



AUG 26 11 06 PM '98

August 25, 1998

WASTE MANAGEMENT
DIVISION

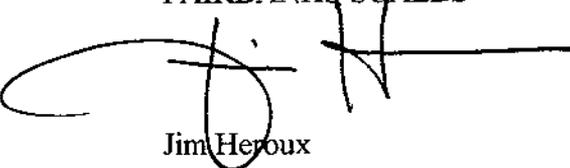
Mr. Michael Young
Agency of Natural Resources
Department of Environmental Conservation
Waste Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404

Dear Mike:

Enclosed you will find Marin Environmental's final report regarding site # 98-2347 at Fairbanks Scales. Per your instructions the additional site investigation has been completed. Please review, if the conclusions meet your approval please contact me in writing so we may confirm site closure.

Sincerely,

FAIRBANKS SCALES



Jim Heroux
Plant Engineer

Enclosure: Marin Environmental Report

JH:sjb



Marin Environmental, Inc.

Hydrogeology, Engineering & GIS Services

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Southbridge MA 01550
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116 Consumer Square
Suite 174
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Phone: (518) 566-8297

Internet:
www.marinenv.com

18 August, 1998

Mr. Jim Heroux
Fairbanks Scales
711 East St. Johnsbury Road
St. Johnsbury, VT 05819

RE: *Initial Site Investigation Report
Fairbanks Scales, St. Johnsbury, VT*

Dear Mr. Heroux:

Purpose

Marin Environmental, Inc. (**Marin**) has completed additional work at Fairbanks Scales (Figure 1) as requested by the VT DEC in the letter dated 30 March 1998. The purpose of this investigation was to evaluate the degree and extent of petroleum contamination in soil and groundwater; qualitatively assess the risks to environmental and public health via relevant sensitive receptors and potential contamination migration pathways; and identify potentially appropriate monitoring and/or remedial actions based on the site conditions.

To achieve this objective, **Marin** supervised the completion of one source area monitoring well, collection and analysis of ground water samples, and completed a sensitive receptor survey.

Findings

- Total petroleum hydrocarbons (TPH) were detected in the source area well (MW-1) at 0.72 ppm; but no volatile petroleum compounds were detected in this sample.
- No volatile petroleum compounds or TPHs were detected in the downgradient well (MW-5), located between the former underground storage tanks (USTs) and the Moose River.
- Low-level petroleum contamination appears to be limited to the immediate vicinity of the former USTs.
- None of the identified sensitive receptors are likely to be impacted by residual soil contamination at the site.
- Monitoring well MW-4 was destroyed, and could not be sampled

Recommendations

Marin recommends no further investigation at the site related to the former underground storage tanks (USTs).

Site Setting/Background

The on-site building consists of a manufacturing plant for industrial scales. The site and surrounding property are supplied with municipal water and sewer. A drainage swale is located approximately 150 feet south-southwest of the USTs, which eventually discharges to the Moose River located approximately 350 feet to the south. Five monitoring wells, installed to evaluate possible impacts from former plating chemical settling pools, are located on the northern portion of the site (Figure 2).

On 4 and 5 March, 1998, three underground storage tanks (USTs) were removed at the site. All of the USTs were found to be in good condition upon removal; however, several holes were observed in the feed line to a #6 fuel-oil UST (UST #2). Approximately 0.5 inches of free-phase No. 6 fuel-oil was encountered on groundwater in the area of UST #2 piping upon removal. Photoionization detector (PID) readings on soils from the UST# 1 excavation ranged from 0.0 to 38.3 parts per million (ppm). PID readings on soils from the UST# 2 and #3 excavation ranged from 0.0 to 52.2 ppm. Petroleum odors were observed on soils around the feed and return lines for all three USTs. The extent of subsurface soil contamination could not be determined at the time of the UST closure.

Soils in the excavation consisted of medium brown sands to depth of approximately 12 feet below ground surface (bgs). Ground water was encountered in the excavation at a depth of 8 feet bgs, with petroleum odors observed at ground water. Fairbanks Scales is located on VT Route 2 in St. Johnsbury, Vermont.

During the removal of UST #3 on 5 March 1998, an 8 inch water line used to feed the on-site sprinkler system was accidentally broken when the ground adjacent to the building slumped into the excavation. Water from the broken water-line rushed into the UST excavation, coming in contact with free-phase No.6 fuel-oil and residual soil contamination. Water was then bailed from the excavation by backhoe onto the parking lot to prevent water from entering UST #3. The bailed water flowed over the parking lot draining into an adjacent swale located on the south side of the building. VT DEC and Town officials were notified immediately and corrective measures were implemented.

Soil Boring/ Monitoring Well Installation

On 15 May 1998, Marin supervised the installation of one monitoring well (MW-1) in the former tank area. The soils in this boring consisted of sands and gravels from the surface down to approximately 12 feet below ground surface. Photoionization detector (PID) readings ranged from 0.4 to 4.6 ppm, with the highest reading obtained at a depth of approximately 7 feet bgs.

The monitoring wells were installed by Tri-State Drilling and Boring of West Burke, Vermont using hollow-stem-auger (HSA) drilling techniques. Soil samples were collected at five-foot intervals using a standard split-spoon barrel. The soil samples were screened for the presence of volatile organic compounds (VOCs) with a PID and logged for lithology by a Marin hydrogeologist. The PID was calibrated with an isobutylene standard gas to a benzene reference. PID screening results are included in boring logs in Attachment C. All downhole drilling equipment was decontaminated after use. The soil-screening results are discussed below.

MW-1 was constructed using hollow-stem auger drilling techniques employing two-inch screen and risers. Clean quartz #1 filter sand was placed in the open annulus around the well to one foot above the top of the screened interval. A two feet thick bentonite seal was then installed above the sand pack and the remainder of the annular space was filled with native material. The completed monitoring well was protected by a flush-mounted steel roadbox that was cemented in place. Monitoring-well construction details are included on the boring/well logs in Attachment C. The well was developed immediately after construction using a peristaltic. Development water was discharged to the ground surface in the vicinity of the well.

Water Sampling and Analysis

Total petroleum hydrocarbons (TPH) were detected in MW-1 at 0.72 parts per million (ppm) but was not detected in the downgradient sample collected from MW-5. No fuel oil related compounds were detected in either of the samples collected at the site. A summary of the analytical results is included on Table 2, and copies of the laboratory analytical reports are included as Attachment B.

On 13 July 1998, ground-water samples were collected from two on-site monitoring wells — one well associated with the former plating chemical settling pools (MW-5) and one well installed in the former UST tank excavation (MW-1). One other well in the area of the former settling pool (MW-4), which Marin had proposed to sample, was destroyed. A Marin field scientist collected ground-water samples from two on-site monitoring wells using pre-cleaned, disposable bailers. Monitoring well samples were collected after purging approximately three volumes of standing water from each well. All samples were submitted for laboratory analysis of volatile petroleum compounds by EPA Method 8020 and total petroleum hydrocarbons by modified EPA Method 8100.

TABLE 2.
Summary of Ground-Water Analytical Results

Well I.D.	benzene	toluene	ethyl benzene	xylene	Total BTEX	TPH (ppm)	MTBE
MW-1	ND <1	ND <1	ND <1	ND <1	ND <1	0.72	ND <1
MW-5	ND <1	ND <1	ND <1	ND <1	ND <1	ND<0.4	ND <1
VGES	5	1,000	700	10,000			40

Results reported as parts per billion (ppb) except where noted otherwise.
ND = Not detected above indicated detection limit.
VGES = Vermont Groundwater Enforcement Standard.

Receptor Evaluation

At this time, none of the identified sensitive receptors appear to be impacted or threatened by residual petroleum contamination at the site. The site and the majority of adjacent properties are supplied with municipal water and sewer services. The on-site drainage swale is located approximately 150 feet south of the former USTs, and the Moose River located approximately 350 south of the drainage swale.

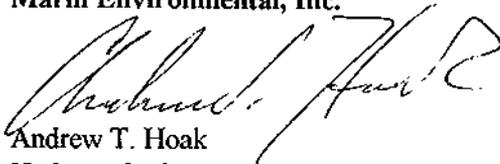
Mr. Jim Heroux
Fairbanks Scales, St. Johnsbury, VT

18 August, 1998
page 4

Please call me if you have any questions regarding the enclosed information or recommendations.

Sincerely,

Marin Environmental, Inc.



Andrew T. Hoak
Hydrogeologist

enclosure

ATH/ref: 98017R01.DOC

ATTACHMENT A
Figures



Marin Environmental, Inc.

FIGURE 1.
SITE LOCATION MAP
FAIRBANKS SCALES
ST. JOHNSBURT, VT

1700 Hegeman Avenue • Colchester, Vermont 05446
(802) 655-0011 • In VT: (800) 520-6065 • Fax (802) 655-6076



Name: CONCORD
Date: 8/18/98
Scale: 1 inch equals 2000 feet

Location: 044° 25' 52.6" N 071° 58' 11.7" W



Marin Environmental, Inc.

1700 Hegeman Avenue
Colchester, VT 05446

PREPARED
BY
ATH

DATE
8/18/98

CHECKED
BY

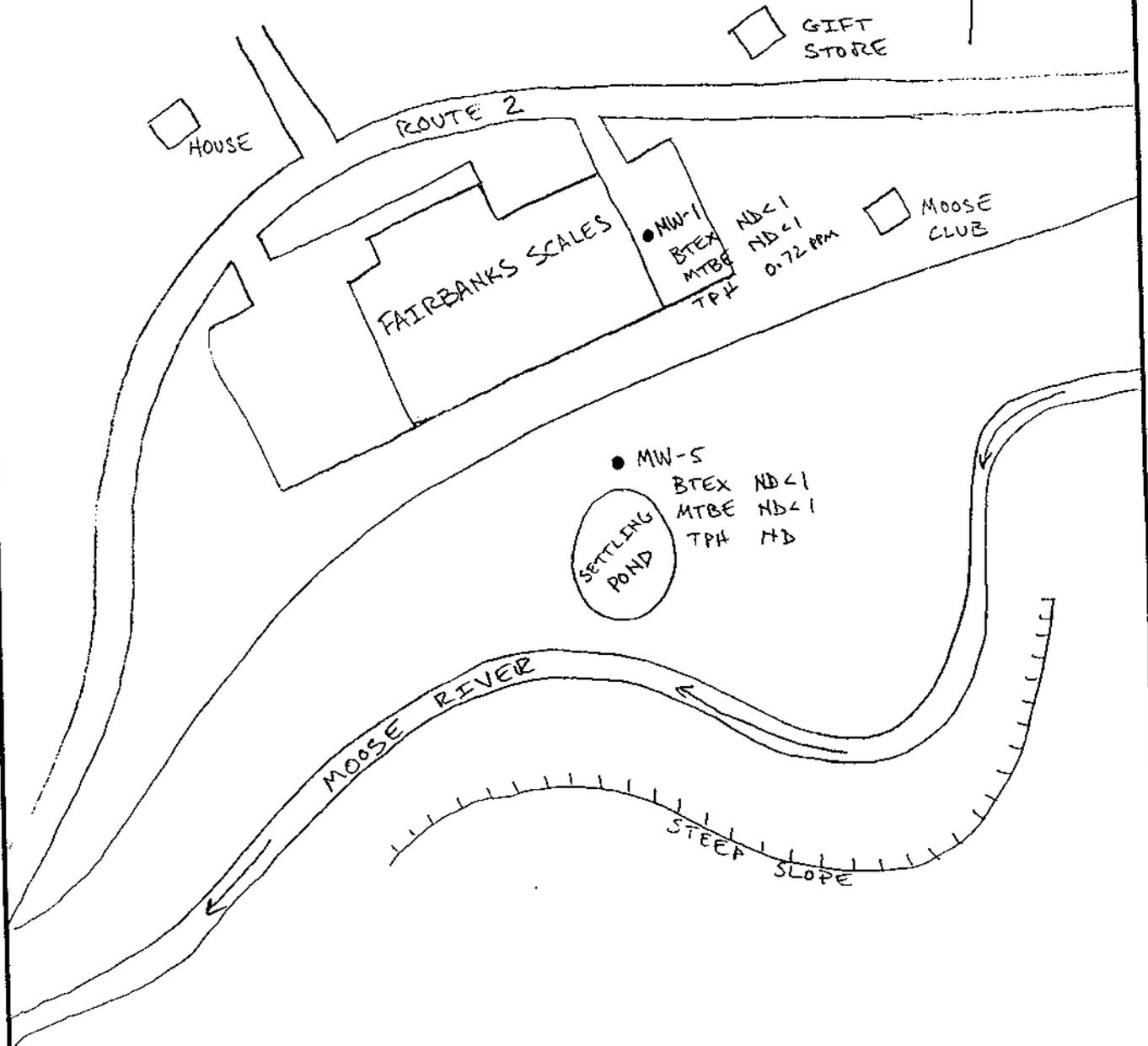
DATE

PROJECT
NO.

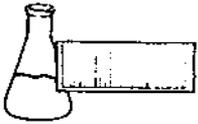
SUBJECT: FIGURE 2. AREA MAP, FAIRBANKS SCALES

SCALE:
1" = 400'
(APPROX.)

ALL LOCATIONS APPROX.



ATTACHMENT B
Laboratory Analytical Reports



ENDYNE, INC.

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Marin Environmental
PROJECT NAME: Fairbanks Scales
REPORT DATE: July 20, 1998
DATE SAMPLED: July 13, 1998

PROJECT CODE: GWVT1643
REF.#: 123,922 - 123,923

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.

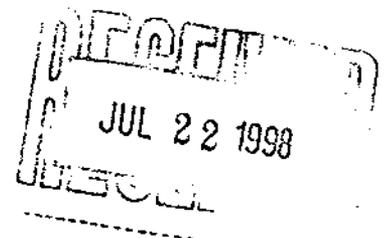
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

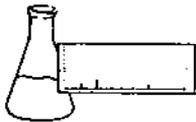
Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by

Harry B. Locker, Ph.D.
Laboratory Director

enclosures





ENDYNE, INC.

Laboratory Services

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

EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Marin Environmental

DATE RECEIVED: July 14, 1998

PROJECT NAME: Fairbanks Scales

REPORT DATE: July 20, 1998

CLIENT PROJ. #: NI

PROJECT CODE: GWVT1643

Ref. #:	123,922	123,923			
Site:	MW-1	MW-5			
Date Sampled:	7/13/98	7/13/98			
Time Sampled:	15:00	15:15			
Sampler:	J.B.	J.B.			
Date Analyzed:	7/17/98	7/15/98			
UIP Count:	>10	0			
Dil. Factor (%):	100	100			
Surr % Rec. (%):	96	90			
Parameter	Conc. (ug/L)	Conc. (ug/L)			
Benzene	<1	<1			
Chlorobenzene	<1	<1			
1,2-Dichlorobenzene	<1	<1			
1,3-Dichlorobenzene	<1	<1			
1,4-Dichlorobenzene	<1	<1			
Ethylbenzene	<1	<1			
Toluene	<1	<1			
Xylenes	<1	<1			
MTBE	<1	<1			

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

CHAIN-OF-CUSTODY RECORD

123,922 — 123,923

Project Name: <u>Fairbanks Scales</u>	Reporting Address: <u>1700 Hegeman Ave</u>	Billing Address: <u>Same</u>
Site Location: <u>St. Johnsbury</u>	<u>Colechester VT</u>	
Endyne Project Number: <u>GWVT1643</u>	Company: <u>Main Environmental</u>	Sampler Name: <u>JS</u>
	Contact Name/Phone #: <u>B. Ross 655-0011</u>	Phone #:

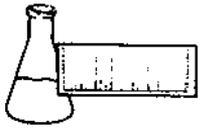
Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
123,922	mw-1	H ₂ O	X		07/13/98 1500	2	40ml Glass		19	HC1	
123,923	mw-5	↓	X		1515	2	40ml Glass		19	HC1	
	mw-1	H ₂ O	X		1500	2	40ml Glass		30	HC1	
	mw-5	↓	X		1515	2	↓		30	HC1	
- use same trip blank as Goss fire											
TEMP = cool											

Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>Ray Brandy</u>	Date/Time
Relinquished by: Signature	Received by: Signature <u>John Sullivan</u>	Date/Time <u>7/14/98 4:00pm</u>

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 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD ₅	14	Turbidity	19	BTEX + MTBE	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <u>TPH by modified 8100</u>										



ENDYNE, INC.

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Marin Environmental
PROJECT NAME: Fairbanks Scales
DATE REPORTED: July 29, 1998
DATE SAMPLED: July 13, 1998

PROJECT CODE: GWVT1644
REF. #: 123,924 - 123,925

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.

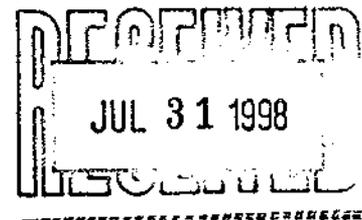
All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

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

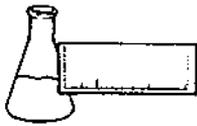
Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director



enclosures



ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: July 29, 1998
CLIENT: Marin Environmental
PROJECT: Fairbanks Scaies
PROJECT CODE: GWVT1644
COLLECTED BY: JB
DATE SAMPLED: July 13, 1998
DATE RECEIVED: July 14, 1998

Reference #	Sample ID	Concentration (mg/L) ¹
123,924	MW-1; 1500	0.72
123,925	MW-5; 1515	ND ²

Notes:

- 1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 0.4 mg/L.
- 2 None detected

CHAIN-OF-CUSTODY RECORD

28011

Project Name: <u>Fairbanks Seales</u>	Reporting Address: <u>1700 Hegeman Ave</u>	Billing Address: <u>Same</u>
Site Location: <u>St. Johnsbury</u>	<u>Colchester VT</u>	
Endyline Project Number: <u>6060VT1674</u>	Company: <u>Mann Environmental</u>	Sampler Name: <u>JBS</u>
	Contact Name/Phone #: <u>B. Ross 655-0011</u>	Phone #:

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				
	<u>mw-1</u>	<u>H₂O</u>	<u>X</u>		<u>07/13/98</u> <u>1500</u>	<u>2</u>	<u>40ml Glass</u>		<u>19</u>	<u>HU</u>	
	<u>mw-5</u>	<u>↓</u>	<u>X</u>		<u>1515</u>	<u>2</u>	<u>40ml Glass</u>		<u>19</u>	<u>HU</u>	
<u>103,904</u>	<u>mw-1</u>	<u>H₂O</u>	<u>X</u>		<u>1500</u>	<u>2</u>	<u>40ml Glass</u>		<u>30</u>	<u>HU</u>	
<u>103,905</u>	<u>mw-5</u>	<u>↓</u>	<u>X</u>		<u>1515</u>	<u>2</u>	<u>↓</u>		<u>30</u>	<u>HU</u>	
<u>use same trip blank as Goss file</u>											
<u>TEMP = Cool</u>											

Relinquished by: Signature <u>JBS</u>	Received by: Signature <u>Ray Browne</u>	Date/Time
Relinquished by: Signature	Received by: Signature <u>John Sullivan</u>	Date/Time <u>7/14/98 4:00pm</u>

New York State Project: Yes No Requested Analyses

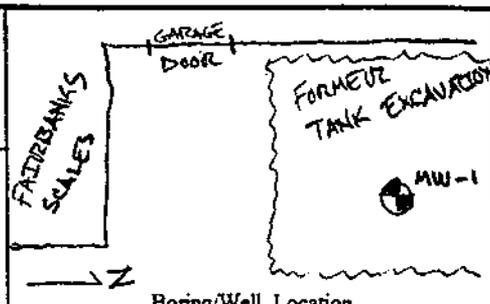
1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 413.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD ₅	14	Turbidity	19	<u>BTEX + MTBE</u>	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): <u>TPH by modified 8100</u>										

ATTACHMENT C
Soil Boring Log

Marin Environmental, Inc.

SITE NAME: FAIRBANKS SCALES
 LOCATION: ST. JOHNSBURY
 JOB NO. VT980017
 DATE: 5/15/98

BORING NO: MW-1
 TOTAL DEPTH: 12'
 DEPTH TO WATER: 5.5'



DRILLING METHOD
 HOLLOW STEM AUGER

FIELD SUPERVISOR: A. HARR

BORING DIAMETER
 8"

CONTRACTOR: TRI-STATE DRILLING

DRILLERS:

Depth	SN	BLOW COUNTS PER 6"					Rec.	SAMPLE DESCRIPTION/COMMENTS	WELL DETAIL	PID (ppm)
		0-6	6-12	12-18	18-24	24-30				
5'		20	10	10	6	12"	- BROWN MEDIUM TO COARSE GRAVELLY SAND WITH FEW PEBBLES, MOIST		2.9	
10'		4	20	16	14	12"	- BROWN MEDIUM TO COARSE GRAVELLY SAND, WET AT 5.5'		4.6	
15'		4	4	6	4	16"	- GRAY MEDIUM TO COARSE WET SAND - REFUSAL AT 11 FT. DRILLED 1.5' THROUGH BOULDER THEN IMMEDIATELY HIT ANOTHER		0.14	
20'							- SET WELL AT 12'			
25'										
30'										
35'										
40'										

		BLOW COUNT		MATERIALS USED	SIZE/TYPE	QUANTITY
AND	33-50%	0-4	VERY LOOSE	WELL SCREEN	2" PVC	8'
SOME	20-33%	4-10	LOOSE	SLOT SIZE	0.010	
LITTLE	10-20%	10-30	MEDIUM	RISER	2" PVC	4'
TRACE	0-10%	30-50	DENSE	GRADED SAND	12'-3' BGS	
		> 50	VERY DENSE	BENTONITE PELLETS	3 - 1' BGS	
				BENTONITE GROUT		