



**Environmental Services of America, Inc.** <sup>NOV 22 1995</sup>

**ENSA Environmental, Inc.**  
205 Main Street  
Brattleboro, VT 05302  
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November 21, 1995

Matthew Moran  
VT DEC HMMD SMS  
103 South Main Street/West Building  
Waterbury, VT 05671-0404

RE: Environmental Site Investigation Report for Western Avenue Texaco Station,  
Brattleboro, Vermont DEC Site #95-1832

Dear Mr. Moran:

Enclosed please find the above referenced report for your review.

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

Sincerely,  
ENSA Environmental, Inc.

Kirsten H. J. Wade  
Project Manager

Enclosure

# Environmental Services of America, Inc.



Nov 13 11 40 AM '95

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205 Main Street  
Brattleboro, VT 05302

**ENSA Environmental, Inc.**

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Brattleboro, VT 05302  
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Fax: (802) 254-7630

November 8, 1995

Mr. Richard Fleming, Jr.  
Fleming Oil Company  
One Putney Road  
Brattleboro, VT 05301

Re: Environmental Site Investigation Report, Fleming Texaco  
Route 9/Western Avenue, Brattleboro, VT (Site #95-1832)

Dear Rick:

Enclosed please find the above-referenced report for your review. If you have any questions, please do not hesitate to call. Upon your approval of this report we will forward a copy to the state.

Sincerely,  
ENSA Environmental, Inc.

A handwritten signature in cursive script that reads "Kirsten H. J. Wade".

Kirsten H. J. Wade  
Project Manager

Enclosure

cc: Matthew Moran, VT DEC SMS (w/o enclosure)

**ENVIRONMENTAL  
SITE INVESTIGATION  
REPORT**

**Western Avenue Texaco Station  
Brattleboro, Vermont  
DEC Site #95-1832**

*Prepared For:*

Fleming Oil Company  
Mr. Richard Fleming Jr.  
1 Putney Road  
Brattleboro, VT 05301

*Prepared By:*

ENSA Environmental, Inc.  
205 Main Street  
Brattleboro, VT 05301  
800-359-3677 phone; 802-254-7630 fax

October 31, 1995

ENSA Environmental, Inc. Job #521

## EXECUTIVE SUMMARY

In a letter dated July 25, 1995, the Sites Management Section (SMS) of the Vermont Department of Environmental Conservation (VT DEC) requested additional investigation of the extent and degree of petroleum related contamination in the soils and groundwater at the Fleming Texaco Site located at 108 Western Avenue, Brattleboro, Vermont. The letter was issued to Mr. Richard Fleming, Jr. of the Fleming Oil Company, in response to a piping removal and replacement/tank closure form that was filed with the state on May 8, 1995.

Based on the good condition of the connective piping and other findings at the time of the piping upgrade, former tanks and fuel dispensers as well as possible overfill events at the pump area are the probable cause of petroleum contamination in the soil at the site. The soils removed during the site excavation were cleared by Ted Unkles (VT ANR DEC MPS) for use as backfill around the new piping.

A total of six soil borings were advanced at the site on September 7, 1995 to define any further contamination. Contamination was detected in soils from borings FT-1, SB-1, FT-3, FT-4, and FT-5. Soils were screened via headspace protocol with an organic vapor meter (OVM). Monitoring wells were emplaced in the boreholes, except for SB-1 which met refusal at a depth of seven (7) feet.

Groundwater samples were collected from monitoring wells FT-1, 2, 3, and 5 on September 11, 1995 and were analyzed via US EPA Method 8020 for Aromatic Volatile Organic Compounds and were scanned for hydrocarbons using method 8100M. Monitoring well FT- 4 was dry at the time of sampling. Laboratory results revealed the presence of volatile organic compounds in wells FT-3 and FT-5. Monitoring wells FT-1 and FT-2 showed an absence of all analytes within detection limits.

Groundwater was encountered at depths of 19 to 30 feet during drilling. Based on groundwater elevations, drainage patterns, and topography, groundwater flow direction is estimated to be to the south/southeast.

The subject property is served by the municipal drinking water and sewer systems of Brattleboro. No private drinking water wells are known to be located within a half mile radius of the site. Potential use for site groundwater is considered to be low.

The Whetstone Brook is located approximately 110 feet south of the site and joins The Connecticut River approximately 1¼ miles to the east of the site. Both water bodies are potential sensitive receptors.

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

**TABLE OF CONTENTS**

1.00 INTRODUCTION . . . . . 1

2.00 SITE DESCRIPTION . . . . . 1

3.00 SUBSURFACE EXPLORATIONS AND ANALYSES . . . . . 2

    3.10 Soil Borings and Monitoring Wells . . . . . 2

    3.20 Field Screening of Soil Samples . . . . . 2

    3.30 Groundwater Levels and Flow Direction . . . . . 3

    3.40 Groundwater Analytical Laboratory Results . . . . . 4

4.00 RISK EVALUATION . . . . . 4

    4.10 Potential Sources . . . . . 4

    4.20 Potential Receptors . . . . . 5

5.00 CONCLUSIONS AND RECOMMENDATIONS . . . . . 5

    5.10 Conclusions . . . . . 5

    5.20 Recommendations . . . . . 6

**APPENDICES**

- Appendix A Site Locus Map
- Appendix B Sit Vicinity Map
- Appendix C Soil Boring/Monitoring Well Construction Logs
- Appendix D Isoconcentration Map
- Appendix E Groundwater Potentiometric Map
- Appendix F Analytical Laboratory Results

## **1.00 INTRODUCTION**

The connective piping, from the underground gasoline storage tank (UST) system located at the Fleming Oil Western Avenue Texaco Station in Brattleboro, Vermont was removed and replaced during the week of May 2, 1995. Petroleum contaminated soil (up to 1,200 ppm VOCs, as detected with a PID) was encountered during the piping replacement, and upon the approval of Ted Unkles was used as backfill in the contaminated area. ENSA Environmental, Inc. of Brattleboro, Vermont, submitted tank removal/piping replacement forms to the Vermont Department of Environmental Conservation (VT DEC). After reviewing that information, the DEC Sites Management Section (SMS) required that additional work be conducted to define the degree and extent of soil and groundwater contamination at the site, and to identify any sensitive receptors which might be impacted by such contamination. This work included subsurface exploration in and around the location of the gasoline USTs and connective piping.

Conclusions and recommendations generated in this report are based solely on information obtained during the course of this investigation. Changes in site conditions, or new information not available for review at the time of this investigation, may necessitate an update of conclusions and recommendations presented in this report.

## **2.00 SITE DESCRIPTION**

The Western Avenue Texaco Station is located on the south side of Western avenue, approximately 0.25 miles north of interchange 2 of Interstate Route 91 in Brattleboro, Vermont. The site is situated in a residential/commercial area. Interstate 91 is located to the east of the property. Behind the site, to the south, is a residence and the Whetstone Brook. A site locus map, copied from the USGS Topographic map of the Brattleboro, Vermont Quadrangle, is presented in Appendix A of this report.

The Fleming Oil Company is a distributor of gasoline and heating oil. The Western Avenue Texaco station serves as a retail distribution location for gasoline and convenience store items. The building is heated with fuel oil stored in an above ground storage tank located behind the building. The site is serviced by the municipal drinking water and sewer systems.

Three USTs and associated pumps are located on the property. The tanks are (1) 8,000 and (2) 10,000 gallons in size, and contain various grades of gasoline. All three tanks are eight years old and are tested regularly as required.

The USGS Topographic map (Appendix A) shows the site to be at an elevation of approximately 126 feet above mean sea level. The Whetstone brook is located approximately 110 feet south of the site building at an elevation of approximately 114 feet above mean sea level. The brook flows to the east where it eventually joins the Connecticut River approximately 1 ¼ miles from the site.

### **3.00 SUBSURFACE EXPLORATIONS AND ANALYSES**

#### **3.10 Soil Borings and Monitoring Wells**

In order to further define the degree and extent of soil contamination previously detected in the vicinity of the former pump island and to assess the potential for groundwater contamination, a total of six soil borings were advanced by a hollow stem auger drill rig on September 7 and 8, 1995, by T&K Drilling of Troy, NH. Drilling was overseen by ENSA personnel. Monitoring wells were installed in five (5) of the six (6) bore holes. The well locations are shown on the Site Vicinity Map presented in Appendix B of this report.

#### **3.20 Field Screening of Soil Samples**

During drilling, split-spoon soil samples were obtained at five-foot intervals from each of the boreholes. Soil samples were field screened for VOCs with a Thermo Environmental Instruments Model 580B Organic Vapor Meter (OVM), field calibrated to 250 parts per million (ppm) of an Isobutylene span gas. Results of sample headspace screening are presented in Table 1, below. Soil boring/monitoring well construction logs are presented in Appendix C of this report.

**Table 1. Results of headspace screening of split-spoon soil samples.  
 VOC concentrations in ppm.**

Depth range (ft.)	FT-1	SB-1	FT-2	FT-3	FT-4	FT-5
0-2	0.0	17.0	0.0	0.0	0.0-0.3	0.0
4-6		21.0				
5-7	0.0	1.0	0.0	0.0	3.0	2.0
10-12	0.0	Refusal	0.0	0.0	1.0	2.4
15-17	0.0		0.0	0.0	0.0	0.3-1.0
20-22	1223.0		0.0	75.0	0.0-0.3	0.3-1.0
25-27	9.0		0.0	1411.0 Refusal	705.0	880.0 Refusal
30-32	0.0		Refusal		Refusal	
35-37	0.0					

Samples containing VOCs exhibited gasoline odors except for the samples collected from FT-1. Pieces of wood and limited soil were obtained in the split spoon soil sample collected from the 20 to 22 foot depth range at FT-1. An OVM reading of 1223 ppm was detected at this sampling location.

An isoconcentration map showing maximum petroleum related VOCs detected in the soil borings is presented in Appendix D. This map suggests that the gasoline release initially migrated through site soils in a southwesterly direction.

Site soils are composed primarily of unsorted to partially sorted sand, silt, and cobbles deposited in a fluvial environment created by the Whetstone brook.

Drilling refusal was encountered at a depth of 27 to 30 feet below ground surface, in the vicinity of the pump island and site building while drilling for monitoring wells FT- 2, 3, 4, and 5. Similar refusal was encountered at 35' during the installation of FT-1. These refusals were apparently due to the presence of bedrock at those depths. The source of the refusal encountered at a 7 foot depth in SB-1 was undetermined.

### 3.30 Groundwater Levels and Flow Direction

Groundwater elevations for all monitoring wells were determined by survey methods and are presented in Table III. Depth to groundwater was measured through the use of a Solinst Model 101 electronic water level indicator. All measurements were taken with respect to the top of the PVC well head (approximate ground surface).

**Table III** **Groundwater Potentiometric Chart**

Date	FT-1	FT-2	FT-3	FT-4	FT-5
Top of PVC	94.85	95.77	95.94	96.10	95.66
9/11/95	65.90	73.25	71.51	Dry	71.12
<i>All results measured in feet from an arbitrary datum point</i>					

A groundwater potentiometric map constructed based on the groundwater elevations that were present on 9/11/95, is included in Appendix E. According to this map, groundwater flow within the investigation area is generally towards the south/southeast. While the flow direction is consistent with regional surface drainage patterns, it is cross gradient to the direction of contaminant migration detected in the soil.

### 3.40 Groundwater Analytical Laboratory Results

Groundwater samples were collected from the monitoring wells on 9/11/95. Laboratory results were compiled and are summarized in Table II.

**Table II** **Monitoring Well Sampling Results**

Date	Compound	FT-1	FT-2	FT-3	FT-5	Duplicate of 3	VT PGQES
9/11/95	Benzene	ND	ND	ND	8.5	ND	5.0
	Toluene	ND	ND	ND	11	ND	2420.0
	Ethylbenzene	ND	ND	ND	9.8	23	680.0
	Xylenes	ND	ND	200	37	170	400.0
	MTBE	ND	ND	ND	ND	ND	--
	sec-Butylbenzene	ND	NA	120	NA	39	
	Isopropylbenzene	ND	NA	55	NA	ND	
	p-Isopropyltoluene	ND	NA	360	NA	130	
	Naphthalene	ND	NA	ND	NA	17	
	n-Propylbenzene	ND	NA	ND	NA	200	
	1,3,5-Trimethylbenzene	ND	NA	990	NA	590	
	1,2,4-Trimethylbenzene	ND	NA	2000	NA	1200	
	8100M TPH	ND	ND	35	5.7	NA	

All results reported in micrograms per liter (ug/l) except 8100M=mg/l  
Samples collected from FT-1 and FT-3 were analyzed via method 8260 for VOCs

ND = Non-detectable  
VT PGQES = Vermont Primary Groundwater Quality Enforcement Standards

NA = not analyzed

Due to the presence of elevated VOCs in the soil sample collected from FT-1 and the former presence of a waste oil UST located near FT-3, a decision was made to analyze groundwater samples from these wells for VOCs via EPA method 8260. The remaining wells were sampled for VOCs via EPA Method 8020. All samples were also analyzed for petroleum hydrocarbons, via EPA Method 8100 M. This analysis qualitatively identified the petroleum contamination in monitoring wells FT-3 and FT-5 as gasoline.

The compounds detected are consistent with petroleum products in particular gasoline and middle distillate fuels. No other contaminants tested for were detected in the samples analyzed. Complete laboratory reports are presented in Appendix F of this report.

## 4.00 RISK EVALUATION

### 4.10 Potential Sources

Based on subsurface investigations, past tank testing, and the age of the current USTs at the site, it does not appear that the on-site USTs are currently a source of contamination. Former tanks, fuel dispensers, and connective piping as well as possible overfill incidents may be more probable sources of site contamination.

Both soil and groundwater contamination were detected in FT-3 and FT-5. Soil contamination was also detected at significant levels in FT-4, but due to the absence of groundwater in that monitoring well, no samples were collected for analysis. Benzene levels detected in well FT-5 are above drinking water guidelines. It is likely that additional contamination may be detected upon increases in the groundwater elevations at the site.

#### 4.20 Potential Receptors

The potential sensitive receptors of most immediate concern are the residents on properties that abut the station property to the southwest and the southeast. The basement ambient air of the residence to the southwest was screened with an OVM and no VOCs were detected.

The Whetstone Brook, located to the south and downgradient of the known area of contamination, is considered a sensitive environmental receptor. No visual evidence of gasoline contamination was observed in the brook and no groundwater seeps were detected downgradient of the site.

According to Town of Brattleboro records, drinking water wells within a half mile of the site are as follows:

<u>Distance and direction from site</u>	<u>Depth</u>	<u>Owner</u>
Approximately 0.5 miles southeast	95 feet	Leon Cobb
Approximately 0.5 miles southeast	205 feet	Robert Johnson
Approximately 0.5 miles south	460 feet	Jack Golding
Approximately 0.5 miles south	350 feet	Jack Golding
Approximately 0.5 miles east	240 feet	Gary Goodemate
Approximately 0.5 miles south	320 feet	Carl Hall
Approximately 0.5 miles south	102 feet	John Mitchel/Arnold Glim
Approximately 0.5 miles north	130 feet	Daniel Coughlin
Approximately 0.5 miles south	265 feet	Michael Gorman/Cooke Realty

None of these residential wells are located on properties that abut the site. The majority of these properties are located on the south side of the Whetstone Brook.

## **5.00 CONCLUSIONS AND RECOMMENDATIONS**

### **5.10 Conclusions**

- Contaminated soils were returned as fill to the excavation area as approved by Ted Unkles of the Vermont DEC, Management and Prevention Section.
- Soil contamination was detected downgradient of the pump island with a plume of soil contamination extending to the southwest.
- Groundwater contamination was detected in two (2) site wells with benzene levels in these wells exceeding state enforcement standards. The petroleum source was identified as gasoline based on petroleum hydrocarbon analysis via EPA Method 8100M. No chlorinated VOCs were detected in the groundwater samples analyzed.
- Groundwater flow was determined to be in a southeasterly direction following survey of site monitoring wells.
- While no information was obtained to suggest that an imminent hazard exists as a result of the release of gasoline at the site, sensitive human and environmental receptors exist downgradient within 100 feet of the source area.

### **5.20 Recommendations**

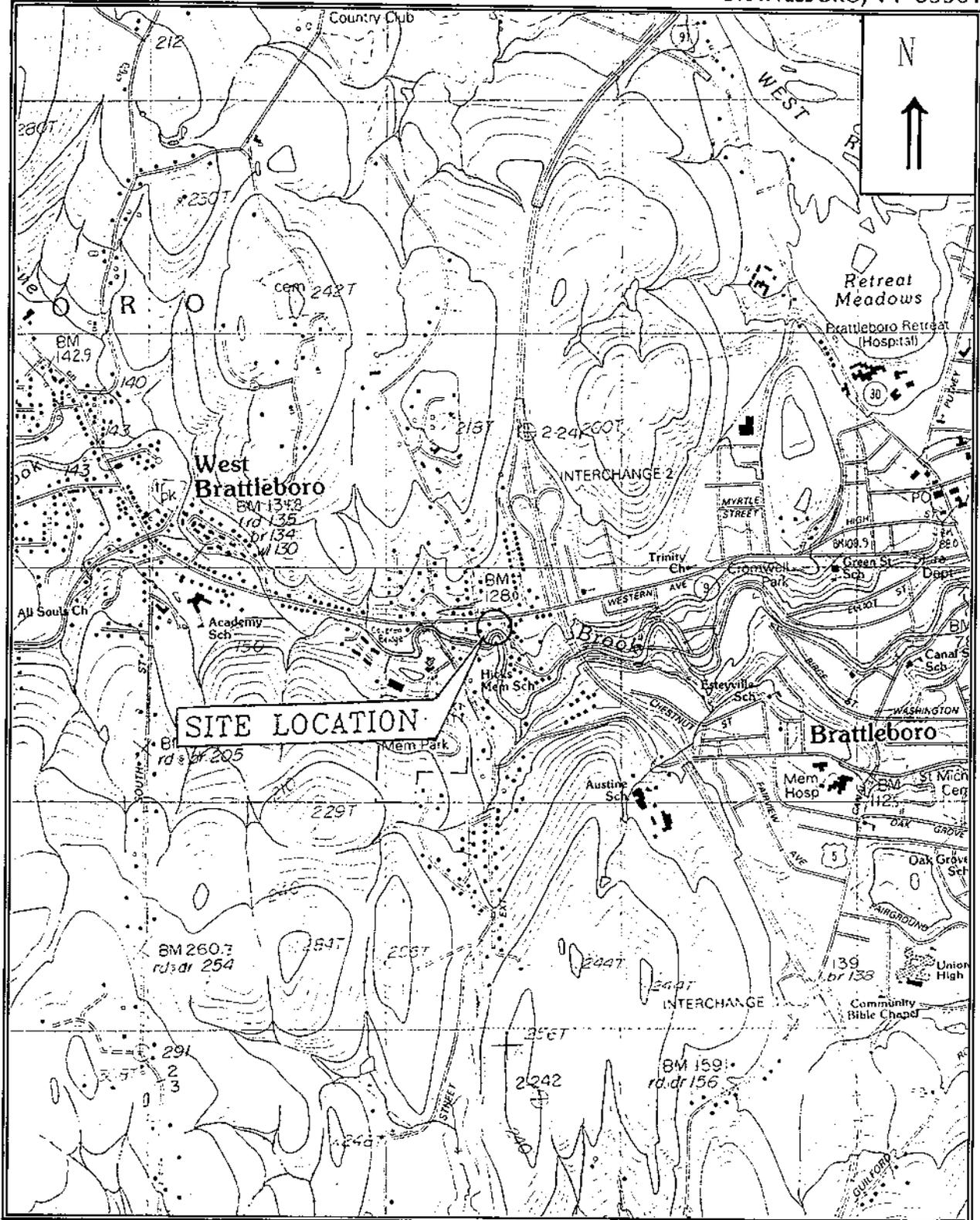
ENSA Environmental, Inc. recommends:

- Quarterly sampling and gauging of site monitoring wells be implemented at the site. Groundwater samples should be analyzed for VOCs via EPA Method 8020.
- Two to three downgradient monitoring wells should be installed to more clearly identify the extent of soil and groundwater contamination. *- Need upgradient well too.*
- A brief soil gas survey be conducted in the two locations (road boxes emplaced in concrete, Map Appendix D) within the pump island that were provided for possible soil vapor extraction points, this area had the highest OVM readings.

\\521\siteinv.rep

**APPENDIX A**

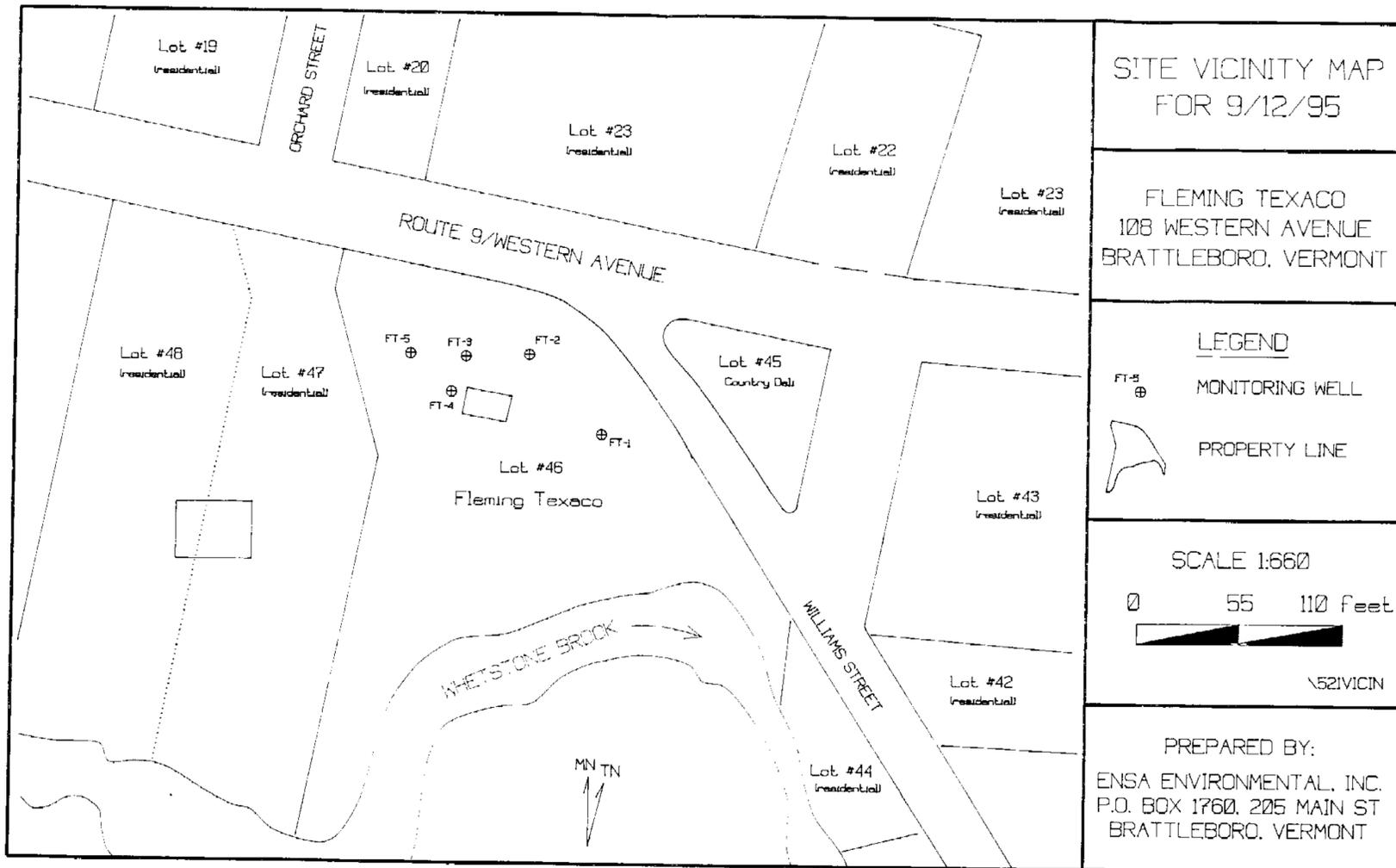
**Site Locus Map**



Site Locus	USGS Topographic Map Brattleboro, VT Revised: 1984 Scale 1: 25000	Fleming Texaco Station 108 Western Avenue Brattleboro, VT
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**APPENDIX B**

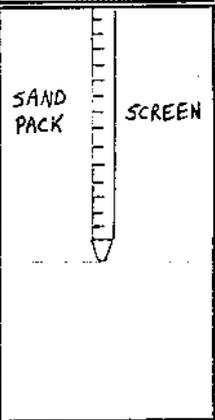
**Site Vicinity Map**



**APPENDIX C**

**Soil Boring/Monitoring Well Construction Logs**



Project #: <u>521</u> Date: <u>9/7/95</u> Project Name: <u>Fleming Oil Texaco</u> Location: <u>108 Western Ave. Brattleboro, VT</u> Driller: <u>T. &amp; K Drilling, Troy, NH</u> ENSA Personnel: <u>D. C. Balk</u> Boring/Well #: <u>FT-1</u> Sheet <u>2</u> of <u>2</u>						<b>SITE LOCUS</b>  See Site Vicinity Map Appendix B		
Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
30 - 32	100+				1	0.0	Wet sand and silt	
35 - 37	100+				1	0.0	Tight till - slow drilling - refusal wet silt and sand	
Drilling Method: <u>HSA</u> Total Well Depth: <u>36'</u> Groundwater Depth: <u>29' 2"</u>						Screen Diameter: <u>2"</u> Length: <u>20'</u> Riser Diameter: <u>2"</u> Length: <u>16'</u> Slot Size: <u>10</u>		

- 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 nondetectable 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

**ENSA ENVIRONMENTAL, INC.**  
**SOIL BORING/MONITORING WELL CONSTRUCTION LOG**

Project #: <u>521</u> Date: <u>9/7/95</u> Project Name: <u>Fleming Oil Texaco</u> Location: <u>108 Western Ave. Brattleboro, VT</u> Driller: <u>T &amp; K Drilling, Troy, NH</u> ENSA Personnel: <u>D. C. Balk</u> Boring/Well #: <u>FT-2</u> Sheet <u>1</u> of <u>1</u>						<b>SITE LOCUS</b>  See Site Vicinity Map Appendix B		
Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0 - 2	Grab	sample				0.0	Dark Brown well sorted sands and silt	
5 - 7	4	3	4	4	12	0.0		
10 - 12	2	4	6	20	6	0.0		
15 - 17	3	2	5	8	4	0.0	Brown well sorted sand and silt	
20 - 22	13	18	22	19	14	0.0		
25 - 27	6	7	22	48	24	0.0	Coarse sand and silt layer - wet Auger plug and rod wet at 23' Refusal at 28'-3" set well	
28-3"					Refusal			
Drilling Method: <u>HSA</u> Total Well Depth: <u>28'</u> Groundwater Depth: <u>23'</u>						Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>18'</u> Slot Size: <u>10</u>		

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 nondetectable 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.
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**ENSA ENVIRONMENTAL, INC.**  
**SOIL BORING/MONITORING WELL CONSTRUCTION LOG**

Project #: <u>521</u> Date: <u>9/8/95</u> Project Name: <u>Fleming Oil Texaco</u> Location: <u>108 Western Ave. Brattleboro, VT</u> Driller: <u>T &amp; K Drilling, Troy, NH</u> ENSA Personnel: <u>D. C. Balk</u> Boring/Well #: <u>FT-3</u> Sheet <u>1</u> of <u>1</u>	<b>SITE LOCUS</b>  See Site Vicinity Map Appendix B
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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	Grab	sample				0.0	Dark Brown fine sands and silt	
5 - 7	2	3	7	7	6	0.0	Brown well sorted medium to fine sand	
10 - 12	13	3	7	11	6	0.0	Dark brown fine to coarse sand some silt	
15 - 17	23	9	9	21	6	0.0	Dark brown fine to coarse sand some silt	
20 - 22	17	7	11	10	6	75	Dark brown coarse sand	
25 - 25-10"	21	80-3"	—	—	6	1411	Dark Brown well sorted sand and silt layer - wet - strong odor of petroleum Auger plug and rod wet at 23'	
25-10"					Refusal		Refusal at 25'-10" set well	

Drilling Method: <u>HSA</u> Total Well Depth: <u>26'</u> Groundwater Depth: <u>19'</u>	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>16'</u> Slot Size: <u>10</u>
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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 nondetectable 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.

**ENSA ENVIRONMENTAL, INC.**  
**SOIL BORING/MONITORING WELL CONSTRUCTION LOG**

Project #: <u>521</u> Date: <u>9/8/95</u> Project Name: <u>Fleming Oil Texaco</u> Location: <u>108 Western Ave. Brattleboro, VT</u> Driller: <u>T &amp; K Drilling, Troy, NH</u> ENSA Personnel: <u>S. T. Gaffney</u> Boring/Well #: <u>FT-4</u> Sheet <u>1</u> of <u>1</u>						<b>SITE LOCUS</b>  See Site Vicinity Map Appendix B		
Depth	Blow Counts				Rec. (ft.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0 - 2	Grab	sample				0.0-0.3	Brown fine sand slight amount of coarse to fine gravel	
5 - 7	6	12	19	21	14	3	Dark brown medium to fine sand some coarse to fine gravel- dry	
10 - 12	4	7	9	11	6	1	Light brown fine to medium sand some coarse to fine gravel-dry	
15 - 17	4	6	7	6	3	0.0	Brown medium sand, some coarse to fine gravel- dry	
20 - 22	2	2	3	4	12	0.0-0.3	Dark brown and black coarse sand Fine gravel some partially burnt wood- dry	
25 - 27	3	4	7	18	20	705	Olive gray sandy silt 1 1/2" thick band black silt at 26' - moist	
28-2"					Refusal		Refusal at 28'-2" set well	
Drilling Method: <u>HSA</u> Total Well Depth: <u>28'-2"</u> Groundwater Depth: _____						Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>18'</u> Slot Size: <u>10</u>		

- 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 nondetectable contaminant concentrations as read by the OVM.
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  5. HSA = Hollow Stem Auger, AR = Air Rotary

**ENSA ENVIRONMENTAL, INC.**  
**SOIL BORING/MONITORING WELL CONSTRUCTION LOG**

Project #: <u>521</u> Date: <u>9/8/95</u> Project Name: <u>Fleming Oil Texaco</u> Location: <u>108 Western Ave. Brattleboro, VT</u> Driller: <u>T &amp; K Drilling, Troy, NH</u> ENSA Personnel: <u>S. T. Gaffney</u> Boring/Well #: <u>FT-5</u> Sheet <u>1</u> of <u>1</u>	<b>SITE LOCUS</b>  See Site Vicinity Map Appendix B
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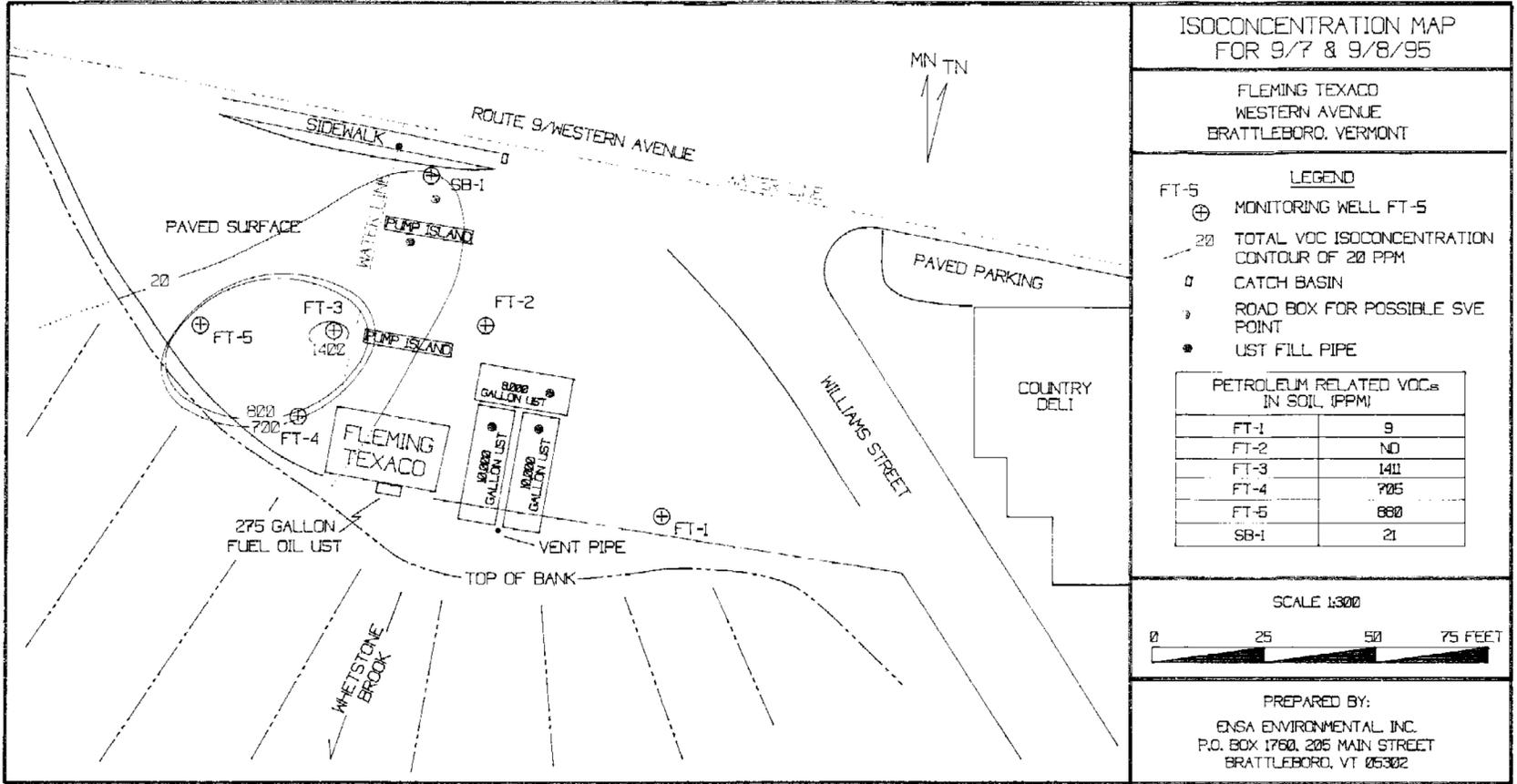
Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
0 - 2	Grab	sample				0.0	Brown fine sand trace fine gravel-dry	
5 - 7	3	4	3	6	10	2.0	Dark Brown coarse-medium-fine sand, coarse to fine gravel- dry	
10 - 12	3	4	7	6	8	2.4	Brown coarse to medium sand, coarse to fine gravel-dry	
15 - 17	4	5	6	8	6	0.3- 1.0		
20 - 22	2	2	7	10	12	0.3-1.0	Dark brown coarse to fine sand some silt- dry Dark brown layer at 21'	
25 - 27	20	20	35	refusal	14	880	Dark brown coarse to medium sand some silt fractured rock last 6"- moist	
26-9"					Refusal		Refusal at 26'-9" set well	

Drilling Method: <u>HSA</u> Total Well Depth: <u>26'-6"</u> Groundwater Depth: <u>24'-6"</u>	Screen Diameter: <u>2"</u> Length: <u>10'</u> Riser Diameter: <u>2"</u> Length: <u>16'-8"</u> Slot Size: <u>10</u>
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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 nondetectable 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

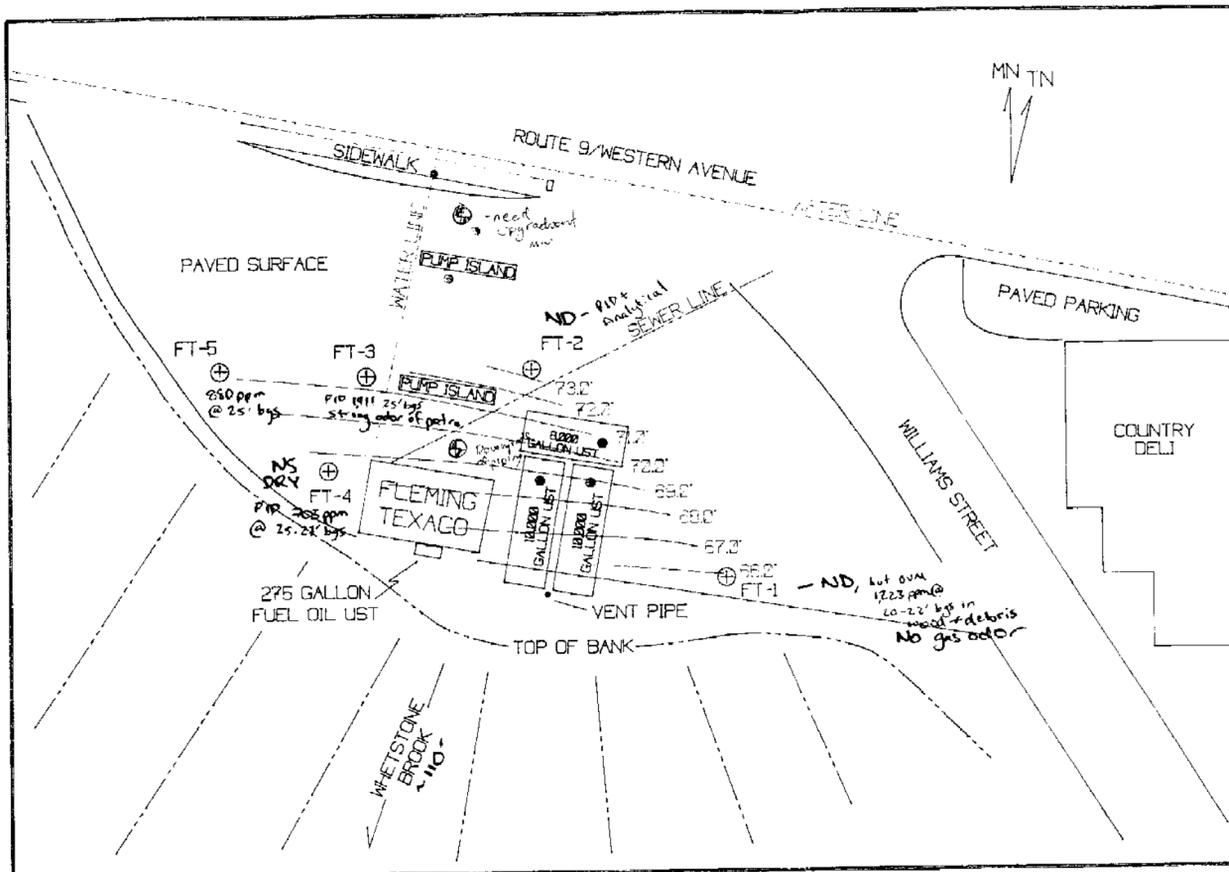
**APPENDIX D**

**Isoconcentration Map**



**APPENDIX E**

**Groundwater Potentiometric Map**



**GROUNDWATER POTENTIOMETRIC MAP FOR 9/11/95**

FLEMING TEXACO  
WESTERN AVENUE  
BRATTLEBORO, VERMONT

**LEGEND**

- ⊕ MONITORING WELL FT-5
- - - 67.0' GROUNDWATER CONTOUR AT 67.0 FEET
- CATCH BASIN
- ROAD BOX FOR POSSIBLE SVE POINT
- UST FILL PIPE

MONITORING WELL	GROUNDWATER ELEVATIONS (IN FEET)
FT-1	65.90
FT-2	73.25
FT-3	71.51
FT-4	DRY
FT-5	71.12

ELEVATIONS MEASURED FROM ARTIFICAL DATUM OF 100 FEET

SCALE 1:300

0 25 50 75 FEET

PREPARED BY:  
ENSA ENVIRONMENTAL, INC.  
P.O. BOX 1760, 205 MAIN STREET  
BRATTLEBORO, VT 05302

**APPENDIX F**

**Analytical Laboratory Reports**

RECEIVED SEP 28 1995

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive  
Westborough, Massachusetts 01581-1019  
(508) 898-9220

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

CERTIFICATE OF ANALYSIS

Client: ENSA Environmental, Inc.	Laboratory Job Number: L9506952
Address: 205 Main Street; 3rd Floor	Invoice Number: 77378
Brattleboro, VT 05301	Date Received: 12-SEP-95
Attn: Bruce Tease	Date Reported: 26-SEP-95
Project Number: 521	Delivery Method: Alpha
Site: Fleming Texaco	

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ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9506952-01	FT-1-91195-521	Brattleboro, VT
L9506952-02	FT-2-91195-521	Brattleboro, VT
L9506952-03	FT-3-91195-521	Brattleboro, VT
L9506952-04	FT-5-91195-521	Brattleboro, VT
L9506952-05	FT-02-91195-521	Brattleboro, VT
L9506952-06	FT-01-91195-521	Brattleboro, VT

Authorized by:



Scott McLean - Laboratory Director

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9506952-01 Date Collected: 11-SEP-95  
 FT-1-91195-521 Date Received : 12-SEP-95  
 Sample Matrix: WATER Date Reported : 26-SEP-95  
 Condition of Sample: Satisfactory Field Prep: None  
 Number & Type of Containers: 2 Vial, 2 Amber Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Volatile Organics by GC/MS				1	8260		19-Sep DB
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	1.5				
Chloroform	ND	ug/l	1.5				
Carbon tetrachloride	ND	ug/l	1.0				
1,2-Dichloropropane	ND	ug/l	3.5				
Dibromochloromethane	ND	ug/l	1.0				
1,1,2-Trichloroethane	ND	ug/l	1.5				
2-Chloroethylvinyl ether	ND	ug/l	10.				
Tetrachloroethene	ND	ug/l	1.5				
Chlorobenzene	ND	ug/l	3.5				
Trichlorofluoromethane	ND	ug/l	5.0				
1,2-Dichloroethane	ND	ug/l	1.5				
1,1,1-Trichloroethane	ND	ug/l	1.0				
Bromodichloromethane	ND	ug/l	1.0				
trans-1,3-Dichloropropene	ND	ug/l	1.5				
cis-1,3-Dichloropropene	ND	ug/l	1.0				
Bromoform	ND	ug/l	1.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0				
Benzene	ND	ug/l	1.0				
Toluene	ND	ug/l	1.5				
Ethylbenzene	ND	ug/l	1.0				
Chloromethane	ND	ug/l	10.				
Bromomethane	ND	ug/l	2.0				
Vinyl chloride	ND	ug/l	3.5				
Chloroethane	ND	ug/l	2.0				
1,1-Dichloroethene	ND	ug/l	1.5				
trans-1,2-Dichloroethene	ND	ug/l	1.5				
Trichloroethene	ND	ug/l	1.0				
1,2-Dichlorobenzene	ND	ug/l	10.				
1,3-Dichlorobenzene	ND	ug/l	10.				
1,4-Dichlorobenzene	ND	ug/l	10.				
Methyl tert butyl ether	ND	ug/l	10.				
Xylenes	ND	ug/l	1.0				
cis-1,2-Dichloroethene	ND	ug/l	1.0				
Dibromomethane	ND	ug/l	10.				
1,4-Dichlorobutane	ND	ug/l	10.				
Iodomethane	ND	ug/l	10.				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

Laboratory Sample Number: L9506952-01  
 FT-1-91195-521

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	ID
							PREP ANALYSIS
Volatile Organics by GC/MS continued							
				1	8260	19-Sep	DB
1,2,3-Trichloropropane	ND	ug/l	10.				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	10.				
Acetone	ND	ug/l	10.				
Carbon Disulfide	ND	ug/l	10.				
2-Butanone	ND	ug/l	4.5				
Vinyl Acetate	ND	ug/l	10.				
4-Methyl-2-pentanone	ND	ug/l	10.				
2-Hexanone	ND	ug/l	10.				
Ethyl methacrylate	ND	ug/l	10.				
Acrolein	ND	ug/l	25.				
Acrylonitrile	ND	ug/l	10.				
Bromochloromethane	ND	ug/l	1.0				
2,2-Dichloropropane	ND	ug/l	1.0				
1,2-Dibromoethane	ND	ug/l	1.0				
1,3-Dichloropropane	ND	ug/l	1.0				
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0				
Bromobenzene	ND	ug/l	1.0				
n-Butylbenzene	ND	ug/l	1.0				
sec-Butylbenzene	ND	ug/l	1.0				
tert-Butylbenzene	ND	ug/l	1.0				
o-Chlorotoluene	ND	ug/l	1.0				
p-Chlorotoluene	ND	ug/l	1.0				
1,2-Dibromo-3-chloropropane	ND	ug/l	1.0				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	1.0				
p-Isopropyltoluene	ND	ug/l	1.0				
Naphthalene	ND	ug/l	1.0				
n-Propylbenzene	ND	ug/l	1.0				
1,2,3-Trichlorobenzene	ND	ug/l	1.0				
1,2,4-Trichlorobenzene	ND	ug/l	1.0				
1,3,5-Trimethylbenzene	ND	ug/l	1.0				
1,2,4-Trimethylbenzene	ND	ug/l	1.0				
trans-1,4-Dichloro-2-butene	ND	ug/l	1.0				
Ethyl ether	ND	ug/l	25.				
SURROGATE RECOVERY							
Toluene-d8	91.0	%					
4-Bromofluorobenzene	90.0	%					
Dibromofluoromethane	89.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

Laboratory Sample Number: L9506952-01  
 FT-1-91195-521

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	ID
							PREP ANALYSIS
Hydrocarbon Scan GC 8100 Modified				1	8100M	14-Sep 15-Sep	DB
Mineral Spirits	ND	mg/l	1.0				
Gasoline	ND	mg/l	1.0				
Fuel Oil #2/Diesel	ND	mg/l	1.0				
Fuel Oil #4	ND	mg/l	1.0				
Fuel Oil #6	ND	mg/l	1.0				
Motor Oil	ND	mg/l	1.0				
Kerosene	ND	mg/l	1.0				
SURROGATE RECOVERY							
o-Terphenyl	99.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

RECEIVED SEP 28 1995

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9506952-02 Date Collected: 11-SEP-95  
 FT-2-91195-521 Date Received : 12-SEP-95  
 Sample Matrix: WATER Date Reported : 26-SEP-95  
 Condition of Sample: Satisfactory Field Prep: None  
 Number & Type of Containers: 2 Vial, 2 Amber Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Aromatic Volatile Organics				1	8020		13-Sep SF
Benzene	ND	ug/l	1.0				
Toluene	ND	ug/l	1.0				
Ethylbenzene	ND	ug/l	1.0				
Xylenes	ND	ug/l	1.0				
1,2-Dichlorobenzene	ND	ug/l	1.0				
1,3-Dichlorobenzene	ND	ug/l	1.0				
1,4-Dichlorobenzene	ND	ug/l	1.0				
Chlorobenzene	ND	ug/l	1.0				
Methyl tert butyl ether	ND	ug/l	1.0				
Hydrocarbon Scan GC 8100 Modified				1	8100M		14-Sep 15-Sep DB
Mineral Spirits	ND	mg/l	1.0				
Gasoline	ND	mg/l	1.0				
Fuel Oil #2/Diesel	ND	mg/l	1.0				
Fuel Oil #4	ND	mg/l	1.0				
Fuel Oil #6	ND	mg/l	1.0				
Motor Oil	ND	mg/l	1.0				
Kerosene	ND	mg/l	1.0				
SURROGATE RECOVERY							
o-Terphenyl	83.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9506952-03 Date Collected: 11-SEP-95  
 FT-3-91195-521 Date Received : 12-SEP-95  
 Sample Matrix: WATER Date Reported : 26-SEP-95  
 Condition of Sample: Satisfactory Field Prep: None

Number & Type of Containers: 2 Vial, 2 Amber Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Volatile Organics by GC/MS				1	8260	19-Sep	DB
Methylene chloride	ND	ug/l	250				
1,1-Dichloroethane	ND	ug/l	75.				
Chloroform	ND	ug/l	75.				
Carbon tetrachloride	ND	ug/l	50.				
1,2-Dichloropropane	ND	ug/l	180				
Dibromochloromethane	ND	ug/l	50.				
1,1,2-Trichloroethane	ND	ug/l	75.				
2-Chloroethylvinyl ether	ND	ug/l	500				
Tetrachloroethene	ND	ug/l	75.				
Chlorobenzene	ND	ug/l	180				
Trichlorofluoromethane	ND	ug/l	250				
1,2-Dichloroethane	ND	ug/l	75.				
1,1,1-Trichloroethane	ND	ug/l	50.				
Bromodichloromethane	ND	ug/l	50.				
trans-1,3-Dichloropropene	ND	ug/l	75.				
cis-1,3-Dichloropropene	ND	ug/l	50.				
Bromoform	ND	ug/l	50.				
1,1,2,2-Tetrachloroethane	ND	ug/l	50.				
Benzene	ND	ug/l	50.				
Toluene	ND	ug/l	75.				
Ethylbenzene	ND	ug/l	50.				
Chloromethane	ND	ug/l	500				
Bromomethane	ND	ug/l	100				
Vinyl chloride	ND	ug/l	180				
Chloroethane	ND	ug/l	100				
1,1-Dichloroethene	ND	ug/l	75.				
trans-1,2-Dichloroethene	ND	ug/l	75.				
Trichloroethene	ND	ug/l	50.				
1,2-Dichlorobenzene	ND	ug/l	500				
1,3-Dichlorobenzene	ND	ug/l	500				
1,4-Dichlorobenzene	ND	ug/l	500				
Methyl tert butyl ether	ND	ug/l	500				
Xylenes	200	ug/l	50.				
cis-1,2-Dichloroethene	ND	ug/l	50.				
Dibromomethane	ND	ug/l	500				
1,4-Dichlorobutane	ND	ug/l	500				
Iodomethane	ND	ug/l	500				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

Laboratory Sample Number: L9506952-03  
 FT-3-91195-521

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	ID
						PREP ANALYSIS	
Volatile Organics by GC/MS continued				1	8260	19-Sep	DB
1,2,3-Trichloropropane	ND	ug/l	500				
Styrene	ND	ug/l	50.				
Dichlorodifluoromethane	ND	ug/l	500				
Acetone	ND	ug/l	500				
Carbon Disulfide	ND	ug/l	500				
2-Butanone	ND	ug/l	230				
Vinyl Acetate	ND	ug/l	500				
4-Methyl-2-pentanone	ND	ug/l	500				
2-Hexanone	ND	ug/l	500				
Ethyl methacrylate	ND	ug/l	500				
Acrolein	ND	ug/l	1300				
Acrylonitrile	ND	ug/l	500				
Bromochloromethane	ND	ug/l	50.				
2,2-Dichloropropane	ND	ug/l	50.				
1,2-Dibromoethane	ND	ug/l	50.				
1,3-Dichloropropane	ND	ug/l	50.				
1,1,1,2-Tetrachloroethane	ND	ug/l	50.				
Bromobenzene	ND	ug/l	50.				
n-Butylbenzene	ND	ug/l	50.				
sec-Butylbenzene	120	ug/l	50.				
tert-Butylbenzene	ND	ug/l	50.				
o-Chlorotoluene	ND	ug/l	50.				
p-Chlorotoluene	ND	ug/l	50.				
1,2-Dibromo-3-chloropropane	ND	ug/l	50.				
Hexachlorobutadiene	ND	ug/l	50.				
Isopropylbenzene	55.	ug/l	50.				
p-Isopropyltoluene	360	ug/l	50.				
Naphthalene	ND	ug/l	50.				
n-Propylbenzene	ND	ug/l	50.				
1,2,3-Trichlorobenzene	ND	ug/l	50.				
1,2,4-Trichlorobenzene	ND	ug/l	50.				
1,3,5-Trimethylbenzene	990	ug/l	50.				
1,2,4-Trimethylbenzene	2000	ug/l	50.				
trans-1,4-Dichloro-2-butene	ND	ug/l	50.				
Ethyl ether	ND	ug/l	1300				
SURROGATE RECOVERY							
Toluene-d8	111.	%					
4-Bromofluorobenzene	110.	%					
Dibromofluoromethane	107.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

Laboratory Sample Number: L9506952-03  
 FT-3-91195-521

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	ID
							PREP ANALYSIS
Hydrocarbon Scan GC 8100 Modified				1	8100M	14-Sep-15-Sep	DB
Mineral Spirits	ND	mg/l	1.0				
Gasoline	35.	mg/l	1.0				
Fuel Oil #2/Diesel	ND	mg/l	1.0				
Fuel Oil #4	ND	mg/l	1.0				
Fuel Oil #6	ND	mg/l	1.0				
Motor Oil	ND	mg/l	1.0				
Kerosene	ND	mg/l	1.0				
SURROGATE RECOVERY							
o-Terphenyl	101.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9506952-04 Date Collected: 11-SEP-95  
 FT-5-91195-521 Date Received : 12-SEP-95  
 Sample Matrix: WATER Date Reported : 26-SEP-95  
 Condition of Sample: Satisfactory Field Prep: None  
 Number & Type of Containers: 2 Vial, 2 Amber Glass

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Aromatic Volatile Organics				1	8020	14-Sep	SF
Benzene	8.5	ug/l	5.0				
Toluene	11.	ug/l	5.0				
Ethylbenzene	9.8	ug/l	5.0				
Xylenes	37.	ug/l	5.0				
1,2-Dichlorobenzene	ND	ug/l	5.0				
1,3-Dichlorobenzene	ND	ug/l	5.0				
1,4-Dichlorobenzene	ND	ug/l	5.0				
Chlorobenzene	ND	ug/l	5.0				
Methyl tert butyl ether	ND	ug/l	5.0				
Hydrocarbon Scan GC 8100 Modified				1	8100M	14-Sep 15-Sep	DB
Mineral Spirits	ND	mg/l	1.0				
Gasoline	5.7	mg/l	1.0				
Fuel Oil #2/Diesel	ND	mg/l	1.0				
Fuel Oil #4	ND	mg/l	1.0				
Fuel Oil #6	ND	mg/l	1.0				
Motor Oil	ND	mg/l	1.0				
Kerosene	ND	mg/l	1.0				
SURROGATE RECOVERY							
o-Terphenyl	68.0	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9506952-05  
 FT-02-91195-521  
 Sample Matrix: WATER  
 Condition of Sample: Satisfactory  
 Date Collected: 11-SEP-95  
 Date Received: 12-SEP-95  
 Date Reported: 26-SEP-95  
 Field Prep: None

Number & Type of Containers: 2 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Volatile Organics by GC/MS				1	8260	20-Sep	DB
Methylene chloride	ND	ug/l	50.				
1,1-Dichloroethane	ND	ug/l	15.				
Chloroform	ND	ug/l	15.				
Carbon tetrachloride	ND	ug/l	10.				
1,2-Dichloropropane	ND	ug/l	35.				
Dibromochloromethane	ND	ug/l	10.				
1,1,2-Trichloroethane	ND	ug/l	15.				
2-Chloroethylvinyl ether	ND	ug/l	100				
Tetrachloroethene	ND	ug/l	15.				
Chlorobenzene	ND	ug/l	35.				
Trichlorofluoromethane	ND	ug/l	50.				
1,2-Dichloroethane	ND	ug/l	15.				
1,1,1-Trichloroethane	ND	ug/l	10.				
Bromodichloromethane	ND	ug/l	10.				
trans-1,3-Dichloropropene	ND	ug/l	15.				
cis-1,3-Dichloropropene	ND	ug/l	10.				
Bromoform	ND	ug/l	10.				
1,1,2,2-Tetrachloroethane	ND	ug/l	10.				
Benzene	ND	ug/l	10.				
Toluene	ND	ug/l	15.				
Ethylbenzene	23.	ug/l	10.				
Chloromethane	ND	ug/l	100				
Bromomethane	ND	ug/l	20.				
Vinyl chloride	ND	ug/l	35.				
Chloroethane	ND	ug/l	20.				
1,1-Dichloroethene	ND	ug/l	15.				
trans-1,2-Dichloroethene	ND	ug/l	15.				
Trichloroethene	ND	ug/l	10.				
1,2-Dichlorobenzene	ND	ug/l	100				
1,3-Dichlorobenzene	ND	ug/l	100				
1,4-Dichlorobenzene	ND	ug/l	100				
Methyl tert butyl ether	ND	ug/l	100				
Xylenes	170	ug/l	10.				
cis-1,2-Dichloroethene	ND	ug/l	10.				
Dibromomethane	ND	ug/l	100				
1,4-Dichlorobutane	ND	ug/l	100				
Iodomethane	ND	ug/l	100				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

Laboratory Sample Number: L9506952-05  
 FT-02-91195-521

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	ID
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PREP ANALYSIS

Volatile Organics by GC/MS continued 1 8260 20-Sep DB

1,2,3-Trichloropropane	ND	ug/l	100				
Styrene	ND	ug/l	10.				
Dichlorodifluoromethane	ND	ug/l	100				
Acetone	ND	ug/l	100				
Carbon Disulfide	ND	ug/l	100				
2-Butanone	ND	ug/l	45.				
Vinyl Acetate	ND	ug/l	100				
4-Methyl-2-pentanone	ND	ug/l	100				
2-Hexanone	ND	ug/l	100				
Ethyl methacrylate	ND	ug/l	100				
Acrolein	ND	ug/l	250				
Acrylonitrile	ND	ug/l	100				
Bromochloromethane	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	10.				
1,2-Dibromoethane	ND	ug/l	10.				
1,3-Dichloropropane	ND	ug/l	10.				
1,1,1,2-Tetrachloroethane	ND	ug/l	10.				
Bromobenzene	ND	ug/l	10.				
n-Butylbenzene	ND	ug/l	10.				
sec-Butylbenzene	39.	ug/l	10.				
tert-Butylbenzene	ND	ug/l	10.				
o-Chlorotoluene	ND	ug/l	10.				
p-Chlorotoluene	ND	ug/l	10.				
1,2-Dibromo-3-chloropropane	ND	ug/l	10.				
Hexachlorobutadiene	ND	ug/l	10.				
Isopropylbenzene	ND	ug/l	10.				
p-Isopropyltoluene	130	ug/l	10.				
Naphthalene	17.	ug/l	10.				
n-Propylbenzene	200	ug/l	10.				
1,2,3-Trichlorobenzene	ND	ug/l	10.				
1,2,4-Trichlorobenzene	ND	ug/l	10.				
1,3,5-Trimethylbenzene	590	ug/l	10.				
1,2,4-Trimethylbenzene	1200	ug/l	10.				
trans-1,4-Dichloro-2-butene	ND	ug/l	10.				
Ethyl ether	ND	ug/l	250				

SURROGATE RECOVERY

Toluene-d8	103.	%					
4-Bromofluorobenzene	103.	%					
Dibromofluoromethane	102.	%					

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006 RI A65

Laboratory Sample Number: L9506952-06 Date Collected: 11-SEP-95  
 FT-01-91195-521 Date Received : 12-SEP-95  
 Sample Matrix: WATER Date Reported : 26-SEP-95  
 Condition of Sample: Satisfactory Field Prep: None

Number & Type of Containers: 21

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES	ID
						PREP ANALYSIS	
Volatile Organics by GC/MS				1	8260	18-Sep	DB
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	1.5				
Chloroform	ND	ug/l	1.5				
Carbon tetrachloride	ND	ug/l	1.0				
1,2-Dichloropropane	ND	ug/l	3.5				
Dibromochloromethane	ND	ug/l	1.0				
1,1,2-Trichloroethane	ND	ug/l	1.5				
2-Chloroethylvinyl ether	ND	ug/l	10.				
Tetrachloroethene	ND	ug/l	1.5				
Chlorobenzene	ND	ug/l	3.5				
Trichlorofluoromethane	ND	ug/l	5.0				
1,2-Dichloroethane	ND	ug/l	1.5				
1,1,1-Trichloroethane	ND	ug/l	1.0				
Bromodichloromethane	ND	ug/l	1.0				
trans-1,3-Dichloropropene	ND	ug/l	1.5				
cis-1,3-Dichloropropene	ND	ug/l	1.0				
Bromoform	ND	ug/l	1.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0				
Benzene	ND	ug/l	1.0				
Toluene	ND	ug/l	1.5				
Ethylbenzene	ND	ug/l	1.0				
Chloromethane	ND	ug/l	10.				
Bromomethane	ND	ug/l	2.0				
Vinyl chloride	ND	ug/l	3.5				
Chloroethane	ND	ug/l	2.0				
1,1-Dichloroethene	ND	ug/l	1.5				
trans-1,2-Dichloroethene	ND	ug/l	1.5				
Trichloroethene	ND	ug/l	1.0				
1,2-Dichlorobenzene	ND	ug/l	10.				
1,3-Dichlorobenzene	ND	ug/l	10.				
1,4-Dichlorobenzene	ND	ug/l	10.				
Methyl tert butyl ether	ND	ug/l	10.				
Xylenes	ND	ug/l	1.0				
cis-1,2-Dichloroethene	ND	ug/l	1.0				
Dibromomethane	ND	ug/l	10.				
1,4-Dichlorobutane	ND	ug/l	10.				
Iodomethane	ND	ug/l	10.				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED SEP 28 1995

Laboratory Sample Number: L9506952-06  
 FT-01-91195-521

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE	PREP ANALYSIS	ID
Volatile Organics by GC/MS continued								18-Sep DB
1,2,3-Trichloropropane	ND	ug/l	10.		8260			
Styrene	ND	ug/l	1.0					
Dichlorodifluoromethane	ND	ug/l	10.					
Acetone	ND	ug/l	10.					
Carbon Disulfide	ND	ug/l	10.					
2-Butanone	ND	ug/l	4.5					
Vinyl Acetate	ND	ug/l	10.					
4-Methyl-2-pentanone	ND	ug/l	10.					
2-Hexanone	ND	ug/l	10.					
Ethyl methacrylate	ND	ug/l	10.					
Acrolein	ND	ug/l	25.					
Acrylonitrile	ND	ug/l	10.					
Bromochloromethane	ND	ug/l	1.0					
2,2-Dichloropropane	ND	ug/l	1.0					
1,2-Dibromoethane	ND	ug/l	1.0					
1,3-Dichloropropane	ND	ug/l	1.0					
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0					
Bromobenzene	ND	ug/l	1.0					
n-Butylbenzene	ND	ug/l	1.0					
sec-Butylbenzene	ND	ug/l	1.0					
tert-Butylbenzene	ND	ug/l	1.0					
o-Chlorotoluene	ND	ug/l	1.0					
p-Chlorotoluene	ND	ug/l	1.0					
1,2-Dibromo-3-chloropropane	ND	ug/l	1.0					
Hexachlorobutadiene	ND	ug/l	1.0					
Isopropylbenzene	ND	ug/l	1.0					
p-Isopropyltoluene	ND	ug/l	1.0					
Naphthalene	ND	ug/l	1.0					
n-Propylbenzene	ND	ug/l	1.0					
1,2,3-Trichlorobenzene	ND	ug/l	1.0					
1,2,4-Trichlorobenzene	ND	ug/l	1.0					
1,3,5-Trimethylbenzene	ND	ug/l	1.0					
1,2,4-Trimethylbenzene	ND	ug/l	1.0					
trans-1,4-Dichloro-2-butene	ND	ug/l	1.0					
Ethyl ether	ND	ug/l	25.					
SURROGATE RECOVERY								
Toluene-d8	89.0	%						
4-Bromofluorobenzene	82.0	%						
Dibromofluoromethane	86.0	%						

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

RECEIVED SEP 28 1995

Laboratory Job Number: L9506952

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Parameter	MS %	MSD %	RPD
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Volatile Organics Spike Recovery by GC MS/MSD for sample(s) 02,04

1,1-Dichloroethene	84	111	28
Trichloroethene	94	113	18
Chlorobenzene	85	99	15
Benzene	98	95	3
Toluene	102	91	11
Ethylbenzene	99	97	2

Volatile Organics by GC/MS Spike Recovery MS/MSD for sample(s) 01,03,05-06

1,1-Dichloroethene	109	116	6
Trichloroethene	99	94	5
Benzene	113	110	3
Toluene	114	108	5
Chlorobenzene	113	108	5

ALPHA ANALYTICAL LABS  
ADDENDUM I

RECEIVED SEP 28 1995

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REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.  
METHOD Method number by which analysis was performed.  
ID Initials of the analyst.

# ALPHA

Analytical Laboratories, Inc.

Eight Walkup Drive  
Westborough, MA 01581-1019  
508-898-9220 FAX 508-898-9193

## CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 49185  
Sheet 1 of 1

Company Name:  
**ENSA ENVIRONMENTAL, INC.**

Project Number: **521**  
P.O. Number: **3339**

Project Name/Location:  
**Fleming Texaco  
Brattleboro, VT**

Date Received in Lab: **9/12**  
Date Due: **9/26**

Company Address:  
**205 MAIN STREET  
BRATTLEBORO, VT**

Phone Number:  
**1-802-254-3677**  
FAX No.: **1-802-254-7630**

Project Manager:  
**Bruce Tease**

Alpha Job Number: (Lab use only)  
**9506952**

ALPHA Lab# (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers)						Solubles - F.F.	Sampling		MATRIX / SOURCE CODES	
				Unpres.	Ice	Nitric	Sulfuric	HCl	Other		Date	Time	Analysis Requested	
				Container Codes: P = Plastic V = Vial C = Cube G = Glass A = Amber Glass B = Bacteria Container O = Other							MW = Monitoring Well RO = Runoff O = Outfall W = Well LF = Landfill L = Lake/Pond/Ocean I = Influent E = Effluent DW = Drinking Water R = River Stream S = Soil SG = Sludge B = Bottom Sediment X1 = Other X2 = Other			
1	FT-1-91195-521	(2/V)(2/A)	MW	X						9/11	11:15	8260 + 418.1	8100M	
2	FT-2-91195-521	(2/V)(2/A)	MW	X						9/11	11:10	8020 + 418.1	8100M	
3	FT-3-91195-521	(2/V)(2/A)	MW							9/11	11:20	8260 + 418.1	8100	
4	FT-5-91195-521	(2/V)(2/A)	MW							9/11	11:25	8020 + 418.1	8100	
5	FT-02-91195-521	(2/V)	MW							9/11	11:23	8260	w/c	
6	FT-0(-91195-521)	(1/V)	MW							9/11	11:00	8260	MC	

Sampler's Signature: **David C. Ball** Affiliation: **ENSA** Date: **9/11/95** Time: **1100**

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	<i>[Signature]</i>	<i>[Signature]</i>	9-12-95	1240
2	<i>[Signature]</i>	<i>[Signature]</i>	9/12/95	1200
3				
4				

ADDITIONAL COMMENTS:  
1 Duplicate phase see modified C.O.C.  
1 Trip Blank  
Change TPH12 to TPH8100 per Kirsten made 9/12

# ALPHA

Analytical Laboratories, Inc.

Eight Walkup Drive  
Westborough, MA 01581-1019  
508-898-9220 FAX 508-898-9193

## CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 49189  
Sheet 1 of 1

Company Name:  
ENSA Environmental Inc.

Project Number: 521  
P.O. Number:

Project Name/Location:  
Fleming Texaco Western Ave.  
Brattleboro, Vt

Date Received in Lab:  
Date Due:

Company Address:  
(205 Main Street) P.O. Box 1760  
Brattleboro, Vt 05302

Phone Number:  
4802-254-3677  
FAX No.:

Project Manager: (Bruce Tease)  
Kirsten Wade

Alpha Job Number: (Lab use only)

ALPHA Lab# (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers)						Solubles - F.F.	Sampling		Analysis Requested
				Unpres.	Ice	Nitric	Sulfuric	HCl	Other		Date	Time	
	FT-1-91195-521	2/V 2/A	MW	X				X			9/11	11:15	8260 & 8100M
	FT-2-91195-521	2/V 2/A	MW	X				X			9/11	11:10	8020 & 8100M
	FT-3-91195-521	2/V 2/A	MW					X			9/11	11:20	8260 & 8100M
	FT-5-91195-521	2/V 2/A	MW					X			9/11	11:25	8020 & 8100M
	FT-02-91195-521	2/V	MW								9/11	11:23	8260
	FT-01-91195-521	1/V	MW								9/11	11:00	8260

Sampler's Signature: *David C. Balke*  
Date: 9/11/95 Time: 1:00

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	<i>Tonya Wanda</i>	<i>- Alpha -</i>	9/12/95	12:40
2				
3				
4				

ADDITIONAL COMMENTS:  
1 Duplicate  
1 Trip Blank

SEP-12-95 TUE 15:48 TRI-S ENVIRONMENTAL P.01

P.01

94%

8022547630

SEP-12-1995 16:01