

DUFRESNE-HENRY, INC.
 Precision Park
 NORTH SPRINGFIELD, VERMONT 05150

LETTER OF TRANSMITTAL

(802) 886-2261

TO AGENCY OF NATURAL RESOURCES
DEC, WMD, SMS
103 SOUTH MAIN STREET / WEST OFFICE
WATERBURY, VT 05671-0404

DATE <u>6/11/98</u>	JOB NO. <u>4080062</u>
ATTENTION <u>MR. CHUCK SCHWER</u>	
RE: <u>E, THETFORD POST OFFICE</u>	

GENTLEMEN:

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

Shop drawings Prints Plans Samples Specifications

Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
<u>1</u>			<u>SITE INVESTIGATION REPORT</u>

WASTE MANAGEMENT
 DIVISION
 JUN 12 10 56 AM '98

THESE ARE TRANSMITTED as checked below:

- For approval Approved as submitted Resubmit _____ copies for approval
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 As requested Returned for corrections Return _____ corrected prints
 For review and comment _____
 FOR BIDS DUE _____ 19 _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO LOREN BACON, DAVID BARNARD,
DANIEL GROSSMAN

SIGNED: Bruce G

Phase (check one)	Type (check one)
<input checked="" type="checkbox"/> Initial Site Investigation <input type="checkbox"/> Corrective Action Feasibility Investigation <input type="checkbox"/> Corrective Action Plan <input type="checkbox"/> Corrective Action Summary Report <input type="checkbox"/> Operations & Monitoring Report	<input type="checkbox"/> Work Scope <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> PCF Reimbursement Request <input type="checkbox"/> General Correspondence

**INITIAL
SITE INVESTIGATION**

**East Thetford Post Office
East Thetford, VT 05043**

SMS Site #unknown

JUN 12 10 56 AM '98
 U.S. MAIL
 EAST THETFORD, VT 05043

**A Facility Owned By:
 Loren Bacon
 121 Mascoma St., #240
 Lebanon, NH 03766
 (603) 448-9775
 Contact: Loren Bacon**

**Prepared By:
 Dufresne-Henry, Inc.
 Precision Park
 North Springfield, VT 05150
 (802) 886-2261
 Contact: Bruce H. Cox, P.E.**

June 11, 1998

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EXECUTIVE SUMMARY

An Initial Site Investigation has been completed at the East Thetford Post Office in East Thetford, Vermont. The investigation was in response to the discovery of a petroleum product release during a Tank Closure Assessment in April 1998. The subjects were one (1) 500 gallon gasoline, one (1) 1,000 gallon gasoline, and one (1) 500 gallon #2 heating oil UST's. The smaller gasoline UST was in poor condition. The larger gasoline UST and the heating oil UST had failed. PID readings up to 1,400 ppm were observed. Per discussions with the Waste Management Division, all soil excavated from the tank bed was backfilled pending additional investigation.

Four shallow groundwater monitoring wells were installed on the site in May 1998. All of the monitoring wells were sampled and analyzed for BTEX and MTBE by EPA Method 602(mod). In addition, the well nearest the former heating oil tank was analyzed for TPH Level-1 by EPA Method 8100(mod). Ethylbenzene at 1 $\mu\text{g/L}$ and Total Xylenes at 18 $\mu\text{g/L}$ were found in the monitoring well immediately adjacent to the former gasoline UST's. No VOC's above method detection limits were found in the other monitoring wells. No TPH above method detection limits was found in the monitoring well immediately adjacent to the former heating oil UST.

Soil on the upper 18' to 19' of the site is a sand. Silt and clay underlie the sand. The permeability of the sand is judged to be relatively high, and the permeability of the silt and clay judged to be quite low. The depth to bedrock is not known, but is likely to be significant. Based on a single round of sounding, the direction of groundwater flow is to the southeast.

Evidence of gasoline contaminated soil was found in the vicinity of the former gasoline UST's. The limits appear to be limited. The product has evidently been in the ground a long time and has undergone significant degradation.

All but two of the properties in the vicinity are on the municipal water supply system. The nearest of these wells is on the property immediately to the south. The nearest surface water is a small stream at the western property line. The direction of groundwater flow is away from this stream. The Connecticut River is approximately 1,400' to 1,500' to the east. The Post Office has a slab on grade foundation. It is not expected that any of these sensitive receptors have been, or will be, impacted by leakage at the site.

Based on these findings, the site does not meet the SMS criteria for corrective actions. At this time it is recommended that a confirmatory round of sampling be conducted in the spring of 1999. If BTEX concentrations at that time are still below the Vermont Enforcement Standard, it will be recommended that the site be closed.

**INITIAL SITE INVESTIGATION
EAST THETFORD POST OFFICE
EAST THETFORD, VERMONT**

Introduction

The East Thetford Post Office is located on U.S. Route 5 in East Thetford, Vermont. A site location map is included as Appendix A.

Dufresne-Henry, Inc., in conjunction with CAB Services, performed an Underground Storage Tank (UST) Closure Assessment at the site on April 27, 1998. The subjects were one (1) 500 gallon gasoline, single wall, steel UST, one (1) 1,000 gallon gasoline, single wall, steel UST, and one (1) 500 gallon #2 heating oil, single wall, steel UST. The smaller gasoline UST was in poor condition. The larger gasoline UST and the heating oil UST had failed. The piping for all of the tanks was in poor condition. PID readings up to 72 ppm were observed at the heating oil tank. PID readings up to 1,400 ppm were observed from the gasoline UST beds. A varnish-like odor indicative of weathered gasoline was noted. Limited space was available for polyencapsulation of contaminated soil. The excavations were backfilled per discussions with the Waste Management Division pending additional investigation.

Work and Health and Safety Plans

As a result of the findings of the Tank Closure Assessment, the property owner opted to proceed under the Site Investigation Expressway Program. The notification form was forwarded to the Waste Management Division on April 29, 1998. Dufresne-Henry prepared a Health and Safety Plan for the proposed activities at the site. Copies of these documents will be found in Appendix B. The remainder of this report describes the on-site activities and subsequent findings of the investigation.

Site Description

The East Thetford Post Office is located on the west side of U.S. Route 5 in the village of East Thetford, Vermont. In addition to the Post Office, the property also consists of a house and a detached garage. The site is generally level. A small stream is on the western property line. The property is served by a municipal water supply system and an on-site wastewater disposal system. The surrounding land use is a mix of residential and commercial.

The two former gasoline UST's were oriented in an east-west direction near the northeast corner of the Post Office. The owner estimated that these tanks were installed in 1942±. During the Closure Assessment, a probable pump island was observed a short distance to the east of these tanks. The heating oil UST was located on the south side of the garage. The property owner estimates the age of this tank to be at least 35 years.

Site History

The history of the site is not known, but has been in the Bacon family for many years. The owner remembers a gasoline service station at the site in the early 1940's. The Post Office is active, the residence to the north is currently unoccupied.

No other UST's are known to exist on the property. With the probable exception of small quantities of gasoline and oil for yard maintenance, no other known hazardous materials are known to be stored on the property.

The most recent (April 1998) Vermont Hazardous Waste Sites List maintained by the Hazardous Materials Management Division (HMMD) contains no other sites in Thetford or East Thetford.

Monitoring Well Installation

Four (4) shallow groundwater monitoring wells were installed on May 22, 1998 by M & W Soils Engineering, Inc. of Charlestown, New Hampshire. All borings and well installations were

under the field observation of Dufresne-Henry personnel. The wells are designated MW-1 through MW-4. Well MW-1 was located just east of the excavation for the former gasoline UST's. Well MW-2 is located approximately 55' south of the former gasoline UST's. Well MW-3 is located immediately south of the former heating oil UST. Well MW-4 is located further to the west in the presumed upgradient direction. All of the borings were completed in soil undisturbed by the UST closure. A site sketch showing the well locations is included as Appendix C. Logs of the borings and a daily inspection report are included in Appendix D.

During boring advancement split spoon soil samples were taken at various intervals as determined by the Dufresne-Henry inspector. All soil samples were screened for the presence of Volatile Organic Compounds (VOC's) with an HNu HW-101 photoionization detector (10.2 eV lamp, calibrated on-site with 100 ppm Isobutylene). The screening was done at ambient temperatures.

In wells MW-1, evidence of soil contamination by olfactory sense was observed from less than 5' to approximately 8'. Odors were again observed below the water table. The odor was varnish-like, indicative of weathered gasoline. PID readings ranged from 20 ppm to 42 ppm. PID readings in several of the samples may have been influenced by moisture. No evidence of contamination by visual or olfactory sense was observed in wells MW-2, MW-3, and MW-4. Low PID readings were observed which were attributed to soil moisture. The general geologic column in all of the wells is sand that gets coarser grained with depth to approximately 18' to 19', which is in turn underlain by silt and clay. The water table was encountered between 12' and 13'. Bedrock was not encountered in any of the borings.

Two-inch diameter PVC monitoring wells were installed in each of the borings. Each well was constructed from .010" machine slotted screen. The screened interval is 10' in all of the wells. Each well was backfilled with clean silica sand to a point above the screen and a bentonite seal installed. In well MW-1 the bentonite seal was placed below the elevation of the observed contaminated soil. The wells were protected at the ground surface by grouting in watertight cast iron monitoring well boxes. All of the wells were developed by using a surge block and bailing. Evacuated water was temporarily stored in a plastic pail, and disposed of on-site at the excavation for the former gasoline UST's. Excess clean soil was disposed of on-site. Excess contaminated soil from MW-1 remained on-site in plastic bags.

Site Geology

Surficial geology at the site is published as fluvial or littoral sand. The borings indicate the former. The presence of the clay and silty clay near the lower limits of the borings indicates quiescent water, at least on a seasonal basis. This area was inundated by glacial Lake Hitchcock at the close of the Pleistocene Epoch. Filling on the site has been minimal, with the only evidence observed in MW-2. The general geologic column is sand that typically gets coarser grained with depth, underlain by silt and clay starting at approximately 18' to 19'. The sands are expected to have relatively high permeability. The clay would have very low permeability. The sand is likely widespread and of high quality, as the State surficial geology map indicates the presence of extraction operations in the immediate area.

Published mapping indicates bedrock on the site is likely to be the Post Pond volcanics of the Orfordville Formation. The Post Pond volcanics are generally described as amphibolite. Just to the west is the contact with the main body of the Orfordville Formation. This rock is generally described as carbonaceous phyllite with minor inclusions of quartzite. The age of the formation is Middle Ordovician. No bedrock outcrops were observed in the immediate vicinity. It is likely that the depth to bedrock is significantly below the lower limit of the borings.

Site Hydrogeology

At the time the monitoring wells were sampled on May 27, 1998, the depth to the water table ranged from approximately 12.5' to approximately 13.9'. Based on this single sounding, the direction of groundwater flow is to the southeast. The gradient is relatively flat at approximately 1.5% - 2%. The groundwater contours suggest the brook at the western property line is likely to be a losing stream. A site plan showing the groundwater contours as of May 27, 1998 is included as Appendix E.

Potential Receptors

Based on the 1983 Lyme, NH-VT USGS topographic quadrangle, approximately 40 structures exist within a one-half mile radius of the site. There are several private water supply

wells in the area. The nearest is located on the property immediately to the south. The other is northeast of the site. All of the other properties in the vicinity are thought to be on the municipal water supply system. The municipal system has a storage tank on the other side of Route 5 immediately opposite the site. The nearest surface water is a small stream located along the western property line. As noted in the previous section, the stream is hydraulically upgradient of the former UST's. The Connecticut River is located approximately 1,400 feet - 1,500 feet to the east. The Post Office has a slab on grade foundation. It is not expected that any of these receptors will be impacted.

Monitoring Well Sampling

The four (4) Dufresne-Henry monitoring wells were sampled on May 27, 1998 following the standard protocols which were previously submitted to the HMMD. The sampling was performed by Dufresne-Henry personnel. Three well volumes were purged from the monitoring wells prior to drawing a sample. No sheens were observed in any of the monitoring wells. No odors were observed when the wells were opened. The refrigerated samples were shipped to Eastern Analytical, Inc. of Concord, New Hampshire on May 28, 1998 via overnight carrier. The samples from all of the wells were analyzed for the VOC's BTEX and MTBE by EPA Method 602(mod). In addition, well MW-3 was analyzed for Total Petroleum Hydrocarbons (TPH) by EPA Method 8100(mod).

In well MW-1, Ethylbenzene and Total Xylenes were found in concentrations of 1 $\mu\text{g/L}$ and 18 $\mu\text{g/L}$ respectively. These concentrations compare with the Vermont Enforcement Standards of 700 $\mu\text{g/L}$ and 10,000 $\mu\text{g/L}$ respectively. No VOC's above method detection limits were found in wells MW-2, MW-3, and MW-4. No TPH above method detection limits was found in MW-3. A copy of the contract laboratory analytical report is included as Appendix F.

Summary and Recommendations

In summary, four (4) shallow groundwater monitoring wells were installed on the site. The monitoring wells were sampled once. The only evidence of soil contamination found during the boring program was in MW-1 just east of the former gasoline UST's. The odor suggested

weathered gasoline. In dry soil, the odor was not observed below 8'±. Faint weathered gasoline odors were again observed in the water table above the underlying silt and clay. The sandy nature of the upper 18'± of the site suggests the plume could have migrated an unknown distance to the east. No evidence of contamination was observed in the boring 55' to the south. Overall, the limits of soil contamination are likely to be limited.

Analysis of groundwater samples from the four monitoring wells found low level concentrations of Ethylbenzene (1 µg/L) and Total Xylenes (18 µg/L) in monitoring well MW-1 next to the former gasoline UST's. Both concentrations are well below the Vermont Enforcement Standard. No TPH above method detection limits was found in monitoring well MW-3 adjacent to the former heating oil UST. The direction of groundwater flow is to the southeast.

All but two (2) properties in the immediate vicinity of the site are connected to the municipal water supply system. The nearest private water supply is the drilled well serving the property immediately to the south. The other property is several hundred feet to the north. The nearest surface water is a stream along the western property line. The direction of groundwater flow is away from this stream. The Connecticut River is approximately 1,400' to 1,500' to the east. The Post Office has a slab on grade foundation. It is not expected that any of these sensitive receptors have been, or will be, impacted by leakage from the former UST's.

Based on these findings, the site does not meet the SMS criteria for corrective actions. It is recommended that a confirmatory round of sampling be conducted in the spring of 1999. If BTEX concentrations at that time are below the Enforcement Standard, the recommendation will be made to close the site.

APPENDIX A
SITE LOCATION MAP

APPENDIX B

**EXPRESSWAY NOTIFICATION
AND
SITE HEALTH AND SAFETY PLAN**

SITE INVESTIGATION EXPRESSWAY NOTIFICATION FORM

Site Owner: Loren Bacon

Site Name, Town: Post Office East Thetford, VT 05043

Yes, this site will participate in the Site Investigation Expressway Process.

No, this site will not participate in the Site Investigation Expressway Process.

If yes, please complete the checklist below:

Contamination present in soils above action levels Yes No

If yes, summarize levels:

PID readings of gas tanks peak @ 2500+ ppm
PID readings of #2 fuel oil peak @ 72.2 ppm

Free product observed Yes No

Groundwater contamination observed Yes No

Surface water contamination observed Yes No

Suspected release of hazardous substances Yes No

If yes, please explain:

Gasoline + #2 Fuel Oil

Affected receptors Yes No

If yes, please identify receptors including names and addresses of third party receptors:

Soil

Please provide an estimated date of when you expect to submit Site Investigation Report: _____

Owner's Signature/Date: Loren Bacon 04-27-98 Consultant's Signature/Date: [Signature] 4-27-98

The SMS has reviewed this expressway notification form and approves / disapproves of this action.

SMS Signature/Date: _____

Description

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EMERGENCY SITUATIONS 9, 10

- Personnel Injury To D-H Employees In The Exclusion Zone
- Personnel Injury To D-H Employees In The Support Zone
- Fire/Explosion
- Personal Protective Equipment Failure
- Other Equipment Failure

EMERGENCY INFORMATION 11

- Ambulance
- Hospital
- Police
- Fire Department
- Poison Center
- State Agency Incident Response
- Corporate
- Nearest Phone
- Location Of On-Site First Aid Kit
- Emergency Vehicle

SIGNATURE SHEET 12

PROJECT: EAST THETFORD POST OFFICE SITE INVESTIGATION
JOB NO.: 4080062

HEALTH AND SAFETY PLAN
FOR

SITE INVESTIGATION

EAST THETFORD POST OFFICE

EAST THETFORD, VERMONT

This Health and Safety Plan applies only to Dufresne-Henry, Inc. employees.

PROPOSED ON-SITE ACTIVITIES:

Installation of four (4) groundwater monitoring wells, decontamination, and groundwater sampling.

PROPOSED DATE(S) OF WORK: Wells: May 22, 1998
Sampling: Week of May 25, 1998

ANTICIPATED WEATHER CONDITIONS: temperatures in the 50's - 80's, possible rain.

PROPOSED SITE INVESTIGATION TEAM:

Personnel

Responsibilities

Bruce Cox

Project Manager

Bruce Cox

Site Safety Officer

Bruce Cox/Oscar Garcia

Field Team Leader (Monitoring Wells/Sampling)

Site Representative

ANR Representative

All Dufresne-Henry, Inc. personnel arriving or departing the Site should check in and out with the Site Safety Officer. All Dufresne-Henry activities on-Site must be cleared through the Field Team Leader or Project Manager.

PROJECT: EAST THETFORD POST OFFICE SITE INVESTIGATION
JOB NO.: 4080062

Background Information

Site Status: Active Inactive Unknown

Site Description (Topography, on-site structures, vegetation, surrounding population, contaminated areas (if known))

The East Thetford Post Office is located on the west side of U.S. Route 5 (Main Street) in East Thetford, VT. The site consists of the Post Office, a house, and a detached garage. The site has on-site water supply and wastewater disposal systems. Overhead electric lines are likely. The water table has not been observed to a depth of approximately 8'.

Dig Safe was contacted on 5/20/98. The site is clear after 7:15 am on 5/22/98. The Dig Safe number is 982104840. There are no known municipal utilities. The property owner is expected to be on-site during the start of the work.

Site History:

The history of the site is not known.

Monitoring or Sampling Data From Previous Site work:

In April 1998 one (1) 500 gallon gasoline, one (1) 1,000 gallon gasoline, and one (1) 500 gallon #2 heating oil UST's were removed from the site. Evidence of contamination was observed at all of the tanks. One of the gasoline tanks and the oil tank had failed. PID readings ranged from .7 ppm to 2,500+ ppm.

No other site investigations are known.

HAZARD REFERENCE

Waste Types:

Liquid Solid (soil) Sludge Vapor Unknown

Waste Characteristics:

Corrosive Ignitable Radioactive
 Volatile Toxic Reactive
 Unknown Other Persistent

Specific Substances of Greatest Concern (if known): gasoline and #2 heating oil.

Hazard Evaluation:

Task: Mon. Well Install. Low Medium High

Identification of Hazards: gasoline and #2 heating oil

Task: Decontamination Low Medium High

Identification of Hazards: gasoline and #2 heating oil

Task: Sampling Low Medium High

Identification of Hazards: gasoline and #2 heating oil

Task: Low Medium High

Identification of Hazards:

Other Physical Hazards: (weather, heavy equipment, site structures...)
Drill rig, traffic, weather.

Hazard Assessment:

OVERALL HAZARD: ___ Serious ___ Moderate X Low ___ Unknown

On-Site Control

Site control is necessary to minimize potential exposure of workers to hazardous waste/materials, protect the public from the Site's chemical and physical hazards, and to facilitate work activity. The procedures to be followed involve the establishment of Site work zones, Site security, and safe work practices.

The on-Site staging area and support zone has been established at:

The Post Office parking lot.

The personal contamination reduction zone (decon area) has been established at:

The location of the former gasoline UST's.

During the intrusive work, the exclusion area will be defined as follows:

A 15 foot radius around the drill rig.

The decontamination of sampling and/or heavy equipment will be conducted:

The location of the former gasoline UST's.

These sub-regions of on-Site control have been established in order to reduce the potential cross contamination and proliferation of contamination by potentially contaminated equipment and personal protective equipment.

SITE ACTIVITIES

Required Personal Protective Equipment (PPE)

<u>Task</u>	<u>Entry Level of Protection</u>	<u>Monitoring Equipment</u>	<u>Upgrade/Downgrade Contingency</u>
Well Install.	Mod D	Photovac HL-2000 Explosimeter O ₂ meter H ₂ S meter	Upgrade to Level C with PID readings over 10 ppm for 5 minutes in breathing space.
Decon.	Mod D	"	"
Sampling	Mod D	"	"

Note: Breathing space PID readings of 50 ppm, explosimeter readings over 25% of the LEL, O₂ deficiency or enrichment, or H₂S readings will result in shutting down the job and consulting with State officials and the client.

PROJECT: EAST THETFORD POST OFFICE SITE INVESTIGATION
JOB NO.: 4080062

Specific protective equipment for each level of protection is as follows:

Level C: Full Face Respirator w/appropriate cartridge (Willson T45)
Chemically Resistant Suit (Tyvek®)
Outer Rubber Slush Boots
Outer Chemically Resistant Gloves
Surgical Gloves
Hard Hat
Steel Toe/Shank Work Boots

Modified Level D: Chemically Resistant Suit (Tyvek®)
Outer Rubber Slush Boots
Outer Chemically Resistant Gloves
Surgical Gloves
Hard Hat
Steel Toe/Shank Work Boots
Safety Glasses or Face Shield

Level D: Work Clothes
Steel Toe/Shank Work Boots
Surgical Gloves
Hard Hat

Rationale for change in level of protection:

Upgrade to Level C with PID readings of 10 ppm or more for 5 minutes in the breathing space. PID readings over 50 ppm in the breathing space, explosimeter readings of over 25% of the LEL, O₂ deficiency or enrichment, or H₂S readings will result in shutting down the job and consulting with State officials and the client.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER OR PROJECT MANAGER.

Monitoring Procedures

Site Monitoring Equipment:

- Photovac MicroTIP (Model HL-2000, 10.6 eV lamp)
- Explosimeter
- Draeger Tube & Pump
- O₂ Meter
- Other: H₂S meter

Methods and Frequency of Monitoring:

Air space and soil samples: Photovac MicroTIP HL-2000.
Air space: explosimeter/O₂ meter/H₂S meter.

Frequency: Soil samples; as obtained.
Air; not to exceed every 15 minutes.

Decontamination and Disposal

Personnel Decontamination Procedure:

X Level C: Slush boot and glove wash, slush boot and glove rinse, tape removal, outer glove removal, (cartridge change), slush boot removal, suit removal, inner glove removal.

X Modified Level D: Slush boot and glove wash, slush boot and glove rinse, slush boot removal, suit removal, glove removal.

Equipment Decontamination:

The drill rig and tools will be decontaminated by steam cleaning prior to the start of work and between borings. The use of clean augers (not previously used on the job) will be permitted with washing of the bit in ALCONOX. All decontamination will be done on-site. Routine washing of split spoon samplers, etc will use water obtained at the site. Disposal of spent cleaning liquid will be on site.

Disposal Procedure for Investigation-Derived Materials:
(decon waste, disposables)

All decon waste and disposables will remain on site.

SITE OPERATING PROCEDURES/SAFETY GUIDELINES

- ** Always observe the buddy system. Never enter or exit site alone, and never work alone in an isolated area. Never wander off by yourself.
- ** Always maintain a line-of-sight.
- ** Practice contamination avoidance. Never sit down or kneel, never lay equipment on the ground, avoid obvious sources of contamination such as puddles, and avoid unnecessary contact with on-site objects
- ** No eating, drinking, or smoking outside the designated "clean" zone.
- ** In the event PPE is ripped or torn, work shall stop and PPE shall be removed and replaced as soon as possible.
- ** Be alert to any unusual changes in your own condition; never ignore warning signs. Notify Health and Safety Coordinator as to suspected exposures or accidents.
- ** A vehicle will be readily available exclusively for emergency use. All personnel going on-site shall be familiar with the most direct route to the nearest hospital.
- ** In the event of direct skin contact, the affected area shall be washed immediately with soap and water.
- ** Copies of the Health and Safety Plan shall be readily accessible at the command post.
- ** Note wind direction. Personnel shall remain upwind whenever possible during on-site activities.
- ** Never climb over or under refuse or obstacles. Use safety harness/safety lines when sampling lagoons, stream beds, and ravines with steep banks.
- ** Hands and face must be thoroughly washed before eating, drinking, etc.
- ** Any modifications to this safety plan MUST be approved by the Site Safety Officer.

Special Procedures:
Confined Space Entry

- No attempt will be made to enter abandoned buildings, manholes, tanks, or any other confined areas.
- Other:

Personnel Monitoring: (If applicable: Heat stress, frostbite, air sampling of individual breathing zone)

Monitoring of individual breathing space will be monitored by a Photovac MicroTIP HL-2000, explosimeter, and O₂ meter as outlined in monitoring procedures. Monitoring of weather related hazards will be dictated by existing conditions.

EMERGENCY SITUATIONS

The following standard emergency procedures will be used by Dufresne-Henry on-site personnel. The Site Safety Officer (SSO) shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate procedures are followed.

Personnel Injury to Dufresne-Henry Employees in the Exclusion Zone

Upon notification of an injury to a Dufresne-Henry employee in the exclusion zone, a rescue team will enter the zone (if required) to remove the injured person to the hotline. The SSO and Project Manager should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the support zone. The SSO shall arrange for appropriate first aid, and contact should be made for an ambulance and with the designated medical facility (if required). No Dufresne-Henry personnel shall re-enter the exclusion zone until the cause of the injury or symptoms are determined.

Personnel Injury to Dufresne-Henry Employees in the Support Zone

Upon notification of an injury to a Dufresne-Henry employee in the support zone, the Project Manager and SSO will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue, with the on-site Field Team Leader initiating the appropriate first aid and necessary follow-up as stated above. If the injury increases the risk to others, all Dufresne-Henry personnel shall move to the decon line for further instructions. Dufresne-Henry activities on-site will cease until the added risk is removed or minimized.

Fire/Explosion

Upon notification of a fire or explosion on-site, all Dufresne-Henry personnel will assemble at the decon line. The fire department shall be alerted and all Dufresne-Henry personnel moved to a safe distance from the involved area.

Personal Protective Equipment Failure

If any Dufresne-Henry site personnel experience a failure or alteration of protective equipment that effects the protection factor, that person and his/her buddy shall immediately leave the exclusion zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure

If any other equipment on-site fails to operate properly, the Project Manager and SSO shall be notified and then determine the effect of this failure on continuing operations on-site. If the failure affects the safety of on-site Dufresne-Henry personnel or prevents the completion of the tasks, all Dufresne-Henry personnel shall leave the exclusion zone until the situation is evaluated and appropriate actions taken.

In all situations, when an on-site emergency results in evacuation of the exclusion zone, Dufresne-Henry personnel shall not re-enter until:

1. The conditions resulting in the emergency have been corrected.
2. The hazards have been reassessed.
3. The Site Safety Plan has been reviewed.
4. Dufresne-Henry personnel have been briefed on any changes in the Site Safety Plan.

EMERGENCY INFORMATION

AMBULANCE:	Fairlee	Phone:	(802) 333 - 4347
HOSPITAL:	Dartmouth-Hitchcock Med. Ctr. One Medical Center Dr. Lebanon, NH (see attached map)	Phone:	(603) 650 - 5000
POLICE:	Fairlee	Phone:	(802) 333 - 4347
FIRE DEPARTMENT:	Fairlee	Phone:	(802) 333 - 4347
POISON CENTER:		Phone:	(802) 658 - 3456
ANR INCIDENT RESPONSE:	Office	Phone:	(802) 241 - 3888
CORPORATE:			
	Dufresne-Henry N. Springfield, VT	Phone:	(802) 886 - 2261
	Project Manager: Bruce Cox		
NEAREST PHONE:	On site		
LOCATION OF ON-SITE FIRST AID KIT:			Boring contractors vehicle
EMERGENCY VEHICLE:			

PROJECT: EAST THETFORD POST OFFICE SITE INVESTIGATION
JOB NO.: 4080062

The following individuals have read this safety document and are familiar with its contents, site conditions, and on-site safety procedures (please sign below):

<u>Name</u>	<u>Company</u>
<u>Bruce Cox</u>	<u>Dufresne-Henry, Inc.</u>
<u>Oscar Garcia</u>	<u>Dufresne-Henry, Inc.</u>
<u>Myron Domingue</u>	<u>M & W Soils Engineering, Inc.</u>
<u>Michael Hitchcock</u>	<u>M & W Soils Engineering, Inc.</u>
_____	<u>M & W Soils Engineering, Inc.</u>
_____	_____
_____	_____
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Copies of this SSP have been given to:

- _____
- _____
- _____
- _____
- _____

Approval Signatures:

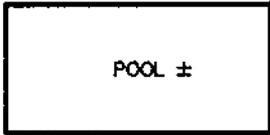
PM _____
Div. Dir. _____

APPENDIX C

SITE PLAN



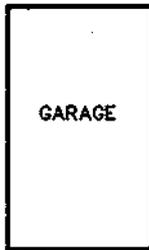
MW-4
⊙



POOL ±

MW-3
⊙

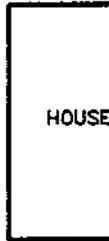
APPROX. UST
LOCATION



GARAGE

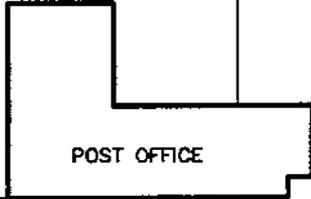
LAWN

PAVEMENT



HOUSE

LAWN



POST OFFICE

APPROX. UST
LOCATIONS

LAWN

MW-2
⊙

PAVEMENT

MW-1
⊙

ROUTE 5



EXISTING SITE PLAN
AT
LOREN BACON PROPERTY

EAST THETFORD,

VERMONT

Project No.	4080062
Proj. Mgr.	B.H.C.
Scale	1"=30'
Date	JUNE '98
A	SP-1

APPENDIX D

BORING LOGS
AND
MONITORING WELL INSTALLATION REPORT

BORING LOCATION MW-1		INCLINATION V		BEARING		DATE START/FINISH MAY 22, 1998 / MAY 22, 1998				
CASING ID		CORE SIZE		TOTAL DEPTH 22 FT		DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)				
GROUND EL (AD) 998.47		DEPTH TO WATER/DATE 13.1 FT/ IMMED.		LOGGED BY: B. COX						
ELEV	SAMPLE			LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION		
AD (FT)	DEPTH (FT)	TYPE AND NO.	B	SAMP OD (IN)	REC (IN)	PENE-TRATION (IN)				
993.47	5						4 1/4" HSA	8"/CCH	0" - 3 1/8" Bituminous concrete pavement. 3 1/8" - 5' Medium brown - dark gray silty SAND. Dry. Dark soil has a moderate - strong weathered gasoline odor (varnish-like).	
991.47	7	SS-1	5 8 8	2	17	24			5' - 6'6" Medium brown and gray, medium dense, silty SAND. Very fine - fine grained, well sorted sand. 40%± non plastic fines in lenses and spread throughout. Dry - slightly moist. Slight varnish-like odor. The grayer soils may be a result of staining. 20 ppm. 6'6" - 7' Medium brown, medium dense SAND. Slight odor.	
989.47	9	SS-2	8 8 10 13	2	18	24			Medium brown, medium dense SAND. Very fine - medium grained, moderately well sorted, predominately quartz sand. 10% - 20% non plastic fines. Trace of mica and mafic minerals. Dry. No odor below 8'±. 25 ppm.	
988.47	10						4 1/4" HSA	8"/CCH	Probable SAND similar to above.	
986.47	12	SS-3	4 5 7 7	2	17	24			Light - medium brown, medium dense SAND similar to above, but coarser grained. Very fine - coarse grained (predominately fine - medium grained), moderately well sorted sand. 10%+ non plastic fines. Trace of mica and mafic minerals. Dry. No odor or staining. 13 ppm.	
983.47	15						4 1/4" HSA	8"/CCH	Probable SAND similar to above.	
981.47	17	SS-4	2 3 5 6	2	24	24			Medium brown, loose - medium dense SAND similar to above, but coarser grained. Very fine - very coarse grained (predominately medium - coarse grained), poorly sorted sand. 10%± non plastic fines. Saturated. Very faint gasoline odor. 42 ppm.	
978.47	20						4 1/4" HSA	8"/CCH	Probable SAND similar to above, changing to silt or clay at 19'3"±.	
976.47	22	SS-5	1 2 2 2	2	24	24			Medium - dark brown gray, very loose/soft, clayey SILT. Nonplastic - plastic fines, with occasional clay layers. Saturated. No odor or staining. 20 ppm.	
									No refusal to depth. Set 10' of 2" diameter, .010" slot, threaded, flush joint, Schd 40 PVC at 20'. Sand backfill to 8'. Bentonite seal 5'10" - 8'. Grouted in flush, watertight, cast iron monitoring well box.	
B - Penetration resistance, Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler. REC - Length of sample recovered. SS - Split spoon sample. U - Undisturbed samples S - Shelby tube D - Denison F - Fixed piston P - Pitcher O - Osterberg SAMP OD - Outside diameter of sampling spoon							NOTES HSA = Hollow Stem Auger CCH = Conical Cutter Head ppm Refers to PID reading (10.6 eV lamp) Top of PVC elev = 988.14		EAST THETFORD POST OFFICE SITE INVESTIGATION EAST THETFORD, VERMONT DATE: MAY 22, 1998 PROJECT: 4080062	
					PAGE 1 OF 1		LOG OF BORING: MW-1			



BORING LOCATION		MW-2		INCLINATION		V		BEARING		DATE START/FINISH		MAY 22, 1998 / MAY 22, 1998	
CASING ID		CORE SIZE		TOTAL DEPTH		22		FT		DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)			
GROUND EL (AD)		998.09		DEPTH TO WATER/DATE		13±		FT/ IMMED.		LOGGED BY: B. COX			
ELEV	SAMPLE			SAMP OD (IN)	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION				
	AD (FT)	DEPTH (FT)	TYPE AND NO.		B	REC (IN)				PENE-TRATION (IN)			
993.09	5						4 1/4" HSA	8"/CCH	0" - 3 1/4" Bituminous concrete pavement. 3 1/4" - 1'6" Medium brown, sandy GRAVEL 1'6" - 5' Medium brown, silty SAND with occasional organic matter.				
991.09	7	SS-1	2 3 8 8	2	19	24			Medium brown, medium dense, silty SAND. Very fine - occasionally medium grained, well sorted sand. 20% + non plastic fines. Trace of mica and mafic minerals. Moist. No odor or staining. 3.8 ppm.				
988.09	10						4 1/4" HSA	8"/CCH	Probable SAND similar to above.				
986.09	12	SS-2	5 5 7 6	2	17	24			Medium brown, medium dense, SAND. Very fine - occasionally coarse grained (predominately fine - medium grained), moderately well sorted sand. 10%± non plastic fines. Dry. No odor or staining. 11 ppm.				
983.09	15						4 1/4" HSA	8"/CCH	Probable SAND similar to above, becoming gravelly below 13'±.				
981.09	17	SS-3	7 9 8 7	2	21	24			Medium brown gray, medium dense, gravelly SAND. Very fine - very coarse grained, rounded, poorly sorted sand. 30%± rounded, gravel 1/8" - 1/2"±. 10%+ non plastic fines. Saturated. No odor or staining. 11 ppm.				
978.09	20						4 1/4" HSA	8"/CCH	Probable SAND similar to above, changing to silt or clay at 18'±.				
976.09	22	SS-4	2 5 5 4	2	24	24			Medium - dark brown gray, loose, SILT. Occasional faint horizontal layering. Occasional thin clay layers. Saturated. No odor or staining. 4.5 ppm.				
									No refusal to depth. Set 10' of 2" diameter, .010" slot, threaded, flush joint, Schd 40 PVC at 20'4". Sand backfill (filter sand and native) to 3'. Bentonite seal 2' - 3'. Grouted in flush, watertight, cast iron monitoring well box.				
<p>B - Penetration resistance, Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler. REC - Length of sample recovered. SS - Split spoon sample. U - Undisturbed samples S - Shelby tube D - Denison F - Fixed piston P - Pitcher O - Osterberg SAMP OD - Outside diameter of sampling spoon</p>							<p>NOTES HSA = Hollow Stem Auger CCH = Conical Cutter Head ppm Refers to PID reading (10.6 eV lamp) Top of PVC elev = 997.60</p>			<p>EAST THETFORD POST OFFICE SITE INVESTIGATION</p> <p>EAST THETFORD, VERMONT DATE: MAY 22, 1998 PROJECT: 4080062</p>			
PAGE 1 OF 1							LOG OF BORING: MW-2						



BORING LOCATION MW-3		INCLINATION V		BEARING		DATE START/FINISH MAY 22, 1998 / MAY 22, 1998				
CASING ID		CORE SIZE		TOTAL DEPTH 22 FT		DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)				
GROUND EL (AD) 998.34		DEPTH TO WATER/DATE 12.3±		FT/ IMMED.		LOGGED BY: B. COX				
ELEV	SAMPLE			SAMP OD (IN)	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION	
AD (FT)	DEPTH (FT)	TYPE AND NO.	B		REC (IN)	PENE-TRATION (IN)				
993.34	5						4 1/4" HSA	8"/CCH	0" - 5" Medium - dark brown, silty, sandy ORGANIC SOIL. 5" - 5' Medium brown silty SAND.	
991.34	7	SS-1	2 3 3 4	2	23	24			Medium gray brown, loose, sandy SILT. Very fine grained sand. 70%+ non plastic fines. Massive. Moist - wet. No odor or staining. 8.4 ppm.	
988.34	10						4 1/4" HSA	8"/CCH	Probable SILT similar to above, changing to SAND at 8'±.	
986.34	12	SS-2	8 13 10 9	2	21	24			Medium brown, medium dense, SAND. Very fine - occasionally coarse grained (predominately fine - medium grained), moderately well sorted sand. 10%± non plastic fines. Moist. No odor or staining. 3.2 ppm.	
983.34	15						4 1/4" HSA	8"/CCH	Probable SAND similar to above, becoming gravelly below 14'±.	
981.34	17	SS-3	3 6 6 7	2	19	24			Medium brown, medium dense, gravelly SAND. Very fine - very coarse grained, rounded, poorly sorted sand. 10% - 20% rounded gravel 1/8" - 1/2"±. 10%+ non plastic fines. Saturated. No odor or staining. 4.0 ppm.	
978.34	20						4 1/4" HSA	8"/CCH	Probable SAND similar to above, changing to clay at 19'±.	
976.34	22	SS-4	1 1 1 2	2	22	24			Dark blue gray, soft, silty CLAY. Sticky, massive, plastic fines. Occasionally silty. Saturated. No odor or staining. 5.0 ppm.	
									No refusal to depth. Set 10' of 2" diameter, .010" slot, threaded, flush joint, Schd 40 PVC at 20'5". Sand backfill to 4'. Bentonite seal 3' - 4'. Grouted in flush, watertight, cast iron monitoring well box.	
B - Penetration resistance. Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler. REC - Length of sample recovered. SS - Split spoon sample. U - Undisturbed samples S - Shelby tube D - Denison F - Fixed piston P - Pitcher O - Osterberg SAMP OD - Outside diameter of sampling spoon							NOTES HSA = Hollow Stem Auger CCH = Conical Cutter Head ppm Refers to PID reading (10.6 eV lamp) Top of PVC elev = 997.88		EAST THETFORD POST OFFICE SITE INVESTIGATION	
							EAST THETFORD, VERMONT DATE: MAY 22, 1998 PROJECT: 4080062			
							PAGE 1 OF 1 LOG OF BORING: MW-3			



BORING LOCATION		MW-4		INCLINATION		V		BEARING		DATE START/FINISH		MAY 22, 1998 / MAY 22, 1998	
CASING ID		CORE SIZE		TOTAL DEPTH		17.5		FT		DRILLED BY: M & W SOILS ENGINEERING, INC. (M.H.)			
GROUND EL (AD)		999.58		DEPTH TO WATER/DATE		12.7±		FT/		IMMED. LOGGED BY: B. COX			
ELEV	SAMPLE			SAMP OD (IN)	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION				
AD (FT)	DEPTH (FT)	TYPE AND NO.	B		REC (IN)	PENE-TRATION (IN)							
994.58	5						4 1/4" HSA	8"/CCH	0" - 6" Medium - dark brown, silty, sandy ORGANIC SOIL. 6" - 5' Medium brown silty SAND.				
992.58	7	SS-1	2 3 4 4	2	18	24			Medium brown, loose, sandy SILT. Very fine grained sand. 70%+ non plastic fines. Massive. Moist. No odor or staining. 2.4 ppm.				
989.58	10						4 1/4" HSA	8"/CCH	Probable SILT similar to above, changing to SAND at 8±.				
987.58	12	SS-2	4 8 10 8	2	19	24			Medium brown, medium dense, SAND. Very fine - coarse grained (predominately fine - medium grained), moderately poorly sorted sand. 10% - 20% fine rounded gravel to 3/8". 10%± non plastic fines. Moist - wet at bottom. No odor or staining. 4.0 ppm.				
984.58	15						4 1/4" HSA	8"/CCH	Probable SAND similar to above, becoming coarser with depth.				
982.58	17	SS-3	2 3 7 7	2	16	24			Medium brown, medium dense, gravelly SAND. Very fine - very coarse grained, rounded, poorly sorted sand. 10% - 20% rounded gravel 1/8" - 1/2"±. 10%+ non plastic fines. Saturated. No odor or staining. 0.9 ppm.				
972.08	17.5						4 1/4" HSA	8"/CCH	Probable SAND similar to above.				
									No refusal to depth. Set 10' of 2" diameter, .010" slot, threaded, flush joint, Schd 40 PVC at 17'6". Sand backfill to 4'. Bentonite seal 3' - 4'. Grouted in flush, watertight, cast iron monitoring well box.				
<p>B - Penetration resistance, Blows/6" of a 140 lb hammer falling 30 in to drive a split spoon sampler. REC - Length of sample recovered. SS - Split spoon sample. U - Undisturbed samples S - Shelby tube D - Denison F - Fixed piston P - Pitcher O - Osterberg SAMP OD - Outside diameter of sampling spoon</p>							<p>NOTES HSA = Hollow Stem Auger CCH = Conical Cutter Head ppm Refers to PID reading (10.6 eV lamp) Top of PVC elev = 999.17</p>			<p>EAST THETFORD POST OFFICE SITE INVESTIGATION</p> <p>EAST THETFORD, VERMONT DATE: MAY 22, 1998 PROJECT: 4080062</p>			
PAGE 1 OF 1							LOG OF BORING: MW-4						



M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME EAST THETFORD POST OFFICE LOCATION EAST THETFORD, VT
REPORT SENT TO BRUCE COX PROJ. NO.
SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7432-98

SHEET 1 OF 1
DATE 5/22/98
HOLE NO. MW-1
LINE & STA.
OFFSET

GROUND WATER OBSERVATIONS		Type Size I. D. Hammer Wt. Hammer Fall	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT 13'5"	AT 1/2 HOURS		HSA	SS		DATE STARTED 5/22/98
AT	AT HOURS		4 1/4"	1 1/2"		DATE COMPL. 5/22/98
				140#	BIT	BORING FORMAN M.D. & M.H.
				30"		INSPECTOR B. COX
						SOILS ENGR.

LOCATION OF BORING BETWEEN OLD GAS TANK AND ROUTE 5

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	FIELD SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE		
							NO.	PEN	REC
					3 1/8"	ASPHALT			
				MED. DENSE	1'	BROWN COARSE GRAVEL			
5'	5' - 7'	SS	5 8	MED. DENSE	6'6"	BROWN SILTY FINE SAND	1	24"	17"
			8 8				2	24"	18"
	7' - 9'	SS	8 8						
10'	10' - 12'	SS	4 5	MED. DENSE	14'8"	BROWN FINE SAND - TRACE OF SILT	3	24"	20"
			7 7						
15'	15' - 17'	SS	2 3	LOOSE - WET	19'	BROWN COARSE SANDS	4	24"	24"
			5 6						
20'	20' - 22'	SS	1 2	LOOSE - MOIST	22'	GREY SILTS WITH CLAY SEAMS	5	24"	23"
			2 2						
25'						NO BEDROCK TO DEPTH			
						SET 2" PVC WELL AT 20'			
						TOP OF WELL AT 10'			
						SAND TO 8'			
						BENTONITE TO 5'10"			
						MATERIALS USED:			
						10' OF 2" PVC 0.010" SLOT SCREEN			
						10' OF 2" PVC SOLID			
						25# OF BENTONITE CHIPS			
						200# OF SAND			
					40# OF CEMENT MIX				
					1 2" EXPANSION CAP				
					1 2" PVC CAP				
					1 6" CAST IRON MANHOLE				

GROUND SURFACE TO 22'

USED HSA CASING THEN DROVE SS 24"

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense
Cohesive Consistency
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary

EARTH BORING 22'

ROCK CORING

SAMPLES 5

HOLE NO. MW-1

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

SHEET 1 OF 1
DATE 5/22/98
HOLE NO. MW-2
LINE & STA.
OFFSET

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME EAST THETFORD POST OFFICE LOCATION EAST THETFORD, VT
REPORT SENT TO BRUCE COX PROJ. NO.
SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7432-98

GROUND WATER OBSERVATIONS		CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT 12'4"	AT 1 1/2 HOURS	Type HSA	SS		DATE STARTED 5/22/98
		Size I. D. 4 1/4"	1 1/2"		DATE COMPL. 5/22/98
		Hammer Wt. 140#	BIT		BORING FORMAN M.D. & M.H.
AT	AT HOURS	Hammer Fall 30"			INSPECTOR B. COX
					SOILS ENGR.

LOCATION OF BORING 21' NORTH OF POLE #3, IN PARKING LOT, 12' OFF EDGE OF ROUTE 5

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	FIELD SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and etc.	SAMPLE		
							NO.	PEN	REC
					3 1/4"	ASPHALT			
				MED. DENSE	1'6"	BROWN COARSE GRAVEL			
				MED. DENSE TO LOOSE	3'	BROWN SILTS WITH ORGANICS AND FINE SAND			
5'	5' - 7'	SS	2 3 8 8				1	24"	19"
				MED. DENSE		BROWN MEDIUM FINE SAND			
					9'				
10'	10' - 12'	SS	5 5 7 6	MED. DENSE		BROWN MEDIUM TO COARSE SANDS	2	24"	17"
					12'				
15'	15' - 17'	SS	7 9 8 7	WET MED. DENSE		BROWN COARSE TO VERY COARSE SANDS	3	24"	21"
					18'				
20'	20' - 22'	SS	2 5 5 4	LOOSE - MOIST		OLIVE BROWN SILT WITH OCCASIONAL CLAY PARTING	4	24"	22"
					22'				
25'						NO BEDROCK TO DEPTH			
						SET 2" PVC WELL AT 20'4" TOP OF WELL AT 10'4" SAND TO 3' BENTONITE FROM 2' TO 3'			
						MATERIALS USED: 10' OF 2" PVC 0.010" SLOT SCREEN 10' OF 2" PVC SOLID 25# OF BENTONITE CHIPS 200# OF SAND 40# OF CEMENT MIX 1 2" EXPANSION CAP 1 2" PVC CAP 1 6" CAST IRON MANHOLE			

GROUND SURFACE TO 22'

USED HSA CASING THEN DROVE SS 24"

Sample Type

D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense
Cohesive Consistency
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary

EARTH BORING 22'
ROCK CORING
SAMPLES 4
HOLE NO. MW-2

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME EAST THETFORD POST OFFICE LOCATION EAST THETFORD, VT
REPORT SENT TO BRUCE COX PROJ. NO. _____
SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7432-98

SHEET 1 OF 1
DATE 5/22/98
HOLE NO. MW-3
LINE & STA. _____
OFFSET _____

GROUND WATER OBSERVATIONS		Type	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT <u>12:4</u>	AT <u>1/2</u> HOURS		<u>HSA</u>	<u>SS</u>		
		Size I. D.	<u>4 1/4"</u>	<u>1 1/2"</u>		DATE STARTED <u>5/22/98</u>
		Hammer Wt.		<u>140#</u>	<u>BIT</u>	DATE COMPL. <u>5/22/98</u>
		Hammer Fall		<u>30"</u>		BORING FORMAN <u>M.D. & M.H.</u>
						INSPECTOR <u>B. COX</u>
						SOILS ENGR. _____

LOCATION OF BORING SOUTH SIDE OF GARAGE, SOUTH OF OLD FUEL OIL TANK

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6"		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	FIELD SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE		
			on sampler					NO.	PEN	REC
					LOOSE	5'	TOPSOIL			
5'	5' - 7'	SS	2	3	LOOSE - MOIST		BROWN SILTY FINE SANDS	1	24"	23"
			3	4						
10'	10' - 12'	SS	8	13	MED. DENSE	8'	BROWN FINE AND COARSE LAYERED SANDS	2	24"	21"
			10	9						
15'	15' - 17'	SS	3	6	MED. DENSE WET	14'	BROWN COARSE SANDS	3	24"	19"
			8	7						
20'	20' - 22'	SS	1	1	LOOSE - MOIST	19'	BLUISH-GREY SILTS WITH OCCASIONAL CLAY PARTINGS	4	24"	23"
			1	2						
25'						22'	NO BEDROCK TO DEPTH			
							SET 2" PVC WELL AT 20'5" TOP OF WELL AT 10'5" SAND TO 4" BENTONITE TO 3'			
							MATERIALS USED: 10' OF 2" PVC 0.010" SLOT SCREEN 10' OF 2" PVC SOLID 25# OF BENTONITE CHIPS 150# OF SAND 40# OF CEMENT MIX 1 2" EXPANSION CAP 1 2" PVC CAP 1 6" CAST IRON MANHOLE			

GROUND SURFACE TO 22'

USED HSA CASING THEN DROVE SS 24"

Sample Type
D-Dry C-Cored W-Washed
UP-Unfinished Piston
TP-Test Pit A-Auger V-Vane Test
UT-Undisturbed Thinwall

Proportions Used
trace 0 to 10%
little 10 to 20%
some 20 to 35%
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50+ Very Dense

Cohesive Consistency
0-4 Soft 30 + Hard
4-8 M/Stiff
8-15 Stiff
15-30 V-Stiff

summary	
EARTH BORING	<u>22'</u>
ROCK CORING	_____
SAMPLES	<u>4</u>
HOLE NO.	<u>MW-3</u>

M & W Soils Engineering Inc.
Main St. Charlestown, NH 03603

TO DUFRESNE-HENRY, INC. ADDRESS NORTH SPRINGFIELD, VT
 PROJECT NAME EAST THETFORD POST OFFICE LOCATION EAST THETFORD, VT
 REPORT SENT TO BRUCE COX PROJ. NO. _____
 SAMPLES RETAINED BY DUFRESNE-HENRY, INC. OUR JOB NO. 7432-98

SHEET 1 OF 1
 DATE 5/22/98
 HOLE NO. MW-4
 LINE & STA. _____
 OFFSET _____

GROUND WATER OBSERVATIONS		Type Size I. D. Hammer Wt. Hammer Fall	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT <u>12:7</u> "	AT <u>1/2</u> HOURS		HSA	SS		DATE STARTED <u>5/22/98</u>
AT _____	AT _____ HOURS		<u>4 1/4"</u>	<u>1 1/2"</u>		DATE COMPL. <u>5/22/98</u>
				<u>140#</u>	BIT	BORING FORMAN <u>M.D. & M.H.</u>
				<u>30"</u>		INSPECTOR <u>B. COX</u>
						SOILS ENGR.

LOCATION OF BORING JUST WEST OF INGROUND POOL

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	FIELD SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and etc.	SAMPLE		
			NO.	PEN				REC		
					LOOSE	6'	TOPSOIL			
5'	5' - 7'	SS	2	3	LOOSE	8'	BROWN SILTY FINE SANDS	1	24"	18"
			4	4						
10'	10' - 12'	SS	4	8	MED. DENSE	11'8"	BROWN MEDIUM TO COARSE SANDS	2	24"	19"
				10	8			WET		
15'	15' - 17'	SS	2	3	MED. DENSE	17'6"	BROWN VERY COARSE SANDS	3	24"	16"
				7	7			WET		
20'							NO BEDROCK TO DEPTH			
							SET 2" PVC WELL AT 17'6"			
							TOP OF WELL AT 7'6"			
							SAND TO 4'			
							BENTONITE TO 3'			
							MATERIALS USED:			
							10' OF 2" PVC 0.010" SLOT SCREEN			
							10' OF 2" PVC SOLID			
							25# OF BENTONITE CHIPS			
							150# OF SAND			
						40# OF CEMENT MIX				
						1 2" EXPANSION CAP				
						1 2" PVC CAP				
						1 6" CAST IRON MANHOLE				

GROUND SURFACE TO 17'6"

USED HSA CASING THEN _____

Sample Type
 D-Dry C-Cored W-Washed
 UP-Unfinished Piston
 TP-Test Pit A-Auger V-Vane Test
 UT-Undisturbed Thinwall

Proportions Used
 trace 0 to 10%
 little 10 to 20%
 some 20 to 35%
 and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler
Cohesionless Density
 0-10 Loose
 10-30 Med. Dense
 30-50 Dense
 50+ Very Dense

Cohesive Consistency
 0-4 Soft 30 + Hard
 4-8 M/Stiff
 8-15 Stiff
 15-30 V-Stiff

summary	
EARTH BORING	<u>17'6"</u>
ROCK CORING	_____
SAMPLES	<u>3</u>
HOLE NO.	<u>MW-4</u>

EAST THETFORD POST OFFICE
INITIAL SITE INVESTIGATION
EAST THETFORD, VERMONT

May 22, 1998

Dufresne-Henry, Inc. - Bruce Cox on site at 7:55 am.

I met with Mr. Loren Bacon, the property owner, to locate on-site buried water and electric lines. M & W Soils Engineering, Inc. - Myron Domingue, Michael Hitchcock, and Chris Conant on site at 8:15 am. Myron left in the morning.

MW-1

MW-1 was located just east of the former gasoline UST's. The boring was started at approximately 8:30 am. The rig and other equipment had been steam cleaned prior to arrival on site. All water used for cleaning split spoons and other tools was obtained at the site. Drilled with 4 1/4" hollow stem augers taking split spoon samples at 5 foot intervals starting at 5 feet. All samples were screened for VOC's with an HNu HW-101 (10.2 eV lamp, calibrated on-site with 100 ppm Isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. No analytical soil samples were collected. Total depth of the boring was 22', with no refusal. The general geologic column is sand and silty sand to approximately 19'3", followed by silty clay to the limit of the boring. Evidence of contamination by visual and olfactory sense was observed from less than 5' to approximately 8'. A moderate - strong weathered gasoline (varnish-like) odor was observed. PID readings up to 25 ppm were observed. The water table was encountered at approximately 14'. Installed a 10' long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 20'. All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 8'. A bentonite seal was installed from 5'10" - 8'. A watertight monitoring well box was grouted in at the surface. All excess clean soil was disposed of on site at the UST excavation. Contaminated soil was stored on-site in plastic bags.

Materials: 10' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
9'9" of 2", solid wall, threaded, flush joint, Schd 40 PVC.
200 lb of silica sand.
25 lb± of bentonite chips.
40 lb of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" monitoring well box.

MW-2

MW-2 was located south of the former gasoline UST's. The boring was started at 10:00 pm. All

water used for cleaning split spoons and other tools was obtained at the site. Drilled with 4 1/4" hollow stem augers taking split spoon samples at 5 foot intervals starting at 5 feet. All samples were screened for VOC's with an HNu HW-101 (10.2 eV lamp, calibrated on-site with 100 ppm Isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. No analytical soil samples were collected. Total depth of the boring was 22', with no refusal. The general geologic column is sand and silty sand to approximately 14', gravelly sand to approximately 19', then silt to the limit of the boring. No evidence of contamination by visual and olfactory sense was observed. PID readings up to 8 ppm were observed (possibly influenced by soil moisture). The water table was encountered at approximately 14'. Installed a 10' long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 20'. All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand and native material to 3'. A bentonite seal was installed from 2' - 3'. A watertight monitoring well box was grouted in at the surface. All excess clean soil was disposed of on site at the UST excavation.

Materials: 10' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
9'9" of 2", solid wall, threaded, flush joint, Schd 40 PVC.
200 lb of silica sand.
25 lb± of bentonite chips.
40 lb of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" monitoring well box.

MW-3

MW-3 was located south of the former heating oil UST. The boring was started at 11:15 am. All water used for cleaning split spoons and other tools was obtained at the site. Drilled with 4 1/4" hollow stem augers taking split spoon samples at 5 foot intervals starting at 5 feet. All samples were screened for VOC's with an HNu HW-101 (10.2 eV lamp, calibrated on-site with 100 ppm Isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. No analytical soil samples were collected. Total depth of the boring was 22', with no refusal. The general geologic column is sand and silty sand to approximately 12', gravelly sand to approximately 18', then silty clay to the limit of the boring. No evidence of contamination by visual and olfactory sense was observed. PID readings up to 11 ppm were observed (possibly influenced by soil moisture). The water table was encountered at approximately 13'. Installed a 10' long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 20'. All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 4'. A bentonite seal was installed from 3' - 4'. A watertight monitoring well box was grouted in at the surface. All excess clean soil was disposed of on site at the UST excavation.

Materials: 10' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
9'9" of 2", solid wall, threaded, flush joint, Schd 40 PVC.
150 lb of silica sand.
25 lb± of bentonite chips.
40 lb of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" monitoring well box.

MW-4

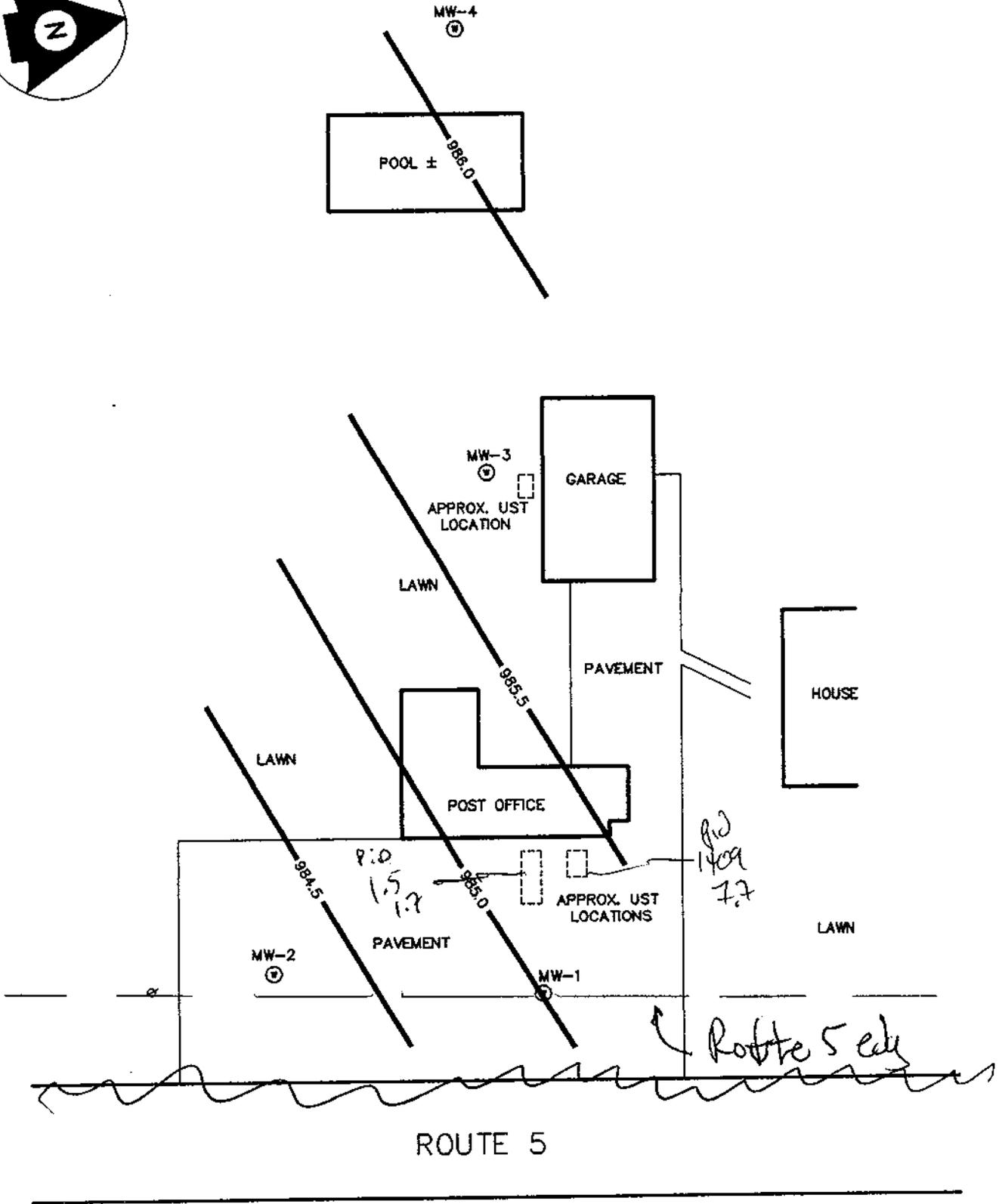
MW-4 was located west of the swimming pool (supposed upgradient direction from the former UST's). The boring was started at 12:45 pm. All water used for cleaning split spoons and other tools was obtained at the site. Drilled with 4 1/4" hollow stem augers taking split spoon samples at 5 foot intervals starting at 5 feet. All samples were screened for VOC's with an HNu HW-101 (10.2 eV lamp, calibrated on-site with 100 ppm Isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. No analytical soil samples were collected. Total depth of the boring was 17'6", with no refusal. The general geologic column is sand and silty sand to approximately 12', and gravelly sand to the limit of the boring. No evidence of contamination by visual and olfactory sense was observed. PID readings up to 4 ppm were observed (possibly influenced by soil moisture). The water table was encountered at approximately 13'. Installed a 10' long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 17'6". All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 4'. A bentonite seal was installed from 3' - 4'. A watertight monitoring well box was grouted in at the surface. All excess clean soil was disposed of on site at the UST excavation.

Materials: 10' of 2", .010" slot, threaded, flush joint, Schd 40 PVC.
7'3" of 2", solid wall, threaded, flush joint, Schd 40 PVC.
150 lb of silica sand.
25 lb± of bentonite chips.
40 lb of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" monitoring well box.

Visitors: Loren Bacon.
Weather: Mostly sunny, 50's - 70's, light wind.
Off site at 3:00 pm±.

APPENDIX E

GROUNDWATER CONTOUR MAP



DH
Dufresne-Henry, Inc.
 Consulting Engineers
 North Springfield, Vermont

GROUNDWATER CONTOUR PLAN
 ELEVATIONS MEASURED ON MAY 27, 1998
 LOREN BACON PROPERTY

EAST THETFORD,

VERMONT

Project No.	4080062
Proj. Mgr.	B.H.C.
Scale	1"=30'
Date	JUNE '98
A	GW-1

APPENDIX F

CONTRACT LABORATORY ANALYTICAL REPORT



RECEIVED

JUN 11 1998

DUFRESNE-HENRY, INC.

Oscar Garcia
Dufresne-Henry
Precision Park
N. Springfield, VT 05150

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 12676 DUFVT
Client Identification: Loren Bacon 4080062
Date Received: 05/29/98
Sample Quantity/Type: 4 aqueous

Dear Mr. Garcia :

Enclosed please find the laboratory report for the above identified project. All analyses were subjected to rigorous quality control measures to assure data accuracy. Unless otherwise stated, all holding times, preservation techniques, container types and sample condition adhered to EPA protocol.

The following standard abbreviations and conventions apply throughout all Eastern Analytical, Inc. reports:

- < = "less than" followed by the detection limit
- TNR = Testing Not Requested
- ND = None Detected, no established detection limit
- BRL = Below Reporting Limits

If you have any questions regarding the results contained within, please feel free to directly contact me, the department supervisor, or the analytical chemist who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Will Brunkhorst (M)
Will Brunkhorst, President

6/8/98
Date



LABORATORY REPORT

Eastern Analytical, Inc. ID#: 12676

Client: Dufresne-Henry

Client Designation: Loren Bacon 4080062

Sample ID: MW-3

Analytical Type: Sample

Matrix: aqueous

Date Sampled: 5/27/98

Date Received: 5/29/98

TPH (C9-C40) < 0.5

Units	Dates		Dilution Factor	Method	Analyst
	Analyzed	Prepared			
mg/l	6/2/98	6/2/98	1	8100 Mod	DJS

Approved By: Timothy Schaper Organics Supervisor

Timothy Schaper 6/3/98



LABORATORY REPORT

Eastern Analytical, Inc. ID#: 12676

Client: Dufresne-Henry

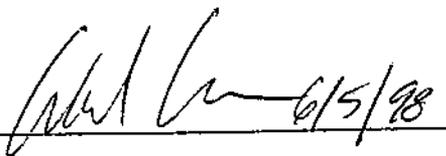
Client Designation: Loren Bacon 4080062

Volatile Organic Compounds

Client ID:	MW-1	MW-2	MW-3	MW-4
Matrix:	aqueous	aqueous	aqueous	aqueous
Date Received:	5/29/98	5/29/98	5/29/98	5/29/98
Date Analyzed:	6/3/98	6/3/98	6/3/98	6/3/98
Analyst:	VG	VG	VG	VG
Units:	ug/L	ug/L	ug/L	ug/L
Method:	*602 mod	*602 mod	*602 mod	*602 mod
MTBE	< 10	< 10	< 10	< 10
Benzene	< 1	< 1	< 1	< 1
Toluene	< 1	< 1	< 1	< 1
Ethylbenzene	1	< 1	< 1	< 1
m,p-Xylene	14	< 1	< 1	< 1
o-Xylene	4	< 1	< 1	< 1

*mod: MTBE included in calibration.

Approved By: Clifford Chase, Volatile Organics Supervisor

 6/5/98

