

MAY 28 10 10 AM '97  
May 28, 1997

Mr. John C. McIsaac, Sr. V.P.  
Agri-Mark  
P.O. box 5800  
Lawrence, MA 01842-5800

Re: Contaminated Soil Removal  
Billings Commerce Park Lot #1  
Wilder, Vermont  
DH 0870007

Dear Mr. McIsaac:

Dufresne-Henry performed oversight of the excavation of contaminated soils at the garage of the former Billings Dairy in Wilder, Vermont per our agreement of May 2, 1997. It is our understanding that this property is under contract for sale to King Arthur Flour who intends to clear the site and construct of 40,000 to 50,000 square foot, slab on grade building. The area now occupied by the garage building will be part of a paved parking area for the new facility. It is also our understanding that it is the goal of both the seller and the buyer to remediate the property by removing as much contaminated soil as practical.

The purpose of this letter is to present our findings to date, and outline additional remedial steps that will allow the State of Vermont, Waste Management Division (WMD) to accept conditions at the site as adequately documented, remediated and controlled.

A Phase II Assessment of the property was conducted by Bruno Associates in early April 1997. The results were detailed in a memorandum from Shannon Larocque of Bruno to attorney Dan Hershenson, and in a Phase II Environmental Site Assessment report dated May 1, 1997. The identified problems were petroleum contamination in the soil and groundwater immediately adjacent to the floor pit inside the garage and a high toluene reading in a soil sample taken from the location of 55 gallon drum which had been noted in the Phase I investigation. Beyond these findings, it had been determined that the underground fuel oil tank for the garage building was still in place, and that there were one or more floor drains in the garage that should be investigated. Thus, the purpose of Dufresne-Henry's work at the site was threefold:

- Observe the removal and report on the condition of the fuel oil tank,
- Investigate the condition, discharge point(s) and potential contamination associated with the floor drain,

John C. McIsaac  
May 28, 1997  
Page 2

- Observe the excavation of contaminated soil from the floor pit and drum areas, and work with the contractor to define limits of excavation and obtain the samples necessary to obtain approval for offsite disposal.

As shown on the attached location map, the site is on the east side of Vermont Route 5, about one mile north of the Village of Wilder. The recently constructed Dothan Brook School is located across Route 5 due west, and upgradient of the site.

Initial field investigations and excavation for this phase of the work began on Monday May 5, 1997 and were completed on Wednesday May 7, 1997. A memorandum detailing these field investigations is attached, as are copies of all laboratory reports. Follow-up excavation to remove the contaminated soil near the former site of the 55 gallon drum was completed on Friday May 24, 1997.

**Underground Storage Tank** - The 1,000 gallon fuel oil UST was successfully removed, and there was no evidence of contamination. Due to the size and use of the tank, no formal closure assessment is required for submittal to the State of Vermont.

**Floor Drains** - The floor drains in the east and west sections of the building were determined to be connected to a common 3-inch diameter clay tile pipe. Oily sludge taken from the sump of the drain in the east part of the building was drummed for disposal. The outlet location for the floor drain line was found to be a severely deteriorated tank located near the northeast corner of the building. The tank crumbled during excavation. The soil surrounding the tank contained evidence of contamination. Field readings taken with a photoionization detector did not indicate a significant presence of volatile organic compounds with a photoionization potential of 10.6 eV or lower. Approximately 25 cubic yards of soil was excavated and polyencapsulated on-site, pending analytical results to allow off-site disposal.

On the day following excavation, there were surface droplets of oil on the water standing in the excavation. The surface was skimmed with a vacuum truck. Groundwater and soil samples were obtained for lab analysis. The soil sample was a composite of several locations around the perimeter of the hole, taken just above the standing water.

The groundwater sample, designated FD aqueous, was analyzed for the eight RCRA metals, volatile organics (VOC's) and total petroleum hydrocarbons (TPH). All metals were below method detection limits. Several VOC's were detected, all but one are hydrocarbons representative of oil contamination. None exceed the current enforcement standard in the 1988 Chapter 12 groundwater rules, or the proposed standards in the January 1997 revision to the rules. Tetrachloroethene was the one chlorinated compound detected, at a concentration of 4  $\mu\text{g}/\text{l}$ . This exceeds the current 1988 enforcement standard of 0.7  $\mu\text{g}/\text{l}$ , but does not the

proposed standard of 5  $\mu\text{g}/\ell$ . There were 1.4  $\text{mg}/\ell$  of TPH identified as fuel and lubricating range organics.

The sample from soil remaining in the floor drain discharge area was analyzed for the same parameters as the water. All metals and VOC's were below method detection limits. TPH was measured at 210  $\text{mg}/\text{kg}$ .

Because it was recognized that not all of the contaminated soil had been removed from the floor drain discharge area, several test pits were excavated to the water table in the apparent downgradient direction so that samples could be screened with the PID. The only location which had an odor and a positive PID reading was at TP-3. There was an odor of gasoline, associated with a PID reading of 338 ppm. A soil sample was taken, and analyzed for gasoline indicator compounds and TPH. Low concentrations of xylenes (total 120  $\mu\text{g}/\text{kg}$ ) and TPH at 280  $\text{mg}/\text{kg}$  were detected. The TPH was again identified as fuel and lubricating range organics. The low xylenes concentration and absence of other gasoline indicator compounds, such as benzene, indicate that the gasoline is old and well decayed.

The S-1 sample taken from the stockpile is representative of the soil removed from the floor drain discharge area. It was analyzed for a broad range of contaminants in order to get approval for off-site disposal at a treatment facility in New Hampshire. That sample did not contain metals, pesticides or PCB's above method detection limits. It did contain one semi-volatile and significant concentrations of several of the VOC's that were found in the FD water sample, and TPH at 3,000  $\text{mg}/\text{kg}$ . This is roughly 15 times the TPH concentration in the sample from the soil which remains in place, indicating that the gross contamination was successfully removed.

During a follow-up inspection on May 23, 1997 the water table was observed roughly two feet lower than it has been when the excavation took place. There was no evidence of product on the surface of the standing water. There was little staining and no olfactory evidence of residual petroleum contamination

**Hydraulic Lift** - Liquid in the lift pit and hydraulic cylinders was removed, and the lift was disassembled. The liquid and parts were taken for off-site disposal. The concrete floor near the lift pit was removed, and clean overburden stockpiled. Approximately 50 cubic yards of contaminated soil was removed from the lift pit area. Excavation was halted because of soupy soil conditions and potential threat to the stability of the structure. The excavation extends west to an interior bearing wall and north to the footing for the north building wall.

Two composite samples were taken from walls of the excavation for TPH analysis. HP-1, from the west and north walls, had a TPH concentration of 260  $\text{mg}/\text{kg}$ . HP-2, from the east and south walls, had a TPH concentration of 1.4  $\text{mg}/\text{kg}$ .

Soil sample S-2 is representative of the soils that were removed from the hydraulic lift area. It contained no metals, semi-volatiles, pesticides or PCB's above detection limits. It contained one volatile, and a relatively low level of TPH, 300 mg/kg.

During a follow-up inspection on May 23, 1997 stained soil was observed at the north and west limits of the excavation. There was a lense of free product of several square inches floating on the standing water near the north wall. As with the floor drain discharge area, it appeared that the water table had dropped on the order of two feet in the two weeks since the excavation.

**55-Gallon Drum Area** - At the time of the initial excavation during the first week of May, the 55 gallon drum had been removed, and no one on-site was sure of its former location. Thus no soil could be excavated from that location. With the assistance of Bruno Associates, the location was recovered. On Friday, May 23, 1997 approximately 10 cubic yards of soil was excavated from the former drum location.

A Photovac HL-2,000 PID with a 10.6 eV lamp was used to determine the limits of the excavation. The unit was calibrated on-site with 100 ppm isobutylene. The peak reading observed was 790 ppm from a sample taken just below the soil surface. Soil was excavated in all directions until PID readings were less than 20 ppm by polybag headspace analysis and there was no discernable gasoline odor. PID readings upon completion were: north wall 0.0 ppm, south wall 10.7 ppm, east wall 0.8 ppm, west wall 2.0 ppm and floor 12.0 ppm.

The soil was polyencapsulated with the previously removed material.

**Potential Receptors** - We have confirmed through the Hartford Department of Public Works that all properties in the vicinity are on the public water and sewer system. The closest surface water receptor would be Dothan Brook which is about 1,500 feet to the east of the site. Given the general lack of VOC's, and distance to adjacent structures, including the elementary school, we do not believe that there is any risk from subsurface migration of vapors from this site.

**Conclusions and Recommendations** - There was no contamination present from the fuel oil UST. Soils in the floor drain discharge area did contain oil contamination and minor tetrachloroethylene contamination. The 25 cubic yards of soil removed from this area successfully removed the gross contamination. With the exception of low xylene concentrations in the sample from TP-3, the remaining soil in this area contains no VOC's above detection limits. Remaining TPH concentrations are 200 to 300 mg/kg, well below the 1,000 mg/kg State of Vermont guideline level for non-residential soil. The groundwater sample from this area shows minor VOC and TPH contamination, as well as minor residual tetrachloroethylene. The 50 cubic yards of soil excavated from the floor lift area also

John C. McIsaac  
May 28, 1997  
Page 5

substantially eliminated gross soil contamination in that area. Composite soil samples showed a residual TPH of less than 300 mg/kg remains, well below the 1,000 mg/kg State guideline. However, there is still an area of stained soil on the north and west sides of the excavation, and small quantity of free product pooled on the standing water. No further excavation can be done without removal of the building. The contaminants in the excavated soil are within the limits that will allow off-site disposal/treatment at either MTS in Chichester, New Hampshire or ESMI in Loudon, New Hampshire. There are no identified sensitive receptors.

Based on the above conclusions we recommend the following outline of events to fully resolve the contamination issues at the site:

- Submit this letter report, and the Bruno Phase II report to the WMD for their review,
- Invite a representative of the WMD to view the site and discuss the need for additional excavation,
- Re-locate the tenant of the building, and remove the building from the site,
- If necessary, excavate additional contaminated soil from the hydraulic lift area and polyencapsulate pending off-site disposal,
- If necessary, obtain additional samples, depending on the total soil volume, to allow off-site disposal, and submit those and currently available results to MTS in preparation for transportation and disposal.
- Obtain concurrence from the WMD that the site can be considered successfully remediated, and the sale to King Arthur Flour and their subsequent construction project can go forward without threat of future regulatory action concerning this issue.

*[Handwritten notes and signatures]*

John C. McIsaac  
May 28, 1997  
Page 6

We appreciate this opportunity to provide engineering services for Agri-Mark. With your approval we will submit this report and the Bruno report to the WMD, and proceed with the course of action outlined above. If you have any questions or concerns, please feel free to contact us.

Very truly yours,

DUFRESNE-HENRY, INC.



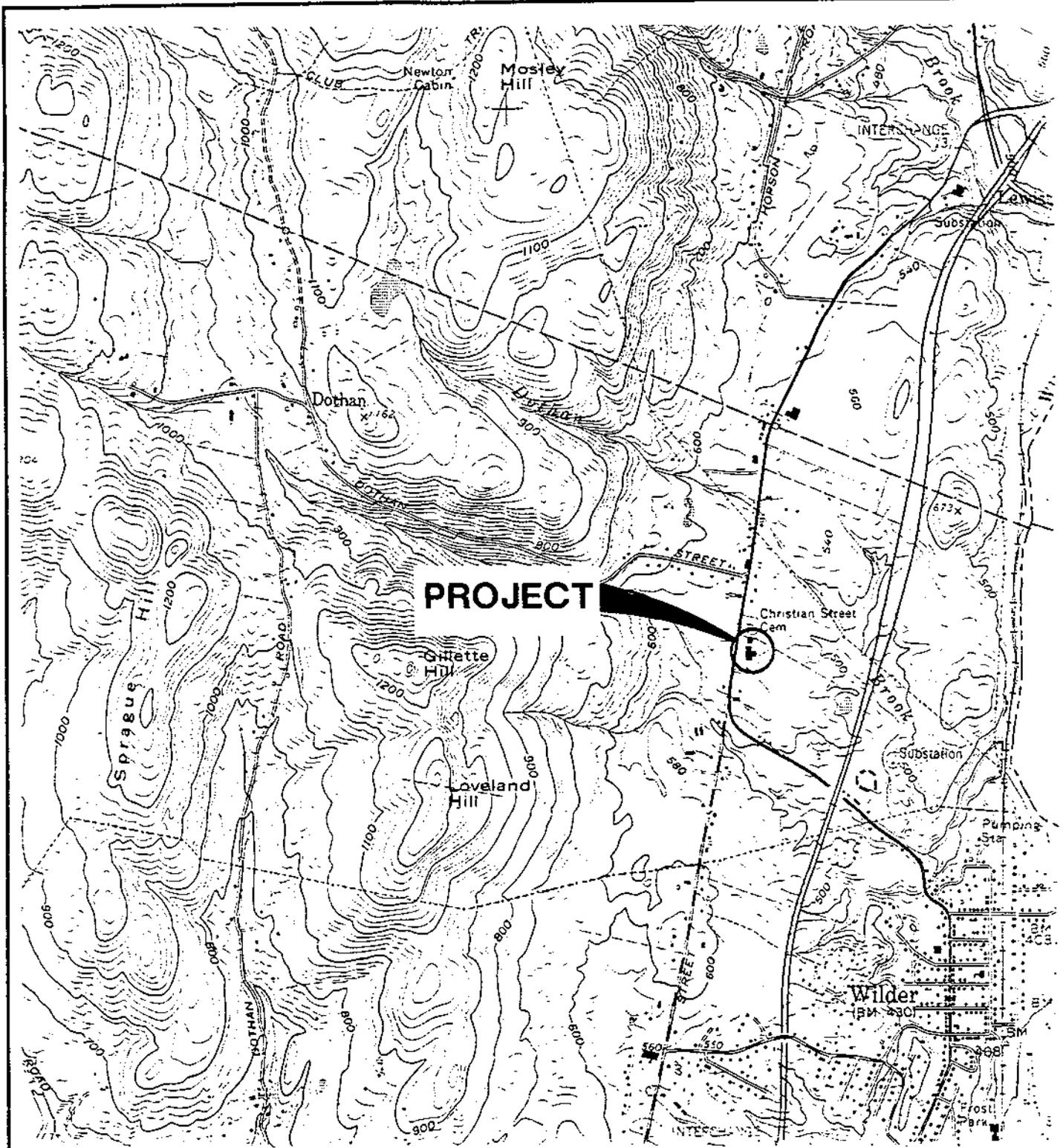
F. David Deane, P.E.  
Environmental Services

FDD/dim

Attachments

cc Maria Stadlmayer ✓  
Dan Hershenson  
Bob Haynes  
John Bruno

BillingsReport0528



**PROJECT**

**SCALE**  
1:24,000

TAKEN FROM A USGS QUAD. SHEET FOR HANOVER, NH. - VT  
PHOTOREVISED IN 1988

**Duffresne-Henry, Inc.**  
A DHI Company  
Precision Park  
No. Springfield,  
Vermont 05150  
Tel. (802)886-2761 Fax (802)886-2260

**SITE LOCATION PLAN**  
PREPARED FOR  
**BILLINGS FARM**  
**GARAGE BUILDING**

**HARTFORD,**

Project No. 0870007
Proj. Mgr. F.D.D.
Date MAY, '97
<b>VERMONT B</b> SLP-1

**DUFRESNE-HENRY, INC.**

**MEMO TO:** File  
**FROM:** Oscar D. Garcia Jr.  
**DATE:** May 12, 1997  
**SUBJECT:** Contaminated Soil Removal at the former Billings Commerce Park  
DH # 0870007

---

Monday, May 5, 1997

On Monday, May 5, 1997, I was at the above referenced location to provide the engineering oversight for the removal of contaminated soil. The contractor retained was Great Northern Environmental Services (GNES). Site features and excavation locations are shown on the attached site sketch.

Upon arrival, a 1000-gallon #2 fuel oil tank was being cleaned. The steel tank installed in 1990 +/- was in good condition. A moderate amount of rust was observed. No surface bubbles or scale was noted. There were no holes observed. The tank had a remote fill and vent. These pipes were in good condition also. The top of the tank was at 3' below the surface in the lawn at the southwest corner of the garage building. The tank measured 4' diameter by 10' 7" long. There was 4" (40 gallons) of product and sludge removed. Two composite soil samples were collected from each end of the tank and screened. A Photovac Micro-TIP HL-2000 P.I.D. (with a 10.6 eV lamp) was used for screening. The Photovac was calibrated on-site prior to it's use with Isobutylene at 100 ppm. Soil sample #1 produced a 1.2 ppm reading, and sample #2 produced a 0.7 ppm reading. There was no odor associated with the samples or the tank grave. There was no visual evidence of contamination present. The soil was sand with a trace amount of silt to the excavation depth of 7'. There was no bedrock or groundwater present. The excavated material was backfilled along with additional gravel provided by GNES. The U.S.T. carcass will be scrapped by GNES.

The hydraulic vehicle lift was disassembled and an attempt was made to vacuum the lines. The pit (constructed of concrete block walls and a poured concrete floor) was also vacuumed. The pit, which measured 15" wide by 10' long, contained 14.5" (110 gallons +/-) of oily residue and sludge. There was also 10.25" (5 gallons +/-) of oil stored in the reservoir which was a steel cylinder. The cylinder was roughly 12" diameter. Once the oil was removed, GNES began the removal of the lift itself.

Both lift cylinders were excavated and removed. This was done by breaking the concrete floor with a jackhammer and removing the pieces with the backhoe. The water table was encountered at approximately 7' below the floor. During removal of the cylinders a visual

inspection of the water surface encountered was not possible. After the cylinders were removed, the remaining metal lift components were removed. All of the metal lift parts were removed from the site by GNES.

Additional sections of the concrete floor were removed, and excavation / stockpiling of the clean overburdening soil began. We removed soil to a depth of roughly 4.5' below the concrete floor. At this point visual and olfactory evidence along with P.I.D. readings in the 5 ppm range indicated that we had reached the depth of the contaminated soil. At this time we had excavated an area large enough to have removed MW-3, installed by Bruno Associates. We had also observed a clay tile pipe which was later determined to be connected to the floor drain in the westerly part of the building. Excavation in this area ceased, with a plan to excavate and stockpile contaminated soil the following day.

Also on this day the floor drains were inspected. There was one drain located in the same side of the garage as the lift, and a second in the westerly side of the building. It was determined that both drains were connected by a 3" diameter clay tile pipe, which was later determined to lead to a tank on the east side of the building. A laboratory sample was to be taken of the material in the sump of the drain next to the lift. Due to the presence of a quantity of oily sludge with apparent free product, this sample was not taken. Instead, the sludge was excavated and drummed for disposal by GNES.

At the end of the day, we had set ourselves up to begin Tuesday by digging contaminated soil from the lift area, and to determine the location of the floor drain discharge point.

Mr. Robert Haynes had visited the site several time throughout the day to evaluate our progress and keep abreast to our current site progress.

## Tuesday, May 6, 1997

Tuesday's work began by finding the end of the floor drain line. Mr. Haynes was present during this operation. As we attempted to uncover the end point, which was about 2' deep, the metal tank crumbled before any size determinations were made. The metal removed from the pit was in poor condition. It is unlikely that destroying it released any additional liquid. The soil below the tank bottom was black muck, with a strong oil typical of waste oil, similar to the sludge that had been excavated from the floor drain. We excavated the overburden to a depth of roughly 3'. From this depth and lower the soil was heavily contaminated. P.I.D. readings observed peaked at only 5 ppm. P.I.D. readings may have been affected by the presence of water. We removed roughly 25 cubic yards of material to roughly 1' below the watertable. The gravelly soil below the water table was soupy and excavation was difficult. Work was halted in this area due to the unknown extent of contamination, and the difficulty of excavation.

We moved to the hydraulic lift area to commence the contaminated soil removal. Soil was excavated to a depth of roughly 8'. This was also 1' below the watertable. Attempts were made

to use the P.I.D. to screen the soil. Soil which was visually heavily contaminated, and had an oily odor, produced readings peaking at 5 ppm +/- . The overall final excavation area measured 14' x 19'. The excavation area had become large enough to have undermined the concrete footing running through the center of the building which was on the west side of the lift. Due to the presence of tools and equipment owned by a local landscaper within the building, and the building itself, excavation to the north, east and south was impeded. By the end of the day we had removed roughly 50 cubic yards of contaminated soil from the lift area.

The soil from the floor drain pit and the hydraulic pit was polyencapsulated to the east of the building with black 6 mil polyethylene. GNES had to relocate piles of construction debris to accommodate the stockpile.

Mr. Haynes checked with in with us several times today.

Wednesday, May 7, 1997

Wednesday began by vacuuming the water surface of both the hydraulic pit and the floor drain pit. There were surface droplets observed on both surfaces, enough to be of concern to me. Groundwater samples were obtained from each pit and labeled "HP" for the hydraulic lift pit, and "FD" for the floor drain pit. Sample "HP" will be analyzed by EPA method 8100 mod. level 1. The sample "FD", which has the potential to contain several types of chemicals, will be analyzed by EPA methods 8260, 8100 level 1, and metals 1311.

Soil samples were prepared from each of the areas. Sample "HP-1" was a composite soil sample obtained from just above the groundwater along the west and north walls at several locations. Sample "HP-2" was composited in a similar fashion from soil along the east and south walls. These samples will be analyzed by EPA method 8100 mod. level 1.

Soil sample "FD", obtained in a similar fashion to the "HP" series, will be analyzed by EPA methods 8260, 8100 level 1, and metals 1311 (the same methods as the water sample from this location). This sample was taken from the floor drain pit.

A meeting was held with myself, Mr. Lee Jackson (GNES), Mr. Robert Haynes (Real Estate Broker), and Mr. Dan Hershenson (Lawyer for Agrimark). We discussed the current site conditions and decided to wait until we receive the laboratory results from the work already performed to determine if further remediation is necessary.

We dug test pits around the floor drain pit to determine the extent of the contamination present. Test pits 1, 2, & 3 were dug first. These were located closest to the excavation area, and were dug to the water table. The soil from just above the water table in test pits #1 and #2 each produced a headspace reading of 0.8 ppm. There was no visible contamination present in these pits. There was no odor noted with the samples or from the pits themselves. Test pit #3, which produced a 338 ppm headspace reading, had a very strong gasoline odor. Since this pit

had a much different odor than the original area, a soil sample designated TP-3 was collected. This sample will be analyzed by EPA methods 8020, and 8100 level 1. Test pits #4, #5, & #6 produced headspace readings of 0.0, 0.7, & 1.5 ppm respectively. There was no visual or olfactory evidence of contamination observed in these locations.

The stockpile of contaminated soil was sampled following designated protocol. Two composite samples, designated S-1, and S-2, were prepared from eight individual samples each. The samples will be analyzed by the necessary EPA methods to allow disposal. Two samples were required due to the volume of the stockpile.

Saturday, May 10, 1997

I inspected the surface of the water in the floor drain pit. It continued to have surface droplets, although less than observed on Wednesday. The garage was locked so that I was not able to inspect the surface of the hydraulic pit. The polyethylene covering the stockpile was intact.





# LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8696 DUFVT

Client: Dufresne-Henry

Client Designation: 0870007 Former Billings Dairy

Sample ID:	FD	FD	S-1	S-1	Date of	Analyst	Method
Matrix:	aqueous	soil	soil	soil	Analysis		
Date Rec'd:	05/09/97	05/09/97	05/09/97	05/09/97			
Units (unless noted):	mg/L	mg/L	mg/kg	mg/kg			
<b>TCLP Metals</b>							
Arsenic	< 0.5	< 0.5	< 2	< 2	05/13/97	RTW	6010
Barium	< 0.5	< 0.5	< 2	< 2	05/13/97	RTW	6010
Cadmium	< 0.05	< 0.05	< 0.2	< 0.2	05/13/97	RTW	6010
Chromium	< 0.1	< 0.1	< 0.4	< 0.4	05/13/97	RTW	6010
Lead	< 0.5	< 0.5	< 2	< 2	06/13/97	RTW	6010
Mercury	< 0.01	< 0.01	< 0.01	< 0.01	05/13/97	JG	7470
Selenium	< 0.5	< 0.5	< 2	< 2	05/13/97	RTW	6010
Silver	< 0.05	< 0.05	< 0.2	< 0.2	05/13/97	RTW	6010

Approved by: Tim Wilson, Metals Supervisor



# LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8696 DUFVT

Client: Dufresne-Henry

Client Designation: 0870007 Former Billings Dairy

## Volatile Organic Compounds

Sample ID:	FD	S-1	S-2		FD	S-1	S-2
Matrix:	Soil	Soil	Soil		Soil	Soil	Soil
Date Received:	6/9/97	5/9/97	5/9/97		5/9/97	6/9/97	5/9/97
Units:	µg/kg	µg/kg	µg/kg		µg/kg	µg/kg	µg/kg
Date of Analysis:	5/14/97	5/14/97	5/14/97		5/14/97	5/14/97	5/14/97
Analyst:	JDS	JDS	JDS		JDS	JDS	JDS
EPA Method:	8260	8260	8260		8260	8260	8260
Benzene	< 10	< 10	< 10	Ethylbenzene	< 10	< 10	< 10
Bromobenzene	< 10	< 10	< 10	Hexachlorobutadiene	< 10	< 10	< 10
Bromochloromethane	< 10	< 10	< 10	Isopropylbenzene	< 10	80	< 10
Bromodichloromethane	< 10	< 10	< 10	p-Isopropyltoluene	< 10	160	< 10
Bromoform	< 10	< 10	< 10	Methylene chloride	< 10	< 10	< 10
Bromomethane	< 10	< 10	< 10	Naphthalene	< 10	50	< 10
n-Butylbenzene	< 10	< 10	< 10	n-Propylbenzene	< 10	100	< 10
sec-Butylbenzene	< 10	60	< 10	Styrene	< 10	< 10	< 10
tert-Butylbenzene	< 10	< 10	< 10	1,1,1,2-Tetrachloroethane	< 10	< 10	< 10
Carbon tetrachloride	< 10	< 10	< 10	1,1,2,2-Tetrachloroethane	< 10	< 10	< 10
Chlorobenzene	< 10	< 10	< 10	Tetrachloroethene	< 10	20	< 10
Chloroethane	< 100	< 100	< 100	Toluene	< 10	< 10	< 10
Chloroform	< 10	< 10	< 10	1,2,3-Trichlorobenzene	< 10	< 10	< 10
Chloromethane	< 100	< 100	< 100	1,2,4-Trichlorobenzene	< 10	< 10	< 10
2-Chlorotoluene	< 10	< 10	< 10	1,1,1-Trichloroethane	< 10	< 10	< 10
4-Chlorotoluene	< 10	< 10	< 10	1,1,2-Trichloroethane	< 10	< 10	< 10
Dibromochloromethane	< 10	< 10	< 10	Trichloroethene	< 10	< 10	< 10
1,2-Dibromo-3-chloropropane	< 10	< 10	< 10	Trichlorofluoromethane	< 100	< 100	< 100
1,2-Dibromoethane	< 10	< 10	< 10	1,2,3-Trichloropropane	< 10	< 10	< 10
Dibromomethane	< 10	< 10	< 10	1,2,4-Trimethylbenzene	< 10	30	< 10
1,2-Dichlorobenzene	< 10	< 10	< 10	1,3,5-Trimethylbenzene	< 10	2,200	10
1,3-Dichlorobenzene	< 10	< 10	< 10	Vinyl chloride	< 20	< 20	< 20
1,4-Dichlorobenzene	< 10	< 10	< 10	o-Xylene	< 10	250	< 10
Dichlorodifluoromethane	< 100	< 100	< 100	m,p-Xylene	< 10	10	< 10
1,1-Dichloroethane	< 10	< 10	< 10	MTBE	< 200	< 200	< 200
1,2-Dichloroethane	< 10	< 10	< 10	Acetone	< 500	< 500	< 500
1,1-Dichloroethene	< 10	< 10	< 10	2-Butanone (MEK)	< 100	< 100	< 100
cis-1,2-Dichloroethene	< 10	< 10	< 10	4-Methyl-2-Pentanone (MIBK)	< 100	< 100	< 100
trans-1,2-Dichloroethene	< 10	< 10	< 10	2-Hexanone	< 100	< 100	< 100
1,2-Dichloropropane	< 10	< 10	< 10				
1,3-Dichloropropane	< 10	< 10	< 10				
2,2-Dichloropropane	< 10	< 10	< 10				
1,1-Dichloropropene	< 10	< 10	< 10				
cis-1,3-Dichloropropene	< 10	< 10	< 10				
trans-1,3-Dichloropropene	< 10	< 10	< 10				

Approved By: Clifford Chase, Volatile Organics Supervisor



# LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8696 DUFVT

Client: Dufresne-Henry

Client Designation: 0870007 Former Billings Dairy

## Volatile Organic Compounds

Sample ID:	TP-3
Matrix:	Soil
Date Received:	5/8/97
Units:	µg/Kg
Date of Analysis:	5/15/97
Analyst:	TML
Method:	*8020(mod)
Dilution Factor:	1
MTBE	< 200
Benzene	< 10
Toluene	< 10
Ethylbenzene	< 10
m,p-Xylene	40
o-Xylene	80

\* Method Modification: MTBE included in target-compound calibrations.

Approved by: Clifford Chase, Volatile Organics Supervisor



# LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8696

Client Designation: 0870007 Former Billings Dairy

Client: Dufresne-Henry

## Volatile Organic Compounds

Sample ID:	FD	VT Std *	FD	VT Std
Matrix:	Aqueous		Aqueous	
Date Received:	5/9/97		5/9/97	
Units:	µg/L		µg/L	
Date of Analysis:	5/13/97		5/13/97	
Analyst:	CWC		CWC	
EPA Method:	8260		8260	
Benzene	<1		Ethylbenzene	1 680
Bromobenzene	<1		Hexachlorobutadiene	<1 None
Bromochloromethane	<2		iso-Propylbenzene	8 None
Bromodichloromethane	<2		p-isoPropyltoluene	3 None
Bromoform	<2		Methylene chloride	<2
Bromomethane	<2		Naphthalene	5 None
n-Butylbenzene	<1		n-Propylbenzene	16 None
sec-Butylbenzene	3 None		Styrene	<1
tert-Butylbenzene	<1		1,1,1,2-Tetrachloroethane	<2
Carbon tetrachloride	<2		1,1,2,2-Tetrachloroethane	<2
Chlorobenzene	<2		Tetrachloroethene	4 0.70
Chloroethane	<10		Toluene	2 2420
Chloroform	<2		1,2,3-Trichlorobenzene	<1
Chloromethane	<10		1,2,4-Trichlorobenzene	<1
2-Chlorotoluene	<2		1,1,1-Trichloroethane	<2
4-Chlorotoluene	<2		1,1,2-Trichloroethane	<2
Dibromochloromethane	<2		Trichloroethane	<2
1,2-Dibromo-3-chloropropane	<1		Trichlorofluoromethane	<10
1,2-Dibromoethane	<2		1,2,3-Trichloropropane	<2
Dibromomethane	<2		1,2,4-Trimethylbenzene	250 None
1,2-Dichlorobenzene	<1		1,3,5-Trimethylbenzene	91 None
1,3-Dichlorobenzene	<1		Vinyl chloride	<2
1,4-Dichlorobenzene	<1		o-Xylene	18 } 400 combined
Dichlorodifluoromethane	<10		mp-Xylene	7
1,1-Dichloroethane	<2		Methyl-t-butyl ether(MTBE)	<20
1,2-Dichloroethane	<2		Acetone	<50
1,1-Dichloroethene	<1		2-Butanone(MEK)	<10
cis-1,2-Dichloroethene	<2		4-Methyl-2-pentanone(MIBK)	<10
trans-1,2-Dichloroethene	<2		2-Hexanone	<10
1,2-Dichloropropane	<2			
1,3-Dichloropropane	<2			
2,2-Dichloropropane	<2			
1,1-Dichloropropene	<2			
cis-1,3-Dichloropropene	<2			
trans-1,3-Dichloropropene	<2			

*Stds from Groundwater Protection Rule and Strategy dated 9/8/88*

Approved By: Clifford Chase, Volatile Organics Supervisor



# LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8696 DUFVT

Client: Dufresne-Henry

Client Designation: 0870007 Former Billings Dairy

## Total Petroleum Hydrocarbons

Sample ID:	HP	HP-1	HP-2	FD	FD	TP-3
Matrix:	Aqueous	Soil	Soil	Aqueous	Soil	Soil
Date Received:	5/9/97	5/9/97	5/9/97	5/9/97	5/9/97	5/9/97
Units:	mg/L	mg/kg	mg/kg	mg/L	mg/kg	mg/kg
Date of Extraction:	5/12/97	5/9/97	5/9/97	5/12/97	5/9/97	5/9/97
Date of Analysis:	5/13/97	5/12/97	5/12/97	5/13/97	5/12/97	5/12/97
Analyst:	DJS	DJS	DJS	DJS	DJS	DJS
EPA Method:	8100(mod)	8100(mod)	8100(mod)	8100(mod)	8100(mod)	8100(mod)
Carbon Range:	C9-C40*	C9-C40*	C9-C40*	C9-C40*	C9-C40*	C9-C40*
Total Petroleum Hydrocarbons	1.4	260	< 50	1.4	210	260

Sample ID:	S-1	S-2
Matrix:	Soil	Soil
Date Received:	5/9/97	5/9/97
Units:	mg/kg	mg/kg
Date of Extraction:	5/9/97	5/9/97
Date of Analysis:	5/12/97	5/12/97
Analyst:	DJS	DJS
EPA Method:	8100(mod)	8100(mod)
Carbon Range:	C9-C40*	C9-C40*
Total Petroleum Hydrocarbons	3,000	300

\* Fuel (Diesel) and Lubricating Oil Range Organics.

Approved By: Timothy Schaper, Organics Supervisor



# LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8696 DUFVT

Client: Dufresne-Henry

Client Designation: 0870007 Former Billings Dalry

## Pesticides and PCBs

Sample ID:	S-1	S-2
Matrix:	Soil	Soil
Date Received:	5/9/97	5/9/97
Units:	µg/kg	µg/kg
Date of Extraction:	5/12/97	5/12/97
Date of Analysis:	5/13/97	5/13/97
Analyst:	TDS	TDS
EPA Method:	8080	8080
Lindane	< 10	< 10
Endrin	< 10	< 10
Methoxychlor	< 10	< 10
Toxaphene	< 100	< 100
PCB-1016	< 100	< 100
PCB-1221	< 100	< 100
PCB-1232	< 100	< 100
PCB-1242	< 100	< 100
PCB-1248	< 100	< 100
PCB-1254	< 100	< 100
PCB-1260	< 100	< 100

Approved By: Timothy Schaper, Organics Supervisor



# LABORATORY REPORT

Eastern Analytical, Inc. ID#: 8696

Client: Dufresne-Henry

Client Designation: 0870007 Former Billings Dairy

## Polynuclear Aromatic Hydrocarbons

Sample ID:	S-1	S-2
Matrix:	Soil	Soil
Date Received:	5/9/97	5/9/97
Units:	µg/Kg	µg/Kg
Date of Extraction:	5/12/97	5/12/97
Date of Analysis:	5/13/97	5/13/97
Analyst:	TDS	TDS
EPA Method:	8270	8270
Dilution Factor:	3	3
Naphthalene	< 500	< 500
2-Methylnaphthalene	1,100	< 500
Acenaphthylene	< 500	< 500
Acenaphthene	< 500	< 500
Fluorene	< 500	< 500
Phenanthrene	< 500	< 500
Anthracene	< 500	< 500
Fluoranthene	< 500	< 500
Pyrene	< 500	< 500
Benzo[a]anthracene	< 500	< 500
Chrysene	< 500	< 500
Benzo[b]fluoranthene	< 500	< 500
Benzo[k]fluoranthene	< 500	< 500
Benzo[a]pyrene	< 500	< 500
Indeno[1,2,3-cd]pyrene	< 500	< 500
Dibenz[a,h]anthracene	< 500	< 500
Benzo[g,h,i]perylene	< 500	< 500

Soil results are expressed on a dry weight basis. Detection limits are modified accordingly.

Approved By: Timothy D. Schaper, Organics Supervisor

**analytics**environmental  
laboratory inc.195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-436-8111 Fax 603-430-2151  
800-929-9906Ms. Emily Burr  
Eastern Analytical, Inc.  
25 Chenell Drive  
Concord, NH 03301

May 21, 1997

SAMPLE DATA

Lab #:	38202-1
Matrix:	Soil
Percent Solid:	92
Dilution Factor:	1.1
Collection Date:	05/08/97
Lab Receipt Date:	05/13/97
Extraction Date:	05/14/97
Analysis Date:	05/20/97

CLIENT SAMPLE ID

Client Project: DUF 8696

Project Number:  
Station ID: S-1**ANALYTICAL RESULTS CHLORINATED HERBICIDES**

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
2,4-D	110	ND
2,4,5-TP	110	ND
<b>Surrogate Standard Recovery</b>		
2,4-Dichlorophenylacetic acid		123%
ND=None Detected    B=Compound Present in Blank    J=Estimated Concentration E=Exceeds Calibration Range		

**METHODOLOGY:** Samples were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8151."**COMMENTS:** Results are expressed on a dry weight basis.

Authorized signature





195 Commerce Way  
Portsmouth, New Hampshire 03801  
603-430-8171 Fax 603-430-2151  
800-929-9906

Ms. Emily Burr  
Eastern Analytical, Inc.  
25 Chocoll Drive  
Concord, NH 03301

May 27, 1997

SAMPLE DATA

Lab #: 38202-2  
Matrix: Soil  
Percent Solid: 92  
Dilution Factor: 1.1  
Collection Date: 05/08/97  
Lab Receipt Date: 05/13/97  
Extraction Date: 05/20/97  
Analysis Date: 05/24/97

CLIENT SAMPLE ID

Client Project: DUP 8696

Project Number:  
Station ID: S-2

**ANALYTICAL RESULTS CHLORINATED HERBICIDES**

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
2,4-D	110	ND
2,4,5-TP	110	ND
<b>Surrogate Standard Recovery</b>		
2,4-Dichlorophenylacetic acid		98%
ND=None Detected B=Compound Present in Blank E=Exceeds Calibration Range J=Estimated Concentration		

**METHODOLOGY:** Samples were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8151."

**COMMENTS:** Results are expressed on a dry weight basis.

Authorized signature \_\_\_\_\_