

NOV 06 1995

**Environmental Services of America, Inc.**



**ENSA Environmental, Inc.**

205 Main Street  
Brattleboro, VT 05302  
Phone: (802) 254-3677  
1-800-359-3677  
Fax: (802) 254-7630

November 3, 1995

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

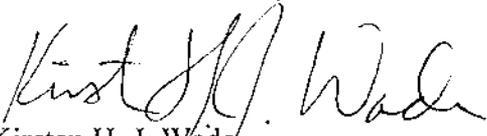
Re: Environmental Site Investigation Report, Fleming Texaco, Route 5, Bellows  
Falls, VT (Site #95-1831)

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

Enclosure

520\cover.let



## Environmental Services of America, Inc.

**ENSA Environmental, Inc.**

205 Main Street  
Brattleboro, VT 05302  
Phone: (802) 254-3677  
1-800-359-3677  
Fax: (802) 254-7630

October 30, 1995

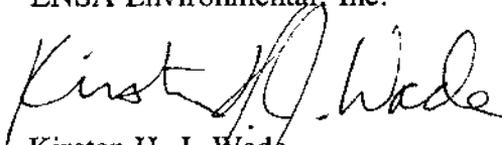
Mr. Richard Fleming, Jr.  
Fleming Oil Company  
One Putney Road  
Brattleboro, VT 05301

Re: Environmental Site Investigation Report, Fleming Texaco  
Route 5, Bellows Falls, VT (Site #95-1831)

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.

  
Kirsten H. J. Wade  
Project Manager

Enclosure

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

Environmental Site Investigation Report  
Fleming Texaco  
97 Westminster Road  
Bellows Falls, Vermont  
DEC Site # 95-1831

October 30, 1995

*for*

Fleming Oil Company  
1 Putney Road  
Brattleboro, VT 05302

by

ENSA Environmental, Inc.  
205 Main Street  
Brattleboro, VT 05301

## 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 97 Westminster Road, Bellows Falls, Vermont. The letter was issued to Mr. Richard Fleming, Jr. of Fleming Oil Company, which owns the gasoline station.

Based on the good condition of the connective piping and other findings at the time of piping upgrade, one or more overflow 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 Marc Coleman (VT ANR DEC MPS) for use as backfill around the new piping.

Two groundwater monitoring wells were installed at the site on September 13, 1995 to define any further contamination on site. Groundwater samples were collected from well BFT-1 on September 18, 1995 and were analyzed via US EPA Method 8020 for Aromatic Volatile Organic Compounds and were scanned for hydrocarbons using method 8100M. Monitoring well BFT-2 was dry at the time of sampling. An additional attempt on October 9, 1995 to sample well BFT-2 was unsuccessful as the well was still dry. Laboratory results revealed the absence of all analytes within detection limits.

The subject property is served by the municipal drinking water and sewer systems of Bellows Falls. 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 Connecticut River is located approximately 1000 feet east of the site. Saxtons River is located approximately 2100 feet to the south of the site. Both water bodies are potential sensitive receptors.

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

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### APPENDICES

Appendix A	Site Location Map
Appendix B	Site Sketch Map
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## I. INTRODUCTION

### A. *Setting and Layout*

The subject property is currently the site of a Fleming Oil Company Texaco Station which sells gasoline and convenience store items. The Texaco station is located at the intersection of Route 5/Westminster Road and Route 121 in Bellows Falls, Vermont. Route 5 is located immediately to the southwest of the site and Route 121 borders the site to the southeast. The intersection of Route 5 and 121 is a 5 way intersection with a town road branching off. Also located around the intersection is a Florist Shop to the southwest of the station and a Sunoco Station to the south. A Napa auto parts distributor is located to the southeast and a restaurant/diner to the east. These businesses are intermingled with residential buildings to the north, west, and east. The Connecticut River is located downgradient approximately 1000 feet to the east of the site. Saxtons River is located approximately 2100 feet to the south of the site. A Site Location Map is presented in Appendix A of this report.

The site is served by the Bellows Falls municipal drinking water and sewage systems. No private drinking water wells are known to be located in the vicinity of the site. Subsurface water and sewer lines extend along Route 5. All other known utilities at the site exist as overhead lines. The layout of the site is shown in the site sketch map presented in Appendix B of this report.

### B. *Background Information*

Between April 10, 1995 and April 13, 1995, the excavation, removal, and replacement of the sites underground storage tank piping and conduit took place. The USTs are located to the southeast of the main site building. According to David Balk of ENSA Environmental, Inc. (ENSA), who conducted a site assessment during the piping removal and replacement, contaminated soil was only encountered in the area between the pump islands. Contaminated soils were backfilled around the new piping upon approval by Marc Coleman of the DEC. Groundwater was not encountered during excavations. It was determined at this time that soil contamination was more than likely caused by overfill problems at the pumps.

In a letter to Richard Fleming, Jr. of Fleming Oil Company, dated July 25, 1995, the VT DEC Site Management Section (SMS) requested that additional investigations be conducted at the subject property. Based on a review of the piping/tank closure report submitted by ENSA, the SMS required the following:

- Further define the degree and extent of contamination to the soil at the site, if any. Soils between the islands and the USTs should be screened along the product piping.

- Determine the degree and extent of contamination, if any, to groundwater. Monitoring wells should be installed. Samples should be analyzed for BTEX and MTBE compounds as well as total petroleum hydrocarbons.
- Perform an assessment of the site to determine the potential for sensitive receptors to be impacted by the contamination (basements, adjacent buildings, nearby surface water, and any public or private drinking water wells).
- Determine the need for a long term treatment and/or monitoring plan at the site based on the results of the above investigations.
- Submit to the SMS a summary report outlining work performed at the site as well as analytical results, site maps, receptor assessments, and appropriate conclusions and recommendations.

ENSA submitted a proposal to perform the above described work, on August 7, 1995 to Rick Fleming. Mr. Fleming approved the proposal and sent copies of the proposal to Matthew Moran of the SMS.

## II. SITE ACTIVITIES

On September 13, 1995, ENSA and T&K Drilling of Troy, NH completed the installation of two groundwater monitoring wells at the site. Well locations are shown on the Site Sketch Map presented in Appendix B. Soil samples collected during the advancement of the well borings were screened onsite according to headspace analysis protocol with a Thermo Environmental Instruments Model 580B Organic Vapor Meter (OVM) calibrated to 255 ppm of an Isobutylene span gas. All headspace readings registered 0.0 ppm. Headspace screening results are included on the Soil Boring/Monitoring Well Construction Logs presented in Appendix C.

On September 18, 1995, the new site monitoring wells were gauged. Depth to groundwater was measured at each well using a Solinst Model 101 electronic water level indicator capable of measuring levels to the nearest 0.01 foot. After removal of three well volumes of groundwater from monitoring well BFT-1, groundwater samples were collected for laboratory analysis. Monitoring well BFT-2 was dry at the time of sampling. An additional attempt to collect a groundwater sample from well BFT-2 was made on October 9, 1995, the monitoring well was again found dry at this time. All samples were refrigerated and sent to Alpha Analytical Laboratories in Westborough, Massachusetts for analysis via EPA Method 8020 + MTBE and 8100M.

### III. RESULTS

#### A. *Site Hydrology*

Depth to groundwater in monitoring well BFT-1 (as measured from the top of the PVC well head, approximate ground surface, on September 18, 1995) was 45.87 feet. Monitoring well BFT-2 was drilled to a depth of 48.4 feet and was found to be dry when gauged on September 18, 1995. Based on topographical gradient groundwater in the area appears to be flowing in a east to northeast direction.

#### B. *Analytical Testing Results*

##### 1. Soil Contamination

During monitoring well installation split spoon soil samples were collected at five (5) foot intervals. Soils were screened for the presence of volatile organic compounds (VOCs) via headspace screening protocol using an OVM. Overall readings were all 0.0 ppm. Complete records of OVM soil screening readings for each well are included in the Soil Boring/Monitoring Well Construction Logs in Appendix C.

##### 2. Groundwater Contamination

The results of the analytical testing performed on the groundwater sample collected from BFT-1 were non-detectable for all analytes. Complete laboratory data sheets and chain of custody statement are included in Appendix D.

#### C. *Initial Risk Evaluation*

The site is served by municipal drinking water and sewer systems. There are no private drinking water wells known to be located in the vicinity of the site.

Based on the analytical testing conducted to date, no levels of petroleum contaminants were detected in the groundwater from the on site monitoring well (BFT-1). BFT-1 is located topographically down gradient of the pump islands and the area of discovered soil contamination. Nearby residential basements were not checked due to their distance from the contaminated soils area, the apparent lack of migration of the contaminants to the groundwater and surrounding overburden, and the suspected preferential path of the groundwater towards the river.

The nearest sensitive human receptors would be site owners/operators and residents located downgradient (northeast/east) of the subject property. The nearest sensitive environmental receptor appears to be the Connecticut River and Saxtons River, which flow

to the east/southeast and south/southeast of the site respectively. Based on the non detectable levels of BTEX compounds detected in the samples collected from the site monitoring well, a level of significant risk does not appear to exist at this time.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of ENSA Environmental, Inc. are based on the premise that all information obtained during these environmental investigations is accurate. Conditions may change with time that may necessitate a re-evaluation of certain conclusions and recommendations.

##### *A. Conclusions*

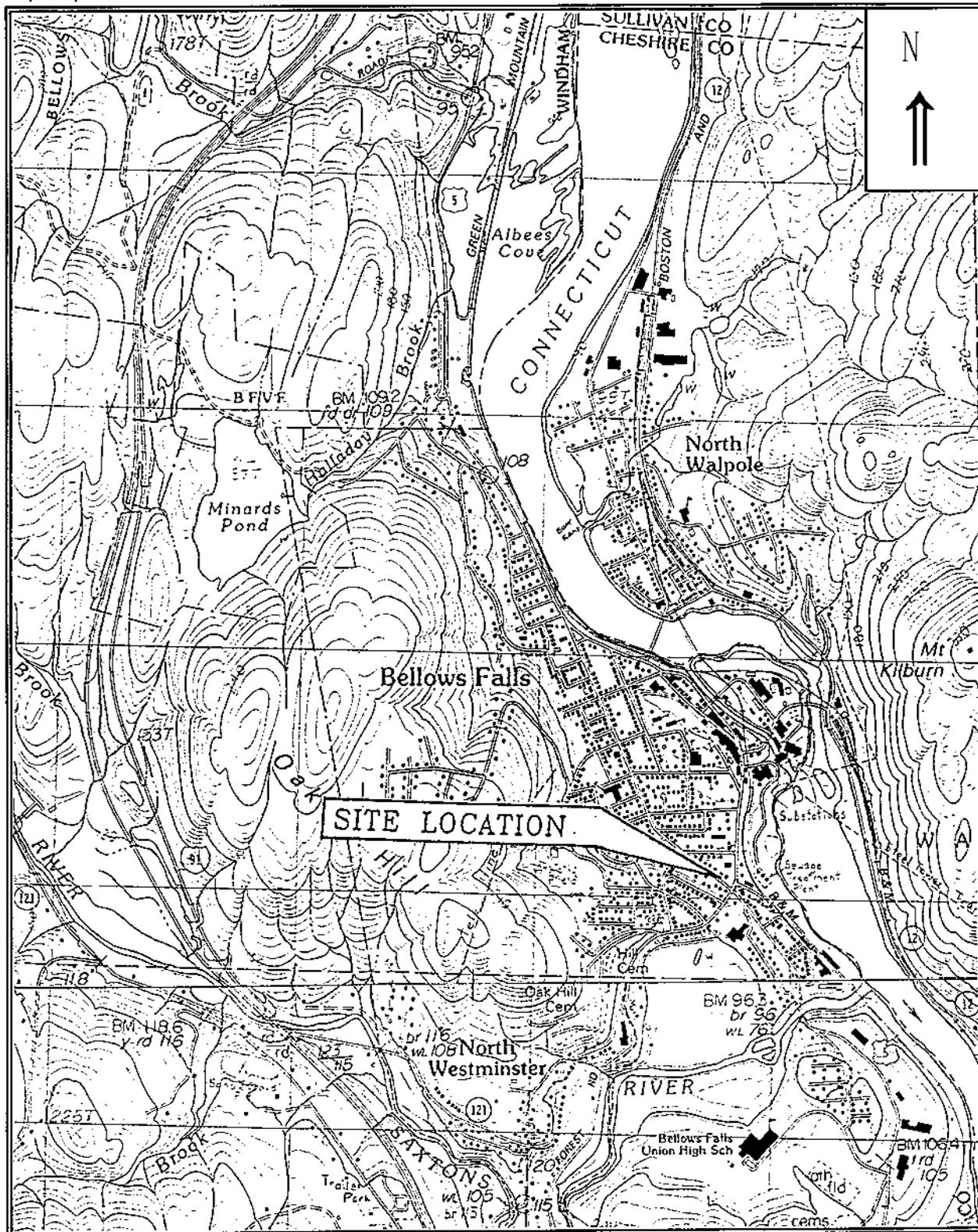
A release of petroleum related volatile organic compounds apparently occurred in the area of the pump islands. VOC levels were detected in this area with an organic vapor meter during excavation for piping removal and replacement. The contaminant levels detected in the soils with the OVM ranged from 40 ppm to 117 ppm in the pump island area. No VOCs were detected during the installation of the two (2) downgradient monitoring wells. Split spoon samples were collected and screened every five (5) feet.

Hydrologic investigations indicate that at the time of data collection, groundwater was present in well BFT-1 approximately 45.87 feet below the ground surface and is suspected to be flowing in a east/northeasterly direction. Upon the analysis of groundwater samples collected from the downgradient monitoring well BFT-1 no petroleum constituents were detected. Monitoring well BFT-2 was dry at the time of sampling.

##### *B. Recommendations*

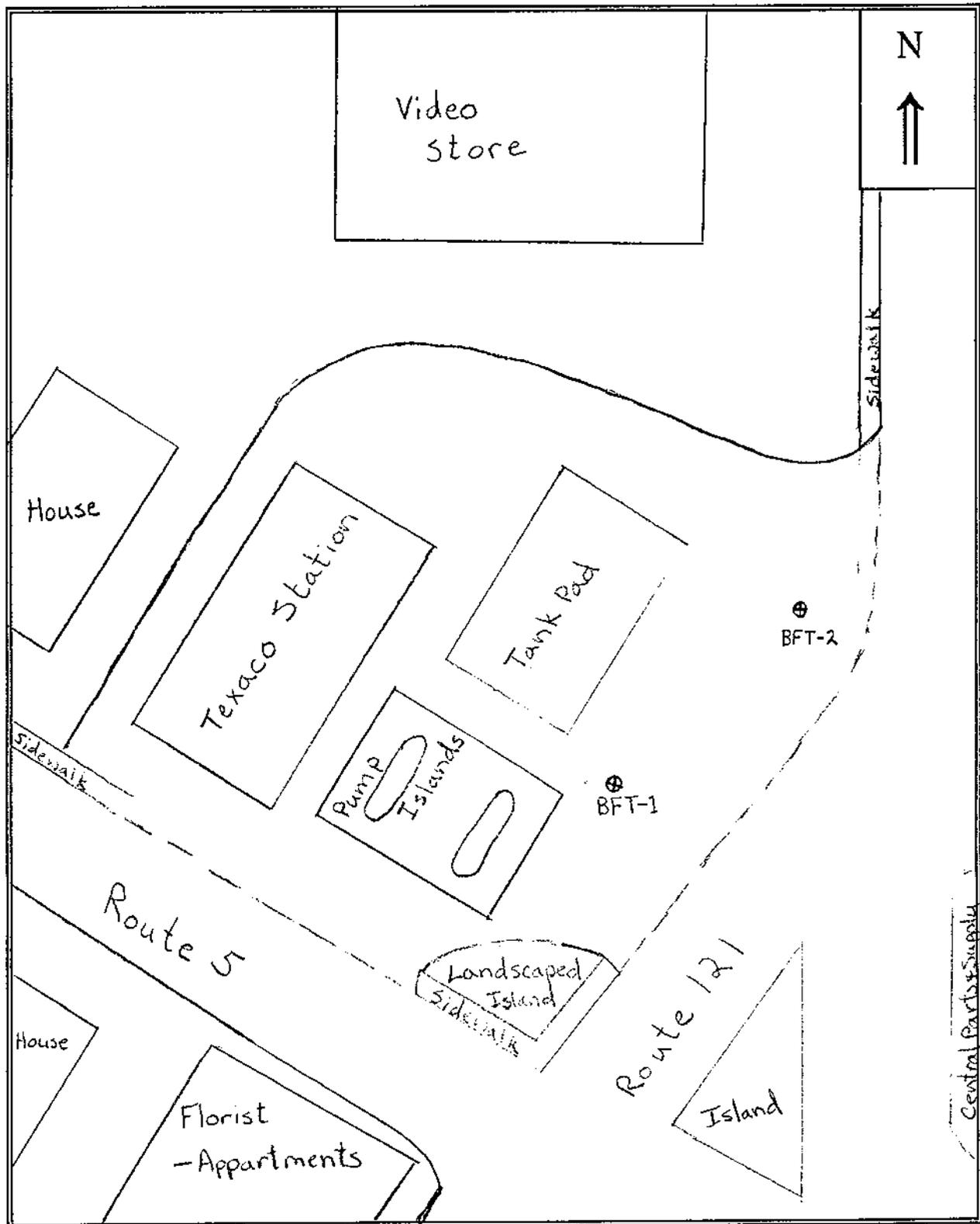
ENSA Environmental, Inc. recommends that the site be considered for closure as no detectable levels of petroleum contamination were found in the groundwater collected from the site monitoring wells or in the soil samples collected every five feet during the installation of the monitoring wells. The minimal amount of soil contamination around the pump islands appears to be contained in the soils and does not appear to be migrating. At this time it does not appear that contaminated soils at the site pose a threat to any surrounding sensitive receptors.

**Appendix A**  
**Site Location Map**



Site Locus	USGS Topographic Map Bellows Falls, VT Revised: 1985 Scale 1: 25000	Fleming Texaco Station 97 Westminister Road Bellows Falls, VT
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**Appendix B**  
**Site Sketch Map**



Site Sketch Map Not To Scale	Fleming Oil Company Bellows Falls Texaco	Route 5 and 121 Bellows Falls, VT
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**Appendix C**  
**Soil Boring/Monitoring Well Construction Logs**



Project #: <u>520</u> Date: <u>9/13/95</u> Project Name: <u>Fleming Oil Texaco</u> Location: <u>Route 5, Bellows Falls, VT</u> Driller: <u>T &amp; K Drilling, Troy, NH</u> ENSA Personnel: <u>K. H. J. Wade</u> Boring/Well #: <u>BFT-1</u> Sheet <u>2</u> of <u>2</u>							SITE LOCUS  <i>See Side Sketch Map</i>	
Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
30 - 32	6	14	18	13	16	0.0	Brown coarse to fine sand and silt	Native Backfill
								Bentonite
35 - 37	23	21	24	26	10	0.0	Brown/gray coarse to fine sand and silt some fine gravel	Grade 1 Silica Sand Pack
40 - 42	17	51	30	55	10	0.0		
45 - 47	28	11	21	38	10	0.0	Brown/olive fine sand and silt little clay few coarse to medium gravel Wet at 46' End of Boring	
Drilling Method: <u>HSA</u>							Screen Diameter: <u>2"</u>	Length: <u>10'</u>
Total Well Depth: <u>47' 4"</u>							Riser Diameter: <u>2"</u>	Length: <u>37'</u>
Groundwater Depth: <u>~ 46'</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 5808.
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



Project #: <u>520</u> Date: <u>9/13/95</u> Project Name: <u>Fleming Oil Texaco</u> Location: <u>Route 5, Bellows Falls, VT</u> Driller: <u>T &amp; K Drilling, Troy, NH</u> ENSA Personnel: <u>K. H. J. Wade</u> Boring/Well #: <u>BFT-2</u> Sheet <u>2</u> of <u>2</u>							SITE LOCUS	
Depth	Blow Counts				Rec. (in.)	OVM (ppm)	Soil Characterization	As Built Diagram
	0-6	6-12	12-18	18-24				
30 - 32	6	14	18	13	16	0.0	Brown fine sand and silt	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">Native Backfill</div> <hr style="border-top: 1px dashed black;"/> <div style="border: 1px solid black; padding: 2px;">Bentonite</div> <hr style="border-top: 1px dashed black;"/> <div style="border: 1px solid black; padding: 2px;">Grade I Silica Sand Pack</div> </div>
35 - 37	23	21	24	26	10	0.0	Brown/gray coarse to fine sand and silt some fine gravel	
40 - 42	17	51	30	55	10	0.0	Silt and clay lens - Wet Brown/gray coarse to fine sand and silt few coarse to medium gravel	
45 - 47	28	11	21	38	10	0.0		
48							End of Boring	

Drilling Method: HSA  
 Total Well Depth: 48' 10"  
 Groundwater Depth: \_\_\_\_\_

Screen Diameter: 2" Length: 10'  
 Riser Diameter: 2" Length: 38' 10"  
 Slot Size: 10

- Notes:
1. Split spoon soil samples are screened for organic vapors via headspace method using a Thermo Environmental Instruments Inc. Organic Vapor Meter Model 5808.
  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**  
**Analytical Laboratory Reports**

ALPHA ANALYTICAL LABORATORIES

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

RECEIVED OCT 05 1995

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: L9507126

Address: 205 Main Street; 3rd Floor

Invoice Number: 77581

Brattleboro, VT 05301

Date Received: 19-SEP-95

Attn: Kirsten Wade

Date Reported: 03-OCT-95

Project Number: 520

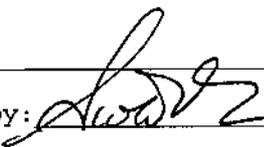
Delivery Method: Alpha

Site: Fleming Texaco

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ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L9507126-01	BFT-1-91895-520	Bellows Falls, VT
L9507126-02	BFT-02-91895-520	Bellows Falls, VT
L9507126-03	BFT-01-91895-520	Bellows Falls, VT

---

Authorized by: 

Scott McLean - Laboratory Director

ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED OCT 05 1995

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

Laboratory Sample Number: L9507126-01 Date Collected: 18-SEP-95  
 BFT-1-91895-520 Date Received : 19-SEP-95  
 Sample Matrix: WATER Date Reported : 03-OCT-95  
 Condition of Sample: Satisfactory Field Prep: None  
 Number & Type of Containers: 1 Amber Glass, 2 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Aromatic Volatile Organics				1	8020	20-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	20-Sep 21-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	86.0	%					

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



ALPHA ANALYTICAL LABORATORIES  
 CERTIFICATE OF ANALYSIS

RECEIVED OCT 05 1995

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

Laboratory Sample Number: L9507126-03 Date Collected: 18-SEP-95  
 BFT-01-91895-520 Date Received : 19-SEP-95  
 Sample Matrix: WATER Date Reported : 03-OCT-95  
 Condition of Sample: Satisfactory Field Prep: None

Number & Type of Containers: 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATES PREP ANALYSIS	ID
Aromatic Volatile Organics				1	8020		21-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				

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

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

RECEIVED 027 0 5 1995

Laboratory Job Number: L9507126

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Parameter	MS %	MSD %	RPD
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Volatile Organics Spike Recovery by GC MS/MSD for sample(s) 01-03

1,1-Dichloroethene	90	86	5
Trichloroethene	96	104	8
Chlorobenzene	89	89	0
Benzene	82	82	0
Toluene	82	81	1
Ethylbenzene	84	83	1

ALPHA ANALYTICAL LABS  
ADDENDUM I

RECEIVED 08705 1985

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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. 49683  
Sheet 1 of 1

Company Name:  
ENSA ENVIRONMENTAL, INC.

Project Number: 520  
P.O. Number: 3350

Project Name/Location:  
FLEMING TEXACO  
BELLOWS FALLS, VT

Date Received in Lab: 9/19  
Date Due: 10/2

Company Address:  
205 MAIN STREET  
BRATTLEBORO, VT

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

Project Manager:  
KIRSTEN WADE

Alpha Job Number: (Lab. use only)  
9507126

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		
<u>7126-1</u>	<u>BFT-1-91895-520</u>	<u>(2/V)(1/A)</u>	<u>MW</u>							<u>9/18</u>	<u>10:50</u>	<u>8020 + 8100M</u>		
<u>2</u>	<u>BFT-02-91895-520</u>	<u>(2/V)</u>	<u>MW</u>							<u>9/18</u>	<u>10:50</u>	<u>8020</u>	<u>n/c</u>	
<u>3</u>	<u>BFT-01-91895-520</u>	<u>(1/V)</u>	<u>MW</u>							<u>9/18</u>	<u>10:50</u>	<u>8020</u>	<u>n/c</u>	

Sampler's Signature: David C. Ball  
Affiliation: ENSA  
Date: 9/18/95  
Time: 1:00

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	<u>Lynne Wender</u>	<u>Denise &amp; Elyse</u>	<u>9-19-95</u>	<u>1:55</u>
2	<u>Denise &amp; Elyse</u>	<u>Shelley</u>	<u>9/19</u>	<u>1700</u>
3				
4				

ADDITIONAL COMMENTS:  
1 Duplicate  
1 Trip Blank