



June 16, 2015

Mr. Joe Gay
NEWSVT
220 Avenue B
Williston, VT 05495

Re: Evaluation of Arsenic in Groundwater near MW-BRW-9S

Dear Joe:

This report presents our evaluation of elevated arsenic concentrations in groundwater in the vicinity of MW-BRW-9S at NEWSVT's solid waste disposal and management facility in Coventry, Vermont.

A. Introduction: Monitoring Well BRW-9S was hand-installed in March 2014 to evaluate groundwater conditions near NEWSVT's western boundary with State of Vermont lands. Groundwater sampling from this well indicated elevated Arsenic concentrations in exceedance of the Vermont Groundwater Enforcement Standard (GES) for arsenic (concentrations as high as 61 ppb, compared to the GES of 10 ppb). Personnel of the VT DEC Solid Waste Management Program requested further exploration and evaluation of the elevated arsenic concentrations in this well.

In March 2015, four additional groundwater monitoring wells were installed in an array surrounding MW-BRW-9S, labeled MW-H1 through MW-H4. Well logs for these wells and nearby wells are included in the attachment, and their locations are shown on the site plan in the attachment.

In March 2014 through May 2015, samples were collected from these new wells and nearby monitoring wells, as well as from nearby underdrains (UD-3 and UD-4), and the nearby surface water monitoring station, SW-7 (on the small stream down-gradient of UD-3 and UD-4, upgradient of the main Black River wetland).

B. Sampling results: See the results of water quality sampling in the attachment. The map in the attachment shows the results of the most recent round of sampling at each location (generally April or May 2015). Summary of Total Arsenic concentrations:

1. Groundwater: BRW-9S was 16 ppb, at a location about 150 feet upgradient of the property line. The two adjacent monitoring wells (H-1, H-3) were 1 ppb, at similar distances from the property line and about 300 feet from BRW-9S on either side. A further down-gradient well located directly on the property line, H-4, was also 1 ppb. Upgradient monitoring wells on NEWSVT property closer to lined landfill Phases III and IV varied from 4 ppb to 23 ppb, with no clear pattern that might indicate a possible point-source (either natural or anthropogenic). An upgradient monitoring well in the main Black River wetland on State property, MW-BRW-10S, located about 2,100 feet from BRW-9S, showed 8 ppb; and the next down-gradient well in the Black River wetland, MW-BRW-8S, about 900 feet away, showed 6 ppb.

The scattered pattern of arsenic concentrations suggests that there is no single point-source of these elevated arsenic concentrations, including not the landfill facility. We explored a possible relationship between pH and arsenic concentrations, and also between well depth



and arsenic concentrations – see the graphs in the attachment, which show no obvious correlation.

2. Underdrains: Discharges from the underdrain systems beneath lined landfill Phases III and IV were also sampled, and showed total arsenic values of 3 ppb. This indicates that the underdrain system is not the source of elevated arsenic in the groundwater locations. The fact that the underdrains collect groundwater from a large area, and have low arsenic concentrations, further indicates that the elevated arsenic concentrations in some of the groundwater monitoring wells are not related to the landfill.
3. Surface water: The surface water sample from the stream downgradient of UD-3 and UD-4 (SW-7) showed 7 ppb. Its location is downgradient of four groundwater monitoring wells (103, 703, 805S and E1) which showed a moderately wide range of arsenic concentrations (3 ppb, 5ppb, 15 ppb, and 5 ppb respectively), which would make sense.

- C. Conclusions: The elevated arsenic concentrations observed in the groundwater in MW-BRW-9S and a few other nearby wells appear to be un-related to landfill activities, pH or depths of monitoring wells. Groundwater arsenic concentrations are not uniformly elevated; the monitoring wells closest to MW-BRW-9S are all very low in arsenic (1 ppb). There does not appear to be a single point-source of the elevated arsenic concentrations in groundwater in this area. The most likely explanation is an anomalous area of arsenic-rich surficial material in this vicinity.

Groundwater closest to this western NEWSVT property line does not exceed the Arsenic GES of 10 ppb, as indicated by the most recent sampling results from MW-H4 (1 ppb; about 10 feet from the property line) and MW-H3 (1 ppb; about 100 feet from the property line).

Respectfully submitted,

Craig D. Heindel

Craig Heindel, C.P.G.
Senior Hydrogeologist

Attachments:

- Table - Total Arsenic, most recent data as of 5.5.2015; two graphs (As v. pH; As v. Well Depth);
- Table – Total Arsenic most recent data as of 5.5.2015, Site-Wide;
- Boring Logs;
- Site Plan: Most Recent Arsenic Data in vicinity of BRW-9S, as of 5.5.2015;
- Summary Tables, WQ Data as of 5.5.2015 in vicinity of BRW-9S.

[U:\PROJECTS - WHEM\NEWSVT\Groundwater Quality Compliance - GWPRS\Arsenic Evaluation Near BRW-9S\Arsenic near BRW-9S, NEWSVT - WHEM report 6-16-2015.docx or PDF]

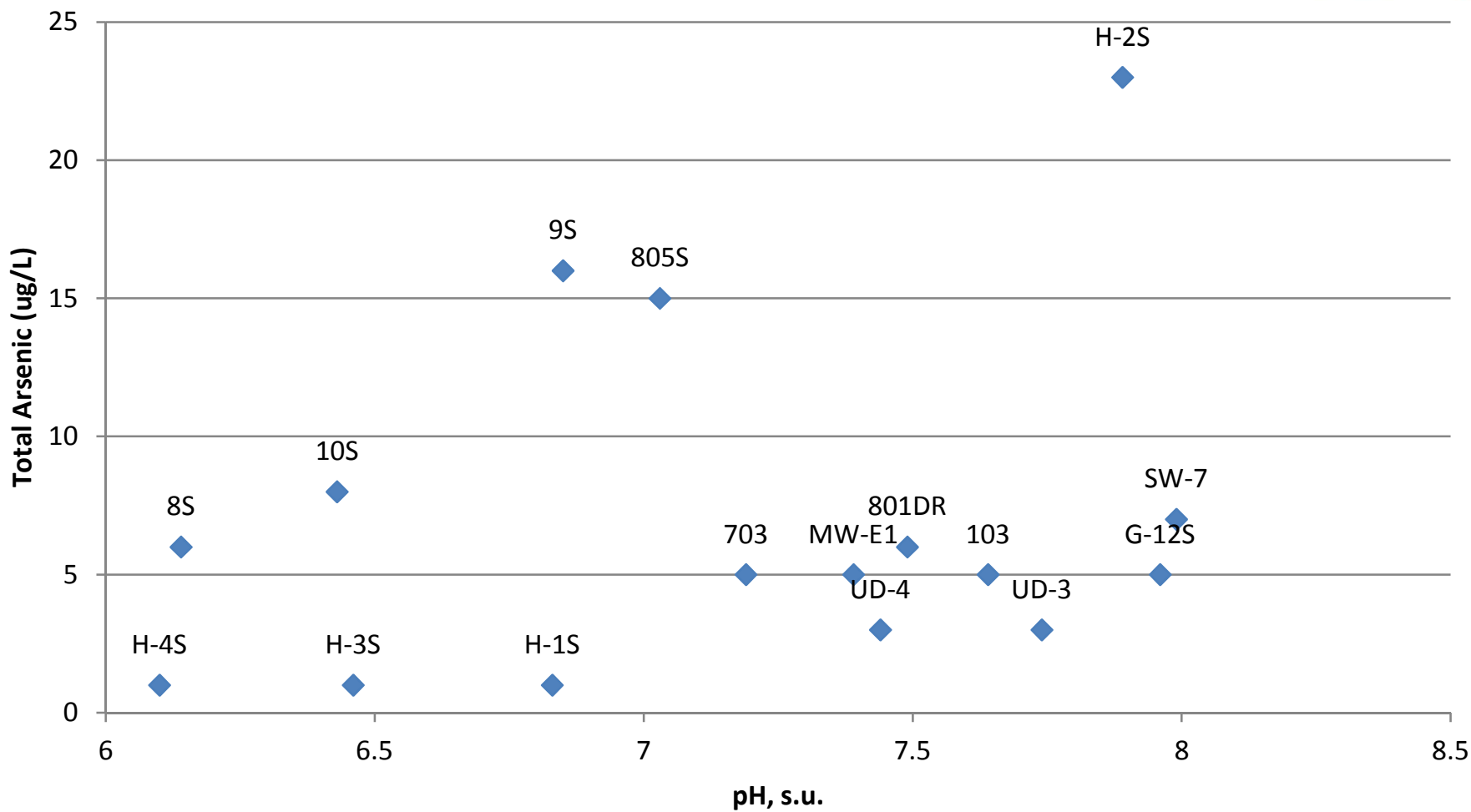
ATTACHMENT

NEWSVT Landfills: Arsenic Evaluation Near BRW-9S
Coventry, Vermont
Total Arsenic (Most Recent Data as of 5.5.2015)

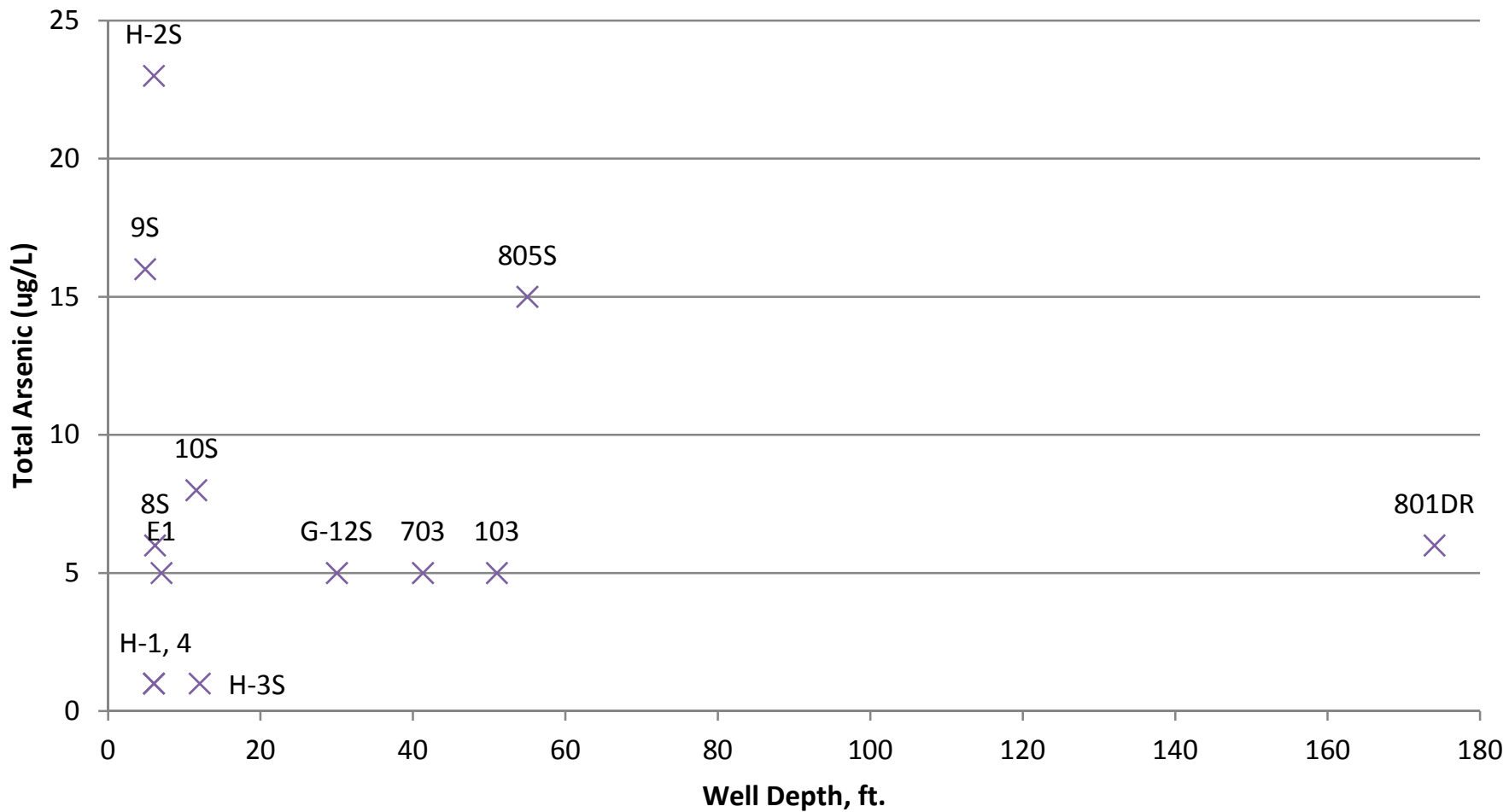


Well	Date	Total Arsenic	Well Depth	pH
		(ug/L)	(ft)	(s.u.)
103	5/5/2015	5	51	7.64
703	5/5/2015	5	41	7.19
801DR	5/5/2015	6	174	7.49
805S	5/5/2015	15	55	7.03
BRW-8S	4/8/2015	6	6	6.14
BRW-9S	4/8/2015	16	5	6.85
BRW-10S	4/8/2015	8	12	6.43
MW-E1	5/5/2015	5	7	7.39
G-12S	3/11/2015	5	30	7.96
H-1S	4/8/2015	1	6	6.83
H-2S	4/8/2015	23	6	7.89
H-3S	4/8/2015	1	12	6.46
H-4S	4/8/2015	1	6	6.10
SW-7	5/6/2015	7	--	7.99
UD-3	5/6/2015	3	--	7.74
UD-4	5/6/2015	3	--	7.44

Total Arsenic vs pH Most Recent Data as of 5/5/2015



Total Arsenic vs Well Depth Most Recent Data as of 5/5/2015



**NEWSVT: Arsenic Evaluation Near MW-BRW-9S
Most Recent Arsenic Results as of May 6, 2015: SITE-WIDE**



Location	Total Arsenic, ppb	Date
Groundwater:		
MW-A1	22	5/5/2015
MW-B1	23	5/5/2015
MW-D1R	15	5/5/2015
MW-D2	1,300	5/5/2015
MW-E1	8	5/5/2015
MW-F1	10	5/5/2015
MW-P2R	350	5/5/2015
MW-P5	3	5/5/2015
MW-P6	ND < 1	5/5/2015
MW-P8	8	5/5/2015
MW-BRW-1	2	2/10/2015
MW-BRW-2R	ND < 1	2/10/2015
MW-BRW-3S	ND < 1	5/6/2015
MW-BRW-3D	27	5/6/2015
MW-BRW-4S	ND < 1	6/5/2014
MW-BRW-5S	1	5/5/2014
MW-BRW-6S	2	5/5/2014
MW-BRW-7S	3	5/5/2014
MW-BRW-8S	6	4/8/2015
MW-BRW-9S	16	4/8/2015
MW-BRW-10S	8	4/8/2015
MW-G-12S	5	3/11/2015
MW-H-1S	5	4/8/2015
MW-H-2S	1	4/8/2015
MW-H-3S	23	4/8/2015
MW-H-4S	1	4/8/2015
MW-103	5	5/5/2015
MW-409	ND < 1	5/5/2015
MW-412R	2	5/5/2015
MW-703	5	5/5/2015
MW-705	4	5/5/2015
MW-706	3	5/5/2015
MW-801-DR	6	5/5/2015
MW-801-BR-R	ND < 1	5/4/2015
MW-804-SR	ND < 1	5/5/2015
MW-805-S	15	5/5/2015
DW-21 [office]	ND < 1	5/5/2015
St. Onge	11	5/6/2015

Location	Total Arsenic, ppb	Date	Description
Surface Water:			
SW-1	ND < 1	5/6/2015	Black R. upstream
SW-2	ND < 1	5/6/2015	Black R. downstream
SW-3	2	5/6/2015	Landfill Brook, Southeast
SW-4	ND < 1	5/6/2015	Landfill Brook, Northeast
SW-5	1	5/6/2015	St. Onge Stream
SW-6	2	5/6/2015	Eastern Stream
SW-7	7	5/6/2015	Western Stream below UD-3, 4
SW-8	ND < 1	5/6/2015	Wetland Below UD-1, 2
Underdrains:			
UD-1	ND < 1	5/6/2015	
UD-2	4	5/6/2015	
UD-3	3	5/6/2015	
UD-4	3	5/6/2015	
Leachates:			
Ph-I	470	5/6/2015	
Ph-II	200	5/6/2015	
Ph-III Cell-1	2,800	5/6/2015	
Ph-III Cell-2	1,300	5/6/2015	
PH-IV Cell-1	560	5/6/2015	
PH-IV Cell-2	410	5/6/2015	
PH-IV Cell-3	590	5/6/2015	

Notes:

ND < 1: Not detected, to detection level shown (ppb).
BRW-4S through BRW-7S: Most recent sampling date of 5/5/2014 is correct, as reported above.



SOIL BORING LOG; WELL CONSTRUCTION RECORD BRW-8S

Site Name: NEWSVT ("Black River Wetland Monitoring Well #8 Shallow")
Coventry, VT

WHEM Proj. #: 98330/4-13 Recert 2013-14

Date Installed: 3/5/2014

Drilled by: Waite-Heindel Environmental Mgmt.

Drilling Method: Stainless Steel Hand Auger, 3.5-in. diam.

Logged by: Wendy Krembs

Sampling Method: Auger Cuttings

Development Method: Peristaltic Pump, on 3/11/14

FT.	Well Construction	Interval (ft)	Soil Characteristics	Letter Symbol	Graphic Symbol	Water
6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 Grade = 0		6.0'	Gripper cap, locking stick-up (ft.) (approximate, not surveyed)			
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0		0 - 4.0'	Brown, mucky organic materials	PT		SAT
		4.0' - 5.0'	Brown, woody, mucky organic materials	PT		SAT
		5.0' - 5.5'	Brown, mucky organic materials	PT		SAT
		5.5' - 6.0'	Very dark brown clay	CL		SAT
	Well bottom: 6.15 ft. BGS 12.15 ft. BTOP					

LEGEND:

- No well-guard installed.
- Bentonite Seal Placed in Annulus.
- Auger cuttings (Peat) placed in Annulus.
- Soils:**
- PT = Peat & other highly organic soils
- CL = Inorganic clays of low to medium plasticity
- Water:**
- SAT = Saturated.



- Cap:** Slip Cap, Locking Gripper (Master key #3476).
- Solid Riser:** 2" ID, Schedule 40 PVC, 6.0 ft. AGS to 1.15 ft. BGS (total 7.15 ft.).
- Screen:** 2" ID, Schedule 40 PVC, 0.010"-Slotted Pre-Pak Sand Well Screen: 1.15 ft. to 6.15 ft. BGS
- Bottom:** Solid bottom cap (~ 0.2 ft.).



SOIL BORING LOG; WELL CONSTRUCTION RECORD BRW-9S

Site Name: NEWSVT ("Black River Wetland Monitoring Well #9 Shallow")
Coventry, VT

WHEM Proj. #: 98330/4-13 Recert 2013-14

Date Installed: 3/5/2014

Drilling Method: Stainless Steel Hand Auger, 3.5-in. diam.

Drilled by: Waite-Heindel Environmental Mgmt.

Sampling Method: Auger Cuttings

Logged by: Wendy Krembs

Development Method: Peristaltic Pump, on 3/11/14

FT.	Well Construction	Interval (ft)	Soil Characteristics	Letter Symbol	Graphic Symbol	Water
5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 Grade = 0		5.0'	Gripper cap, locking stick-up (ft.) (approximate, not surveyed)			
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0		0 - 3.0"	Brown frozen peat	PT		SAT
		3.0" - 2.0'	Very dark-brown peaty mulch			
		2.0' - 4.5'	Very dark brown peaty mulch with woody debris	PT		SAT
		4.5' - 5.0'	Gray clay	CL		SAT
	<p>Well bottom: 4.85 ft. BGS 9.85 ft. BTOP</p>					

LEGEND:

- No well-guard installed.
- Bentonite Seal Placed in Annulus.
- Auger cuttings (Peat) placed in Annulus.
- Soils:**
- PT = Peat & other highly organic soils
- CL = Inorganic clays of low to medium plasticity
- Water:**
- SAT = Saturated.



- Cap:** Slip Cap, Locking Gripper (Master key #3476).
- Solid Riser:** 2" ID, Schedule 40 PVC, 5.0 ft. AGS to 0.15 ft. BGS (total 5.15 ft.).
- Screen:** 2" ID, Schedule 40 PVC, 0.010"-Slotted Pre-Pak Sand Well Screen: 0.15 ft. to 4.85 ft. BGS
- Bottom:** Solid bottom cap (~ 0.2 ft.).



SOIL BORING LOG; WELL CONSTRUCTION RECORD BRW-10S

Site Name: NEWSVT ("Black River Wetland Monitoring Well #10 Shallow")
Coventry, VT

WHEM Proj. #: 98330/4-13 Recert 2013-14
Date Installed: 4/4/2014
Drilled by: Waite-Heindel Environmental Mgmt. Drilling Method: Stainless Steel Hand Auger, 3.5-in. diam.
Logged by: Wendy Krembs Sampling Method: Auger Cuttings
Development Method: Disposable Hand Bailer, on 4/4/14

FT.	Well Construction	Interval (ft)	Soil Characteristics	Letter Symbol	Graphic Symbol	Water
5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 Grade = 0		3.5'	Gripper cap, locking stick-up (ft.) (approximate, not surveyed)			
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0 10.5 11.0 11.5 12.0 12.5 13.0 13.5 14.0 14.5 15.0	<p style="text-align: right; margin-right: 20px;">Well bottom: 11.56 ft. BGS 15.06 ft. BTOP</p>	0 - 15.0'	Brown peat with some woody debris	PT		SAT

LEGEND:

No well-guard installed. Bentonite Seal Placed in Annulus. Auger cuttings (Peat) placed in Annulus.		<p>Cap: Slip Cap, Locking Gripper (Master key #3476). Solid Riser: 2" ID, Schedule 40 PVC, 3.5 ft. AGS to 6.56 ft. BGS (total 10.06 ft.). Screen: 2" ID, Schedule 40 PVC, 0.010"-Slotted Pre-Pak Sand Well Screen: 6.56 ft. to 11.56 ft. BGS Bottom: Solid bottom cap (~ 0.2 ft.).</p>
<p>Soils: PT = Peat & other highly organic soils, some wood</p> <p>Water: SAT = Saturated.</p>		

SOIL BORING LOG

WELL CONSTRUCTION RECORD

H-1

Site Name: NEWSVT
Coventry, VT

WHEM Project # 98330/2-13 Recert

Date Installed: 3/3/2015

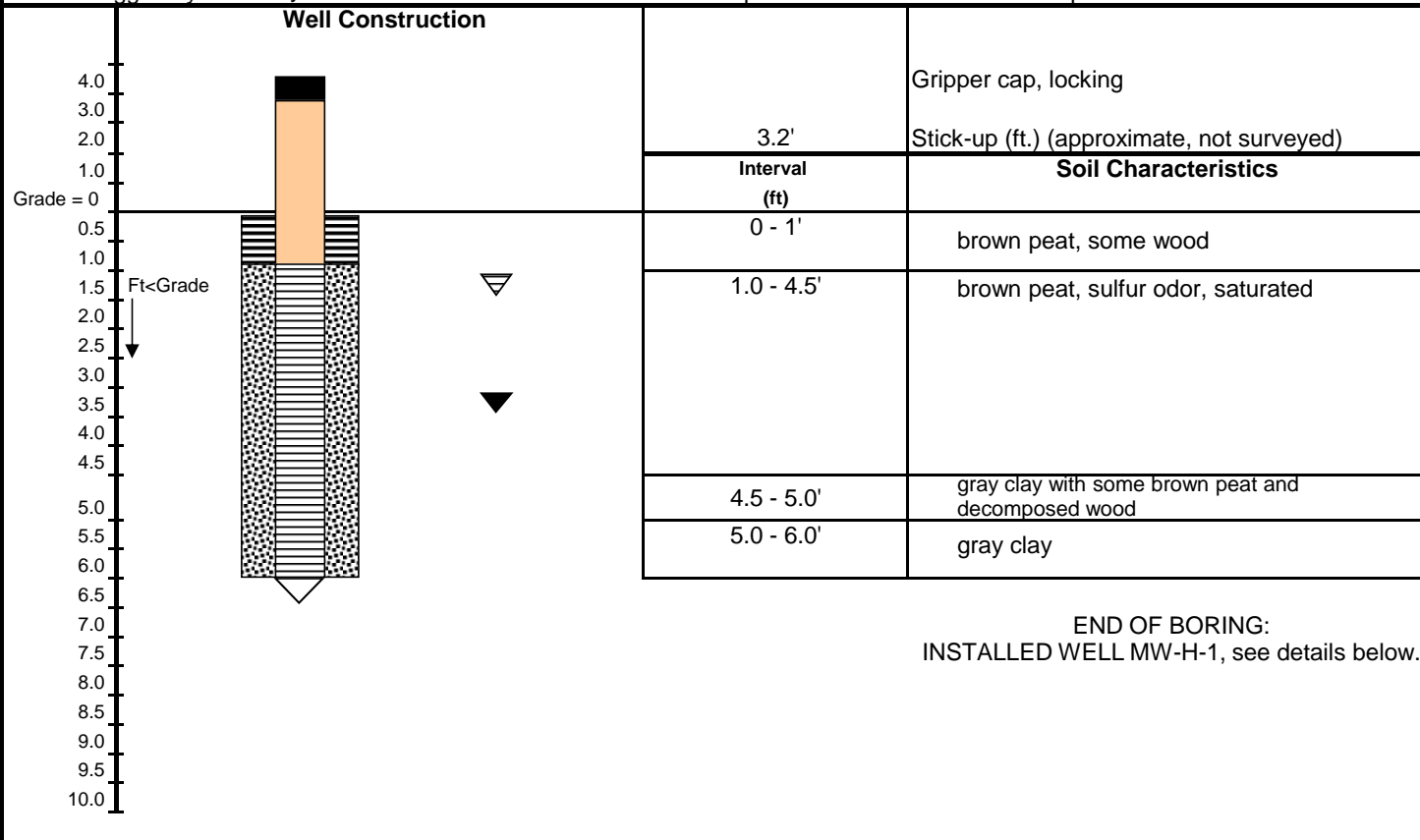
Drilled by : Waite-Heindel Environmental Mgmt.

Drilling Method: Stainless Steel Hand Auger, 3.5-in. diam.

Logged by: Wendy Krembs

Sampling Method: Auger Cuttings

Development Method: Peristaltic Pump - 3/12/15



Legend

- | | | |
|---|--|--|
| <p>No well-guard installed, locking gripper cap.</p> <p> Bentonite Pellets Placed in Annulus: 0-1'.</p> <p> Drill Cuttings Placed in Annulus: 1-6'.</p> | | <p>Locking gripper cap.</p> <p><u>Solid Riser:</u> 2" ID, Schedule 40 PVC: 1' BGS to approximately 3.2' AGS.</p> <p><u>Slotted Screen:</u> 2" ID, Schedule 40 PVC, 0.010" Slotted, Pre-Pack Well Screen: 1' - 6' BGS.</p> <p><u>Bottom:</u> Solid bottom cap: 6.0 - 6.2' BGS.</p> <p>Approximate Water Level During Drilling, below grade: 1 - 4' BGS.</p> <p>Static Water Level on 3/12/15, measured before well development: 3.55' BTOP.</p> |
|---|--|--|



SOIL BORING LOG WELL CONSTRUCTION RECORD H-2

**Site Name: NEWSVT
Coventry, VT**

WHEM Project # 98330/2-13 Recert

Date Installed: 3/4/2015

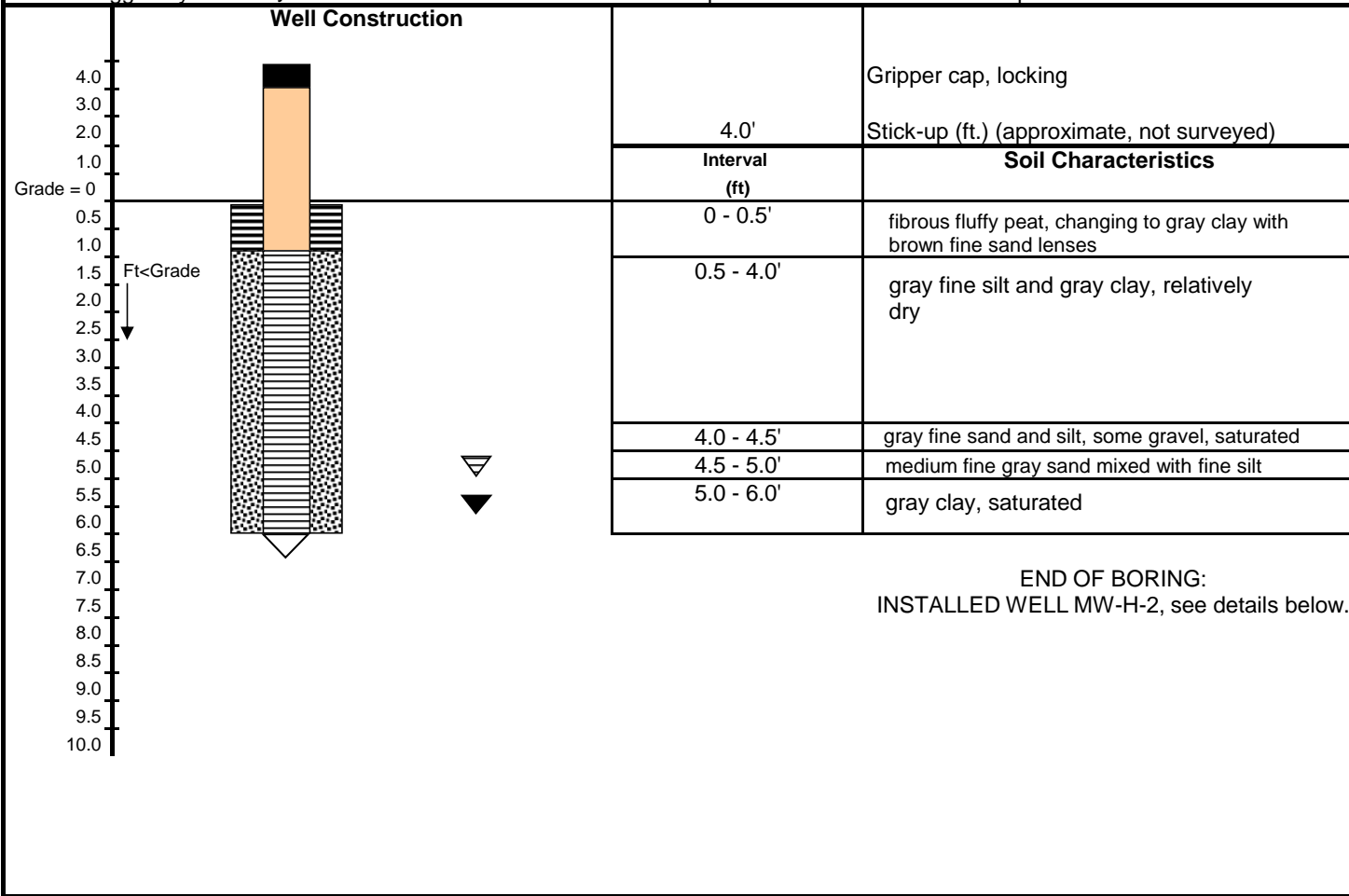
Drilled by : Waite-Heindel Environmental Mgmt.

Drilling Method: Stainless Steel Hand Auger, 3.5-in. diam.

Logged by: Wendy Krembs

Sampling Method: Auger Cuttings

Development Method: Peristaltic Pump - 3/11/15



Legend

<p>No well-guard installed, locking gripper cap.</p> <p> Bentonite Pellets Placed in Annulus: 0-1'.</p> <p> Drill Cuttings Placed in Annulus: 1-6'.</p>		<p>Locking gripper cap.</p> <p><u>Solid Riser</u>: 2" ID, Schedule 40 PVC: 1' BGS to approximately 4.0' AGS.</p> <p><u>Slotted Screen</u>: 2" ID, Schedule 40 PVC, 0.010" Slotted, Pre-Pack Well Screen: 1' - 6' BGS.</p> <p><u>Bottom</u>: Solid bottom cap: 6.0 - 6.2' BGS.</p> <p> Approximate Water Level During Drilling, below grade: 5 - 6' BGS.</p> <p> Static Water Level on 3/11/15, measured before well development: 5.41' BTOP.</p>
---	--	--



SOIL BORING LOG WELL CONSTRUCTION RECORD H-3

**Site Name: NEWSVT
Coventry, VT**

WHEM Project # 98330/2-13 Recert

Date Installed: 3/3/2015

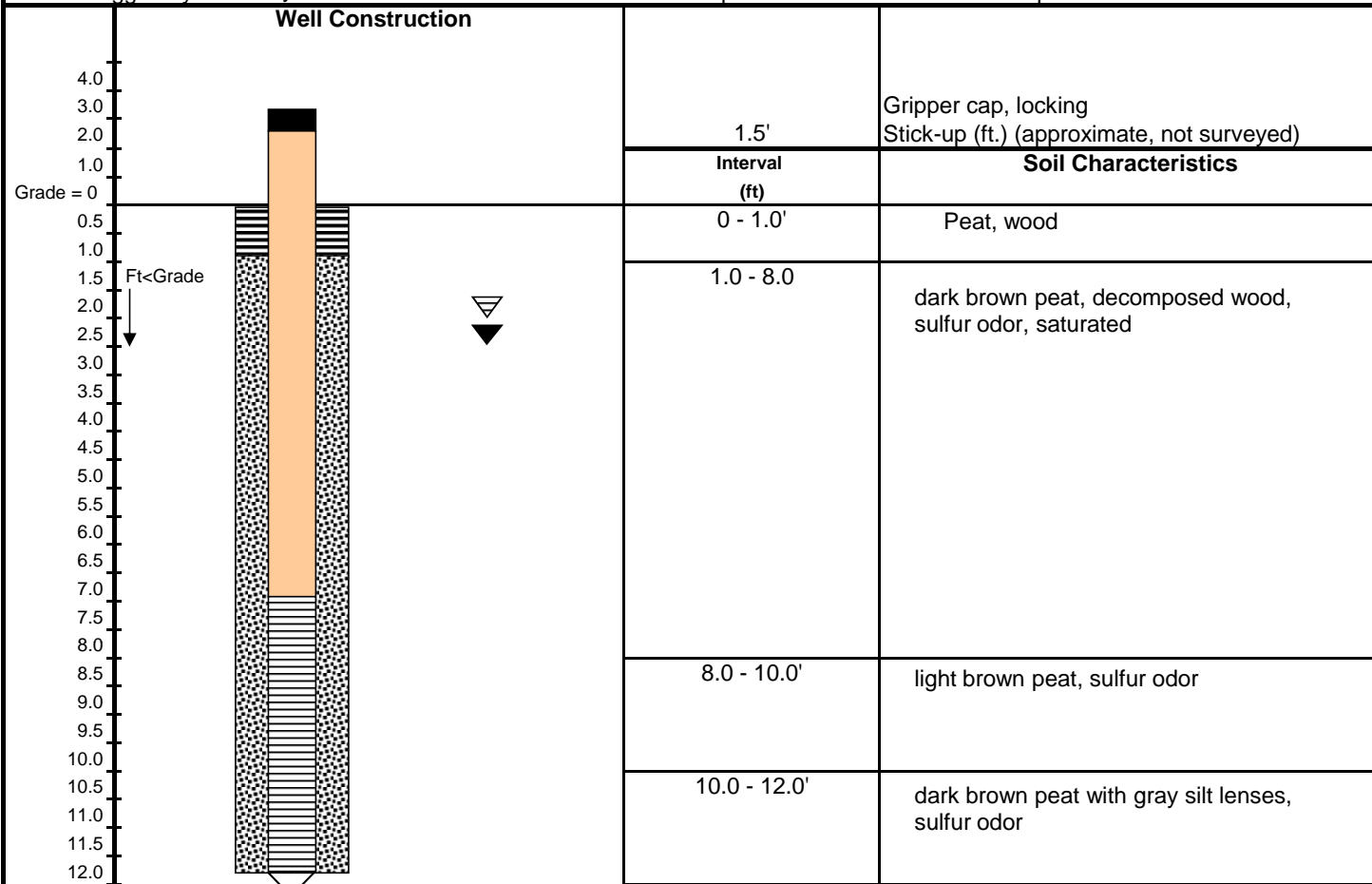
Drilled by : Waite-Heindel Environmental Mgmt.

Drilling Method: Stainless Steel Hand Auger, 3.5-in. diam.

Logged by: Wendy Krembs

Sampling Method: Auger Cuttings

Development Method: Peristaltic Pump - 3/12/15



END OF BORING:
INSTALLED WELL MW-H-3, see details below.

Legend

- | | | |
|--|--|--|
| <p>No well-guard installed, locking gripper cap.</p> <p> Bentonite Pellets Placed in Annulus: 0-1'.</p> <p> Drill Cuttings Placed in Annulus: 1-12'.</p> | | <p>Locking gripper cap.</p> <p><u>Solid Riser</u>: 2" ID, Schedule 40 PVC: 1' BGS to approximately 1.5' AGS.</p> <p><u>Slotted Screen</u>: 2" ID, Schedule 40 PVC, 0.010" Slotted, Pre-Pack Well Screen: 7' - 12' BGS.</p> <p><u>Bottom</u>: Solid bottom cap: 12 - 12.2' BGS.</p> <p> Approximate Water Level During Drilling, below grade: 1 - 8' BGS.</p> <p> Static Water Level on 3/12/15, measured before well development: 2.35' BTP.</p> |
|--|--|--|



SOIL BORING LOG WELL CONSTRUCTION RECORD H-4

**Site Name: NEWSVT
Coventry, VT**

WHEM Project # 98330/2-13 Recert

Date Installed: 3/4/2015

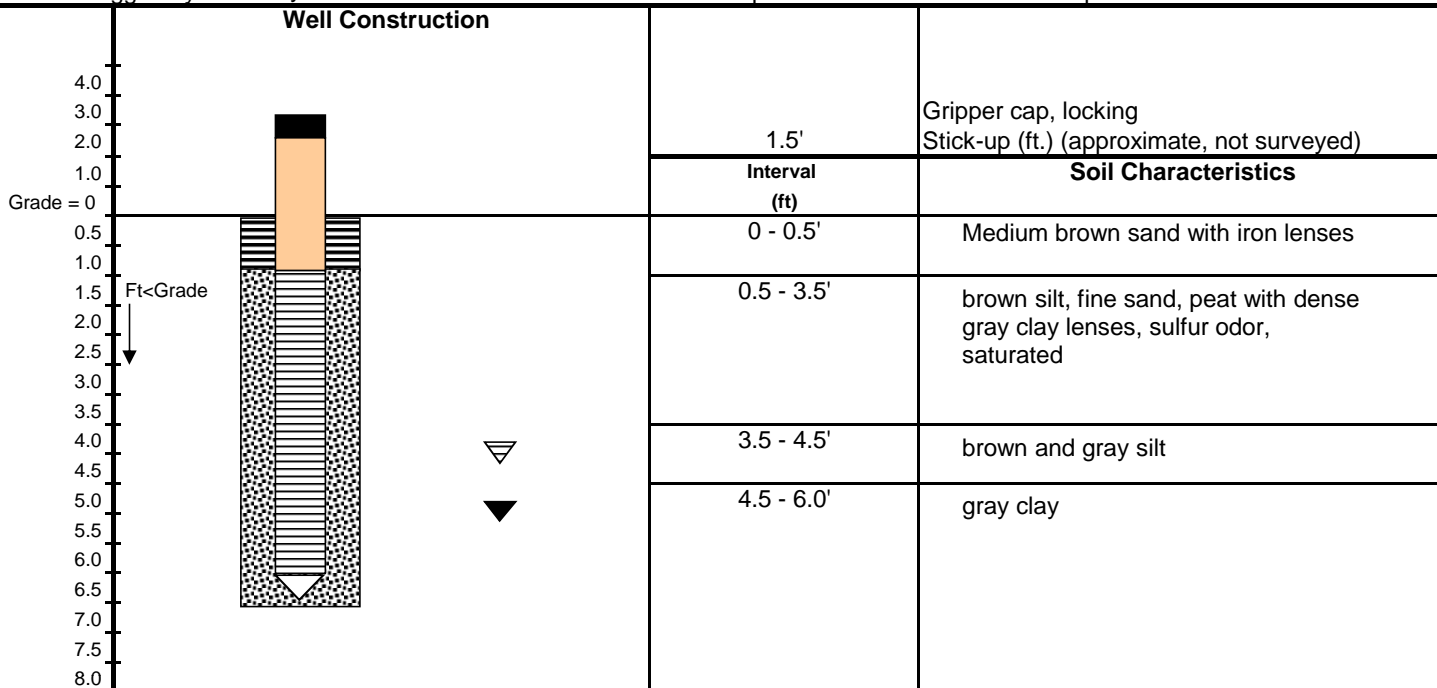
Drilled by : Waite-Heindel Environmental Mgmt.

Drilling Method: Stainless Steel Hand Auger, 3.5-in. diam.

Logged by: Wendy Krembs

Sampling Method: Auger Cuttings

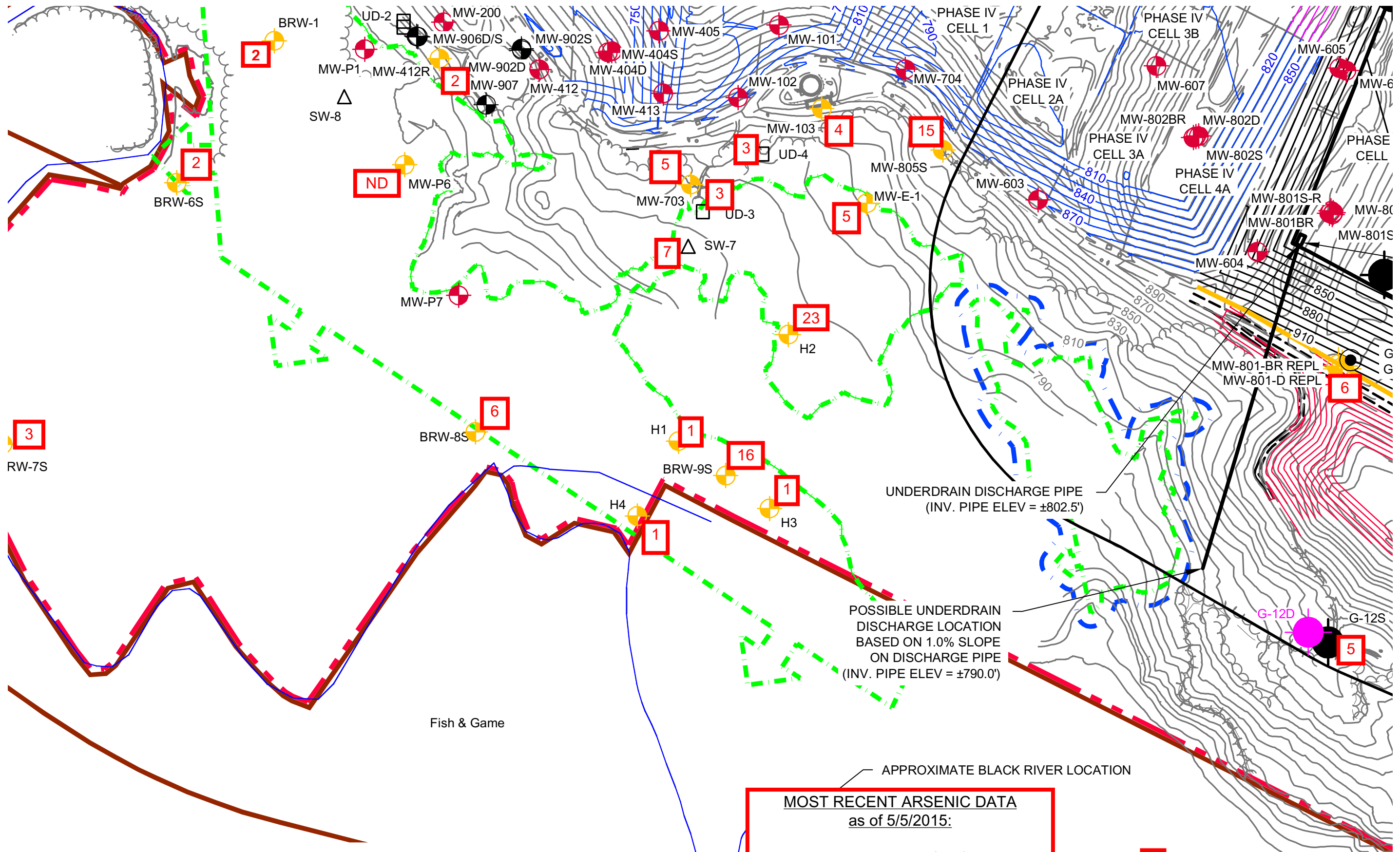
Development Method: Peristaltic Pump - 3/12/15



END OF BORING:
INSTALLED WELL MW-H-4, see details below.

Legend

<p>No well-guard installed, locking gripper cap.</p> <p> Bentonite Pellets Placed in Annulus: 0-1'.</p> <p> Drill Cuttings Placed in Annulus: 1-6'.</p>		<p>Locking gripper cap.</p> <p><u>Solid Riser</u>: 2" ID, Schedule 40 PVC: 1' BGS to approximately 1.5' AGS.</p> <p><u>Slotted Screen</u>: 2" ID, Schedule 40 PVC, 0.010" Slotted, Pre-Pack Well Screen: 1' - 6' BGS.</p> <p><u>Bottom</u>: Solid bottom cap: 6.0 - 6.2' BGS.</p>
		<p>Approximate Water Level During Drilling, below grade: 4.0 - 4.5' BGS.</p> <p>Static Water Level on 3/12/15, measured before development: 5.22' BTP.</p>



- 6. WETLANDS TO THE WEST OF THE MEAD SOIL STOCKPILE AREA AND SOUTH OF THE PHASE IV VISUAL BERM WERE DELINEATED BY AE AND PROVIDED TO SANBORN HEAD IN DIGITAL FORMAT ON OCTOBER 14, 2010, JUNE 28, 2011, AND APRIL 25, 2013.
- 7. AERIAL IMAGE WAS DEVELOPED FROM A NATIONAL AGRICULTURE IMAGERY PROGRAM ORTHOPHOTOGRAPH, OBTAINED FROM THE VCGI WEBSITE. SOURCE DATES JULY TO OCTOBER 2011. ORIGINAL SCALE = 1:40,000.
- 8. THE APPROXIMATE PROPERTY BOUNDARY INFORMATION WAS MERGED BY SANBORN HEAD FROM THE FOLLOWING DATA:

MOST RECENT ARSENIC DATA
as of 5/5/2015:

3 Arsenic, Total (ppb)
(ND = Not Detected)

[Map - Most Recent As Data - WHEM 6-15-2015]
Base Map by SHA.

ANBORN,
NEWSVT
PHY WAS
2,
ANBORN

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]							
				Total Arsenic (ug/L)	Total Manganese*** (mg/L)	Dissolved Manganese*** (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05	
VT Preventive Action Level* [1]				1.0	0.150	0.150	0.15	0.15	0.025	0.025	
VT Health Advisory [2]				None	0.300	0.300	0.3	0.3	0.05	0.05	
Federal MCL [2]				10	None	None	None	None	None	None	
Well	Date	Lab	Remarks								
MW-103	12/28/2001	Endyne	see note [j]	43	3.62	0.006	129	0.053	3.62	0.006	
	1/15/2002	Endyne	see note [r]	2	0.011		0.411		0.011		
	1/25/2002	Endyne	see note [p]	< 2	0.019		0.812		0.019		
	2/6/2002	Endyne	see note [p]	5	0.166		4.87	< 0.010	0.166		
	10/28/2004	Endyne	see note [n]	3	0.028	< 0.005	1.38	< 0.010	0.028	< 0.005	
	5/3/2005	Endyne	see note [bb]	< 2	0.014	< 0.005	0.529	< 0.010	0.014	< 0.005	
	10/4/2005	Endyne	see note [jj]	21	0.513	< 0.005	18.4	< 0.010	0.513	< 0.005	
	5/2/2006	Endyne	see note [nn]	29	0.836	< 0.005	29.30	< 0.010	0.836	< 0.005	
	10/3/2006	Endyne	see note [sss]	4	0.054	< 0.020	2.19	< 0.020	0.054	< 0.020	
	5/1/2007	Endyne	see note [k1]	3	0.059	< 0.020	2.53	0.035	0.059	< 0.020	
	10/4/2007	Endyne	see note [j2]	< 2	< 0.020	< 0.020	0.206	< 0.02	< 0.020	< 0.020	
	5/6/2008	Endyne	see note [j3]	5	0.13	< 0.020	4.800	0.028	0.130	< 0.020	
	10/6/2008	Endyne	see note [i4]	< 2	0.039	< 0.020	1.000	< 0.020	0.039	< 0.020	
	5/6/2009	Endyne	see note [j5]	19	0.84	0.041	24.000	0.120	0.840	0.041	
	10/6/2009	Endyne	see note [i6]	< 2	0.027	< 0.020	0.450	0.029	0.027	< 0.020	
	duplicate	10/6/2009	Endyne	see note [j6]	< 2	0.052	< 0.020	0.920	0.021	0.052	< 0.020
		5/4/2010	Endyne	see note [j7]	< 2	0.064	0.033	0.540	0.110	0.064	0.033
		10/5/2010	Endyne	see note [f8]	1	0.034	0.025	0.550	0.022	0.034	0.025
	duplicate	10/5/2010	Endyne	see note [r8]	1	0.032	< 0.020	0.530	0.031	0.032	< 0.020
		5/4/2011	Endyne	see note [a9]	3	0.27	0.150	2.8	0.032	0.270	0.150
	duplicate	5/5/2011	Endyne	see note [v8]	2	0.21	0.160	1.6	0.097	0.210	0.160
		10/4/2011	Endyne	see note [v8]	2	0.028	< 0.020	0.092	< 0.020	0.028	< 0.020
	duplicate	10/4/2011+	Endyne	see note [v8]	2	0.030	< 0.020	0.068	0.025	0.030	< 0.020
		5/2/2012+	Endyne	see note [e10]	7	0.710	0.043	8.70	0.097	0.710	0.043
	duplicate	5/2/2012+	Endyne	see note [f10]	9	0.660	0.036	11.00	0.053	0.660	0.036
		10/2/2012+	Endyne	see note [t10]	2	0.070	< 0.020	0.12	< 0.020	0.070	< 0.020
		5/9/2013+	Endyne	see note [o10]	3	0.130	< 0.020	0.40	< 0.020	0.130	< 0.020
		10/8/2013+	Endyne	see note [v11]	4	0.270	< 0.020	0.58	< 0.020	0.270	< 0.020
	5/6/2014+	Endyne	see note [v11]	4	0.260	< 0.020	0.19	< 0.020	0.260	< 0.020	
	10/6/2014+	Endyne	see note [o10]	7	0.730	< 0.020	0.64	0.024	0.730	< 0.020	
	3/11/2015+	Endyne		4	0.220	< 0.020	0.15	< 0.020	0.220	< 0.020	
	5/5/2015	Endyne		5							
duplicate	5/5/2015	Endyne		4							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] From December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level

** Shaded values exceed VT GES, as set by GWPRS, 2005.

*** As of 2/26/2007, the Primary Vermont GES for Manganese was changed from 0.840 mg/L to 0.300 mg/L.

The < values listed here are the reported detection limit.

[a] through [u3]: See last page of inorganic data for additional notes.

[3] Statistical analyses are conducted only on data since 5/15/1998, when requirement changed to TOTAL metals instead of dissolved metals, except for Mn & Fe (see note below).

Archived data has not been included in statistical analyses since 5/15/1998.

[4] For Fe and Mn only, requirement since 5/15/1998 is to analyze for both total and dissolved forms. The dissolved archived data are not included in the statistical analyses give consistency between dissolved and total Mn & Fe as prior to 5/98, samples were not analyzed for total and dissolved metals on the same date. This gives consistency of comparisons between dissolved and total Fe and Mn.

+MW sampling utilized low-flow technology at the request of the State when sufficient water was available.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese*** (mg/L)	Dissolved Manganese*** (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [1]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [2]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [2]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-703 Upgradient	Earlier data are archived to conserve table space. See notes [3] and [4] below.									
	5/14/1998	Endyne	see note [a]	< 5	0.020	0.015	0.180	0.129	0.020	0.015
	10/14/1998	Endyne	see note [b]	8	1.64	0.029	1.49	0.098	1.64	0.029
	5/5/1999	Endyne	see note [d]	< 5	0.148	0.1	0.34	< 0.010	0.148	0.1
	10/12/1999	Endyne	see note [d]	9	0.888	0.097	1.36	< 0.010	0.888	0.097
	5/4/2000	Endyne	see note [f]	9	0.181	0.048	1.39	< 0.010	0.181	0.048
	10/10/2000	Endyne	see note [f]	8	0.494	0.268	2.90	< 0.010	0.494	0.268
	6/3/2001	Endyne	see note [h]	6	0.139	0.092	0.73	< 0.010	0.139	0.092
	10/3/2001	Endyne	see note [h]	4	0.235	0.232	0.15	< 0.010	0.235	0.232
	5/2/2002	Endyne	see note [i]	8	0.654	0.236	3.36	0.058	0.654	0.236
	10/2/2002	Endyne	see note [a]	5	0.246	0.139	0.330	< 0.010	0.246	0.139
	5/6/2003	Endyne	see note [d]	5	0.187	0.086	0.556	0.015	0.187	0.086
	10/2/2003	Endyne	see note [d]	5	0.224	0.087	0.141	< 0.010	0.224	0.087
	5/4/2004	Endyne	see note [d]	4	0.107	0.051	0.137	0.025	0.107	0.051
	10/5/2004	Endyne	see note [h]	24	0.859	0.282	13.8	< 0.010	0.859	0.282
	5/3/2005	Endyne	see note [bb]	6	0.148	0.094	0.691	< 0.010	0.148	0.094
	10/4/2005	Endyne	see note [a]	5	0.261	0.239	0.131	< 0.010	0.261	0.239
	5/2/2006	Endyne	see note [ww]	110	4.850	0.030	90.10	< 0.010	4.850	0.030
	10/3/2006	Endyne	see note [nnn]	8	0.384	0.138	1.960	< 0.020	0.384	0.138
	5/1/2007	Endyne	see note [o1]	5	0.320	0.188	0.541	0.029	0.320	0.188
	5/1/2007	Endyne	see note [x1]	7	0.518	0.199	1.430	0.049	0.518	0.199
	10/4/2007	Endyne	see note [n2]	5	0.259	0.241	0.042	< 0.020	0.259	0.241
	5/6/2008	Endyne	see note [n3]	9	0.480	0.30	3.90	0.31	0.480	0.300
	10/6/2008	Endyne	see note [n4]	15	0.930	0.18	9.80	0.035	0.930	0.180
	5/6/2009	Endyne	see note [o5]	100	45	0.18	450	2.6	45	0.180
	10/6/2009	Endyne	see note [o6]	18	0.87	0.16	15	0.048	0.87	0.160
	10/6/2009	Endyne	see note [p6]	47	2.60	0.16	47	< 0.020	2.60	0.160
	5/4/2010	Endyne	see note [n7]	7	0.17	0.083	1.9	0.070	0.17	0.083
	10/5/2010	Endyne	see note [j8]	11	0.35	0.140	4.9	0.041	0.35	0.140
	5/4/2011	Endyne	see note [v8]	7	0.13	0.057	1.6	0.021	0.13	0.057
	10/4/2011+	Endyne	see note [q9]	7	1.10	0.020	2.1	0.081	1.10	0.020
	5/3/2012+	Endyne	see note [j10]	28	3.50	0.170	27.0	0.045	3.50	0.170
	10/2/2012+	Endyne	see note [z10]	33	6.80	0.510	37.0	0.040	6.80	0.510
5/9/2013+	Endyne	see note [o10]	6	0.78	0.063	0.7	< 0.020	0.78	0.063	
10/8/2013+	Endyne	see note [o10]	6	1.10	0.120	1.1	< 0.020	1.10	0.120	
5/7/2014+	Endyne	see note [o10]	6	1.30	0.029	0.34	< 0.020	1.30	0.029	
10/6/2014+	Endyne	see note [n11]	6	1.80	0.210	0.29	< 0.020	1.80	0.210	
3/11/2015+	Endyne		4	0.38	0.230	0.12	< 0.020	0.38	0.230	
3/27/2015+	Endyne		5	0.34	0.100	0.15	< 0.020	0.34	0.100	
4/8/2015+	Endyne		5	1.30	0.061	0.58	< 0.020	1.30	0.061	
5/5/2015	Endyne		5							
duplicate										
duplicate										

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] From December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level

** Shaded values exceed Vermont GES, as set by Vermont GWPRS, 2005.

*** As of 2/26/2007, the Primary Vermont GES for Manganese was changed from 0.840 mg/L to 0.300 mg/L.

The < values listed here are the reported detection limit.

[a] through [u3]: See last page of inorganic data for additional notes.

[3] Statistical analyses are conducted only on data since 5/15/1998, when requirement changed to TOTAL metals instead of dissolved metals, except for Mn & Fe (see note below).

Archived data has not been included in statistical analyses since 5/15/1998.

[4] For Fe and Mn only, requirement since 5/15/1998 is to analyze for both total and dissolved forms. The dissolved archived data are not included in the statistical analyses to give consistency between dissolved and total Mn & Fe as prior to 5/98, samples were not analyzed for total and dissolved metals on the same date. This gives consistency of comparisons between dissolved and total Fe and Mn.

+MW sampling utilized low-flow technology at the request of the State when sufficient water was available.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese*** (mg/L)	Dissolved Manganese*** (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [1]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [2]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [2]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-801D-R	5/6/2008	Endyne	see note [q3]	6	0.250	0.120	6.4	0.27	0.250	0.120
	10/6/2008	Endyne	see note [q4]	11	0.150	0.110	2.5	0.097	0.150	0.110
	5/6/2009	Endyne	see note [r5]	< 2	0.037	0.120	8.1	0.9	0.037	0.120
	10/6/2009	Endyne	see note [r6]	11	0.093	0.078	0.57	0.13	0.093	0.078
	5/3/2010	Endyne	see note [q7]	6	0.110	0.100	0.97	0.15	0.110	0.100
	10/5/2010	Endyne	see note [l8]	10	0.160	0.100	3.7	0.091	0.160	0.100
	5/4/2011	Endyne	see note [v8]	4	0.110	0.095	0.077	0.044	0.110	0.095
	10/4/2011-	Endyne	see note [v8]	9	0.092	0.024	0.74	0.029	0.092	0.024
	5/2/2012+	Endyne	see note [n10]	7	0.089	0.085	0.20	0.054	0.089	0.085
	10/2/2012+	Endyne	see note [t10]	9	0.130	0.071	0.48	< 0.020	0.130	0.071
	5/8/2013+	Endyne	see note [o10]	8	0.052	< 0.020	0.89	0.030	0.052	< 0.020
	10/8/2013+	Endyne	see note [o10]	< 1	0.027	< 0.020	4.60	0.053	0.027	< 0.020
	5/6/2014+	Endyne	see note [o10]	< 1	< 0.020	< 0.020	2.40	0.022	< 0.020	< 0.020
	10/6/2014+	Endyne	see note [o10]	< 1	< 0.020	< 0.020	2.30	0.049	< 0.020	< 0.020
	3/11/2015+	Endyne		9	0.200	0.120	1.30	0.057	0.200	0.120
5/5/2015			6							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] From December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level

** Shaded values exceed Vermont GES, as set by Vermont GWPRS, 2005.

*** As of 2/26/2007, the Primary Vermont Groundwater Enforcement Standard for Manganese was changed from 0.840 mg/L to 0.300 mg/L.

The < values listed here are the reported detection limit.

[a] through [u3]: See last page of inorganic data for additional notes.

[3] Statistical analyses are conducted only on data since 5/15/1998, when requirement changed to TOTAL metals instead of dissolved metals, except for Mn & Fe (see note below).

Archived data has not been included in statistical analyses since 5/15/1998.

[4] For Fe and Mn only, requirement since 5/15/1998 is to analyze for both total and dissolved forms. The dissolved archived data are not included in the statistical analyses to give consistency between dissolved and total Mn & Fe as prior to 5/98, samples were not analyzed for total and dissolved metals on the same date. This gives consistency of comparisons between dissolved and total Fe and Mn.

-Could not get pump to stabilize flow rate for proper low-flow sampling, sample taken before reading stabilized

+MW sampling utilized low-flow technology at the request of the State when sufficient water was available.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese*** (mg/L)	Dissolved Manganese*** (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [1]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [2]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [2]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-805S	12/28/2001		see note [z]	78	1.200	0.116	31.4	0.021	1.200	0.116
	1/15/2002		see note [r]	< 2	0.018		0.229		0.018	
	1/25/2002		see note [r]	< 2	0.016		0.376		0.016	
	2/6/2002		see note [aa]	26	1.62	< 0.005	58.1	< 0.010	1.62	< 0.005
	10/28/2004	Endyne	see note [g]	11	0.623	< 0.005	26.3	< 0.010	0.623	< 0.005
	5/3/2005	Endyne	see note [bb]	7	0.305	< 0.005	14.8	< 0.010	0.305	< 0.005
	10/4/2005	Endyne	see note [a]	3	0.043	< 0.005	1.60	< 0.010	0.043	< 0.005
	5/2/2006	Endyne	see note [mm]	47	3.760	< 0.005	144.00	< 0.010	3.760	< 0.005
	10/3/2006	Endyne	see note [ttt]	21	1.010	< 0.020	42.80	< 0.020	1.010	< 0.020
	5/1/2007	Endyne	see note [s1]	5	0.355	< 0.020	13.40	0.081	0.355	< 0.020
	10/4/2007	Endyne	see note [r2]	6	1.910	< 0.020	6.06	0.060	1.910	< 0.020
	5/6/2008	Endyne	see note [t3]	8	0.130	< 0.020	4.80	0.026	0.130	< 0.020
	10/6/2008	Endyne	see note [t4]	11	0.890	< 0.020	32.00	0.220	0.890	< 0.020
	5/6/2009	Endyne	see note [u5]	31	4.3	4.6	160	110	4.3	4.6
	10/6/2009	Endyne	see note [u6]	8	0.6	< 0.020	23	0.034	0.6	< 0.020
	5/4/2010	Endyne	see note [t7]	16	1.4	< 0.020	49	0.066	1.4	< 0.020
	10/5/2010	Endyne	see note [o8]	23	1.9	< 0.020	76	0.092	1.9	< 0.020
	5/4/2011	Endyne	see note	< 1	< 0.020	< 0.020	0.12	0.027	< 0.020	< 0.020
	6/20/2011 [5]	Endyne	see note [v8]	< 1	< 0.020	< 0.020	0.48	0.032	< 0.020	< 0.020
	10/4/2011^	Endyne	see note [s9]	120	4.7	0.085	240	3	4.7	0.085
	5/2/2012^	Endyne	see note [p10]	6	0.21	< 0.020	7.6	0.079	0.21	< 0.020
	10/2/2012^	Endyne	see note [b11]	72	4.5	0.021	240.0	0.790	4.5	0.021
	5/9/2013^	Endyne	see note [k11]	510	37.0	0.170	1600	4.900	37.0	0.170
	10/10/2013^	Endyne	see note [u11]	35	2.0	0.032	89	0.250	2.0	0.032
	5/7/2014^	Endyne	see note [e12]	5	0.23	< 0.020	10	0.047	0.23	< 0.020
	10/7/2014^	Endyne	see note [k12]	2	0.043	< 0.020	1.7	0.048	0.043	< 0.020
	3/13/2015^	Endyne		35	12.0	0.068	510.0	2.200	12.000	0.068
3/27/2015^	Endyne		20	4.1	0.030	290.0	0.800	4.100	0.030	
4/8/2015^	Endyne		22	4.7	0.029	210.0	1.000	4.700	0.029	
5/5/2015	Endyne		15							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] From December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level

** Shaded values exceed Vermont GES, as set by Vermont GWPRS, 2005.

*** As of 2/28/2007, the Primary Vermont Groundwater Enforcement Standard for Manganese was changed from 0.840 mg/L to 0.300 mg/L.

The < values listed here are the reported detection limit.

[a] through [u3]: See last page of inorganic data for additional notes.

[3] Statistical analyses are conducted only on data since 5/15/1998, when requirement changed to TOTAL metals instead of dissolved metals, except for Mn & Fe (see note below).

Archived data has not been included in statistical analyses since 5/15/1998.

[4] For Fe and Mn only, requirement since 5/15/1998 is to analyze for both total and dissolved forms. The dissolved archived data are not included in the statistical analyses to give consistency between dissolved and total Mn & Fe as prior to 5/98, samples were not analyzed for total and dissolved metals on the same date. This gives consistency of comparisons between dissolved and total Fe and Mn.

[5] Re-sampling was conducted on 6/20/11 due to questionable results from 5/4/11

^ Insufficient water to low-flow well, grab sample obtained

/ COD sample not preserved to pH<2 qualified by lab for several ICP metal values due to inter-element interference from sample matrix due to significant amount of sediment, see lab report

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [2]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [3]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [4]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-BRW-8S	3/12/2014	Endyne	see note (11)	5	3.200	2.900	17	16	3.200	2.900
	3/25/2014	Endyne	see note (16)	4	2.600	2.600	21	19	2.600	2.600
	4/14/2014	Endyne	see note (19)	2	2.700	3.000	20	22	2.700	3.000
	5/5/2014	Endyne	see note (4)	2	2.600	3.200	22	16	2.600	3.200
	3/12/2015	Endyne		9	3.000	3.100	45	33	3.000	3.100
	3/27/2015	Endyne		23	3.000	3.200	61	30	3.000	3.200
	4/8/2015	Endyne		6	3.000	2.900	30	27	3.000	2.900

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] Vermont Health Advisory Levels and Federal MCLs from December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level.

** Shaded values exceed Vermont Groundwater Enforcement Standard, as set by Vermont Groundwater Protection Rule and Strategy, 2005.

En = Endyne, Inc., Williston, VT.

"<" means not detected, to the reported detection limit shown.

note: (11), (16), (19), (4): See last page of inorganic data for footnotes of additional data.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [2]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [3]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [4]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-BRW-9S	3/12/2014	Endyne	see note (12)	46	4.700	4.700	12	12	4.700	4.700
	3/25/2014	Endyne	see note (17)	38	4.700	4.700	13	13	4.700	4.700
	4/14/2014	Endyne	see note (20)	38	3.000	3.000	7.1	6.0	3.000	3.000
	5/5/2014	Endyne	see note (23)	61	3.300	3.400	11.0	6.0	3.300	3.400
	3/12/2015	Endyne		4	0.700	0.840	1.4	1.3	0.700	0.840
	3/27/2015	Endyne		4	0.730	0.980	1.4	1.5	0.730	0.980
	4/8/2015	Endyne		16	2.700	2.500	8.3	7.4	2.700	2.500

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] Vermont Health Advisory Levels and Federal MCLs from December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level.

** Shaded values exceed Vermont Groundwater Enforcement Standard, as set by Vermont Groundwater Protection Rule and Strategy, 2005.

En = Endyne, Inc., Williston, VT.

"<" means not detected, to the reported detection limit shown.

note: (12), (17), (20), (23): See last page of inorganic data for footnotes of additional data.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [2]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [3]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [4]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-BRW-10S	5/6/2014	Endyne	see note (24)	2	0.450	0.500	3.00	3.90	0.450	0.500
	6/5/2014	Endyne	see note (16)	< 1	0.350	0.280	3.20	5.10	0.350	0.280
	6/17/2014^	Endyne	see note (25)	1	0.340	0.340	6.30	5.10	0.340	0.340
	7/7/2014	Endyne	see note (20)	< 1	0.380	0.250	14.00	4.80	0.380	0.250
	3/12/2015	Endyne		4	0.470	0.430	13.00	10.00	0.470	0.430
	4/8/2015	Endyne		8	0.690	0.540	25.00	9.80	0.690	0.540

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] Vermont Health Advisory Levels and Federal MCLs from December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level.

** Shaded values exceed Vermont Groundwater Enforcement Standard, as set by Vermont Groundwater Protection Rule and Strategy, 2005.

En = Endyne, Inc., Williston, VT.

"<" means not detected, to the reported detection limit shown.

note: (24), (16), (25), (20): See last page of inorganic data for footnotes of additional data.

^: Sample filtration occurred beyond the 15-minute hold time, and was performed by the laboratory upon arrival

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]							
				Total Arsenic (ug/L)	Total Manganese*** (mg/L)	Dissolved Manganese*** (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05	
VT Preventive Action Level* [1]				1.0	0.150	0.150	0.15	0.15	0.025	0.025	
VT Health Advisory [2]				None	0.300	0.300	0.3	0.3	0.05	0.05	
Federal MCL [2]				10	None	None	None	None	None	None	
Well	Date	Lab	Remarks								
MW-E1	5/6/2005	Endyne	see note [s]	28	0.788	< 0.005	12.9	< 0.010	0.788	< 0.005	
	10/4/2005	Endyne	see note [f]	11	0.138	0.091	0.163	< 0.010	0.138	0.091	
	5/2/2006	Endyne	see note [u]	20	0.227	0.048	4.060	0.010	0.227	0.048	
	10/3/2006	Endyne	see note	54	0.786	0.057	13.40	< 0.02	0.786	0.057	
	5/1/2007	Endyne	see note [u1]	12	0.187	0.150	2.18	0.216	0.187	0.150	
	10/4/2007	Endyne	see note [c2]	13	0.409	0.125	2.34	< 0.020	0.409	0.125	
	5/6/2008	Endyne	see note [a3]	21	0.340	0.160	5.60	0.18	0.340	0.160	
	10/6/2008	Endyne	see note [z3]	24	0.400	0.060	5.20	0.023	0.400	0.060	
	5/6/2009	Endyne	see note [b5]	110	1.000	0.120	46.00	0.038	1.000	0.120	
	10/6/2009	Endyne	see note [a3]	33	0.340	0.110	5.80	0.066	0.340	0.110	
	5/4/2010	Endyne	see note [b7]	20	0.430	0.140	9.90	0.082	0.430	0.140	
	10/5/2010	Endyne	see note [a8]	15	0.190	0.075	2.50	0.077	0.190	0.075	
	5/4/2011	Endyne	see note [v8]	12	0.150	0.130	0.96	0.17	0.150	0.130	
	10/4/2011^	Endyne	see note [v8]	12	0.073	0.077	0.95	0.15	0.073	0.077	
	5/2/2012^	Endyne	see note [q9]	13	0.310	0.130	1.50	0.41	0.310	0.130	
	10/2/2012^	Endyne	see note [w10]	44	0.590	0.150	14.00	0.031	0.590	0.150	
	5/9/2013^	Endyne	see note [o10]	24	0.420	0.210	6.80	0.11	0.420	0.210	
	10/10/2013^	Endyne	see note [o10]	12	0.300	0.250	2.50	0.080	0.300	0.250	
	Duplicate	10/10/2013^	Endyne	see note [x11]	16	0.400	0.220	5.30	0.039	0.400	0.220
		5/7/2014^	Endyne	see note [o10]	10	0.250	0.190	1.80	0.068	0.250	0.190
10/7/2014^		Endyne	see note [o10]	10	0.160	0.130	1.40	< 0.020	0.160	0.130	
3/13/2015^		Endyne		6	0.190	0.160	0.73	0.050	0.190	0.160	
3/27/2015^		Endyne		7	0.170	0.170	1.50	0.040	0.170	0.170	
4/8/2015^		Endyne		6	0.230	0.160	1.70	0.044	0.230	0.160	
5/5/2015		Endyne		5							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] From December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level

** Shaded values exceed Vermont GES, as set by Vermont GWPRS, 2005.

*** As of 2/26/2007, the Primary Vermont Groundwater Enforcement Standard for Manganese was changed from 0.840 mg/L to 0.300 mg/L.

The < values listed here are the reported detection limit.

[a] through [u3]: See last page of inorganic data for additional notes.

[3] Statistical analyses are conducted only on data since 5/15/1998, when requirement changed to TOTAL metals instead of dissolved metals, except for Mn & Fe (see note below).

Archived data has not been included in statistical analyses since 5/15/1998.

[4] For Fe and Mn only, requirement since 5/15/1998 is to analyze for both total and dissolved forms. The dissolved archived data are not included in the statistical analyses to give consistency between dissolved and total Mn & Fe as prior to 5/98, samples were not analyzed for total and dissolved metals on the same date. This gives consistency of comparisons between dissolved and total Fe and Mn.

^ Insufficient water to low-flow well, grab sample obtained

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [2]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [3]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [4]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-G-12S	3/11/2015	Endyne	see note	5	0.079	0.027	2.5	0.190	0.079	0.027
		Endyne	see note							
		Endyne	see note							
		Endyne	see note							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] Vermont Health Advisory Levels and Federal MCLs from December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level.

** Shaded values exceed Vermont Groundwater Enforcement Standard, as set by Vermont Groundwater Protection Rule and Strategy, 2005.

En = Endyne, Inc., Williston, VT.

"<" means not detected, to the reported detection limit shown.

note: (9), (14), (4), (22): See last page of inorganic data for footnotes of additional data.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [2]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [3]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [4]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-H-1S	3/12/2015	Endyne	see note	2	0.210	0.210	2.8	0.48	0.210	0.210
	3/27/2015	Endyne	see note	2	0.440	0.510	2.8	2.2	0.440	0.510
	4/8/2015	Endyne	see note	1	0.530	0.490	2.8	2.6	0.530	0.490
		Endyne	see note							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] Vermont Health Advisory Levels and Federal MCLs from December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level.

** Shaded values exceed Vermont Groundwater Enforcement Standard, as set by Vermont Groundwater Protection Rule and Strategy, 2005.

En = Endyne, Inc., Williston, VT.

"<" means not detected, to the reported detection limit shown.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [2]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [3]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [4]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-H-2S	3/11/2015	Endyne	see note	28	3.600	0.280	130.0	0.57	3.600	0.280
	3/27/2015	Endyne	see note	14	0.620	0.240	20.0	0.39	0.620	0.240
	4/8/2015	Endyne	see note	23	0.760	0.250	21.0	1.8	0.760	0.250
		Endyne	see note							
		Endyne	see note							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] Vermont Health Advisory Levels and Federal MCLs from December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level.

** Shaded values exceed Vermont Groundwater Enforcement Standard, as set by Vermont Groundwater Protection Rule and Strategy, 2005.

En = Endyne, Inc., Williston, VT.

"<" means not detected, to the reported detection limit shown.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [2]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [3]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [4]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-H-3S	3/12/2015	Endyne	see note	7	0.820	0.860	5.1	3.2	0.820	0.860
	3/27/2015	Endyne	see note	2	0.760	0.900	3.7	3.1	0.760	0.900
	4/8/2015	Endyne	see note	1	0.900	0.810	3.7	3.2	0.900	0.810
		Endyne	see note							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] Vermont Health Advisory Levels and Federal MCLs from December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level.

** Shaded values exceed Vermont Groundwater Enforcement Standard, as set by Vermont Groundwater Protection Rule and Strategy, 2005.

En = Endyne, Inc., Williston, VT.

"<" means not detected, to the reported detection limit shown.

**NEWSVT Landfills
Coventry, Vermont
Groundwater Analyses
Inorganics**

				Primary Groundwater Quality Parameters [1]						
				Total Arsenic (ug/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)	Total Iron (mg/L)	Dissolved Iron (mg/L)	Total Manganese (mg/L)	Dissolved Manganese (mg/L)
VT GES**[1]				10.0	0.300	0.300	0.3	0.3	0.05	0.05
VT Preventive Action Level* [2]				1.0	0.150	0.150	0.15	0.15	0.025	0.025
VT Health Advisory [3]				None	0.300	0.300	0.3	0.3	0.05	0.05
Federal MCL [4]				10	None	None	None	None	None	None
Well	Date	Lab	Remarks							
MW-H-4S	3/12/2015	Endyne	see note	3	2.000	2.600	44	42	2.000	2.600
	3/27/2015	Endyne	see note	2	2.700	3.000	44	48	2.700	3.000
	4/8/2015	Endyne	see note	1	3.400	3.200	48	50	3.400	3.200
		Endyne	see note							

[1] VT GES = VT Groundwater Enforcement Standards and Preventive Action Levels from Table 1, Groundwater Protection Rule & Strategy (GWPRS), 2005.

[2] Vermont Health Advisory Levels and Federal MCLs from December 2002 Vermont Department of Health Drinking Water Guidance.

* Bold values exceed Vermont Preventive Action Level.

** Shaded values exceed Vermont Groundwater Enforcement Standard, as set by Vermont Groundwater Protection Rule and Strategy, 2005.

En = Endyne, Inc., Williston, VT.

"<" means not detected, to the reported detection limit shown.

**NEWSVT Landfills
Coventry, Vermont
Surface Water Analyses
Metals**

Station: SW-7 Western Stream Below UD-3,4 Downstream

			Arsenic (ug/l)	Iron (mg/l)	Mang. (mg/l)
VT WQ Standard (Prot. Human Health): [1]			2 [5]	none	none
VT WQ Standard (Prot. Aq. Biota): [1]			190	1.0	none
Date	Lab	Type			
10/28/2004	Endyne	Total	7	0.136	0.018
5/2/2005	Endyne	Total	15	1.790	0.264
10/3/2005	Endyne	Total	6	0.754	0.247
5/1/2006	Endyne	Total	20	2.90	0.359
10/2/2006	Endyne	Total	21	1.30	0.478
4/30/2007	Endyne	Total	36	6.83	1.640
10/3/2007	Endyne	Total	14	2.60	0.505
5/6/2008	Endyne	Total	8	0.59	0.140
10/6/2008	Endyne	Total	7	0.12	0.110
5/6/2009	Endyne	Total	24	2.40	0.470
10/6/2009	Endyne	Total	9	0.86	0.160
5/3/2010	Endyne	Total	6	0.33	0.075
10/4/2010	Endyne	Total	6	0.26	0.150
5/3/2011	Endyne	Total	< 1	0.23	0.550
10/3/2011	Endyne	Total	9	0.63	0.190
5/1/2012	Endyne	Total	45	7.50	1.200
10/1/2012	Endyne	Total	5	0.34	0.170
5/8/2013	Endyne	Total	4	0.24	0.120
10/9/2013	Endyne	Total	5	0.31	0.110
5/7/2014	Endyne	Total	10	0.85	0.200
10/9/2014	Endyne	Total	7	0.46	0.110
3/11/2015	Endyne	Total	68	12.00	1.400
3/27/2015	Endyne	Total	17	2.20	0.250
4/8/2015	Endyne	Total	7	0.80	0.100
5/6/2015	Endyne	Total	7	0.58	0.097

**Coventry, Vermont
Surface Water Analyses
Metals**

Station: SW-7 Western Stream Below UD-3,4 Downstream

			Iron (mg/l)	Mang. (mg/l)
VT WQ Standard (Prot. Human Health): [1]			none	none
VT WQ Standard (Prot. Aq. Biota): [1]			none	none
Date	Lab	Type		
3/11/2015	Endyne	Dissolved		0.068
3/27/2015	Endyne	Dissolved		0.037
4/8/2015	Endyne	Dissolved		0.051
5/6/2015	Endyne	Dissolved		0.021

Shading bold indicates exceedance of Surface Water Quality Standard, Prot. Human Health

[1] Vt Water Quality Standards (12/30/11, no change from 08), Appendix C: Protection of Human Health (consumption of organisms only).

[5] Arsenic, Mercury: VT Surface Water Std. is the ANR Laboratory's Practical Quantitation Limit, for the specific purposes of SWMD; per telecon S. Bushman, SWMD, 9/7/93

[2008] Vermont Water Quality Standards, Appendix C: Protection of Human Health, Consumption of organisms only. Effective January 1, 2008.

**NEWSVT Landfills
Coventry, Vermont
Underdrains
Metals**

				Arsenic (ug/L)	Iron (mg/L)	Manganese (mg/L)
VT WQ Standard (Prot. Human Health): [1]				2 [5]	none	none
VT WQ Standard (Prot. Aq. Biota): [1]				190	1.0	none
	Date	Lab	Type			
Phase 3 Under drain Outlet	5/5/1999	Endyne	Total	< 5	0.038	0.026
	10/11/1999	Endyne	Total	10	5.05	0.214
	5/4/2000	Endyne	Total	< 5	0.559	0.187
	10/9/2000	Endyne	Total	< 5	0.144	0.044
	5/3/2001	Endyne	Total	2	0.677	0.275
	10/2/2001	Endyne	Total	< 2	0.031	0.038
	5/1/2002	Endyne	Total	< 2	0.129	0.169
	10/2/2002	Endyne	Total	< 2	0.075	0.033
	5/5/2003	Endyne	Total	< 2	0.348	0.159
	10/1/2003	Endyne	Total	3	0.077	0.093
	5/4/2004	Endyne	Total	< 2	0.058	0.093
	10/5/2004	Endyne	Total	< 2	0.061	0.093
	5/2/2005	Endyne	Total	< 2	0.038	0.151
	10/3/2005	Endyne	Total	6	0.636	0.768
	5/1/2006	Endyne	Total	3	0.642	0.244
	10/2/2006	Endyne	Total	< 3	< 0.020	< 0.020
	4/30/2007	Endyne	Total	< 2	< 0.020	< 0.020
	10/3/2007	Endyne	Total	4	1.20	0.288
	5/6/2008	Endyne	Total	5	1.10	0.570
	10/6/2008	Endyne	Total	9	4.30	0.300
	5/6/2009	Endyne	Total	19	7.50	0.630
	10/6/2009	Endyne	Total	8	1.20	0.200
	5/3/2010	Endyne	Total	5	1.10	0.290
	10/4/2010	Endyne	Total	5	0.43	1.000
	5/3/2011	Endyne	Total	7	1.90	2.500
	10/3/2011	Endyne	Total	19	4.80	2.600
	5/1/2012	Endyne	Total	10	4.70	3.100
	10/1/2012	Endyne	Total	2	0.12	0.150
	5/8/2013	Endyne	Total	3	0.32	0.220
	10/9/2013	Endyne	Total	2	0.04	0.130
5/7/2014	Endyne	Total	5	0.23	0.048	
10/8/2014	Endyne	Total	3	< 0.020	< 0.020	
3/27/2015	Endyne	Total	5	0.059	< 0.020	
4/8/2015	Endyne	Total	4	< 0.020	< 0.020	
5/6/2015	Endyne	Total	3	< 0.020	< 0.020	
		Endyne	Total			
Phase 4 Under drain Outlet	10/2/2006	Endyne	Total	< 2	< 0.020	< 0.020
	4/30/2007	Endyne	Total	< 2	0.020	0.02
	10/3/2007	Endyne	Total	< 2	0.047	0.02
	5/6/2008	Endyne	Total	< 2	< 0.020	< 0.020
	10/6/2008	Endyne	Total	< 2	< 0.020	< 0.020
	5/6/2009	Endyne	Total	< 2	< 0.020	< 0.020
	10/6/2009	Endyne	Total	3	0.047	< 0.020
	5/3/2010	Endyne	Total	4	0.035	0.039
	10/4/2010	Endyne	Total	6	0.770	0.190
	5/3/2011	Endyne	Total	10	0.390	0.440
	10/3/2011	Endyne	Total	8	0.060	0.190
	5/1/2012	Endyne	Total	4	0.490	0.280
	10/1/2012	Endyne	Total	5	0.280	0.210
	5/8/2013	Endyne	Total	6	0.620	0.300
	10/9/2013	Endyne	Total	5	0.660	0.420
	5/7/2014	Endyne	Total	4	0.370	0.270
	10/9/2014	Endyne	Total	2	0.078	0.088
3/27/2015	Endyne	Total	2	< 0.020	< 0.020	
4/8/2015	Endyne	Total	3	0.034	0.031	
5/6/2015	Endyne	Total	3	< 0.020	0.022	
		Endyne	Total			

Lab: Endyne = Endyne, Inc., Williston, VT
 Shading indicates exceedance of Surface Water Quality Standard.
 All metals are dissolved through 3/28/94; all metals total thereafter.
 NOTE: Only total metals are included in statistical analysis.
 [5] Arsenic, Mercury: VT Surface Water Std. is the ANR Laboratory's Practical Quantitation Limit, for the specific purposes of SWMD; per telecon S. Bushman, SWMD, 9/7/93
 * Not Sampled; dripping only
 NA = Not Analyzed (inadvertent error).
 ** Analysis was requested by client after EPA specified holding time had expired.
 [1] Surface Water Quality Standard from Appendix C: Protection of Human Health (c (Chronic Criteria), Vermont Water Quality Standard, effective date 12/30/11, no c [C-1] -[C-5] are indicated on the following page