



# AMERICAN GEOTECH, INC.

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July 12, 1996

Agency of Natural Resources  
Department of Environmental Conservation  
Waste Management Division - Sites Management Section  
Mr. Jason Feingold  
Project Manager  
103 South Main Street/West Building  
Waterbury, Vermont 05671-0404

WASTE MANAGEMENT DIVISION  
SITES MANAGEMENT SECTION

JUL 16 9 46 AM '96

Re: **Initial Site Investigation Report, Ames Department Store, Route 5, Derby, Vermont; Site #95-1936.**

Dear Mr. Feingold,

American Geotech, Inc. has completed an Initial Site investigation Report for the Ames Department Store, Route 5, Derby, Vermont in accordance with the Scope of Work approved by the Vermont Waste Management Division - Sites Management Section. A copy of the report is included herein.

If you have any questions regarding our report please don't hesitate to call me. Thank you.

Sincerely,

J. Weston Perry  
Senior Hydrogeologist

Enclosures

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STATE OF NEW YORK  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
DIVISION OF WATER

JUL 16 9 46 AM '96

## EXECUTIVE SUMMARY

American Geotech, Inc. (AGI) has completed an Initial Site Investigation Report for the Site known as the Ames Department Store, Route 5, Derby, Vermont in accordance with Vermont Department of Environmental Conservation (VDEC) Site Investigation Guidance Document. This study was conducted in conformance with the Scope of Work (SOW) approved by the Vermont Waste Management Division - Sites Management Section.

J. Weston Perry, Senior Hydrogeologist of American Geotech, Inc. observed the excavation of a 3,000 gallon #2 heating oil Underground Storage Tank (UST) located immediately adjacent to the east side of the water tower located in the front parking area of the Ames Department Store facility in Derby, Vermont on December 4, 1995. The UST was connected to fuel a heating system associated with the store's fire control water tower/sprinkler system. The UST initially failed tightness testing on October 17, 1995 and a second tightness test on November 16, 1995. In response to the Vermont Department of Environmental Conservation Underground Storage Tank Regulations, 8-604 *Corrective Action*, the UST was pumped of product and replaced with an Above ground Storage Tank (AST) on December 1, 1995. Initial estimates indicated the capacity of the UST was 2,050 gallons. However, an inspection of the UST after removal indicated that the tank was 64 inches in diameter and 18 feet 6 inches in length which corresponds to a capacity of approximately 3,090 gallons. The tank was of single wall steel construction and was reportedly 25 years old.

During the removal of the tank an assessment was made by American Geotech, Inc. to determine if contamination was present by field screening soil samples from the excavation. Excavated soil samples were screened for the presence of contamination in the field using standard headspace analysis. The soils directly beneath the tank consisted of a gray-brown silt which exhibited visual and olfactory evidence of petroleum contamination. Groundwater was evident within the excavation (approximately 10 feet in depth). Screening of the soils in the floor and walls of the excavation with a Photo Ionization Device (PID) confirmed the presence of Volatile Organic Compounds (VOC) contamination. Based upon discussions between AGI and Mr. Tim McNamara of the VDEC, contaminated soils were returned to the excavation and the excavation was backfilled. As part of AGI's Site Assessment three test pits were also completed, soil samples were collected and analyzed using a PID.

Test pitting operations conducted in the vicinity of the western side of the UST excavation indicated no petroleum contaminated soils existed in the vicinity of TP-1 and TP-2 (to a depth of 15 feet). Petroleum contaminated soils were found in TP-3. Petroleum contaminated soils in TP-3 were identified at 5 feet and at 10 feet. No contamination was found at 15 feet. The test pit results indicate that the petroleum contaminated soil is constrained to the west between the UST excavation and TP-1 and

TP-2. No test pitting operations could be conducted north, south, or east of the Leaking Underground Storage Tank (LUST) due to cultural encumbrances.

As part of this study AGI installed six monitoring wells; MW-1 through MW-6. MW-1 was installed upgradient to provide background groundwater quality conditions within the aquifer. MW-1 was located at a point which is unaffected by contamination migration from the Underground Storage Tank (UST). MW-4 was placed in the area of the confirmed release to characterize the source area of the suspected plume. The remaining wells were placed at anticipated hydraulically downgradient areas from the former UST location. Actual groundwater flow direction was ascertained by gauging the installed wells.

AGI collected one round of groundwater samples at the Site. No petrochemical contamination was detected in the six wells above the Method Detection Limits (MDLs) for EPA method 8260 and 8270. AGI collected a water sample from the on-Site bedrock well and analyzed the sample for VOCs via EPA method 8020. No VOCs were detected above the Method Detection Limits. Groundwater flow direction is to the east. This groundwater flow direction is what one would expect from the observed topography.

AGI suspects that residual saturation, adsorption and low infiltration rates at the Site have prevented the groundwater (to date) from being impacted from the UST release. AGI also recognizes that groundwater directly beneath the water tower may be contaminated. However, due to the close proximity of the water tower to the UST excavation it was not possible to place a monitoring well directly adjacent to the eastern downgradient side of the excavation.

## 1.0 BACKGROUND

### 1.1 SITE LOCATION AND DESCRIPTION

|                   |   |
|-------------------|---|
| <b>The site:</b>  | Ames Department Store, Fire Control Water Tower and the Lodge Restaurant                  |
| <b>Owner:</b>     | George Haliikas   |
| <b>Size:</b>      | 1.28 ± acres  |
| <b>Zoning:</b>    | Commercial  |
| <b>Utilities:</b> | Municipal Water and On Site Bedrock Well<br>Municipal Sewer<br>Electricity<br>Natural Gas |

The Site is located in Derby, Vermont. A Locus Map and Site Plan are presented as Figures 1 and 2, respectively. The Site is located on the northerly side of Route 5, west of Interstate 91 and is situated in a commercial retail area. The property supports the Lodge Restaurant and the Ames Department Store fire control tower. All structures on and adjacent to property are of masonry block construction. A review of property tax records in the Derby Tax Assessors office indicates that the property upon which the release occurred is not owned by Ames Department Store but by George Halikas, PO BOX 880, Newport VT. The property is serviced by an on-Site bedrock well and municipal water. The bedrock well is located upgradient from the UST release and supplies water to the Lodge Restaurant bathroom and bar area only.

## 1.2 DATA EVALUATION OF SITE INFORMATION AND HISTORY

AGI reviewed Property Tax files, USGS Quadrangle Maps, Code Enforcement Records, and the Vermont Hazardous Waste Sites Active Sites List to obtain information concerning names, addresses, phone numbers of Site owners, Site operators, the Site land owner and adjacent land owners. In addition, inquiries into historical land use, waste storage or disposal areas, and previous hazardous material releases were made for the Site. The table below contains the names, addresses, and phone numbers of Site Owners and adjacent land owners. The property upon which the release occurred is not owned by Ames Department Store but by George Halikas. Records at the Tax Assessors office indicate that the property has been used to support the Ames Department Store fire control water tower for approximately 20 years. Prior to that the property was undeveloped raw land.

| MAP/LOT | ADDRESS  | TELEPHONE NUMBER | OWNER                 |
|---------|--|------------------|-----------------------|
| G4/51   | PO Box 880<br>Newport VT 05855                           | 802-334-6423     | Halikas, George       |
| F4/46   | RR 1, BOX 40<br>Derby, VT 05855                          | 802-766-5505     | Lemay, John           |
| G3/45   | PO Box 34<br>Newport, VT                                 | NA               | Milken, James         |
| G4/47   | HCR 61, Box 24<br>Newport, VT                            | NA               | Marcel, Robert        |
| G4/49   | 2418 Main Street<br>Derby, VT 05855                      | 802-334-6774     | Ames Department Store |
| G4/51   | 17 Monsignor O'Brien Highway<br>East Cambridge, MA 02141 | NA               | Cayte, Raymond        |

*Notes:*

*NA = Not Available at Derby Town office or through Vermont Directory Assistance*

A review of the Vermont Hazardous Waste Sites Active Sites List (dated 04/04/96) indicated that the Site (not including the current investigation) nor any adjacent property has suffered the release of petroleum products, or hazardous wastes or substances. A review of files at the Derby Code Enforcement Office on May 13, 1996 indicated that the property is not subject to any environmental liens or governmental

notifications relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property.

## **2.0 SUBSURFACE INVESTIGATION**

### **2.1 SITE HEALTH AND SAFETY PLAN**

A site specific "Site Safety Plan" was prepared for all Site work by American Geotech, Inc. and/or Subcontractors. The plans detailed various site safety procedures and provided information relative to the various medical facilities, and state and municipal agencies to contact should an emergency or accident occur. The Site Safety Plan was posted at the Site and all personnel were briefed on its contents and availability prior to the initiation of work.

### **2.2 MONITORING WELL INSTALLATION AND SOIL BORING FIELD SCREENING RESULTS**

To further evaluate the extent of groundwater contamination by petrochemicals, Soil Exploration, Inc. (SEI) advanced four borings for the installation of monitoring wells MW-1 through MW-4 on May 14, 1996. However, due to the wet Site conditions SEI's conventional truck mounted hollow stem auger vehicle was not able to advance borings downgradient of the UST. Monitoring wells were installed in the following locations: upgradient of the UST release, in the UST excavation, and on the flanks of the UST excavation. Consequently, the use of a track mounted rig was necessary to allow the installation of two downgradient wells. The remaining two wells MW-5 and MW-6 were installed by Contech, Inc. (CI) on June 12, 1996.

Split spoon samples were recovered for each boring at five foot intervals or change in strata. Soil samples were physically characterized and logged (see Boring Logs, Appendix A). Each split spoon sample was field screened for evidence of petroleum products or other volatile organic compounds (VOCs) with a portable Photo Ionization Detector (PID) using standard head space analysis. Upon completion, each monitoring well was developed by pumping with a Whale Pump® to remove silts and clays, and enhance the hydraulic connection of the well with the surrounding aquifer.

#### Monitoring Well MW-1

Monitoring well MW-1 was installed approximately 110 feet west of the UST excavation. The monitoring well was installed upgradient to provide background groundwater quality conditions within the aquifer. The boring for MW-1 was advanced to 35 feet in attempt to determine if the wet silt layer encountered at approximately 3 feet was indicative of the water table or if the water table at the Site existed at a deeper

depth. Based upon the drilling logs the upper wet silt layer was indicative of a shallow perched water table and thus the well point was set at 12 feet to ensure that the riser screen for the monitoring well straddled the observed water table. Soils encountered in the boring consisted of stiff silt with some fine sand and a trace of gravel from 0 to 22 feet. The soils encountered from 22 to 35 feet consisted of dry, medium dense, fine to coarse sand with a trace of fine gravel and silt. N-values averaged below 7 for the silt and averaged 15 for the dry sand layer. No significant levels of organic vapors were detected in the soil of MW-1 with the PID. After completion MW-1 was developed by pumping the well dry on several occasions. Recovery rates in the well were low.

#### FIELD SCREENING RESULTS OF MW-1

| MONITORING WELL | SAMPLE DEPTH (FT) | RESULT (PPM) |
|-----------------|-------------------|--------------|
| MW-1            | 0-2               | 0.0          |
|                 | 5-7               | 0.0          |
|                 | 10-12             | 0.2          |
|                 | 15-17             | 0.1          |
|                 | 20-22             | 0.0          |
|                 | 25-27             | 0.0          |
|                 | 30-32             | 0.0          |
|                 | 35-37             | 0.0          |

#### Monitoring Well MW-2

Monitoring well MW-2 was installed on the southern flank of the UST excavation. The boring for MW-2 was advanced to 12 feet. No significant levels of organic vapors were detected in the soil of MW-2 with the PID. The boring encountered groundwater at approximately 6 feet below grade. The well point was set at 12 feet below grade. Soils encountered in the boring consisted of stiff silt with some fine sand and a trace of gravel. N-values indicated the overburden is somewhat less dense than that encountered in the boring for MW-1. MW-2 was developed by pumping the well dry on several occasions. The recovery rate in the well was low.

#### FIELD SCREENING RESULTS OF MW-2

| MONITORING WELL | SAMPLE DEPTH (FT) | RESULT (PPM) |
|-----------------|-------------------|--------------|
| MW-2            | 0-2               | 0.3          |
|                 | 5-7               | 0.2          |
|                 | 10-12             | 0.2          |

#### Monitoring Well MW-3

Monitoring well MW-3 was installed on the northern side of the UST excavation. The boring for MW-3 was advanced to 17 feet. No significant organic vapors were measured with the PID. The well point was set at 15 feet. Soils encountered in the boring consisted of stiff silt with some fine sand and a trace of gravel. N-values were

generally below 7 throughout the geologic section. The boring encountered groundwater at approximately 8 feet. The well was developed by pumping the well dry on several occasions.

#### FIELD SCREENING RESULTS OF MW-3

| MONITORING WELL | SAMPLE DEPTH (FT) | RESULT (PPM) |
|-----------------|-------------------|--------------|
| MW-3            | 0-2               | 0.0          |
|                 | 5-7               | 0.6          |
|                 | 10-12             | 0.7          |
|                 | 15-17             | 0.6          |

#### Monitoring Well MW-4

Monitoring well MW-4 was installed in the former UST excavation. The boring for MW-4 was advanced to 12 feet. Organic vapors were detected in the soil of MW-4 with the PID (see table below). The boring intercepted groundwater at approximately 6 feet below grade. The well point was set at 12 feet. Soils encountered in the boring consisted of stiff silt with some fine sand and a trace of gravel. N-values were generally below 3 throughout the geologic section. After completion, the well was developed by pumping the well dry on several occasions. Recovery rates in the well were low.

#### FIELD SCREENING RESULTS OF MW-4

| MONITORING WELL | SAMPLE DEPTH (FT) | RESULT (PPM) |
|-----------------|-------------------|--------------|
| MW-4            | 0-2               | 25.0         |
|                 | 5-7               | 48.0         |
|                 | 10-12             | 3.0          |

#### Monitoring Well MW-5

Monitoring well MW-5 was installed downgradient and east of the UST excavation. The boring for MW-5 was advanced to 17 feet. No organic vapors were detected in the soil of MW-5 with the PID. The boring encountered groundwater at approximately 4 feet below grade. The well point was set at 12.7 feet below grade. Soils encountered in the boring consisted of stiff silt with some fine sand and a trace of gravel. N-values were generally below 3 throughout the geologic section. The well was developed by pumping the well dry on several occasions. The recovery rate in the well was low.

### FIELD SCREENING RESULTS OF MW-5

| MONITORING WELL | SAMPLE DEPTH (FT) | RESULT (PPM) |
|-----------------|-------------------|--------------|
| MW-5            | 0-2               | 0.0          |
|                 | 5-7               | 0.0          |
|                 | 10-12             | 0.0          |
|                 | 15-17             | 0.0          |

#### Monitoring Well MW-6

Monitoring well MW-6 was also installed downgradient and east of the UST excavation and is located north of MW-5. The boring for MW-6 was advanced to 17 feet. No organic vapors were measured with the PID. The well point was set at 13 feet. Soils encountered in the boring consisted of stiff silt with some fine sand and a trace of gravel. N-values were generally below 3 throughout the geologic section. The boring encountered groundwater at approximately 4 feet. The MW-6 was developed by pumping the well dry on several occasions.

### FIELD SCREENING RESULTS OF MW-6

| MONITORING WELL | SAMPLE DEPTH (FT) | RESULT (PPM) |
|-----------------|-------------------|--------------|
| MW-6            | 0-2               | 0.0          |
|                 | 5-7               | 0.0          |
|                 | 10-12             | 0.0          |
|                 | 15-17             | 0.0          |

## 2.3 GROUNDWATER SAMPLING AND ANALYSIS

AGI personnel collected groundwater samples from the six groundwater monitoring wells MW-1 through MW-6 on June 19, 1996. Each groundwater sample was analyzed by Spectrum Analytical, Inc., a Vermont Certified Laboratory, for Volatile Organic Compounds (VOCs), EPA Method 8260 and Polycyclic Aromatic Hydrocarbons (PAH), EPA Method 8270. Spectrum Analytical, Inc. Certificates of Analysis are included as Appendix B. A description of AGI's Standard Groundwater Monitoring Sampling Protocols is included in Appendix C.

Analytical results for the six wells are presented in the table below. Analytical results for groundwater monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6 were below the Method Detection Limits (MDL) for VOCs, and PAH.

## GROUNDWATER ANALYTICAL RESULTS

| <i>SAMPLE ID</i> | <i>PARAMETER</i> | <i>MDL (ppb)</i> | <i>Result (ppb)</i> |
|------------------|------------------|------------------|---------------------|
| MW-1             | VOCs             | Varies           | ND                  |
|                  | PAH              | Varies           | ND                  |
| MW-2             | VOCs             | Varies           | ND                  |
|                  | PAH              | Varies           | ND                  |
| MW-3             | VOCs             | Varies           | ND                  |
|                  | PAH              | Varies           | ND                  |
| MW-4             | VOCs             | Varies           | ND                  |
|                  | PAH              | Varies           | ND                  |
| MW-5             | VOCs             | Varies           | ND                  |
|                  | PAH              | Varies           | ND                  |
| MW-6             | VOCs             | Varies           | ND                  |
|                  | PAH              | Varies           | ND                  |

*Notes:*

*ND = Species not detected above Method Detection Limit (MDL).*

### 2.4 WATER SUPPLY WELL SAMPLING AND ANALYSIS

AGI personnel obtained a water sample from the bedrock well located near the southeast corner of the Lodge Restaurant structure on June 19, 1996. While the bedrock well is located upgradient from the UST excavation AGI believed that it would be prudent to sample the well because bedrock fractures act independently of topography and provide a natural receptor (conduit) for contaminants. The sample (Well) was analyzed for VOCs, EPA Method 8020 by Spectrum Analytical, Inc.. No VOCs were detected above the Method Detection Limits.

## 3.0 SITE GEOLOGY AND HYDROGEOLOGY

### 3.1 SURFICIAL GEOLOGY

The topography of the Site is relatively level to moderately steep. The highest grade is at the west portion of the parcel. The surface grade drops at a moderate to steep grade east of the water tower. Drainage on the Site is controlled by the topography and anthropogenic features such as the pavement grade. Vegetation on the parcel is generally restricted to grasses, weeds, and shrubs. The surficial geology consists of glacial lacustrine deposits. This area was the site of high level melt water from Lake

Memphremagog during the Wisconsin deglaciation (Diver, 1987). AGI's geologist classifies the surficial material as lacustrine silt and sand sediments. Upgradient drainage within 1,000 feet of the Site is generally from the west of the Site.

### 3.2 BEDROCK GEOLOGY

Bedrock at the Site is mapped as the Derby pluton, a syn to post Acadian porphyritic granite of Devonian age. No bedrock outcrops were observed on the Site.

### 3.3 CONCEPTUAL HYDROGEOLOGIC MODEL AND CONTAMINANT TRANSPORT

#### Hydrogeology

A review of AGI's, SEI's and CI's boring logs and hydrogeologic data collected by American Geotech, Inc. indicates that the Site overburden consists of a shallow and deep aquifer system. The shallow perched aquifer exists above and within the upper silt overburden. A second deeper aquifer exists within a coarse sand deposit below the overlying silt aquitard.

AGI measured the water table elevations and surveyed the riser elevations with a Nikon Auto Level in the six monitoring wells on June 19, 1996. Based on the hydraulic head elevations of the six wells, groundwater flow direction appears to be to the east (see Figure 2).

Because slug or pump tests are outside this project scope of work, AGI can only estimate hydraulic parameters for the overburden on the Site. Since the release involved LNAPL, the shallow perched aquifer system is the most likely receptor for contamination. Therefore overburden hydraulic properties were estimated for the silt material only. Groundwater flow velocities were calculated using the average linear velocity equation (Freeze and Cherry, 1979). The equation is as follows:

$$v = - \frac{K}{n} \frac{dh}{dl}$$

where :

$v$  = average linear velocity(ft / day)

$n$  = volumetric porosity

$K$  = hydraulic conductivity(ft / day)

$\frac{dh}{dl}$  = hydraulic gradient(ft / ft)

Based on the Site soil conditions a hydraulic conductivity of 0.1 feet / day was selected for the undisturbed portions of the aquifer with a volumetric porosity of 0.45. The selection of hydraulic conductivity and volumetric porosity was based upon a review of the boring logs and other observations at the Site. Both the conductivity value and the volumetric porosity values were selected from published averages (Freeze and Cherry, 1979). The hydraulic gradient was estimated using the groundwater elevation measurements between MW-1 and MW-6. The horizontal distance between the selected monitoring wells was obtained from Figure 2. The estimated average linear velocity in the aquifer is 0.01 ft /day. It should be noted that this linear velocity is only an estimate (not based upon pumping or slug tests) and that the true average linear velocity in the aquifer may vary significantly.

#### Contaminant Transport and Source Evaluation

AGI suspects that there may be several mechanism/conditions active at the Site that have prevented the groundwater (to date) from having been impacted from the UST release.

AGI presents four possible explanations:

- 1) Residual Saturation.
- 2) Adsorption.
- 3) Low Infiltration Rate.
- 4) Cultural Encumbrances Inhibit Monitoring Well Network.

582  
701  
1050

#### Residual Saturation

The soils contaminated from the UST release remain partially saturated (i.e., soils that have not reached or exceeded residual saturation) with fuel oil. No measurable free product was detected on the water table with an interface probe. This indicates that affected soils above the water table do not contain enough fuel oil to exceed residual saturation levels. Typical oil retention capacities of silt are about 40 liters per cubic meter (l/m<sup>3</sup>) or 8 gallons per cubic yard (g/yd<sup>3</sup>).

The lack of occurrence of fuel oil contamination in the groundwater extracted from monitoring well MW-4, the monitoring well installed in the UST excavation, supports the theory that the soils above the water table do not contain enough fuel oil to

exceed residual saturation levels. Thus it is plausible that little or no fuel oil has reached the water table and the Light Non Aqueous Phase Liquid (LNAPL) is immobile above the capillary zone. This theory is supported by field screening results of split spoon samples from MW-4 for volatile organic compounds with a PID using standard head space analysis. Significant VOC contamination was observed at 0-2 feet, 25 parts per million (ppm) and at 5-7 feet, 48 ppm. However at 10-12 feet only 3 ppm of VOC contamination was detected while no groundwater contamination was detected for the analytes tested above MDLs.

#### Adsorption

The net result of adsorption in petroleum contaminated soils and aquifers is to retard the movement of contaminants. Adsorptive reactions between the soil and LNAPL and/or dissolved contaminants may be preventing contamination from reaching the groundwater. The adsorption process occurs when molecules of free product or contaminants dissolved in water are attached to the surface of an individual soil particle (often in the form of organic carbon). Adsorption is surface phenomenon, its activity is a direct function of the surface area of the solid and electrical forces active on that surface. Most petroleum products are nonionic and thus tend to associate with organic rather than mineral particles in soil. Adsorption is a very important process in transport of LNAPL in sediments containing a high percentage of organic matter (such as the former Memphremagog lake bed). Thus, mass migration of product through the silt layer at the Site would be greatly retarded.

#### Low Infiltration Rate

The silt in and above the area in which the contamination exists has a low permeability. Consequently snow melt and precipitation events would infiltrate and recharge the groundwater at a very low rate. Thus the dissolution and transport of dissolved contaminants from the LNAPL release would be greatly impeded by the overlying silt.

Furthermore, it is well known that the infiltration capacity of silty soils is quite rapid and that during a rainfall when the rate of rainfall exceeds the infiltration capacity the excess water will pond on the soil surface. This ponded water at the Site would then flow over the land as surface streams (i.e. overland flow or Hortonian overflow) and drain to the east down the sloped embankments. Hortonian overflow would reduce the volume of water that could infiltrate in the area of the petroleum release and thus slow the rate at which dissolved contaminants would reach the groundwater.

Cultural Encumbrances Inhibit Monitoring Well Network

It is possible that groundwater directly beneath the water tower may be contaminated. However, due to the close proximity of the water tower to the UST excavation it was not possible to place a monitoring well directly adjacent to the eastern downgradient side of the excavation.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

American Geotech, Inc. has completed a Site Investigation Report, in accordance with the VDEC Site Investigation Guidance Document. Subject to the limitations found in AGI's proposal, and based solely on the Site reconnaissance, governmental agency research, analytical data, and other information included in this report, AGI has found the following facts/conditions:

- No petrochemicals were detected above Method Detection Limits (MDLs) in monitoring wells MW-1 through MW-6;
- Groundwater flow direction appears to be to easterly. This flow direction follows the gradient imposed by the local topography;
- No VOCs were detected above the MDLs for the private water supply well on the Site;
- Estimated groundwater flow velocities are low due to overburden which is predominately composed of a medium stiff low permeability silt, and
- Residual saturation, adsorption and low infiltration rates at the Site have thus far prevented the groundwater from being adversely impacted by petroleum release. AGI recognizes that the groundwater directly beneath the water tower may be contaminated. However, due to the close proximity of the water tower to the UST excavation it was not possible to place a monitoring well directly adjacent to the eastern downgradient side of the excavation.

*Based upon the above facts/conditions AGI recommends the following:*

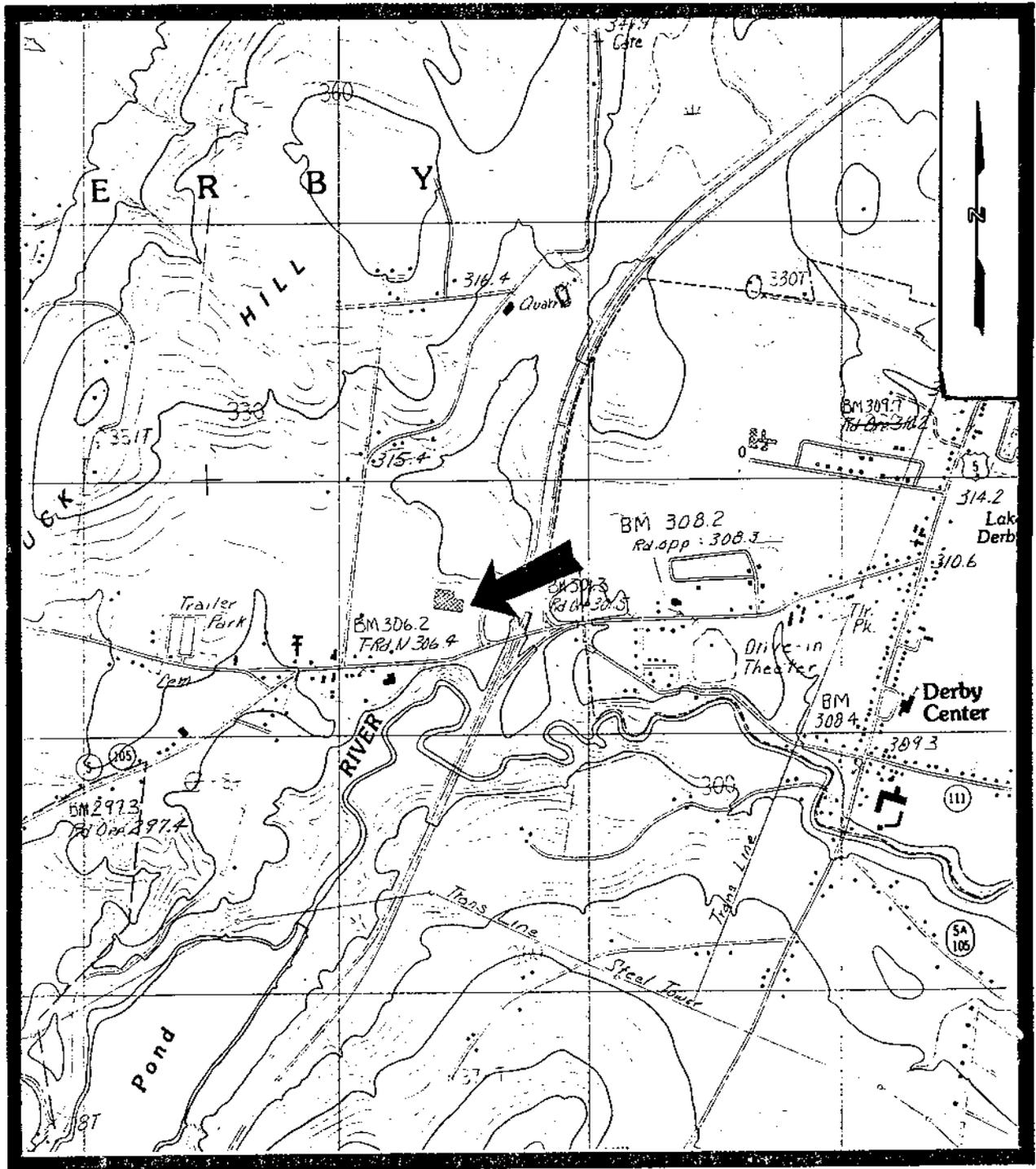
- No further investigations.

AMERICAN GEOTECH, INC.



J. Weston Perry  
Senior Hydrogeologist

**FIGURES**

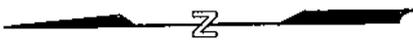
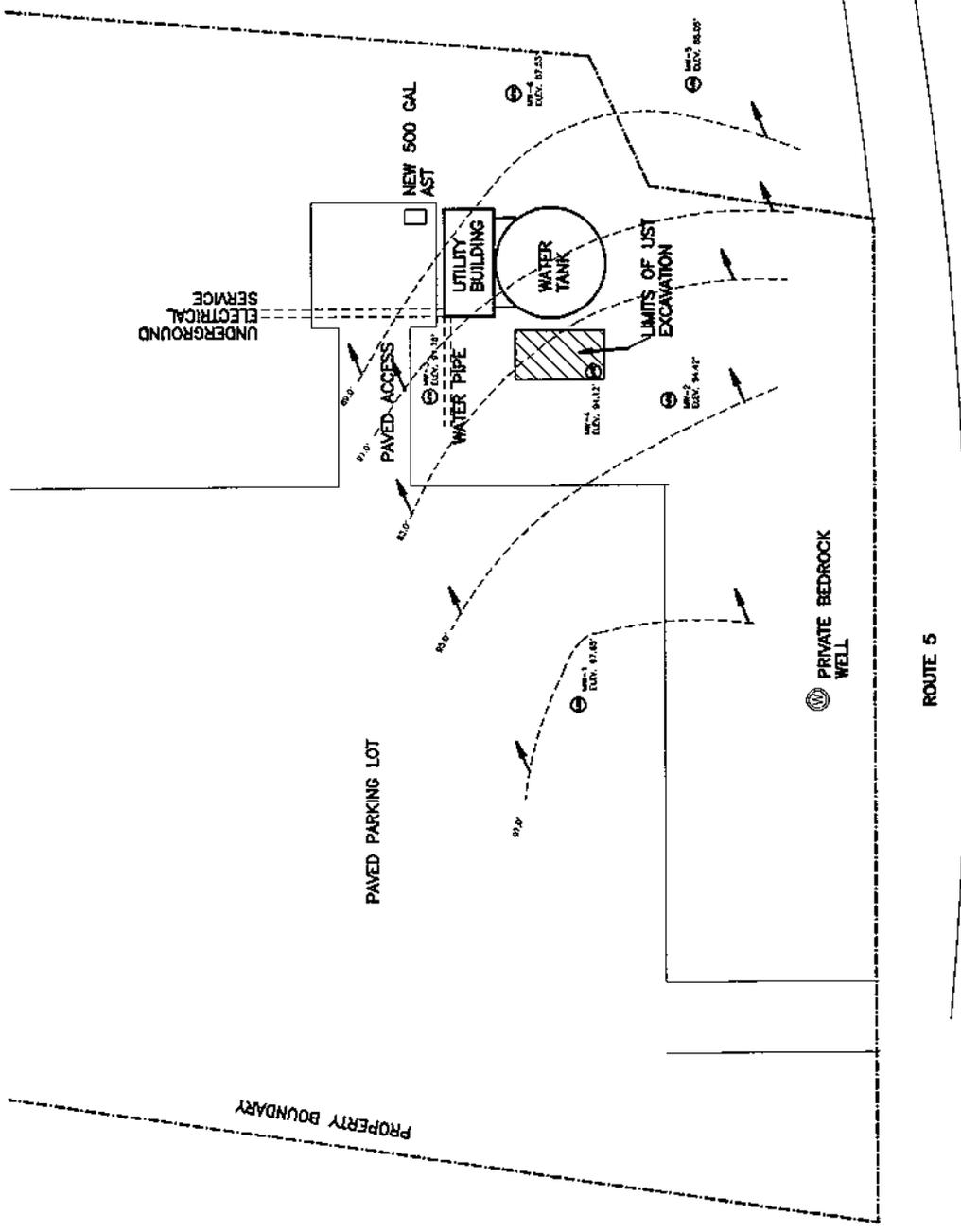


**FIGURE 1, SITE MAP**

Base map adapted from U.S.G.S. 7.5 Minute Series Newport, VT, 1986  
 Base map original scale is 1:24,000

SITE LOCATION:  
 Ames Department Store  
 Route 5  
 Derby, Vermont

1 INCH ON THE MAP REPRESENTS 2000 FEET ON THE GROUND  
 CONTOUR INTERVAL IS 6 METERS



SCALE IS APPROX. 1"=50'

|   |                                   |
|---|-----------------------------------|
| <b>AMERICAN GEOTECH, INC.</b><br>11 SURREY COACH LN.<br>BOW, NH 03304 |                                   |
| GAUGING DATE: 6/19/96<br>DESIGNED: JAB                                | DATE: 7/9/96<br>ACAD FILE: 9646P2 |
| INITIAL SITE INVESTIGATION  |                                   |
| DETAILED: JWP<br>CLIENT: AMES DEPARTMENT STORE                        | PROJECT NO.: 96-46-P2             |
| CHECKED: JWP<br>LOCATION: ROUTE 5 DERBY, VT                           | FIGURE: 2                         |

**LEGEND**

- ⊕ MONITORING WELL
- GROUND WATER CONTOUR WITH DIRECTION OF FLOW

**APPENDIX A  
BORING LOGS**



148 Pioneer Dr.  
Leominster, MA 01453  
(508) 840-0391

**SOIL EXPLORATION CORPORATION**  
Geotechnical Drilling and Groundwater Monitor Wells

5 Monson Place  
Milford, NH 03055  
(603) 672-2135

Client **American Geotech Inc.** Date **5/17/96** Job No. **96-0528**

Location **American Shopping Plaza, Derby Vermont**

BORING NO. **MW-1** Ground Elev. \_\_\_\_\_ Date Start **5/14/96** Date Complete **5/14/96** Drilling Foreman **DL** Eng./Hydrol. Geologist \_\_\_\_\_

| DEPTH<br>H | Sample Data |                    |                      |             | Soil and/or bedrock strata descriptions |                     |   |
|------------|-------------|--------------------|----------------------|-------------|---|---------------------|---|
|            | No.         | Sample Depth (ft.) | Blows 6" Penetration | Rec. inches | Casing Blows Per ft.                    | Strata Change Depth | Visual Identification of Soil and/or Rock Strata  |
|            |             |                    |                      |             |   |                     |   |
|            | 1           | 0'0"-2'0"          | 4-8-11-10            |             |   |                     | Dry, medium dense, FINE TO COARSE SAND, trace inorganic silt.                             |
| 5          | 2           | 5'0"-7'0"          | 3-4-5-6              |             |   | 3'0"                | Wet, stiff SILT, some fine sand, trace fine gravel.                                       |
| 10         | 3           | 10'0"-12'0"        | 8-5-8-9              |             |   |                     |   |
| 15         | 4           | 15'0"-17'0"        | 5-6-9-9              |             |   |                     |   |
| 20         | 5           | 20'0"-22'0"        | 10-11-20-15          |             |   | 19'0"               | Dry, hard SILT, trace fine sand, trace clay.  |
| 25         | 6           | 25'0"-27'0"        | 18-18-23-22          |             |   | 22'0"               | Dry, medium dense, FINE TO COARSE SAND, trace fine gravel, trace inorganic silt.          |
| 30         | 7           | 30'0"-32'0"        | 10-11-13-13          |             |   |                     |   |
| 35         | 8           | 35'0"-37'0"        | 9-11-12-11           |             |   |                     |   |
| 40         |             |                    |                      |             |   | 37'0"               | End of Boring at 37'0"<br>Water level at 5'0" upon completion.<br>Set well point at 12'0" |

Type of Boring \_\_\_\_\_ Casing Size: \_\_\_\_\_ Hollow Stem Auger Size: \_\_\_\_\_

|  |  |   |
|--|--|---|
| <b>Proportion Percentages</b><br>Trace 0 to 10%<br>Some 10 to 40%<br>And 40 to 50% | <b>Granular Soils (blows per ft.)</b><br>0 to 4 Very Loose      30 to 50 Dense<br>4 to 10 Loose          Over 50 Very Dense<br>10 to 30 Medium Dense                     | <b>Cohesive Soils (blows per ft.)</b><br>0 to 2 Very Soft      8 to 15 Stiff<br>2 to 4 Soft              15 to 30 Very Stiff<br>4 to 8 Medium Stiff    Over 30 Hard |
|  | Standard penetration test (SPT) = 140# hammer falling 30"<br>Blows are per 6" taken with an 18" long x 2" O.D. x 1 3/8" I.D. split spoon sampler unless otherwise noted. |   |

The terms and percentages used to describe soil and or rock are based on visual identification of the retrieved samples. ■ Moisture content indicated may be affected by time of year and water added during the drilling process. ■ Water levels indicated may vary with seasonal fluctuation and the degree of soil saturation when the boring was taken. ■ The stratification lines represent the approximate boundaries between soil types, the actual transitions may be gradual. ■



148 Pioneer Dr.  
Leominster, MA 01453  
(508) 840-0391

**SOIL EXPLORATION CORPORATION**  
Geotechnical Drilling and Groundwater Monitor Wells

5 Monson Place  
Milford, NH 03055  
(603) 672-2135

Client **American Geotech Inc.** Date **5/17/96** Job No. **96-0528**

Location **American Shopping Plaza Derby Vermont**

BORING NO. **MW-2** Ground Elev.  Date Start **5/14/96** Date Complete **5/14/96** Drilling Foreman **ML** Eng./Hydrol. Geologist

| DEPTH | Sample Data |                    |                      |             |                      | Soil and/or bedrock strata descriptions |   |
|-------|-------------|--------------------|----------------------|-------------|----------------------|---|---|
|       | No.         | Sample Depth (ft.) | Blows 6" Penetration | Rec. Inches | Casing Blows Per ft. | Strata Change Depth                     | Visual Identification of Soil and/or Rock Strata  |
|       |             |                    |                      |             |                      |   |   |
|       | 1           | 0'0"-2'0"          | 2-3-3-3              |             |                      |   | Wet, loose FINE TO COARSE SAND, trace inorganic silt.                                     |
| 5     | 2           | 5'0"-7'0"          | 4-4-5-5              |             |                      | 4'0"                                    | Wet, medium stiff, SILT, little fine sand.  |
| 10    | 3           | 10'0"-12'0"        | 3-5-3-3              |             |                      |   |   |
| 15    |             |                    |                      |             |                      | 12'0"                                   | End of Boring at 12'0"<br>Water level at 2'0" upon completion.<br>Set well point at 12'0" |
| 20    |             |                    |                      |             |                      |   |   |
| 25    |             |                    |                      |             |                      |   |   |
| 30    |             |                    |                      |             |                      |   |   |
| 35    |             |                    |                      |             |                      |   |   |
| 40    |             |                    |                      |             |                      |   |   |

Type of Boring **Casing Size:** Hollow Stem Auger Size:

|  |  |  |   |  |
|--|--|--|---|--|
| <b>Proportion Percentages</b><br>Trace 0 to 10%<br>Some 10 to 40%<br>And 40 to 50% | <b>Granular Soils (blows per ft.)</b><br>0 to 4 Very Loose      30 to 50 Dense<br>4 to 10 Loose          Over 50 Very Dense<br>10 to 30 Medium Dense                     |  | <b>Cohesive Soils (blows per ft.)</b><br>0 to 2 Very Soft      8 to 15 Stiff<br>2 to 4 Soft            15 to 30 Very Stiff<br>4 to 8 Medium Stiff    Over 30 Hard |  |
|  | Standard penetration test (SPT) = 140# hammer falling 30"<br>Blows are per 6" taken with an 18" long x 2" O.D. x 1 3/8" I.D. split spoon sampler unless otherwise noted. |  |   |  |

The terms and percentages used to describe soil and or rock are based on visual identification of the retrieved samples. ■ Moisture content indicated may be affected by time of year and water added during the drilling process. ■ Water levels indicated may vary with seasonal fluctuation and the degree of soil saturation when the boring was taken. ■ The stratification lines represent the approximate boundaries between soil types, the actual transitions may be gradual. ■



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Geotechnical Drilling and Groundwater Monitor Wells

5 Monson Place  
Milford, NH 03055  
(603) 672-2135

Client **American Geotech Inc.** Date **5/17/96** Job No. **96-0528**

Location **American Shopping Plaza, Derby Vermont**

BORING NO. **MW-3** Ground Elev.  Date Start **5/14/96** Date Complete **5/14/96** Drilling Foreman **ML** Eng./Hydrol. Geologist

| DEPTH | Sample Data |                    |                      |             |                      | Soil and/or bedrock strata descriptions |   |
|-------|-------------|--------------------|----------------------|-------------|----------------------|---|---|
|       | No.         | Sample Depth (ft.) | Blows 6" Penetration | Rec. Inches | Casing Blows Per ft. | Strata Change Depth                     | Visual Identification of Soil and/or Rock Strata  |
|       |             |                    |                      |             |                      |   |   |
|       | 1           | 0'0"-2'0"          | 3-3-4-4              |             |                      |   | Moist loose, FINE TO COARSE SAND, trace inorganic silt.                                   |
| 5     | 2           | 5'0"-7'0"          | 3-3-5-3              |             |                      | 3'0"                                    | Wet, stiff SILT, trace fine sand.   |
| 10    | 3           | 10'0"-12'0"        | 3-6-3-3              |             |                      |   |   |
| 15    | 4           | 15'0" 17'0"        | 7-6-7-9              |             |                      |   |   |
| 20    |             |                    |                      |             |                      | 17'0"                                   | End of Boring at 17'0"<br>Water level at 3'0" upon completion.<br>Set well point at 15'0" |
| 25    |             |                    |                      |             |                      |   |   |
| 30    |             |                    |                      |             |                      |   |   |
| 35    |             |                    |                      |             |                      |   |   |
| 40    |             |                    |                      |             |                      |   |   |

Type of Boring  Casing Size:  Hollow Stem Auger Size:

|  |  |   |
|--|--|---|
| <b>Proportion Percentages</b><br>Trace 0 to 10%<br>Some 10 to 40%<br>And 40 to 50% | <b>Granular Soils (blows per ft.)</b><br>0 to 4 Very Loose      30 to 50 Dense<br>4 to 10 Loose          Over 50 Very Dense<br>10 to 30 Medium Dense | <b>Cohesive Soils (blows per ft.)</b><br>0 to 2 Very Soft      8 to 15 Stiff<br>2 to 4 Soft            15 to 30 Very Stiff<br>4 to 8 Medium Stiff    Over 30 Hard |
|--|--|---|

Standard penetration test (SPT) = 140# hammer falling 30"  
Blows are per 6" taken with an 18" long x 2" O.D. x 1 3/8" I.D. split spoon sampler unless otherwise noted.

The terms and percentages used to describe soil and or rock are based on visual identification of the retrieved samples. ■ Moisture content indicated may be affected by time of year and water added during the drilling process. ■ Water levels indicated may vary with seasonal fluctuation and the degree of soil saturation when the boring was taken. ■ The stratification lines represent the approximate boundaries between soil types, the actual transitions may be gradual. ■



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Leominster, MA 01453  
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# SOIL EXPLORATION CORPORATION

Geotechnical Drilling and Groundwater Monitor Wells

5 Monson Place  
Milford, NH 03055  
(603) 672-2135

Client **American Geotech Inc.** Date **5/17/96** Job No. **96-0528**

Location **American Shopping Plaza Derby Vermont**

**BORING NO.** MW-4 **Ground Elev.** **Date Start** 5/14/96 **Date Complete** 5/14/96 **Drilling Foreman** ML **Eng./Hydrol. Geologist**

| DEPTH | Sample Data |                    |                      |             | Soil and/or bedrock strata descriptions |                     |   |
|-------|-------------|--------------------|----------------------|-------------|---|---------------------|---|
|       | No.         | Sample Depth (ft.) | Blows 6" Penetration | Rec. Inches | Casing Blows Per ft.                    | Strata Change Depth | Visual Identification of Soil and/or Rock Strata  |
|       |             |                    |                      |             |   |                     |   |
| 5     | 1           | 0'0"-2'0"          | 2-3-2-2              |             |   |                     | Wet, soft, SILT, trace fine sand, (fill).   |
|       |             |                    |                      |             |   |                     |   |
|       | 2           | 5'0"-7'0"          | 3-4-3-2              |             |   |                     |   |
| 10    |             |                    |                      |             |   |                     | End of Boring at 12'0"<br>Water level at 1'0" upon completion.<br>Set well point at 12'0" |
|       | 3           | 10'0"-12'0"        | 1-2-2-1              |             |   |                     |   |
| 15    |             |                    |                      |             |   |                     |   |
|       |             |                    |                      |             |   |                     |   |
| 20    |             |                    |                      |             |   |                     |   |
|       |             |                    |                      |             |   |                     |   |
| 25    |             |                    |                      |             |   |                     |   |
|       |             |                    |                      |             |   |                     |   |
| 30    |             |                    |                      |             |   |                     |   |
|       |             |                    |                      |             |   |                     |   |
| 35    |             |                    |                      |             |   |                     |   |
|       |             |                    |                      |             |   |                     |   |
| 40    |             |                    |                      |             |   |                     |   |

Type of Boring **Casing Size:** **Hollow Stem Auger Size:**

|  |  |   |
|--|--|---|
| <p><b>Proportion Percentages</b><br/>Trace 0 to 10%<br/>Some 10 to 40%<br/>And 40 to 50%</p>   | <p><b>Granular Soils (blows per ft.)</b><br/>0 to 4 Very Loose      30 to 50 Dense<br/>4 to 10 Loose          Over 50 Very Dense<br/>10 to 30 Medium Dense</p> | <p><b>Cohesive Soils (blows per ft.)</b><br/>0 to 2 Very Soft      8 to 15 Stiff<br/>2 to 4 Soft            15 to 30 Very Stiff<br/>4 to 8 Medium Stiff    Over 30 Hard</p> |
| <p>Standard penetration test (SPT) = 140# hammer falling 30"<br/>Blows are per 6" taken with an 18" long x 2" O.D. x 1 3/8" I.D. split spoon sampler unless otherwise noted.</p> |  |   |

The terms and percentages used to describe soil and or rock are based on visual identification of the retrieved samples. ■ Moisture content indicated may be affected by time of year and water added during the drilling process. ■ Water levels indicated may vary with seasonal fluctuation and the degree of soil saturation when the boring was taken. ■ The stratification lines represent the approximate boundaries between soil types, the actual transitions may be gradual. ■

**CON-TEC, INC. TEST BORING LOG**

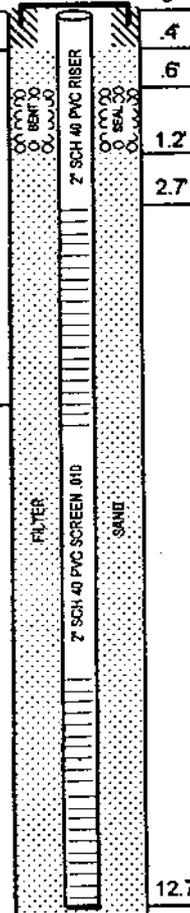
PROJECT: **AMES PLAZA**  
 LOCATION: **DERBY, VERMONT**

JOB NO. 9649  
 HOLE NO. MW-5  
 SHEET 1 OF 1  
 START DATE 6/12/96  
 FINISH DATE 6/12/96  
 DRILLER R.S. McGlashan  
 HELPER W. Hoeckele  
 INSPECTOR Wes Perry

| TYPE        | CASING | SAMPLE | CORE | GROUNDWATER |        | DEPTH TO |                  |                |
|-------------|--------|--------|------|-------------|--------|----------|------------------|----------------|
|             |        |        |      | DATE        | TIME   | WATER    | BOTTOM OF CASING | BOTTOM OF HOLE |
| SIZE ID     | 4 1/4" | 1 1/2" |      | 6/12/96     | 3 p.m. | 4.5'     | 12.6'            |                |
| HAMMER WT.  |        | 140    |      |             |        |          |                  |                |
| HAMMER FALL |        | 30'    |      |             |        |          |                  |                |

| DEPTH IN FEET | CASING BLOWS PER FOOT | SAMP. NO. | SAMPLE DEPTH | SAMPLE BLOWS PER 6 INCHES | RECDY. | SOIL DESCRIPTION | WELL DETAILS |
|---------------|-----------------------|-----------|--------------|---------------------------|--------|------------------|--------------|
|---------------|-----------------------|-----------|--------------|---------------------------|--------|------------------|--------------|

| DEPTH IN FEET | CASING BLOWS PER FOOT | SAMP. NO. | SAMPLE DEPTH | SAMPLE BLOWS PER 6 INCHES | RECDY. | SOIL DESCRIPTION   | WELL DETAILS |
|---------------|-----------------------|-----------|--------------|---------------------------|--------|--|--------------|
| 0             |                       |           |              |                           |        |  |              |
| 0             |                       | 1         | 0-2          | 1                         |        | TOPSOIL  | 0            |
|               |                       |           |              | 2                         |        | Dark brown, dry, stiff SILT, trace fine sand   | 4            |
|               |                       |           |              | 9                         |        |  | 6            |
|               |                       |           |              | 10                        |        |  | 1.2          |
| 2.5           |                       |           |              |                           |        |  | 2.7          |
| 5.0           |                       |           |              |                           |        |  |              |
| 5.0           |                       | 2         | 5-7          | 3                         |        | Dark brown, wet, medium stiff SILT, trace f/m/c sand                                 |              |
|               |                       |           |              | 3                         |        |  |              |
|               |                       |           |              | 3                         |        |  |              |
|               |                       |           |              | 2                         |        |  |              |
| 7.5           |                       |           |              |                           |        |  |              |
| 10.0          |                       |           |              |                           |        |  |              |
| 10.0          |                       | 3         | 10-12        | 3                         |        |  |              |
|               |                       |           |              | 4                         |        |  |              |
|               |                       |           |              | 8                         |        |  |              |
|               |                       |           |              | 12                        |        |  |              |
| 12.5          |                       |           |              |                           |        | Gray, wet, medium dense SILT, trace embedded f/m/c sand, trace embedded f/m/c gravel | 12.7         |
| 15.0          |                       |           |              |                           |        |  |              |
| 15.0          |                       | 4         | 15-17        | 13                        |        |  |              |
|               |                       |           |              | 12                        |        |  |              |
|               |                       |           |              | 13                        |        |  |              |
|               |                       |           |              | 23                        |        |  |              |
| 17.5          |                       |           |              |                           |        | NOTE: Typed driller's field log.   |              |
|               |                       |           |              |                           |        | BOTTOM OF BORING   | 17.0         |



# CON-TEC, INC. TEST BORING LOG

PROJECT: AMES PLAZA  
 LOCATION: DERBY, VERMONT

JOB NO. 9649  
 HOLE NO. MW-6  
 SHEET 1 OF 1  
 START DATE 6/12/96  
 FINISH DATE 6/12/96  
 DRILLER R.S. McGlashan  
 HELPER W. Hoeckle  
 INSPECTOR Wes Perry

| TYPE        | CASING | SAMPLE | CORE | GROUNDWATER |        | DEPTH TO |                  |                |
|-------------|--------|--------|------|-------------|--------|----------|------------------|----------------|
|             |        |        |      | DATE        | TIME   | WATER    | BOTTOM OF CASING | BOTTOM OF HOLE |
| SIZE ID     | 4 1/4" | 1 1/2" |      | 6/12/96     | 3 p.m. | 11.7'    | 12.9'            |                |
| HAMMER WT.  |        | 140    |      |             |        |          |                  |                |
| HAMMER FALL |        | 30"    |      |             |        |          |                  |                |

| DEPTH IN FEET | CASING BLOWS PER FOOT | SAMP. NO. | SAMPLE DEPTH | SAMPLE BLOWS PER 8 INCHES | RECOR | SOIL DESCRIPTION | WELL DETAILS |
|---------------|-----------------------|-----------|--------------|---------------------------|-------|------------------|--------------|
|---------------|-----------------------|-----------|--------------|---------------------------|-------|------------------|--------------|

|       |  |   |        |                     |  |  |                          |
|-------|--|---|--------|---------------------|--|--|--------------------------|
| 2.5'  |  | 1 | 0-2'   | 1<br>2<br>2<br>2    |  | TOPSOIL<br>Brown, dry, soft SILT, trace f/m/c sand                                       | 1.0'<br>5'<br>15'<br>30' |
| 5.0'  |  |   |        |                     |  | Brown, wet, medium stiff SILT, trace fine sand   | 4.0'                     |
| 7.5'  |  | 2 | 5-7'   | 3<br>3<br>4<br>3    |  | Gray, wet, stiff SILT, little to trace embedded f/m/c sand, trace embedded, f/m/c gravel | 7.0'                     |
| 10.0' |  |   |        |                     |  |  |                          |
| 12.5' |  | 3 | 10-12' | 5<br>7<br>10<br>15  |  |  |                          |
| 15.0' |  | 4 | 13-15' | 9<br>11<br>12<br>16 |  |  | 13.0'                    |
|       |  |   |        |                     |  | BOTTOM OF BORING   | 15.0'                    |

NOTE: Typed driller's field log.

**APPENDIX B**  
**CERTIFICATES OF ANALYSIS FOR GROUNDWATER**



**SPECTRUM ANALYTICAL, INC.**

Massachusetts Certification M-MA 138  
Connecticut Approval # PH0777  
Rhode Island # 98 & Maine # n/a  
New Hampshire ID#253893  
New York ID#11393  
Florida HRS87448

*American Geotech, Inc.  
11 Surrey Coach Lane  
Bow, NH 03304*

*June 27, 1996*

*Attn: Wes Perry*

Client Project No.: 96-46-P2

Location: Derby, VT

| <u>Lab ID No.</u> | <u>Client ID</u> | <u>Analysis Requested</u>             |
|-------------------|------------------|---------------------------------------|
| AA55285           | MW-1             | C95-EPA 8240/624<br>C101/102-EPA 8270 |
| AA55286           | MW-2             | C95-EPA 8240/624<br>C101/102-EPA 8270 |
| AA55287           | MW-3             | C95-EPA 8240/624<br>C101/102-EPA 8270 |
| AA55288           | MW-4             | C95-EPA 8240/624<br>C101/102-EPA 8270 |
| AA55289           | MW-5             | C95-EPA 8240/624<br>C101/102-EPA 8270 |
| AA55290           | MW-6             | C95-EPA 8240/624<br>C101/102-EPA 8270 |
| AA55291           | TRIPBLNK         | C95-EPA 8240/624                      |
| AA55292           | WELL             | C93-EPA 602                           |

Authorized by

Hanibal Tayeh  
President/Laboratory Director

ENVIRONMENTAL ANALYSES

# SPECTRUM ANALYTICAL, INC.

## Laboratory Report

Client ID: MW-1  
Lab ID No: AA55285

Location: Derby, VT  
Client Job No.: 96-46-P2

Matrix: Water  
Sampled on 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration, HCl  
Container : 2 VOA Vials  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

### Volatile Organics

EPA Methods 624 / 8240

| Parameter                     | Result (in ug/L) | MDL | Analyzed | Analyst |
|-------------------------------|------------------|-----|----------|---------|
| Benzene                       | Not detected     | 1   | 06/26/96 | CH      |
| Bromodichloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| Bromomethane                  | Not detected     | 1   | 06/26/96 | CH      |
| Bromoform                     | Not detected     | 1   | 06/26/96 | CH      |
| Carbon tetrachloride          | Not detected     | 1   | 06/26/96 | CH      |
| Chlorobenzene                 | Not detected     | 1   | 06/26/96 | CH      |
| Chloroethane                  | Not detected     | 5   | 06/26/96 | CH      |
| Chloroform                    | Not detected     | 1   | 06/26/96 | CH      |
| Chloromethane                 | Not detected     | 5   | 06/26/96 | CH      |
| Dibromochloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,3-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,4-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethene            | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,2-Dichloroethene      | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloropropane           | Not detected     | 1   | 06/26/96 | CH      |
| cis-1,3-Dichloropropene       | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,3-Dichloropropene     | Not detected     | 1   | 06/26/96 | CH      |
| Ethylbenzene                  | Not detected     | 1   | 06/26/96 | CH      |
| Methylene chloride            | Not detected     | 2.5 | 06/26/96 | CH      |
| 1,1,2,2-Tetrachloroethane     | Not detected     | 1   | 06/26/96 | CH      |
| Tetrachloroethene             | Not detected     | 1   | 06/26/96 | CH      |
| Toluene                       | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,1-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,2-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| Trichloroethene               | Not detected     | 1   | 06/26/96 | CH      |
| Trichlorofluoromethane        | Not detected     | 1   | 06/26/96 | CH      |
| m,p-Xylenes                   | Not detected     | 2   | 06/26/96 | CH      |
| o-Xylene                      | Not detected     | 1   | 06/26/96 | CH      |
| Vinyl chloride                | Not detected     | 1   | 06/26/96 | CH      |
| Methyl-t-butyl ether          | Not detected     | 1   | 06/26/96 | CH      |
| BFB Surrogate Recovery (%)    | 101              |     | 06/26/96 | CH      |
| p-DFB Surrogate Recovery (%)  | 100              |     | 06/26/96 | CH      |
| CLB-d5 Surrogate Recovery (%) | 108              |     | 06/26/96 | CH      |

# SPECTRUM ANALYTICAL, INC.

## Laboratory Report

Client ID: MW-2  
Lab ID No: AA55286

Location: Derby, VT  
Client Job No.: 96-46-P2

Matrix: Water  
Sampled on 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration, HCl  
Container : 2 VOA Vials  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

### Volatile Organics

EPA Methods 624 / 8240

| Parameter                     | Result (in ug/L) | MDL | Analyzed | Analyst |
|-------------------------------|------------------|-----|----------|---------|
| Benzene                       | Not detected     | 1   | 06/26/96 | CH      |
| Bromodichloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| Bromomethane                  | Not detected     | 1   | 06/26/96 | CH      |
| Bromoform                     | Not detected     | 1   | 06/26/96 | CH      |
| Carbon tetrachloride          | Not detected     | 1   | 06/26/96 | CH      |
| Chlorobenzene                 | Not detected     | 1   | 06/26/96 | CH      |
| Chloroethane                  | Not detected     | 5   | 06/26/96 | CH      |
| Chloroform                    | Not detected     | 1   | 06/26/96 | CH      |
| Chloromethane                 | Not detected     | 5   | 06/26/96 | CH      |
| Dibromochloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,3-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,4-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethene            | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,2-Dichloroethene      | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloropropane           | Not detected     | 1   | 06/26/96 | CH      |
| cis-1,3-Dichloropropene       | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,3-Dichloropropene     | Not detected     | 1   | 06/26/96 | CH      |
| Ethylbenzene                  | Not detected     | 1   | 06/26/96 | CH      |
| Methylene chloride            | Not detected     | 2.5 | 06/26/96 | CH      |
| 1,1,2,2-Tetrachloroethane     | Not detected     | 1   | 06/26/96 | CH      |
| Tetrachloroethene             | Not detected     | 1   | 06/26/96 | CH      |
| Toluene                       | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,1-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,2-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| Trichloroethene               | Not detected     | 1   | 06/26/96 | CH      |
| Trichlorofluoromethane        | Not detected     | 1   | 06/26/96 | CH      |
| m,p-Xylenes                   | Not detected     | 2   | 06/26/96 | CH      |
| o-Xylene                      | Not detected     | 1   | 06/26/96 | CH      |
| Vinyl chloride                | Not detected     | 1   | 06/26/96 | CH      |
| Methyl-t-butyl ether          | Not detected     | 1   | 06/26/96 | CH      |
| BFB Surrogate Recovery (%)    | 110              |     | 06/26/96 | CH      |
| p-DFB Surrogate Recovery (%)  | 104              |     | 06/26/96 | CH      |
| CLB-d5 Surrogate Recovery (%) | 110              |     | 06/26/96 | CH      |

**SPECTRUM ANALYTICAL, INC.**

## Laboratory Report

Client ID: MW-3  
Lab ID No: AA55287Location: Derby, VT  
Client Job No.: 96-46-P2Matrix: Water  
Sampled on 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HTPreservative: Refrigeration, HCl  
Container : 2 VOA Vials  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier**Volatile Organics**

EPA Methods 624 / 8240

| Parameter                     | Result (in ug/L) | MDL | Analyzed | Analyst |
|-------------------------------|------------------|-----|----------|---------|
| Benzene                       | Not detected     | 1   | 06/26/96 | CH      |
| Bromodichloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| Bromomethane                  | Not detected     | 1   | 06/26/96 | CH      |
| Bromoform                     | Not detected     | 1   | 06/26/96 | CH      |
| Carbon tetrachloride          | Not detected     | 1   | 06/26/96 | CH      |
| Chlorobenzene                 | Not detected     | 1   | 06/26/96 | CH      |
| Chloroethane                  | Not detected     | 5   | 06/26/96 | CH      |
| Chloroform                    | Not detected     | 1   | 06/26/96 | CH      |
| Chloromethane                 | Not detected     | 5   | 06/26/96 | CH      |
| Dibromochloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,3-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,4-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethene            | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,2-Dichloroethene      | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloropropane           | Not detected     | 1   | 06/26/96 | CH      |
| cis-1,3-Dichloropropene       | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,3-Dichloropropene     | Not detected     | 1   | 06/26/96 | CH      |
| Ethylbenzene                  | Not detected     | 1   | 06/26/96 | CH      |
| Methylene chloride            | Not detected     | 2.5 | 06/26/96 | CH      |
| 1,1,2,2-Tetrachloroethane     | Not detected     | 1   | 06/26/96 | CH      |
| Tetrachloroethene             | Not detected     | 1   | 06/26/96 | CH      |
| Toluene                       | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,1-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,2-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| Trichloroethene               | Not detected     | 1   | 06/26/96 | CH      |
| Trichlorofluoromethane        | Not detected     | 1   | 06/26/96 | CH      |
| m,p-Xylenes                   | Not detected     | 2   | 06/26/96 | CH      |
| o-Xylene                      | Not detected     | 1   | 06/26/96 | CH      |
| Vinyl chloride                | Not detected     | 1   | 06/26/96 | CH      |
| Methyl-t-butyl ether          | Not detected     | 1   | 06/26/96 | CH      |
| BFB Surrogate Recovery (%)    | 107              |     | 06/26/96 | CH      |
| p-DFB Surrogate Recovery (%)  | 103              |     | 06/26/96 | CH      |
| CLB-d5 Surrogate Recovery (%) | 106              |     | 06/26/96 | CH      |

**SPECTRUM ANALYTICAL, INC.**

## Laboratory Report

Client ID: **MW-4**  
Lab ID No: **AA55288**Location: **Derby, VT**  
Client Job No.: **96-46-P2**Matrix: **Water**  
Sampled on 06/19/96 by **AM GEOTECH**  
Received on 06/20/96 by **DDR**  
QC and Data Review by **HT**Preservative: **Refrigeration, HCl**  
Container : **2 VOA Vials**  
Condition of Sample as Received: **Satisfactory**  
Delivered by: **Courier****Volatile Organics**

EPA Methods 624 / 8240

| <b>Parameter</b>              | <b>Result (in ug/L)</b> | <b>MDL</b> | <b>Analyzed</b> | <b>Analyst</b> |
|-------------------------------|-------------------------|------------|-----------------|----------------|
| Benzene                       | Not detected            | 1          | 06/26/96        | CH             |
| Bromodichloromethane          | Not detected            | 1          | 06/26/96        | CH             |
| Bromomethane                  | Not detected            | 1          | 06/26/96        | CH             |
| Bromoform                     | Not detected            | 1          | 06/26/96        | CH             |
| Carbon tetrachloride          | Not detected            | 1          | 06/26/96        | CH             |
| Chlorobenzene                 | Not detected            | 1          | 06/26/96        | CH             |
| Chloroethane                  | Not detected            | 5          | 06/26/96        | CH             |
| Chloroform                    | Not detected            | 1          | 06/26/96        | CH             |
| Chloromethane                 | Not detected            | 5          | 06/26/96        | CH             |
| Dibromochloromethane          | Not detected            | 1          | 06/26/96        | CH             |
| 1,2-Dichlorobenzene           | Not detected            | 1          | 06/26/96        | CH             |
| 1,3-Dichlorobenzene           | Not detected            | 1          | 06/26/96        | CH             |
| 1,4-Dichlorobenzene           | Not detected            | 1          | 06/26/96        | CH             |
| 1,1-Dichloroethane            | Not detected            | 1          | 06/26/96        | CH             |
| 1,2-Dichloroethane            | Not detected            | 1          | 06/26/96        | CH             |
| 1,1-Dichloroethene            | Not detected            | 1          | 06/26/96        | CH             |
| trans-1,2-Dichloroethene      | Not detected            | 1          | 06/26/96        | CH             |
| 1,2-Dichloropropane           | Not detected            | 1          | 06/26/96        | CH             |
| cis-1,3-Dichloropropene       | Not detected            | 1          | 06/26/96        | CH             |
| trans-1,3-Dichloropropene     | Not detected            | 1          | 06/26/96        | CH             |
| Ethylbenzene                  | Not detected            | 1          | 06/26/96        | CH             |
| Methylene chloride            | Not detected            | 2.5        | 06/26/96        | CH             |
| 1,1,2,2-Tetrachloroethane     | Not detected            | 1          | 06/26/96        | CH             |
| Tetrachloroethene             | Not detected            | 1          | 06/26/96        | CH             |
| Toluene                       | Not detected            | 1          | 06/26/96        | CH             |
| 1,1,1-Trichloroethane         | Not detected            | 1          | 06/26/96        | CH             |
| 1,1,2-Trichloroethane         | Not detected            | 1          | 06/26/96        | CH             |
| Trichloroethene               | Not detected            | 1          | 06/26/96        | CH             |
| Trichlorofluoromethane        | Not detected            | 1          | 06/26/96        | CH             |
| m,p-Xylenes                   | Not detected            | 2          | 06/26/96        | CH             |
| o-Xylene                      | Not detected            | 1          | 06/26/96        | CH             |
| Vinyl chloride                | Not detected            | 1          | 06/26/96        | CH             |
| Methyl-t-butyl ether          | Not detected            | 1          | 06/26/96        | CH             |
| BFB Surrogate Recovery (%)    | 107                     |            | 06/26/96        | CH             |
| p-DFB Surrogate Recovery (%)  | 103                     |            | 06/26/96        | CH             |
| CLB-d5 Surrogate Recovery (%) | 106                     |            | 06/26/96        | CH             |

# SPECTRUM ANALYTICAL, INC.

## Laboratory Report

Client ID: MW-5  
Lab ID No: AA55289

Location: Derby, VT  
Client Job No.: 96-46-P2

Matrix: Water  
Sampled on 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration, HCl  
Container : 2 VOA Vials  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

### Volatile Organics

EPA Methods 624 / 8240

| Parameter                     | Result (in ug/L) | MDL | Analyzed | Analyst |
|-------------------------------|------------------|-----|----------|---------|
| Benzene                       | Not detected     | 1   | 06/26/96 | CH      |
| Bromodichloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| Bromomethane                  | Not detected     | 1   | 06/26/96 | CH      |
| Bromoform                     | Not detected     | 1   | 06/26/96 | CH      |
| Carbon tetrachloride          | Not detected     | 1   | 06/26/96 | CH      |
| Chlorobenzene                 | Not detected     | 1   | 06/26/96 | CH      |
| Chloroethane                  | Not detected     | 5   | 06/26/96 | CH      |
| Chloroform                    | Not detected     | 1   | 06/26/96 | CH      |
| Chloromethane                 | Not detected     | 5   | 06/26/96 | CH      |
| Dibromochloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,3-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,4-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethene            | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,2-Dichloroethene      | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloropropane           | Not detected     | 1   | 06/26/96 | CH      |
| cis-1,3-Dichloropropene       | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,3-Dichloropropene     | Not detected     | 1   | 06/26/96 | CH      |
| Ethylbenzene                  | Not detected     | 1   | 06/26/96 | CH      |
| Methylene chloride            | Not detected     | 2.5 | 06/26/96 | CH      |
| 1,1,2,2-Tetrachloroethane     | Not detected     | 1   | 06/26/96 | CH      |
| Tetrachloroethene             | Not detected     | 1   | 06/26/96 | CH      |
| Toluene                       | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,1-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,2-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| Trichloroethene               | Not detected     | 1   | 06/26/96 | CH      |
| Trichlorofluoromethane        | Not detected     | 1   | 06/26/96 | CH      |
| m,p-Xylenes                   | Not detected     | 2   | 06/26/96 | CH      |
| o-Xylene                      | Not detected     | 1   | 06/26/96 | CH      |
| Vinyl chloride                | Not detected     | 1   | 06/26/96 | CH      |
| Methyl-t-butyl ether          | Not detected     | 1   | 06/26/96 | CH      |
| BFB Surrogate Recovery (%)    | 110              |     | 06/26/96 | CH      |
| p-DFB Surrogate Recovery (%)  | 106              |     | 06/26/96 | CH      |
| CLB-d5 Surrogate Recovery (%) | 107              |     | 06/26/96 | CH      |

# SPECTRUM ANALYTICAL, INC.

## Laboratory Report

Client ID: MW-6  
Lab ID No: AA55290

Location: Derby, VT  
Client Job No.: 96-46-P2

Matrix: Water  
Sampled on 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration, HCl  
Container : 2 VOA Vials  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

### Volatile Organics

EPA Methods 624 / 8240

| Parameter                     | Result (in ug/L) | MDL | Analyzed | Analyst |
|-------------------------------|------------------|-----|----------|---------|
| Benzene                       | Not detected     | 1   | 06/26/96 | CH      |
| Bromodichloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| Bromomethane                  | Not detected     | 1   | 06/26/96 | CH      |
| Bromoform                     | Not detected     | 1   | 06/26/96 | CH      |
| Carbon tetrachloride          | Not detected     | 1   | 06/26/96 | CH      |
| Chlorobenzene                 | Not detected     | 1   | 06/26/96 | CH      |
| Chloroethane                  | Not detected     | 5   | 06/26/96 | CH      |
| Chloroform                    | Not detected     | 1   | 06/26/96 | CH      |
| Chloromethane                 | Not detected     | 5   | 06/26/96 | CH      |
| Dibromochloromethane          | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,3-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,4-Dichlorobenzene           | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloroethane            | Not detected     | 1   | 06/26/96 | CH      |
| 1,1-Dichloroethene            | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,2-Dichloroethene      | Not detected     | 1   | 06/26/96 | CH      |
| 1,2-Dichloropropane           | Not detected     | 1   | 06/26/96 | CH      |
| cis-1,3-Dichloropropene       | Not detected     | 1   | 06/26/96 | CH      |
| trans-1,3-Dichloropropene     | Not detected     | 1   | 06/26/96 | CH      |
| Ethylbenzene                  | Not detected     | 1   | 06/26/96 | CH      |
| Methylene chloride            | Not detected     | 2.5 | 06/26/96 | CH      |
| 1,1,2,2-Tetrachloroethane     | Not detected     | 1   | 06/26/96 | CH      |
| Tetrachloroethene             | Not detected     | 1   | 06/26/96 | CH      |
| Toluene                       | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,1-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| 1,1,2-Trichloroethane         | Not detected     | 1   | 06/26/96 | CH      |
| Trichloroethene               | Not detected     | 1   | 06/26/96 | CH      |
| Trichlorofluoromethane        | Not detected     | 1   | 06/26/96 | CH      |
| m,p-Xylenes                   | Not detected     | 2   | 06/26/96 | CH      |
| o-Xylene                      | Not detected     | 1   | 06/26/96 | CH      |
| Vinyl chloride                | Not detected     | 1   | 06/26/96 | CH      |
| Methyl-t-butyl ether          | Not detected     | 1   | 06/26/96 | CH      |
| BFB Surrogate Recovery (%)    | 106              |     | 06/26/96 | CH      |
| p-DFB Surrogate Recovery (%)  | 101              |     | 06/26/96 | CH      |
| CLB-d5 Surrogate Recovery (%) | 106              |     | 06/26/96 | CH      |

# SPECTRUM ANALYTICAL, INC.

## Laboratory Report

Client ID: **TRIPBLNK**  
Lab ID No: **AA55291**

Location: **Derby, VT**  
Client Job No.: **96-46-P2**

Matrix: **Water**  
Sampled on **06/14/96** by **AM GEOTECH**  
Received on **06/20/96** by **DDR**  
QC and Data Review by **DDR**

Preservative: **Refrigeration, HCl**  
Container : **1 VOA Vial**  
Condition of Sample as Received: **Satisfactory**  
Delivered by: **Courier**

### Volatile Organics

EPA Methods 624 / 8240

| Parameter                     | Result (in ug/L) | MDL | Analyzed | Analyst |
|-------------------------------|------------------|-----|----------|---------|
| Benzene                       | Not detected     | 1   | 06/25/96 | CH      |
| Bromodichloromethane          | Not detected     | 1   | 06/25/96 | CH      |
| Bromomethane                  | Not detected     | 1   | 06/25/96 | CH      |
| Bromoform                     | Not detected     | 1   | 06/25/96 | CH      |
| Carbon tetrachloride          | Not detected     | 1   | 06/25/96 | CH      |
| Chlorobenzene                 | Not detected     | 1   | 06/25/96 | CH      |
| Chloroethane                  | Not detected     | 5   | 06/25/96 | CH      |
| Chloroform                    | Not detected     | 1   | 06/25/96 | CH      |
| Chloromethane                 | Not detected     | 5   | 06/25/96 | CH      |
| Dibromochloromethane          | Not detected     | 1   | 06/25/96 | CH      |
| 1,2-Dichlorobenzene           | Not detected     | 1   | 06/25/96 | CH      |
| 1,3-Dichlorobenzene           | Not detected     | 1   | 06/25/96 | CH      |
| 1,4-Dichlorobenzene           | Not detected     | 1   | 06/25/96 | CH      |
| 1,1-Dichloroethane            | Not detected     | 1   | 06/25/96 | CH      |
| 1,2-Dichloroethane            | Not detected     | 1   | 06/25/96 | CH      |
| 1,1-Dichloroethene            | Not detected     | 1   | 06/25/96 | CH      |
| trans-1,2-Dichloroethene      | Not detected     | 1   | 06/25/96 | CH      |
| 1,2-Dichloropropane           | Not detected     | 1   | 06/25/96 | CH      |
| cis-1,3-Dichloropropene       | Not detected     | 1   | 06/25/96 | CH      |
| trans-1,3-Dichloropropene     | Not detected     | 1   | 06/25/96 | CH      |
| Ethylbenzene                  | Not detected     | 1   | 06/25/96 | CH      |
| Methylene chloride            | Not detected     | 2.5 | 06/25/96 | CH      |
| 1,1,2,2-Tetrachloroethane     | Not detected     | 1   | 06/25/96 | CH      |
| Tetrachloroethene             | Not detected     | 1   | 06/25/96 | CH      |
| Toluene                       | Not detected     | 1   | 06/25/96 | CH      |
| 1,1,1-Trichloroethane         | Not detected     | 1   | 06/25/96 | CH      |
| 1,1,2-Trichloroethane         | Not detected     | 1   | 06/25/96 | CH      |
| Trichloroethene               | Not detected     | 1   | 06/25/96 | CH      |
| Trichlorofluoromethane        | Not detected     | 1   | 06/25/96 | CH      |
| m,p-Xylenes                   | Not detected     | 2   | 06/25/96 | CH      |
| o-Xylene                      | Not detected     | 1   | 06/25/96 | CH      |
| Vinyl chloride                | Not detected     | 1   | 06/25/96 | CH      |
| Methyl-t-butyl ether          | Not detected     | 1   | 06/25/96 | CH      |
| BFB Surrogate Recovery (%)    | 101              |     | 06/25/96 | CH      |
| p-DFB Surrogate Recovery (%)  | 100              |     | 06/25/96 | CH      |
| CLB-d5 Surrogate Recovery (%) | 104              |     | 06/25/96 | CH      |

**SPECTRUM ANALYTICAL, INC.**  
Laboratory Report( Subcontracted Analyses )

Client ID: **MW-1**  
Lab ID No: **AA55285**

Location: **Derby, VT**  
Client Job No.: **96-46-P2**

Matrix: Water  
Collected: 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration  
Container : 1 Amber Glass Liter  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

**Semivolatile Organics-PAH's**  
EPA Method 8270

| Parameter for AA55285    | Result (ug/L) | MDL  | Extracted | Analyzed | Analyst |
|--------------------------|---------------|------|-----------|----------|---------|
| Acenaphthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Acenaphthylene           | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Anthracene               | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) anthracene     | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (b) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (k) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (g,h,i) perylene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) pyrene         | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Chrysene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Dibenz (a,h) anthracene  | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluoranthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluorene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Indeno (1,2,3-cd) pyrene | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| 2-Methylnaphthalene      | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Naphthalene              | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Phenanthrene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Pyrene                   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |

**SPECTRUM ANALYTICAL, INC.**  
Laboratory Report( Subcontracted Analyses )

Client ID: MW-2  
Lab ID No: AA55286

Location: Derby, VT  
Client Job No.: 96-46-P2

Matrix: Water  
Collected: 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration  
Container : 1 Amber Glass Liter  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

**Semivolatile Organics-PAH's**  
EPA Method 8270

| Parameter for AA55286    | Result (ug/L) | MDL  |           |          | Analyst |
|--------------------------|---------------|------|-----------|----------|---------|
|                          |               |      | Extracted | Analyzed |         |
| Acenaphthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Acenaphthylene           | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Anthracene               | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) anthracene     | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (b) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (k) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (g,h,i) perylene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) pyrene         | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Chrysene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Dibenz (a,h) anthracene  | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluoranthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluorene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Indeno (1,2,3-cd) pyrene | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| 2-Methylnaphthalene      | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Naphthalene              | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Phenanthrene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Pyrene                   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |

**SPECTRUM ANALYTICAL, INC.**  
Laboratory Report( Subcontracted Analyses )

Client ID: MW-3  
Lab ID No: AA55287

Location: Derby, VT  
Client Job No.: 96-46-P2

Matrix: Water  
Collected: 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration  
Container : 1 Amber Glass Liter  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

**Semivolatile Organics-PAH's**  
EPA Method 8270

| Parameter for AA55287    | Result (ug/L) | MDL  | Extracted | Analyzed | Analyst |
|--------------------------|---------------|------|-----------|----------|---------|
| Acenaphthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Acenaphthylene           | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Anthracene               | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) anthracene     | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (b) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (k) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (g,h,i) perylene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) pyrene         | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Chrysene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Dibenz (a,h) anthracene  | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluoranthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluorene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Indeno (1,2,3-cd) pyrene | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| 2-Methylnaphthalene      | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Naphthalene              | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Phenanthrene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Pyrene                   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |

**SPECTRUM ANALYTICAL, INC.**  
Laboratory Report( Subcontracted Analyses )

Client ID: **MW-4**  
Lab ID No: **AA55288**

Location: **Derby, VT**  
Client Job No.: **96-46-P2**

Matrix: Water  
Collected: 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration  
Container : 1 Amber Glass Liter  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

**Semivolatile Organics-PAH's**  
EPA Method 8270

| Parameter for AA55288    | Result (ug/L) | MDL  | Extracted | Analyzed | Analyst |
|--------------------------|---------------|------|-----------|----------|---------|
|                          |               |      |           |          |         |
| Acenaphthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Acenaphthylene           | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Anthracene               | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) anthracene     | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (b) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (k) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (g,h,i) perylene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) pyrene         | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Chrysene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Dibenz (a,h) anthracene  | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluoranthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluorene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Indeno (1,2,3-cd) pyrene | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| 2-Methylnaphthalene      | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Naphthalene              | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Phenanthrene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Pyrene                   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |

**SPECTRUM ANALYTICAL, INC.**  
Laboratory Report( Subcontracted Analyses )

Client ID: **MW-5**  
Lab ID No: **AA55289**

Location: **Derby, VT**  
Client Job No.: **96-46-P2**

Matrix: Water  
Collected: 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration  
Container : 1 Amber Glass Liter  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

**Semivolatile Organics-PAH's**  
EPA Method 8270

| Parameter for AA55289    | Result (ug/L) | MDL  | Extracted | Analyzed | Analyst |
|--------------------------|---------------|------|-----------|----------|---------|
| Acenaphthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Acenaphthylene           | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Anthracene               | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) anthracene     | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (b) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (k) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (g,h,i) perylene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) pyrene         | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Chrysene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Dibenz (a,h) anthracene  | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluoranthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluorene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Indeno (1,2,3-cd) pyrene | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| 2-Methylnaphthalene      | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Naphthalene              | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Phenanthrene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Pyrene                   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |

**SPECTRUM ANALYTICAL, INC.**  
Laboratory Report( Subcontracted Analyses )

Client ID: MW-6  
Lab ID No: AA55290

Location: Derby, VT  
Client Job No.: 96-46-P2

Matrix: Water  
Collected: 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by HT

Preservative: Refrigeration  
Container : 1 Amber Glass Liter  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

**Semivolatile Organics-PAH's**  
EPA Method 8270

| Parameter for AA55290    | Result (ug/L) | MDL  | Extracted | Analyzed | Analyst |
|--------------------------|---------------|------|-----------|----------|---------|
| Acenaphthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Acenaphthylene           | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Anthracene               | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) anthracene     | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (b) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (k) fluoranthene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (g,h,i) perylene   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Benzo (a) pyrene         | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Chrysene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Dibenz (a,h) anthracene  | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluoranthene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Fluorene                 | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Indeno (1,2,3-cd) pyrene | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| 2-Methylnaphthalene      | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Naphthalene              | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Phenanthrene             | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |
| Pyrene                   | Not detected  | 10.0 | 06/25/96  | 06/25/96 | HT      |

**SPECTRUM ANALYTICAL, INC.**

Laboratory Report

Sample ID: **WELL**  
Lab ID No: **AA55292**

Location: **Derby, VT**  
Client Job No.: **96-46-P2**

Matrix: Water  
Sampled on 06/19/96 by AM GEOTECH  
Received on 06/20/96 by DDR  
QC and Data Review by DDR

Preservative: Refrigeration, HCl  
Container : 2 VOA Vials  
Condition of Sample as Received: Satisfactory  
Delivered by: Courier

**Volatile Aromatics**  
EPA Method 602/8020

| <b>Parameter</b>           | <b>Result (in ug/L)</b> | <b>MDL</b> | <b>Analyzed</b> | <b>Analyst</b> |
|----------------------------|-------------------------|------------|-----------------|----------------|
| Benzene                    | Not detected            | 1          | 06/27/96        | NB             |
| Toluene                    | Not detected            | 1          | 06/27/96        | NB             |
| Ethylbenzene               | Not detected            | 1          | 06/27/96        | NB             |
| m,p-Xylenes                | Not detected            | 2          | 06/27/96        | NB             |
| o-Xylene                   | Not detected            | 1          | 06/27/96        | NB             |
| Chlorobenzene              | Not detected            | 1          | 06/27/96        | NB             |
| 1,2-Dichlorobenzene        | Not detected            | 1          | 06/27/96        | NB             |
| 1,3-Dichlorobenzene        | Not detected            | 1          | 06/27/96        | NB             |
| 1,4-Dichlorobenzene        | Not detected            | 1          | 06/27/96        | NB             |
| Methyl-t-butyl-ether       | Not detected            | 1          | 06/27/96        | NB             |
| TFT Surrogate Recovery (%) | 90                      |            | 06/27/96        | NB             |

**Spectrum Analytical, Inc.**  
**Laboratory Report Supplement**

References

- Methods for the Determination of Organic Compounds in Drinking Water. EPA-600/4-88/039. EMSL 1988.
- Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. EMSL 1983.
- Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. EPA 600/4-82-057. EMSL 1982.
- Test Methods for Evaluating Solid Waste. Physical/Chemical Methods. EPA SW-846. 1986.
- Standard Methods for the Examination of Water and Wastes. APHA-AWWA-WPCF. 16th Edition. 1985.
- Standard Methods for Comparison of Waterborne Petroleum Oils by Gas Chromatography. ASTM D 3328. 1982.
- Oil Spill Identification System. U.S. Coast Guard CG-D-52-77. 1977.
- Handbook for Analytical Quality Control in Water and Wastewater Laboratories. EPA 600/4-79-019. EMSL 1979.
- Choosing Cost-Effective QA/QC (Quality Assurance/Quality Control) Programs for Chemical Analyses. EPA 600/4-85/056. EMSL 1985.

Report Notations

|                                    |   |   |
|------------------------------------|---|---|
| Not Detected,<br>Not Det, ND or nd | = | <i>The compound was not detected at a concentration equal to or above the established method detection limit.</i> |
| NC                                 | = | <i>Not Calculated</i>   |
| VOA                                | = | <i>Volatile Organic Analysis</i>  |
| BFB                                | = | <i>4-Bromofluorobenzene (an EPA 624 Surrogate)</i>  |
| p-DFB                              | = | <i>1,4-Difluorobenzene (an EPA 624 Surrogate)</i>   |
| CLB-d5                             | = | <i>Chlorobenzene-d5 (an EPA 624 Surrogate)</i>  |
| BCP                                | = | <i>2-Bromo-1-chloropropane (an EPA 601 Surrogate)</i>   |
| TFT                                | = | <i>a, a, a-Trifluorotoluene (an EPA 602 Surrogate)</i>  |
| <i>Decachlorobiphenyl</i>          | = | <i>(An EPA 608/8080 Surrogate)</i>  |

Definitions

**Surrogate Recovery** = The recovery (expressed as a percent) of a non method analyte (see surrogates listed above) added to the sample for the purpose of monitoring system performance.

**Matrix Spike Recovery** = The recovery (expressed as a percent) of method analytes added to the sample for the purpose of determining any effect of sample composition on analyte recovery.

**Laboratory Replicate** = Two sample aliquots taken in the analytical laboratory and analyzed separately with identical procedures. Analyses of laboratory duplicates give a measure of the precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures.

**Field Duplicate** = Two separate samples collected at the same time and place under identical circumstances and treated exactly the same throughout field and laboratory procedures. Analysis of Field duplicates give a measure of the precision associated with sample collection, preservation and storage, as well as with laboratory procedures.

**Relative Percent Difference (%RPD)** = The precision measurement obtained on duplicate/replicate analyses. %RPD is calculated as:

$$\%RPD = \frac{|value1 - value2|}{ave. value} * 100\%$$



# CHAIN OF CUSTODY RECORD

588 Silver Street  
Agawam, MA 01001

Tel. (413) 789-9018  
FAX (413) 789-4076

|  |                          |
|--|--------------------------|
| REPORTS TO:<br><i>AMERICAN Geotech, Inc.</i><br><i>11 Surrey Loch Lane</i><br><i>Bow, NH 03309</i> | INVOICE TO: <i>Same</i>  |
| PROJECT No: <i>96-46-P2</i>  | P.O. No: <i>96-46-P2</i> |
| PROJECT Mgr: <i>Wes Perry</i>  | SAMPLER(s): <i>JWA</i>   |
| SITE LOCATION: <i>Derby, VT</i>  |                          |

| SAMPLE TYPE & MATRIX CODES:  |             |         |       | CONTAINERS        |                         |                     |                      | ORGANICS   |  |   | METALS                       |  | OTHER                            |                                      |                                     |
|--|-------------|---------|-------|-------------------|-------------------------|---------------------|----------------------|--|--|---|------------------------------|--|----------------------------------|--------------------------------------|-------------------------------------|
| 1=4°C 2=HCl 3=H <sub>2</sub> SO <sub>4</sub> 4=HNO <sub>3</sub> 5= OTHER |             |         |       | # 40 ml VOA VIALS | # OF AMBER GLASS LITERS | # OF PLASTIC LITERS | # OF GLASS SOIL JARS | <input type="checkbox"/> 601 <input type="checkbox"/> 8010 | <input type="checkbox"/> 602 <input checked="" type="checkbox"/> 8020 <input type="checkbox"/> 502.2 | <input type="checkbox"/> 624 <input type="checkbox"/> 8260 <input type="checkbox"/> 524.2 | <input type="checkbox"/> HSL | <input type="checkbox"/> 625 <input type="checkbox"/> 8270 | <input type="checkbox"/> SOLUBLE | <input type="checkbox"/> FINGERPRINT | <input type="checkbox"/> OIL&GREASE |
| C = COMPOSITE G = GRAB   |             |         |       |                   |                         |                     |                      |  |  |   |                              | <input type="checkbox"/> TOTAL                             | <input type="checkbox"/> IR      | <input type="checkbox"/> 608         |                                     |
| 1 = AQUEOUS 3 = SLUDGE 5 = OTHER<br>2 = SOIL 4 = SEDIMENT                |             |         |       |                   |                         |                     |                      |  |  |   |                              | <input type="checkbox"/> TCLP                              | <input type="checkbox"/> GC      | <input type="checkbox"/> 610         |                                     |
| LAB USE ONLY   | SAMPLE I.D. | DATE    | TIME  | MATRIX            | SAMPLE TYPE             | PRESERVATIVE        |                      |  |  |   |                              |  |                                  |                                      |                                     |
| 55285  | MW-1        | 6-19-96 | 11:15 | 1                 | G                       | 12                  | 2                    | 1  |  |   |                              |  |                                  |                                      |                                     |
| 55286  | MW-2        | 6-19-96 | 12:15 | 1                 | G                       | 12                  | 2                    | 1  |  |   |                              |  |                                  |                                      |                                     |
| 55287  | MW-3        | 6-19-96 | 11:45 | 1                 | G                       | 12                  | 2                    | 1  |  |   |                              |  |                                  |                                      |                                     |
| 55288  | MW-4        | 6-19-96 | 2:00  | 1                 | G                       | 12                  | 2                    | 1  |  |   |                              |  |                                  |                                      |                                     |
| 55289  | MW-5        | 6-19-96 | 1:15  | 1                 | G                       | 12                  | 2                    | 1  |  |   |                              |  |                                  |                                      |                                     |
| 55290  | MW-6        | 6-19-96 | 12:45 | 1                 | G                       | 12                  | 2                    | 1  |  |   |                              |  |                                  |                                      |                                     |
| 55291  | Trip Blank  | 6-14-96 | N/A   | 1                 | N/A                     | 12                  | 1                    |  |  |   |                              |  |                                  |                                      |                                     |
| 55292  | Well        | 6-19-96 | 3:30  | 1                 | G                       | 12                  | 2                    |  | X  |   |                              |  |                                  |                                      |                                     |

|                                |                                   |                         |                       |
|--------------------------------|-----------------------------------|-------------------------|-----------------------|
| RELINQUISHED BY:<br><i>JWA</i> | RECEIVED BY:<br><i>C. Henning</i> | DATE:<br><i>6/20/96</i> | TIME:<br><i>15:25</i> |
|--------------------------------|-----------------------------------|-------------------------|-----------------------|

|                       |  |
|-----------------------|--|
| SPECIAL INSTRUCTIONS: | SPECIAL HANDLING<br><input checked="" type="checkbox"/> STANDARD 6 day special<br><input type="checkbox"/> 7 BUS. DAYS<br><input type="checkbox"/> RUSH 24 HOURS<br>DATE RESULTS NEEDED: |
|-----------------------|--|

**APPENDIX C**  
**AGI STANDARD PROTOCOLS**

**AMERICAN GEOTECH, INC.**  
**STANDARD GROUND WATER SAMPLING PROTOCOLS**

**Groundwater Sampling**

Following, well development at least 5-7 days of well stabilization is allowed before sampling is initiated. To obtain a representative sample of the groundwater, the water within the well casing and in close proximity of the well must be purged prior to groundwater sampling. Purging of the standing well water is complete when one of the following is achieved: a minimum of three well volumes are purged, and insitu parameters are stabilized, or five well volumes are purged, or the well has been bailed dry. After purging, a Teflon® bailer or submersible pump is lowered to the middle of the screened interval or midpoint of the static water level. If the analysis to be performed is for lighter than water chemical species, the sampling device is lowered to the top of the water column for the sample location. Volatile and semi-volatile sample containers are filled directly from the bailer or outflow of the submersible pump with as little agitation as possible. Samples extracted for metal analysis will be filtered in the field with 0.45 µm disposable filter. The bailer or pump is then removed from the well. Bailers are disposed of off-Site. Immediately after sampling the sample data record is completed, the well cap and lock secured, and the samples are placed in an ice packed cooler with a chain of custody for shipment to a VT Certified Laboratory for analysis.

**Field QA/QC of Groundwater Samples**

Two types of QC samples are collected in the field and submitted for laboratory analysis. These are trip blanks and field duplicates. Quality control samples assess the precision of sampling efforts and the effects of ambient environmental conditions on sensitive analytes. One trip blank accompanies each cooler containing volatile organic compounds (VOCs). Trip blanks are stored at the laboratory with the samples and analyzed with the sample set. Trip blanks are only analyzed for VOCs. Field duplicates are a second sample taken from the monitoring well and/or soil sample and is treated the same as the original sample in order to determine the precision of the laboratory analytical method. Field duplicates are analyzed with every analytical batch or every 20 samples, whichever was greater. This procedure is applicable to all organic and inorganic analytes sampled for this project.

**APPENDIX D**  
**MONITORING WELL CONSTRUCTION DIAGRAMS**

PROJECT No.: 96-46-P2

DATE OF CONSTRUCTION: 05/14/96

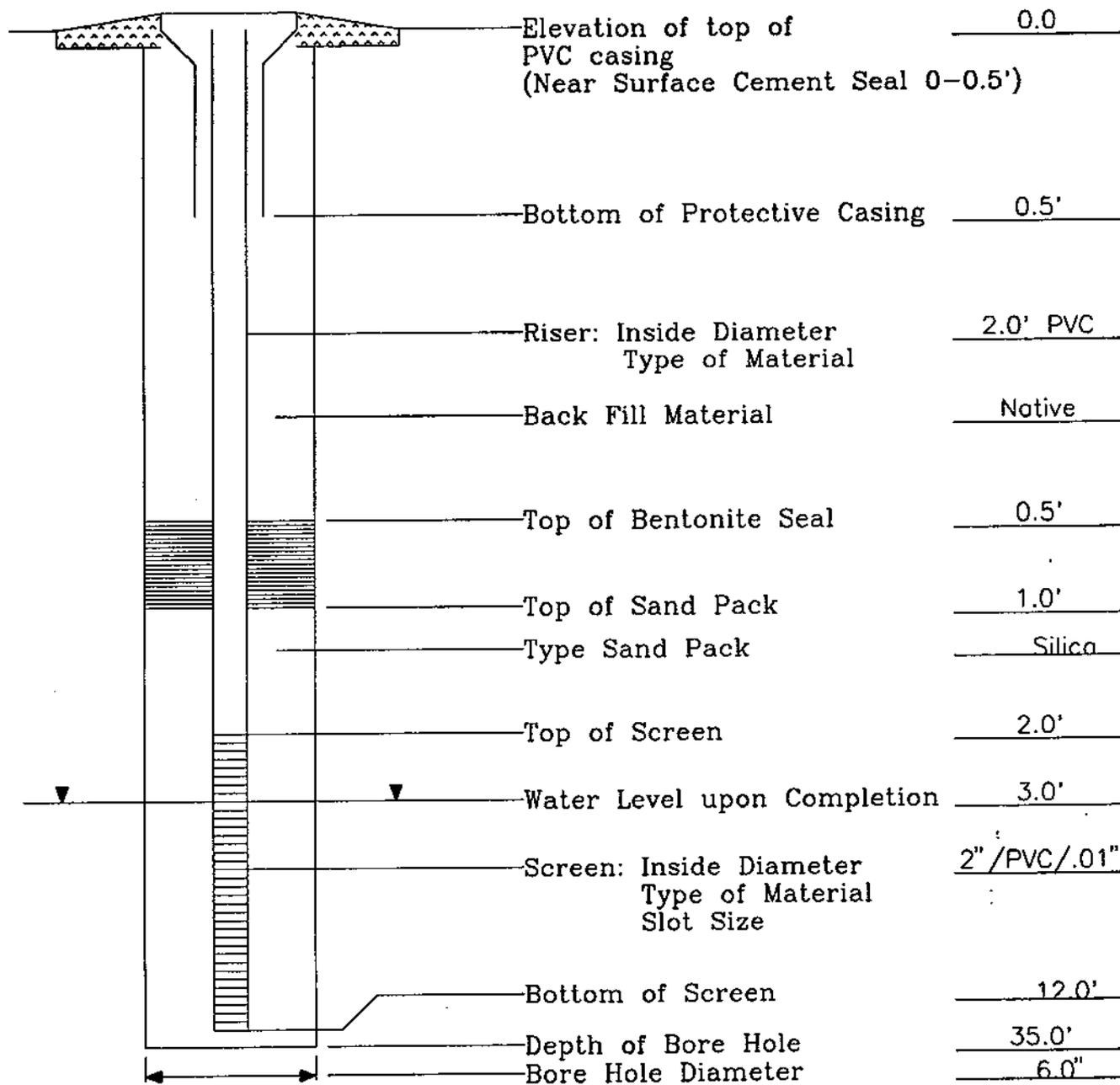
PROJECT LOCATION: Derby, VT

DRILLING METHOD: HSA

CONTRACTOR: Soil Explor., Inc.

TOTAL DEPTH: 35.0'

WELL No: MW-1



Initial Site Investigation Report  
VDEC Project No. 95-1936  
Route 5, Derby, VT

AMERICAN GEOTECH, Inc.  
11 SURREY COACH LN.  
BOW, NH 03304

PROJECT No.: 96-46-P2

DATE OF CONSTRUCTION: 05/14/96

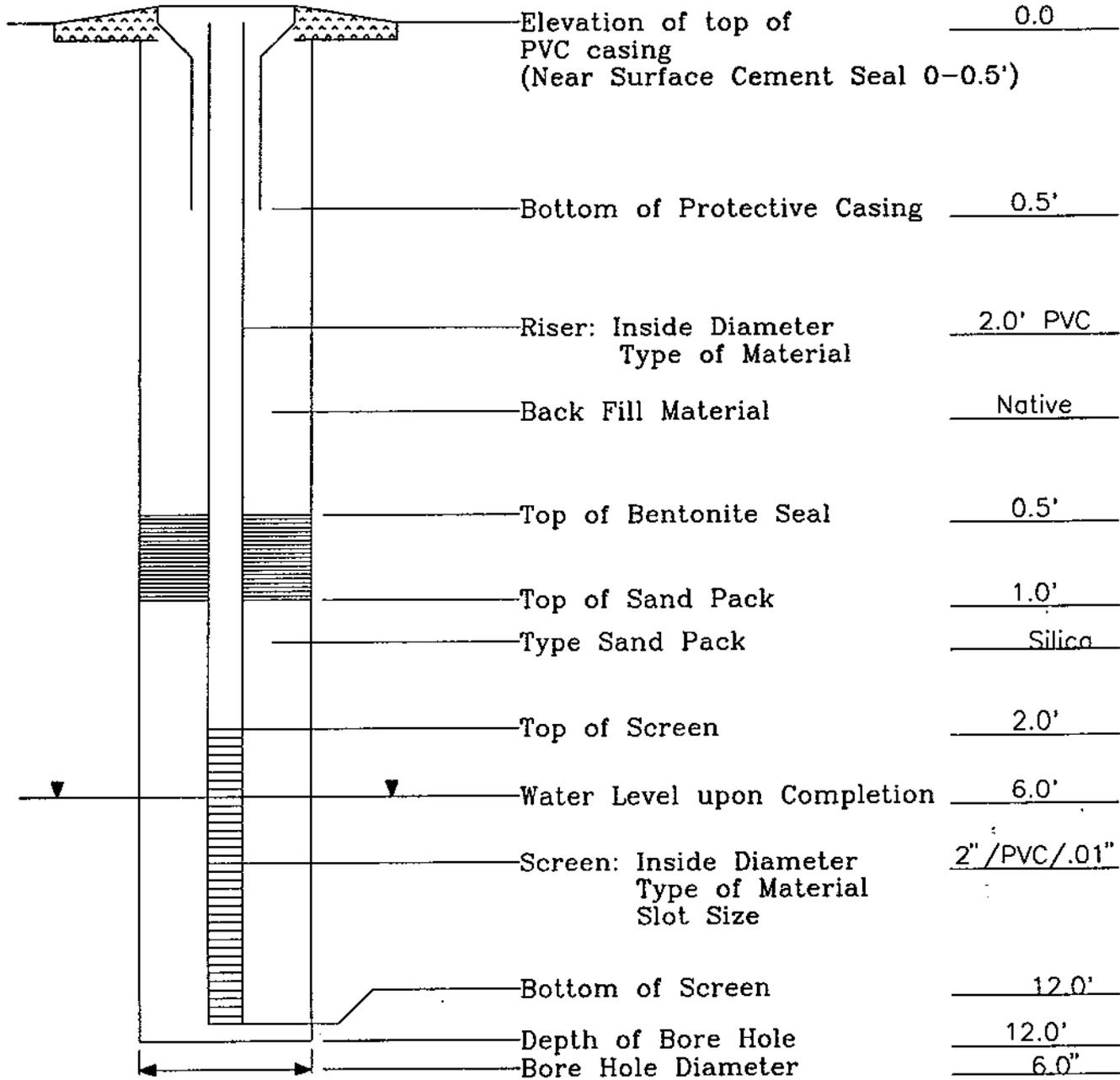
PROJECT LOCATION: Derby, VT

DRILLING METHOD: HSA

CONTRACTOR: Soil Explor., Inc.

TOTAL DEPTH: 12.0'

WELL No: MW-2



Initial Site Investigation Report  
VDEC Project No. 95-1936  
Route 5, Derby, VT

AMERICAN GEOTECH, Inc.  
11 SURREY COACH LN.  
BOW, NH 03304

PROJECT No.: 96-46-P2

DATE OF CONSTRUCTION: 05/14/96

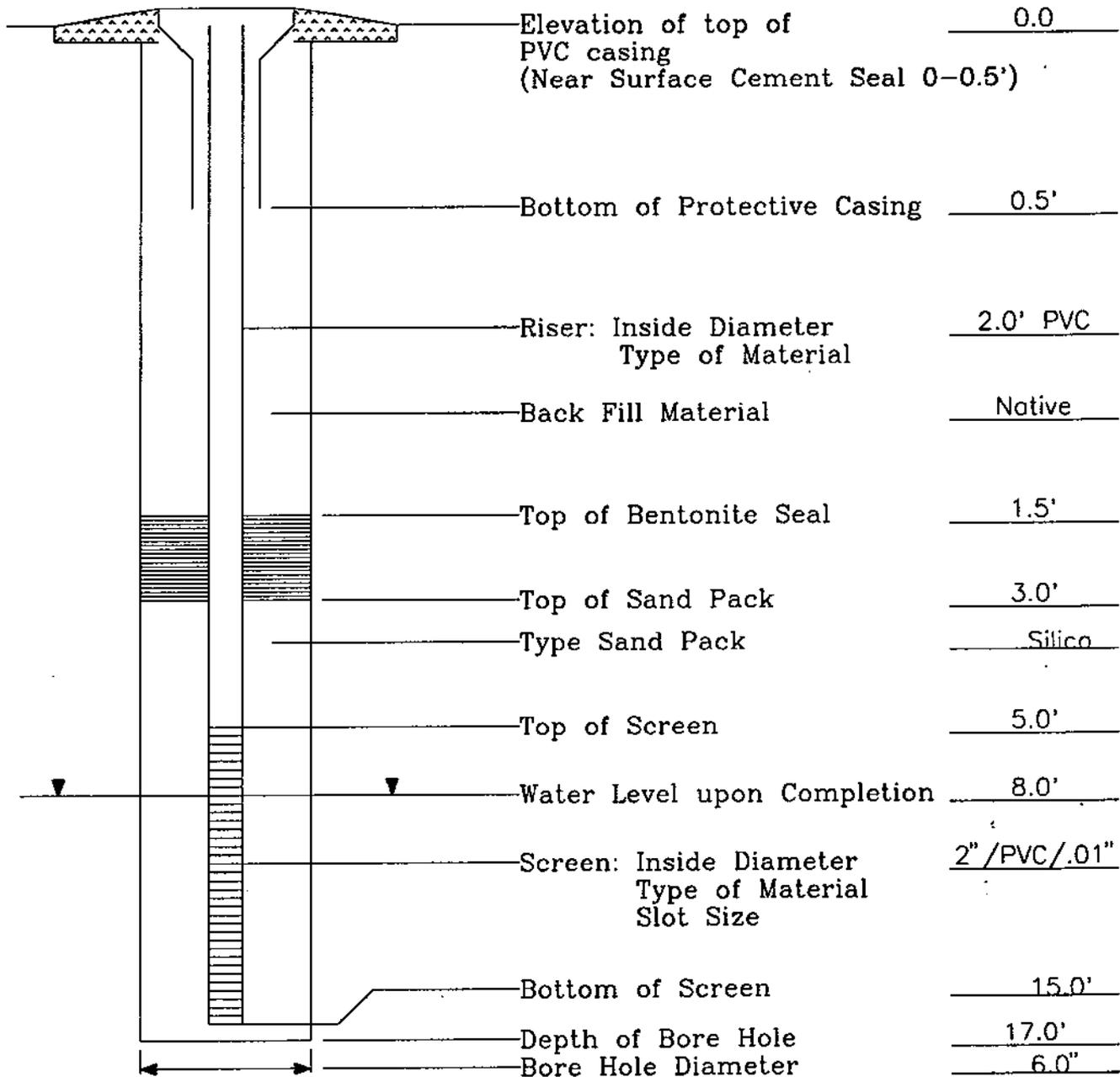
PROJECT LOCATION: Derby, VT

DRILLING METHOD: HSA

CONTRACTOR: Soil Explor., Inc.

TOTAL DEPTH: 17.0'

WELL No: MW-3



Initial Site Investigation Report  
VDEC Project No. 95-1936  
Route 5, Derby, VT

AMERICAN GEOTECH, Inc.  
11 SURREY COACH LN.  
BOW, NH 03304

PROJECT No.: 96-46-P2

DATE OF CONSTRUCTION: 05/14/96

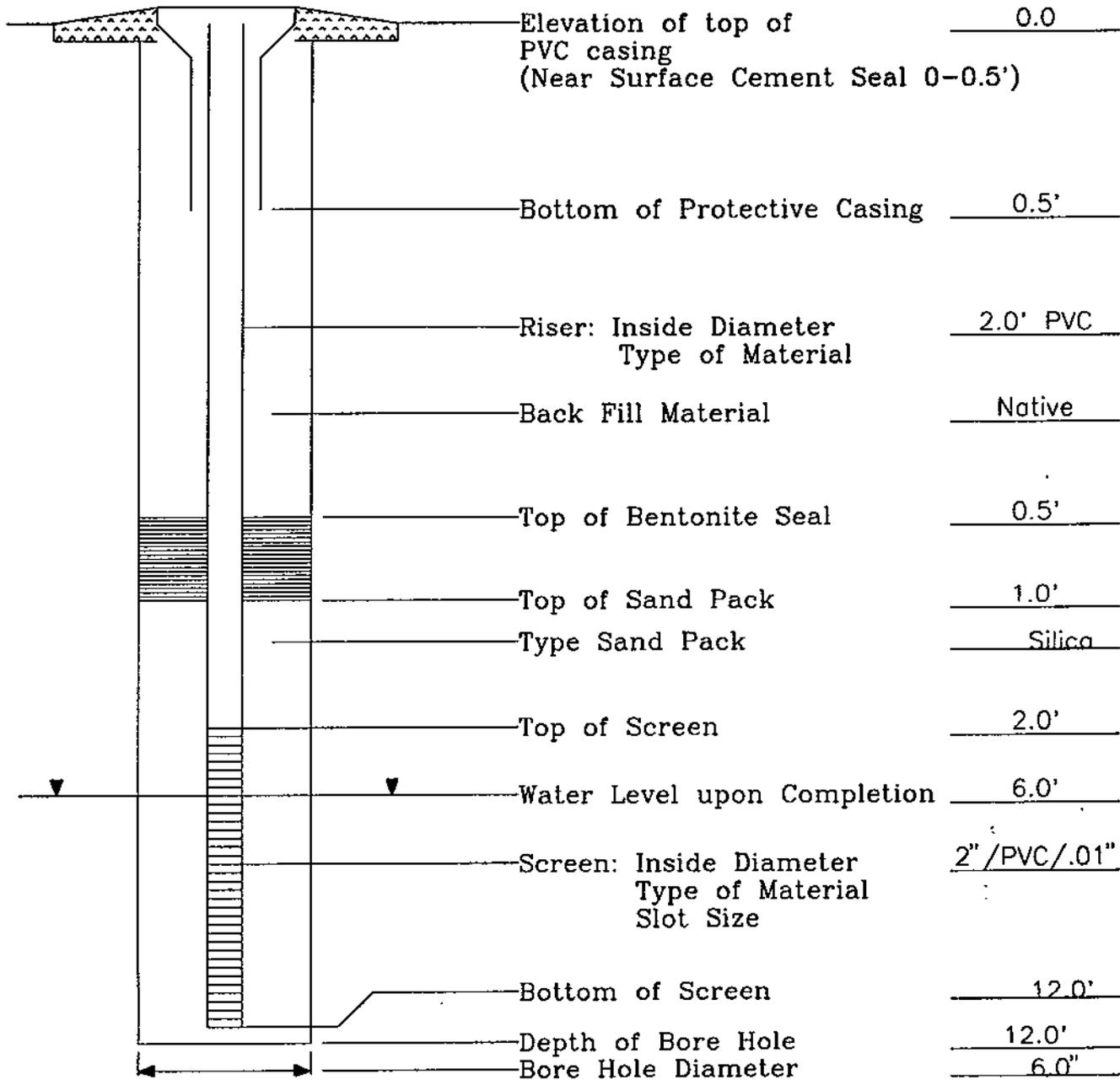
PROJECT LOCATION: Derby, VT

DRILLING METHOD: HSA

CONTRACTOR: Soil Explor., Inc.

TOTAL DEPTH: 12.0'

WELL No: MW-4



Initial Site Investigation Report  
VDEC Project No. 95-1936  
Route 5, Derby, VT

AMERICAN GEOTECH, Inc.  
11 SURREY COACH LN.  
BOW, NH 03304

PROJECT No.: 96-46-P2

DATE OF CONSTRUCTION: 06/12/96

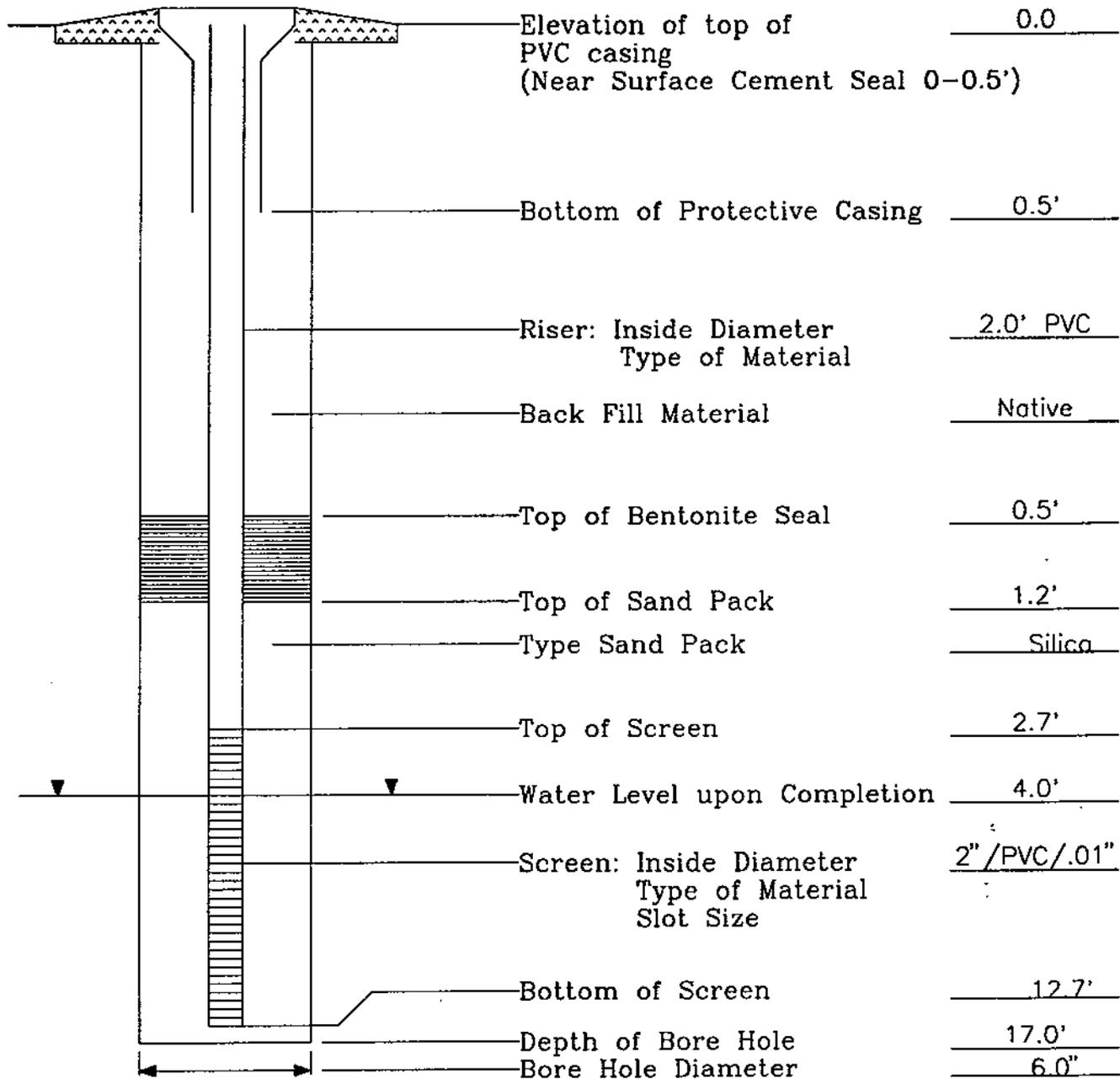
PROJECT LOCATION: Derby, VT

DRILLING METHOD: HSA

CONTRACTOR: Contech., Inc.

TOTAL DEPTH: 17.0'

WELL No: MW-5



Initial Site Investigation Report  
VDEC Project No. 95-1936  
Route 5, Derby, VT

AMERICAN GEOTECH, Inc.  
11 SURREY COACH LN.  
BOW, NH 03304

PROJECT No.: 96-46-P2

DATE OF CONSTRUCTION: 06/12/96

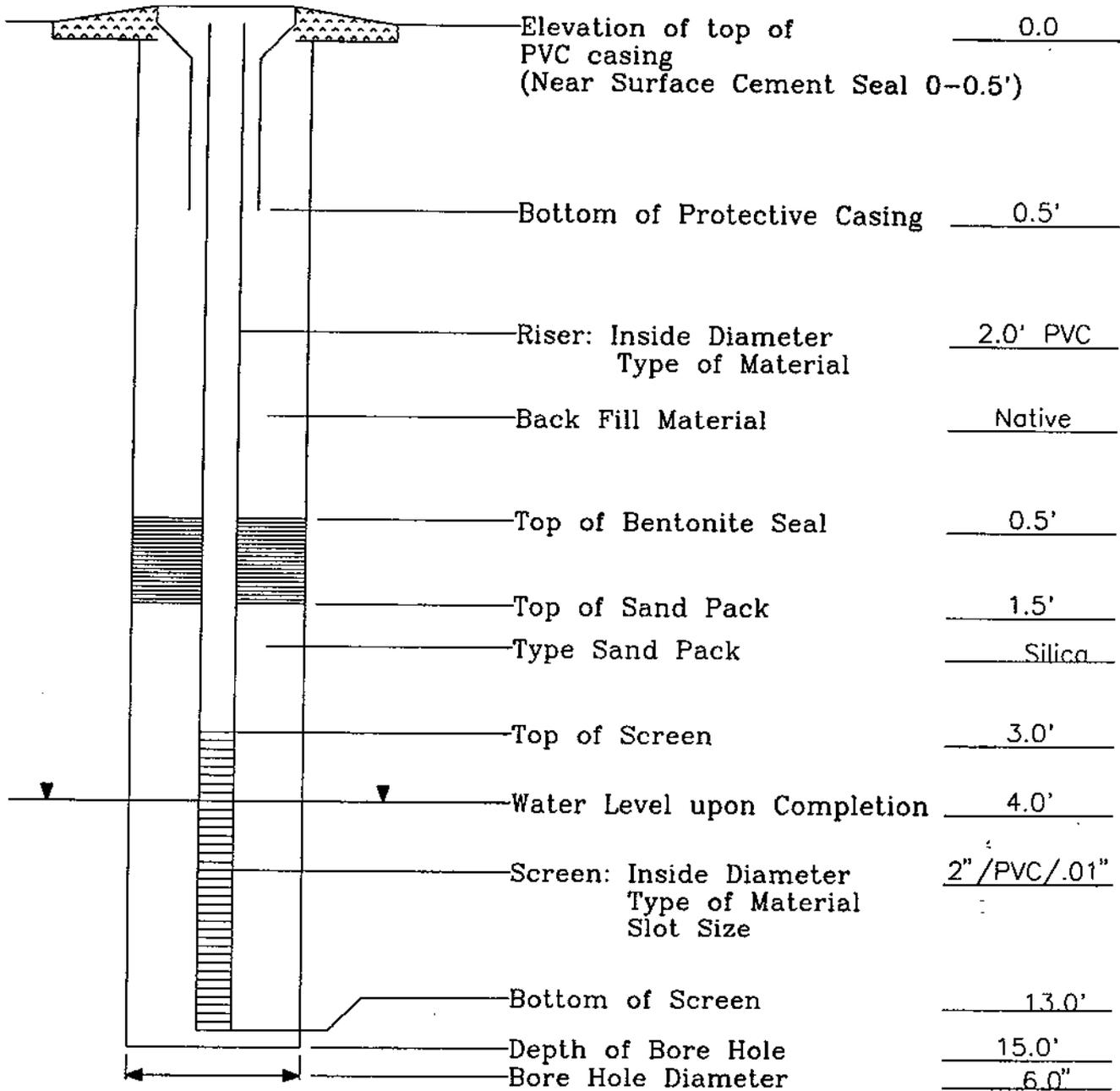
PROJECT LOCATION: Derby, VT

DRILLING METHOD: HSA

CONTRACTOR: Contech., Inc.

TOTAL DEPTH: 17.0'

WELL No: MW-6



Initial Site Investigation Report  
VDEC Project No. 95-1936  
Route 5, Derby, VT

AMERICAN GEOTECH, Inc.  
11 SURREY COACH LN.  
BOW, NH 03304