	
Nov-96	ug/l								3.4 B		332						138		244			24.8			NS	48.8		12						
May-97	ug/l								10 U		252 J						10 U		10 U			10 U			10 U	73.6 J		10 U						
Oct-97	ug/l								209		366						298		227			34.8			10 U	180		10 U						
May-98	ug/l								5 U		346						77.5		238			10.6			5 U	37.4		5 U						
Nov-98	ug/l								5.4 U		376						145		218			5.4 U			5.4 U	89.1		11.5						
May-99	ug/l								2.7 B		431						156		216			12.2 B			2.7 B	78.2		5.0 B						
Nov-99	ug/l								1.9 U		492						176		215			7.3			1.9 U	61.3		6.5						
May-00	ug/l								2.5 U		404						41.4		216			14.6			2.5 U	116		2.5 U						
Nov-00	ug/l								4.2 U		523						154		172			45			17.4	91.5		13.8						
May-01	ug/l								4.1 U		487						129		186			47.6			4.1 U	50.8		13.8						
Oct-01	ug/l								1.5 U		573						183		165			44.2			1.5 U	66		14.8						
May-02	ug/l								4.0 B		469						66.9		154			55.9 B			2.8 B	47.8 B		11.9 B						
Oct-02	ug/l								3.2 U		648						164		175			77.1			3.2 U	66.1		3.2 U						
May-03	ug/l								4.7 U		498						36.1		197			101			4.7 U	26.6		7.3						
Nov-03	ug/l								4.1 U		639						83.6		194			76.4			4.1 U	13.4		4.7 B						
May-04	ug/l								2.6 U		502						75		136			88.1			2.6 U	27.2		7.4 B						
Nov-04	ug/l								5.8 U		617						121		156			65.4			5.8 U	19.5		6.8 B						
Jun-05	ug/l								4.5 U		524						26.3		159						4.5 U	10.1		7.0 B						
Jan-06	ug/l								5 U		567						156		189			154				5 U		5 U						
Apr-06	ug/l			4940		22		5 U					5 U		18						5 U	171		5 U						5 U		5 U		
Jun-06	ug/l			5970		46		6	5 U		700		5 U		16		1790		346			167		5 U	5 U	5 U		6		5 U		5 U		
Sep-06	ug/l			4560		22		10					5 U		44						5 U	109		5 U					5 U		5 U			
Dec-06	ug/l			1930		30		5 U	5 U		668		5 U		93		142		361		5 U	115		5 U	5 U	5 U		8		5 U		5 U		
Apr-07	ug/l																				3 U	98		3 U						3 U		3 U		
May-07	ug/l																																	
Oct-07	ug/l			4856		28.1			0.59 J		686.5		1.6		42		885.1		336.2		0.81 J	55.1		0.73 J		7.5		16.2		11.8		22.6		
Apr-08	ug/l																				1.1	106.2		0.19 J			4.1		0.5 U		0.5 U			
Oct-08	ug/l			1748		26.8			1 UJ		663.5		3.3		75		173.6	28	7.9		1 U	81		1 UJ		2.3		4.9		1 UJ		1 UJ		
Jan-09	ug/l	188.9	1.4																															
Apr-09	ug/l																				1.2	98.7		0.5 U					3.6		0.5 U		0.5 U	
Oct-09	ug/l			4429		30.5					709.1		0.5 U		26.7		136.9	38.8	23.8			48.3				15.1		12.3		0.5 U		0.5 U		
Apr-10	ug/l																					69.6						3.4		0.6		0.6		
Oct-10	ug/l			3488		24.5			0.9		694		0.5 U		25		234.8	56.1	4.4		0.9	46.5		0.5 U		3.1		4.8		0.5 U		0.5 U		
Apr-11	ug/l																					57.9						1		0.5 U		0.5 U		
Oct-11	ug/l			4942		27.4					654.9		2.8		70.4		62.9		7.3			45.7				1.4		5.5		0.5 U		0.5 U		
Apr-12	ug/l																					41.9						3.7		0.5 U		0.6		
Oct-12	ug/l			2286		26.1			0.7		647		1.0		24.2		138.3		139.3		1.1	43.6		0.5 U		3.8		4.5		0.5 U		0.5 U		
May-13	ug/l											496						3.8		621			34.1				2.7		3.7		0.72 J		0.93 J	
Oct-13	ug/l				2,500		21.2			1.2		752		2.0 U		34.9		33.6		641			54.3						15.1		2.0 U		2.0 U	
Nov-13	ug/l																										6.2							

Notes:
and bolded values exceeds the MCL Standard
ug/l = micrograms per liter
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
-s was non-detect at the reporting limit shown.

Table 5-6
Summary of Historical Arsenic Concentrations
Shepley's Hill Landfill
Devens, Massachusetts

Well ID	Total or Dissolved	SHL-9 (T)	SHL-9 (D)	SHM-05-39A (T)	SHM-05-39A (D)	SHM-05-39B (T)	SHM-05-39B (D)	SHM-05-40X (T)	SHM-05-40X (D)	SHM-05-41A (T)	SHM-05-41A (D)	SHM-05-41B (T)	SHM-05-41B (D)	SHM-05-41C (T)	SHM-05-41C (D)	SHM-05-42A (T)	SHM-05-42A (D)	SHM-05-42B (T)	SHM-05-42B (D)	SHM-93-10C (T)	SHM-93-10D (T)	SHM-93-22C (T)	SHM-93-22C (D)	
Sample Month-Year	Units																							
August-91	ug/l	37																						
Dec-91	ug/l	67																						
Mar-93	ug/l	42.4																		21.3		68.9		
Jun-93	ug/l																			18.1		49.8		
Nov-96	ug/l	46.9																		12.4		44.6		
May-97	ug/l	16.1 J																		10 U		40.4		
Oct-97	ug/l	25.2																		10.5		10 U		
May-98	ug/l	15																		7.5		31.6		
Nov-98	ug/l	27.2																		10.2		51.1		
May-99	ug/l	71.3																		10.8 B		42.8		
Nov-99	ug/l	28.5																		8.7		33.2		
May-00	ug/l	15																		5.9 J		34.4		
Nov-00	ug/l	31.4																		8.8		47.8		
May-01	ug/l	15.1																		6.9		19.7		
Oct-01	ug/l	28.1																		10.1		31.6		
May-02	ug/l	144																		11.0 B		30.5 B		
Oct-02	ug/l	29																		7.1		30.1		
May-03	ug/l	13.4																		9.8		21		
Nov-03	ug/l	30.6																		5.2 U		29.8		
May-04	ug/l	19.8																		7.2 B		27.8		
Nov-04	ug/l	32.2																		10.6 B		34.9		
Jun-05	ug/l																			8.1 B		15.8		
Jan-06	ug/l	18																		11		23		
Apr-06	ug/l	21		289		590		3610		54		2420		626		5 U		266			14			
Jun-06	ug/l	21		288		634		3420		52		2720		614		5 U		241		12		17		
Sep-06	ug/l	46		270		415		3510		41		2730		640		5 U		276			14			
Dec-06	ug/l	51		248		412		4070		36		2280		666		5 U		296		10	12	73		
Apr-07	ug/l	26								30		1990		627		3 U		249				76		
May-07	ug/l																							
Oct-07	ug/l	34.1		241.5		309.4		4445		24.9		2591		684.5		1.01 J		304.4		9.8	10.3	72.5		
Apr-08	ug/l	14.6								26.9		2349		662.2		2.5		266.2				29.4		
Oct-08	ug/l	40.7		275.6		241.2		4920		18.7		1910		789.3		1 U		256		10.1	23.4	17.7		
Jan-09	ug/l																							
Apr-09	ug/l	18.1								22.1		1497		895.3		2		255.7				21.7		
Oct-09	ug/l	37.6		259.5		338.8		3833		16.3		1464		828.7		1 U		211.4				74.7		
Apr-10	ug/l	25.2								26.9		1372		896		2.5		72.2				14.6		
Oct-10	ug/l	38.4		246.3		162		3637		66.7		1036		787		1.2		197.2		8.7		15.8		
Apr-11	ug/l	25.7								20.9		1045		749.8		1.1		188.9				13.9		
Oct-11	ug/l	39.8		227.1		308.1		3703		18.4		1369		917		0.8		230				13.9		
Apr-12	ug/l	29.5								15.5		770.8		764.8		2.3		238.7				25.4		
Oct-12	ug/l	36.4		76.3		364.4		2974		10.3		859.5		782.2		0.7		240.6		8.1		21.7		
May-13	ug/l		30.0							12.3		812			709		0.89 J		238				19.7	
Oct-13	ug/l		33.1		146		113		3100		12.5		716		890		2.0 U		232				25.1	
Nov-13	ug/l																							

Notes:
and bolded values exceeds the MCL Standard
ug/l = micrograms per liter
J - The analyte was positively identified;
associated numerical value is the approxi
concentration of the analyte in the sam
is was non-detect at the reporting limit shown.

Table 5-6
Summary of Historical Arsenic Concentrations
Shepley's Hill Landfill
Devens, Massachusetts

Well ID	Total or Dissolved	SHM-93-22B (T)	SHM-93-22B (D)	SHM-96-5B (T)	SHM-96-5B (D)	SHM-96-5C (T)	SHM-96-5C (D)	SHM-99-31A (T)	SHM-99-31A (D)	SHM-99-31B (T)	SHM-99-31B (D)	SHM-99-31C (T)	SHM-99-31C (D)	SHM-99-32X (T)	SHM-99-32X (D)	SHP-01-36X (T)	SHP-01-36X (D)	SHP-01-37X (T)	SHP-01-37X (D)	SHP-01-38A (T)	SHP-01-38A (D)	SHP-99-29X (T)	SHP-99-29X (D)
Sample Month-Year	Units																						
August-91	ug/l																						
Dec-91	ug/l																						
Mar-93	ug/l																						
Jun-93	ug/l																						
Nov-96	ug/l	324		1440		71																	
May-97	ug/l	318 J		3,300 J		43.2																	
Oct-97	ug/l	352		2040		43.1																	
May-98	ug/l	365		4300		49.5																	
Nov-98	ug/l	406		3080		46.8																	
May-99	ug/l	707		3490		57																	
Nov-99	ug/l	1440		2700		44.8																	
May-00	ug/l	1360		5110		52.2																	
Nov-00	ug/l	1180		2500		40.3																	
May-01	ug/l	1540		3800		80.5																	
Oct-01	ug/l	1670		1850		41.1																	
May-02	ug/l	2040		3800		50.4 B																	
Oct-02	ug/l	159		1970		41.3																	
May-03	ug/l	2070		3920		55.1																	
Nov-03	ug/l	2500		3380		48.3																	
May-04	ug/l	1690		3950		47.1																	
Nov-04	ug/l	2360		2110		49.5																	
Jun-05	ug/l																						
Jan-06	ug/l	3320		4130		43																	
Apr-06	ug/l	3690		2110		47		9		56		270		168		24		41		550			
Jun-06	ug/l	3440		2760		51		12		53		273		186		22		49		496			
Sep-06	ug/l	3110		1570		37		23		74		305		202		30		46		681			
Dec-06	ug/l	3100		2980		24		16		72		301		176		19		46		623			
Apr-07	ug/l	2800		2030		47																	
May-07	ug/l																						
Oct-07	ug/l	1978		750		61.1		22.7		85.5		292.1		206.2		16.7		26.6		781.4		2953	
Apr-08	ug/l	1721		1597		54.7																	
Oct-08	ug/l	1374		747.8		51.8		16.2		79.5		260.3		203.9		27.9		38.1		602.4		2106	
Jan-09	ug/l																						
Apr-09	ug/l	1128		1401		44.2																	
Oct-09	ug/l	832.3		776.3		27.5		20.4		56.7		223.5		196.8		18.7		35.1		663.7		1686	
Apr-10	ug/l	947.5		1504 J		31.2																	
Oct-10	ug/l	827.6		846.2		26.4		17.4		39.2		239.4		173.4		14.2		22.5		651.8		3156	
Apr-11	ug/l	1039		2030		35																	
Oct-11	ug/l	1072		1895		24.5		18.4		59.3		244		172.8		30.8		20.2		557.9		1457	
Apr-12	ug/l	1271		1681		8.7																	
Oct-12	ug/l	879		1376		7.7		17.7		60.1		206.4		130.6		17.8		10.2		660.5		2739	
May-13	ug/l		1150		1400		10.4													412			
Oct-13	ug/l		1150		1660		5.5		14.6		61.6		205		107								2760
Nov-13	ug/l																4.8		4.7		247		

Notes:
and bolded values exceeds the MCL Standard
ug/l = micrograms per liter
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associated numerical value is the approxi
concentration of the analyte in the sampl
was non-detect at the reporting limit shown.

TABLE 6-1
Summary of Revised System Performance Assessment Metrics and Results
Shepley's Hill Landfill, Devens, Massachusetts

Performance Assessment Component	Method	Description	Data Utilized	Results	Interpretation	Conclusion
Hydraulic Capture Zone Analysis	Gradient Vector Analysis	Compute horizontal hydraulic gradient vectors between groups of wells (triplets) in hydraulic monitoring network under pumping and non-pumping conditions (US EPA study).	Continuous (15-minute interval) water level data using transducers installed in 33 wells and piezometers from September 2012 to July 2013 (Collected by US EPA).	Average gradient vectors from complete dataset, map comparing pumping and non-pumping gradient vectors at each well triplet.	Horizontal flow patterns are most influenced by pumping for nearfield wells, but also in wells further to the east. Capture is evident for nearfield wells but inconclusive for wells further away.	operating as designed
	Comparison to Numerical Model Results	Compare results of Gradient Vector Analysis to particle tracking simulations using the revised (2014) numerical groundwater flow model.	Numerical simulation results for 49 gpm pumping rate with particles released at wells with elevated dissolved arsenic.	Map showing particle paths.	Particle paths and capture are consistent with gradient vector analysis. Capture zone effectively contains groundwater passing through the landfill footprint.	operating as designed
	Capture Zone Width Calculation	Compute theoretical capture zone width using basic flow budget and conservative assumptions regarding hydraulic conductivity and saturated thickness	Observed hydraulic gradients for 2007, aquifer properties as specified in existing model, saturated thickness from SGI cross-sections and extraction well boring logs.	Calculated capture zone width is 763 feet at the extraction wells, based on the saturated thickness of 50 feet.	Calculated capture zone width is adequate to contain the estimated 444 foot width of impacted water.	operating as designed
	Drawdown Assessment	Compare nearfield water levels under pumping and non-pumping conditions at next system shutdown to determine observed drawdown	Two synoptic rounds just prior to and after a system restart (Completed 3/3/08)	Comparison map with observed vs. predicted drawdowns based on the February 2008 shutdown	Distribution and magnitude of observed drawdown generally consistent with predicted.	operating as designed
Geochemical Monitoring	Advective Travel Time Analysis	Develop particle tracking-based travel times to predict the time required for unimpacted groundwater from plume flanks to flow through downgradient impacted wells.	Numerical model simulation results for extraction well operating conditions (49 gpm).	Map plotting predicted 2 year travel time markers.	Advective velocities in downgradient groundwater generally 1 ft/d, calculations suggest it will take over 50 years for arsenic concentrations to decline.	inconclusive
	Geochemical Assessment	Evaluate As concentrations and ORP data since Extraction System startup for changes relative to historical conditions.	Historic As, Fe, and ORP data from Spring 2006 through 2013.	Interpretation of spatial pattern of arsenic trends and ORP conditions.	Mixed arsenic trends, even in wells clustered together, and persistent downgradient negative redox potential indicate pumping has not changed geochemical conditions.	inconclusive