JUL 10 1991

HCE **HERTZBERG CONSULTING ENGINEERS, INC.**
57 TALCOTT ROAD • P.O. BOX 942 • WILLISTON, VERMONT 05495
FAX 802 - 879-2967 802 - 879-2755

July 8, 1991

Charles B. Schwer, Supervisor
Sites Management Section
Vermont Agency of Natural Resources
Department of Environmental Conservation
Hazardous Materials Division
103 South Main Street
West Building
Waterbury, VT 05671-0404

Re: Fuel Oil Storage Tank Replacement
Medical Center Hospital of Vermont
Burlington, Vermont
Eng. Proj. No. 9029

Dear Mr. Schwer:

This letter and the accompanying information is in response to your request for more information regarding the cleanup and replacement of underground fuel oil storage tanks at MCHV, your site no. (91-1040).

It is our understanding that Dana E. Swenson, P.E., Director of Facilities Management at MCHV has forwarded a copy of soil boring logs for borings performed on May 1 and 2, 1991 to your office. The following information is included here in response to your letter of request to Mr. Swenson dated June 20, 1991:

1. Copy of letter dated May 3, 1991 from Aquatec, Inc. to Dana Swenson, P.E. summarizing results of four site borings performed on May 1 and 2, 1991.

2. Copy of site map provided by Aquatec, Inc. showing the location of the four borings performed on May 1 and 2, 1991. In addition, HCE, Inc. has marked the approximate location of a boring performed for the Hospital by Green Mountain Boring, Inc. on October 18, 1990.

3. Copy of untitled boring log dated October 18, 1990 provided by Green Mountain Boring, Inc. for the boring performed on the same date.

In response to your questions regarding the excavation, please be advised of the following:

Excavation dimensions: 37' wide x 55' long x 16'deep. Note

the site was excavated down to the top of the existing concrete ballast slab (16'-0").

A series of incidental excavations were made to facilitate the removal and replacement of fuel oil piping, gas piping, storm drain piping and a catch basin.

Pavement abutting the excavation was removed, the site has been regraded and repaved.

If you have any further questions regarding this matter, please contact our office at your convenience.

Very Truly Yours,

Lincoln W. Vannah

Lincoln W. Vannah

JUL 10 1991

FILE 9029

CONST. ADMIN

aquatec INC. ENVIRONMENTAL SERVICES

75 GREEN MOUNTAIN DRIVE, SOUTH BURLINGTON, VERMONT 05403, TELEPHONE (802) 658-1074

May 3, 1991

MAH 5/6/91
LWV
FILE 9029 CONST.

RECEIVED
MAY 6 RECD
HCE, INC.

Mr. Dana Swenson, P.E.
Facilities Management
Medical Center Hospital of Vermont
111 Colchester Avenue
Burlington, VT 05401

Re: Soil Boring Program
Aquatec Project No. 91053

Dear Mr. Swenson:

On May 1 and 2, 1991, Aquatec personnel provided assistance during a soil boring program adjacent to three No. 2 fuel oil underground storage tanks (USTs) at the MCHV facility. Four soil borings were advanced using the hollow stem auger (HSA) drilling technique by Green Mountain Boring, Inc. of Barre, Vermont.

Two soil borings were located south of the USTs; SB-1 situated 13.5 feet south of the middle tank and SB-2 situated 36 feet south of the west tank. The two other soil borings, SB-3 and SB-4, were advanced in the area north of the USTs. SB-3 was situated 7.5 feet west of the southeast corner and five feet south of the boiler room building and SB-4 was situated 23.5 feet west of the southeast corner and 19 feet south of the boiler room building.

Soil samples were obtained at five foot intervals in each boring to a depth of approximately 25 feet below ground surface (bgs). Samples were collected using a two inch diameter, two foot long split-spoon barrel. The split-spoon barrel was washed between locations using a tap water and Liquinex detergent solution followed by a tap water rinse.

Each soil sample was screened using an HNu systems Model PI101 photoionization detector (PID) equipped with a 10.2 eV lamp. The PID was calibrated with isobutylene each morning prior to screening soil samples. Samples were screened immediately after collection using the method outlined in the Vermont Agency of Natural Resources "Field Protocol for Petroleum Contaminated Sites". Photoionization detector screening results and visual observations obtained during the soil boring program are included in the attached summary table.

Based on PID screening of the soil samples obtained during the soil boring program, it appears that some of the soil will be within the limits (10-40 parts per million) for disposal of No. 2

fuel oil contaminated soil at an approved landfill. It also appears that the petroleum contamination is limited to the areas adjacent to the USTs. The extent of petroleum contamination could not be entirely defined during the soil boring program and it is possible that soil immediately adjacent to the tanks will have PID levels greater than 40 ppm.

Arrangements should be made for possibly stockpiling or contain petroleum contaminated soils during excavation of the USTs and during the period while waiting approval from the State for off site disposal. Typically, a letter of approval from the Vermont Agency of Natural Resources is required for off site disposal which could take several days to receive. However, in certain cases, if a state representative is on-site during the excavation activities a temporary permit can be issued the same day.

If you have any questions regarding the findings during the soil boring program, please call me at your convenience.

Sincerely,

Bob Ross

Robert J. Ross
Hydrogeologist

RJR/lam

Enclosure

cc: Mr. Mike Hertzberg
Mr. Kent Degoosh

91053B2MAY91

Summary Table
Soil Boring Screening Results
Medical Center Hospital of Vermont
Burlington, Vermont
Aquatec Project No. 91053

Sample ID	Depth (ft.)	PID (ppm)	Comments
SB-1			
SS-1	5-7	NR	silty Sand, dry (Fill)
SS-2	10-12	NR	silty Sand, moist (Fill)
SS-3	15-16	>20*	fine Sand, slight petroleum odor
SS-4	20-22	NR	dense, poorly sorted Sand and gravel
SS-5	25-25.5	NR	dense, poorly sorted Sand and gravel
SB-2			
SS-1	5-7	NR	dense silt and very fine sand (Fill)
SS-2	10-10.5	NR	dense, fine Sand and silt (Fill)
SS-3	15-17	NR	dark brown clay and gravel
SS-4	20-21	NR	dark brown Sand and gravel
SS-5	25-26.5	NR	dense Sand and gravel
SB-3			
SS-1	5-7	NR	fine Sand mixed with asphalt material (Fill)
SS-2	10-12	NR	fine Sand, crushed stone and asphalt (Fill)
SS-3	15-17	NR	fine Sand, crushed stone; slight petroleum odor
SS-4	20-22	NR	fine Sand, crushed stone, slight petroleum odor
SS-5	25-26	NR	fine Sand, ash material
SB-4			
SS-1	5-7	NR	brown, fine Sand (Fill)
SS-2	10-12	7-8	brown, moist sand and silt (Fill); slight petroleum odor
SS-3	15-17	>20*	brown, fine Sand with coarse gravel; petroleum odor
SS-4	20-20.5	3-4	dense brown, fine Sand with coarse gravel; petroleum odor
SS-5	25-25.5	NR	dense brown, fine Sand with coarse gravel

NR - No response; PID reading <0.1 ppm.

* - Off scale on 0-20 ppm setting, subsequent reading between 20-30 ppm on 0-2,000 ppm scale.

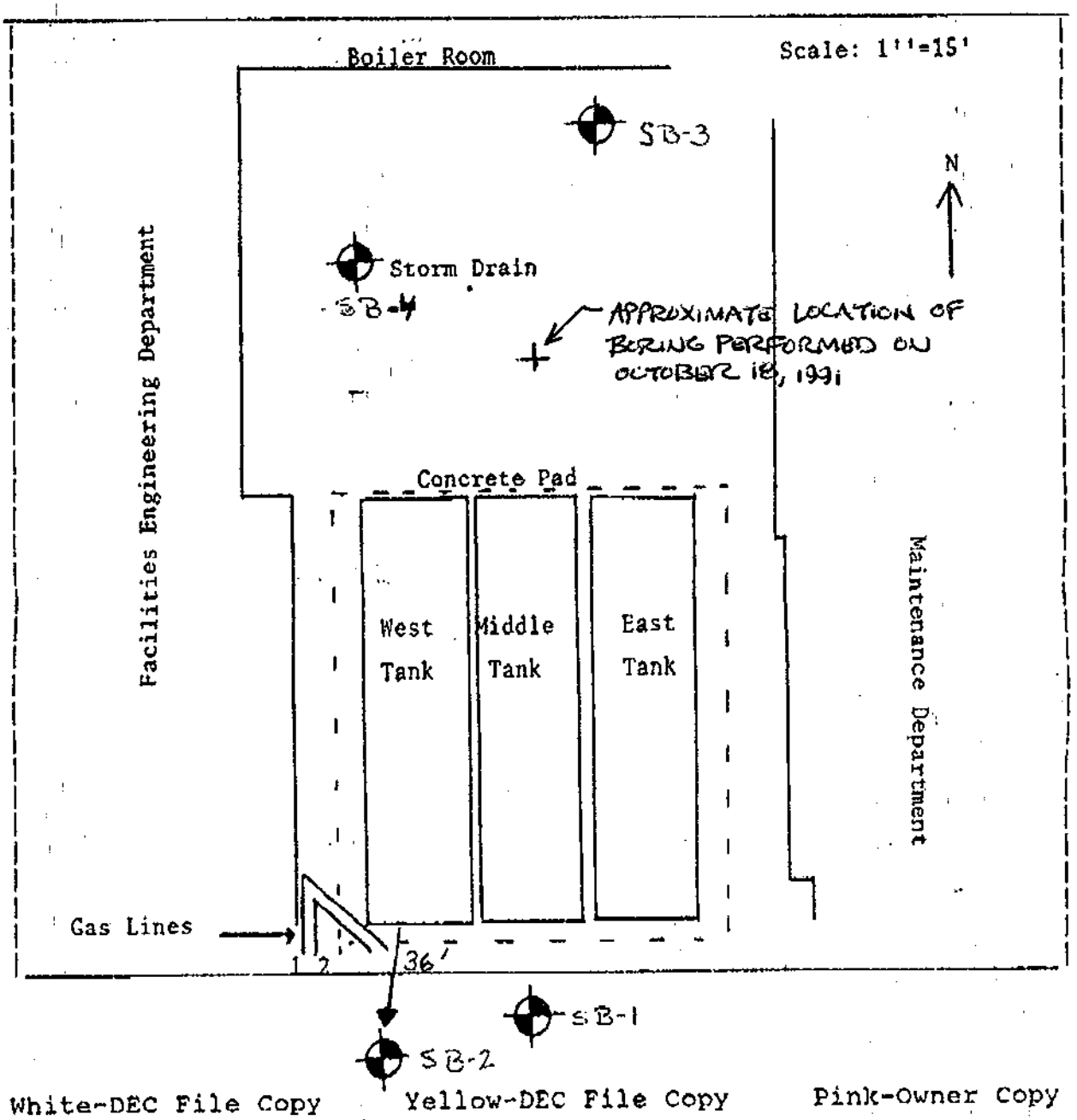
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
SITE MAP

RECOMMENDED SCALE - 1" = 50 feet (but not smaller than 1" = 100 feet) ⊕ SB-2 – Approximate Soil Boring Location

MAP DRAWN BY: Christopher Ouellette, Aquatec Inc. See letter dated May 3, 1991 for boring location measurements

BUSINESS NAME WHERE TANK(S) LOCATED: Medical Center Hospital of Vermont

Show location of all tanks and property boundary; distance to permanent structures; monitoring wells; water wells within 500 foot radius; storm; sewer and water lines; sample points; areas of contamination and other pertinent site information. Indicate North arrow and major street names or route number.



White-DEC File Copy Yellow-DEC File Copy Pink-Owner Copy

07/08/91 09:53 8026565312 MCHV 001

Green Mountain Boring JUL 10 1991

R. D. 2 – BARRE, VERMONT 05641

SHEET 1 OF 1
DATE 10-18-90
HOLE NO. SB 1
LINE & STA.
OFFSET Water

TO Geriatrical Center of Vt. ADDRESS Rutland VT
PROJECT NAME Fuel Tanks LOCATION Rutland VT
REPORT SENT TO PROJ. NO.
SAMPLES SENT TO OUR JOB NO. 10-90

GROUND WATER OBSERVATIONS
At Dry at 1 Hours
At at Hours

	CASING	AUGERS.	SPLIT SPOON	CORE BAR.
Type				
Size I. D.		3.25	1 3/8"	
Hammer Wt.			140#	
Hammer Fall			30"	

SURFACE ELEV.
DATE STARTED 10-18-90
DATE COMPL. 10-18-90
BORING FOREMAN Chris
INSPECTOR
SOILS ENGR.

LOCATION OF BORING: North End of Fuel Tanks Ground Surface

DEPTH	Casing Blows per foot	Sample Depths From – To	Type of Sample	Blows per 6" on Sampler From 0-6	6-12	To 12-18	Moisture Density or Consist.	Strata Change Elev.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, condition, hardness, Drilling time, seams and etc.	SAMPLE No.	Pen	R
		5 – 7'	dry	11 38	16	105	dry		FEW Fine SAND from Slags	1	24	24
		10 – 11'	dry	18	23		moist		fine sand from slags	2	12	12
		11 – 12'	dry	28	26		moist		fine sand from slags	3	12	12
		14 – 15.5'	dry	32	34	106	moist		fine sand from slags	4	18	18
							MOIST					

GROUND SURFACE TO 14' USED 3.25 AUGERS: THEN Split Spoon

Sample Type
D – Dry C – Cored W – Washed
UP – Undisturbed 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 on 2" O. D. Sampler

Cohesionless Density
0-10 Loose
10-30 Med. Dense
30-50 Dense
50 ± Very Dense

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

SUMMAR
Earth Boring
Rock Coring
Samples

HOLE NO.