



SEP 3 10 31 AM '97

September 2, 1997

Mr. Chuck Schwer  
Vermont ANR/DEC  
Waste Management Division  
103 South Main St. /West Building  
Waterbury, VT 05671-0404

RE: Initial Investigation of Suspected Subsurface Petroleum Contamination  
Miltope Corporation, Springfield, Vermont (VTDEC Site #97-2162)

Dear Mr. Schwer:

Enclosed please find the summary report for the site investigation conducted at the Miltope Corporation in Springfield, Vermont. Griffin is recommending that the Miltope Corporation site be considered for closure and removed from the VTDEC Active Hazardous Waste Sites List.

Please contact me if you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "Christine Ward".

Christine Ward  
Hydrogeologist

Enclosure

c.: Mr. John Hall, w/o enc.  
GI#69741025

SEP 3 10 24 AM '97

**INITIAL INVESTIGATION OF  
SUSPECTED SUBSURFACE PETROLEUM  
CONTAMINATION REPORT**

**MILTOPE CORP.  
76 PEARL STREET  
SPRINGFIELD, VERMONT**

(VTDEC SITE #97-2162)  
GI #69741025

August 1997

*Prepared for*

Miltope Corp.  
76 Pearl Street  
Springfield, VT 05156

*Prepared by*



P.O. Box 943  
Williston, Vermont 05495  
(802) 865-4288

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## **I. INTRODUCTION**

This report summarizes the initial investigation of suspected subsurface petroleum contamination at the Miltope Corporation on Pearl Street in Springfield, Vermont. This work was requested by Mr. Chuck Schwer of the Vermont Department of Environmental Conservation (VTDEC) in a letter to Mr. John Hall of the Miltope Corporation dated May 12, 1997. This work was performed in accordance with the May 21, 1997, *Preliminary Work Plan and Cost Estimate for Subsurface Investigation of Suspected Petroleum Contamination* for the site prepared by Griffin. The Work Plan was approved by Mr. Andrew Shively (VTDEC) in a letter to Mr. Hall dated June 20, 1997.

## **II. SITE BACKGROUND**

### **A. Site History**

On April 14, 1997, petroleum contamination was detected at the Miltope Corporation during soil field screening at a routine removal of a fuel oil underground storage tank (UST). The former UST had a capacity of 12,000-gallons and was constructed of single wall steel. Related piping was also removed. The UST and the piping were 30 years old. The UST was reported to be in fair condition, and the piping was reported to be in good condition, at the time of closure. The UST was replaced with a new 10,000-gallon double wall steel UST. The new UST was installed in the same location as the former UST.

Soil samples collected during the UST removal were screened for volatile organic compounds (VOCs) using an HNu™ systems Model PI 101 photo ionizing detector (PID). Readings of up to 46 parts per million (ppm) were detected in soils excavated from the UST pit, with the higher concentrations detected near the center of the UST on the north side of the excavation. Groundwater was encountered approximately at 9 feet below grade, and was estimated to be a perched water table.

As a result of the petroleum contamination detected in the subsurface beneath the former UST, the VTDEC requested that additional work be conducted at the site in order to determine the extent and degree of petroleum contamination.

### **B. Site Description**

The UST is located at the northwest corner of the Miltope building (see Site Map, Appendix A). The property slopes down steeply from the south-southwest along Prospect Street to the north along Morgan Street. The UST and nearby driveway are

located on a terrace along the slope. The eastern end of the UST is adjacent to the ground floor of the Miltope building.

There is an abandoned house, which appeared to have been used for commercial purposes, to the north of the site. The area east of the Miltope property is primarily industrial, and the area south and west is primarily residential.

The area is served by municipal water and sewer systems. The nearest surface water is the Black River, approximately 250 feet north of the site.

### **C. Site Geology**

Soils in the vicinity of the UST pit during the removal inspection consisted of medium to fine gravel and coarse to fine sand with some silt and clay. According to the Surficial Geologic Map of Vermont (Doll, 1970), the site is underlain by postglacial fluvial alluvium. Bedrock below the site is mapped as the Waits River formation consisting of gray quartzose and micaceous crystalline limestone which weathers to a distinctive brown earthy crust (Doll, 1961).

## **III. INVESTIGATIVE PROCEDURES**

To further define the extent of subsurface petroleum contamination in the area of the former UST, the following investigative tasks were undertaken: soil borings; monitoring well installations; groundwater sample collection and analyses for petroleum related constituents; and a sensitive receptor survey.

### **A. Monitoring Well Installation**

Three monitoring wells, MW-1 through MW-3, were installed on July 16, 1997, by Adams Engineering, under the direct supervision of a Griffin hydrogeologist. Three additional borings, SB-1 through SB-3, were advanced, however refusal was met before groundwater was encountered. The soil borings were advanced with a truck mounted vibratory soil core sampler and with augers. The soil boring logs and monitoring well as-built specifications are presented in Appendix B. The monitoring well and soil boring locations are indicated on the Site Map (Appendix A).

Monitoring well MW-1 was located approximately 10 feet south of the former UST, in a presumed upgradient direction. Monitoring well MW-2 was located approximately 5 feet north of the UST, in a presumed downgradient location. Monitoring well MW-3 was

located approximately eight feet northwest of the UST, in a presumed downgradient direction.

Undisturbed soil samples were collected from the borings with the core sampler. Additional soil samples were collected from the auger cuttings. The soil samples were logged by the supervising hydrogeologist and screened for the presence of volatile organic compounds (VOCs) using an HNu™ systems Model PI 101 photo ionizing detector (PID). Prior to screening, the PID was calibrated with isobutylene referenced to benzene. Soils were screened using the Griffin Jar/Polyethylene Bag Headspace Screening Protocol, which conforms to state and industry standards. VOCs were not detected with the PID in any of the soil samples.

Soil encountered during drilling consisted primarily of sand and silt with some gravel. Sampler and auger refusal was encountered in all of the borings, with the bottom of the boring consisting of highly weathered decomposed rock.

During drilling, the water table was encountered at approximately 9 feet below grade in MW-1 and approximately 13 feet below grade in MW-2. Soils in the boring for MW-3 were slightly wet at approximately 10 feet below grade. The water table was not encountered in soil borings SB-1, SB-2, and SB-3.

The monitoring wells are constructed of 1.5 inch diameter, schedule 40 PVC, with a 10 foot length of 0.010 inch slotted screen. A sandpack was placed in the annulus between the monitoring well screen and the borehole wall. Above the sand pack, the annulus was filled with a bentonite clay grout seal to prevent surface water from entering the borehole. The wells are protected at the surface by a flush mounted steel roadbox with a bolt down cover. The well head protective roadboxes are set in cement.

Monitoring wells MW-1 and MW-2 were developed immediately following installation with a peristaltic pump and dedicated tubing. There was insufficient water to develop monitoring well MW-3 on the day of the drilling.

## **B. Groundwater Flow Direction**

Water table elevation measurements were collected from monitoring wells, MW-1, MW-2, and MW-3 on July 24, 1997. The top of casing elevations were determined relative to MW-1, which was arbitrarily set at 100 feet. The depth to water in each well was subtracted from the top of casing elevation to obtain the relative water table elevation in each well. Water level data are presented in Appendix C. No free phase product was detected in the wells. Monitoring well MW-3 was dry on this date. Water table elevations were plotted on the site map to generate the Groundwater Elevation Map figure presented in Appendix A.

The relative water table elevations measured on July 24, 1997, in MW-1 and MW-2, suggest that groundwater flow is generally toward the north. This flow direction would be toward the Black River.

### **C. Groundwater Sampling and Analyses**

Griffin collected groundwater samples from MW-1 and MW-2 on July 24, 1997. The groundwater samples were analyzed by Endyne, Inc. of Williston, Vermont, by EPA Method 602 for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl tertiary butyl ether (MTBE), and by modified EPA Method 8100 for total petroleum hydrocarbons (TPH). Results of the laboratory analyses for the monitoring wells are summarized in Appendix D. The laboratory analysis report is also in Appendix D. Analytical results of the trip blank and duplicate samples indicate that adequate quality assurance and control were maintained during sample collection and analysis.

Petroleum compounds were not detected in the groundwater samples collected from MW-1 and MW-2.

### **D. Sensitive Receptor Survey**

A receptor risk assessment was conducted to identify known and potential receptors of the contamination detected at the Miltope Corp. A visual survey was conducted at the time of the UST removal inspection on April 14, 1997, as well as during the monitoring well installation on July 16, 1997. Based on these observations, a determination of the potential risk to identified receptors was conducted.

The entire area is served by municipal water. No public or private water supply wells were observed in the vicinity of the Miltope Corporation.

The nearest surface water is the Black River located approximately 250 feet north of the site. Based on the non-detection of VOCs and TPH in the groundwater samples collected from the monitoring wells, the potential impact to the river is considered minimal.

The UST is located adjacent to the lower level of the Miltope building. The building wall is brick and concrete construction. Based on the non-detection of VOCs from the soil borings, the potential impact to this building from petroleum vapors from the UST system is considered minimal.

#### IV. CONCLUSIONS

Based on the results of this investigation, Griffin presents the following conclusions:

- 1) There was a release(s) of petroleum to the subsurface in the vicinity of the former UST system. The amounts and duration of the release(s) are unknown. The source of the petroleum contamination (i.e., the UST system) was replaced in April 1997.
- 2) VOCs were not detected with a PID in the soil samples collected from the soil borings on July 16, 1997.
- 3) Petroleum compounds were not detected in the groundwater collected from the monitoring wells on July 24, 1997.
- 4) The groundwater flow beneath the site is estimated to be to the north toward the Black River.
- 5) There appears to be no significant potential risks to identified sensitive receptors.

#### V. RECOMMENDATIONS

Based on the groundwater sample analyses and on the soil screening results during drilling, Griffin recommends that the Miltope Corporation, Springfield, Vermont site be considered for closure and be removed from the VTDEC Active Hazardous Waste Sites List. This recommendation is offered based upon achievement of the following closure criteria, as per the VTDEC Site Management Activity Completed (SMAC) Checklist:

- 1) The source(s), nature, and extent of the petroleum contamination at the site has been adequately defined.

The source of petroleum contamination detected in soils at Miltope Corporation was a former No. 2 Fuel Oil UST at the property.

VOC readings up to 46 ppm were detected in soils during the tank removal on April 14, 1997. VOCs were not detected with the PID from soil samples collected from the soil borings on July 16, 1997.

Dissolved petroleum contamination was not detected in groundwater samples collected from the on-site monitoring wells on July 24, 1997.

- 2) Source(s) has been removed, remediated, or adequately contained.

The No. 2 Fuel Oil UST was removed from the Miltope Corporation in April 1997.

- 3) Levels of contaminants in soil and groundwater shall be stable, falling, or non-detectable.

VOCs were not detected with the PID in soil samples collected July 16, 1997, from the soil borings.

Petroleum contamination was not detected in groundwater samples collected from the monitoring wells on July 24, 1997.

- 4) Groundwater enforcement standards are met on entire property.

Petroleum contamination was not detected in groundwater samples collected from the monitoring wells on July 24, 1997.

- 5) Soil guideline levels are met. If not, engineering or institutional controls are in place.

Non-detect readings of VOCs were measured from the soil borings on July 16, 1997.

- 6) No unacceptable threat to human health or the environment exists on site.

Petroleum contamination was not detected in groundwater samples collected from the two on-site monitoring wells at the Miltope Corporation.

- 7) Site meets RCRA requirements.

Available records indicate that the Miltope Corporation site is not in violation of the Resource Conservation and Recovery Act (RCRA) as defined in 40 CFR 264.

- 8) Site meets CERCLA requirements.

Available records indicate that the Miltope Corporation site is not in violation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as defined in 40 CFR 300.

**REFERENCES**

USGS 7.5 x 15 Minute Topographic Map, Springfield quadrangle, Vermont, dated 1984.

Doll, Charles G., ed., 1961, *Centennial Geologic Map of Vermont*, Vermont Geological Survey.

Doll, Charles G., ed., 1970, *Surficial Geologic Map of Vermont*, Vermont Geological Survey.

Griffin International, April 15, 1997, *Miltope Corporation UST Closure Inspection*.

**APPENDIX A**

**Site Location Map**

**Site Map**

**Groundwater Elevation Map**

**Site Photographs**



**SITE LOCATION MAP**

**MILTOPE CORPORATION, SPRINGFIELD, VT**

Base Map: USGS Springfield, VT-NH, 7.5' X 15' quadrangle, dated 1984

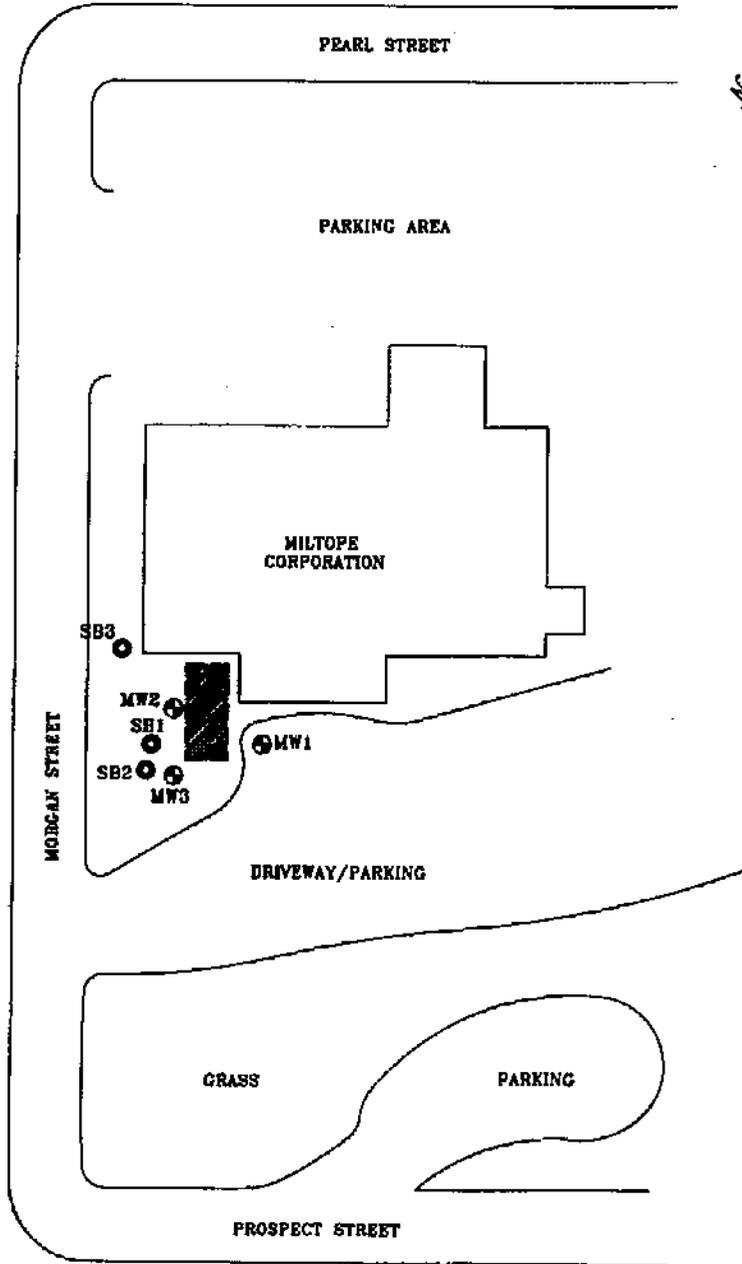
Scale: 1:25,000 metric



APPROX. 250 FEET  
TO BLACK RIVER

ABANDONED  
BUILDING

HOUSE



**LEGEND**

-  MW# MONITORING WELL
-  SB# SOIL BORING

JOB #: 69741025



**MILTOPE CORPORATION**

**SPRINGFIELD, VERMONT**

**SITE MAP**

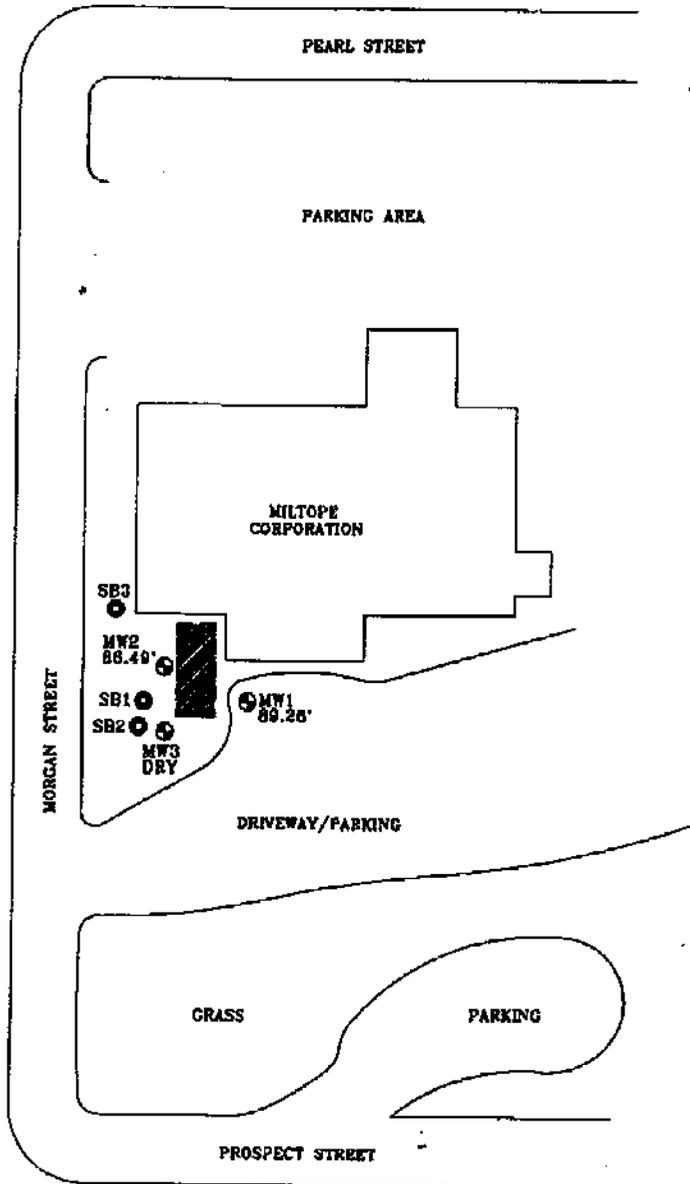
DATE: 8/7/97

DWG.#:1

SCALE: 1"=60'

DRN.:SB APP.:CW

APPROX. 250 FEET  
TO BLACK RIVER



**LEGEND**

- MW2 88.49' MONITORING WELL AND WATER TABLE ELEVATION IN FEET
- SB1 SOIL BORING

JOB #: 69741025  
MEASUREMENT DATE: 7/24/97



**MILTOPE CORPORATION**

**SPRINGFIELD, VERMONT**

**GROUNDWATER ELEVATION MAP**

DATE: 8/7/97	DWG.#:2	SCALE: 1"=60'	DRN.:SB APP.:CW
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SITE PHOTOGRAPHS  
MILTOPE CORPORATION



Showing the slope of the topography around the UST.

**APPENDIX B**

**Soil Logs and Monitoring Well Specifications**

PROJECT MILTOPE CORPORATION

LOCATION SPRINGFIELD, VERMONT

DATE DRILLED 7/16/97 TOTAL DEPTH OF HOLE 13.7'

DIAMETER 2.25"

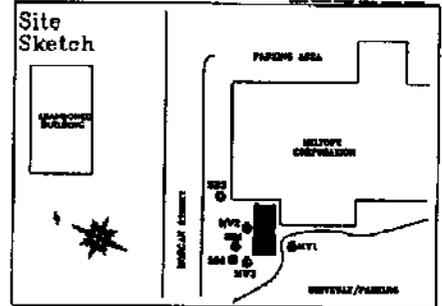
SCREEN DIA. 1.5" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 1.5" LENGTH 3.2' TYPE sch 40 pvc

DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY

DRILLER GERRY ADAMS LOG. BY C. WARD

WELL NUMBER MW1



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX			0
0		WELL CAP			0
1		CONCRETE			1
2		BENTONITE		Orange brown, coarse SAND and GRAVEL some silt.	2
3		WELL RISER	0'-5' 0 ppm		3
4					4
5					5
6				Brown, fine SAND and SILT, trace gravel, damp.	6
7				Brown, medium SAND, some silt, some gravel, damp.	7
8		SAND PACK	5'-10' 0 ppm	Brown SILT, little fine sand, trace clay, some very thin dark brown layers, possibly old mats of organic material.	8
9		WELL SCREEN		9.0' WATER TABLE	9
10					10
11				Brown SILT, little fine sand, trace clay, wet, with approximately 1" diameter clump of gray clay and several other smaller clumps of dark brown decomposed rock-phyllite.	11
12					12
13		BOTTOM CAP	10'-13.7' 0 ppm	Brown SAND and SILT, some gravel, wet.	13
14		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 13.7' REFUSAL AT 13.7'	14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

WELL NUMBER MW2

PROJECT MILTOPE CORPORATION

LOCATION SPRINGFIELD, VERMONT

DATE DRILLED 7/16/97 TOTAL DEPTH OF HOLE 18.0'

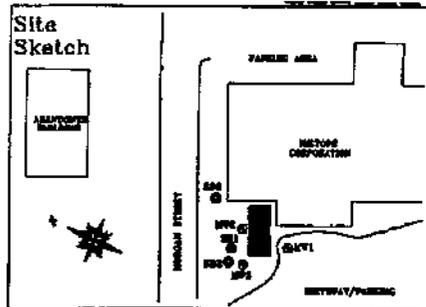
DIAMETER 2.25"

SCREEN DIA. 1.5" LENGTH 10.0' SLOT SIZE 0.010"

CASING DIA. 1.5" LENGTH 6.3' TYPE sch 40 pvc

DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY

DRILLER GERRY ADAMS LOG BY C. WARD



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0	ROAD BOX	ROAD BOX			0
0	WELL CAP	WELL CAP			0
1	CONCRETE	CONCRETE			1
2	BENTONITE	BENTONITE			2
3	WELL RISER	WELL RISER			3
4					4
5			0'-15' 0 ppm	Brown, fine SAND and SILT, trace gravel.	5
6					6
7					7
8	SAND PACK	SAND PACK			8
9	WELL SCREEN	WELL SCREEN			9
10					10
11					11
12					12
13				13.0' WATER TABLE	13
14					14
15			15'-18' 0 ppm	Dark gray, decomposed rock-phyllite and dark brown silt.	15
16	BOTTOM CAP	BOTTOM CAP			16
17					17
18	UNDISTURBED NATIVE SOIL	UNDISTURBED NATIVE SOIL		BASE OF WELL AT 16.8' REFUSAL AT 18.0'	18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT MILTOPE CORPORATION

LOCATION SPRINGFIELD, VERMONT

DATE DRILLED 7/16/97 TOTAL DEPTH OF HOLE 11.8'

DIAMETER 2.25"

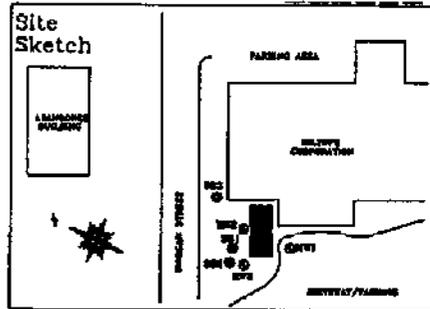
SCREEN DIA. 1.5" LENGTH 9.7' SLOT SIZE 0.010"

CASING DIA. 1.5" LENGTH 1.7' TYPE sch 40 pvc

DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY

DRILLER GERRY ADAMS LOG BY C. WARD

WELL NUMBER MW3

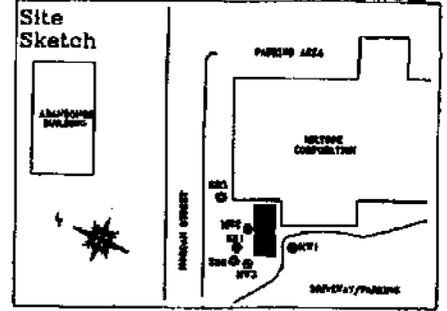


GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		ROAD BOX			0
0		WELL CAP			0
1		CONCRETE			1
1		BENTONITE			1
2		WELL RISER			2
3					3
4					4
5		SAND PACK			5
6			0'-11.8'	Brown SAND and SILT, some gravel.	6
7			0 ppm		7
8		WELL SCREEN			8
9					9
10					10
11		BOTTOM CAP			11
12		UNDISTURBED NATIVE SOIL		BASE OF WELL AT 11.7'	12
13				REFUSAL AT 11.8'	13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT MILTOPE CORPORATION  
 LOCATION SPRINGFIELD, VERMONT  
 DATE DRILLED 7/16/97 TOTAL DEPTH OF HOLE 8.5'  
 DIAMETER 2.25"  
 SCREEN DIA. NA LENGTH NA SLOT SIZE NA  
 CASING DIA. NA LENGTH NA TYPE NA  
 DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY  
 DRILLER GERRY ADAMS LOG BY C. WARD

WELL NUMBER SB1



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0					0
1	[Hatched area representing backfill]	NATIVE BACKFILL	0'-6' 0 ppm	Light brown, fine SAND, some silt, damp. bottom of shoe- black coal like or old asphalt.	1
2					2
3					3
4					4
5					5
6			5'-7' 0 ppm	Dark orange/brown SAND, some silt, some gravel.	6
7			7'-8.5' 0 ppm	Light orange brown, fine to medium SAND, some silt, damp.	7
8		Reddish brown, decomposed rock.		8	
9		Reddish brown, medium coarse SAND, some silt, slightly weathered rock-phyllite. Then at bottom of shoe- gray/brown SAND and phyllite schist rock frags.		9	
10		UNDISTURBED NATIVE SOIL		REFUSAL AT 8.5'	10
11					11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT MILTOPE CORPORATION

LOCATION SPRINGFIELD, VERMONT

DATE DRILLED 7/16/97 TOTAL DEPTH OF HOLE 7.0'

DIAMETER 2.25"

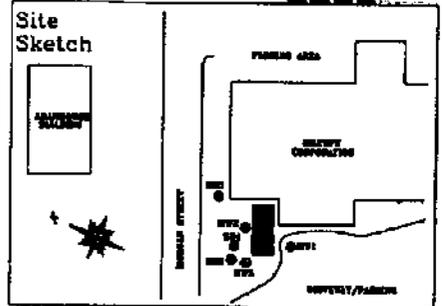
SCREEN DIA. NA LENGTH NA SLOT SIZE NA

CASING DIA. NA LENGTH NA TYPE NA

DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY

DRILLER GERRY ADAMS LOG. BY C. WARD

WELL NUMBER SB3



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0		NATIVE BACKFILL	0'-7' 0 ppm	Gray/brown SAND and SILT, trace gravel, dry. Then gray SILT and SAND, trace rock fragments- phyllite schist.	0
1					1
2					2
3					3
4					4
5					5
6					6
7		UNDISTURBED NATIVE SOIL		REFUSAL AT 7.0'	7
8					8
9					9
10					10
11					11
12					12
13					13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

**APPENDIX C**

**Liquid Level Monitoring Data**

**LIQUID LEVEL MONITORING DATA**

**MILTOPE CORP.  
SPRINGFIELD, VERMONT**

7/24/97

Well I.D.	Well Depth btoc	Top of Casing Elevation	Depth To Product btoc	Depth To Water btoc	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
MW-1	13.3	100.00	-	10.74	-	-	-	-	89.26
MW-2	16.3	99.85	-	13.38	-	-	-	-	86.49
MW-3	11.3	100.14	-	dry	-	-	-	-	<88.81

All Values Reported in Feet

btoc - Below Top of Casing

Elevations determined relative to top of casing of MW-1, which was arbitrarily set at 100'

**APPENDIX D**  
**Water Quality Data**

# GROUNDWATER QUALITY SUMMARY

## MILTOPE CORP. SPRINGFIELD, VERMONT

**MW-1**

PARAMETER	Date of Sample Collection				Applicable Standard (ppb)
	7/24/97				
Benzene	ND > 1				5. a
Chlorobenzene	ND > 1				100. a
1,2-DCB	ND > 1				600. b
1,3-DCB	ND > 1				600. c
1,4-DCB	ND > 1				75. a
Ethylbenzene	ND > 1				680. d
Toluene	ND > 1				1,000. b
Xylenes	ND > 1				400. d
Total BTEX	ND				-
MTBE	ND > 10				40. c
BTEX+MTBE	ND				-
TPH (mg/L)	ND > 0.8				

**MW-2**

PARAMETER	Date of Sample Collection				Applicable Standard (ppb)
	7/24/97				
Benzene	ND > 1				5. a
Chlorobenzene	ND > 1				100. a
1,2-DCB	ND > 1				600. b
1,3-DCB	ND > 1				600. c
1,4-DCB	ND > 1				75. a
Ethylbenzene	ND > 1				680. d
Toluene	ND > 1				1,000. b
Xylenes	ND > 1				400. d
Total BTEX	ND				-
MTBE	ND > 10				40. c
BTEX+MTBE	ND				-
TPH (mg/L)	ND > 0.8				

BTEX Analysis by EPA 502, TPH Analysis by Modified EPA 8100

All Values Reported in ug/L (ppb) except TPH in mg/L (ppm)

ND>1 - None Detected above Detection Limit

MCL - E.P.A. Maximum Contaminant Level

HAL - Health Advisory Level

VGES - Vermont Groundwater Enforcement Standard

a - MCL and VGES

b - MCL

c - HAL

d - VGES

# GROUNDWATER QUALITY SUMMARY

## MILTOPE CORP. SPRINGFIELD, VERMONT

MW-3

PARAMETER	Date of Sample Collection				Applicable Standard (ppb)
	7/24/97				
Benzene	*				5. a
Chlorobenzene	No Sample				100. a
1,2-DCB					600. b
1,3-DCB	Well Dry				600. c
1,4-DCB					75. a
Ethylbenzene					680. d
Toluene					1,000. b
Xylenes					400. d
Total BTEX					-
MTBE					40. c
BTEX+MTBE					-
TPH (mg/L)					

BTEX Analysis by EPA 602, TPH Analysis by Modified EPA 8100  
 All Values Reported in ug/L (ppb) except TPH in mg/L (ppm)  
 ND>1 - None Detected above Detection Limit

MCL - E.P.A. Maximum Contaminant Level  
 HAL - Health Advisory Level  
 VGES - Vermont Groundwater Enforcement Standard  
 a - MCL and VGES  
 b - MCL  
 c - HAL  
 d - VGES

**GROUNDWATER QUALITY SUMMARY  
QA/QC SAMPLES**

**MILTOPE CORP.  
SPRINGFIELD, VERMONT**

7/24/97

PARAMETER	Trip Blank	Equipment Blank	Duplicate of MW-2	Applicable Standard (ppb)
Benzene	ND > 1	No	ND > 1	5. a
Chlorobenzene	ND > 1	Sample	ND > 1	100. a
1,2-DCB	ND > 1		ND > 1	600. b
1,3-DCB	ND > 1	Disposable	ND > 1	600. c
1,4-DCB	ND > 1	Bailers	ND > 1	75. a
Ethylbenzene	ND > 1	Used	ND > 1	680. d
Toluene	ND > 1		ND > 1	1,000. b
Xylenes	ND > 1		ND > 1	400. d
Total BTEX	ND		ND	-
MTBE	ND > 10		ND > 10	40. c
BTEX+MTBE	ND		ND	-
TPH (mg/L)	NA		NA	

BTEX Analysis by EPA 602, TPH Analysis by Modified EPA 8100

All Values Reported in ug/L (ppb) except TPH in mg/L (ppm)

ND > 1 - None Detected above Detection Limit

NA - Not Analyzed

MCL - E.P.A. Maximum Contaminant Level

HAL - Health Advisory Level

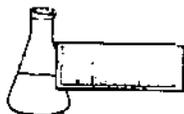
VGES - Vermont Groundwater Enforcement Standard

a - MCL and VGES

b - MCL

c - HAL

d - VGES



**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International  
PROJECT NAME: Miltope  
REPORT DATE: August 1, 1997  
DATE SAMPLED: July 24, 1997

PROJECT CODE: GIMI1529  
REF.#: 107,196 - 107,199

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

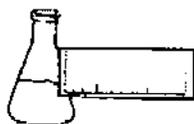
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

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**EPA METHOD 602--PURGEABLE AROMATICS**

CLIENT: Griffin International

DATE RECEIVED: July 25, 1997

PROJECT NAME: Miltope

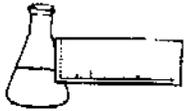
REPORT DATE: August 1, 1997

CLIENT PROJ. #: 69741025

PROJECT CODE: GIMI1529

Ref. #:	107,196	107,197	107,198	107,199	
Site:	Trip Blank	MW-2	Duplicate	MW-1	
Date Sampled:	7/24/97	7/24/97	7/24/97	7/24/97	
Time Sampled:	5:50	9:50	9:50	10:10	
Sampler:	C. Ward	C. Ward	C. Ward	C. Ward	
Date Analyzed:	7/31/97	7/30/97	7/30/97	7/30/97	
UIP Count:	0	0	0	0	
Dil. Factor (%):	100	100	100	100	
Surr % Rec. (%):	86	89	88	85	
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	
Benzene	<1	<1	<1	<1	
Chlorobenzene	<1	<1	<1	<1	
1,2-Dichlorobenzene	<1	<1	<1	<1	
1,3-Dichlorobenzene	<1	<1	<1	<1	
1,4-Dichlorobenzene	<1	<1	<1	<1	
Ethylbenzene	<1	<1	<1	<1	
Toluene	<1	<1	<1	<1	
Xylenes	<1	<1	<1	<1	
MTBE	<10	<10	<10	<10	

Note: UIP = Unidentified Peaks TBQ = Trace Below Quantitation NI = Not Indicated



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REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International  
PROJECT NAME: Miltope  
DATE REPORTED: August 7, 1997  
DATE SAMPLED: July 24, 1997

PROJECT CODE: GIMI1530  
REF. #: 107,200 - 107,201

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

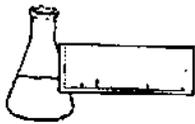
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures



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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: August 7, 1997  
CLIENT: Griffin International  
PROJECT: Miltope  
PROJECT CODE: GIMI1530  
COLLECTED BY: Chris Ward  
DATE SAMPLED: July 24, 1997  
DATE RECEIVED: July 25, 1997

Reference #	Sample ID	Concentration (mg/L) <sup>1</sup>
107,200	MW-2; 9:50	ND <sup>2</sup>
107,201	MW-1; 10:10	ND

Notes:

- 1 Method detection limit is 0.8 mg/L.
- 2 None detected

Project Name: <b>MILTOPE</b>	Reporting Address: <b>GRIFFIN</b>	Billing Address: <b>GRIFFIN</b>
Site Location: <b>SPRINGFIELD</b>		
Endyne Project Number: <b>GIMI1529</b>	Company: <b>GRIFFIN</b>	Sampler Name: <b>CHRIS WARD</b>
	Contact Name/Phone #:	Phone #: <b>865-4288</b>

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
107,196	TRIT BLANK	4.0	✓		7/25/97 5:50	2	40ml		27	HCB	
107,197	HW-2				9:50	4	40ml		27, 30		
107,198	Duplicate				9:50	2	40ml		27		
107,199	HW-1				10:10	4	40ml		27, 30		

Relinquished by: Signature <i>Chris Ward</i>	Received by: Signature <i>M. Smith</i>	Date/Time
Relinquished by: Signature <i>M. Smith</i>	Received by: Signature <i>Jason Woodard</i>	Date/Time <b>7/25/97 10:57 A.M.</b>

New York State Project: Yes  No

**Requested Analyses**

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 801 (8020)
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 1080 Post/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	DTX	24	EPA 608 Post/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatile, semi-volatile, metals, pesticides, herbicides)										
30	Other (Specify): <b>TPH by modified EPA 8100</b>										