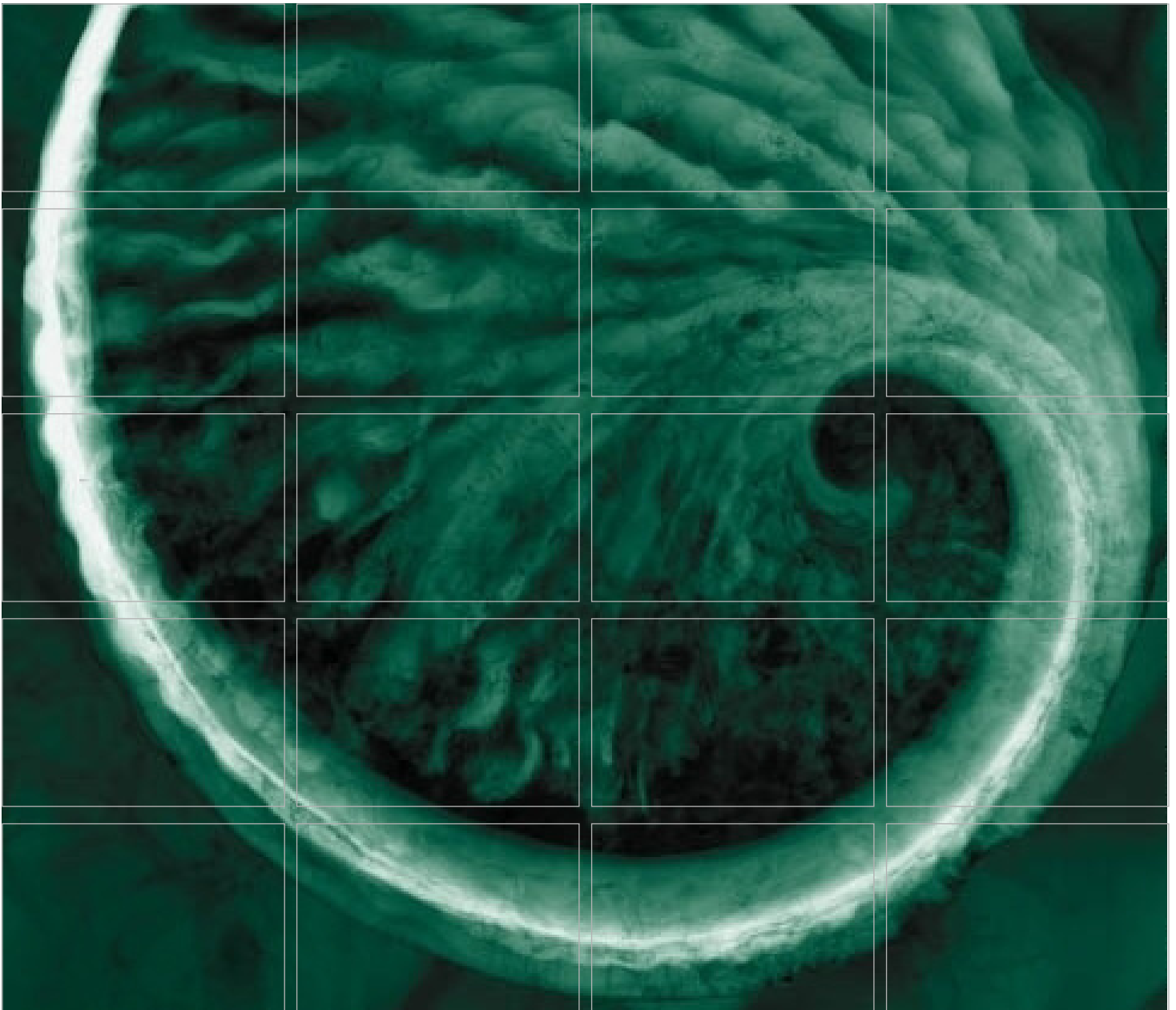




Interim Remedial Measure and Corrective Action Plan Operations, Maintenance, and Monitoring Report #1

**SMS #2006-3509
401 Gage Street
Bennington, Vermont**

**Prepared for:
Energizer Battery Manufacturing, Inc.
401 Gage Street
Bennington, Vermont 05201
(802) 442-6301**

**ERM Reference 0081293
20 June 2008**



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Environmental Resources Management

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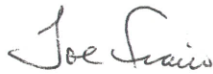
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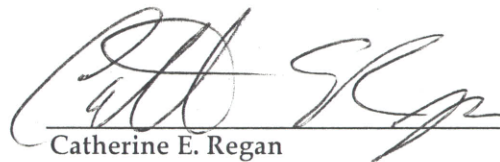
Bennington, Vermont

20 June 2008

ERM Reference 0081293



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EXECUTIVE SUMMARY

Environmental Resources Management (ERM) has prepared this Monitoring Report #1 for the Interim Remedial Measure (IRM) and Corrective Action Plan (CAP) remediation systems on behalf of Energizer Battery Manufacturing, Inc. (Energizer) for the Energizer facility at 401 Gage Street, Bennington, Vermont (the "Site"). The Vermont Department of Environmental Conservation (VTDEC), Sites Management Section has assigned the Site Number 2006-3509.

The IRM remediation system was designed and installed to contain tetrachloroethene (PCE) and trichloroethene (TCE) impacts to groundwater and soil gas along the northern Energizer facility property line. The CAP remediation system was designed and installed to abate PCE and TCE impacts to soil, groundwater, and soil gas in selected Areas of Concern (AOCs) at the Site. The remedial objective is to achieve applicable regulatory cleanup standards at the Energizer facility property line.

The IRM system consists of air sparging (AS) and soil vapor extraction (SVE) components. The CAP system consists of integrated steam injection, AS, and SVE components. The IRM system was installed during Summer and Fall 2007 and the CAP system was installed during Fall 2007 and Winter 2007-2008. The IRM system has been operating since September 2007 and the CAP system began operation in April 2008.

The purpose of this report is to document the operations, maintenance, and monitoring (OM&M) data collected for the IRM and CAP remediation systems from September 2007 through March 2008.

1.0 INTRODUCTION

1.1 OVERVIEW

Environmental Resources Management (ERM) has prepared this Operations, Maintenance, and Monitoring (OM&M) Report #1 for the Interim Remedial Measure (IRM) and Corrective Action Plan (CAP) remediation systems on behalf of Energizer Holdings (Energizer) for the Energizer facility located at 401 Gage Street, Bennington, Vermont (the "Site"). The Vermont Department of Environmental Conservation (VTDEC), Sites Management Section has assigned the Site Number 2006-3509. A Site Locus Map is provided as [Figure 1](#).

1.2 SITE BACKGROUND

In February 2006, ERM conducted a limited soil and shallow groundwater investigation to determine if chlorinated solvents were present in the subsurface in the vicinity of an active vapor degreaser located in the northeast corner of Plant I (note: operation of this degreaser was subsequently discontinued in 2007). The results of this initial investigation indicated that both tetrachloroethene (PCE) and trichloroethene (TCE) were present in soil and groundwater in the vicinity of the active degreaser (ERM, 2006). Energizer verbally notified VTDEC of the findings of the initial investigation on 6 March 2006. Subsequently, written notification was provided to the VTDEC on 16 March 2006.

Site investigation activities focused on delineation of the extent of PCE and TCE impacts in soil, groundwater and soil gas. ERM has identified six potential Areas of Concern (AOCs), which correspond to areas of former solvent usage at the facility ([Figure 2](#)):

- AOC-1: Former degreaser area;
- AOC-2: Former machine shop;
- AOC-3: Current production area;
- AOC-4: Former loading dock area;
- AOC-5: Former drain line; and
- AOC-6: Former process area sump.

During 2006 and early 2007, ERM conducted a dynamic Triad site investigation in accordance with the VTDEC Site Investigation Procedure

(VTDEC, 2005). In June 2007, ERM submitted a Site Investigation Report (SIR, ERM 2007a) to the VTDEC documenting the methods, results, and conclusions of the site investigation. The SIR concluded that remediation and/or management of Site soil, groundwater and soil gas was necessary.

The Corrective Action Feasibility Investigation (CAFI) was submitted to the VTDEC as part of the SIR. The CAFI documented a formal evaluation of potential Site remedial alternatives. Based on the results of the CAFI, ERM recommended implementation of the following remedial alternatives:

- A containment remedy consisting of focused shallow soil excavation and air sparge/soil vapor extraction (AS/SVE) along the northern Site boundary; and
- A source abatement remedy consisting of a combination of AS/SVE, steam-enhanced SVE, and possibly in-situ chemical oxidation (ISCO).

The containment remedy design is documented in the CAFI as an Interim Remedial Measure (IRM). The source area abatement remedy design is documented in the Corrective Action Plan Report (CAP, ERM 2007b). A Final Construction Report (ERM, 2008a) was submitted on 20 June 2008 to document the construction of the IRM and CAP remediation systems.

1.3 *PURPOSE AND SCOPE*

The purpose of this report is to document the operations, maintenance, and monitoring (OM&M) data collected for the IRM and CAP remediation systems from September 2007 through March 2008. The following activities were conducted during this reporting period:

- Started the IRM and CAP AS/SVE system;
- Conducted OM&M of the AS/SVE system;
- Conducted baseline groundwater sampling in AOC-1 prior to steam injection;
- Completed a steam injection calibration test; and
- Completed monthly and quarterly soil gas and groundwater monitoring.

1.4 *REPORT ORGANIZATION*

The remainder of this report is divided into the following sections:

- Section 2.0 – Remediation System Operation and Maintenance
- Section 3.0 – Ambient Air Sampling
- Section 4.0 – Soil Gas Monitoring
- Section 5.0 – Groundwater Monitoring
- Section 6.0 – Results

[Figure 3](#) shows the locations of the remediation wells.

2.1

SOIL VAPOR EXTRACTION

There are 18 SVE wells (SVE-1 through SVE-18) that are part of the IRM system. Start-up of these wells occurred in September 2007. There are an additional 12 SVE wells (SVE-19 through SVE-27; SVE-30 through SVE-32) associated with the CAP system, which became operational in January 2008.

Vacuum, flow and differential pressure readings from the SVE system collected during this reporting period are summarized in [Tables 1, 2, and 3](#), respectively.

There are three 5,000-pound vapor-phase carbon vessels (VGAC-301, -302, and -303) onsite. Two vessels are operated in parallel at one time, with the third vessel on stand-by.

Grab air samples were collected from the inlet and outlet air streams of the carbon vessels using clean, laboratory-certified, stainless steel Summa-type canisters. Samples were collected at start-up and then 1, 2, 3, and 5 weeks following start-up. Monthly samples were collected thereafter. The air samples were analyzed by Alpha Woods Hole Laboratories of Westborough, Massachusetts (Alpha) for chlorinated volatile organic compounds (CVOCs) by Method TO-15. These data are used to estimate the contaminant mass removed by the SVE system over time.

Laboratory analytical results of the off-gas treatment system samples are summarized in [Table 4](#). Laboratory analytical reports for these air samples are attached as [Appendix A](#). A graph showing total CVOCs removed during this reporting period is provided as [Figure 4](#).

An additional effluent sample was collected in November 2007. This sample was analyzed for CVOCs by Method TO-15 (Select Ion Method) to obtain lower detection limits to better understand if PCE and TCE were present in the effluent.

Vessels VGAC-301 and -302 were operational from the start-up and testing of the IRM system in September 2007 through 1 April 2008. Based on the data collected on 25 March 2008, it was determined that the carbon

in VGAC-301 was spent, and that vessel was taken out of service. On 2 April 2008, the vessels were reconfigured such that VGAC-302 and -303 were online.

2.2 *AIR SPARGING*

There are 45 AS wells (AS-1 through AS-45) associated with the IRM system. Start-up of these wells occurred in September 2008. There are an additional 12 active AS wells (AS-53 through AS-57; AS-59 through AS-64; AS-66) associated with the CAP system, which became operational in January 2008. There are also five inactive AS wells in AOC-2 (AS-69 through AS-71, AS-74; AS-75), which can become operational, if needed.

Pressure and flow readings from the AS system during this reporting period are summarized in [Tables 5 and 6](#), respectively.

2.3 *GENERAL SYSTEM PARAMETERS*

Additional measurements are collected to monitor the operation of the AS/SVE remediation equipment. The measurements include:

- temperature of the AS and SVE blower effluent;
- Temperature and pressure of the non-contact cooling water and effluent air at the air-to-water heat exchangers; and
- Total combined flow of the SVE system.

A summary of these measurements is provided in [Table 7](#).

2.4 *STEAM INJECTION*

A calibration test of the steam injection system was conducted between 10 and 14 March 2008. A summary of the test is provided as [Appendix B](#). The calibration test was conducted before the full-scale injection was conducted. The objectives of the calibration test were to evaluate:

- steam injection rates and back pressures;
- heating rates at discrete depths within the aquifer;

- the efficacy of steam injection versus steam/air pulsed injection; and
- system integrity (i.e., do all parts of the system operate as designed).

The steam calibration test was conducted within AOC-1. Short-term steam injections were conducted at steam injection wells SIW-8, SIW-9 and SIW-12. These steam injection wells were selected due to their close proximity to the following temperature monitoring points (TMPs):

- SIW-8: TMP-59 (12.3 ft),
- SIW-9: TMP-64 (6 ft), and
- SIW-12: TMP-53 and TMP-56 (11.4 ft and 9 ft, respectively).

Steam was injected into SIW-8 and SIW-9, but air was also pulsed into SIW-12 to determine if an air/steam combination was more effective than steam injection alone.

The TMPs were used to determine temperature changes in the subsurface. These data were graphed ([Appendix B](#)) and used to estimate the rates of heating that could be expected during full-scale steam injection.

Groundwater extraction was not needed during the calibration test. However, two extraction wells (EW-3 and EW-4) were operated to test the onsite water treatment system. The extracted groundwater remained in the onsite holding tank at the end of the calibration test.

A discussion of the full-scale steam injection program is provided in Section 6.0.

At the request of the VTDEC, outdoor ambient air sampling was conducted as part of the start-up of the IRM system. Samples were collected at two locations along the northern property boundary. The purpose of these samples was to determine if the IRM system operation (particularly the SVE off-gas effluent) would have an effect on ambient air quality. Ambient air sample OAA-105 was located at the southwest corner of the residential property at 403 Gage Street. Sample OAA-106 was collected northwest of the facility, at the corner of Pratt and Gage Streets. Locations of OAA-105 and OAA-106 are shown on [Figure 3](#).

Baseline ambient air samples were collected prior to start-up of the IRM system. Three weekly and then three monthly ambient air samples were collected following start-up of the IRM system.

Samples were collected using clean, laboratory-certified, 6-liter, Summa-type canisters with two-hour calibrated regulators connected to the dedicated polyethylene tubing with a “swagelok®-type” fitting. The samples were 8-hour composite samples. Samples were submitted to Alpha for analysis of CVOCs using EPA Method TO-15 select ion monitoring (SIM).

[Table 8](#) summarizes the ambient air analytical data collected during this reporting period. Laboratory analytical reports are attached as [Appendix A](#). Results of the outdoor ambient air sampling are discussed in Section 6.0.

ERM has conducted active soil gas sampling since July 2006 to delineate the extent of CVOC impacts to soil gas on and off Site. [Figure 5](#) shows the locations of the 33 active soil gas locations (ASG-1 through ASG-33). Active soil gas samples were collected from locations ASG-14, -16, -17, -18, -20, -28, -32, and -33 during this reporting period.

Prior to collection of the soil gas samples, the soil gas probes and tubing were purged of a minimum of three tubing volumes at a rate not exceeding 0.2 liters per minute. Helium was used as a tracer gas to determine whether ambient air was being drawn into the sampling zone. Samples were collected using clean, laboratory-certified, 6-liter, Summa-type canisters with two-hour calibrated regulators connected to the dedicated polyethylene tubing with a “swagelok®-type” fitting.

Soil gas samples were submitted to Alpha for analysis of CVOCs using EPA Method TO-15. Results were reported for site-specific target analytes. [Table 9](#) and [Figure 5](#) present a summary of active soil gas sample results collected during this reporting period. Laboratory analytical reports are attached as [Appendix A](#). Results of the soil gas sampling are discussed in Section 6.0.

As requested by the VTDEC, monthly sampling of locations ASG-32 and ASG-33 occurred in October, November and December 2007 following start up of the IRM AS/SVE system. In February 2008, soil gas samples were collected in conjunction with residential indoor air samples and outdoor ambient air samples. Additional samples were collected in March 2008. Results of this investigation were presented in the Vapor Intrusion Investigation Report submitted to the VTDEC in April 2008 (ERM, 2008b).

Groundwater monitoring was performed following start-up of the IRM system to determine the system's effectiveness in reducing CVOC concentrations. Additional groundwater sampling was conducted prior to the steam injection calibration test to establish baseline CVOC concentrations.

Historic groundwater data is presented in the SIR and CAP reports (ERM 2007a, 2007b).

Groundwater samples from the monitoring wells were collected using low-flow sampling techniques and submitted to Alpha for analysis of CVOCs by EPA Method 8260, unless otherwise noted. Groundwater monitoring analytical results for this reporting period are summarized in [Table 10](#). Laboratory reports for groundwater analytical results are provided in [Appendix C](#).

5.1***MONTHLY & QUARTERLY GROUNDWATER MONITORING***

Samples were collected from ERM-12, ERM-13, ERM-14, ERM-15, ERM-16 and ERM-17 in September 2007 as part of additional off-site investigation activities. These samples were analyzed for target compounds only by Stone Environmental (Stone) using their on-site field laboratory.

After start-up of the IRM AS/SVE system, groundwater samples were collected in October, November, and December 2007 from ERM-12, ERM-19 and ERM-20.

Quarterly groundwater monitoring commenced in March 2008. Monitoring points sampled during the quarterly event included ERM-12, ERM-13, ERM-14, ERM-16, ERM-17, ERM-18, ERM-19 and ERM-20. The SIR (ERM, 2007a) shows groundwater elevations at the site. [Figures 6 and 7](#) show PCE and TCE concentrations, respectively, at these monitoring wells in March 2008.

5.2***BASELINE GROUNDWATER SAMPLING***

Following installation of the CAP wells, groundwater samples were collected between July and September 2007 at AS well locations and IW locations in AOC-1. These wells are screened in the sand and gravel layer.

These samples were analyzed primarily by Stone and their on-site field laboratory, with four AS/IW locations from July 2007 being sent to Alpha for CVOC analysis. Two soil boring locations, SB-68 and SB-72, were also sampled for CVOCs in groundwater by Stone and their onsite lab in September 2007. These locations were originally intended to be AS/IW locations but were determined to be unnecessary during final construction.

The groundwater results are presented in [Table 10](#). [Figures 8 and 9](#) show PCE and TCE concentrations, respectively, in AOC-1.

In February 2007, ERM also collected groundwater samples from nine SIW wells (SIW-8, SIW-9, SIW-10, SIW-11, SIW-12, SIW-13, SIW-14, SIW-15, and SIW-16) and four groundwater extraction wells (EW-1, EW-2, EW-3, and EW-4). These wells are screened in the silt layer. These samples were collected to measure baseline CVOC groundwater concentrations in the silt layer prior to steam injection.

Due to low hydraulic conductivity in the silt layer, groundwater samples were collected by purging each well dry and then letting it recharge. Samples were collected using a peristaltic pump and disposable tubing and submitted to Alpha for analysis of CVOCs by EPA Method 8260. [Figures 10 and 11](#) show PCE and TCE concentrations, respectively, in the SIW and EW wells.

Groundwater results are discussed in Section 6.0.

6.0 *RESULTS AND RECOMMENDATIONS*

6.1 *REMEDIATION SYSTEM OPERATION*

6.1.1 *AS/SVE Systems*

Based on the OM&M data collected during this reporting period, the following conclusions can be made regarding the operation of the remediation systems:

- Based on SVE system vacuum data, the SVE system is adequately capturing vapors within the vadose zone.
- The air flow from each SVE well is greater than or equal to what was anticipated based on a field-scale pilot study conducted in March 2007 (ERM, 2007b).
- The vapor-phase activated carbon is effective in treating the SVE off-gas.
- The AS pressures and flows are consistent with the system design.
- The remediation equipment (i.e., blowers, moisture separators, heat exchangers) is operating as designed and has adequate capacity for operating the AS and SVE wells.

6.1.2 *Steam Injection*

Full-scale steam injection commenced in April 2008. Details of the full-scale implementation will be provided in OM&M Report #2. However, based on the steam injection calibration test, the following assumptions can be made regarding the full-scale steam injection:

- The maximum steam injection rate at each SIW location is estimated to be 1,500 pounds per hour (lb/hr). This is less than the design flow rate of 2,500 lb/hr.
- It will be possible to inject into four SIW locations simultaneously.
- Fuel and water use is expected to be less than the design consumption rates.

6.2 *AMBIENT AIR*

Changes in ambient air quality do not appear to be significant following start-up of the SVE system. PCE and TCE concentrations are consistent with other ambient air samples collected in the vicinity of the facility, as reported in the Vapor Intrusion Investigation Report (ERM, 2008b).

6.3 *SOIL GAS*

The following conclusions can be made relative to the active soil gas sampling during this reporting period:

- PCE and TCE concentrations at ASG-14, located in the facility's northwest parking lot, have decreased since the start-up of the IRM system. PCE concentrations decreased from 7,890 micrograms per cubic meter (ug/m^3) in July 2006 to $3.2 \text{ ug}/\text{m}^3$ in March 2008.
- PCE and TCE concentrations at ASG-32 and ASG-33, the residential locations closest to the IRM barrier, have decreased since the start-up of the IRM system. At ASG-32, PCE concentrations decreased from $332 \text{ ug}/\text{m}^3$ in July 2007 to $6.14 \text{ ug}/\text{m}^3$ in February 2008. At ASG-33, PCE concentrations decreased from $5,530 \text{ ug}/\text{m}^3$ in July 2007 to $6.8 \text{ ug}/\text{m}^3$ in February 2008.

6.4 *GROUNDWATER*

The following conclusions can be made relative to the groundwater sampling during this reporting period:

- PCE and TCE concentrations in groundwater at ERM-12, ERM-13, ERM-17, ERM-19 and ERM-20 have decreased since the start-up of the IRM system. At ERM-12, PCE has decreased from 120 micrograms per liter (ug/L , February 2007) to $69 \text{ ug}/\text{L}$ (March 2008). At ERM-20, PCE decreased from $190 \text{ ug}/\text{L}$ (July 2007) to $96 \text{ ug}/\text{L}$ (March 2008).
- PCE and TCE concentrations in groundwater have remained generally constant at ERM-14, ERM-15, and ERM-16. The most significant change in PCE is at ERM-16, with a decrease from $54 \text{ ug}/\text{L}$ (May 2007) to $31 \text{ ug}/\text{L}$ (March 2008).

RECOMMENDATIONS

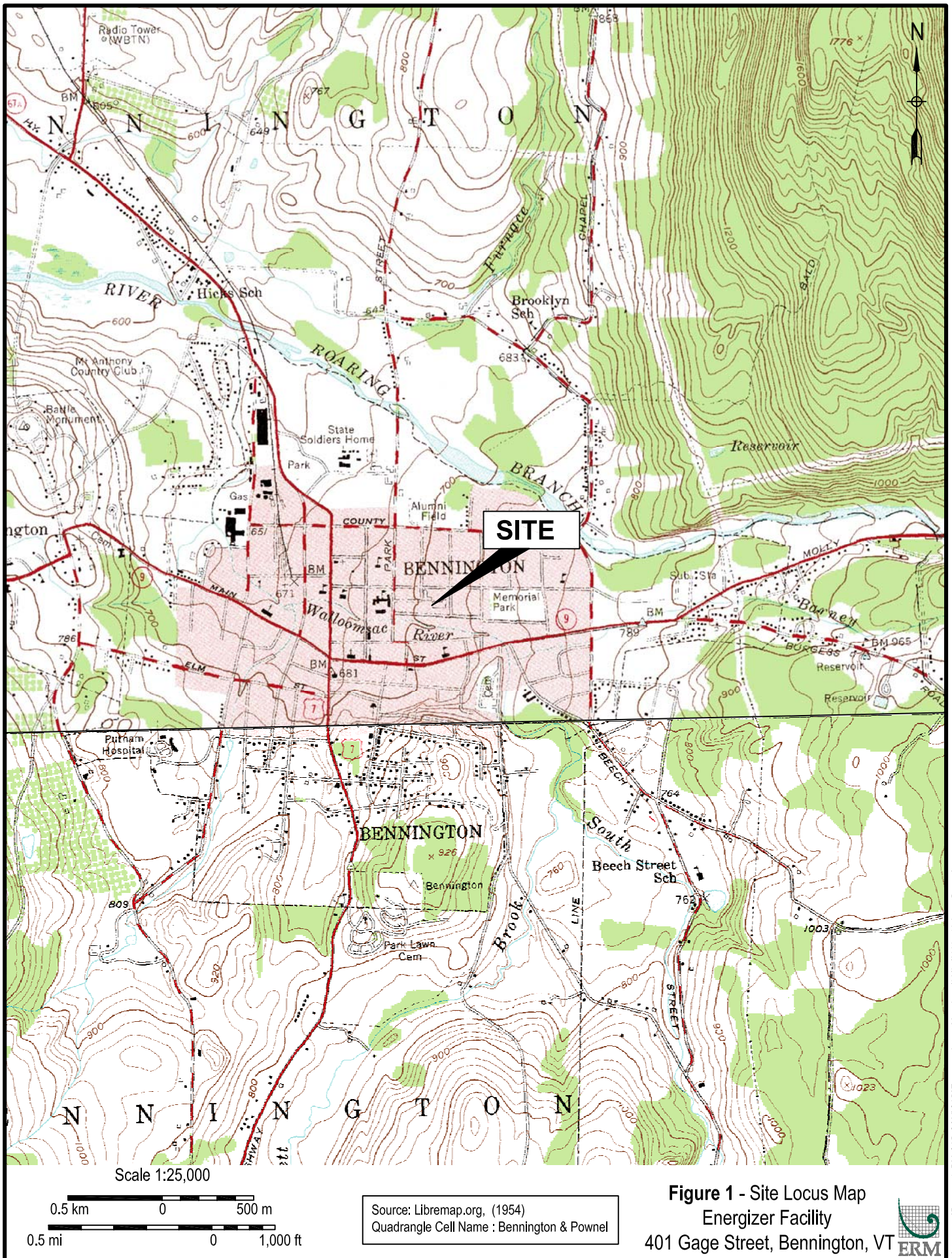
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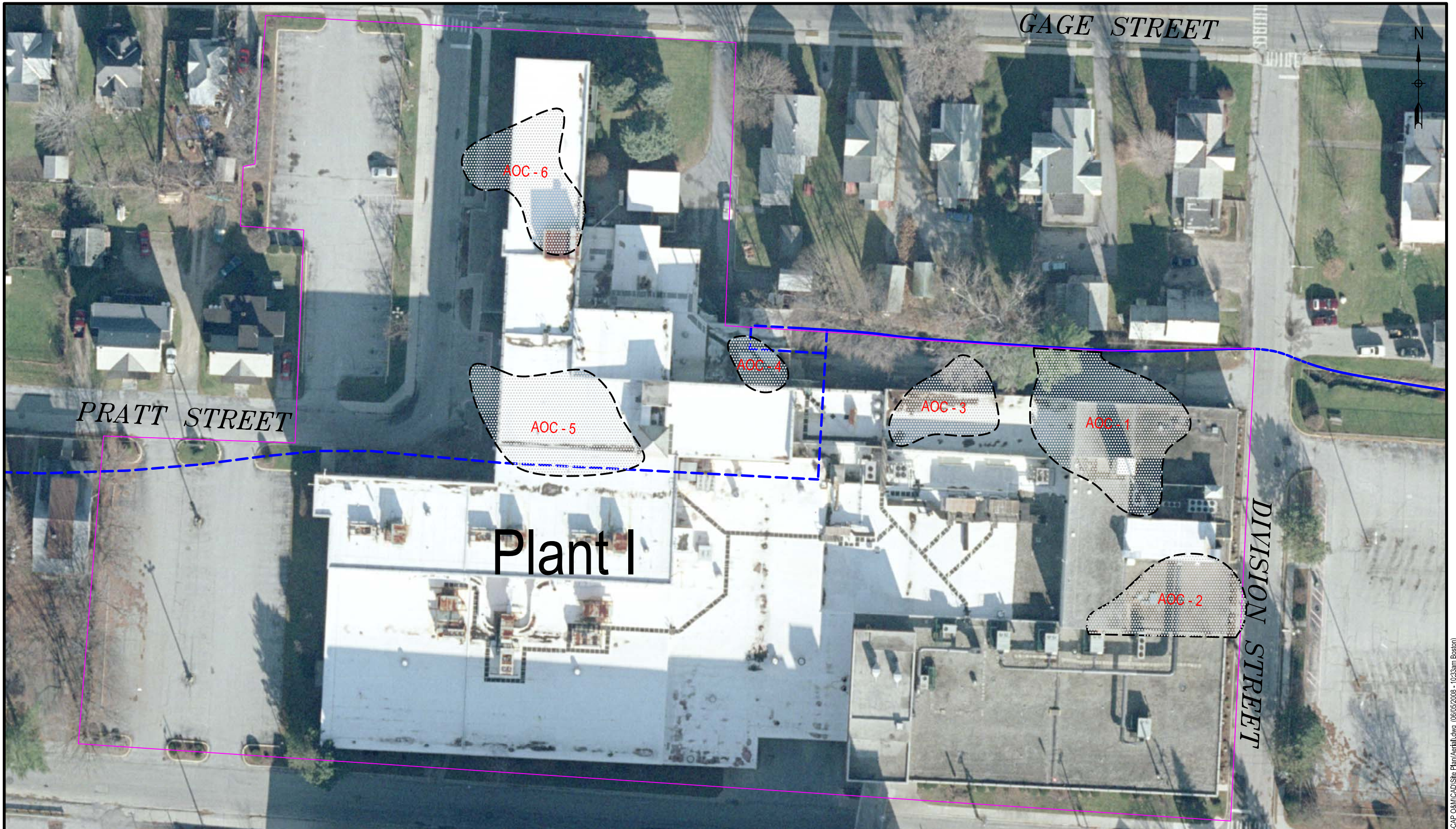
- Continue operation and maintenance of the IRM system;
- Initiate full-scale start-up of the steam injection system;
- Continue quarterly active soil gas sampling at ASG-14, ASG-32, and ASG-33; and
- Continue quarterly groundwater monitoring at ERM-12, ERM-13, ERM-14, ERM-15, ERM-16, ERM-17, ERM-19, and ERM-20.

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Figures





- Legend
- Site Boundary
 - Morgan Brook (Dashed Where Culverted)
 - AOC - 1 Areas of Concern (AOC)
 - Potential Source Area

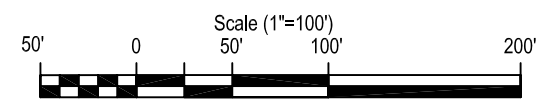
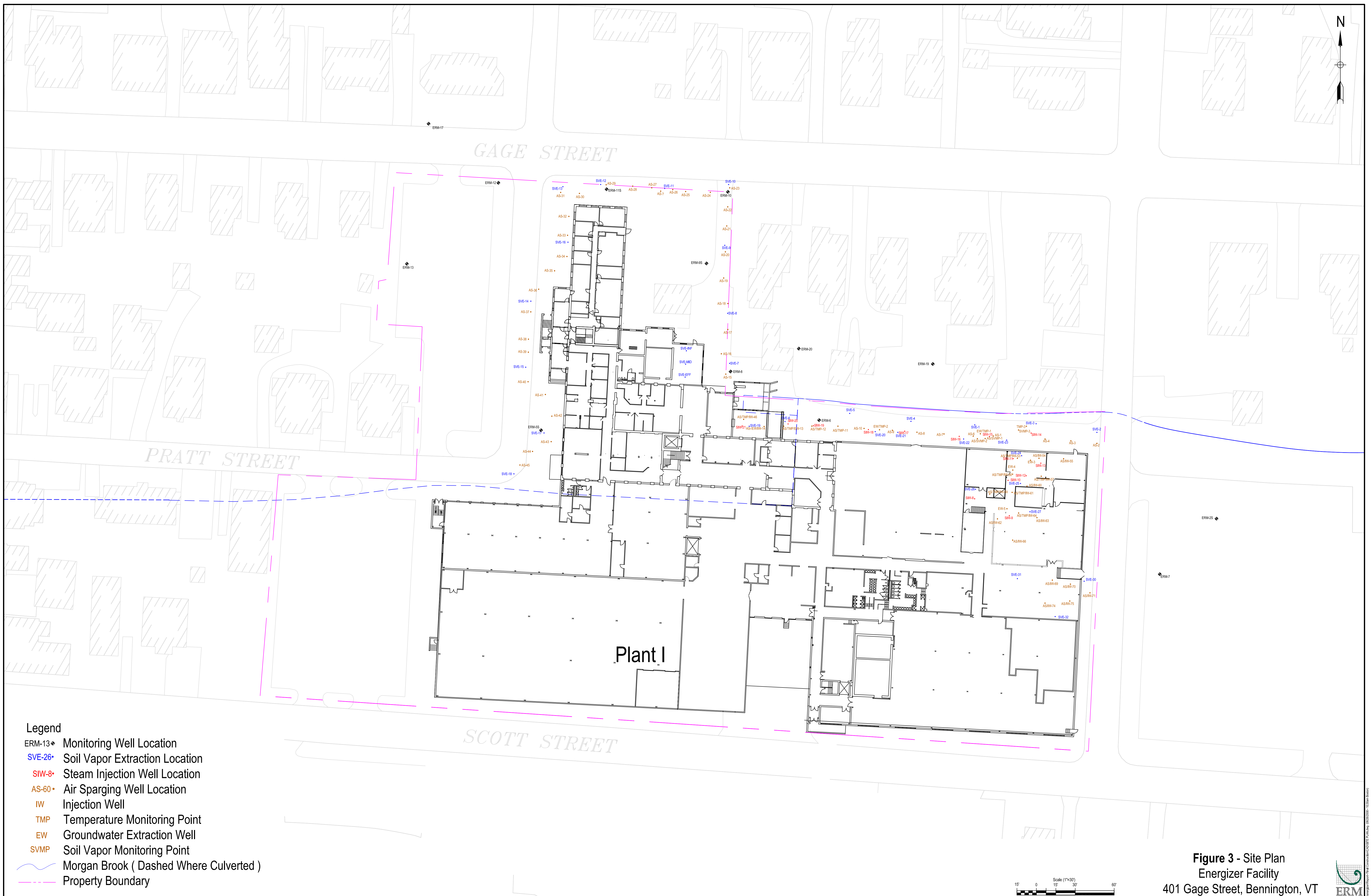


Figure 2 - Site Plan
 Energizer Facility
 401 Gage Street, Bennington, VT





Legend

- ERM-13 ♦ Monitoring Well Location
- SVE-26 • Soil Vapor Extraction Location
- SIW-8 • Steam Injection Well Location
- AS-60 • Air Sparging Well Location
- IW • Injection Well
- TMP • Temperature Monitoring Point
- EW • Groundwater Extraction Well
- SVMP • Soil Vapor Monitoring Point
- Morgan Brook (Dashed Where Culverted)
- Property Boundary

Figure 3 - Site Plan
Energizer Facility
401 Gage Street, Bennington, VT

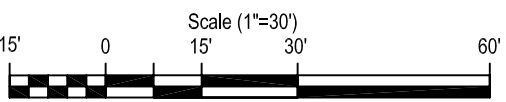
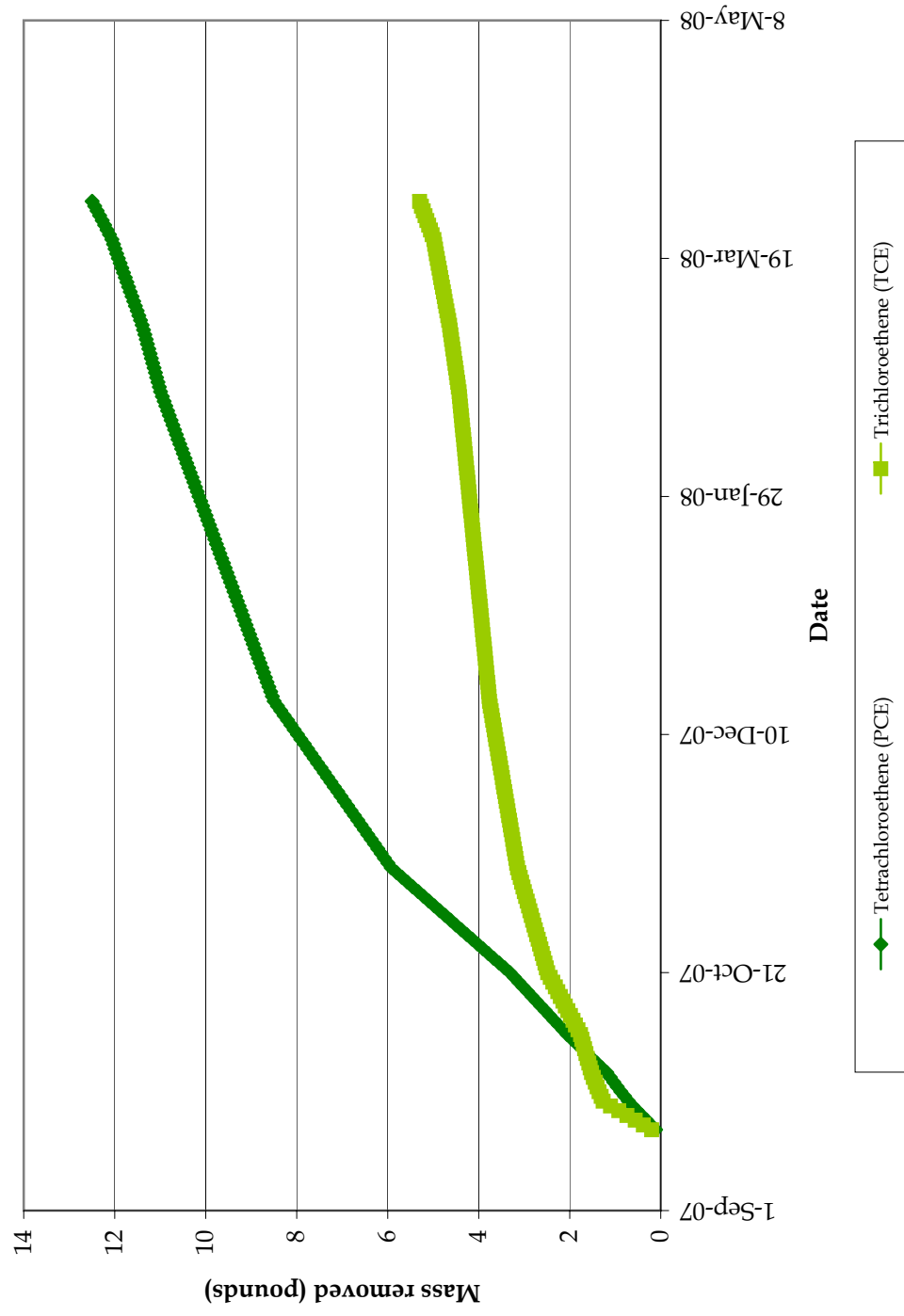
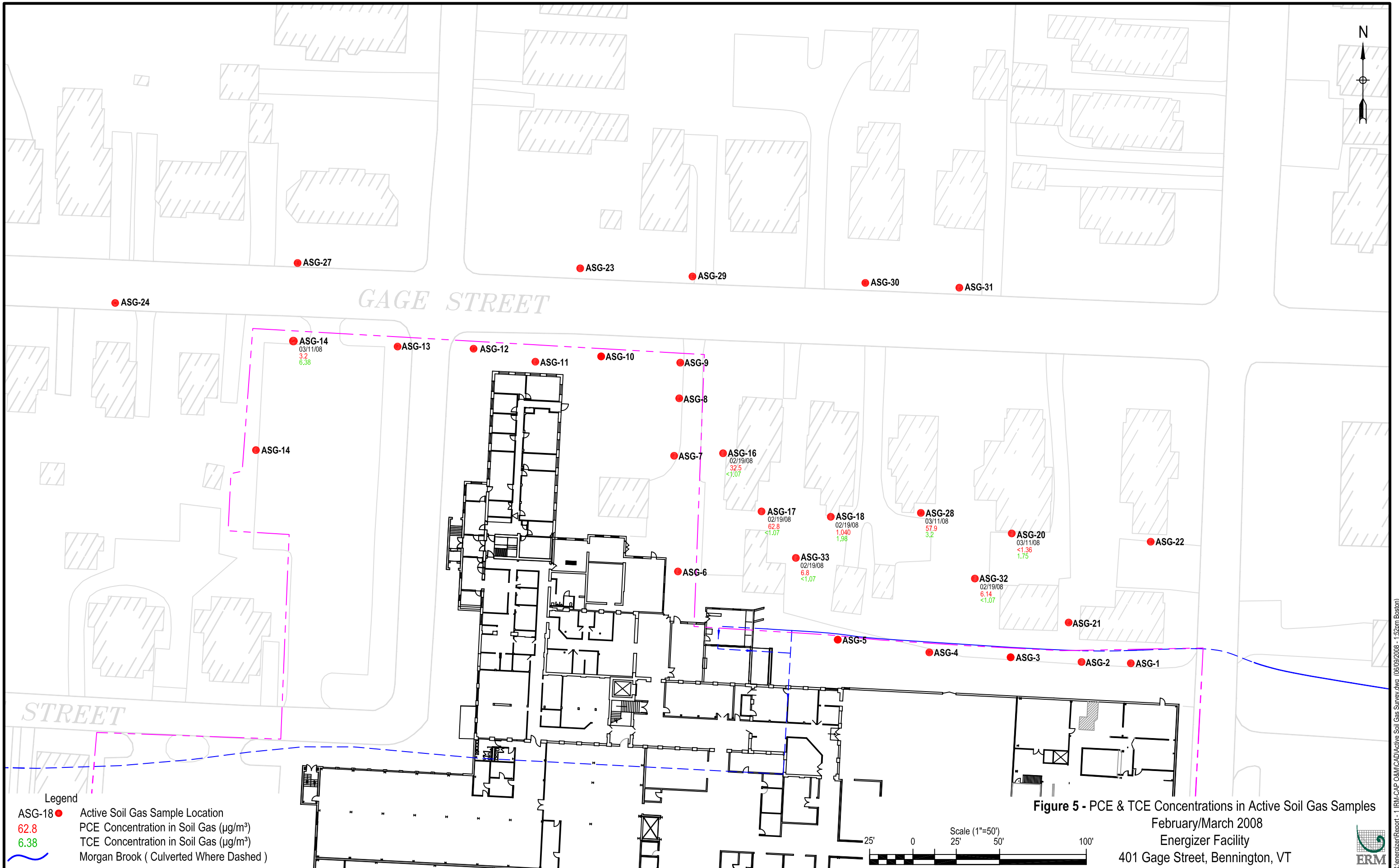
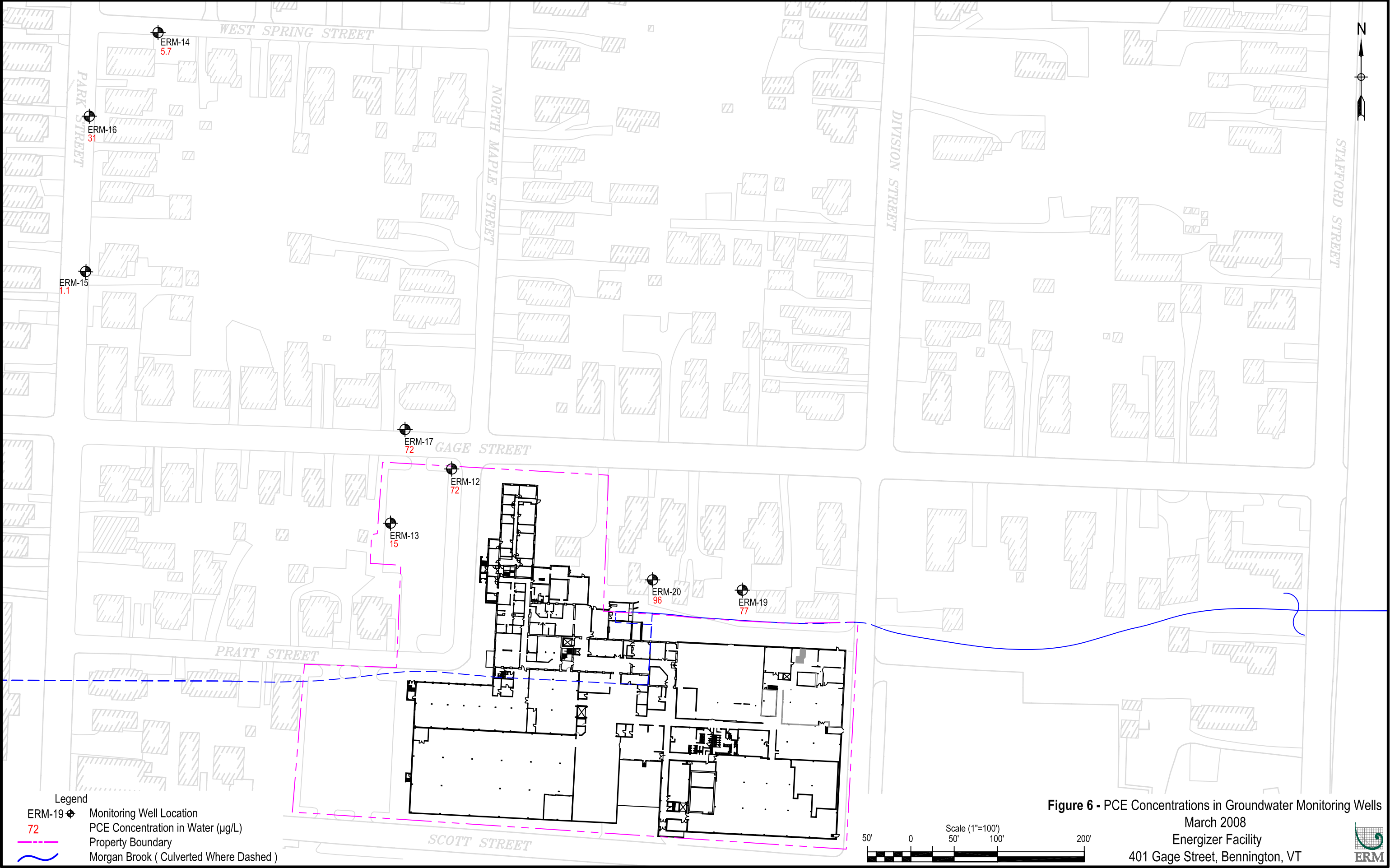
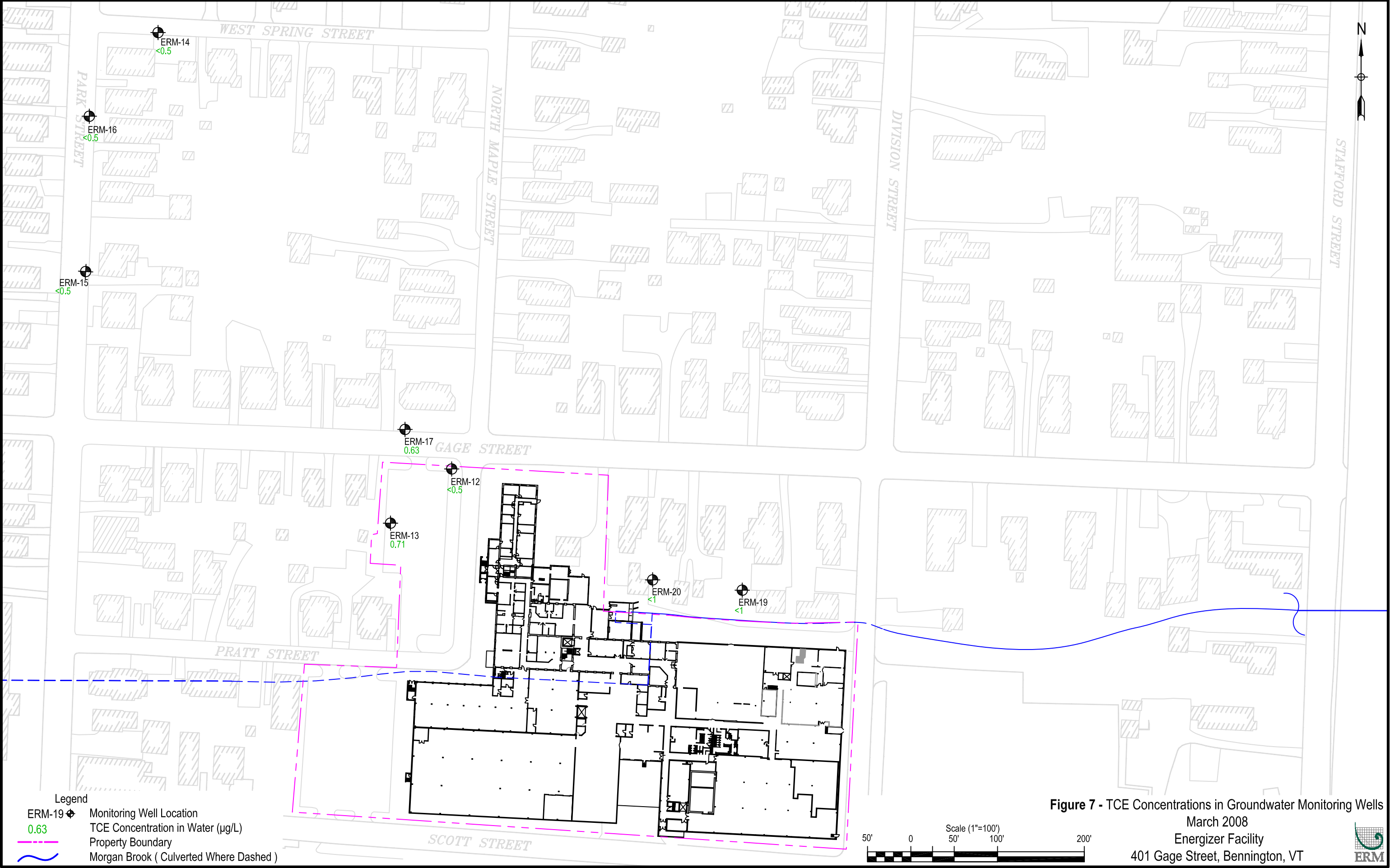


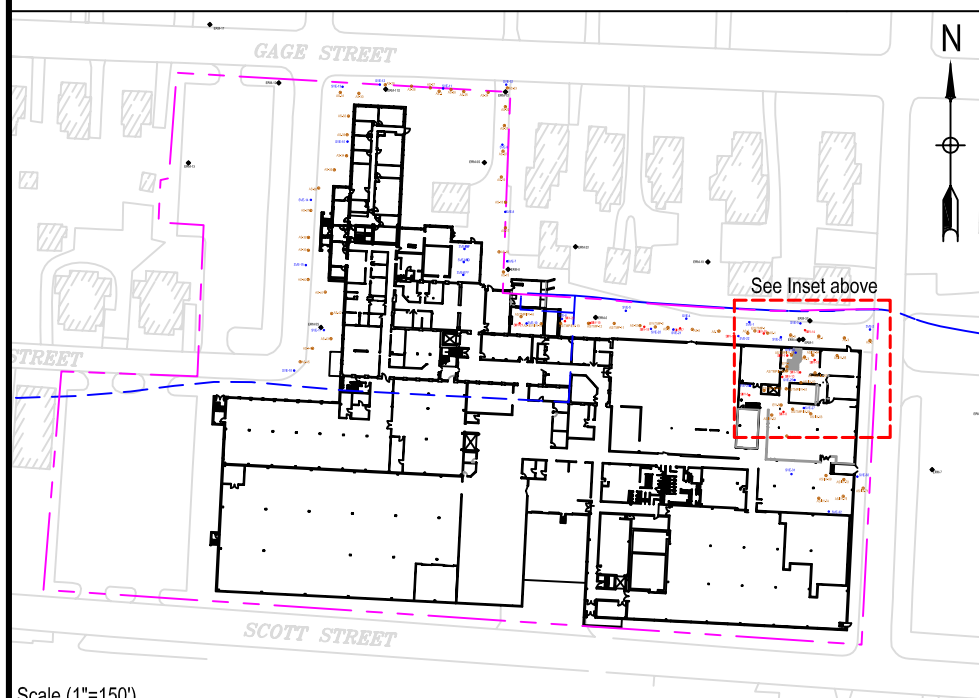
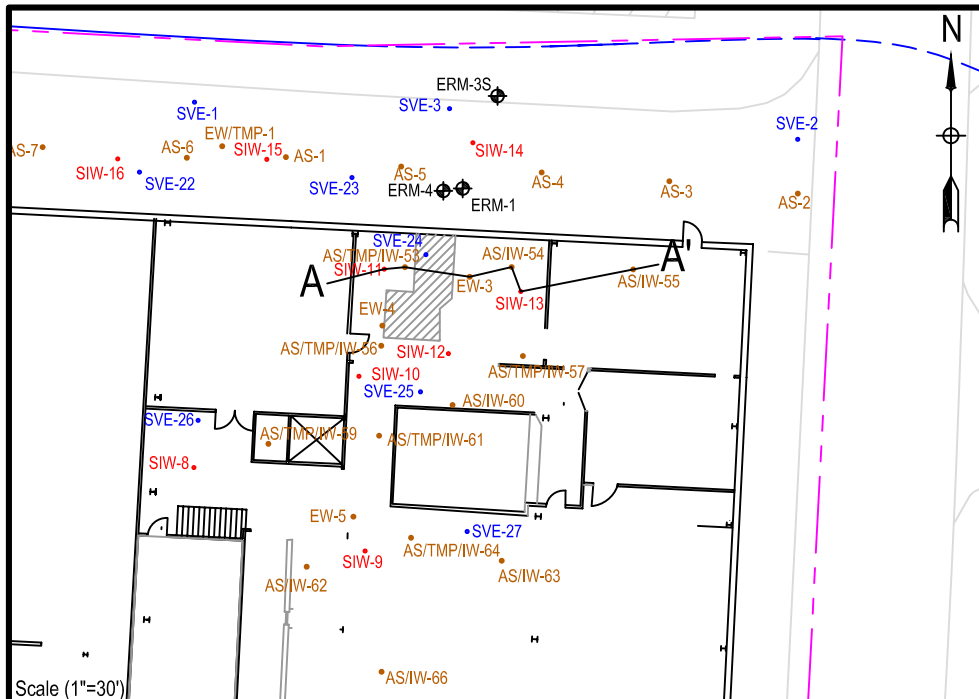
Figure 4 - SVE System Cumulative Mass Removal











- Legend**
- 60,000 PCE Concentration ($\mu\text{g/L}$)
 - Approximate PCE Contour
 - 1,700 TCE Concentration ($\mu\text{g/L}$)
 - Approximate TCE Contour
 - Sand & Gravel
 - Silt
 - Former Vapor Degreaser
 - Property Boundary
 - Morgan Brook (Dashed Where Culverted)
 - Screened Interval
 - Boring

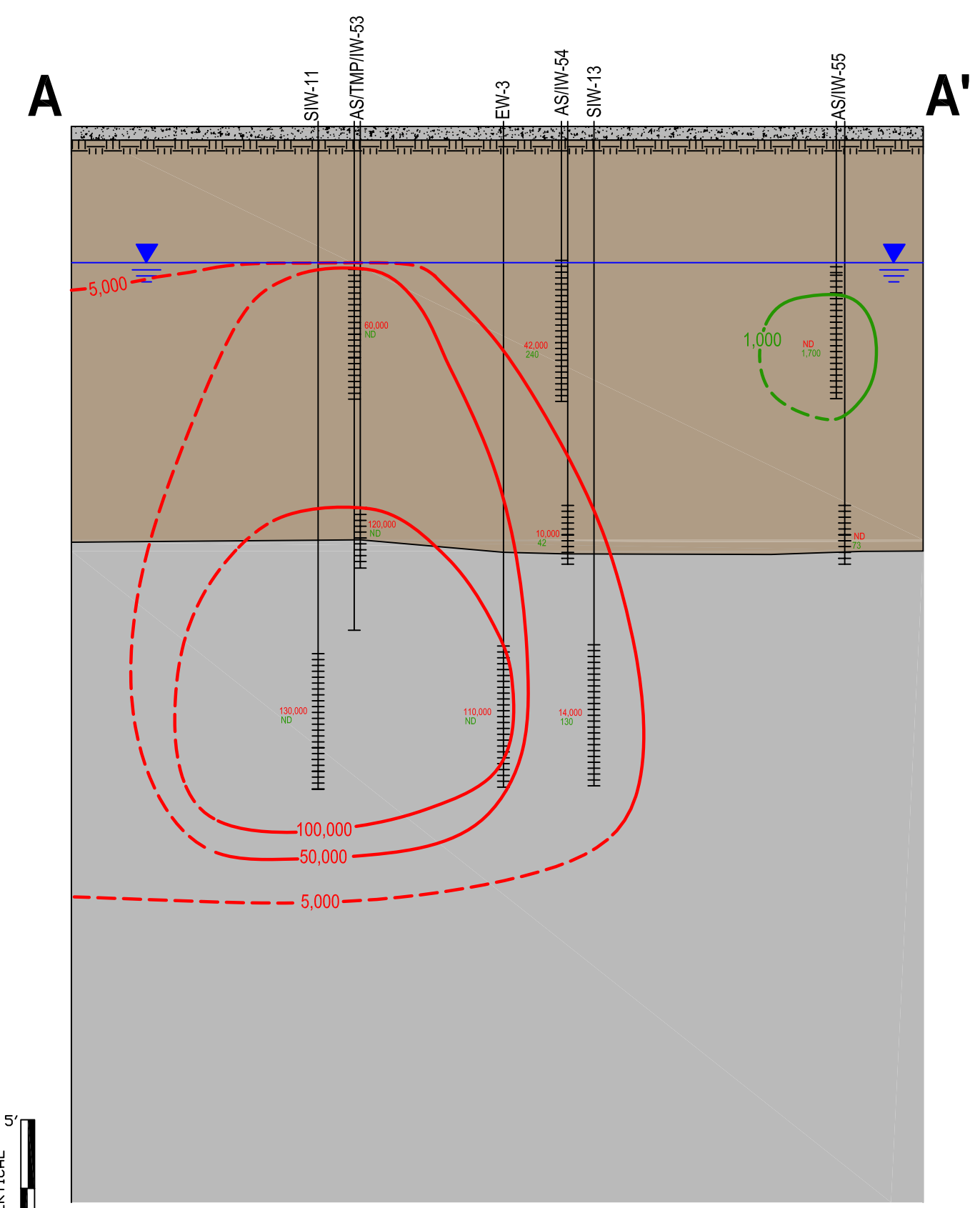
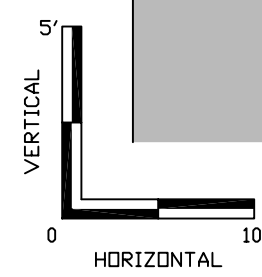
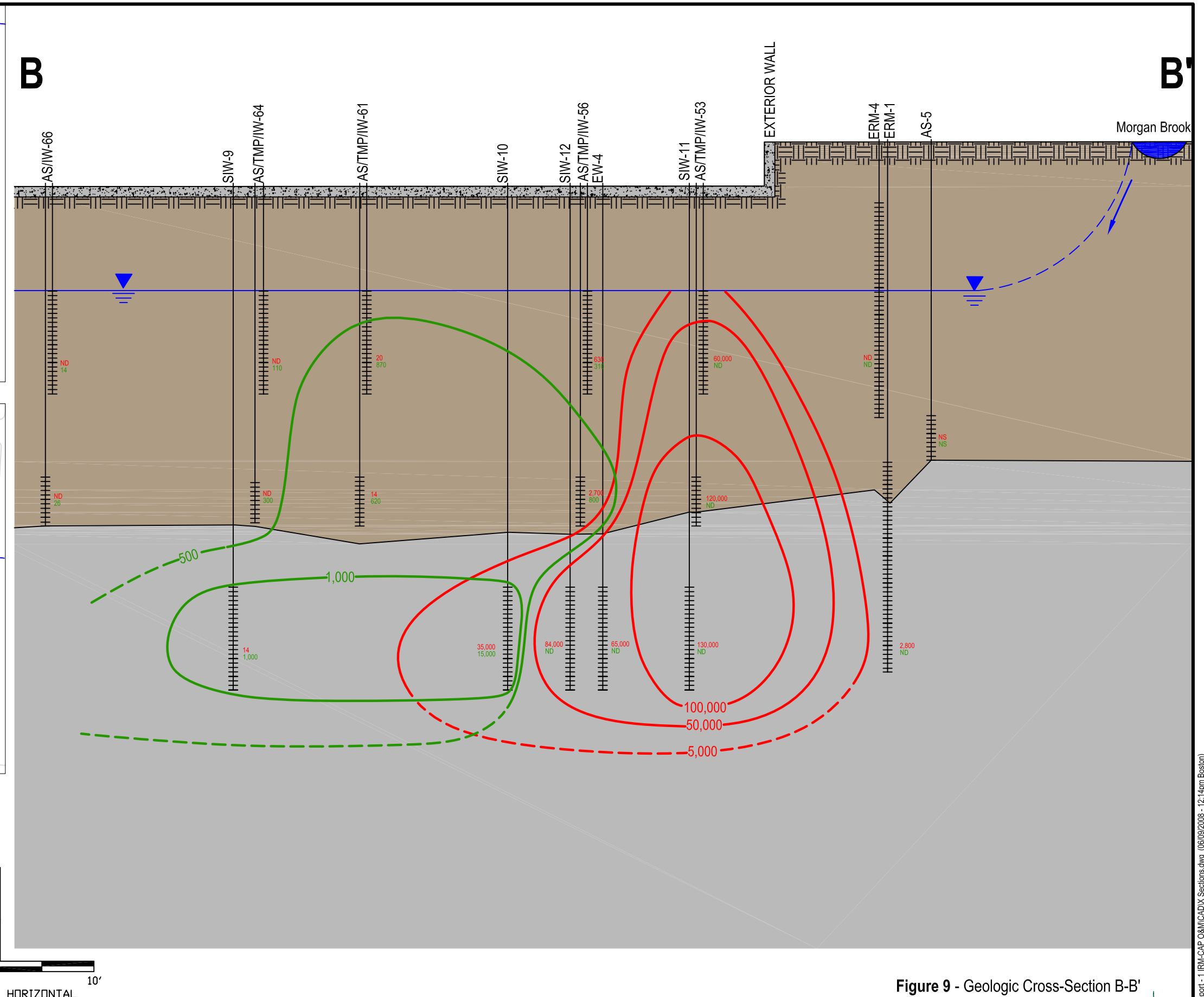
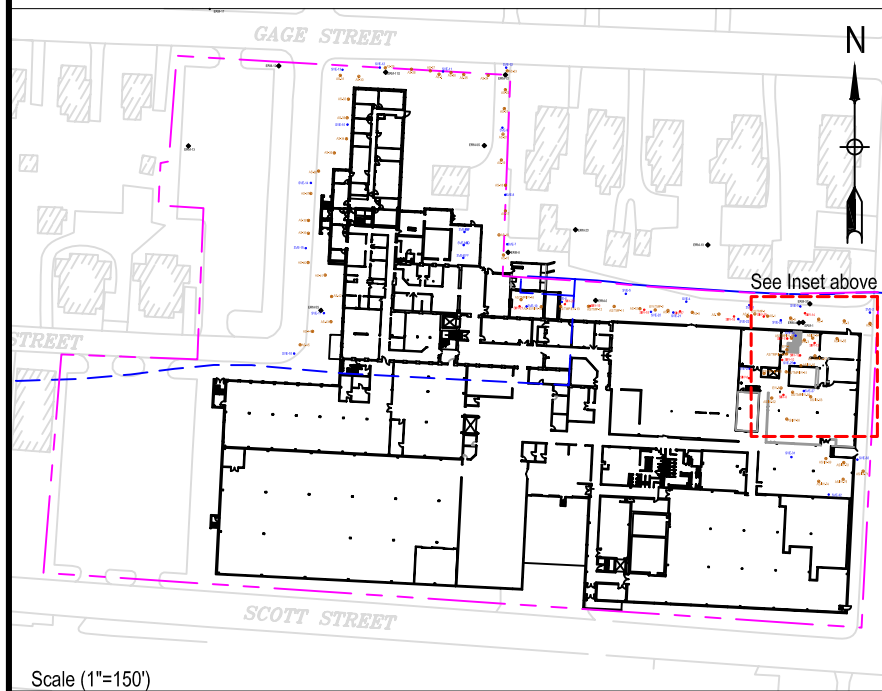
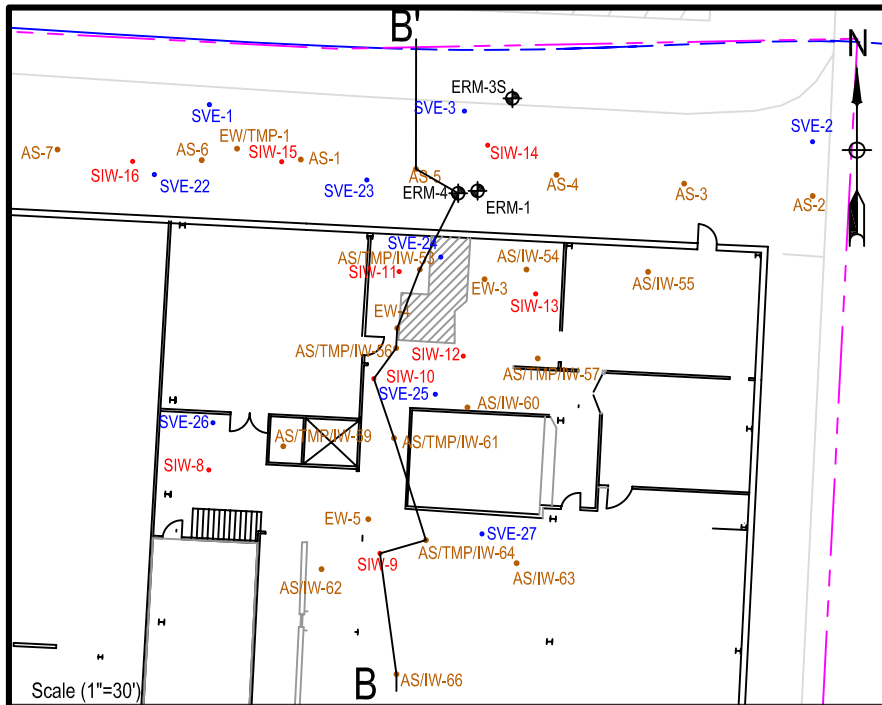


Figure 8 - Geologic Cross-Section A-A'
 Energizer Facility
 401 Gage Street, Bennington, VT





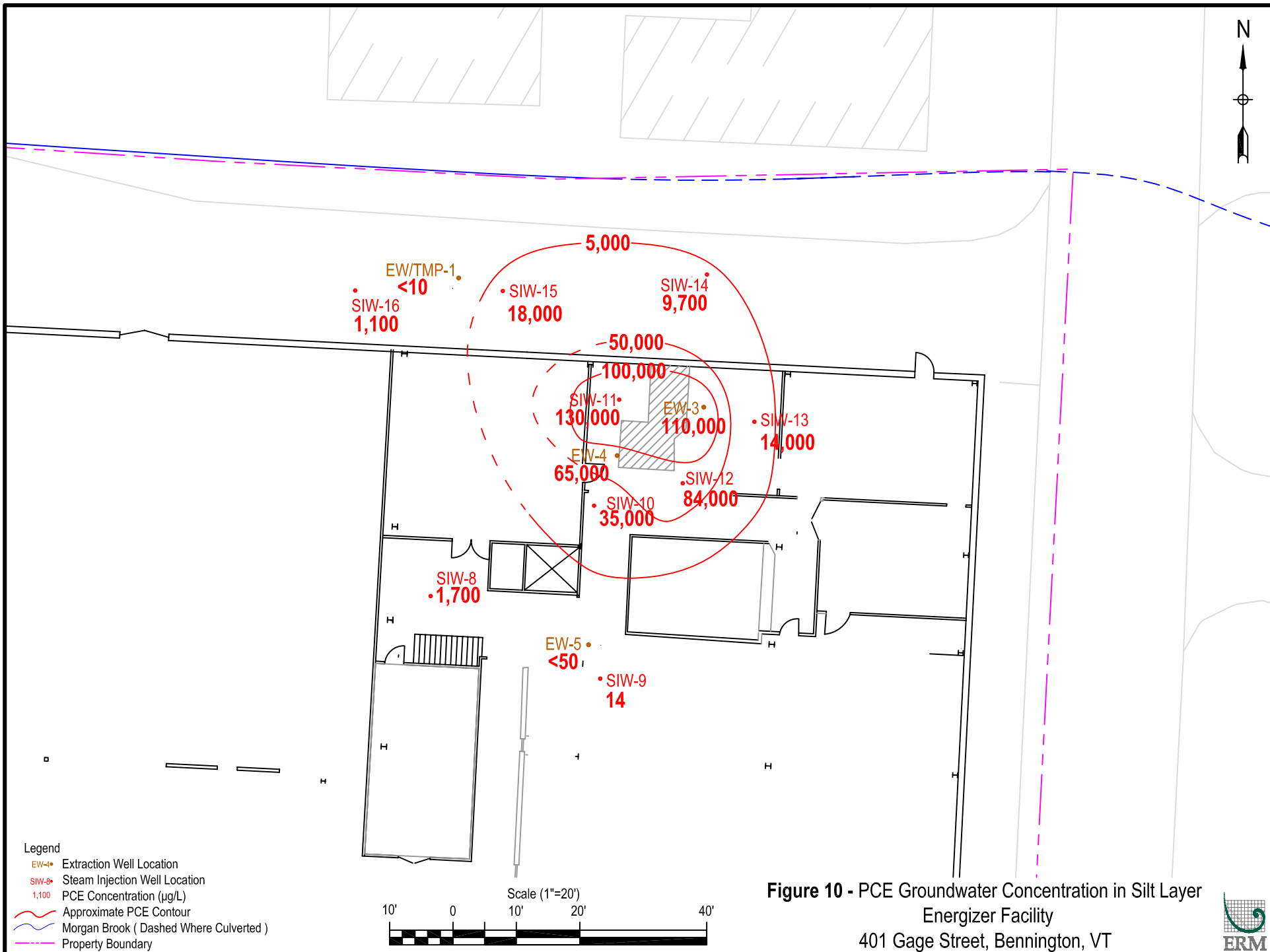
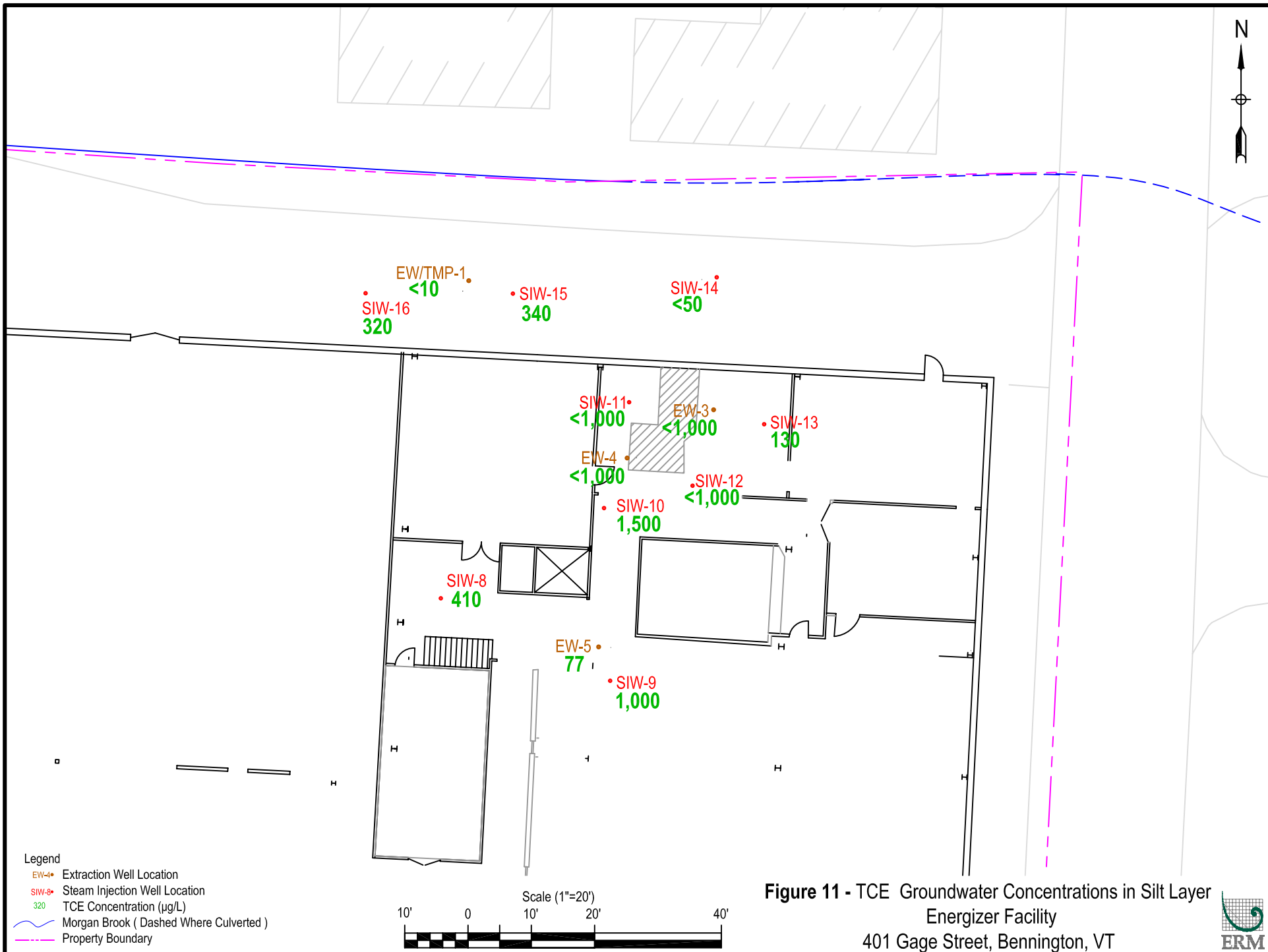


Figure 10 - PCE Groundwater Concentration in Silt Layer
Energizer Facility
401 Gage Street, Bennington, VT





Tables

Table 1
SVE Wells - Vacuum Gauge Data
Energizer Facility
Bennington, Vermont

WELL-ID	Gauge Location	17-Sep-07	18-Sep-07	19-Sep-07	20-Sep-07	21-Sep-07	24-Sep-07	25-Sep-07	28-Sep-07	8-Oct-07	21-Mar-08
335	North Basement	8	NR	14	18	22	22	29	15	14	No Gauge
313	North Basement	7	NR	14	10	10	10	14	14	15	10
317	North Basement	8	NR	18	18	16	16	18	18	17	20
312	North Basement	7	NR	14	9	8	9	12	12	14	8
318	North Basement	6	NR	14	13	13	13	13	15	14	10
315	North Basement	5	NR	12	12	12	12	16	12	12	16
311	North Basement	6	NR	13	17	18	18	14	11	13	18
316	North Basement	7	NR	14	14	14	14	16	14	14	12
314	North Basement	9	NR	16	14	14	15	18	15	16	16
307	Room 24	NA	7	12	12	13	12	16	16	15	24
308	Room 24	NA	8	10	10	11	10	18	16	18	6
309	Room 24	NA	10	13	14	14	14	18	20	15	20
310	Room 24	NA	10	14	16	16	14	20	20	19	14
319	Room 24	NA	5	6	6	6	3	10	10	9	6
320	Room 24	NA	8	21	24	-	24	-	20	20	32
327	Room 24	NA	6	20	21	22	26	22	22	21	16
322	Room 24	NA	6	18	22	22	24	19	20	20	0
323	Room 24	NA	6	19	20	21	22	18	20	20	16
302	Room 24	NA	10	16	18	18	18	18	20	18	20
306	Room 24	NA	10	14	18	18	26	20	20	19	20
303	Room 24	NA	6	8	10	11	8	12	16	15	10
301	Room 24	NA	9	16	19	20	26	20	20	22	40
304	Room 24	NA	7	12	17	15	10	15	18	16	30
305	Room 24	NA	10	16	18	18	24	20	21	20	40
327	Degreaser	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR
325	Degreaser	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR
324	Degreaser	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR
326	Degreaser	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR
330	Bldg 14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR
331	Bldg 14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR
332	Bldg 14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NR

Notes:
Readings are in inches of water.
The last 2 digits of the Well ID correspond to the SVE well ID (i.e., 301 is for SVE-01).
NA - SVE well not operational at time of reading
NR - no reading

Table 2
SVE Wells - Differential Pressure and Flow Data
Energiizer Facility
Bennington, Vermont

WELL-ID	Gauge Location	17-Sep-07		18-Sep-07		19-Sep-07		21-Sep-07		24-Sep-07	
		Differential Pressure	Flow Rate	Differential Pressure	Flow Rate	Differential Pressure	Flow Rate	Differential Pressure	Flow Rate	Differential Pressure	Flow Rate
335	North Basement	6	40	NR	NR	0	11	0	0	> 10	>52
313	North Basement	6	41	NR	NR	10	51	10	51	> 10	>52
317	North Basement	5	36	NR	NR	10	51	10	51	> 10	>52
312	North Basement	7	44	NR	NR	10	51	10	51	> 10	>52
318	North Basement	4	34	NR	NR	10	52	10	51	10	51
315	North Basement	4	32	NR	NR	10	51	10	51	10	51
311	North Basement	2	26	NR	NR	9	49	10	51	> 10	>52
316	North Basement	3	30	NR	NR	10	51	10	51	10	51
314	North Basement	4	32	NR	NR	10	51	10	51	10	51
307	Room 24	NA	NA	8	46	10	51	10	51	10	51
308	Room 24	NA	NA	8	48	10	51	10	51	10	51
309	Room 24	NA	NA	7	44	9	50	10	51	10	51
310	Room 24	NA	NA	5	38	10	51	10	51	10	51
319	Room 24	NA	NA	7	43	8	47	10	51	10	51
320	Room 24	NA	NA	1	16	0	0	NR	NR	> 10	>52
327	Room 24	NA	NA	0	4	1	20	3	28	3	27
322	Room 24	NA	NA	2	23	7	43	9	50	10	50
323	Room 24	NA	NA	2	21	4	32	7	45	9	49
302	Room 24	NA	NA	0	4	9	50	10	51	10	51
306	Room 24	NA	NA	2	21	4	31	9	48	7	44
303	Room 24	NA	NA	6	39	10	51	10	51	10	51
301	Room 24	NA	NA	1	18	3	30	7	43	6	41
304	Room 24	NA	NA	6	40	10	51	10	51	10	51
305	Room 24	NA	NA	1	19	2	22	4	33	4	31
327	Degreaser	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
325	Degreaser	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
324	Degreaser	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
326	Degreaser	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
330	Bldg 14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
331	Bldg 14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
332	Bldg 14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Differential pressure readings are in inches of water.
Flow rate readings are in standard cubic feet per minute (scfm).
The last 2 digits of the Well ID correspond to the SVE well ID
(i.e., 301 is for SVE-01).
N/A - SVE well not installed at time of reading
NR - no reading

Table 2
SVE Wells - Differential Pressure and Flow Data
Energiizer Facility
Bennington, Vermont

WELL-ID	Gauge Location	25-Sep-07		28-Sep-07		8-Oct-07		21-Mar-08	
		Differential Pressure	Flow Rate	Differential Pressure	Flow Rate	Differential Pressure	Flow Rate	Differential Pressure	Flow Rate
335	North Basement	15	63	14	61	1	17	No Gauge	NR
313	North Basement	15	63	15	62	NR	NR	7	43
317	North Basement	13	58	11	53	NR	NR	9	49
312	North Basement	14	62	14	60	NR	NR	7	43
318	North Basement	16	64	10	52	NR	NR	8	45
315	North Basement	13	58	9	49	NR	NR	9	49
311	North Basement	11	55	5	36	NR	NR	8	46
316	North Basement	11	54	9	48	NR	NR	9	48
314	North Basement	14	60	10	51	NR	NR	8	45
307	Room 24	15	63	13	58	14	61	0	0
308	Room 24	15	62	14	60	15	63	8	45
309	Room 24	12	55	10	52	17	66	8	46
310	Room 24	15	64	14	61	14	61	9	48
319	Room 24	18	69	18	68	18	68	8	46
320	Room 24	NR	NR	1	19	2	26	0	0
327	Room 24	2	24	1	14	2	23	1	17
322	Room 24	7	42	3	29	4	34	0	0
323	Room 24	6	42	4	33	3	30	0	0
302	Room 24	11	55	11	53	11	53	2	24
306	Room 24	6	41	4	33	6	39	1	17
303	Room 24	18	68	17	66	13	58	0	0
301	Room 24	4	34	18	68	3	30	0	0
304	Room 24	17	66	10	52	12	55	0	0
305	Room 24	4	32	1	19	3	27	0	0
327	Degreaser	NA	NA	NA	NA	NA	NA	NR	NR
325	Degreaser	NA	NA	NA	NA	NA	NA	NR	NR
324	Degreaser	NA	NA	NA	NA	NA	NA	NR	NR
326	Degreaser	NA	NA	NA	NA	NA	NA	NR	NR
330	Bldg 14	NA	NA	NA	NA	NA	NA	NR	NR
331	Bldg 14	NA	NA	NA	NA	NA	NA	NR	NR
332	Bldg 14	NA	NA	NA	NA	NA	NA	NR	NR

Notes:
Differential pressure readings are in inches of water.
Flow rate readings are in standard cubic feet per minute (scfm).
The last 2 digits of the Well ID correspond to the SVE well ID (i.e., 301 is for SVE-01).
NA - SVE well not installed at time of reading
NR - no reading

Table 3
Soil Vapor Extraction System Mass Removal Data
Energizer Facility
Bennington, Vermont

Parameter	Sample ID Date Sampled Laboratory	SVE-INF 17-Sep-07		SVE-MID 17-Sep-07		SVE-EFF 17-Sep-07		Mass Removed	
		Alpha	N	Alpha	N	Alpha	N		
Tetrachloroethene		845	-	-	-	-	-	665	-
Trichloroethene		1500	-	-	-	-	-	360	-
Cis-1,2-dichloroethene		84.3	-	-	-	-	-	14.8	-
Trans-1,2-dichloroethene		8.35	-	-	-	-	-	-	-
2-Butanone		2200	-	247	160	-	-	252	64.4
Acetone		261	-	187	68.9	-	-	55.2	10.8
Benzene		-	-	-	3.64	-	-	2.70	-
Carbon disulfide		-	-	-	-	-	-	1.80	-
Chloroform		19.3	-	-	-	-	-	16.3	-
Cyclohexane		2.84	-	-	-	-	-	-	-
Dichlorodifluoromethane		11.6	-	-	-	-	-	5.47	6.34
Dichloromethane		-	-	-	-	-	-	-	-
Ethanol		-	-	-	5.90	-	-	-	4.88
Ethyl Acetate		-	-	-	-	-	-	-	-
Freon 113		-	-	-	-	-	-	-	-
Isopropanol		13.5	-	2.96	3.38	-	-	-	5.48
Methylene chloride		-	-	-	-	-	-	-	-
N-hexane		31.2	-	-	-	-	-	-	-
Propylene		-	-	6.26	4.92	-	-	-	-
Tetrahydrofuran		6280	-	467	340	-	-	289	54.5
Toluene		7.02	-	-	-	-	-	31.1	-
Trichlorofluoromethane		-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene		-	-	-	-	-	-	-	-
Total		11264	910	587	146	1693	216	91%	91%

Notes:
Units are in micrograms per cubic meter (ug/mg3)
N = Normal Sample.
- = Non Detect

Table 3
Soil Vapor Extraction System Mass Removal Data
Energizer Facility
Bennington, Vermont

Parameter	Sample ID Date Sampled Laboratory	SVE-INF 01-Oct-07 Alpha	SVE-MID 01-Oct-07 Alpha	SVE-EFF 01-Oct-07 Alpha	Mass Removed	SVE-INF 09-Oct-07 Alpha	SVE-MID 09-Oct-07 Alpha	SVE-EFF 09-Oct-07 Alpha	Mass Removed
Tetrachloroethene		957	-	-		866	-	-	
Trichloroethene		266	-	-		495	-	-	
Cis-1,2-dichloroethene		11.1	-	-		18.0	-	-	
Trans-1,2-dichloroethene		-	-	-		-	-	-	100%
2-Butanone		134	30.3	30.1		242	37.8	28.7	
Acetone		17.20	5.20	9.02		41.5	-	-	
Benzene		-	-	-		3.29	-	-	
Carbon disulfide		-	-	-		1.70	-	-	
Chloroform		16.60	-	-		17.0	-	-	
Cyclohexane		2.08	-	-		2.45	-	-	
Dichlorodifluoromethane		-	-	-		5.30	-	-	
Dichloromethane		-	-	-		-	-	-	
Ethanol		-	-	-		-	-	-	
Ethyl Acetate		-	-	-		-	-	-	
Freon 113		-	-	-		-	-	-	
Isopropanol		-	1.68	2.06		-	3.54	-	
Methylene chloride		-	-	-		-	-	-	
N-hexane		18.50	-	-		16.9	-	-	
Propylene		-	-	-		-	-	-	
Tetrahydrofuran		125.00	9.33	22.0		228	15.2	16.8	
Toluene		8.69	-	-		29.4	-	-	
Trichlorofluoromethane		-	-	-		-	-	-	
1,2,4-Trimethylbenzene		-	-	-		-	-	-	
Total		1556	47	63	96%	1967	57	46	98%

Notes:
Units are in micrograms per cubic meter (ug/mg3)
N = Normal Sample.
- = Non Detect

Table 3
Soil Vapor Extraction System Mass Removal Data
Energizer Facility
Bennington, Vermont

Parameter	Sample ID Date Sampled Laboratory	SVE-INF 22-Oct-07 Alpha N	SVE-MID 22-Oct-07 Alpha N	SVE-EFF 22-Oct-07 Alpha N	Mass Removed	SVE-EFF 08-Nov-07 Alpha N	SVE-INF 13-Nov-07 Alpha N	SVE-MID 13-Nov-07 Alpha N	SVE-EFF 13-Nov-07 Alpha N	Mass Removed
Tetrachloroethene		1,060	-	-		-	657	-	-	
Trichloroethene		270	-	-		0.130	157	-	-	
Cis-1,2-dichloroethene		11.5	-	-		-	-	-	-	
Trans-1,2-dichloroethene		-	-	-		-	-	-	-	100%
2-Butanone		68.2	12.4	30.2		8.92	48.1	8.82	22.3	
Acetone		17.8	-	-		-	-	6.71	6.49	
Benzene		-	-	-		-	-	-	-	
Carbon disulfide		-	-	-		-	-	-	-	
Chloroform		47.9	-	-		-	-	-	-	
Cyclohexane		-	-	-		-	-	-	-	
Dichlorodifluoromethane		6.52	5.74	5.15		-	-	-	-	
Dichloromethane		-	-	-		-	-	-	3.85	
Ethanol		-	-	5.83		-	-	-	-	
Ethyl Acetate		-	-	1.96		-	-	-	-	
Freon 113		-	-	-		-	-	-	-	
Isopropanol		-	-	4.45		-	-	-	-	
Methylene chloride		3.97	22.7	-		6.16	-	-	-	
N-hexane		6.38	-	-		-	-	-	-	
Propylene		-	-	-		-	-	-	-	
Tetrahydrofuran		52.4	3.91	13.8		-	30.2	1.60	7.74	
Toluene		13.1	-	20.9		0.083	24.8	-	-	
Trichlorofluoromethane		-	-	-		-	-	-	-	
1,2,4-Trimethylbenzene		-	-	2.92		-	-	-	-	
Total		1558	45	85	95%	15	917	17	40	96%

Notes:
Units are in micrograms per cubic meter (ug/mg3)
N = Normal Sample.
- = Non Detect

Table 3
Soil Vapor Extraction System Mass Removal Data
Energizer Facility
Bennington, Vermont

Parameter	Sample ID Date Sampled Laboratory	SVE-INF 18-Dec-07 Alpha	SVE-MID 18-Dec-07 Alpha	SVE-EFF 18-Dec-07 Alpha	Mass Removed	SVE-INF 21-Feb-08 Alpha	SVE-MID 21-Feb-08 Alpha	SVE-EFF 21-Feb-08 Alpha	Mass Removed
Tetrachloroethene		343	31.6	-		258	-	-	
Trichloroethene		92.2	-	-		133	-	-	
Cis-1,2-dichloroethene		377	-	-		187	-	-	
Trans-1,2-dichloroethene		-	-	-		-	-	-	100%
2-Butanone		29.6	9.17	7.28		18.5	10.0	35.8	
Acetone		17.6	7.05	-		6.67	5.94	8.62	
Benzene		220	-	-		0.920	-	-	
Carbon disulfide		-	-	-		-	-	-	
Chloroform		10.9	11.6	-		9.57	-	-	
Cyclohexane		-	-	-		-	-	-	
Dichlorodifluoromethane		-	-	-		2.72	2.43	2.72	
Dichloromethane		-	-	-		-	-	-	
Ethanol		-	-	-		-	11.4	6.52	
Ethyl Acetate		-	-	-		-	-	-	
Freon 113		-	-	-		-	-	-	
Isopropanol		-	1.36	-		-	5.49	17.1	
Methylene chloride		4.04	-	-		1.78	2.16	-	
N-hexane		-	-	-		1.75	-	-	
Propylene		-	-	-		-	-	-	
Tetrahydrofuran		21.5	31.6	2.05		23.5	18.1	2.68	
Toluene		23.9	1.53	-		8.58	4.32	-	
Trichlorofluoromethane		-	-	-		1.12	-	-	
1,2,4-Trimethylbenzene		-	-	-		-	-	-	
Total		549	94	9	98%	468	60	73	84%

Notes:
Units are in micrograms per cubic meter (ug/mg3)
N = Normal Sample.
- = Non Detect

Table 3
Soil Vapor Extraction System Mass Removal Data
Energizer Facility
Bennington, Vermont

Parameter	Sample ID Date Sampled Laboratory	SVE-INF 25-Mar-08 Alpha	SVE-MID 25-Mar-08 Alpha	SVE-EFF 25-Mar-08 Alpha	Mass Removed
Tetrachloroethene		386	-	-	
Trichloroethene		279	-	1.60	
Cis-1,2-dichloroethene		2.35	-	-	
Trans-1,2-dichloroethene		-	-	-	100%
2-Butanone		24.1	4.9	16.2	
Acetone		19.4	7.10	8.14	
Benzene		1.67	-	-	
Carbon disulfide		-	-	-	
Chloroform		6.3	-	-	
Cyclohexane		-	-	-	
Dichlorodifluoromethane		3.57	2.54	3.32	
Dichloromethane		-	-	-	
Ethanol		-	-	-	
Ethyl Acetate		-	-	-	
Freon 113		2.72	5.32	-	
Isopropanol		-	1.24	1.96	
Methylene chloride		-	-	-	
N-hexane		0.889	-	-	
Propylene		-	-	-	
Tetrahydrofuran		19.8	0.829	2.1	
Toluene		25.6	-	-	
Trichlorofluoromethane		1.80	2.06	-	
1,2,4-Trimethylbenzene		-	-	-	
Total		773	24	33	96%

Notes:
Units are in micrograms per cubic meter (ug/mg3)
N = Normal Sample.
- = Non Detect

Table 4
Air Sparge Wells - Pressure Gauge Data
Energiizer Facility
Bennington, Vermont

Air Sparge Well-ID	Gauge Location	19-Sep-07	20-Sep-07	21-Sep-07	24-Sep-07	25-Sep-07	28-Sep-07	8-Oct-07	21-Mar-08
245	North Basement	5.0	4.5	4.5	4.5	4.5	4.5	4.8	4.0
244	North Basement	4.5	4.0	4.3	4.0	4.0	4.0	4.0	4.0
242	North Basement	3.8	4.0	4.5	4.0	4.0	4.0	4.0	4.0
235	North Basement	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
248	North Basement	6.0	5.5	6.0	0.5	NR	0.0	NR	NR
247	North Basement	6.0	5.5	5.5	0.5	NR	0.0	NR	NR
234	North Basement	4.0	4.0	4.0	3.6	3.8	2.5	3.5	0.0
233	North Basement	4.0	2.5	2.5	2.0	2.0	2.0	2.0	0.0
232	North Basement	2.5	1.8	1.7	1.5	1.5	1.0	1.5	3.0
230	North Basement	4.0	3.0	3.0	2.5	2.8	2.5	3.0	2.0
225	North Basement	2.5	3.8	4.0	3.8	3.5	3.5	4.0	5.0
226	North Basement	2.5	3.5	3.0	2.6	2.5	3.0	2.5	0.0
227	North Basement	2.5	2.8	2.5	2.5	2.5	2.5	2.5	2.5
228	North Basement	4.0	4.0	4.3	2.6	2.5	2.5	2.5	3.0
229	North Basement	3.0	3.0	3.0	2.6	2.5	2.5	2.5	3.0
231	North Basement	4.0	4.3	4.5	4.0	4.0	4.0	4.0	4.0
239	North Basement	4.0	4.0	4.0	3.7	4.0	3.5	4.0	4.0
238	North Basement	0.0	0.0	0.0	0.0	3.5	3.5	3.8	3.5
237	North Basement	2.3	1.5	1.5	0.5	3.0	3.0	3.0	3.0
243	North Basement	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
241	North Basement	4.0	4.0	3.5	3.6	3.5	3.0	3.5	2.5
240	North Basement	4.5	4.5	4.5	4.4	4.3	4.0	4.3	4.0
236	North Basement	3.3	3.3	4.0	3.0	3.5	3.5	3.0	3.0
246	Room 24	2.5	3.0	2.5	3.3	2.5	2.0	3.0	14.0
213	Room 24	2.8	2.5	2.5	2.8	2.5	4.0	2.5	3.0
212	Room 24	3.5	3.3	3.3	3.5	3.0	3.0	3.5	4.0
211	Room 24	4.3	4.5	5.5	4.3	4.0	3.5	4.0	4.0
210	Room 24	3.0	3.0	2.8	2.8	2.5	2.5	2.5	3.0
209	Room 24	1.0	0.0	0.5	0.0	3.3	3.0	3.5	3.0
208	Room 24	3.0	3.3	3.0	3.3	3.0	3.0	3.5	4.0
207	Room 24	3.0	4.0	4.0	4.0	3.5	3.5	4.5	5.0
206	Room 24	2.5	2.5	2.5	2.5	2.8	2.0	2.5	3.0
201	Room 24	4.0	3.5	3.8	3.8	3.8	4.0	4.0	4.0

Table 4
Air Sparge Wells - Pressure Gauge Data
Energizer Facility
Bennington, Vermont

Air Sparge Well-ID	Gauge Location	19-Sep-07	20-Sep-07	21-Sep-07	24-Sep-07	25-Sep-07	28-Sep-07	8-Oct-07	21-Mar-08
205	Room 24	3.5	4.0	4.3	4.5	3.5	4.0	4.8	6.0
204	Room 24	3.3	3.5	3.5	3.5	3.3	3.0	3.5	3.5
215	Room 24	2.0	2.5	2.5	2.8	2.0	2.0	3.3	4.0
203	Room 24	3.5	3.5	3.5	3.5	3.0	2.5	3.5	4.0
224	Room 24	0.5	1.0	1.0	0.5	0.5	1.0	0.0	0.0
202	Room 24	3.5	3.5	3.5	3.5	3.3	3.0	3.5	4.0
223	Room 24	3.3	3.5	3.5	3.3	3.0	3.0	3.5	3.0
214	Room 24	3.0	3.0	2.8	2.5	2.5	2.5	2.8	3.0
222	Room 24	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0
219	Room 24	2.3	2.8	2.5	2.5	2.3	2.0	2.5	2.5
221	Room 24	3.5	3.3	3.5	3.5	3.5	3.5	3.5	4.0
220	Room 24	4.3	4.3	4.3	4.3	4.0	4.0	4.5	5.0
218	Room 24	2.5	2.5	2.5	2.5	2.3	2.0	2.5	2.5
217	Room 24	3.5	3.0	2.5	2.5	2.5	2.0	3.0	3.0
216	Room 24	2.5	2.5	2.0	2.0	2.0	2.0	2.0	3.0
265	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
256	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
263	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
262	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
264	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
261	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
253	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
254	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
257	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
259	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR

Notes:
Readings are in pounds per square inch (psi).
The last 2 digits of the Well ID correspond to the AS well ID (i.e., 301 is for AS-01).
NA - AS well not installed at time of reading
NR - no reading

Table 5
Air Sparge Wells - Flow Data
Energizer Facility
Bennington, Vermont

Air Sparge Well-ID	Gauge Location	19-Sep-07	20-Sep-07	21-Sep-07	24-Sep-07	25-Sep-07	28-Sep-07	8-Oct-07	21-Mar-08
245	North Basement	8.5	8.5	10.0	10.0	10.0	9.5	9.0	10.0
244	North Basement	8.0	8.5	10.0	10.0	10.0	9.5	9.5	10.0
242	North Basement	8.5	8.0	10.0	10.0	10.0	10.0	9.5	10.0
235	North Basement	9.0	8.5	10.0	10.0	10.0	10.5	10.0	10.0
248	North Basement	0.0	0.0	0.0	0.0	NR	0.0	NR	NR
247	North Basement	0.0	0.0	0.0	0.0	NR	0.0	NR	NR
234	North Basement	10.5	10.0	10.0	10.5	10.5	12.5	11.0	0.0
233	North Basement	10.0	10.0	10.0	9.5	10.0	10.5	10.0	0.0
232	North Basement	9.5	8.5	10.0	10.0	10.0	11.0	11.0	10.0
230	North Basement	9.0	9.5	10.0	10.0	10.0	10.5	10.0	10.0
225	North Basement	10.0	8.5	10.0	10.0	10.0	10.0	9.5	10.0
226	North Basement	9.5	10.5	10.0	10.5	10.5	10.5	9.5	10.0
227	North Basement	9.0	9.5	10.0	10.0	10.0	10.5	10.0	10.0
228	North Basement	10.5	11.5	10.0	10.5	10.0	11.0	10.0	10.0
229	North Basement	9.0	9.0	10.0	9.5	11.0	10.5	10.5	10.0
231	North Basement	8.5	8.5	10.0	10.5	10.5	10.5	10.5	10.0
239	North Basement	9.0	9.0	10.0	10.0	10.0	10.5	10.0	10.0
238	North Basement	8.5	8.5	10.0	10.0	10.0	10.5	10.0	10.0
237	North Basement	8.0	8.0	10.0	10.0	10.0	10.5	10.0	10.0
243	North Basement	8.5	8.5	10.0	10.0	10.0	10.0	9.5	10.0
241	North Basement	8.5	8.0	9.0	9.5	9.5	10.5	9.5	10.0
240	North Basement	9.0	9.0	10.0	10.5	10.5	10.0	10.0	10.0
236	North Basement	8.0	8.0	10.0	10.0	10.0	10.5	10.5	10.0
246	Room 24	10.0	10.0	10.0	10.0	10.5	11.5	11.5	10.0
213	Room 24	10.0	10.0	10.0	10.0	10.0	10.5	10.0	10.0
212	Room 24	10.0	10.0	10.0	10.0	10.0	10.5	10.0	10.0
211	Room 24	9.0	8.0	9.0	10.0	10.0	10.5	11.0	9.0
210	Room 24	10.0	10.0	10.0	10.0	10.0	10.5	10.0	10.0
209	Room 24	10.0	10.0	10.0	10.5	10.0	10.5	9.5	10.0
208	Room 24	10.0	10.0	10.0	10.5	10.5	10.5	10.0	10.0
207	Room 24	10.0	9.0	10.0	10.0	10.3	11.5	9.5	11.0
206	Room 24	10.0	10.5	10.0	10.0	10.5	10.5	10.0	10.0
201	Room 24	10.0	10.0	10.0	10.0	10.5	11.0	10.5	11.0
205	Room 24	10.0	9.5	10.0	10.5	10.5	11.0	10.0	11.0
204	Room 24	10.0	10.5	10.0	10.0	10.0	10.0	9.0	10.0
215	Room 24	10.0	10.0	10.0	10.0	10.0	10.5	10.0	10.0

Table 5
Air Sparge Wells - Flow Data
Energizer Facility
Bennington, Vermont

Air Sparge Well-ID	Gauge Location	19-Sep-07	20-Sep-07	21-Sep-07	24-Sep-07	25-Sep-07	28-Sep-07	8-Oct-07	21-Mar-08
203	Room 24	10.0	10.0	10.0	10.5	10.0	10.0	9.5	10.0
224	Room 24	10.0	10.0	10.0	10.0	10.0	12.0	10.0	10.0
202	Room 24	10.0	10.0	10.0	10.5	10.5	10.0	9.5	9.0
223	Room 24	10.0	10.0	10.0	10.5	10.5	10.5	10.0	9.0
214	Room 24	10.0	11.0	10.0	10.0	10.5	10.5	10.5	9.0
222	Room 24	10.0	10.0	10.0	10.5	10.5	10.5	10.0	10.0
219	Room 24	10.0	10.0	10.0	10.5	10.5	11.0	10.0	11.0
221	Room 24	10.0	9.0	10.0	10.0	10.0	10.0	9.5	11.0
220	Room 24	9.0	8.5	10.0	9.5	10.0	10.0	9.0	8.0
218	Room 24	10.0	10.0	10.0	10.5	10.5	10.5	10.0	10.0
217	Room 24	10.0	10.5	10.0	10.0	10.0	10.0	9.5	10.0
216	Room 24	10.0	10.5	10.0	10.0	10.0	10.0	9.5	10.0
265	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
256	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
263	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
262	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
264	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
261	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
253	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
254	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
257	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR
259	Degreaser	NA	NA	NA	NA	NA	NA	NA	NR

Notes:

Readings are in standard cubic feet per minute (scfm).

The last 2 digits of the Well ID correspond to the AS well ID (i.e., 301 is for AS-01).

NA - air sparge well not installed at time of reading

NR - no reading

Table 6
General System Parameters
Energiizer Facility
Bennington, Vermont

		18-Sep-07	19-Sep-07	24-Sep-07	25-Sep-07	28-Sep-07	8-Oct-07	6-Mar-08	14-Mar-08	21-Mar-08	28-Mar-08
Temperature Transmitter	Units										
TT-200	(°F)	-	149	155	161	149	150	137	134	121	142
TT-201		-	149	154	161	149	149	136	134	120	141
TT-202		-	93	98	110	102	104	97	103	93	107
TT-300		101	106	114	116	117	112	101	112	107	117
TT-301		100	106	112	114	116	111	100	111	107	115
TT-302		77	71	71	73	72	72	79	85	82	88
TT-500		58	62	64	65	64	64	57	59	58	59
TT-501		68	75	81	89	88	93	83	90	82	96
Pressure Gauge											
200	PSI	-	6.0	5.0	5.0	-	5.5	8.0	7.5	8.0	5.0
201		-	5.0	6.0	5.5	-	6.0	7.0	6.0	6.0	6.0
202		-	5.5	5.5	5.5	-	5.5	7.0	6.5	6.5	6.0
500		7.0	5.0	5.5	0.0	-	13.0	7.0	38.0	10.0	10.0
501		-	0.0	0.0	5.5	-	0.0	2.0	1.0	1.0	1.0
Pressure Gauge											
300	in .aoc.	-	32	27	35	-	28	30	30	27	28
301		-	-	-	-	-	18	13	12	14	13
302		-	-	-	-	-	14	2	1	3	3
303		-	-	-	-	-	-	0	0	0	2
Temperature Gauge											
200	(°F)	-	151	153	165	-	150	135	135	125	140
201		-	150	160	170	-	156	140	140	130	140
202		-	96	78	108	-	102	98	104	94	108
500		59	63	64	66	-	66	78	60	60	60
501		-	72	77	86	-	93	84	90	82	96
502		-	-	-	68	-	67	68	62	60	64
300		-	73	73	74	-	73	80	86	82	88
Vacuum Transmitter											
300	in .aoc.	-	36	40	35	36	35	45	55	56	55
Pressure Transmitter											
200	PSI	-	6	6	6	6	6	6	6	6	6
Air Velocity Transmitter											
300	FPM	2192	3735	3328	3797	3610	3428				
	CFM	-	-	-	-	-	-	1530	1496	1411	1511
301	FPM	4453	4030	3634	4128	3820	3748				
	CFM	6214	-	-	-	-	-	1695	1690	1608	1680

Notes:

- -- not collected
°F - degrees Fahrenheit
CFM - cubic feet per minute
FPM - feet per minute
PSI - pounds per square inch
IN WC - inches of water column

Table 7
Summary of Outdoor Ambient Air Analytical Results
Energizer Facility
Bennington, Vermont

	Location ID: Sample Date: Sample Type:	OAA-105 7-Sep-2007 N	OAA-105 25-Sep-2007 N	OAA-105 2-Oct-2007 N	OAA-105 9-Oct-2007 N	OAA-105 23-Oct-2007 N	OAA-105 14-Nov-2007 N	OAA-105 19-Dec-2007 N
<i>Volatile Organic Compounds (VOCs, ug/m³)</i>								
<i>(EPA Method TO-15)</i>								
Cis-1,2-Dichloroethene		<0.079	<0.079	<0.079	<0.079	<0.079	<0.079	<0.079
Tetrachloroethylene		<0.136	0.263	0.205	0.156	0.325	0.346	0.294
Trans-1,2-Dichloroethene		<0.079	<0.079	<0.079	<0.079	<0.079	<0.079	<0.079
Trichloroethylene		2.42	4.37	2.37	0.140	1.28	1.52	0.711
Vinyl chloride		<0.051	<0.051	<0.051	<0.051	<0.051	<0.051	<0.051

Notes:
ug/m³ = micrograms per cubic meter.
Values in bold indicate concentrations above method detection limit

Table 7
Summary of Outdoor Ambient Air Analytical Results
Energizer Facility
Bennington, Vermont

	Location ID: Sample Date: Sample Type:	OAA-106		OAA-106		OAA-106		OAA-106		OAA-106		OAA-106		OAA-106	
		N		N		N		N		N		N		N	
Volatile Organic Compounds (VOCs, ug/m ³)															
(EPA Method TO-15)															
Cis-1,2-Dichloroethene		<0.079		<0.079		<0.079		<0.079		<0.079		<0.079		<0.079	
Tetrachloroethylene		<0.136		0.324		0.136		0.291		0.352		0.255			
Trans-1,2-Dichloroethene		<0.079		<0.079		<0.079		<0.079		<0.079		<0.079		<0.079	
Trichloroethylene		0.070		1.40		0.795		0.107		0.338		1.07		0.611	
Vinyl chloride		<0.051		<0.051		<0.051		<0.051		<0.051		<0.051		<0.051	

Notes:
ug/m³ = micrograms per cubic meter.
Values in bold indicate concentrations above method detection limit

Table 8
Summary of Active Soil Gas Analytical Results
Energizer Facility
Bennington, Vermont

	Location ID: Sample Date: Sample Type:	ASG-14 27-Jul-2006		ASG-14 17-May-2007		ASG-14 5-Sep-2007		ASG-14 11-Mar-2008		ASG-16 14-Feb-2007		ASG-16 19-Feb-2008	
		N		N		N		N		N		N	
		Volatile Organic Compounds (VOCs, ug/m ³) (EPA Method TO-15)											
Cis-1,2-Dichloroethene		<19.8		<1.98		0.515		<0.792		<1.98		<0.792	
Tetrachloroethylene		7890		602		50.4		3.2		5.16		32.5	
Trans-1,2-Dichloroethene		<19.8		<1.98		0.4		<0.792		<1.98		<0.792	
Trichloroethylene		222		38.4		20.9		6.38		<2.68		<1.07	
Vinyl chloride		<12.8		<1.28		0.243		<0.511		<1.28		<0.511	

Notes:
ug/m³ = micrograms per cubic meter.
Values in bold indicate concentrations above method detection limit

Table 8
Summary of Active Soil Gas Analytical Results
Energizer Facility
Bennington, Vermont

	Location ID: Sample Date: Sample Type:	ASG-17		ASG-17		ASG-18		ASG-18		ASG-20		ASG-20	
		N		N		N		N		N		N	
Volatile Organic Compounds (VOCs, ug/m ³) (EPA Method TO-15)													
Cis-1,2-Dichloroethene		< 1.98		< 0.792		< 19.8		< 0.792		< 1.98		< 0.792	
Tetrachloroethylene		361		62.8		2200		1040		291		< 1.36	
Trans-1,2-Dichloroethene		< 1.98		< 0.792		< 19.8		< 0.792		< 1.98		< 0.792	
Trichloroethylene		5.63		< 1.07		< 26.8		1.98		< 2.68		1.75	
Vinyl chloride		< 1.28		< 0.511		< 12.8		< 0.511		< 1.28		< 0.511	

Notes:
ug/m³ = micrograms per cubic meter.
Values in bold indicate concentrations above method detection limit

Table 8
Summary of Active Soil Gas Analytical Results
Energizer Facility
Bennington, Vermont

	Location ID:	ASG-28		ASG-28		ASG-32		ASG-32		ASG-32		ASG-32	
	Sample Date:	19-Feb-2008		11-Mar-2008		26-Jul-2007		17-Oct-2007		14-Nov-2007		18-Dec-2007	
	Sample Type:	N	N	N	N	N	N	N	N	N	N	N	N
Volatile Organic Compounds (VOCs, ug/m ³)													
(EPA Method TO-15)													
Cis-1,2-Dichloroethene		< 1.98	< 0.792	< 0.792	< 0.792	< 1.98	< 1.98	< 0.079	< 0.079	< 0.079	< 0.079	< 0.079	< 0.079
Tetrachloroethylene		72.9	430	57.9	57.9	332	41.2	24.2	24.2	12.3	12.3	12.3	12.3
Trans-1,2-Dichloroethene		< 1.98	< 0.792	< 0.792	< 0.792	< 1.98	< 1.98	< 0.079	< 0.079	< 0.079	< 0.079	< 0.079	< 0.079
Trichloroethylene		32.6	< 1.07	3.2	3.2	162	70.8	1.84	1.84	0.256	0.256	0.256	0.256
Vinyl chloride		< 1.28	< 0.511	< 0.511	< 0.511	< 1.28	< 1.28	< 0.051	< 0.051	< 0.051	< 0.051	< 0.051	< 0.051

Notes:
ug/m³ = micrograms per cubic meter.
Values in bold indicate concentrations above method detection limit

Table 8
Summary of Active Soil Gas Analytical Results
Energizer Facility
Bennington, Vermont

	Location ID: Sample Date: Sample Type:	ASC-32 19-Feb-2008 N
<i>Volatile Organic Compounds (VOCs, ug/m³)</i> (EPA Method TO-15)		
Cis-1,2-Dichloroethene		< 0.792
Tetrachloroethylene		6.14
Trans-1,2-Dichloroethene		< 0.792
Trichloroethylene		< 1.07
Vinyl chloride		< 0.511

Notes:
ug/m³ = micrograms per cubic meter.
Values in bold indicate concentrations above method detection limit

Table 8
Summary of Active Soil Gas Analytical Results
Energizer Facility
Bennington, Vermont

	Location ID: Sample Date: Sample Type:	ASG-33 26-Jul-2007		ASG-33 17-Oct-2007		ASG-33 14-Nov-2007		ASG-33 18-Dec-2007		ASG-33 19-Feb-2008	
		N	N	N	N	N	N	N	N	N	N
		Volatile Organic Compounds (VOCs, ug/m ³) (EPA Method TO-15)									
Cis-1,2-Dichloroethene		3.8	< 1.98	< 0.079	< 0.079	< 0.079	< 0.079	< 0.792			
Tetrachloroethylene		5530	602	73.4	78.3	78.3	78.3	6.8			
Trans-1,2-Dichloroethene		< 1.98	< 1.98	< 0.079	< 0.079	< 0.079	< 0.079	< 0.792			
Trichloroethylene		109	65.9	2.69	1.09	1.09	1.09	< 1.07			
Vinyl chloride		< 1.28	< 1.28	< 0.051	< 0.051	< 0.051	< 0.051	< 0.511			

Notes:
ug/m³ = micrograms per cubic meter.
Values in bold indicate concentrations above method detection limit

Table 9
Summary of Groundwater Analytical Results
Energizer Facility
401 Gage Street, Bennington, Vermont

Location ID: Sample Date: Laboratory Sample Type:	IW-53 28-Aug-07 Stone N	IW-54 23-Aug-07 Stone N	IW-55 12-Sep-07 Stone N	IW-56 29-Aug-07 Stone N	IW-57 24-Aug-07 Stone N	IW-59 25-Sep-07 Stone N	IW-60 27-Aug-07 Stone N	IW-61 30-Aug-07 Stone N	IW-62 21-Sep-07 Stone N	IW-63 18-Sep-07 Stone N	IW-64 13-Sep-07 Stone N	IW-66 19-Sep-07 Stone N	IW-69 25-Jul-07 Alpha N
Primary Groundwater Quality Standards Enforcement Standard													
Analyte													
Volatile Organics (VOCs) (ug/l)													
2-Butanone													< 2.0
Acetone													11
Chloroform													3.3
Cis-1,2-Dichloroethene													< 2.0
Tetrachloroethylene													< 2.0
Tetrahydrofuran													
Trans-1,2-Dichloroethene													< 2.0
Trichloroethylene													6

Notes:

Units are in ug/l.

ug/l = micrograms per liter.

< = Compound not detected. Method detection limit shown.

Blank Cell: Not analyzed.

NS: No standard available.

Bold cells indicate concentrations greater than the laboratory detection limits.

Shaded cells indicate exceedances of Primary Groundwater Quality Standards Enforcement Standard.

Tabulated results include only those analytes detected at least once above method detection limits.

Alpha is the Lab designation for Alpha Woods Hole Laboratory Westboro, MA.

Stone is the Lab designation for Stone Environmental, Inc. Montpelier, VT.

Analyses for VOCs performed by Alpha (EPA Method SW8260) and Stone (EPA Method SW8260B). See Table for distinction.

FD = Field Duplicate

N= Normal Sample

Table 9

Summary of Groundwater Analytical Results
 Energizer Facility
 401 Gage Street, Bennington, Vermont

IW-70 25-Jul-07 Alpha N	Location ID: Sample Date: Laboratory Sample Type:	Primary Groundwater Quality Standards Enforcement Standard	IW-71 13-Sep-07 Stone N	IW-74 24-Jul-07 Alpha N	IW-75 25-Jul-07 Alpha N
Analyte					
Volatile Organics (VOCs) (ug/l)					
< 2.0	2-Butanone	NS	< 2.0	< 2.0	< 2.0
4.2	Acetone	700	3.4	4	4
1.5	Chloroform	0.17	2.4	1.9	1.9
< 2.0	Cis-1,2-Dichloroethene	70	< 2.0	< 2.0	< 2.0
1.7	Tetrachloroethylene	5	< 2.0	< 2.0	< 2.0
	Tetrahydrofuran	NS			
< 2.0	Trans-1,2-Dichloroethene	100	< 2.0	< 2.0	< 2.0
34	Trichloroethylene	5	65	< 2.0	1.5

Notes:

Units are in ug/l.

ug/l = micrograms per liter.

< = Compound not detected. Method detection limit shown.

Blank Cell: Not analyzed.

NS: No standard available.

Bold cells indicate concentrations greater than the laboratory detection limits.

Shaded cells indicate exceedances of Primary Groundwater Quality Standards Enforcement Standard.

Tabulated results include only those analytes detected at least once above method detection limits.

Alpha is the Lab designation for Alpha Woods Hole Laboratory Westboro, MA.

Stone is the Lab designation for Stone Environmental, Inc., Montpelier, VT.

Analyses for VOCs performed by Alpha (EPA Method SW8260) and Stone (EPA Method SW8260B). See Table for distinction.

FD = Field Duplicate

N- Normal Sample

Appendix A
Air Sample Analytical Results

Appendix B
Steam Injection Calibration Test Memo

Appendix C
Groundwater Sample Analytical Results