

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

LETTER OF TRANSMITTAL

(802) 886-2261

DATE 3/1/95	JOB NO. 415002
ATTENTION MR. RICHARD SPIESE	
RE: SOAP SHED LAUNDROMAT	
CHESTER, VT	

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

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COPY TO TOM SPATER

SIGNED: Burton Coy

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"/> Work Scope <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> PCF Reimbursement Request <input type="checkbox"/> General Correspondence

**INITIAL
SITE INVESTIGATION**

**Soap Shed Laundromat
VT Route 103
Chester, VT 05143**

**SMS Site #94-1731
UST Facility #252**

**A Facility Owned By:
Thomas Spater
P.O. Box 130
Chester, VT 05143
(802) 875-2952
Contact: Thomas Spater**

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

March 1, 1995

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EXECUTIVE SUMMARY

An Initial Site Investigation has been completed at the Soap Shed Laundromat in Chester, Vermont. The investigation was in response to the discovery of gasoline contaminated soil during a Tank Closure Assessment in November 1994. One of the tanks was found to be perforated. All soil excavated during the closure was backfilled.

Four shallow groundwater monitoring wells were installed on the site in February 1995. The wells were sampled and analyzed for VOC's by EPA Method 602/8015 and for TPH by EPA Method 8100. BTEX above detection limits was found in all but the upgradient well. BTEX in the well near the former pump island exceeded the State of Vermont Enforcement Standard. TPH was found in low concentrations only in the well near the pump island. PID readings and olfactory evidence from soil boring samples indicated the presence of both gasoline and probable heating oil. The PID readings for oil contaminated soil were typically at or slightly over the concentrations at which the State will allow backfilling. Areas of gasoline contamination greatly exceeded the threshold.

Gasoline contaminated soil and groundwater is primarily concentrated in the vicinity of the former pump island, with lesser amounts near the former UST's. Contamination of soil with probable heating oil is far more widespread, covering much of the developed portion of the site. The probable source of the oil is spills from a bulk facility operated by a former owner of the property. It is reported that all storage vessels associated with that facility were above ground tanks. Evidence from the boring program does not indicate the plumes have migrated off the property.

Soundings of the monitoring wells indicate the direction of groundwater movement is to the southwest. Nine private bedrock water wells, and one municipal gravel packed well have been identified within one-half mile of the site. None of the wells are in the immediate vicinity of the property. The municipal well, located approximately 1,800 feet to the west, is reportedly used as backup supply. None of the water supplies identified are judged to be in jeopardy. The nearest surface water in the downgradient direction is Lovers Lane Brook located approximately 700 feet to the southwest. No odors have been reported in nearby basements.

Based on these findings, it is recommended that:

1. The gasoline contaminated soil be excavated and treated by asphalt batching.
2. The oil contaminated soil be left in place.
3. At least one monitoring well be installed in the area of soil removal, and all monitoring wells be sampled semi-annually for BTEX.

**INITIAL SITE INVESTIGATION
SOAP SHED LAUNDROMAT
CHESTER, VERMONT**

Introduction

The Soap Shed Laundromat is located on Depot Street (Vermont Route 103) in Chester, Vermont. A site location map is included as Appendix A.

Twin State Environmental Corp. performed a Tank Closure Assessment at the site on November 22 and 29, 1994. The subjects were two (2) 2,100 gallon gasoline, and one (1) 500 gallon gasoline single wall UST's. The two 2,100 gallon tanks were found to be in good condition. The 500 gallon tank was observed to have a 1/2" - 1" diameter hole in the bottom. Evidence of soil contamination was discovered in the vicinity of the 500 gallon tank and near the southwest corner of the nearest 2,100 gallon tank to the north. PID readings up to 66 ppm were observed from soil samples of the tank beds. The water table was encountered at a depth of approximately 4 feet, but was variable. No free product was observed. The excavation was backfilled pending additional site investigation.

Work and Health and Safety Plans

As a result of the findings of the Tank Closure Assessment, the Sites Management Section (SMS) requested additional investigations at the Soap Shed Laundromat in their letter dated December 20, 1994. A copy of that letter is included in Appendix B. Dufresne-Henry prepared a Work Plan, and a Health and Safety Plan for the proposed activities at the site. A copy of the proposed work plan was sent to the Hazardous Materials Management Division (HMMD) for review on January 20, 1995. Approval of

the work plan was received on January 30, 1995. Copies of these documents will also be found in Appendix B. The remainder of this report describes the on-site activities and subsequent findings based on that work plan.

Site Description

The Soap Shed Laundromat is located on the east side of Vermont Route 103. The 1.11 acre site consists of the laundromat, a small separate building, and paved and unpaved parking areas. The majority of the site is undeveloped. There are two (2) above ground propane tanks and the cradle of a former above ground storage tank located to the east of the laundromat. The subject property is surrounded by residential property to the north, commercial property to the northeast and east, residential property to the south, and Route 103 and residential and commercial property to the west. There is small wet area just off the parking lot on the east side of the property. The developed portion of the site is fairly level with a slight grade down to the southwest. There is a small knoll to the east. Lovers Lane Brook is approximately 700 feet to the south and southwest. The property is served by the municipal water and wastewater system. There are no remaining UST's known to exist on the site.

Site History

The history of the site is not completely known. The current owner purchased the property in July 1981. The former pump island on the west side of the building was removed at that time. Prior to ownership by Spater, the site had been used as a gasoline service station from at least the early 1950's to 1981. Cray Oil Company owned the property from 1933 to 1978. During all or part of that time it was operated as a bulk distribution facility. It is unknown if retail sales of petroleum products took place. Neighbors reported that two above ground storage tanks were on the site. The cradle

for one AST still exists and the remnants of another are found near the edge of the driveway.

No hazardous products are currently stored at the site. Potentially hazardous materials which were, or may have been, stored at the site in the past include gasoline, other automotive fluids, and heating oil. It has been reported that a spill of probable heating oil occurred during ownership by Cray Oil. The oil supposedly entered the basement of the house just to the southwest of the site.

Monitoring Well Installation

Four (4) shallow groundwater monitoring wells were installed on February 3, 1995 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 near the northwest corner of the property, well MW-2 was located at the northwest corner of the laundromat, well MW-3 was located in the "ell" on the east side of the laundromat, and well MW-4 was located on the west side of the building near the former pump island. A site sketch showing the well locations is included as Appendix C. Logs of the borings and monitoring well installation reports are included in Appendix D.

During boring advancement split spoon soil samples were taken at various intervals depending on discovered and expected conditions. All samples were screened for the presence of Volatile Organic Compounds (VOC's) with a Photovac MicroTIP HL-2000 photoionization detector (10.6 eV lamp, calibrated with isobutylene). The screening was done at ambient air temperature. In MW-1, a PID reading of 11 ppm was observed. No visual or olfactory evidence of contamination was observed in the samples or on the drilling tools. Refusal on probable bedrock was encountered at 8'6". In MW-2 a PID reading of 14 ppm was observed. A slight oil odor was noted below 4'±. Refusal on

probable bedrock was encountered at 5'2". In MW-3 a PID reading of 20 ppm was observed along with an oily odor. Refusal on probable bedrock was at 5'5". In MW-4 a strong gasoline odor was observed from several feet below ground level to refusal on probable bedrock at 5'6". A PID reading of 1100+ ppm was observed.

A two-inch diameter PVC monitoring well was installed in each boring. The length of each screen was determined by the depth to refusal. Screen lengths were 5'6", 2'6", 3'6", and 2'6" for MW-1 through MW-4 respectively. Each well was constructed from .010" machine slotted screen. Each well was backfilled with clean silica sand to a point above the screen and a bentonite seal installed. The wells were protected at the ground surface by grouting in watertight aluminum monitoring well boxes.

Test Borings

Evidence of soil contamination was observed in at least three of the four monitoring well locations. To help determine the limits of contamination, a series of seven (7) test borings were performed at various locations on the site. No borings were done outside the boundaries of the subject property. All of the borings were done using 4" solid stem augers and taken to refusal. Soil samples were obtained from the auger flights. All samples were screened for VOC's as previously described. PID readings ranged from 0 ppm to 400+ ppm. The borings show that soil contamination is widespread over the developed portion of the site, but has apparently not migrated off site. It appears that the contamination is related to at least two separate releases. The gasoline associated with the tanks and/or former pump island is concentrated to the north and west of the laundromat. A second, more widespread release appears to be heating oil (by odor) and is likely related to the spill previously noted. Other smaller releases related to overfills and spills are also likely.

Site Geology

Surficial geology at the site is published as till with glacial outwash along Lovers Lane Brook. The borings indicate the presence of silty sand over the developed portion of the site. The sand did not appear to be fill.

Published data indicates bedrock at the site is associated with the Mount Holly Complex. The Mount Holly Complex in the vicinity of the site is mapped as fine to medium grained biotitic gneiss. It is known to be schistose in places with local bodies of pegmatite and gneissoid granite. There are bedrock outcrops on the site just east of the Laundromat. The bedrock contours, both above and below ground level, are very uneven. Bedrock exposed on the site is competent, but occasionally fractured.

Site Hydrogeology

At the time that groundwater samples were obtained on February 8, 1995, the water levels in the wells ranged from 2.4 feet to 3.0 feet below the ground surface. The available data indicates the general direction of groundwater movement to be to the southwest. The gradient is moderately steep at 2.2%. Given the sites location near the top of a low hill and the proximity of bedrock to the surface, it is likely that the gradient and direction could be different only short distances from the monitoring wells. The sites location near the crest of the hill means the catchment for groundwater recharge is greatly reduced. This fact, coupled with bituminous concrete pavement in front of the laundromat, has probably minimized migration of the plumes. A site sketch showing approximate water table contours as of the date of sampling is included as Appendix E.

Potential Receptors

The 1972 Chester, VT USGS quadrangle shows in excess of 100 structures within a one-half mile radius of the site. Data on file with the Vermont Agency of Natural Resources, Water Supply Division indicates 11 bedrock wells within one-half mile of the site. Two of those are observation wells maintained by the USGS. Discussions with the Chester Water and Sewer Department indicate that all residences in the immediate vicinity of the Soap Shed Laundromat are on the municipal system. The nearest public water supply is a gravel packed well on Canal Street owned by the Town of Chester. It is located approximately 1,800 feet west of the site. The well is reportedly used as a backup source and is separated from the site by Lovers Lane Brook. Based on the observed direction of groundwater flow, the nearest potential surface water receptor is Lovers Lane Brook approximately 700 feet to the southwest. The Soap Shed Laundromat has a slab on grade foundation. The house just to the south has a basement, although no complaints have been received from the residents. A plan showing potential receptors within a one-half mile radius of the site will be found in Appendix F.

Monitoring Well Sampling

The four Dufresne-Henry monitoring wells were sampled on February 8, 1995 following the standard protocols which accompanied our work plan. The sampling was performed by Dufresne-Henry personnel. Three well volumes were purged prior to drawing a sample. No measurable free product was observed in any well, although a sheen was observed on water bailed from MW-4. The refrigerated samples were sent to Eastern Analytical, Inc. of Concord, New Hampshire on February 8, 1995 via overnight service. The samples were analyzed for the VOC's Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and MTBE by EPA Method 602/8015 and for Total Petroleum Hydrocarbons by EPA Method 8100 (modified). A summary of the VOC

analytical results is presented in the table below, and are indicated on the site sketch in Appendix C.

Summary of Analytical Results

Volatile Organic Compounds

Compound	ES μg/L	MW-1 μg/L	MW-2 μg/L	MW-3 μg/L	MW-4 μg/L
Benzene	5	<1	3	<1	250
Toluene	2,420	<1	3	3	7,600
Ethylbenzene	680	<1	<1	8	1,000
Total Xylenes	400	<1	1	13	6,500
Total BTEX		<1	7	24	15,350
MTBE	40*	<20	<20	<20	<200

ES State of Vermont Enforcement Standard
Health Advisory

Total Petroleum Hydrocarbons

Compound	MW-1 mg/L	MW-2 mg/L	MW-3 mg/L	MW-4 mg/L
TPH	<0.5	<0.5	<0.5	26

BTEX above detection limits was found in all wells except MW-1, the upgradient well. The BTEX concentration in MW-4 exceeds the Vermont Enforcement Standard. MTBE above detection limits for the method used was not found in any of the wells. MTBE was not expected given the year the tanks were taken out of service. Total Petroleum Hydrocarbons in the range C8 - C16 were found in well MW-4 at a concentration of 26 mg/L. The product was noted as resembling gasoline. No TPH above detection limits for the method used was found in wells MW-1, MW-2, and MW-3.

A copy of the laboratory analytical report is included as Appendix G.

Summary and Recommendations

In summary, four (4) shallow groundwater monitoring wells were installed on the site and sampled. Analysis of groundwater samples from the monitoring wells found BTEX above detection limits for the method used in all wells but MW-1, the upgradient well. BTEX concentrations in MW-4, near the former pump island, exceeded the State of Vermont Enforcement Standard. Seven (7) test borings were also performed on developed portions of the site. PID readings of soil samples from areas contaminated with oil were typically at or slightly over the threshold at which the State will allow backfilling. Soils where gasoline is present greatly exceed the backfilling threshold. The oil has been in the ground at least 17 years, and perhaps much longer. The time the gasoline has been in the ground is less well known, but probably is 17 years or less.

Results from the boring program and the water quality sampling indicate that widespread soil and water contamination has occurred. Gasoline contaminated soil and groundwater appears to be limited to the area southwesterly of the former UST's and is concentrated in the area of the former pump island. Soil contaminated with probable heating oil is far more widespread, being found over significant portions of the developed site. The source of the oil is likely a spill reported to have occurred during ownership by Cray Oil. TPH concentrations in groundwater samples are below detection limits or in low concentrations. Evidence from the boring program did not indicate the plumes have migrated off the site.

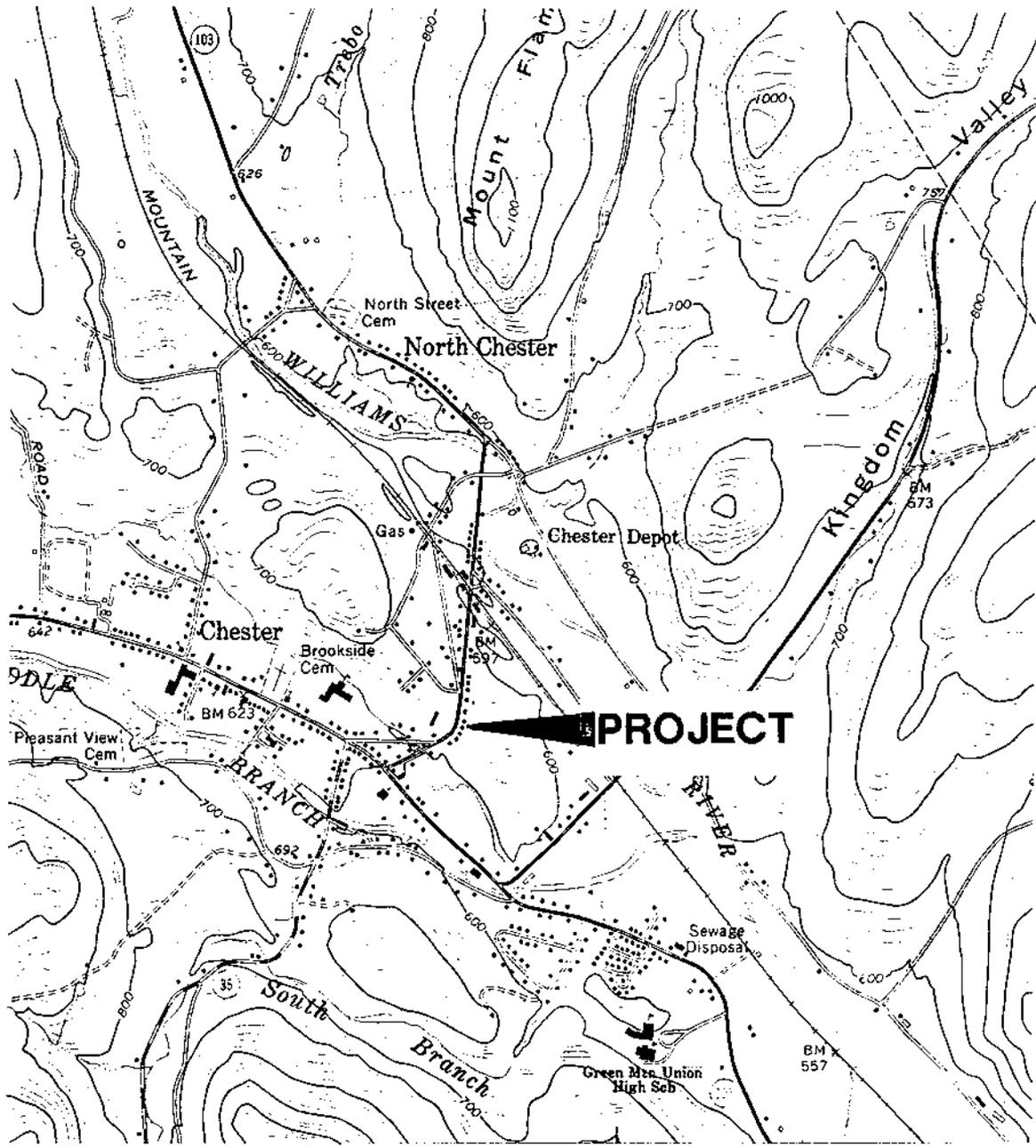
There are no bedrock water wells in the immediate vicinity of the site. The Town has a gravel packed well, reportedly used only for backup purposes, approximately 1,800 feet to the west. The potential receptors identified are typically at higher topographic elevations and/or separated from the site by streams. The nearest surface water

receptor in a downgradient direction is Lovers Lane Brook approximately 700 feet to the southwest. At least one building in the immediate downgradient direction has a basement, although no complaints of odors have been received. None of the water supplies identified are judged to be in jeopardy as a result of conditions on the Soap Shed Laundromat site.

Based on these findings we recommend the following:

1. The gasoline contaminated soil in the vicinity of the former pump island and UST's should be excavated and treated off-site by asphalt batching. This should remove the majority of the source of groundwater contamination.
2. The oil contaminated soil should remain in place. PID readings of soil samples were within or near State guidelines for backfilling. TPH concentrations in the groundwater are below detection limits or very low.
3. Following soil removal, at least one monitoring well should be installed in the affected area. All of the monitoring wells should be sampled semi-annually for BTEX to monitor groundwater quality.

APPENDIX A
SITE LOCATION MAP



SCALE
1:24000

TAKEN FROM A USGS QUAD SHEET FOR CHESTER, VT

Duffresne-Henry, Inc.
A DVI Company
Precision Park
No. Springfield,
Vermont 05150
Tel. 18021886-2261 Fax 18021886-2260

SITE LOCATION MAP
FOR THE
SOAP SHED LAUNDROMAT
DEPOT STREET
CHESTER, VERMONT

Project No. 415002
Proj. Mgr. B.H.C.
Date FEB. '95
B

APPENDIX B

**SITE INVESTIGATION REQUEST, WORK PLAN,
SITE HEALTH AND SAFETY PLAN**



State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
Natural Resources Conservation Council
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Hazardous Materials Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3888
FAX (802) 241-3296

December 20, 1994

Tom Spater
Soap Shed Laundromat
Route 103
Chester, VT 05143

RE: Petroleum contamination at Soap Shed Laundromat, Chester, VT (Site #94-1731)

Dear Mr. Spater:

The Sites Management Section (SMS) has received a site assessment report outlining the subsurface conditions for the above referenced site, submitted by Maria Dunn of Twin State Environmental, Inc. on December 2, 1994. This report summarizes the degree and extent of contamination encountered during the November 22 and 29 assessment. The tanks removed were two 2,100-gallon and one 500-gallon gasoline underground storage tanks (USTs). The tanks were taken out of service in 1987. According to the Vermont Underground Storage Tank Regulations, a tank must be permanently closed within one year after being taken out of service. Failure to do so is considered a violation of the VT UST Regulations. The two 2,100-gallon USTs (UST-1 and UST-2) were in good condition. The 500-gallon UST (UST-3) had a 1" diameter hole in the bottom of the tank.

During the tank pull, soils screened from the bottom of UST-2 had peak concentrations of 66 ppm as measured by a photoionization detector (PID). Peak PID readings of 34 ppm were encountered in the UST-3 excavation. All excavated soil was backfilled since the full extent of the contamination was unknown. Groundwater was encountered at 4 feet below ground surface. Free product was not encountered. There are nine private bedrock wells and one public supply well located within 1/2 mile of the site.

Based on the above information, the SMS has determined that additional work is necessary at the site in order to determine the severity of contamination present. Due to the possibility of contaminant impact to nearby receptors, the SMS is requesting that Soap Shed Laundromat retain the services of a qualified environmental consultant to perform the following:

- Further define the degree and extent of contamination to the soil. This may be accomplished by obtaining soil borings, digging test pits, or performing a soil gas survey.
- Determine the degree and extent of contamination, if any, to groundwater. If soil is found to contain evidence of contamination at the water table, then a sufficient number of monitoring wells should be installed in locations which will adequately define the severity of contamination at the site. All groundwater samples taken should be analyzed for BTEX and MTBE compounds.
- Perform an assessment of the site to determine the potential for sensitive receptors to

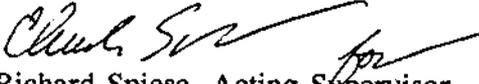
be impacted by the contamination. This should include basements of adjacent buildings, nearby surface water, and any public or private drinking water wells which are located within the vicinity of the site. If any water supplies appear at risk from this contamination, they should be sampled and analyzed using EPA Method 8020.

- Determine the need for a long term treatment and/or monitoring plan which addresses the contamination present at the site. The need for such a plan should be based on the results of the above investigations.
- Submit to the SMS a summary report which outlines the work performed as well as providing conclusions and recommendations. Included should be detailed well logs, analytical data, a site map, an area map showing the location of any sensitive receptors, and a groundwater contour map.

Please have your consultant submit a preliminary work plan and cost estimate or a site investigation expressway notification form within fifteen days of your receipt of this letter so that it may be approved prior to the initiation of onsite work. Enclosed please find a list of consultants who perform this type of work in the area as well as the brochure "Selecting Your UST Cleanup Contractor", which will help you in choosing an environmental consultant.

The underground storage tanks at Soap Shed Laundromat are covered by the Petroleum Cleanup Fund as set forth in 10 V.S.A. Section 1941 as long as no private insurance exists which would apply to this situation. You must provide proof of no insurance before the PCF can be used to reimburse these expenses. An owner or permittee of an underground storage tank, who is not in significant violation of his or her permit, is eligible for reimbursement from the fund. The owner or permittee must pay for the removal or repair of the failed tank and for the first \$10,000 of the cleanup; after that the fund will reimburse the tank owner or permittee for additional cleanup costs up to \$1 million. The fund may not pay for cleanup costs which are for cleanup work that is not pre-approved by the Agency. Please refer to the attached guidance document titled, "Reimbursement Package for the Petroleum Cleanup Fund" for further information on this program. Additionally, the Secretary of the Agency of Natural Resources reserves the right to seek cost recovery of fund monies spent at the Soap Shed Laundromat site if the Secretary concludes that Soap Shed Laundromat is in significant violation of the Vermont Underground Storage Tank Regulations and the Underground Storage Tank statute (10 V.S.A., Chapter 59). If you have any questions, please feel free to call.

Sincerely,


Richard Spiese, Acting Supervisor
Sites Management Section

Enclosures

cc: Chester Selectboard
DEC Regional Office
Maria Dunn, TSEC

**Proposed Work Plan
Initial Site Investigation**

**SOAP SHED LAUNDROMAT
CHESTER, VERMONT**

This work plan outlines the boring, monitoring well, and sampling program for the Initial Site Investigation at the Soap Shed Laundromat in Chester, Vermont. The site is a former gasoline service station. Contaminated soil was discovered at the site during a tank closure assessment. The closure assessment was performed by Twin State Environmental, Inc. Three underground tanks were removed: two 2,100 gallon gasoline, one 500 gallon gasoline. PID readings above the State guidelines for backfilling were observed near one of the 2,100 gallon tanks and at the 500 gallon tank. Groundwater was typically encountered at about 4'. No free product was observed. As the limits of contamination were not known, all soils were backfilled pending additional investigation.

The proposed monitoring wells will be used to define the extent of the contamination plume and provide basic hydrogeologic data. It is anticipated that four (4) shallow wells will be installed. All borings and monitoring well installations will be performed by M & W Soils Engineering, Inc. of Charlestown, New Hampshire under the field supervision of Dufresne-Henry personnel. All field personnel are OSHA certified for hazardous site operations under 29 CFR part 1910.120.

BORINGS

It is anticipated that the borings for the monitoring wells will be done using 4 1/4" hollow stem augers. Hollow stem augers offer the advantages of minimal hole caving, ease of geologic sampling, and relatively easy monitoring well installation. They generally are the most cost effective method given the expected subsurface conditions. Monitoring well borings will be taken to a depth of approximately 5' into the prevailing groundwater table or to refusal, whichever occurs first. It is expected that the wells will be approximately 10' deep. Petroleum based pipe dope for use on drill rods, tools, or casing will not be allowed. No type of drilling mud, including polymers, will be used. Should flowing sands be encountered, clean water obtained locally will be used to increase hydraulic head. If flowing sands are particularly problematic, casing will be used.

SOIL SAMPLING

Soil samples will typically be taken at 5 foot intervals using a split spoon sampler. Sampling at other intervals may occur and will be a field decision of the Dufresne-Henry inspector. Possible reasons include abrupt changes in drill rate and

suspected, or known, zones of contamination. The split spoon sampler allows retrieval of relatively undisturbed soil samples from a known depth for classification and Volatile Organic Compound (VOC) screening. All soil samples and material from the auger flights will be screened for VOC's by headspace analysis with a Photovac MicroTIP HL-2000 photoionization detector (10.6 eV lamp, calibrated with isobutylene). The act of driving the sampler (Standard Penetration Test) also gives an indication of the density or degree of compaction of the soil. Representative samples from each spoon will be placed in glass jars and retained by Dufresne-Henry. These are for project records only and are not intended for chemical analysis. Detailed logs of geology, drilling data, PID readings, and monitoring well installation will be prepared for each boring. Soil samples for laboratory analysis may be obtained as part of this project. Water quality samples will not be obtained during the boring program.

MONITORING WELLS

Monitoring wells will be constructed from 2", 0.010" machine slotted, threaded, flush joint, Schedule 40 PVC. Assuming no refusal, each monitoring well will consist of 5' of screen with sufficient riser to reach approximately 2" below the surface grade. The bottom of the well will be set such that approximately 5 feet of screen extends below the water table observed at the time of installation. For wells with shallow depth to the water table, the screened interval will be a decision of the Dufresne-Henry inspector. The bottom of all wells will be provided with a PVC cap or point or a plug with an expanding gasket. The annular space between the auger and the screen will be carefully backfilled with clean silica sand to create a filter pack around the well. The filter pack will extend from the bottom of the well to approximately 2 feet above the screen. The remainder of the hole will be backfilled with native soil to about 2 feet from the surface. A bentonite seal will be installed and a protective monitoring well box will be grouted in flush at the surface or a stick-up steel casing installed depending on the location. All wells will have removable top caps for sampling and sounding.

DECONTAMINATION

The borings may, or may not, be completed within the zone of contamination. However, to prevent cross contamination between the borings, strict decontamination procedures will be followed. All in-ground tools and equipment will be decontaminated by steam cleaning prior to the start of work and between borings. All decontamination will be done on-site at a designated location. Routine cleaning of equipment, such as split spoons, will use water obtained at the site and a product such as ALCONOX. Disposal of waste will be at the site. Excess contaminated soil will be disposed of on-site.

RECEPTOR STUDY

A field investigation will be performed to identify potential receptors including nearby water supply wells and surface water. The basements of any nearby buildings, if any, will be screened with the PID as deemed necessary.

WATER SAMPLING

Water quality samples will be obtained from all Dufresne-Henry installed monitoring wells following a period of stabilization. A sample will also be obtained from any nearby drinking water supplies identified during the receptor study. The samples will be taken by Dufresne-Henry personnel. Protocols for the sampling are on an attached document. Samples will not be obtained from any well exhibiting free product. The samples will be analyzed for VOC's (BTEX & MTBE) by EPA Method 602/8015 and for TPH by EPA Method 8100 by Eastern Analytical, Inc. of Concord, New Hampshire.

REPORTING

A letter report summarizing the finding and recommendations of the investigation will be submitted within 45 days of the completion of well installation.

A summary breakdown of estimated costs to complete the work will be found attached.

WATER QUALITY SAMPLING TECHNIQUES

Quality Assurance Document

Introduction

Sample collection for groundwater monitoring wells is performed with polyvinyl chloride (PVC) bailers for samples which are analyzed for inorganic parameters, and by Teflon bailers for organic parameters. Surface water samples are hand grab samples. All samples are collected in suitable containers and refrigerated and/or field preserved as appropriate until delivered to a certified laboratory for analysis. Samples are delivered to the laboratory as soon as possible and in all circumstances within the recommended delivery time for specific parameters. A Chain of Custody record is kept for each sample location and sampling occurrence.

Monitoring Wells

The casing and well guard are inspected for signs of vandalism or damage. The condition of the ground surface at the well head is examined for signs of surface water infiltration. Information regarding condition is noted as well as information regarding identification of the lock and key. Well casing diameter is noted. Weather conditions are noted as well as any recent rainfall or drought conditions.

Upgradient wells ("clean") are sampled prior to downgradient wells. Static water level is determined using an electronic water sounder or a tape and weight with an accuracy of ± 0.01 foot. Measurements are recorded to the nearest 0.02 foot from the top of the protective steel casing or monitoring well casing. The PVC bailer is washed with a non-ionic phosphate free detergent and rinsed with distilled water. The depth to the bottom of the well is determined and the volume of water required for purging is calculated. A minimum of three volumes of static water in the well is purged. The purged water is discarded. Teflon bailers are used for sample collection. The Teflon bailers are washed with detergent and rinsed with distilled water between sampling locations.

The color, odor, and turbidity of the sample is noted. Samples are obtained for parameters required for the specific well. An example of the parameters typically obtained immediately after the well has been flushed are: chemical oxygen demand (COD), chloride, and site specific metals. Samples may also be obtained for nitrates, calcium, manganese, sulfates, total organic compounds, total halogenated organic compounds, and volatile organic compounds. If volatile organic analysis (VOA) is required, these samples are obtained first. The VOA sample is slowly released into a clean VOA vial with as little disturbance to the sample as possible. The vial cap is retained in the hand during the process with the Teflon seal protected from all contamination. No free gases are permitted in the sample.

All samples which will be analyzed for dissolved metals and COD are field filtered using a pressurized 0.45u filter. Samples are placed in containers provided by the certified laboratory and labeled with an identification number, date, and method of preservation.

Surface Water Sampling

Hand grab samples are collected at surface water sampling locations. Samples are obtained from mid-depth of the water column in a field cleaned sampling device. Samples which will be analyzed for dissolved metals, COD, and which have observable turbidity are filtered with a 0.045u filter and immediately preserved. Field parameters of temperature, pH, and specific conductance are also measured in the water column. Conditions in the vicinity of the sampling location are noted, depth of sample below water surface, and general flow conditions.

Sample Preservation and Handling

Samples collected which require fixing with preservative chemicals are placed in sample containers with the appropriate reagent. The samples are placed in insulated chests with ice packs or ice. Samples are kept refrigerated until they are delivered to the laboratory no later than allowable according to the holding times determined by Standard Methods. Sampling personnel contact the laboratory personnel regarding sampling delivery and analysis.

Record Keeping

Field data sheets are utilized to reconstruct sampling conditions at any time after sampling. These sheets shall contain all information regarding the site: name, date, time of sampling, weather, ambient air temperature, identification numbers, and sampler's name. Field data is to include information regarding the condition of the well head and casing, well specifics (total depth, static water level, diameter, length of casing above grade, volume of water purged), sampling date (equipment used, depth sample obtained, physical properties of sample), field measurements of pH, conductivity, temperature, and the number and type of sample containers.

Chain of custody record for all samples shall be maintained. A sample shall be considered to be in the custody of an individual if it is in the direct view of, or otherwise controlled by, the individual in custody. Storage of samples during custody shall be accomplished according to established preservation techniques in appropriately sealed and numbered storage containers. Chain of custody shall be maintained during the exchange of the samples or sealed sample container directly transferred from one individual to the next with the former custodian witnessing the signature of the recipient on the chain of custody record. Chain of custody forms shall contain the

following information: sample location names, field identification numbers, signature of collector, date and time of collection, number of containers transferred, parameters for analysis, all signatures of individuals involved in the chain of possession, description of sample condition, and any comments regarding sample collection.

Quality Assurance and Control

To check the integrity of field sampling and equipment cleaning techniques, the following field control procedures may be used. Field blanks, and occasionally trip blanks, may be used as control or external QA/QC samples to detect contamination that may be introduced in the field (atmospheric or from sampling equipment), in transit to or from the sampling site, during bottle preparation, and sample log-in or storage.

A "field blank" is collected after sampling a well that previously indicated high concentrations of the water quality parameters analyzed. The sampling equipment is cleansed and a sample of distilled water is obtained using the sampling equipment. The distilled water sample is then used to prepare the field blank.

A sample replicate is used periodically to provide quality assurance for the laboratory analysis techniques. A sample is split in the field and provided to the laboratory in two or more sampling containers.

Decontamination of Field Equipment

All field equipment is rinsed with de-ionized or distilled water. This includes the electronic water sounder probe, the bailer winch spool, Teflon coated bailer wire, filter unit, and bailers. In addition, the bailers are disassembled, washed with a non-phosphate detergent, and rinsed with pressurized distilled water.

Site Health and Safety

All sampling personnel shall receive an annual medical examination to determine the baseline physiological condition. Appropriate blood chemistry work and x-rays are taken as required.

Protective clothing is worn by all site technicians during sampling. This clothing includes protective rubberized overalls, rubber gloves, and steel-toed boots. Full-face respirators with organic filter cartridges, combustible gas and oxygen detection meters, and photoionization detectors are available for the sampler's protection.

Upon arrival at the site a visual survey is performed to determine the safety of the work place. No water quality testing is performed if there is any evidence of hazardous

waste disposal or the uncovering of suspected hazardous materials. Upon arrival at a monitoring well location, the cap is removed from an upwind position. The well head is allowed to vent for at least five minutes while sampling equipment is set up. No smoking or use of flammable materials is permitted adjacent to a well head.

Data Transaction, Reduction and Report Generation

Data analysis and interpretation are the responsibility of the Project Manager or Project Team member responsible for a particular task of the project. The data are compiled in table form for ease of presentation to highlight the significant information. The data may be input into the computer and plotted on various types of graphs and maps, or analyzed by various statistical methods.

Sampling Protocol Addendum for: Soap Shed Laundromat
Chester, Vermont

1. The person(s) sampling the wells will utilize a Photovac MicroTIP photoionization detector. Immediately upon removal of the well cap, the PID will be used to make a preliminary determination as to the VOC activity in the well.
2. A bailer will then be lowered into the well to check for the presence of free product floating on the groundwater surface. If free product is found, the well will be purged until product ceases to be observed. Product will be stored in a container that will remain on-site. The well will be allowed to recover and be repurged and checked for free product. If free product is again observed, no water quality samples will be taken. If free product is not observed, the well will be sounded, purged, and sampled as outlined above.
3. Water samples will be forwarded to Eastern Analytical, Inc of Concord, New Hampshire for analysis. Analysis will be for Volatile Organic Compounds including "BTEX" and MTBE by EPA Method 602/8015 and for TPH by EPA Method 8100.



State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
Natural Resources Conservation Council
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

JAN 30 1995
DUFRESNE-HENRY

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Hazardous Materials Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3888
FAX (802) 241-3296

January 26, 1995

Thomas Spater
P.O. Box 130
Chester, VT 05143

RE: Petroleum contamination at Soap Shed Laundromat, Chester, VT (Site #94-1731)

Dear Mr. Spater:

The Sites Management Section (SMS) has reviewed the Proposed Work Plan submitted to us by Dufresne-Henry, regarding the Soap Shed site in Chester. The Work Plan appears to satisfy all of the requirements outlined in the SMS letter dated 12/20/1994. The SMS approves of the scope of this plan, and encourages you to undertake this work as soon as possible.

After a review of our files, I have found that you have not yet provided us with proof that there is no insurance that will cover the costs for this investigation. Please forward this documentation to us as soon as you can. You must provide this proof before the Petroleum Cleanup Fund can be used to reimburse expenses after the first \$10,000 of the cleanup.

Please keep us informed as to the progress of this work. Feel free to call me if you have any questions.

Sincerely,

Richard Spiese, Acting Supervisor
Sites Management Section

cc: Bruce Cox, Dufresne-Henry

mr/sites/1731ok

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PROJECT: SOAP SHED LAUNDROMAT INITIAL SITE INVESTIGATION
JOB NO.: 415002

HEALTH AND SAFETY PLAN
FOR

INITIAL SITE INVESTIGATION

SOAP SHED LAUNDROMAT

CHESTER, VERMONT

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

PROPOSED ON-SITE ACTIVITIES:

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

PROPOSED DATE(S) OF WORK: Borings: 2/1/95
Sampling: week of 2/6/95

ANTICIPATED WEATHER CONDITIONS: temperatures, singles - 30's, possible snow or rain, light wind.

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)
Thomas Spater	Site Representative
Richard Spiese	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: SOAP SHED LAUNDROMAT INITIAL SITE INVESTIGATION
JOB NO.: 415002

Background Information

Site Status: X Active Inactive Unknown

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

The Soap Shed Laundromat is located on VT Route 103 in Chester, VT. The site consists of the laundromat, and paved and unpaved parking areas. The site is served by the municipal water and wastewater system. Other known on-site utilities include overhead powerlines. The site is generally flat with a slight grade to the southwest.

The area of known contamination is on the northerly side of the building. Additional details will be found below.

Dig Safe was contacted on January 30, 1995. The site is OK'd after 11:05 am on February 1, 1995. The Dig Safe number is 950500429.

The Chester Water & Sewer Department was contacted on January 30, 1995. Someone from the department will be on site at 8:00 am 2/1/95.

Site History:

The history of the site is not known at this time. It is known that prior to being used as a laundromat the site was a gasoline service station. The pump island was removed at the time the laundromat began operation. The three UST's formerly on the site were reportedly taken out of service in 1987.

Field Monitoring or Sampling Data From Previous Site work:

A Tank Closure Assessment was conducted at the site by Twin State Environmental, Inc. on November 22 and 29, 1994. Three (3) UST's were removed at that time; two (2) 2,100 gallon gasoline and one (1) 500 gallon gasoline. Soil from the bed of the westerly 2,100 gallon tank had peak PID readings of 66 ppm. Peak PID readings of 34 ppm were observed from the bed of the 500 gallon tank.

No other site investigation work is known to exist.

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):

Hazard Evaluation:

Task: Mon. Well Install. Low Medium High

Identification of Hazards: Gasoline, potentially other petroleum products.

Task: Decontamination Low Medium High

Identification of Hazards: Gasoline, potentially other petroleum products.

Task: Sampling Low Medium High

Identification of Hazards: Gasoline, potentially other petroleum products.

Task: Low Medium High

Identification of Hazards:

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

Drill rig, traffic, weather.

PROJECT: SOAP SHED LAUNDROMAT INITIAL SITE INVESTIGATION
JOB NO.: 415002

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 paved parking area in front of the laundromat.

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

The area of the removed UST's.

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

The drill rig and a 15 foot radius around the borehole.

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

The area of the removed 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.	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.	D	"	"
Sampling	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: SOAP SHED LAUNDROMAT INITIAL SITE INVESTIGATION
JOB NO.: 415002

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 probe)
 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.

PROJECT: SOAP SHED LAUNDROMAT INITIAL SITE INVESTIGATION
JOB NO.: 415002

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 with disposal 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.

PROJECT: SOAP SHED LAUNDROMAT INITIAL SITE INVESTIGATION
JOB NO.: 415002

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, O₂ meter, and H₂S 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.

PROJECT: SOAP SHED LAUNDROMAT INITIAL SITE INVESTIGATION
JOB NO.: 415002

EMERGENCY INFORMATION

AMBULANCE: Chester Phone: (802) 875 - 3200

HOSPITAL: Springfield Hospital
Ridgewood Road Phone: (802) 885 - 2151
Springfield, VT
(see attached map)

POLICE: Chester Phone: (802) 875 - 2233

FIRE DEPARTMENT: Chester Phone: (802) 875 - 3200

POISON CENTER: Burlington 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: Laundromat

LOCATION OF ON-SITE FIRST AID KIT: Boring contractor's vehicle.

EMERGENCY VEHICLE: The designated emergency vehicle on-site shall be that of the Dufresne-Henry, Inc. representative.

PROJECT: SOAP SHED LAUNDROMAT INITIAL SITE INVESTIGATION
JOB NO.: 415002

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>Richard Holmes</u>	<u>M & W Soils Engineering, Inc.</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Copies of this SSP have been given to:

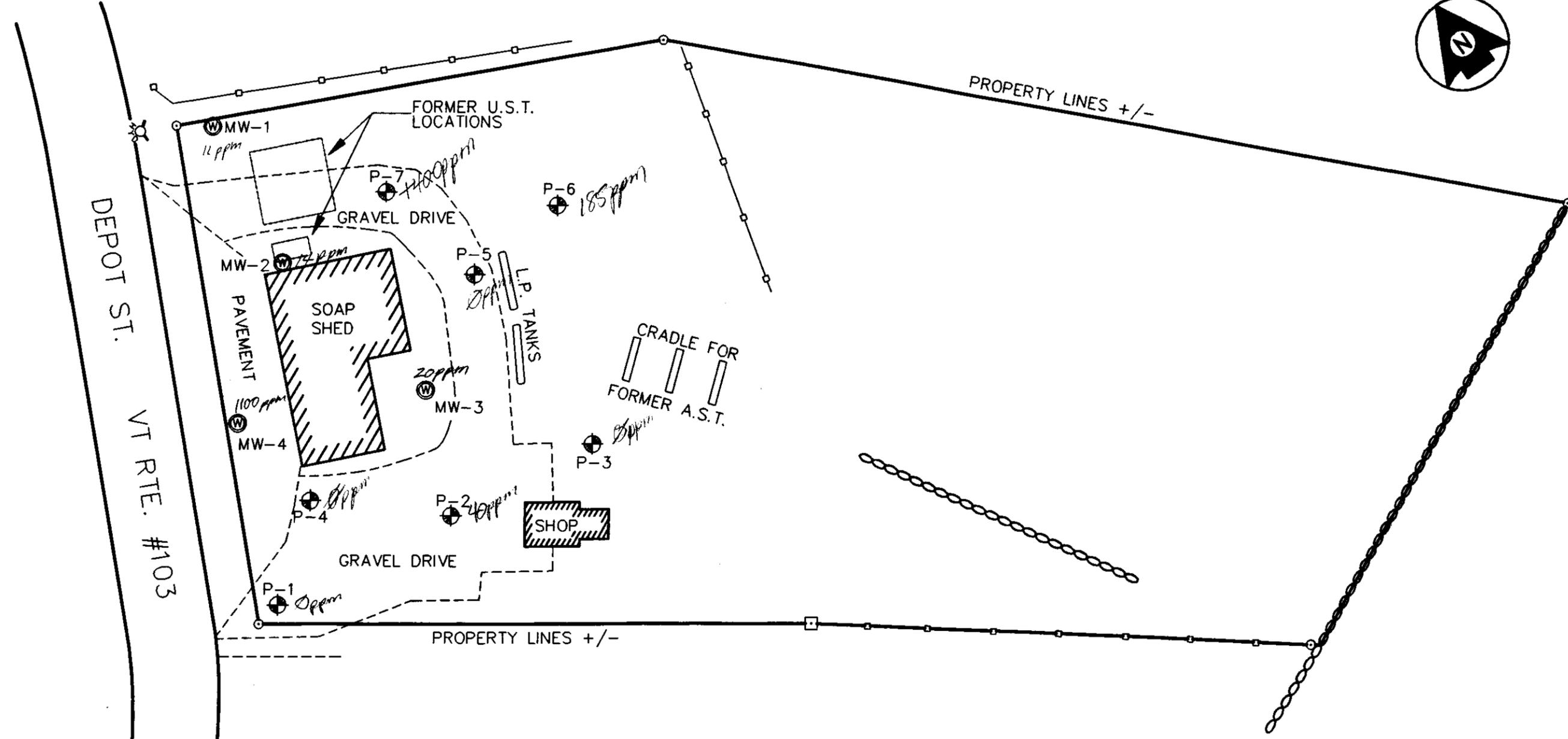
- _____
- _____
- _____
- _____
- _____

Approval Signatures:

PM _____
Div. Dir. _____

APPENDIX C

SITE PLAN



DEPOT ST.
VT RTE. #103

PID readings

LEGEND:

- SOIL PROBE
- MONITORING WELL
- STONE WALL
- WOODEN FENCE

SCALE
1" = 30'

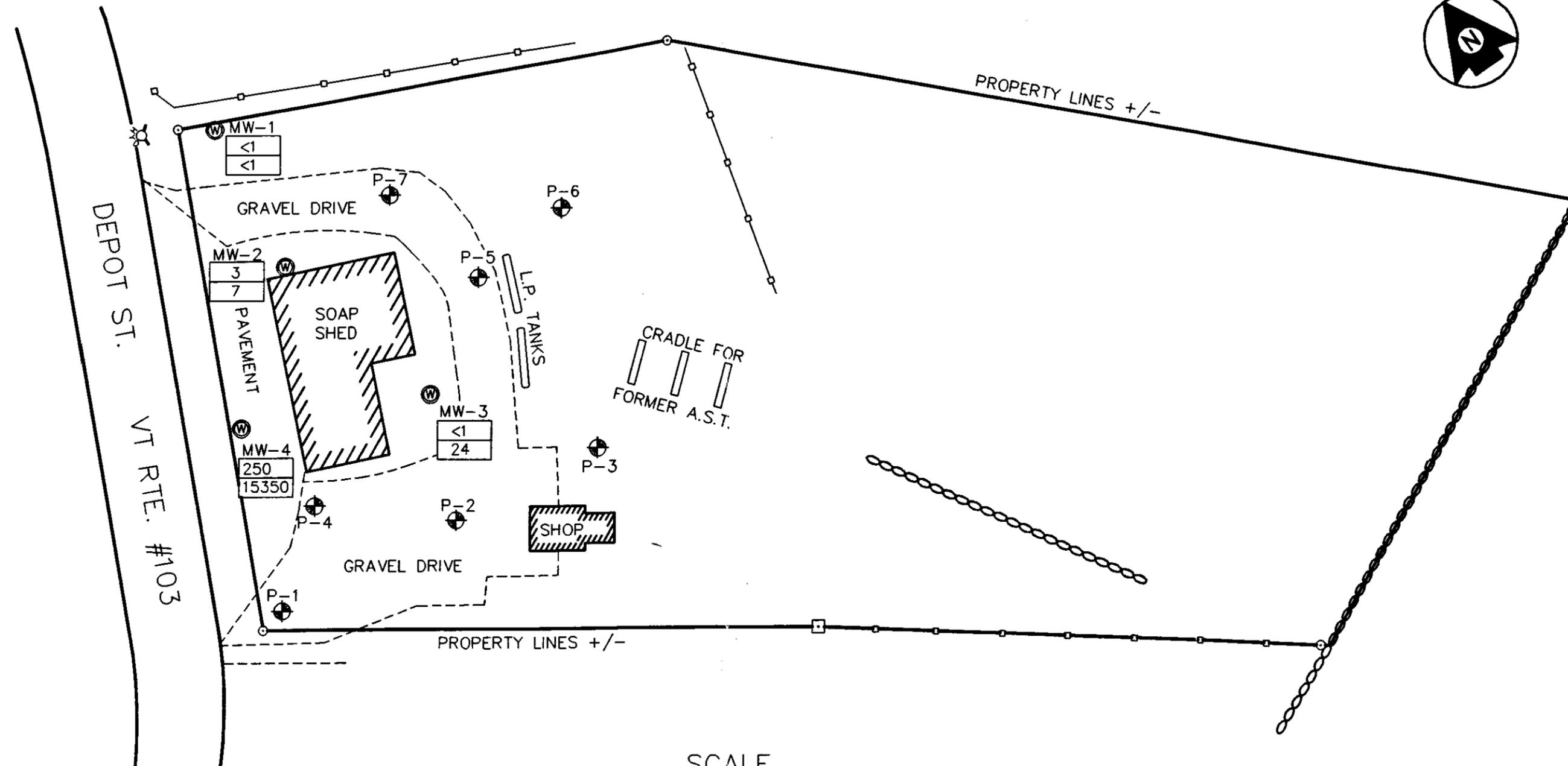
NOTE:

THIS PLAN WAS TAKEN FROM A SURVEY COMPLETED BY SOUTHERN VERMONT SURVEYS.

DH Dufresne-Henry, Inc.
Precision Park
No. Springfield,
Vermont 05150
Tel. (802)896-2261 Fax (802)896-2260

SITE PLAN OF THE SOAP SHED LAUNDROMAT
CHESTER, VERMONT

Project No. 415002
Proj. Mgr. B.H.C.
Date 2/95
B



SCALE
1" = 30'

LEGEND:

-  SOIL PROBE
-  MONITORING WELL
-  STONE WALL
-  WOODEN FENCE
- | |
|-------|
| 250 |
| 15350 |

 BENZENE CONCENTRATION
BTEX CONCENTRATION

NOTE:

THIS PLAN WAS TAKEN FROM A SURVEY COMPLETED BY SOUTHERN VERMONT SURVEYS.

DH *Henry, Inc.*
Precision Park
No. Springfield,
Vermont 05350
A DH Company
Tel. 1802896-2261 Fax 1802896-2260

SITE PLAN
OF THE
SOAP SHED LAUNDROMAT
CHESTER,
VERMONT

Project No.	415002
Proj. Mgr.	B.H.C.
Date	2/95
	B

APPENDIX D
BORING LOGS
AND
MONITORING WELL INSTALLATION REPORT

BORING LOCATION MW-1 INCLINATION V BEARING DATE START/FINISH 2/3/95 / 2/3/95
 CASING ID CORE SIZE TOTAL DEPTH 8.5 FT DRILLED BY: M & W SOILS ENGINEERING, INC. (M.D.)
 GROUND EL (AD) 497.46 DEPTH TO WATER/DATE 2.55 FT/ 2/8/95 LOGGED BY: B. COX

ELEV AD FT	SAMPLE			SAMP OD IN	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
	DEPTH FT	TYPE AND NO.	B		REC IN	PENETRA- TION IN			
492.46	5		.				4" SSA	4 1/2"/FB	Medium brown, silty SAND. Saturated at 30".
490.46	7	SS-1	9 11 10 12	2	24	24			Medium brown gray, medium dense, silty SAND. Very fine - fine grained, well sorted sand. 30%+ non plastic fines. Trace mica, mafic minerals. Saturated. No odor or staining. 11 ppm.
488.96	8.5						4 1/4" HSA	8"/CCH	Probable silty SAND similar to above to 7'6"±, then probable weathered bedrock.
									Refusal on HSA at 8'6" on probable bedrock. Set 5'6" of 2" dia, .010" slot, threaded, flush joint, Schd 40 PVC at 8'6". Sand backfill to 2'6". Bentonite seal 2' - 2'6". Grouted in flush watertight aluminum monitoring well box.

B - Penetration resistance, 8blows/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 N - Denison
 F - Fixed piston P - Pitcher
 O - Osterberg
 SAMP OD - Outside diameter of sampling spoon

NOTES
 SSA = Solid Stem Auger
 HSA = Hollow Stem Auger
 FB = Finger Bit
 CCH = Conical Cutter Head
 ppm Refers to PID reading (10.6 eV lamp)
 Top of PVC elev = 497.14

SOAP SHED LAUNDROMAT
 INITIAL SITE INVESTIGATION
 CHESTER, VERMONT
 DATE: 2/3/95 PROJECT: 415002
 PAGE 1 OF 1 LOG OF BORING: MW-1

BORING LOCATION MW-2 INCLINATION V BEARING DATE START/FINISH 2/3/95 / 2/3/95
 CASING ID CORE SIZE TOTAL DEPTH 5.25 FT DRILLED BY: M & W SOILS ENGINEERING, INC. (M.D.)
 GROUND EL (AD) 496.87 DEPTH TO WATER/DATE 2.85 FT/ 2/8/95 LOGGED BY: B. COX

ELEV AD FT	SAMPLE			SAMP OD IN	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
	DEPTH FT	TYPE AND NO.	B		REC IN	PENETRA- TION IN			
492.37	4.5						4 1/4" HSA	8"/CCH	Medium gray brown, silty SAND. Saturated below 2'10".
491.62	5.25	SS-1	8 14*	2	8	8	* 14/3"		Medium gray, medium dense, silty SAND. Very fine - fine grained, well sorted, predominately quartz sand. 30%+ non plastic fines. Trace mica, mafic minerals. Saturated. Slight oily odor, no staining. 14 ppm.
									Refusal on HSA at 5'3" on probable bedrock. Set 2'6" of 2" dia, .010" slot, threaded, flush joint, Schd 40 PVC at 5'2". Sand backfill to 2' Bentonite seal 1'6" - 2'. Grouted in flush watertight aluminum 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 N - 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 = 496.59

SOAP SHED LAUNDROMAT
 INITIAL SITE INVESTIGATION
 CHESTER, VERMONT
 DATE: 2/3/95 PROJECT: 415002

BORING LOCATION MW-3 INCLINATION V BEARING DATE START/FINISH 2/3/95 / 2/3/95
 CASING ID CORE SIZE TOTAL DEPTH 5.42 FT DRILLED BY: M & W SOILS ENGINEERING, INC. (M.D.)
 GROUND EL (AD) 495.92 DEPTH TO WATER/DATE 2.35 FT/ 2/8/95 LOGGED BY: B. COX

ELEV AD FT	SAMPLE			SAMP OD IN	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
	DEPTH FT	TYPE AND NO.	B		REC IN	PENETRA- TION IN			
491.92	4						4 1/4" HSA	8"/CCH	Medium gray, silty SAND. Slight oily odor.
490.67	5.25	SS-1	11 23 24*	2	12	15	* 24/3"		Medium gray brown, medium dense - dense, silty SAND. Very fine - medium grained, moderately well sorted, predominately quartz sand. 20% - 30% non plastic fines. Abundant mica, trace mafic minerals. Saturated. Oily odor, possible slight staining. 20 ppm.
490.50	5.42						4 1/4" HSA	8"/CCH	Probable silty sand as above.
									Refusal on HSA at 5'5" on probable bedrock. Set 3'6" of 2" dia, .010" slot, threaded, flush joint, Schd 40 PVC at 5'5". Sand backfill to 2'6". Bentonite seal 2' - 2'6". Grouted in flush watertight aluminum 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 N - 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 = 495.60

SOAP SHED LAUNDROMAT
 INITIAL SITE INVESTIGATION
 CHESTER, VERMONT
 DATE: 2/3/95 PROJECT: 415002
 PAGE 1 OF 1 LOG OF BORING: MW-3

BORING LOCATION MW-4 INCLINATION V BEARING DATE START/FINISH 2/3/95 / 2/3/95
 CASING ID CORE SIZE TOTAL DEPTH 5.5 FT DRILLED BY: M & W SOILS ENGINEERING, INC. (M.D.)
 GROUND EL (AD) 496.14 DEPTH TO WATER/DATE 3.00 FT/ 2/8/95 LOGGED BY: B. COX

ELEV AD FT	SAMPLE			SAMP OD IN	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
	DEPTH FT	TYPE AND NO.	B		REC IN	PENETRA- TION IN			
491.64	4.5						4 1/4" HSA	8"/CCH	Medium gray, silty SAND. Strong gasoline odor.
491.39	4.75	SS-1	12*	2	3	3	* 12/3"		Medium - dark gray brown, medium dense, silty SAND Very fine - rarely medium grained, well sorted, predominately quartz sand. 20% - 30% non plastic fines. Saturated. Moderate - strong oily gaso- line odor. 1100+ ppm.
									Refusal on HSA at 4'9" on probable bedrock. Set 3' of 2" dia, .010" slot, threaded, flush joint PVC at 4'6". Sand backfill to 1'6". Ben- tonite seal 1' - 1'6". Grouted in flush water- tight aluminum 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 N - 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 = 495.86

SOAP SHED LAUNDROMAT
 INITIAL SITE INVESTIGATION
 CHESTER, VERMONT
 DATE: 2/3/95 PROJECT: 415002
 PAGE 1 OF 1 LOG OF BORING: MW-4

BORING LOCATION INCLINATION V BEARING DATE START/FINISH 2/3/95 / 2/3/95
 CASING ID CORE SIZE TOTAL DEPTH FT DRILLED BY: M & W SOILS ENGINEERING, INC. (M.D.)
 GROUND EL (MSL) DEPTH TO WATER/DATE FT/ LOGGED BY: B. COX

ELEV MSL FT	SAMPLE			SAMP OD IN	LENGTH		REMARKS ON ADVANCE OF BORING	SIZE/TYPE BIT USED TO ADVANCE BORING	SOIL AND ROCK DESCRIPTION
	DEPTH FT	TYPE AND NO.	B		REC IN	PENETRA- TION IN			
									P-1 0' - 5' Medium brown gray silty SAND. Slight or- ganic odor. 0 ppm. 5' - 7'± As above, no odor. Refusal on probable bedrock.
									P-2 0' - 3' Medium brown gray, silty SAND. Oil odor. Refusal on probable bedrock. 40 ppm.
									P-3 0" - 18" Medium brown, silty SAND. No odor. 0 ppm.
									P-4 0' - 8'± Medium brown gray, silty SAND. Slight unknown odor above water table. 0 ppm.
									P-5 0' - 2' Medium brown gray, silty SAND. No odor. 0 ppm.
									P-6 0' - 3'9"± Medium brown gray, silty SAND. Oil odor. 185 ppm.
									P-7 0' - 9' Medium brown gray, silty SAND. Strong gasoline and oil odor. 400+ ppm.

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 N - Denison
 F - Fixed piston P - Pitcher
 O - Osterberg
 SAMP OD - Outside diameter of sampling spoon

NOTES
 All borings performed with 4" solid stem augers.
 ppm Refers to PID reading (10.6 eV lamp)

SOAP SHED LAUNDROMAT
 INITIAL SITE INVESTIGATION
 CHESTER, VERMONT
 DATE: 2/3/95 PROJECT: 415002
 PAGE 1 OF 1 LOG OF BORING:

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

TO DUFRESNE-HENRY ENGINEERING ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME SOAP SHED LAUNDROMAT LOCATION CHESTER, VT
REPORT SENT TO BRUCE COX PROJ. NO. _____
SAMPLE SENT TO RETAINED BY DUFRESNE-HENRY OUR JOB NO. 6284-95

SHEET 1 OF 1
DATE 2/3/95
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 <u>2'6"</u>	AT <u>OPENHOLE</u>	HOURS		HSA	SS		DATE STARTED <u>2/3/95</u>
AT _____	AT _____	HOURS		<u>4 1/4"</u>	<u>1 1/2"</u>		DATE COMPL. <u>2/3/95</u>
					<u>140#</u>	BIT	BORING FORMAN <u>M.D. & R.H.</u>
					<u>30"</u>		INSPECTOR <u>B. COX</u>
							SOILS ENGR. _____

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler			MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect.	SAMPLE		
				0-6	6-12	12-18				NO.	PEN	REC
5'		5' - 7'	SS	9	11			GREYISH BROWN SILTY FINE SAND	1	24'	24'	
				10	12			SAME MATERIAL				
							8'6"	REFUSAL - BEDROCK OR BOULDER				
10'								INSTALLED 2" PVC WELL AT 8'6" SLOTTED FROM 3'-8'6" WITH 0.010" SLOT SCREEN FILTER SAND TO 2'6" BENTONITE FROM 1'6"-2'6"				
								MATERIALS USED: 5' OF 2" PVC 0.010" SLOT SCREEN 3' OF 2" PVC SOLID RISER 20# OF BENTONITE CHIPS 125# OF SAND 40# OF CEMENT MIX 1 6" MANHOLE COVER 1 2" SLIDE CAP 1 2" EXPANSION CAP				

GROUND SURFACE TO 8'6"

USED _____ 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 8'6"
ROCK CORING _____
SAMPLES 1
HOLE NO. MW-1

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

TO DUFRESNE-HENRY ENGINEERING ADDRESS NORTH SPRINGFIELD, VT
 PROJECT NAME SOAP SHED LAUNDROMAT LOCATION CHESTER, VT
 REPORT SENT TO BRUCE COX PROJ. NO. _____
 SAMPLE SENT TO RETAINED BY DUFRESNE-HENRY OUR JOB NO. 6284-95

SHEET 1 OF 1
 DATE 2/3/95
 HOLE NO. MW-2
 LINE & STA. _____
 OFFSET _____

GROUND WATER OBSERVATIONS		Type	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT <u>2'10"</u>	AT _____ HOURS		HSA	SS	_____	DATE STARTED <u>2/3/95</u>
*WELL COMPLETION		Size I. D.	<u>4 1/4"</u>	<u>1 1/2"</u>	_____	DATE COMPL. <u>2/3/95</u>
AT _____	AT _____ HOURS	Hammer Wt.	_____	<u>140#</u>	BIT	BORING FORMAN <u>M.D. & R.H.</u>
		Hammer Fall	_____	<u>30"</u>	_____	INSPECTOR <u>B. COX</u>
LOCATION OF BORING						SOILS ENGR.

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler			MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness. Drilling time, seams and ect.	SAMPLE		
				From 0-6	6-12	To 12-18				NO.	PEN	REC
5'		<u>4'6" - 5'4"</u>	SS	8	<u>14/3"</u>			5'4"	GREY SILTY FINE SAND			
									REFUSAL - BEDROCK OR BOULDER	1	9"	9"
10'									INSTALLED 2" PVC WELL AT 5'2" SLOTTED FROM 2'6"-5'2" WITH 0.010" SLOT SCREEN FILTER SAND TO 2' BENTONITE FROM 1'8"-2'			
									MATERIALS USED: 5' OF 2" PVC 0.010" SLOT SCREEN 3' OF 2" PVC SOLID RISER 10# OF BENTONITE CHIPS 50# OF SAND 40# OF CEMENT MIX 1 6" MANHOLE COVER 1 2" SLIDE CAP 1 2" EXPANSION CAP			

GROUND SURFACE TO 5'4" USED HSA CASING THEN DROVE SS 9"

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>5'4"</u> ROCK CORING _____ SAMPLES <u>1</u> HOLE NO. <u>MW-2</u>
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M & W Soils Engineering, Inc.
 Main St. Charlestown, NH 03603

TO DUFRESNE-HENRY ENGINEERING ADDRESS NORTH SPRINGFIELD, VT
 PROJECT NAME SOAP SHED LAUNDROMAT LOCATION CHESTER, VT
 REPORT SENT TO BRUCE COX PROJ. NO. _____
 SAMPLE SENT TO RETAINED BY DUFRESNE-HENRY OUR JOB NO. 6284-95

SHEET 1 OF 1
 DATE 2/3/95
 HOLE NO. MW-3
 LINE & STA. _____
 OFFSET _____

GROUND WATER OBSERVATIONS		Type Size I. D. Hammer Wt. Hammer Fall	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT <u>2'5"</u> AT _____ HOURS			HSA	SS		DATE STARTED <u>2/3/95</u>
*WELL COMPLETION			4 1/4"	1 1/2"		DATE COMPL. <u>2/3/95</u>
AT _____ AT _____ HOURS				140#	BIT	BORING FORMAN <u>M.D. & R.H.</u>
				30"		INSPECTOR <u>B. COX</u>
						SOILS ENGR. _____

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler			MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect.	SAMPLE		
				0-6	6-12	12-18				NO.	PEN	REC
5'							DENSE - WET	5'5"	GREY SILTY FINE SAND			
		4' - 5'5"	SS	11	23				REFUSAL - BEDROCK OR BOULDER	1	15'	12'
				24/5'								
10'									INSTALLED 2" PVC WELL AT 5' SLOTTED FROM 2'6"-5' WITH 0.010" SLOT SCREEN FILTER SAND TO 2'6" BENTONITE FROM 1'6"-2'6"			
									MATERIALS USED: 5' OF 2" PVC 0.010" SLOT SCREEN 3' OF 2" PVC SOLID RISER 10# OF BENTONITE CHIPS 100# OF SAND 40# OF CEMENT MIX 1 6" MANHOLE COVER 1 2" SLIDE CAP 1 2" EXPANSION CAP			

GROUND SURFACE TO 5'5"

USED HSA CASING THEN DROVE SS 15"

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	5'5"
ROCK CORING	
SAMPLES	1
HOLE NO.	MW-3

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

TO DUFRESNE-HENRY ENGINEERING ADDRESS NORTH SPRINGFIELD, VT
PROJECT NAME SOAP SHED LAUNDROMAT LOCATION CHESTER, VT
REPORT SENT TO BRUCE COX PROJ. NO. _____
SAMPLE SENT TO RETAINED BY DUFRESNE-HENRY OUR JOB NO. 6284-95

SHEET 1 OF 1
DATE 2/3/95
HOLE NO. MW-4
LINE & STA. _____
OFFSET _____

GROUND WATER OBSERVATIONS			CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT <u>3'4"</u>	AT _____	HOURS _____	HSA	SS		
*WELL COMPLETION			Size I. D.	<u>4 1/4"</u>	<u>1 1/2"</u>	DATE STARTED <u>2/3/95</u>
AT _____ AT _____ HOURS _____			Hammer Wt.		<u>140#</u>	DATE COMPL. <u>2/3/95</u>
			Hammer Fall		<u>30"</u>	BORING FORMAN <u>M.D. & R.H.</u>
						INSPECTOR <u>B. COX</u>
						SOILS ENGR. _____

LOCATION OF BORING

Depth	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler			MOISTURE DENSITY OF CONSTANT	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE		
				From 0-6	6-12	To 12-18				NO.	PEN	REC
								2'	ASPHALT PAVEMENT			
									GREY GRAVELLY SAND WITH PIPES AND FILL (STRONG GAS ODOR)			
5'		4'5" - 4'9"	SS	12				4'9"	REFUSAL - BEDROCK OR BOULDER	1	6"	6"
									INSTALLED 2" PVC WELL AT 4'6" SLOTTED FROM 1'6"-4'6" WITH 0.010" SLOT SCREEN			
									MATERIALS USED: 5' OF 2" PVC 0.010" SLOT SCREEN 2' OF 2" PVC SOLID RISER 10# OF BENTONITE CHIPS 75# OF SAND 40# OF CEMENT MIX 1 6" MANHOLE COVER 1 2" SLIDE CAP 1 2" EXPANSION CAP			

GROUND SURFACE TO 4'9"

USED HSA CASING THEN DROVE SS 6"

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 4'9"
ROCK CORING _____
SAMPLES 1

HOLE NO. MW-4

SOAP SHED LAUNDROMAT
INITIAL SITE INVESTIGATION
CHESTER, VERMONT

2/3/95

Dufresne-Henry, Inc. - Bruce Cox on site at 8:00 am.
M & W Soils Engineering, Inc. - Myron Domingue, Richard Holmes already there.
Met with Bud from the Chester Water and Sewer Dept about utility locations.
The Photovac was calibrated at 8:10 am.

MW-1

Started boring at 8:15 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 from the Soap Shed Laundromat. Drilled with 4 1/4" hollow stem augers taking split spoon samples starting at 5'. All samples were screened for VOC's with a Photovac MicroTIP HL-2000 (10.6 eV lamp, calibrated with isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. Total depth of the boring was 8'6" with refusal on probable bedrock. The general geologic column is silty sand to the limit of the boring. No evidence of contamination (visual or olfactory) was observed in the samples or on the tools. A PID reading of 11 ppm was observed from a sample headspaced at ambient temperature. The water table was encountered at 30". Installed a 5'6" long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 8'6". All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 2'6". A bentonite seal was installed from 2' - 2'6". A watertight aluminum monitoring well box was grouted in flush at the surface.

Materials: 5'6" of 2", .010" slot, threaded, flush joint, SCHD 40 PVC.
2'10" of 2", solid wall, threaded, flush joint, SCHD 40 PVC.
125 lb± of silica sand.
20 lb± of bentonite chips.
40 lb± of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" aluminum monitoring well box.

MW-2

Started boring at 10:05 am±. Clean augers not previously used on the site were used. The bit was washed in ALCONOX prior to reuse. All water used for cleaning split spoons and other tools was obtained from the Soap Shed Laundromat. Drilled with 4 1/4" hollow stem augers taking split spoon samples starting at 4'6". All samples were screened for VOC's with a Photovac MicroTIP HL-2000 (10.6 eV lamp, calibrated with isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. Total depth of the boring was 5'3" with refusal on probable bedrock. The general geologic column is silty sand to the limit of the boring. A slight oily odor was observed

in the 4'6" - 5'3" sample. A PID reading of 14 ppm was observed from a sample headspaced at ambient temperature. The water table was encountered at 2'10". Installed a 2'6" long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 5'2". All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 2'. A bentonite seal was installed from 1'6" - 2'. A watertight aluminum monitoring well box was grouted in flush at the surface.

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

MW-3

Started boring at 11:00 am. Clean augers not previously used on the site were used. The bit was washed in ALCONOX prior to reuse. All water used for cleaning split spoons and other tools was obtained from the Soap Shed Laundromat. Drilled with 4 1/4" hollow stem augers taking split spoon samples starting at 4'. All samples were screened for VOC's with a Photovac MicroTIP HL-2000 (10.6 eV lamp, calibrated with isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. Total depth of the boring was 5'5" with refusal on probable bedrock. The general geologic column is silty sand to the limit of the boring. A slight oily odor was observed in the 4' - 5'3" sample. A PID reading of 20 ppm was observed from a sample headspaced at ambient temperature. The water table was encountered at 2'5". Installed a 3'6" long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 5'5". All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 2'6". A bentonite seal was installed from 2' - 2'6". A watertight aluminum monitoring well box was grouted in flush at the surface.

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

MW-4

Started boring at 12:00 noon. Clean augers not previously used on the site were used. The bit was washed in ALCONOX prior to reuse. All water used for cleaning

split spoons and other tools was obtained from the Soap Shed Laundromat. Drilled with 4 1/4" hollow stem augers taking split spoon samples starting at 5'. All samples were screened for VOC's with a Photovac MicroTIP HL-2000 (10.6 eV lamp, calibrated with isobutylene). Representative soil samples from each split spoon were stored in clear glass jars and retained by Dufresne-Henry. Total depth of the boring was 5'6" with refusal on probable bedrock. The general geologic column is silty sand to the limit of the boring. A strong gasoline odor was observed in the 5' - 5'6" sample. A PID reading of 1100+ ppm was observed from a sample headspaced at ambient temperature. The water table was encountered at 3'4". Installed a 3' long, 2" diameter, .010" machine slotted, threaded, flush joint, Schedule 40 PVC well at 4'6". All pipe came from factory sealed plastic bags. The annular space was backfilled with clean silica sand to 1'6". A bentonite seal was installed from 1' - 1'6". A watertight aluminum monitoring well box was grouted in flush at the surface.

Materials: 3' of 2", .010" slot, threaded, flush joint, SCHD 40 PVC.
1'4" of 2", solid wall, threaded, flush joint, SCHD 40 PVC.
100 lb± of silica sand.
10 lb± of bentonite chips.
40 lb± of concrete mix.
1 2" push-on PVC cap.
1 2" expanding gasket cap.
1 6" aluminum monitoring well box.

Test Probes

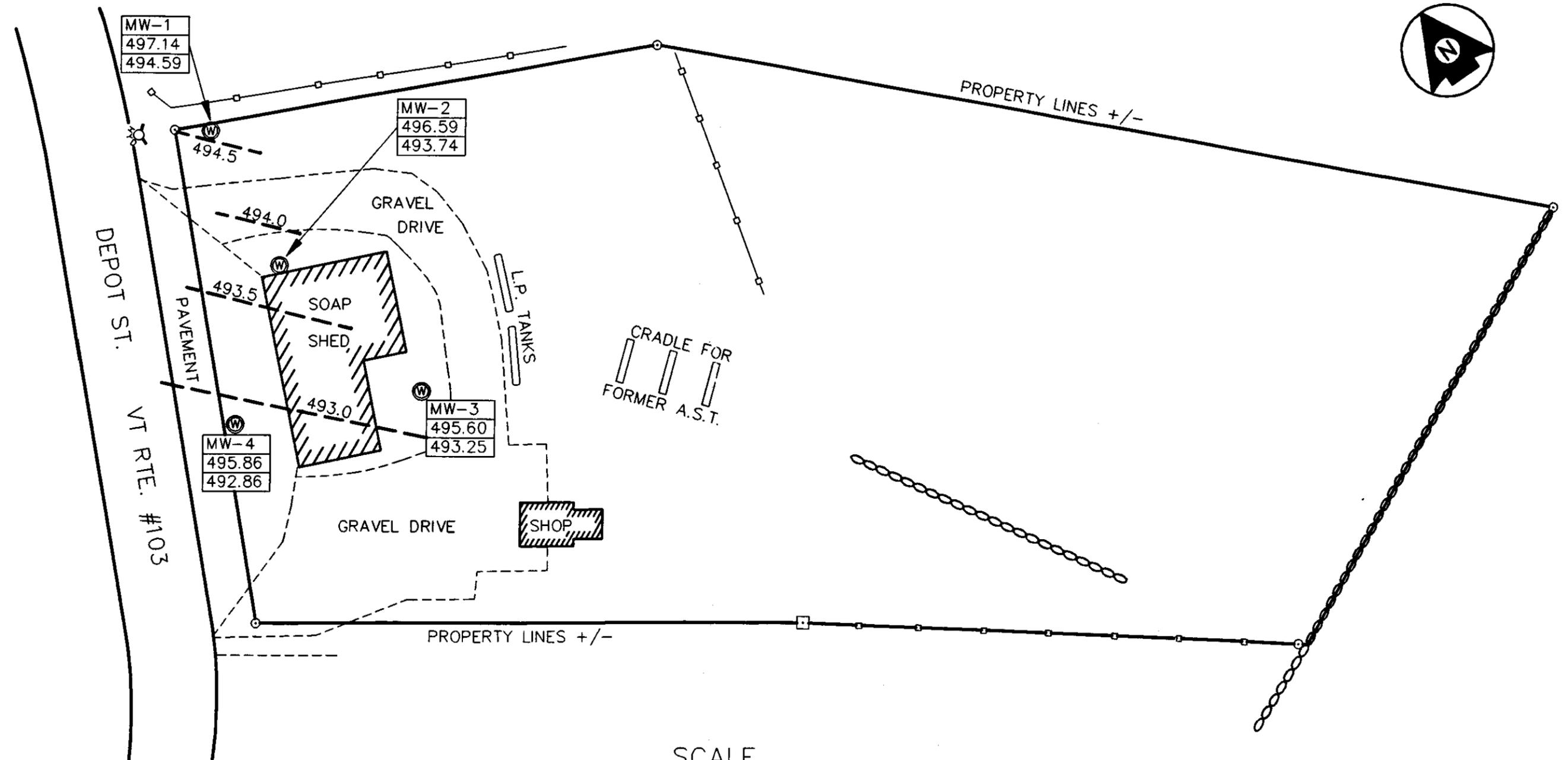
Because of the presence of gasoline and probable heating oil, a series of 7 test probes were made at various locations on the site. All probes were done using 4" solid stem augers with soil samples obtained from the auger flights. All soil samples were screened for VOC's as above. Evidence of oil contaminated soil was found in most locations.

Visitors: Thomas Spater.

Weather: Sunny, singles - teens am, teens - 20's pm, calm.

Off site: 3:00 pm±.

APPENDIX E
GROUNDWATER CONTOUR MAP



SCALE
1" = 30'

LEGEND:

- | |
|--------|
| MW-3 |
| 495.60 |
| 493.25 |

MONITORING WELL
TOP OF PVC ELEVATION
GROUNDWATER ELEVATION
- | |
|---|
| ⊙ |
|---|

MONITORING WELL
- ⊗⊗⊗⊗⊗
STONE WALL
- WOODEN FENCE

NOTE:

THIS PLAN WAS TAKEN FROM A SURVEY COMPLETED BY SOUTHERN VERMONT SURVEYS.

DH
Dufresne-Henry, Inc.
A DMI Company
Precision Park
No. Springfield,
Vermont 05150
Tel. 1802386-2261 Fax 1802386-2260

GROUNDWATER CONTOURS FOR
FEBRUARY 8, 1995 AT THE
SOAP SHED LAUNDROMAT
CHESTER, VERMONT

Project No. 415002
Proj. Mgr. B.H.C.
Date 2/95
B

APPENDIX F
POTENTIAL RECEPTOR PLAN

**RECEPTOR STUDY
WELLS WITHIN ONE-HALF MILE OF SITE**

Well ID #	Owner	Well Depth (ft)	Over-Burden (ft)	Casing Length (ft)
2	U.S.G.S.	32	44	30
9	U.S.G.S.	27		21
18	Ralph Cummings	98	25	
134	Seely Norton	295	5	15
138	Albert Wilder	160	20	30
174	VT. Talc Co.	183	2	21
234	Horace Holden	125	45	55
242	John Hennessey	255	35	44
283	Lee & Kathy Veysey, Hollis Veysey	298	25	35
403	Richard Sticker	175	35	38
430	Linda Smith, Omar Austin	585	3	20

Notes:

1. Well ID # is that shown on the maps of the Vermont Agency of Natural Resources, Water Supply Division.
2. Owner is as recorded in the ANR WSD database and may not be current.
3. The two USGS wells are observation wells.

APPENDIX G

CONTRACT LABORATORY ANALYTICAL REPORT

February 16, 1995

Oscar Garcia
Dufresne-Henry
Precision Park
North Springfield, VT 05150

Subject: Laboratory Report

Eastern Analytical, Inc. ID #: 1841 DUF
Client Identification: 415002/Soap Shed Laundromat
Sample Quantity/Type: 4 aqueous
Date Received: 2/9/95

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.

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.

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

Sincerely,



William Brunkhorst
President

LABORATORY REPORT

Eastern Analytical, Inc. ID#: 1841 DUF

Client: Dufresne-Henry
Client Designation: 415002/Soap Shed Laundromat

Sample Qty/Type: 4 aqueous
Date Received: February 9, 1995

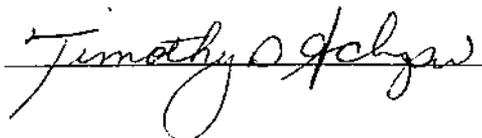
Petroleum Hydrocarbons

Sample ID:	1	2	3	4
Matrix:	Aqueous	Aqueous	Aqueous	Aqueous
Date of Extraction:	2/9/95	2/9/95	2/9/95	2/9/95
Date of Analysis:	2/10/95	2/10/95	2/10/95	2/10/95
Units:	mg/L	mg/L	mg/L	mg/L
Analyst:	NZ	NZ	NZ	NZ
Method:	8100(mod)	8100(mod)	8100(mod)	8100(mod)

Identification	Carbon Range				
None Identified	N/A	< 0.5	< 0.5	< 0.5	
Unknown*	C8-C16				26

* Resembles Gasoline

Approved By: Timothy Schaper, Organics Supervisor



LABORATORY REPORT

Eastern Analytical, Inc. ID#: 1841 DUF

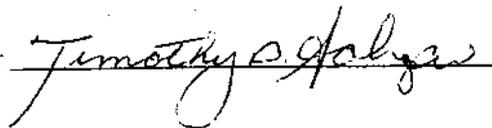
Client: Dufresne-Henry
Client Designation: 415002/Soap Shed Laundromat

Sample Qty/Type: 4 aqueous
Date Received: February 9, 1995

Volatile Organic Compounds

Sample ID:	1	2	3	4
Matrix:	Aqueous	Aqueous	Aqueous	Aqueous
Date of Analysis:	2/13/95	2/13/95	2/13/95	2/13/95
Units:	µg/L	µg/L	µg/L	µg/L
Analyst:	TML	TML	TML	TML
EPA Method:	602	602	602	602
Dilution Factor:	1	1	1	10
Benzene	<1	3	<1	250
Toluene	<1	3	3	7,600
Ethylbenzene	<1	<1	8	1,000
Total Xylenes	<1	1	13	6,500
EPA Method:	8015	8015	8015	8015
MTBE	<20	<20	<20	<200

Approved By: Timothy Schaper, Organics Supervisor



1841

CHAIN OF CUSTODY FORM

DH Dufresne-Henry, Inc.

Precision Park
No. Springfield, VT 05150 (802) 886-2261

Generator: Soap Shed Laundry

Page 1 of 1

Facility #:

Generator Rep:

DH W/O #: 415002

Return To: Oscar Garcia

Client Name:

Client Job #:

Address:
(If different)

Sampled By: Oscar Garcia

ID #	Date	Time	C-Comp Or D-Desc	W-Water L-Liquid S-Solid	Number/Size Containers	Field Preserved Yes or No	Field Filtered Yes or No	Analysis Requested/Remarks	Est. Lab Cost
1	2-8-95	9:55	D	W	2-40ml	HoL	NO	BTEX, MTBE, 8100	
2		10:10							
3		10:20							
4		10:35							
1		9:55			1-liter	No			
2		10:10							
3		10:20							
4		10:35							

Generator Rep. Authorization:

Estimated Lab Analysis Total \$

Relinquished By: [Signature] Date: 2/9/95 Time: 3:30

Received By: [Signature] Date: 2/9/95 Time: 9:50 AM

Relinquished By: Date: Time:

Received By: Date: Time:

Relinquished By: Date: Time:

Received By: Date: Time:

PLEASE RETURN COMPLETED CHAIN OF CUSTODY FORM WITH ANALYSIS RESULTS

Vermont Samples