

February 10, 2004

Mr. Jeff Dyber, P.E.
Environmental Engineer 2
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action
625 Broadway
Albany, New York 12233

**RE: National Heatset Printing
Operation & Maintenance Report, January 2004
1 Adams Boulevard
Farmingdale, New York
NYSDEC Site 1-52-140**

Dear Mr. Dyber:

This letter provides an overview of the ongoing operation of the soil vapor extraction (SVE) system for the National Heatset Printing Site in Farmingdale, New York (**Figure 1**) for the reporting period including January 2004. A site visit was performed by Shaw Environmental, Inc. (Shaw) personnel on January 6, 2004 in accordance with our contract with the Department.

System Operation

Operation of SVE system began on September 17, 2002. The SVE system was restarted after the installation of a blower control component during the January 6, 2004 site visit. SVE system operational data is summarized in **Table 1** and is presented as **Appendix A**.

The SVE blower operated at a flow of approximately 164 cfm and vacuum of 12 inches of water column as observed during the site visit. A flow of 98.5 cfm and a vacuum of 74 inches of water column were observed at the extraction well. The extraction well and dilution valves were both 50% open. Volatile organic compound (VOC) and tetrachloroethene (PCE) concentrations from the extraction well were observed to be 110 and 100 ppm, respectively. The positioning of the well extraction and dilution air valves will be modified based on continued monitoring of VOC concentrations.

No water was collected from the knockout vessel during this reporting period. A small quantity of water has been collected during the previous reporting periods and placed in an accumulation

drum for storage until the drum has been filled, at which time proper characterization and disposal procedures will be followed.

VOC concentrations of 247 ppm and a PCE concentration of 250 ppm were observed at the VGAC influent port during the site visit. Non-detect VOC and PCE concentrations were observed from the VGAC mid and effluent sampling ports.

Monitoring Probes

A vacuum of 1.8 inches of water column was observed at vapor monitoring point VP-1 and 0.20 inches of water column was observed at VP-2 during the site visit. Vacuum influence was not observed at VP-3. Monitoring of the vapor points will continue during future site visits.

PCE Removal

The estimated mass of PCE removed by the SVE system has not changed between the November 24, 2003 and January 6, 2004 site visits because the SVE system was idle during that period. Now that the SVE system has been restarted, PCE removal calculations will be included in the next Operation & Maintenance Report. A summary of the estimated PCE mass removal over time is presented in **Table 2**.

Air Discharge Monitoring

Shaw personnel did not collect a sample of the system effluent air for laboratory analyses during the January 6, 2004 site visit. Sampling of the system effluent air stream will resume during future site visits. Air sample analytical results are presented in **Table 3**.

Field monitoring of the system discharge conducted during the site visit indicated non-detect concentrations of PCE and total VOCs. A summary of the field monitoring and laboratory air discharge monitoring results is presented as **Table 4**.

Conclusions and Recommendations

Based on the data collected from the SVE system during this reporting period, Shaw recommends continued operation of the SVE system at 1 Adams Boulevard. As site conditions change, adjustments will be made to optimize the system operation.

Please do not hesitate to contact me at 518-783-1996 with any questions you might have regarding this report.

Sincerely,
Shaw Environmental, Inc.



John A. Skaarup
Project Engineer

Cc: File

Attachments: Tables
Figures
Appendix A – Site Visit Documentation

TABLES

**TABLE 1
SUMMARY OF SOL VAPOR EXTRACTION SYSTEM READINGS
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY**

| Date | Run Time Meter Reading (hours) | Run Time Since Last Visit (hours) | | Operation Time Since Last Visit (%) | Dilution Valve Position (% Open) | Extraction Well MW-F Valve Position (% Open) | Air Flow at Well (scfm) | Vacuum at Well (inches H2O) | Pre-Dilution PID (ppm) | Pre-Dilution PCE (ppm) | Influent SVE | | | | | Mid GAC | | | | Effluent GAC | | | | |
|------------|--------------------------------|-----------------------------------|--------|-------------------------------------|----------------------------------|--|-------------------------|-----------------------------|------------------------|------------------------|------------------------|---------------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----|
| | | Available | Actual | | | | | | | | Blower Flow (cfm) | Vacuum (inches H2O) | Temp (°F) | PID (ppm) | PCE (ppm) | Flow (cfm) | Temp (°F) | PID (ppm) | PCE (ppm) | Flow (cfm) | Temp (°F) | PID (ppm) | PCE (ppm) | |
| 9/18/2002 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | SVE PILOT TEST STARTUP | | | | | | | | | | | | | |
| 9/30/2002 | 304 | 294 | / | 294 | 100% | 100 | 50 | 34.5 | 5 | 2,000 | 500 | 256 | 25 | 107.2 | 1,015 | -- | 317 | 102.3 | 0 | -- | 290 | 89.5 | 0 | -- |
| 10/14/2002 | 642 | 343 | / | 338 | 99% | 100 | 50 | 38 | 7 | 1,011 | 400 | 258 | 27 | -- | 75.3 | 50 | -- | 0 | -- | -- | -- | 0 | -- | |
| 11/19/2002 | 1508 | 882 | / | 866 | 98% | 100 | 50 | 49 | 12 | 0 | 0 | 120 | 28 | 106 | 0 | 0 | 209 | 92 | 0 | -- | 290 | 80.3 | 0 | -- |
| 12/4/2002 | -- | 368 | / | -- | -- | -- | -- | -- | -- | 77 | 200 | -- | -- | -- | 14.3 | 10 | -- | -- | 15.5 | 10 | -- | -- | 0 | 0 |
| 12/16/2002 | 2153 | 294 | / | 645 | 98% | 100 | 50 | 36.5 | 10 | 560 | 200 | 253 | 28 | 92 | 46.4 | 50 | 302 | 60 | 3.4 | -- | 340 | 53.9 | 0 | -- |
| 1/21/2003 | 3016 | 882 | / | 863 | 98% | 100 | 50 | -- | -- | -- | -- | 70 | 52 | 98 | 0 | 0 | 220 | -- | 0 | -- | 220 | -- | 0 | -- |
| 2/10/2003 | 3496 | 490 | / | 480 | 98% | 100 | 50 | 38 | -- | 639 | 400 | 262 | 27 | 102 | 72 | 50 | 266 | 90 | 26 | 10 | 258 | 83 | 3.2 | 10 |
| 3/18/2003 | 4360 | 882 | / | 864 | 98% | 100 | 50 | 92 | 12 | 125 | 100 | 266 | 25 | 123 | 15 | 10 | 278 | 124 | 0 | 0 | 282 | 117 | 0 | 0 |
| 4/29/2003 | 5359 | 1029 | / | 999 | 97% | 75 | 50 | 75 | 50 | 152 | 50 | 132 | 16 | 118.5 | 48.2 | 25 | 302 | 96 | 18.6 | 10 | 287 | 86 | 0.6 | 0 |
| 5/13/2003 | 5700 | 343 | / | 341 | 99% | 75 | 50 | 78 | -- | 127 | 50 | 239 | 48 | 130 | 41.8 | 50 | 246 | 108 | 46 | 25 | 245 | 97 | 0.6 | 0 |
| 6/30/2003 | 6850 | 1176 | / | 1150 | 98% | 50 | 50 | 115 | 32 | 82.4 | 50 | 140 | 66 | 173 | 36.8 | 50 | 198 | 157 | 25.1 | 25 | 240 | 150 | 29.8 | 100 |
| 7/10/2003 | 6851 | 245 | / | 1 | 0% | 50 | 50 | 99.5 | 25 | 406 | 400 | 151 | 68 | 156 | 221 | 215 | 260 | 76 | 0 | 0 | 222 | 81.9 | 0 | 0 |
| 7/22/2003 | 7144 | 294 | / | 294 | 100% | 50 | 50 | -- | -- | 127 | -- | -- | -- | 168 | 65 | -- | -- | 107 | 0 | -- | -- | 106 | 0 | -- |
| 8/26/2003 | 7957 | 858 | / | 813 | 95% | 50 | 50 | 79 | 13.5 | 137 | 10 | 186 | 65 | 170 | 51.4 | 5 | 291 | -- | 55.4 | 10 | 232 | -- | 35.6 | 10 |
| 9/23/2003 | 8274 | 686 | / | 317 | 46% | 50 | 50 | 218 | 33 | 141 | 15 | 194 | 64 | 160 | 55 | 30 | 254 | 124 | 0 | 0 | 210 | 110 | 0 | 0 |
| 10/21/2003 | 8945 | 686 | / | 671 | 98% | 50 | 50 | 166 | 45 | -- | 20 | 158 | 68 | 166 | 37.5 | 25 | 214 | 130 | 30.7 | 15 | 225 | 112 | 0 | 0 |
| 11/24/2003 | 9749 | 833 | / | 805 | 97% | 50 | 50 | 130 | 46 | 141 | 125 | 178 | 72 | 138 | 261 | 200 | 225 | 52 | 0 | 0 | 205 | 51.4 | 0 | 0 |
| 1/6/2004 | 9750 | 1054 | / | 1 | 0% | 50 | 50 | 98.5 | 74 | 118 | 100 | 164 | 12 | 140 | 247 | 250 | 224 | 48.6 | 0 | 0 | 200 | 48.4 | 0 | 0 |

Notes:
 PID = Total VOC concentration measured with photoionization detector
 ppm = parts per million (volume/volume basis)
 PCE = Tetrachloroethene (PCE) concentration measured with Drager tube of 10-500 ppm range
 scfm = standard cubic feet per minute
 cfm = cubic feet per minute
 Influent SVE = Readings collected between the SVE Blower and the Carbon Units
 Mid GAC = Readings collected between the lead and lag carbon units
 Effluent GAC = Readings collected after the lag carbon unit
 GAC = granular activated carbon unit
 -- = measurement not recorded

TABLE 2
PCE
REMOVAL ESTIMATE
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

| Date | VOC Influent Concentration * (ppmv) | PCE Influent Concentration * (ppmv) | % PCE of Total VOCs | Extraction Well Flow Rate (cfm) | Elapsed Time Since Last Visit (day) | PCE Removal Since Last Visit (lb) | Cumulative PCE Removal (lb) |
|------------|-------------------------------------|-------------------------------------|---------------------|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------|
| 9/18/2002 | SVE PILOT TEST STARTUP | | | | | | |
| 9/30/2002 | 2,000 | 500 | 25.0 | 34.5 | 12 | 126 | 126 |
| 10/14/2002 | 1,011 | 400 | 39.6 | 38 | 14 | 129 | 255 |
| 11/19/2002 | 0 | 0 | -- | 49 | 36 | 116 | 371 |
| 12/16/2002 | 560 | 200 | 35.7 | 36.5 | 27 | 70 | 441 |
| 1/13/2003 | 485 | 400 | 82.5 | 28.5 | 28 | 157 | 597 |
| 1/21/2003 | 0 | 0 | -- | 0 | 8 | 63 | 660 |
| 2/10/2003 | 639 | 400 | 62.6 | 38 | 20 | 65 | 725 |
| 3/5/2003 | 263 | 200 | 76.0 | 24.4 | 23 | 132 | 856 |
| 3/18/2003 | 125 | 100 | 80.0 | 92 | 13 | 77 | 934 |
| 4/29/2003 | 152 | 50 | 32.9 | 75 | 42 | 109 | 1,042 |
| 5/13/2003 | 127 | 50 | 39.4 | 78 | 14 | 65 | 1,107 |
| 6/30/2003 | 82.4 | 50 | 60.7 | 115 | 48 | 91 | 1,198 |
| 7/22/2003 | 406 | 400 | 98.5 | 99.5 | 12 | 416 | 1,615 |
| 8/26/2003 | 137 | 10 | 7.3 | 79 | 35 | 291 | 1,906 |
| 9/23/2003 | 141 | 15 | 10.6 | 218 | 14 | 30 | 1,936 |
| 10/21/2003 | 37.5 | 20 | 53.3 | 166 | 28 | 42 | 1,978 |
| 11/24/2003 | 141 | 125 | 88.7 | 130 | 34 | 179 | 2,157 |
| 1/6/2004 | 118 | 100 | 84.7 | 98.5 | 43 | -- | 2,157 |

Notes:

* = VOC concentrations of 2,000 ppm and PCE concentrations of 500 ppm are greater than the limit of their respective monitoring device and are to be taken as estimations.

$$\text{Removal Rate} = \frac{[(\text{flow}(\text{cfm}) \cdot \text{influent conc.}(\text{ppmv}) \cdot \text{MW} \cdot 12.187) / (273.15 + C)] \cdot 1 \text{ cu. m.} / 35.31 \text{ cu. ft} \cdot 1 \text{g} / 1000 \text{ mg} \cdot 1 \text{ lb} / 453.6 \text{ g} \cdot 60 \text{ min} / \text{hr}}{\text{days of operation}}$$

Where:

- MW = molecular weight
- Molecular weight (MW) of PCE is 165.85
- C = degrees centigrade, assumed to be 25
- lb = pounds
- cfm = cubic feet per minute
- ppmv = parts per million (volume/volume basis)

TABLE 3
AIR SAMPLE ANALYTICAL RESULTS
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY

| SVE Influent Concentration (mg/m3) | | | |
|---|-------------------------------|--------------------------------|------------------------|
| Date | cis-1,2-Dichloroethene | Tetrachloroethene (PCE) | Trichloroethene |
| 9/18/2002 | 5 | 600E | 31 |
| 9/30/2002 | ND (5) | 360E | 23 |
| 10/14/2002 | -- | -- | -- |
| 11/19/2002 | -- | -- | -- |

| VGAC Effluent Concentration (mg/m3) | | | |
|--|-------------------------------|--------------------------------|------------------------|
| Date | cis-1,2-Dichloroethene | Tetrachloroethene (PCE) | Trichloroethene |
| 9/18/2002 | -- | -- | -- |
| 9/30/2002 | -- | -- | -- |
| 10/14/2002 | -- | -- | -- |
| 11/19/2002 | -- | -- | -- |
| 12/16/2002 | ND (5) | ND (5) | ND (5) |
| 1/21/2003 | -- | -- | -- |
| 2/10/2003 | ND (5) | 8 | 6 |
| 3/18/2003 | -- | -- | -- |
| 4/29/2003 | -- | -- | -- |
| 5/13/2003 | ND (1) | 5 | ND (1) |
| 6/30/2003 | -- | -- | -- |
| 7/22/2003 | ND (1) | ND (1) | ND (1) |
| 8/26/2003 | ND (5) | 29 | 3.6 |
| 9/23/2003 | ND (5) | ND (5) | ND (5) |
| 10/21/2003 | ND (5) | ND (5) | ND (5) |
| 11/24/2003 | -- | -- | -- |
| 1/6/2004 | -- | -- | -- |

Notes:

Only compounds that were detected above the method reporting limit were presented above

ND(5) = Not detected above method reporting limit in parenthesis

E = Concentration exceeded calibration range

SVE = Soil vapor extraction

VGAC = vapor-phase granular activated carbon unit

mg/m3 = milligrams per cubic meter

-- = sample not collected

**TABLE 4
AIR DISCHARGE MONITORING
NATIONAL HEATSET PRINTING
1 ADAMS BLVD., FARMINGDALE, NY**

| Date | Field Monitoring | | | | Laboratory Results | | Discharge based on Field Monitoring | | Discharge based on Laboratory Results | | | |
|------------|---------------------------------|--|--|--------------------|--------------------|----------------|--|-------------------------------------|--|-------------------------------------|--|-------------------------------------|
| | System Effluent Flow Rate (cfm) | PCE System Effluent Concentration (ppmv) | System Effluent VOC Concentration (ppmv) | Elapsed Time (day) | PCE (mg/cu m.) | TCE (mg/cu m.) | PCE Discharge Since Last Visit (lb/hr) | PCE Discharge Since Last Visit (lb) | PCE Discharge Since Last Visit (lb/hr) | PCE Discharge Since Last Visit (lb) | TCE Discharge Since Last Visit (lb/hr) | TCE Discharge Since Last Visit (lb) |
| 9/18/2002 | SVE PILOT TEST STARTUP | | | | | | | | | | | |
| 9/30/2002 | 290 | -- | 0 | 12 | -- | -- | -- | -- | -- | -- | -- | -- |
| 10/14/2002 | -- | -- | 0 | 14 | -- | -- | -- | -- | -- | -- | -- | -- |
| 11/19/2002 | 290 | -- | 0 | 36 | -- | -- | -- | -- | -- | -- | -- | -- |
| 12/16/2002 | 340 | -- | 0 | 27 | ND (5) | ND (5) | -- | -- | 0.00 | 0.00 | 0.00 | 0.00 |
| 1/13/2003 | 45 | 0 | -- | 28 | -- | -- | 0.0000 | 0.00 | -- | -- | -- | -- |
| 1/21/2003 | 220 | -- | 0 | 8 | -- | -- | -- | -- | -- | -- | -- | -- |
| 2/10/2003 | 258 | 10 | 3.2 | 20 | 8.0 | 6.0 | 0.0654 | 31.40 | 0.008 | 3.71 | 0.006 | 2.78 |
| 3/5/2003 | 305 | -- | 0 | 23 | -- | -- | -- | -- | -- | -- | -- | -- |
| 3/18/2003 | 282 | 0 | 0 | 13 | -- | -- | 0.0000 | 0.00 | -- | -- | -- | -- |
| 4/29/2003 | 287 | 0 | 0.6 | 42 | -- | -- | 0.0000 | 0.00 | -- | -- | -- | -- |
| 5/13/2003 | 245 | 0 | 0.6 | 14 | 5.0 | ND (1) | 0.0000 | 0.00 | 0.005 | 1.54 | 0.00 | 0.00 |
| 6/30/2003 | 240 | 100 | 29.8 | 48 | -- | -- | 0.3043 | 350.56 | -- | -- | -- | -- |
| 7/22/2003 | 222 | -- | 0 | 12 | ND (1) | ND (1) | -- | -- | 0.00 | 0.00 | 0.00 | 0.00 |
| 8/26/2003 | 232 | 10 | 35.6 | 35 | 29.0 | 3.6 | 0.0588 | 49.42 | 0.025 | 21.17 | 0.003 | 2.63 |
| 9/23/2003 | 210 | 0 | 0 | 28 | ND (5) | ND (5) | 0.0000 | 0.00 | 0.000 | 0.00 | 0.000 | 0.00 |
| 10/21/2003 | 225 | 0 | 0 | 28 | ND (5) | ND (5) | 0.0000 | 0.00 | 0.000 | 0.00 | 0.000 | 0.00 |
| 11/24/2003 | 205 | 0 | 0 | 34 | -- | -- | 0.0000 | 0.00 | -- | -- | -- | -- |
| 1/6/2004 | 200 | 0 | 0 | 43 | -- | -- | 0.0000 | 0.00 | -- | -- | -- | -- |
| Totals: | | | | | | | | 431.38 | | 26.42 | | 5.41 |

Notes:

-- = Measurement not recorded

*: Total VOC Discharge = PCE lab result + TCE lab result

Discharge Rate (Field Monitoring, lb/hr) = [(flow(cfm)*influent conc.(ppmv)*MW*12.187)/(273.15+C)]*1 cu. m./35.31 cu. ft*1g/1000 mg*1 lb/453.6 g*60 min/1 hr

Discharge (lb) = Discharge Rate (lb/hr) * # of days*24hours/day*60 minutes/hr

Discharge Rate (Lab Results, lb/hr) = flow (cfm)*effluent conc. (mg/cu. m.)*1g/1000mg*1lb/453.6g*1cu. m./35.31cu. ft*60min/1 hr

Discharge (lb) = Discharge Rate (mg/cu. m) * # of days*24hours/day*60 minutes/hr

Where:

MW = molec

Molecular weight (MW) of PCE is 165.85, Molecular weight (MW) of TCE is 131.4

C = degrees centigrade, assumed to be 25

cfm = cubic feet per minute

mg/cu. m = milligrams per cubic meter

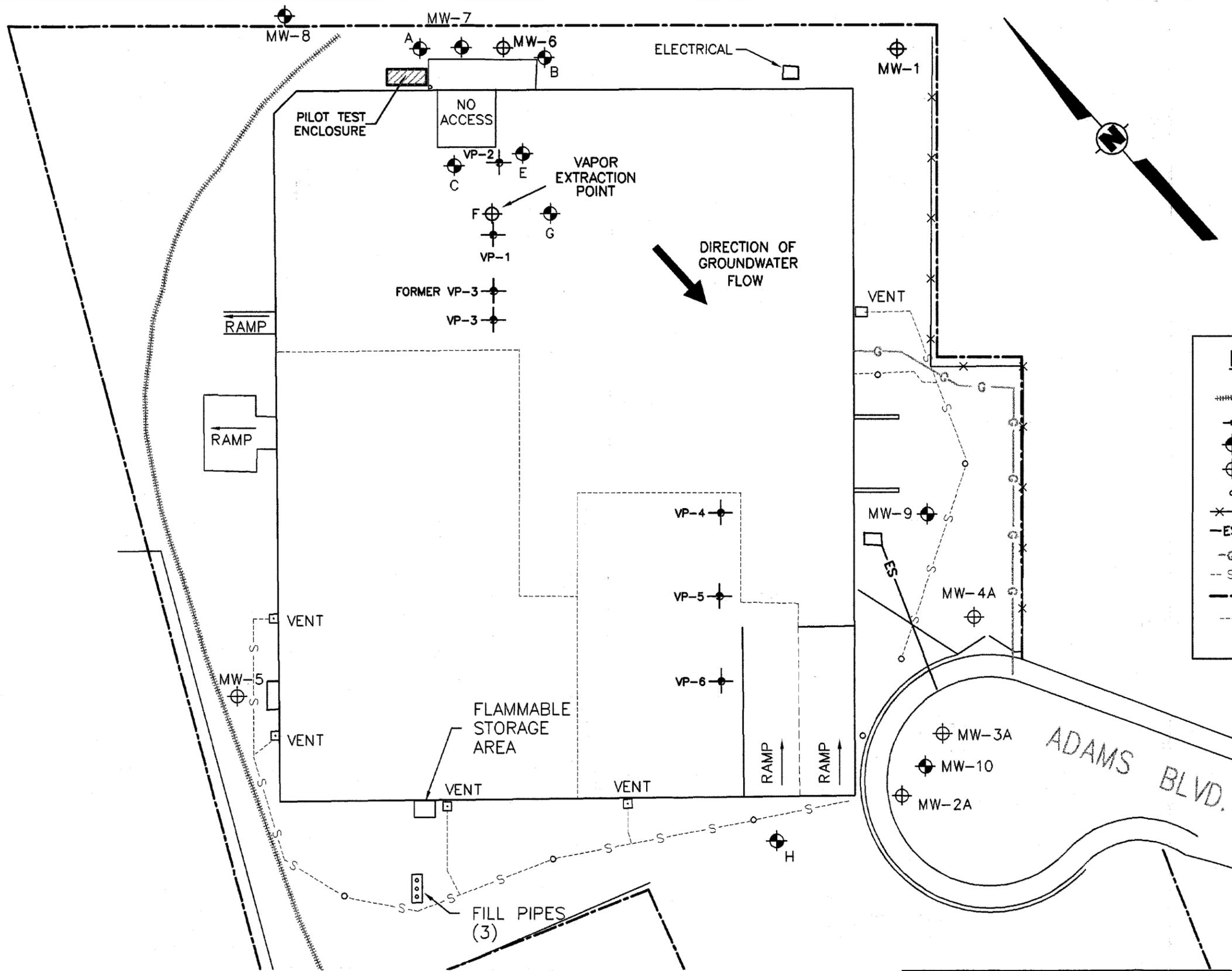
ppmv = parts per million (volume/volume basis)

lb = pounds

hr = hours

| Permit Limit | | |
|--------------|-------|-------|
| | lb/hr | lb/yr |
| PCE | 0.031 | 270 |
| TCE | 0.014 | 120 |

FIGURES



LEGEND:

- ##### TRAIN TRACK
- ⊕ VAPOR MONITORING POINT
- ⊙ DEEP MONITORING WELL (>30')
- ⊕ SHALLOW MONITORING WELL (<30')
- MANHOLE OR ACCESS POINT
- ×× FENCE LINE
- ES- ELECTRIC LINE
- G- GAS LINE
- S- SANITARY SEWER
- PROPERTY LINE
- INTERIOR BUILDING WALL (DIVIDES WAREHOUSE)

FIGURE 1

| | | | | | |
|-------------|------------|--|-------------|----------------------------|--|
| | | NATIONAL HEATSET PRINTING FARMINGDALE, NEW YORK | | | |
| | | SOIL VAPOR EXTRACTION PILOT TEST LOCATION MAP | | | |
| DESIGNED BY | J. SKAARUP | 10/23/02 | CHECKED BY | SAS | |
| DRAWN BY | CA/HMD/SSH | 10/23/02 | APPROVED BY | | |
| SCALE: | AS SHOWN | DRAWING NO. | 802901B35 | SHEET NO. | |
| REV | DATE | BY | CHK'D | APR'VD | |
| | | | | DESCRIPTION/ISSUE | |
| 4 | 6/9/03 | SSH | | UPDATE DRAWING | |
| 3 | 4/17/03 | SSH | | UPDATE DRAWING | |
| 2 | 1/16/03 | SSH | | ADD FORMER VP-3 TO DRAWING | |
| 1 | 12/3/02 | SSH | | UPDATE DRAWING | |
| | | | | REVISION NO. | |
| | | | | 4 | |

APPENDIX A
SITE VISIT DOCUMENTATION

National Heatset Printing

1 Adams Boulevard, Farmingdale, New York

Shaw Environmental, Inc. Job/Task Number 802901/06010000

Personnel: R. Hyde
 Weather: Summary Cool

Time: 12:00
 Date: 1-6-04

System Status:

Arrival: 1145
 Departure: 1400
 Run Timer Reading: 09750.30
 Electric Meter Reading: 4625

System Data:

Extraction Well F Gate Valve: 50 % Open
 Dilution Valve: 50 % Open

Pre-Bleed Air (Extraction Well):

Flow: 98.5 CFM
 Vacuum: 74 "H2O
 PID Reading: 118 PPM
 Draeger Tube: 100 PPM
 Temperature: 47. °F

Post-Bleed Air (SVE Influent):

Flow: 164 CFM
 Vacuum: 12 "H2O
 PID Reading: 247 PPM
 Draeger Tube: 250 PPM
 Temperature: 140 °F

Carbon Monitoring:

Mid: 0.0 PPM 224 CFM 46.6 Temp. (°F) 0 PPM (Drager)
 Effluent: 0.0 PPM 200 CFM 48.4 Temp. (°F) 0 PPM (Drager)

Carbon effluent sample collected & shipped to lab? ND

Knockout Tank Drained? ND
 # Gallons: 0
 Purge water drums on-site: 0

Monitoring Well Gauging / Vapor Point Monitoring:

| Well/V.P. ID: | MW-C | MW-E | MW-F | MW-G | VP-1 | VP-2 | VP-3 | VP-4 | VP-5 | VP-6 |
|---------------|-------|-------|-------|-------|------|------|-------|------|------|------|
| DTW (ft): | 17.15 | 17.20 | 17.00 | 17.40 | 17.4 | DRY | 16.02 | | | |
| Vac. (" H2O): | - | - | - | - | 1.8 | 0.20 | 0 | | | |

Comments:

Upon Arrival Installed new over load system Restated without Incident checked running amps all in check with name plate. Continued with O&M.

Closest Pole with Transformers is PARKING lot in front of Eagle Box offices. METAL # on Pole 13 B 3 TRANSFORMERS. Could not locate Electric meter