

Environmental Services of America, Inc.



Tri-S Division

205 Main Street
P.O. Box 1760
Brattleboro, VT 05302
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March 1, 1994

Chuck Schwer
VT DEC SMS HMMMD
103 South Main St/West Bldg
Waterbury, VT 05671-0404

RE: Environmental Site Investigation Report of DJ Wholesale Building Materials, Inc.
Putney Road, Brattleboro, VT DEC Site #93-1489

Dear Mr. Schwer:

With approval from David Ouimette of DJ Wholesale Building Materials, Inc., we are submitting our completed report for your review of the above referenced site.

Should you have any questions please call me at 254-3677.

Sincerely,
ENSA TRI-S, Inc. Environmental Consulting

A handwritten signature in cursive script that reads "Bruce Tease".

Bruce Tease, Ph.D.
Project Manager

Enclosure

BET:dn

\\381.01\statappv.let

Offices Nationwide

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FEB 24 1994

Environmental Services of America, Inc.



Tri-S Division
205 Main Street
P.O. Box 1760
Brattleboro, VT 05302
Phone: (802) 254-3677
1-800-359-3677
Fax: (802) 254-7630

February 23, 1994

DJ Wholesale Building Materials, Inc.
Attn: David Ouimette
1415 Elm Street
Manchester, NH 03108

RE: Environmental Site Investigation Report of DJ Wholesale Building Materials, Inc.
Putney Road, Brattleboro, Vermont DEC Site #93-1489

Dear Mr. Ouimette:

Enclosed please find the above-referenced report for your review. Also enclosed you will find 2 forms requiring your signature upon approval of this report. Please sign one form and return it to us in the self addressed, stamped envelope provided for your convenience. The second copy is for your records.

As soon as we receive this form, a copy of the above-referenced report will be mailed to the recipient noted on the enclosed form.

Should you have any questions please call me at 1-800-359-3677.

Sincerely,
ENSA TRI-S, Inc. Environmental Consulting Division

Bruce Tease, Ph.D.
Project Manager

Enclosures

cc: ~~Frank Schwer, State of Vermont Dept.~~

BET:dn

\\381.01\approval.let

Environmental Site Investigation Report
of
DJ Wholesale Building Materials, Inc.
P.O. Box 825, Putney Road
Brattleboro, VT 05301
DEC Site #93-1489

Prepared for

DJ Wholesale Building Materials, Inc.
Attn: David Ouimette
PO Box 5240
1415 Elm Street
Manchester, NH 03108

by

Environmental Services of America, Inc.
TRI-S, Inc. Environmental Consulting Division
205 Main Street
Brattleboro, VT 05301

February 22, 1994

EXECUTIVE SUMMARY

This report describes subsurface investigation work required by the Sites Management Section (SMS) of the Vermont Department of Environmental Conservation (VT DEC) at the site of DJ Wholesale Building Materials, Inc. located in Brattleboro, Vermont. The environmental investigation was requested by the SMS following a review of tank pull forms and a subsurface assessment report that indicated a release of petroleum product (gasoline and diesel) had possibly occurred from the pump island and/or feed lines leading to the two underground storage tanks that were removed from the site.

Work conducted during the recent investigation included the drilling of five soil borings in areas within, upgradient, and downgradient of the source area, head space screening of split spoon soil samples for volatile organic compounds (VOCs), installation of groundwater monitoring wells in the above noted bore holes, and analysis of groundwater samples for Volatile Organic Compounds by GC/MS via EPA Method 8020 plus MTBE. One sample was analyzed for Total Petroleum Hydrocarbons by IR via EPA Method 418.1.

Head space screening of the split spoon soil samples revealed the absence of volatile organic compounds (VOCs) in the samples collected from the soil borings for DJ-1 through DJ-4. VOCs as high as 93.0 ppm were detected in DJ-5 in the sample collected at the groundwater table interface. This boring was advanced adjacent to DJ-1 within the contaminant source area and the well was screened within the upper five feet of the water table.

Analytical testing of groundwater samples collected from the monitoring wells revealed the absence of the compounds tested for. Depth to groundwater was approximately 12-13 feet below ground surface and groundwater flow was in an east-southeasterly direction.

Conclusions and recommendations are presented at the end of this report.

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1. Introduction

Environmental Services of America - TRI-S, Inc. Environmental Consulting Division (TEC) was contracted by DJ Wholesale Building Materials, Inc. of Brattleboro, VT to conduct subsurface environmental investigations at their site off of Putney Road (aka Route 5) in Brattleboro, VT (see Site Location Map in Appendix A). This work was performed pursuant to the following tasks requested by the Sites Management Section (SMS) of the Vermont Department of Environmental Conservation (VT DEC) in their letter dated November 16, 1993:

Determine the degree and extent of contamination, if any, to the groundwater. If soil is found to contain evidence of contamination at the water table, then a sufficient number of monitoring wells should be installed in locations which will adequately define the severity of contamination at the site. Any borings installed should have the split spoon samples screened at five foot intervals in order to further define the degree and extent of contamination to the soils. All groundwater samples taken should be analyzed using EPA Methods 8020 and one for Total Petroleum Hydrocarbons (TPH).

Perform an assessment of the site to determine the potential for sensitive receptors to be impacted by the contamination. This should include basements of adjacent buildings, nearby surface water including the tributary to the Connecticut River, and any public or private drinking water wells which are located within the vicinity of the site. Of particular concern to the SMS is private well #24 shown on the enclosed map. Should any water supplies appear at risk from this contamination, they should be sampled and analyzed using EPA Methods 8020 and TPH.

Develop a plan to treat and/or monitor the eleven cubic yards of stockpiled soils. The soils must remain located in an area such that they have a low potential to impact nearby receptors. They must also remain properly encapsulated in plastic. If the soils are to be moved off-site, the SMS or UST Program must grant permission prior to their transport.

Determine the need for a long term treatment and/or monitoring plan which addresses the contamination present at the site. The need for such a plan should be based on the results of the above investigations.

Submit to the SMS a summary report which outlines the work performed as well as providing conclusions and recommendations. Included should be detailed well logs, analytical data, site map, showing the location of the stockpiled soils, area map, and a groundwater contour map - if applicable.

2. Overview of Past Environmental Investigations

On October 12, 1993, a 5000 gallon gasoline underground storage tank (UST) and a 10,000 gallon diesel fuel UST were removed from the subject property. A site assessment and tank pull forms were completed by TEC. During the removal of the USTs, contaminated soil was found directly beneath the pump island located in between the two USTs. The USTs appeared to be in good condition and no holes were observed. Based on field screening performed on soil samples collected during the excavation, a total of approximately 11 cubic yards of contaminated soil was stockpiled and polyencapsulated on-site. The VOC readings ranged as high as 372 ppm and averaged approximately 50 ppm. The level of VOCs remaining at the extent of the excavation (approximately 12-16 feet) ranged from 20 to 28 ppm. Field screening was performed using a Thermo Environmental Instruments, Inc. Organic Vapor Meter (OVM) Model 580B calibrated to 250 parts per million (ppm) Isobutylene span gas. It should be noted that if reference to Benzene is desired, direct OVM readings should be multiplied by a response factor of 0.5.

Groundwater was not encountered at the site during the UST pull. Native soil encountered under the fill beneath the USTs consisted of fine to medium grained silty sand with some gray-green clay.

On December 16, 1993, TEC submitted a Work Plan to the SMS for their review which outlined the approach to be taken in performing the tasks requested by the SMS at the subject property. On January 14, 1994, the SMS approved the Work Plan.

3. Subsurface Investigations

3.1 Soil Borings

On January 19, and 20, 1994, five (5) soil borings were advanced in strategic locations at the subject property by T&K Drilling of Troy, NH, under the direction of TEC. Split spoon soil samples were collected at the surface and at five foot intervals into the groundwater table. Three soil borings were advanced on January 19, 1994. The fourth planned boring was advanced on January 20, 1994. Based on the information obtained from the four planned soil borings, a fifth boring was advanced in the immediate vicinity of the first boring located within the source area (beneath the former pump island). This boring was used to determine if petroleum contamination was present above the 10-12 foot depth range.

The air temperature during the drilling period ranged from approximately -20° F to 10° F. This significantly affected the progress of the drilling and hampered the ability to detect volatile organic compounds (VOC) via field screening despite warming the soil samples to approximately 60° F. Therefore, a decision was made to install monitoring wells within the bore holes despite the apparent absence of VOCs in the split spoon soil samples collected from the first four borings.

The location of the monitoring wells is shown on the Groundwater Potentiometric Map included in Appendix B.

3.2 Split Spoon Soil Sampling and Field Screening

Split spoon soil samples were screened for volatile organic compounds (VOC) using a Thermo Environmental Instruments Inc. Organic Vapor Meter (OVM) Model 580B calibrated to 250 ppm of Isobutylene span gas. This meter is capable of detecting VOC concentrations to a limit of 0.1 ppm. It should be noted that depending upon the compound(s) of interest, the direct readings from the OVM may or may not reflect representative levels of contamination. According to the manufacture's suggestion, direct readings should be adjusted multiplying by a factor of 0.5 when reference to Benzene is desired.

No VOCs were encountered in the split spoon soil samples collected from the first four soil borings. A maximum of 93.0 ppm of VOCs were detected in the soil sample collected at the 9-11 foot depth range during the advancement of the fifth soil boring (DJ-5). VOC screening results (direct readings) are presented on the Soil Boring/Monitoring Well Logs in Appendix C.

3.3 Soil Conditions

The soil conditions encountered during the advancement of the soil borings consisted of backfilled sand and gravel within the former UST pit area and fine to medium grained light brown silty sand in areas outside of the excavation pit. Variation in the silt content was observed at depths ranging from 10-20 feet below grade. Wet soils were encountered at depths of approximately 10-11 feet, but, the potentiometric surface ranged from 12.41 to 12.87 feet below the PVC well head (approximately ground surface). Clay bands and coarse grained sand were encountered at the 20-22 foot depth range.

3.4 Site Hydrology

The depth to groundwater was measured from the top of the PVC well pipe and well elevations were determined by survey methods on January 21, 1994, by TEC personnel. Groundwater flow was determined to be in an east-southeasterly direction. A Groundwater Potentiometric Map is included in Appendix B.

Depth to groundwater from the PVC well head and groundwater potentiometric readings are summarized in the following table.

Groundwater Potentiometric Chart for January 26, 1994

Wells	DJ-1	DJ-2	DJ-3	DJ-4	DJ-5
Top of PVC	98.87	98.17	98.81	99.53	98.81
Groundwater elevation	86.19	85.76	85.94	86.73	86.29
Depth to Groundwater	12.68	12.41	12.87	12.80	12.52
Top of PVC and groundwater elevation readings are measured in feet from an arbitrary datum point					

The Hydraulic Gradient in the subject area was determined to be approximately 0.02 cm/cm. Based on a Hydraulic Conductivity value of 10^{-3} cm/sec for silty sandy and an effective porosity estimate of 35%, the groundwater transport velocity in the vicinity of the contaminated area of the site was approximated by using the following variation of Darcy's Equation:

$$GW_{vel} = \text{Hydraulic Conductivity} \times \text{Hydraulic Gradient} / \text{Effective Porosity}$$

For Silty Sand

$$GW_{vel} = 10^{-3} \text{ cm/sec} \times 0.02 \text{ cm/cm} / 0.35$$

$$GW_{vel} = 5.7 \times 10^{-5} \text{ cm/sec}$$

$$GW_{vel} = 5 \text{ cm/day}$$

3.5 Groundwater Sampling and Analysis

On January 26, 1994, following the removal of three well volumes, groundwater samples were collected and preserved in accordance with State of Vermont sampling protocol, and analyzed for Volatile Organic Compounds via EPA Method 8020. A sample from DJ-5 was collected and analyzed for Total Petroleum Hydrocarbons by IR via EPA Method 418.1.

No odors or sheens were detected during sample collection. It should be noted, however, that the air temperature was very cold, which can significantly limit olfactory sensing of VOCs. Monitoring well gauging and sampling information are presented in Appendix D.

Groundwater samples were submitted on January 27, 1994, to Matrix Analytical, Inc. located in Hopkinton, Massachusetts. No compounds tested for were detected in any of the samples analyzed. Full laboratory data sheets and Chain-of-Custody statement are included in Appendix E.

4. Risk Evaluation

Analytical results indicated the absence of the compounds tested for in the groundwater samples collected. Based on these results, it would appear that the majority of the petroleum related contamination detected during the UST excavations has been removed following excavation of the contaminated soils. While residual soil contamination does appear to be present based on the information obtained from the DJ-5 soil boring, the degree of contamination is not considered to be extensive enough to have contaminated the site's groundwater. Therefore, a threat to human and/or environmental sensitive receptors does not appear to exist at this time.

5. Conclusions

TEC makes the following conclusions:

Determination of the Degree and Extent of Contamination at the Subject Property

Based on the field screening of soil samples and analytical results obtained to date, the extent of soil contamination appears to be limited to the immediate vicinity of the former excavation pit, particularly in the area of the former pump island. No compounds tested for were detected in the groundwater samples analyzed.

Potential for Off-Site Contaminant Migration

Based on the analytical laboratory testing conducted to date, off-site migration of petroleum related compounds does not appear to have been significant.

Need for Additional Assessment and/or Testing

Based on the absence of petroleum related compounds in the groundwater samples analyzed to date, no further testing is warranted at this time.

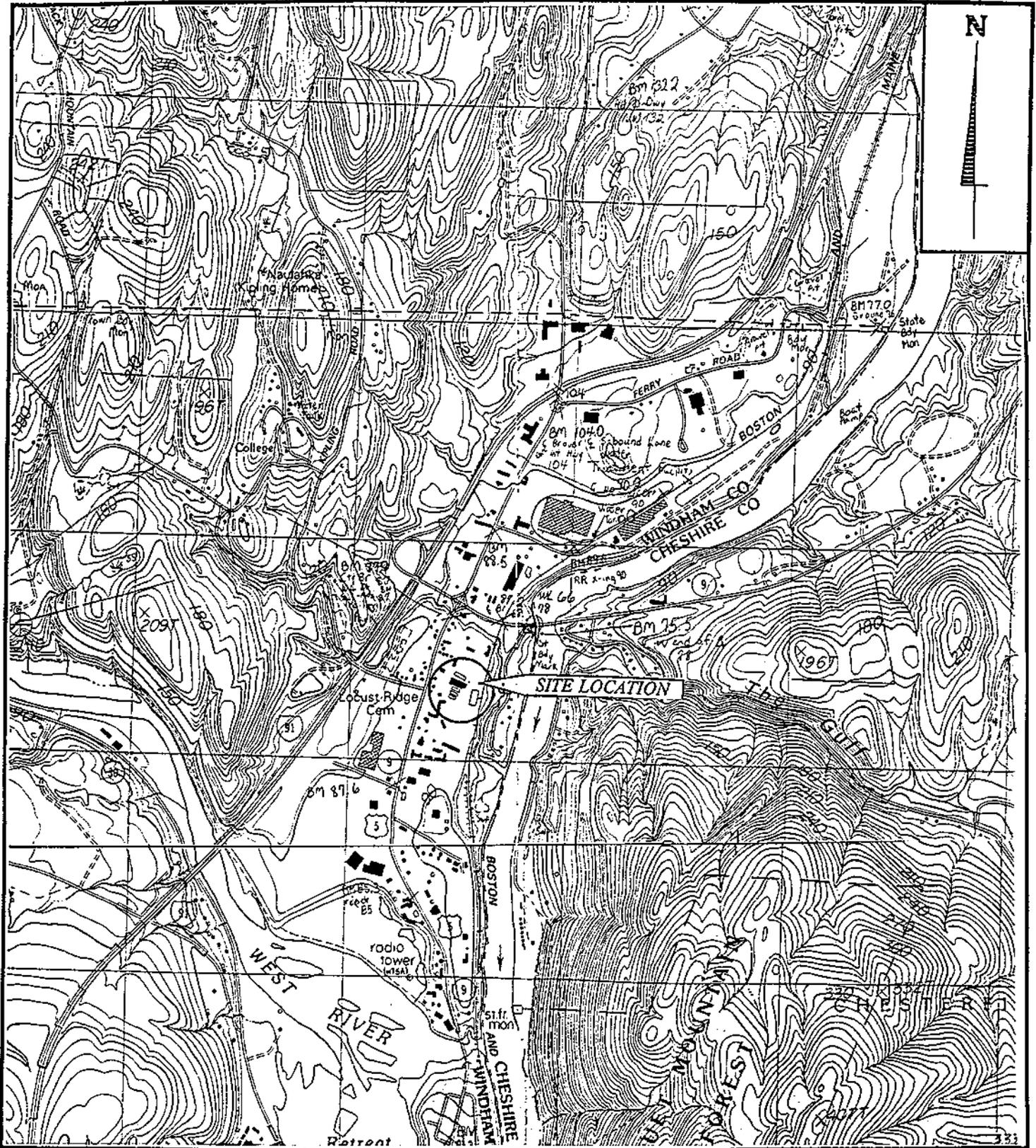
6. Recommendations

TEC recommends that the contaminated soil stockpiled at the subject property be re-screened for VOCs in the spring of 1994. Based on the level of contamination present, a decision regarding the disposal of this soil can be made.

This report must be submitted to the VT SMS of the Department of Environmental Conservation located on 103 South Main Street/West Building, Waterbury, VT 05671-0404. Upon review and approval, TEC can submit this report on behalf of the site owner.

Appendix A

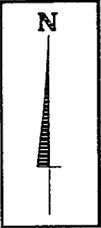
Site Location Map



Site Locus	DJ Wholesale Building Materials, Inc. Putney Road Brattleboro, Vermont	Topographic Quadrangle Newfane, VT.- NH scale: 1:25,000 metric 1984
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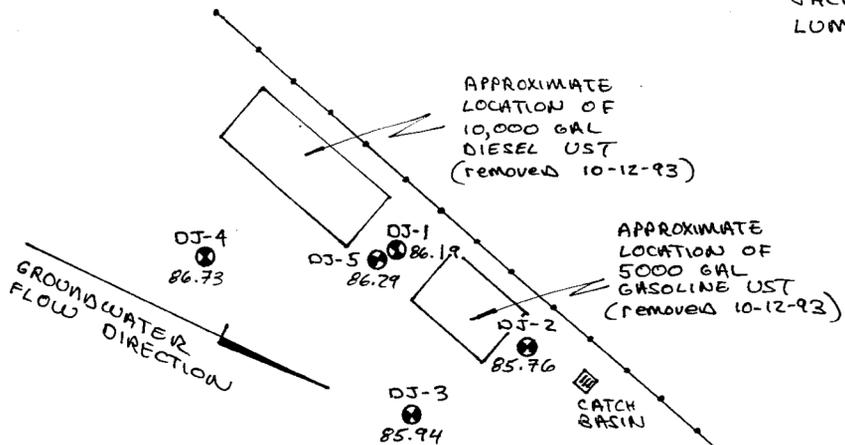
Appendix B

Groundwater Potentiometric Map



DJ WHOLESALE
BUILDING MATERIALS, INC.

JACK TARMY
LUMBER YARD



GROUNDWATER POTENTIOMETRIC MAP	
DJ Wholesale Building Materials, Inc. Putney Road Brattleboro, Vermont	SCALE: 1:240 DATE: 2/18/94
Environmental Services of America TRI-S, Inc. Environmental Consulting Division 205 Main Street Brattleboro, Vermont	

Appendix C

Soil Boring/Monitoring Well Logs

TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

Project #: <u>381.01</u> Date: <u>1/19/94</u> Project Name: <u>DJ Wholesale</u> Location: <u>Brattleboro, VT</u> Driller: <u>T&K Drilling</u> TEC Personnel: <u>PSR</u> Boring/Well #: <u>MW-1</u> Sheet <u>1</u> of <u>1</u>	SITE LOCUS
--	-------------------

Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0-2	off flights				-	0.0	fine grained silty sand, dry	
5-7	9	7	6	4	15	0.0	backfill sand & gravel with asphalt pieces, dry	
10-12	4	5	5	8	18	0.0	fine grained sand & silt, moist	
15-17	2	5	8	6	20	0.0	fine to medium grained silty sand, wet	
20-22	1	1	6	9	24	0.0	medium to coarse grained sand	
25-27	8	8	10	12	20	0.0	wet	

Drilling Method: <u>HSA</u> Total Well Depth: <u>20'</u> Groundwater Depth: <u>12.68'</u> PVC elevation: _____	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>10'</u> Slot Size: <u>10</u> Ground Elevation: _____
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- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
 2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
 3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
 4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
 5. HSA = Hollow Stem Auger, AR = Air Rotary

**TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG**

Project #: <u>381.01</u> Date: <u>1/19/94</u> Project Name: <u>DI Wholesale</u> Location: <u>Brattleboro, VT</u> Driller: <u>T&K Drilling</u> TEC Personnel: <u>PSR</u> Boring/Well #: <u>MW-2</u> Sheet <u>1</u> of <u>1</u>	SITE LOCUS
--	-------------------

Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0-2	off flights				-	0.0	medium to coarse grained silty sand, dry	
5-7	5	5	6	6	20	0.0	medium to coarse grained silty sand, trace of gravel, dry	
10-12	4	4	3	6	20	0.0	medium to coarse grained sand, dry wet fine grained sand & silt at 11'	
15-17	2	4	3	3	20	0.0	medium to coarse grained sand, wet	
20-22	1	5	5	4	20	0.0	medium to coarse grained sand, wet	

Drilling Method: <u>HSA</u> Total Well Depth: <u>20'</u> Groundwater Depth: <u>12.41'</u> PVC elevation: _____	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>10'</u> Slot Size: <u>10</u> Ground Elevation: _____
---	--

- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
 2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
 3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
 4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
 5. HSA = Hollow Stem Auger, AR = Air Rotary

TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

Project #: <u>381.01</u> Date: <u>1/19/94</u> Project Name: <u>DI Wholesale</u> Location: <u>Brattleboro, VT</u> Driller: <u>T&K Drilling</u> TEC Personnel: <u>PSR</u> Boring/Well #: <u>MW-3</u> Sheet <u>1</u> of <u>1</u>	SITE LOCUS
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Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0-2	off flights				-	0.0	fine to medium grained silty sand, dry	
5-7	4	3	2	3	20	0.0	fine grained silty sand, dry	
10-12	5	4	6	6	18	0.0	fine grained silty sand, dry	
15-17	4	4	4	4	20	0.0	fine grained silty sand, wet	
20-22	3	3	5	6	20	0.0	fine to medium grained sand and silt, wet	
							coarse grained sand & gravel at 21'	

Drilling Method: <u>HSA</u> Total Well Depth: <u>20'</u> Groundwater Depth: <u>12.87'</u> PVC elevation: _____	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>10'</u> Slot Size: <u>10</u> Ground Elevation: _____
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- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
 2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
 3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
 4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
 5. HSA = Hollow Stem Auger, AR = Air Rotary

TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG

Project #: <u>381.01</u> Date: <u>1/20/94</u> Project Name: <u>DJ Wholesale</u> Location: <u>Brattleboro, VT</u> Driller: <u>T&K Drilling</u> TEC Personnel: <u>BET</u> Boring/Well #: <u>MW-4</u> Sheet <u>1</u> of <u>1</u>	SITE LOCUS
--	-------------------

Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0-2	off flights				-	0.0	fine grained light brown sand and silt, dry	
5-7	3	4	4	4	18	0.0	fine grained light brown sand and silt, dry	
							evidence of high groundwater table and FEOH bands	
10-12	3	4	4	5	20	0.0	silt and fine grained sand, wet	
15-17	3	4	3	2	18	0.0	fine grained sand and silt, wet	
							1" FEOH band	
20-22	1	1	5	5	20	0.0	medium grained sand and silt	
							2" clay lense	
							7" coarse sand	

Drilling Method: <u>HSA</u> Total Well Depth: <u>20'</u> Groundwater Depth: <u>12.80'</u> PVC elevation: _____	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>10'</u> Slot Size: <u>10</u> Ground Elevation: _____
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- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
 2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
 3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
 4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
 5. HSA = Hollow Stem Auger, AR = Air Rotary

**TRI-S, INC. ENVIRONMENTAL CONSULTING
SOIL BORING/MONITORING WELL LOG**

Project #: <u>381.01</u> Date: <u>2/20/94</u> Project Name: <u>DI Wholesale</u> Location: <u>Brattleboro, VT</u> Driller: <u>T&K Drilling</u> TEC Personnel: <u>DCB</u> Boring/Well #: <u>MW-5</u> Sheet <u>1</u> of <u>1</u>	SITE LOCUS
--	-------------------

Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0-2	no sample							
5-7	9	3	3	5	12	0.0	fine - medium grained sand and gravel, backfill, dry	
7-9	4	4	4	3	12	2.0	fine - medium grained sand and gravel, backfill, dry	
9-11	4	4	5	5	18	93.0	fine grained silty sand, wet at 11' petroleum odor	
15	no sample					-		

Drilling Method: <u>HSA</u> Total Well Depth: <u>15'</u> Groundwater Depth: <u>12.52'</u> PVC elevation: _____	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>5'</u> Slot Size: <u>10</u> Ground Elevation: _____
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- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 580B.
 2. ND indicates Non-Detectable contaminant concentrations as read by the OVM.
 3. Samples are collected using a Split Spoon Sampler unless otherwise indicated.
 4. Split Spoon Sampler has a 2" diameter and is driven using a 140 lb. hammer falling 30 inches.
 5. HSA = Hollow Stem Auger, AR = Air Rotary

Appendix D

Monitoring Well Gauging and Sampling Log

Appendix E
Laboratory Data



RECEIVED FEB 07 1994

ANALYTICAL DATA

SUMMARY

Report Date: 02/02/94

Account: TRI-S Environmental Consulting
Address: P.O. Box 1760
Brattleboro, VT 05302
802-254-3677

Project Manager: B. Tease
Project Name: D.J. Wholesale (1-27-94)
Project No.: 381.01

Sample Information:

Table with 4 columns: Laboratory ID, Client/Field ID, Laboratory ID, Client/Field ID. Rows include sample IDs 40270323-001 through 40270323-007 and their corresponding client/field IDs.

Reviewed by

Handwritten signature of Stephen DiMattei

Stephen DiMattei
Quality Assurance Officer

Lab Certifications

EPA ID: No. MA059
Massachusetts: No. M-MA059
Maine: Reciprocity
Rhode Island: No. 87
South Carolina: No. 88011

Florida(DEP): QA Plan No. 900437G
Florida(HRS): No. E87290
Connecticut: No. PH0515
New York: ELAP No. 11116
New Hampshire: No. 2041



Matrix Analytical, Inc.
 106 South Street
 Hopkinton, MA 01748-2295
 1 (800) 362-8749

RECEIVED FEB 07 1994

F I N A L R E P O R T

Client Information

Account: TRI-S Environmental Consulting
 Address: P.O. Box 1760
 Brattleboro, VT 05302

Project Name: D.J. Wholesale (1-27-94)
 Project Number: 381.01
 Project Manager: B.Tease
 Sampler Name: TRI-S Environmental

Sample Information

Lab ID: 40270323-001
 Client ID: MW-1-12694-381
 Matrix: Water

Date Sampled: 01/26/94 14:08
 Date Received: 01/27/94 :0
 Date Reported: 02/02/94

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	ND	ug/l	1	8020	kp	02/02/94
Chlorobenzene	ND	ug/l	1	8020	kp	02/02/94
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	02/02/94
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	02/02/94
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	02/02/94
Ethylbenzene	ND	ug/l	1	8020	kp	02/02/94
MTBE	ND	ug/l	5	8020	kp	02/02/94
Toluene	ND	ug/l	1	8020	kp	02/02/94
Xylene	ND	ug/l	1	8020	kp	02/02/94

Surrogate Studies - Volatiles

Bromofluorobenzene (602/8020)	84	Percent			kp	02/02/94
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Matrix Analytical, Inc.
 106 South Street
 Hopkinton, MA 01748-2295
 1 (800) 362-8749

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F I N A L R E P O R T

Client Information

Account: TRI-S Environmental Consulting
 Address: P.O. Box 1760
 Brattleboro, VT 05302

Project Name: D.J. Wholesale (1-27-94)
 Project Number: 381.01
 Project Manager: B.Tease
 Sampler Name: TRI-S Environmental

Sample Information

Lab ID: 40270323-002
 Client ID: MW-2-12694-381
 Matrix: Water

Date Sampled: 01/26/94 14:03
 Date Received: 01/27/94 :0
 Date Reported: 02/02/94

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	ND	ug/l	1	8020	kp	02/01/94
Chlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
Ethylbenzene	ND	ug/l	1	8020	kp	02/01/94
MTBE	ND	ug/l	5	8020	kp	02/01/94
Toluene	ND	ug/l	1	8020	kp	02/01/94
Xylene	ND	ug/l	1	8020	kp	02/01/94

Surrogate Studies - Volatiles

Bromofluorobenzene (602/8020)	93	Percent			kp	02/01/94
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F I N A L R E P O R T

Client Information

Account: TRI-S Environmental Consulting
 Address: P.O. Box 1760
 Brattleboro, VT 05302

Project Name: D.J. Wholesale (1-27-94)
 Project Number: 381.01
 Project Manager: B.Tease
 Sampler Name: TRI-S Environmental

Sample Information

Lab ID: 40270323-003
 Client ID: MW-3-12694-381
 Matrix: Water

Date Sampled: 01/26/94 14:00
 Date Received: 01/27/94 :0
 Date Reported: 02/02/94

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<u>VOLATILE ORGANICS</u>						
Benzene	ND	ug/l	1	8020	kp	02/01/94
Chlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
Ethylbenzene	ND	ug/l	1	8020	kp	02/01/94
MTBE	ND	ug/l	5	8020	kp	02/01/94
Toluene	ND	ug/l	1	8020	kp	02/01/94
Xylene	ND	ug/l	1	8020	kp	02/01/94
<u>Surrogate Studies - Volatiles</u>						
Bromofluorobenzene (602/8020)	86	Percent			kp	02/01/94



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F I N A L R E P O R T

Client Information

Account: TRI-S Environmental Consulting
 Address: P.O. Box 1760
 Brattleboro, VT 05302

Project Name: D.J. Wholesale (1-27-94)
 Project Number: 381.01
 Project Manager: B.Tease
 Sampler Name: TRI-S Environmental

Sample Information

Lab ID: 40270323-004
 Client ID: MW-4-12694-381
 Matrix: Water

Date Sampled: 01/26/94 13:56
 Date Received: 01/27/94 :0
 Date Reported: 02/02/94

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<u>VOLATILE ORGANICS</u>						
Benzene	ND	ug/l	1	8020	kp	02/01/94
Chlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
Ethylbenzene	ND	ug/l	1	8020	kp	02/01/94
MTBE	ND	ug/l	5	8020	kp	02/01/94
Toluene	ND	ug/l	1	8020	kp	02/01/94
Xylene	ND	ug/l	1	8020	kp	02/01/94
<u>Surrogate Studies - Volatiles</u>						
Bromofluorobenzene (602/8020)	82	Percent			kp	02/01/94



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FINAL REPORT

Client Information

Account: TRI-S Environmental Consulting
 Address: P.O. Box 1760
 Brattleboro, VT 05302

Project Name: D.J. Wholesale (1-27-94)
 Project Number: 381.01
 Project Manager: B.Tease
 Sampler Name: TRI-S Environmental

Sample Information

Lab ID: 40270323-005
 Client ID: MW-5-12694-381
 Matrix: Water

Date Sampled: 01/26/94 14:12
 Date Received: 01/27/94 :0
 Date Reported: 02/02/94

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
<u>VOLATILE ORGANICS</u>						
Benzene	ND	ug/l	1	8020	kp	02/01/94
Chlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
Ethylbenzene	ND	ug/l	1	8020	kp	02/01/94
MTBE	ND	ug/l	5	8020	kp	02/01/94
Toluene	ND	ug/l	1	8020	kp	02/01/94
Xylene	ND	ug/l	1	8020	kp	02/01/94
<u>Surrogate Studies - Volatiles</u>						
Bromofluorobenzene (602/8020)	86	Percent			kp	02/01/94
<u>Petroleum Hydrocarbon Analysis</u>						
Total Petroleum Hydrocarbons (IR)	ND	mg/l	1.0	418.1	sh	01/28/94



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F I N A L R E P O R T

Client Information

Account: TRI-S Environmental Consulting
 Address: P.O. Box 1760
 Brattleboro, VT 05302

Project Name: D.J. Wholesale (1-27-94)
 Project Number: 381.01
 Project Manager: B.Tease
 Sampler Name: TRI-S Environmental

Sample Information

Lab ID: 40270323-006
 Client ID: MW-01-12694-381
 Matrix: Water

Date Sampled: 01/26/94 12:00
 Date Received: 01/27/94 : 0
 Date Reported: 02/02/94

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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VOLATILE ORGANICS

Benzene	ND	ug/l	1	8020	kp	02/01/94
Chlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,2-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,3-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
1,4-Dichlorobenzene	ND	ug/l	1	8020	kp	02/01/94
Ethylbenzene	ND	ug/l	1	8020	kp	02/01/94
MTBE	ND	ug/l	5	8020	kp	02/01/94
Toluene	ND	ug/l	1	8020	kp	02/01/94
Xylene	ND	ug/l	1	8020	kp	02/01/94

Surrogate Studies - Volatiles

Bromofluorobenzene (602/8020)	89	Percent			kp	02/01/94
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F I N A L R E P O R T

Client Information

Account: TRI-S Environmental Consulting
 Address: P.O. Box 1760
 Brattleboro, VT 05302

Project Name: D.J. Wholesale (1-27-94)
 Project Number: 381.01
 Project Manager: B.Tease
 Sampler Name:

Sample Information

Lab ID: 40270323-007
 Client ID: QC Report -Water
 Matrix: Water

Date Sampled: 01/26/94 :
 Date Received: 01/27/94 : 0
 Date Reported: 02/02/94

Analytical Parameter	Result	Unit	Detection Limit	Method No.	Analyst	Date Analyzed
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METHOD BLANK - VOLATILES

Method Blank	ND	ug/l		8020/602		
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METHOD SUMMARIES

Petroleum Hydrocarbon Analysis:

- (1) TPH (IR) Based on Methods SW846 9073 and EPA 418.1
 Analyzed by FTIR using BioRad FTS 7 instrumentation.
- (2) TPH (GC) / Petroleum Hydrocarbon Profile
 Based on Methods ASTM D3328, SW846 8100/3550 and the
 State of California L.U.F.T. field manual.
 Analyzed by GC/FID using Hewlett Packard 5890 GC.

Volatile organic analysis is performed using H/P 5995 or 5970 GC/MS, Tekmar purge and trap, and ALS autosampler. Chromatography incorporates packed and megabore columns. Data reduction is performed on RTE 1000 and ChemStation systems. Tuning is based on BFB standards. Procedural guidelines follow EPA 624 or SW846 for all analyses. Aromatic volatiles listed in VOA 8020 are analyzed using GC/MS systems.

METHOD REFERENCES

1. Test Methods For Evaluating Solid Waste: Physical Chemical Methods. EPA SW 846. November 1986.
 2. Methods For Chemical Analysis of Water and Wastes. EPA 600/4-79-200. Revised March 1983.
 3. Standard Methods For Examination of Water and Wastewater. APHA-AWWA-WACF., 17th Edition. 1989.
- Note: Solid sample analysis reported on a wet weight basis except metals.

CHAIN-OF-CUSTODY RECORD

(rev. 01/93)

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COMPANY NAME: TRI-S ENVIRONMENTAL CONSULTING				ANALYSES REQUESTED												Total # of B O T T L E S				
ADDRESS: 205 MAIN STREET BOX 1760 BRATTLEBORO, UT 05302				8020 (GC only)	TPH	1181	BY	IR											COMMENTS OR NOTES	
PROJECT NAME: D.J. WHOLESALE		NO.: 381.01																		
PROJECT MANAGER: BRUCE TEASE		PHONE: 1-800-359-3677																		
SAMPLER(S) NAME: DAVID BALK																				
LAB ID (LAB USE ONLY)	CLIENT SAMPLE ID	TYPE*	COLLECTION DATE / TIME																	
	MW-1-12694-381	GW	1/26/94 2:08	2																2
	MW-2-12694-381	" "	" " 2:03	2																2
	MW-3-12694-381	" "	" " 2:00	2																2
	MW-4-12694-381	" "	" " 2:56	2																2
	MW-5-12694-381	" "	" " 2:12	2	1															3
	MW-01-12694-381	" "	" " 2:00	2																2
				TOTAL															13	
*TYPE: W = water; GW = groundwater; DW = drinking water; SW = surface water; S = soil; SED = sediment; SL = sludge; DS = drum sample; O = oil; WI = wipe; X = other (please describe)				SPECIAL INSTRUCTIONS / NOTES: <div style="font-size: 1.5em; text-align: center;">PO # 2093</div>																

MATRIX ANALYTICAL USE ONLY	RELINQUISHED BY	RECEIVED BY	DATE	TIME	COMMENTS
NOTES:	<i>D. Nolan</i>	<i>Wm Anderson</i>	1/27/94		
	<i>Wm Anderson</i>	<i>Wm Anderson</i>			
		<i>M. Cook</i>	1/27	1745	
PROJECT PRICE QUOTE NO.:		MATRIX ANALYTICAL, INC. 106 South Street Hopkinton, MA 01748 1 (800) 362-8740			

40270323-001