

Superfund Records Center

SITE: Wolcott

BREAK: 17.8

OTHER: 41954

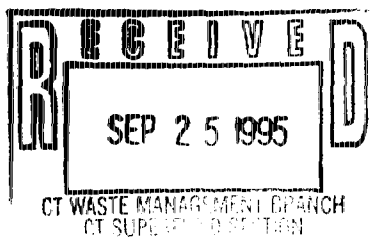
T. GIANNI AND SONS, INC.

— BUILDERS —

1 Nutmeg Valley Road

Wolcott, Connecticut 06716

Phone 879-6475



SITE ASSESSMENT REPORT

HRP ASSOCIATES, INC.

HRP #WC-WHT-Ø

FOR: CELINDA W. MAYO

ISSUED: December 30, 1986

UPDATED: November 14, 1988

T. GIANNI AND SONS, INC.

— BUILDERS —

1 Nutmeg Valley Road
Wolcott, Connecticut 06718
Phone 879-6475

= former address:
76 Wolcott Rd,
Wolcott, Ct. 06716

(203) 879-6475

- adjoining roads -

The Waterbury Heat Treating Company, Inc. is located southeast of the Wolcott Road (Route 69) and northeast of the Nutmeg Valley Road. The loading dock of the facility is located on the southwest side of the facility.

b. topography -

The site lies at an elevation of approximately 490 to 500 feet above mean sea level.

c. soils -

Soils occurring on the Waterbury Heat Treating site are mapped by the Soil Conservation Services (SCS) as Agawam fine, sandy loam, 8 to 15 percent slopes. Typically, the surface layer of soil is dark brown, fine sandy loam, 8 inches thick. The subsoil is dominantly dark brown and dark yellowish-brown, fine sandy loam, 20 inches thick. The substratum, to a depth of 60 inches, is yellowish-brown, gravelly sand.

d. vegetation -

Much vegetation was removed from the rear of the building to determine the extent of soil contamination. The portion of the property adjacent to Wolcott Road is covered by lawn and grass. The rear portion (east) of the property still has some native hardwoods and brush.

e. wetlands -

No wetlands are on site at present or are known to have existed on site.

f. buildings, roadways and parking areas -

One building lies on the site. The building is located at the corner of Nutmeg Valley Road and Wolcott Road (Route 69) and runs parallel to Wolcott Road. A paved parking area is located on a portion of the site adjacent to Nutmeg Valley Road between the road and the building.

g. site utilities -

Site utilities are provided as follows:

Telephone: Southern New England Telephone
Electricity: CL&P
Water: Private Well
Sewer: Town of Wolcott
Propane: F&S Oil Company

h. transformers -

No transformers were found either inside or outside of the facility.

i. capacitors -

No capacitors were found either inside or outside of the facility.

j. fencing -

An 8' metal cyclone fence with privacy slats and 3 strands of barbed wire borders the property on the northeast side, parallel to Nutmeg Valley Road. It runs from near the northwest corner of the building to the northeast corner of the property and is part of the bordering facility.

k. asbestos -

There is asbestos at the facility. It is in the form of asbestos insulation on the basement oil furnace. There is also some transite on one of the furnaces.

C. Site History and Use

1. Current Site Utilization

The site is presently used by the Waterbury Heat Treating Company, Inc. for the heat treating and annealing of metal parts. The process utilized at this facility consists of first heating the parts in an oven, running the parts through an oil quench bath, and washing the parts with detergent in a rotary washer.

2. Former Site Utilization

Waterbury Heat Treating was established in 1958. There is reported to have been a bakery on the site at one time. Barbed wire on the east end of the facility suggests livestock usage in the past.

3. Aerial Photograph Reconnaissance

<u>Date of Photography</u>	<u>Scale</u>	<u>Description of Features</u>
1986	1" = 1000'	Building and vegetation; white spots (trucks, machinery)
1980	1" = 1000'	Building and vegetation
1975	1" = 1000'	Building and vegetation
1970	1" = 1000'	Building and vegetation

D. Site Waste and Wastewater Generation Information

1. Domestic/Sanitary Wastes

a. Septic tanks/cesspools

A septic drywell and leaching fields were utilized until December, 1983. Per DEP Consent Order WC4253, dry well and leaching fields were excavated from October, 1986 through December, 1986. See Appendix A for a summary of remedial actions performed at this facility.

b. Sanitary sewers

The on-site septic system was utilized until the sanitary sewer system was installed in December, 1983.

c. Wastewater generation rates (no. of units, families)

Approximately 70 gallons per day of sanitary waste is generated from the Waterbury Heat Treating facility (5 employees).

2. Industrial/Commercial Wastes

a. Waste Types and Generation Rates

(1) Solids

The processes employed at the facility do not generate solid waste other than very small quantities of floor sweepings such as spilled metal parts.

(2) Sludges

According to the facility operator, sludge is not generated or disposed of.

(3) Liquids

All liquids are recycled. These essentially consisted of heat treating oil and detergent solution. Solution levels drop due to dragout or parts and are simply made up with fresh solution.

(4) Cooling Water

Non-contact cooling water is used to cool bearings on a tumbling drum used in the case hardening process. This is discharged to the sanitary sewer.

b. Lagoons, pits and ponds

There are no lagoons, pits or ponds for waste disposal on the site. The pits on site were created in the process of removing contaminated soil, and will be filled pending State of Connecticut DEP approval.

c. Refuse and rubbish (solid waste)

Sanitary refuse and floor sweepings are stored in a dumpster and removed once a week to the local sanitary landfill.

d. Underground or above ground storage tanks

	<u>Type</u>	<u>Content</u> <u>Volume</u>	<u>Date of</u> <u>Installation</u>	<u>Age</u>
(1) Oil	No.2 Diesel Oil	Empty 5000 gal	Not known (excavated on 10/17/86)	Not known

(2) Gasoline

No gasoline tanks are known to be present on site.

(3) Liquid Wastes

Raw materials are recycled and thus do not now become liquid waste.

(4) Chemical raw materials (bulk liquids)

The following bulk chemical raw materials are stored on site:

Chemsearch ND-165	Water Soluble Degreasing Solution	1X15 gal drum
Gulf Super Quench 70	Heat Treating Oil	12X55 gal drum
MacDermid of Bristol	Oil-Tex 40 Heat Treating Oil	1X55 gal drum
Cook Quench 70	Heat Treating Oil	Approx 500 gal tank

E. Raw Materials Used or Stored on Site

<u>Material Name</u>	<u>Volume & Type of Container</u>	<u>Content/Use</u>
Kemtex RPE-400	2~50 gal Fiber drums	1½ drums
Carbon Cover No. 2	1-55 gal drum	1½ drums

F. Site Geology and Hydrogeology

a. Surficial Geology - See Appendix A.

b. Bedrock Geology - See Appendix A.

c. Existing Subsurface Exploration Data

(1) On-site

No subsurface exploration data is known to exist on the site in published sources.

(2) In site vicinity (0.5 miles)

No subsurface exploration data is known to exist within 0.5 miles of the site.

d. Groundwater Classification and Uses

See Appendix A.

e. Water Supply or Production Wells

(1) On site

A production well is located near the northeast corner of the building.

(2) Within one-mile of site

No public water supply wells are known to exist within one mile of the site.

f. Assumed Groundwater Flow Direction

Groundwater flow is controlled by many factors including aquifer type, depth to bedrock, and topography. Generally, groundwater flows in the direction of the topographic slope. It appears that groundwater from the site flows southwesterly towards the Old Tannery Brook, which is a tributary of the Mad River.

G. Surface Water

a. Building Drainage

(1) Roof Drains

Three roof drains are located on the east side of the building and discharge to the ground.

(2) Floor Drains

There are no floor drains at present in the facility. They have been sealed since circa May, 1986.

(3) Dry wells/sumps

There is a sump located in the northwest corner of the facility. This sump is located under a piece of heat treating equipment and appears to contain oily liquid.

b. Site Drainage

(1) Catch Basins

There are no catch basins on the site.

(2) Storm Sewers

There are no storm drains on the site.

(3) Swales, ditches or retention basins

There are no swale ditches or retention basins on site.

c. Watercourses

(1) Location and Name

The nearest watercourse is the Old Tannery Brook. This stream is located approximately 700 feet to the east of the facility. The Old Tannery Brook is a tributary of the Mad River.

(2) Surface Water Classification

See Appendix A.

(3) Surface Water Use

See Appendix A.

H. Hazardous Waste or Related Permits

1. Permits Held by Current and Former Site Owners:

There are no hazardous waste or related permits held by the current or former site owners.

2. Citations or Fines for Violations of Hazardous Waste Regulations:

There are no citations or fines for violations of Hazardous Waste Regulations. There is, however, a consent order agreement No. WC 4253 in effect.

3. Hazardous Waste or Related Permits which should be obtained

The facility does not generate hazardous waste and needs no permits at this time.

4. Pending Hazardous Waste or Related Permits

A permit for discharge of cooling water to the Wolcott sanitary sewer system is pending.

I. Summary of Visual Inspection

1. Visual Evidence of Soil Contamination

See Appendix A, "Summary of Remedial Actions Taken at the Waterbury Heat Treating Company, Inc."

2. Visual Evidence of Liquid Discharges

See Appendix A, "Summary of Remedial Actions Taken at the Waterbury Heat Treating Company, Inc."

3. Visual Evidence of Soil Disturbances

See Appendix A, "Summary of Remedial Actions Taken at the Waterbury Heat Treating Company, Inc."

4. Solid or hazardous waste deposits (piles, landfills, pits, ponds, lagoons, etc.)

There are no solid or hazardous waste deposits on the site at this time. Soil piles with some oil contamination are located on site and will be removed to the City of Waterbury's landfill pending DEP approval.

J. Conclusions of Background Research and Visual Site Inspection:

Releases of oily waste to the septic system in the past have caused soil contamination on site. This contamination has been minimized by excavating the septic tank, lines and leach field.

K. Recommendations for Further Investigation or Remedial Action:

See attached letter (Appendix B) of December 11, 1986 to Mr. Scott Wing of DEP-WCU.

Soil contamination on site appears to have been contained to levels consistent with DEP regulations. Contaminated soil will be removed pending DEP approval.

Three groundwater monitoring wells are expected to be installed within the near future. These wells will be sampled and analyzed per DEP and EPA approved standards.

Based on the site investigations, HRP recommends that Waterbury Heat Treating proceed with its plan to obtain a permit to discharge non-contact cooling water to the sanitary sewer of the Town of Wolcott.

HRP further recommends that contact be maintained with the DEP and groundwater monitoring well installation and soil removal be completed as planned.

NOVEMBER 14, 1988 UPDATE

To meet the requirements of Steps 3D and 3E of Order Number WC-4253, Dr. Elliot Mayo, M.D., retained the engineering services of HRP Associates, Inc. to complete the following:

- a. backfilling and grading of all excavated areas;
- b. off-site disposal of 5,000 gallon storage tank and associated piping;
- c. installation of two (2) downgradient monitoring wells and one (1) upgradient monitoring well;
- d. sampling and analysis of the three (3) monitoring wells; and
- e. abandonment of an inactive production well per Section 25-128-57 of the State of Connecticut's Well Drilling Board and Rules and Regulations.

Outlined under Appendix C, "Summary of Remedial Actions to Complete Steps 3D and 3E of Consent Order Number WC4253", is a summary of the various operations performed at this site to complete the requirements listed above.

Due to the presence of cyanide detected within one (1) of the downgradient monitoring well, HRP Associates, Inc. recommended that the monitoring wells be monitored for one (1) year to determine if the cyanide concentration will increase or decrease over time. The one (1) year monitoring included collecting and analyzing the ground water samples from each well every three (3) months for a total of four (4) separate sampling/analyzing events.

Based upon the ground water monitoring data compiled from the four sampling/analyzing events (see Appendix D, "First Year Annual Ground Water Monitoring Report - Former Site of Waterbury Heat Treating, Inc."), it was HRP's opinion that the requirements of Consent Order Number WC4253 have been fulfilled.

On June 14, 1988, the Connecticut Department of Environmental Protection (CT-DEP) notified Dr. Mayo that requirements of Consent Order Number WC4253 have been fulfilled. Provided under Appendix E are the various approval letters received from the CT-DEP in reference to Consent Order Number WC4253.

II. FIELD INVESTIGATION AND TESTING

See Attached Reports (Appendices A, C and D)

A. Scope of Field Investigation and Testing Program

1. Subsurface Geology and Sediment Sampling

- a. test pits -
- b. borings -
- c. subsurface material description -
- d. samples collected
- e. analyses performed -
- f. test results -
- g. notes -

2. Groundwater Sampling

- a. monitor well construction -
- b. sampling procedure -
- c. analyses performed -
- d. test results -
- e. notes -

3. Surface Water Sampling

- a. sampling procedure -
- b. analyses performed -
- c. test results -
- d. notes -

4. Additional Subsurface Testing

- a. geophysical surveys -
- b. tracer studies -
- c. metal detection -
- d. notes -

B. Conclusion of Field Investigation and Testing

- 1. Findings of the Part II Investigation and Recommendations, if any, for additional work.

See Appendices C, D and E.

III. LIMITATIONS ON WORK PRODUCT

All work product and reports provided by HRP in connection with the performance of Environmental Site Assessments (Phase I and Phase II) are subject to the following limitations.

1. The observations described in this Report were made under the conditions stated therein. The conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by the Client. The work described in this report was carried out in accordance with the Statement of Terms and Conditions.
2. In preparing this Report, HRP has relied on certain information provided by state and local officials and information and representations made by other parties referenced therein, and on information contained in the files of state and/or local agencies made available to HRP at the time of the site assessment. To the extent that such files are missing, incomplete or not provided to HRP, HRP is not responsible. Although there may have been some degree of overlap in the information provided by these various sources, HRP did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment.
3. Observations were made of the site and of structures on the site as indicated within the Report. Where access to portions of the site or to structures on the site was unavailable or limited, HRP renders no opinion as to the presence of hazardous substances, wastes or petroleum and chemical products and wastes. In addition, HRP renders no opinion as to the presence of indirect evidence relating to hazardous substances, wastes or petroleum and chemical products or wastes where direct observation of the interior walls, floors, or ceilings of a structure on a site was obstructed by objects or coverings on or over these surfaces.
4. Unless otherwise specified in the Report, HRP did not perform testing or analyses to determine the presence or concentration of asbestos or polychlorinated biphenyls (PCB's) at the site or in the environment of the site.
5. The purpose of this report was to assess the physical characteristics of the subject site with respect to the presence in the environment of hazardous substances, waste or petroleum and chemical products and wastes as defined in Connecticut General Statutes Section 22a-452. No specific attempt was made to check the compliance of present or past owners or operators of the site with federal, state, or local laws and regulations, environmental or otherwise.

6. If the conclusions and recommendations contained in this Report are based in part upon the data obtained from a limited number of soil samples obtained from widely spaced subsurface explorations; then the nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, it will be necessary to re-evaluate the conclusions and recommendations of this report.
7. If water level readings have been made in test pits, borings, and/or observation wells; these observations were made at the times and under the conditions stated on the test pit or boring logs or in the report. However, it must be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, passage of time and other factors. Should additional data become available in the future, these data should be reviewed by HRP, and the conclusions and recommendations presented herein modified accordingly.
8. Except as noted within the text of the Report, no quantitative laboratory testing was performed as part of the site assessment. Where such analyses have been conducted by an outside laboratory, HRP has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these tests.
9. If the conclusions and recommendations contained in this report are based, in part, upon various types of chemical data; then the conclusions and recommendations are contingent upon the validity of such data. These data (if obtained) have been reviewed and interpretations made in the Report. If indicated within the Report, some of these data may be preliminary "screening" level data and should be confirmed with quantitative analyses if more specific information is necessary. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by HRP and the conclusions and recommendations presented herein modified accordingly.
10. Chemical analyses may have been performed for specific parameters during the course of this site assessment, as described in the text. However, it should be noted that additional chemical constituents not searched for during the current study may be present in soil and/or groundwater at the site.

11. It is recommended that HRP be retained to provide further hydrogeologic and engineering services during the construction and/or implementation of any remedial measures recommended in this report. This is to allow HRP to observe compliance with the concepts and recommendations contained herein, and to allow the development of changes to the remedial program in the event that subsurface conditions or other conditions differ from those anticipated.

IV. IDENTIFICATION OF PARTICIPANTS AND REFERENCES USED IN PARTS I AND II

A. Participants

1. Personnel involved in the Site Inspection and Investigation:

<u>Name</u>	<u>Address or Affiliation</u>	<u>Qualifications</u>
Richard D. McFee	HRP Associates, Inc.	Sr. Project Eng.
Michael Seguljic	HRP Associates, Inc.	Project Engineer
Steven Pranulis	HRP Associates, Inc.	Project Engineer

2. Persons Contacted In Regard To The Site:

Dr. Elliot May (owner of property)

Roger Pelletier (operator of facility)

B. References

1. Reports, Plans and Other Documents Reviewed

SUMMARY OF REMEDIAL ACTIONS
TAKEN AT THE
WATERBURY HEAT TREATING COMPANY, INC.
WOLCOTT, CONNECTICUT

T. GIANNI AND SONS, INC.

— BUILDERS —

1 Nutmeg Valley Road
Wolcott, Connecticut 06716
Phone 879-6475

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
I	INTRODUCTION	1
II	SUMMARY OF REMEDIAL ACTIONS	2
III	SUMMARY OF ANALYTICAL RESULTS	6
IV	ADDITIONAL REMEDIAL ACTIONS	7

I. INTRODUCTION

In response to Consent Order # WC4253, HRP Associates, Inc. was retained by Mrs. Celinda W. Mayo, owner of the property located at 76 Wolcott Road in Wolcott, Connecticut (the subject site is presently leased by Waterbury Heat Treating Inc.) to investigate the extent of soil and ground water contamination resulting from historic quenching oil discharges to the ground. To determine the extent of contamination, a site investigation was conducted by HRP Engineers with Mr. Scott Wing of the Department of Environmental Protection, Water Compliance Unit (DEP-WCU) on July 28, 1986. In September, 1986 approval by Mr. Scott Wing was given to proceed with sampling and excavation as outlined in the "Scope of Study Report" (attached as Appendix G).

Summarized in Section II of this report are the actions taken to date to excavate contaminated soil at the Waterbury Heat Treating, Inc. site.

II. SUMMARY OF REMEDIAL ACTIONS

September 10, 1986

- excavated soil around back door pad and stored the soil on plastic at rear of the facility (P4-See Figure 1)
- excavated soil around stand pipe B and stored the soil on plastic at rear of the facility (P4)
- determined that stand pipe B was connected to an inactive 4 inch cast iron septic line
- excavated soil around stand pipe A and stored the soil on plastic at rear of the facility (P4)
- determined that stand pipe A was connected to an inactive 4 inch cast iron septic line
- located a 5,000 gallon underground storage tank adjacent to stand pipe A, containing approximately 1000 gallons of quench oil (Note: No fill or vent lines for this tank were visible)

September 12, 1986

- samples were collected from the underground storage tank and stand pipe B (Note: the only oil in this pipe was in the U-shape trap) and submitted to Baron Consulting Company for analysis (see Appendix A)

October 1, 1986

- 1000 gallons of quench oil (Connecticut Regulated Waste CRO2) was hauled off-site for disposal by United Industrial Services, Inc. (see manifest in Appendix B)

October 17, 1986

- the 5000 gallon underground storage tank was removed by the J. J. Brennen Company and stored on plastic at the rear of the facility (see Figure 1)
- soil excavated as part of the tank removal was stored at the rear of the facility (P3)

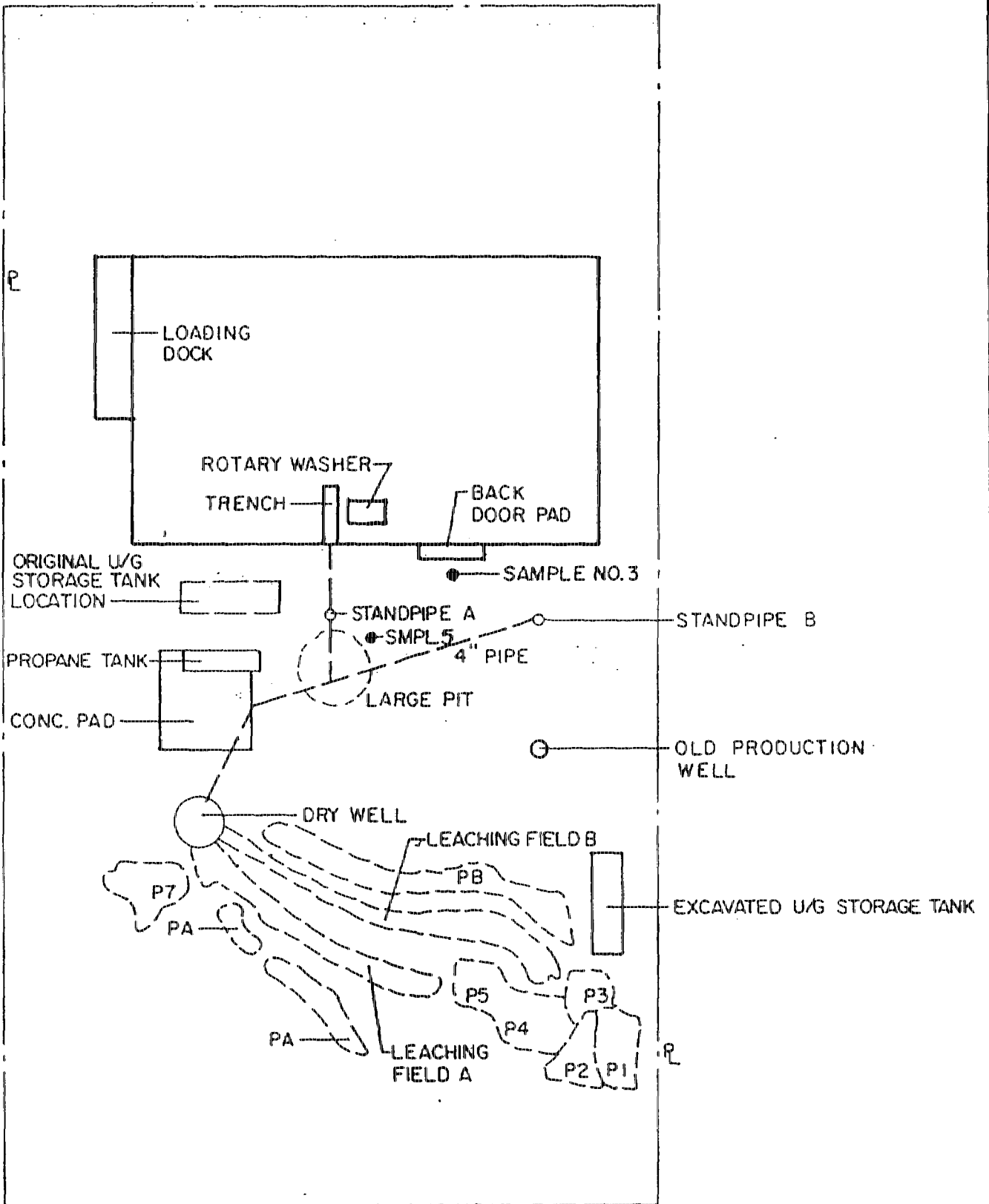


FIG. 1
FACILITY SITE
WATERBURY HEAT TREATING, INC.
WOLCOTT, CT.

1" = 30' WCWHT0

October 22, 1986

- removed septic line (see Figure 1) and excavated contaminated soil surrounding septic line A (Note: a pit measuring approximately 20' L x 20' W x 10' D was dug where septic lines A and B joined)
- removed septic line B and excavated contaminated soil surrounding septic line B
- contaminated soil surrounding these lines was stored on plastic at rear of the facility (P1, P2 and P5)
- dry well containing oily waste was located just beyond the concrete pad (see Figure 1)
- test pits were dug around the dry well to determine the location of the leaching fields

October 23, 1986

- samples were collected at the following locations (see Figure 1)

- #3 - front of back door pad
- #5 - adjacent to leach pit pipe B
- Comp A - composite of large pit wall 0-2 feet
- Comp B - composite of large pit wall 2-6 feet
- Comp C - composite of large pit wall 6-10 feet
- #10 - sludge from dry well

- analytical results are provided in Appendices C and D

October 24, 1986

- excavated dry well and stored contaminated soil on plastic (P6 and P7)
- dry well measured approximately 13' diameter by 12' deep and was constructed of cinder blocks
- dry well was sampled as follows:

- Composite A - along north wall
- Composite B - along east wall
- Composite C - along west wall
- # 11 - bottom of pit

- septic pipe lying underneath the concrete pad was not removed
- analytical results are provided in Appendix E

October 29, 1986

- started excavation of leaching fields A and B

October 31, 1986

- collected core samples from piles P1, P2, P3, P4, P5 and P6 and delivered to the laboratory for analysis
- analytical results are provided in Appendix C

November 3, 1986

- continued excavation of leaching fields A and B

November 4, 1986

- continued excavation of leaching fields A and B

November 7, 1986

- completed excavation of leaching fields A and B
- leaching fields measured approximately 5' W x 80' L x 6' D each

November 10, 1986

- samples were collected from the following locations and submitted for analysis

#PA - composite from leaching field Pile A

#PB - composite from leaching field Pile B

7 - excavated soil from dry well

- analytical results are provided in Appendix F

November 21, 1986

- sample collected for pile P7 for oil and grease analysis
- see Appendix F for analytical results

III. SUMMARY OF ANALYTICAL RESULTS

All samples collected at the Waterbury Heat Treating site, as shown in Appendices C through F were analyzed for arsenic, cadmium, chromium (total), lead, cyanide (total) and cyanide (amenable). In addition, piles P7, PA and PB which contain the highest visible contamination, were analyzed for halogenated volatile organics (8010) and aromatic volatile organics (8020). Pile P7, as requested by Mr. Scott Wing, was also analyzed for oil and grease.

Based from these analytical results, the highest concentration of contamination was detected in piles P5, P6 and P7. However, since these results are below the State of Connecticut's clean standards, this material is classified as only "contaminated soil." Consequently, HRP Associates, Inc. respectively requests approval to dispose of the following material at the Waterbury landfill:.

<u>Pile #</u>	<u>Estimated Quantity</u>
P-1	16 cubic yards
P-2	63 cubic yards
P-3	43 cubic yards
P-4	70 cubic yards
P-5	28 cubic yards
P-6	16 cubic yards
P-7	35 cubic yards
PA	40 cubic yards
PB	40 cubic yards
TOTAL	351 cubic yards

IV. ADDITIONAL REMEDIAL ACTIONS

To meet the requirements of consent order # WC4253 and scope of services outlined under HRP's September, 1986 report, the following scope of work will be performed upon removal of contaminated soil:

- abandonment of inactive production well per Section 25-128-57 of the State of Connecticut's well drilling board and rules and regulations
- backfilling, grading and seeding of all excavated areas;
- off-site disposal of 5000 gallon storage tank; and
- installation of two (2) downgradient monitoring wells.

Appendix A

Quench Oil from Underground Storage
Tank and Standpipe B
Analytical Results

Waterbury Heat Treat
WC-WHT-Ø

BARON CONSULTING CO.

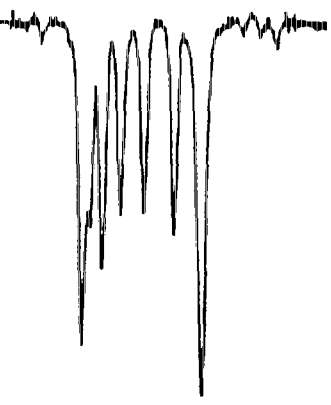
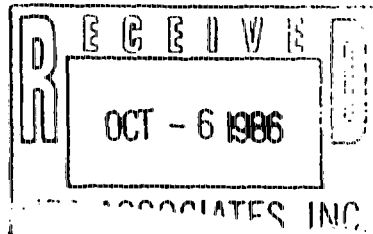
HARRY AGAHIGIAN, Ph.D., DIRECTOR

analytical services

P.O. BOX 663, ORANGE CT. 06477

September 30, 1986

Ms. Nina Northrup
HRP Assoc.
P. O. Box 732
New Britain, Ct. 06050



Analysis of Job # WC-WHT-O
BC# 50074

	TIA	PIA
Flash Point	195.8°F	None Observed
Cyanide	ND<1.0	ND<1.0

	TIB	PID
As	ND<.1	ND<.1
Pb	ND<.1	ND<.1
Cd	ND<.1	ND<.1
Cr	ND<.1	ND<.1

All values are expressed in mg/l.

This analysis was done per the EP Toxicity Procedure.

ROB/rsb

Robert O. Blake, Jr.
Laboratory Manager

This report is submitted with the understanding that it is not to be reproduced for advertising or other purposes over our signature without express written permission from us. We do not accept any liability concerning the use of these results.

NOT RESPONSIBLE FOR SAMPLES LEFT OVER 30 DAYS AFTER RECEIPT OF REPORT.

EPA METHOD 8010
HALOGENATED VOLATILE ORGANICS

JOB #WC-WHT-0
BC# 50073

	PIC(ppb)	TIC(ppm)
1. Benzyl chloride	ND<10	ND<10
2. Bis (2-chloroethoxy)methane	ND<10	ND<10
3. Bis (2-chloroisopropyl)ether	ND<10	ND<10
4. Bromobenzene	ND<10	ND<10
5. Bromodichloromethane	ND<10	ND<10
6. Bromoform	ND<10	ND<10
7. Bromomethane	ND<25	ND<25
8. Carbon tetrachloride	ND<10	ND<10
9. Chloroacetaldehyde	ND<10	ND<10
10. Chloral	ND<10	ND<10
11. Chlorobenzene	ND<10	ND<10
12. Chloroethane	ND<10	ND<10
13. Chloroform	ND<10	ND<10
14. 1-Chlorohexane	ND<10	ND<10
15. 2-Chloroethyl vinyl ether	ND<10	ND<10
16. Chloromethane	ND<25	ND<25
17. Chloromethyl methyl ether	ND<10	ND<10
18. Chlorotoluene	ND<10	ND<10
19. Dibromochloromethane	ND<10	ND<10
20. Dibromomethane	ND<10	ND<10
21. 1,2-Dichlorobenzene	ND<10	ND<10
22. 1,3-Dichlorobenzene	ND<10	ND<10

	PIC(ppb)	TIC(ppm)
23. 1,4-Dichlorobenzene	ND<10	ND<10
24. Dichlorodifluoromethane	ND<10	ND<10
25. 1,1-Dichloroethane	ND<10	ND<10
26. 1,2-Dichloroethane	ND<10	ND<10
27. 1,1-Dichloroethylene	ND<10	ND<10
28. trans-1,2-Dichloroethylene	ND<10	ND<10
29. Dichloromethane	ND<10	ND<10
30. 1,2-Dichloropropane	ND<10	ND<10
31. 1,3-Dichloropropylene	ND<10	ND<10
32. 1,1,2,2-Tetrachloroethane	ND<10	ND<10
33. 1,1,1,2-Tetrachloroethane	ND<10	ND<10
34. Tetrachloroethylene	ND<10	ND<10
35. 1,1,1-Trichloroethane	ND<10	ND<10
36. 1,1,2-Trichloroethane	ND<10	ND<10
37. Trichloroethylene	ND<10	ND<10
38. Trichlorofluoromethane	ND<10	ND<10
39. Trichloropropane	ND<10	ND<10
40. Vinyl chloride	ND<50	ND<50

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

JOB # WC-WHT-0
BC# 50073
Results in ppb

	PIC	TIC
1. Benzene	ND<5	ND<5
2. Chlorobenzene	ND<15	ND<15
3. 1,2-Dichlorobenzene	ND<15	ND<15
4. 1,3-Dichlorobenzene	ND<15	ND<15
5. 1,4-Dichlorobenzene	ND<15	ND<15
6. Ethyl benzene	ND<5	1.355
7. Toluene	ND<5	2.688
8. Xylenes (Dimethyl benzenes)	ND<5	ND<5

Appendix B

Quench Oil Manifest

DEPARTMENT OF ENVIRONMENTAL PROTECTION
 Hazardous Waste MANIFEST SECTION, State Office Building, Hartford, CT 06106



PLEASE PRINT OR TYPE (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.		Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law, but may be required by State law.	
3. GENERATOR'S Name and Mailing Address					A. State Manifest Document Number CT B 0014467		
4. GENERATOR'S Phone					M. State Gen. ID		
TRANSPORTER 1 Company Name United Industrial Services		6	US EPA ID Number CTD021816889		C. State Train ID		
TRANSPORTER 2 Company Name		8	US EPA ID Number		D. Train Phone 203 235-3753		
DESIGNATED FACILITY Name and Street Address United Oil Recovery 136 Grassy Ave. Kate Meriden, CT 06450		10	US EPA ID Number CTD021816889		E. State Train ID		
					F. Train Phone 203 235-3753		
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)					12. Containers	13. Total Quantity	14. Unit (Wt/Vol)
					No.	Type	Waste No.
					3 0.5 1 100 / 100 3		
Additional Descriptions for Materials Listed Above					Additional Codes for Waste Listed Above		
15. SPECIAL HANDLING Instructions and Additional Information							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, and all applicable State laws and regulations. Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(f) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal, hereby available to me which minimizes the present and future threat to human health and the environment.							
Printed/Typed Name				Signature		Date Month Day Year	
17. TRANSPORTER 1 Acknowledgement of Receipt of Materials				Signature		Date Month Day Year	
Printed/Typed Name				Signature		Date Month Day Year	
18. TRANSPORTER 2 Acknowledgement of Receipt of Materials				Signature		Date Month Day Year	
Printed/Typed Name				Signature		Date Month Day Year	
19. DISCREPANCY							
FACILITY OWNER OR OPERATOR:				Signature		Date Month Day Year	
Printed/Typed Name				Signature		Date Month Day Year	

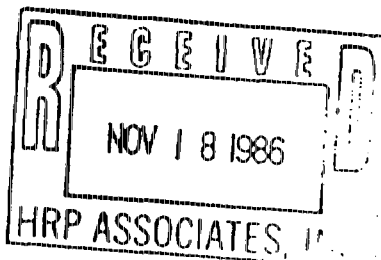
Appendix C

Analytical Results for
Piles P1 - P6, #3 and #5

Waterbury Health
WC-WHT-0

November 17, 1986

HRP Associates Inc.
P.O. Box 732
New Britain, CT 06050



RE: Lab. No. 106-036-8
P.O. No. WC-WHT-0
Inv. No. 133

Dear Ms. Northrup:

The following is a report of analysis on samples received October 31, 1986:

EP TOXICITY

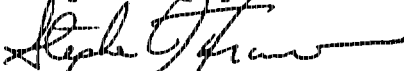
	<u>P-1</u>	<u>P-2</u>	<u>P-3</u>
Arsenic mg/l	ND<0.01	ND<0.01	ND<0.01
Cadmium mg/l	ND<0.01	ND<0.01	ND<0.01
Chromium, Total mg/l	ND<0.01	ND<0.01	ND<0.01
Lead mg/l	ND<0.02	0.16	ND<0.02
Cyanide, Total mg/l	<0.02	<0.02	<0.02
Cyanide, Amenable mg/l	<0.02	<0.02	<0.02

	<u>P-4</u>	<u>P-5</u>	<u>P-6</u>
Arsenic mg/l	ND<0.01	ND<0.01	ND<0.01
Cadmium mg/l	ND<0.01	0.01	ND<0.01
Chromium, Total mg/l	0.01	0.04	0.01
Lead mg/l	0.14	0.22	0.08
Cyanide, Total mg/l	<0.02	<0.02	0.08
Cyanide, Amenable mg/l	<0.02	<0.02	<0.02

	<u>No. 3</u>	<u>No. 5</u>
Arsenic mg/l	ND<0.01	ND<0.01
Cadmium mg/l	ND<0.01	ND<0.01
Chromium, Total mg/l	ND<0.01	ND<0.01
Lead mg/l	ND<0.02	ND<0.02
Cyanide, Total mg/l	<0.02	<0.02
Cyanide, Amenable mg/l	<0.02	<0.02

If you have any questions, please contact me.

Very truly yours,


Stephen J. Franco
Laboratory Director

CONNECTICUT TESTING LABORATORIES, INC.

140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

WATER

SOIL

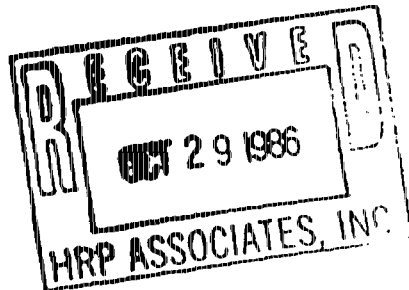
AIR

STEPHEN J. FRANCO
Laboratory Director



Appendix D
Analytical Results for Large Pit

Water...
WC-WHT-0



October 29, 1986
HRP Associates, Inc.
P.O. Box 732
New Britain, CT 06050

RE: Lab No. 106-016-4
Project ID: WC-WHT-0
Inv. No. 00111

Dear Ms. Northrup:

The following is a report of analysis on samples received 10-24-86:

EP Toxicity

	<u>Comp A</u>	<u>Comp B</u>	<u>Comp C</u>	<u># 10</u>
Arsenic	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Cadmium	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Chromium, Total	ND<0.01	ND<0.01	ND<0.01	0.06
Lead	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Cyanide, Total	<0.01	<0.01	<0.01	0.12
Cyanide, Amen.	<0.01	<0.01	<0.01	<0.01

The above concentrations are in mg/l.

Please contact us if you have any questions.

Very truly yours,

Stephen J. Franco
Laboratory Director

CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

WATER

SOIL

AIR

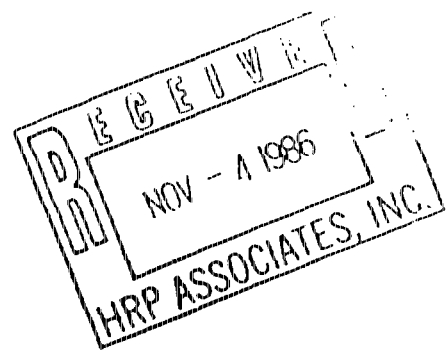
FRANCO
Director

Appendix E
Analytical Results for Dry Well

Waterbury Great Trail
WC-WHT-0

WATER

November 3, 1986



SOIL

HRP Associates Inc.
P.O. Box 732
New Britain, CT 06050

AIR

Attention: Nina Northrup

RE: Lab. No. 106-026-4
P.O. No. WC-WHT-0
Inv. No. 118

Dear Ms. Northrup:

The following is a report of analysis on samples received October 30, 1986:

EP Toxicity

J. FRANCO
y Director

	<u>Comp</u> <u>A</u>	<u>Comp</u> <u>B</u>	<u>Comp</u> <u>C</u>	<u>No. 11</u>
Arsenic mg/l	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Cadmium mg/l	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Chromium, Total mg/l	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Lead mg/l	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Cyanide, Total mg/l	<0.01	<0.01	<0.01	0.04
Cyanide, Amenable mg/l	<0.01	<0.01	<0.01	<0.01

If you have any questions, please contact me.

Very truly yours,

Stephen J. Franco
Laboratory Director

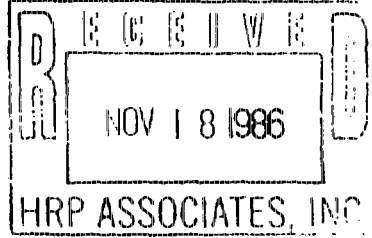
SJF:ckf

CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

Appendix F
Analytical Results Piles A, B, and 7

Water, Soil, Heat Test
WC-WHT-d

November 17, 1986



HRP Associates Inc.
P.O. Box 732
New Britain, CT 06050

RE: Lab. No. 116-015-3
P.O. No. WC-WHT-O
Inv. No. 132

Dear Ms. Northrup:

The following is a report of analysis on samples received November 11, 1986:

	<u>EP TOXICITY</u>		
	<u>PA</u>	<u>PB</u>	<u>P7</u>
Arsenic mg/l	ND<0.01	ND<0.01	ND<0.01
Cadmium mg/l	ND<0.01	ND<0.01	ND<0.01
Chromium, Total mg/l	ND<0.01	ND<0.01	0.02
Lead mg/l	ND<0.02	ND<0.02	0.12
Cyanide, Total mg/l	<0.02	0.04	0.04
Cyanide, Amenable mg/l	<0.02	<0.02	<0.02

If you have any questions, please contact me.

Very truly yours,

Stephen J. Franco
Laboratory Director

SJF:ckf

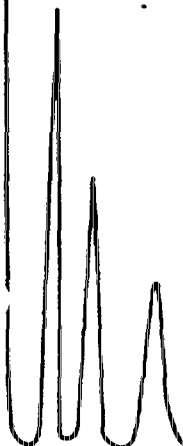
CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

WATER

SOIL

AIR

FRANCO
Director



EPA METHOD 8010
 HALOGENATED VOLATILE ORGANICS

JOB #WC-WHT-0
 BC #50990

	PA	PB	P7
1. Benzyl chloride	ND<15	ND<15	ND<15
2. Bis (2-chloroethoxy)methane	ND<15	ND<15	ND<15
3. Bis (2-chloroisopropyl)ether	ND<15	ND<15	ND<15
4. Bromobenzene	ND<15	ND<15	ND<15
5. Bromodichloromethane	ND<15	ND<15	ND<15
6. Bromoform	ND<15	ND<15	ND<15
7. Bromomethane	ND<50	ND<50	ND<50
8. Carbon tetrachloride	ND<15	ND<15	ND<15
9. Chloracetaldehyde	ND<15	ND<15	ND<15
10. Chloral	ND<15	ND<15	ND<15
11. Chlorobenzene	ND<15	ND<15	ND<15
12. Chloroethane	ND<15	ND<15	ND<15
13. Chloroform	ND<15	ND<15	ND<15
14. 1-Chlorohexane	ND<15	ND<15	ND<15
15. 2-Chloroethyl vinyl ether	ND<15	ND<15	ND<15
16. Chloromethane	ND<50	ND<50	ND<50
17. Chloromethyl methyl ether	ND<15	ND<15	ND<15
18. Chlorotoluene	ND<15	ND<15	ND<15
19. Dibromochloromethane	ND<15	ND<15	ND<15
20. Dibromomethane	ND<15	ND<15	ND<15
21. 1,2-Dichlorobenzene	ND<15	ND<15	ND<15
22. 1,3-Dichlorobenzene	ND<15	ND<15	ND<15

	PA	PB	P7
23. 1,4-Dichlorobenzene	ND<15	ND<15	ND<15
24. Dichlorodifluoromethane	ND<15	ND<15	ND<15
25. 1,1-Dichloroethane	ND<15	ND<15	ND<15
26. 1,2-Dichloroethane	ND<15	ND<15	ND<15
27. 1,1-Dichloroethylene	ND<15	ND<15	ND<15
28. trans-1,2-Dichloroethylene	ND<15	ND<15	ND<15
29. Dichloromethane	ND<15	ND<15	ND<15
30. 1,2-Dichloropropane	ND<15	ND<15	ND<15
31. 1,3-Dichloropropylene	ND<15	ND<15	ND<15
32. 1,1,2,2-Tetrachloroethane	ND<15	ND<15	ND<15
33. 1,1,1,2-Tetrachloroethane	ND<15	ND<15	ND<15
34. Tetrachloroethylene	ND<15	ND<15	ND<15
35. 1,1,1-Trichloroethane	ND<15	ND<15	ND<15
36. 1,1,2-Trichloroethane	ND<15	ND<15	ND<15
37. Trichloroethylene	ND<15	ND<15	ND<15
38. Trichlorofluoromethane	ND<15	ND<15	ND<15
39. Trichloropropane	ND<15	ND<15	ND<15
40. Vinyl chloride	ND<50	ND<50	ND<50

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Job# WC-WHT-0
BC# 50990

	PA	PB	P7
1. Benzene	ND<5	ND<5	ND<5
2. Chlorobenzene	ND<15	ND<15	ND<15
3. 1,2-Dichlorobenzene	ND<15	ND<15	ND<15
4. 1,3-Dichlorobenzene	ND<15	ND<15	ND<15
5. 1,4-Dichlorobenzene	ND<15	ND<15	ND<15
6. Ethyl benzene	ND<5	ND<5	ND<5
7. Toluene	ND<5	ND<5	ND<5
8. Xylenes (Dimethyl benzenes)	ND<5	ND<5	ND<5

APPENDIX G
SCOPE OF STUDY REPORT

SCOPE OF STUDY

WATERBURY HEAT TREATING, INC.
76 WOLCOTT ROAD
WOLCOTT, CONNECTICUT

HRP# WC-WHT-Ø

AUGUST, 1986

Submitted by:

HRP Associates, Inc.
10 Lexington Street
New Britain, Connecticut

TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
1.0	INTRODUCTION	1
	1.1 SITE LOCATION	2
2.0	GEOLOGY OF THE SITE AREA	4
	2.1 BEDROCK GEOLOGY	5
	2.2 SURFICIAL GEOLOGY	5
	2.3 SOIL	6
3.0	GROUND WATER USE/CLASSIFICATION	7
4.0	SURFACE WATER USE/CLASSIFICATION	8
5.0	HYDROLOGY	9
6.0	HAZARDOUS MATERIALS HANDLING AND STORAGE . .	10
7.0	PROPOSED SCOPE OF STUDY	12
8.0	SAMPLING AND ANALYSIS PROTOCOL	14
	8.1 ANALYTICAL PROCEDURES	15
9.0	GROUND WATER MONITORING SAMPLING AND ANALYSIS PROGRAM	17
	9.1 GROUND WATER MONITORING PARAMETERS . .	19
	9.2 SAMPLE COLLECTION PROCEDURES	19
	9.3 SAMPLING RECORDS AND CHAIN-OF-CUSTODY CONTROL	20
10.0	REPORTING PROCEDURES	22

SCOPE OF STUDY

WATERBURY HEAT TREATING, INC.
76 WOLCOTT ROAD
WOLCOTT, CONNECTICUT

1.0 INTRODUCTION

HRP Associates, Inc. has been retained by Dr. Celinda W. Mayo, owner of the property located at 76 Wolcott Road in Wolcott, Connecticut, (the subject site is presently leased by Waterbury Heat Treating, Inc.), to investigate the extent of soil and ground water contamination resulting from historic quenching oil discharges to the ground.

To meet the requirements of Consent Order WC4253 between Dr. Celinda W. Mayo and the Commissioner of Environmental Protection, the investigation will include the following tasks:

- A. Preparation of soil and groundwater sampling and analysis plan for submission to the Department of Environmental Protection (DEP).
- B. Upon approval of the DEP, implementation of the soil sampling and analysis plan.
- C. Preparation of a remedial action report detailing the results of field investigations, laboratory analyses and recommended remedial action (as necessary).

This report contains the soil and ground water sampling and analysis plan as required by Item (A) above.

In order to initially define the scope of the investigation, a site inspection was conducted by HRP Engineers with Mr. Scott Wing of the Department of

Environmental Protection Water Compliance Unit (DEP-WCU) on July 28, 1986.

In addition to the site inspection, HRP has reviewed various inspection reports and results of laboratory analysis of soil samples collected by the Department of Environmental Protection (DEP).

1.1 Site Location

The subject site is located at 76 Wolcott Road in Wolcott, Connecticut. As mentioned previously, Waterbury Heat Treating Inc. has operated at this site since 1981. The location of the site is depicted on Figure 1.0.



SITE LOCATION

FIG. 10
 SITE LOCATION
 WATERBURY HEAT TREATING INC.
 WOLCOTT, CT.
 NTS WCWHT 0



2.0 GEOLOGY OF THE SITE AREA

The general geology of the site area has been described in the following reports and/or maps, all available from the Natural Resources Center, Connecticut Department of Environmental Protection:

- (1) "Bedrock Geology of the Southington Quadrangle", Map GQ-200; Crawford E. Fritts, U.S. Geological Survey, 1963.
- (2) "Surficial Geology of the Southington Quadrangle", Map GW-146; Albert M. LaSala, Jr., U. S. Geological Survey, 1961.
- (3) "Hydrogeologic Data for the Lower Housatonic River Basin", Connecticut Water Resources Bulletin No. 20; I. G. Grossman and W. E. Wilson, U. S. Geological Survey, 1970.
- (4) "Atlas of the Public Water Supply Sources and Drainage Basins of Connecticut", DEP Bulletin No. 4, Map No. 65, June, 1982.
- (5) "Water Resources of Connecticut, Part 5, Lower Housatonic River Basin", Connecticut Water Resources Bulletin No. 19; William E. Wilson, et. al., U. S. Geological Survey, 1974.
- (6) "Contour Map of the Bedrock Surface, Southington Quadrangle, Connecticut", Map MF-660 A; David L. Mazzaferro, U. S. Geological Survey, 1975.
- (7) "Proposed Water Quality Classifications for the Hudson, Housatonic River Basins", Sheet 1 of 2; Connecticut DEP, Water Compliance Unit, June, 1982.
- (8) "Soil Survey of New Haven County, Connecticut", Sheet Number 5, Charles A. Reynolds, U. S. Department of Agriculture, Soil Conservation Service.

2.1 Bedrock Geology

Bedrock underlying the Waterbury Heat Treating site is the "pcwp" member of the Waterbury Gneiss (Ref. 1). The name Waterbury Gneiss is restricted to metasedimentary rocks of the Precambrian Age that underlie the Straits Schist. The Waterbury Gneiss is part of a basement complex, which forms the core of a partly-preserved dome called the "Waterbury Dome".

The "pcwp" member is a fine-grained, thinly banded, light-to-dark gray paragneiss composed of quartz, biotite, muscovite, intermediate to calcic oligoclase, kyanite, garnet microcline and magnetite. In some places, it contains schist and minor calc-silicate rocks.

No bedrock outcroppings were observed on the site or in the vicinity during the field inspection. However, review of data on aquifer characteristics in the area (Ref. 5) suggest that bedrock is within approximately 20 feet of the ground surface at the location (Ref. 6).

2.2 Surficial Geology

Surficial material at the Waterbury Heat Treating site is mapped as a kame-terrace deposit (Reference 2). Kame-terrace deposits consist of stratified drift forming benches against hillsides or valley walls. They were deposited in contact with stagnant ice that has shrunk away from the hills and valley walls and may be considered as

fills formed in temporary glacial valleys that were restricted on one side by de-glaciated ground and on the other by stagnant ice. The Kame-terrace deposits are reported to be composed of well-sorted, cross-bedded sand and gravel.

2.3 Soil

Soils occurring on the Waterbury Heat Treating site are mapped by the Soil Conservation Services (SCS) as Agawam fine, sandy loam, 8 to 15 percent slopes (Reference 8). Typically, the surface layer of soil is dark brown, fine, sandy loam, 8 inches thick. The subsoil is dominantly dark brown and dark yellowish brown, fine, sandy loam, 20 inches thick. The substratum, to a depth of 60 inches, is yellowish brown, gravelly sand.

3.0 GROUND WATER USE/CLASSIFICATION

The 1982 DEP "Atlas of Public Water Supply Sources and Drainage Basins in Connecticut", Map Nos. 64 and 65 (Reference 4) indicates that there are no public ground or surface water supplies mapped within at least a mile radius of the Waterbury Heat Treating site.

Although there are no private wells mapped in the area in the "Hydrogeologic Data for the Lower Housatonic River Basin, Connecticut", HRP is aware that this facility and surrounding local industries have bedrock production wells.

Ground water areas underlying the site and downgradient of Waterbury Heat Treating have been assigned a ground water classification of GB/GA by the Connecticut Department of Environmental Protection. GA ground water may be suitable for drinking water supplies without treatment. Industrial or other discharges to GA water will not be permitted by the DEP if these discharges pose a threat to GA ground waters. GB ground water may not be suitable for public or private use as drinking water without treatment. No quantitative limits apply since GB ground waters are known or presumed to be degraded. The GB/GA classification indicates a current ground water quality condition consistent with GB standards and a proposed State water quality management goal of an upgrading to GA quality.

4.0 SURFACE WATER USE/CLASSIFICATION

The proposed surface water classification for the Old Tannery Brook at the Waterbury Heat Treating location and downstream is B/A. This classification means that the brook has a current water quality classification of "B" with a management goal of upgrading to "A" quality in the future. Class "A" surface waters may be suitable for drinking water supply and for all other uses including swimming, while Class "B" surface waters are lesser in quality and may be suitable for receiving treated industrial discharges.

5.0 HYDROLOGY

It is apparent from the topography of the area and the shallow nature of unconsolidated materials overlying bedrock that both ground and surface water drainage from the Waterbury Heat Treating site discharges to the Old Tannery Brook. The Old Tannery Brook which lies about 700 feet to the southeast of the site is directly tributary to the Mad River. The confluence of these streams is approximately 2000 feet south of the site.

6.0 HAZARDOUS MATERIALS HANDLING AND STORAGE

The Waterbury Heat Treating, Inc. is a job shop that specializes in the heat treating and annealing of metal parts. The process utilized at this facility consists of first heating the parts in an oven, running the parts through an oil quench batch and then washing the parts with a detergent in a rotary washer.

From the rotary washer, the overflow is discharged to a rinse tank (located inside the building) where the oil layer is manually skimmed and stored in a 50 gallon tank for reuse. The only discharge from this operation is the non-contact cooling water.

Spillage from this operation prior to 1985 was discharged to the sanitary sewer via a floor drain. Per a DEP order, the floor drain has been sealed and any spillage is now collected in the floor trench located adjacent to the rotary washer.

In the past, the industrial rinse waters were discharged to the on-site dry well/leaching field system and the quench oils to an underground 3,000 gallon cooling tank. The visible soil contamination at this site is due to the overfilling of the underground cooling tank. General location of this well/tank contaminated soil is shown on Figure 6.1.

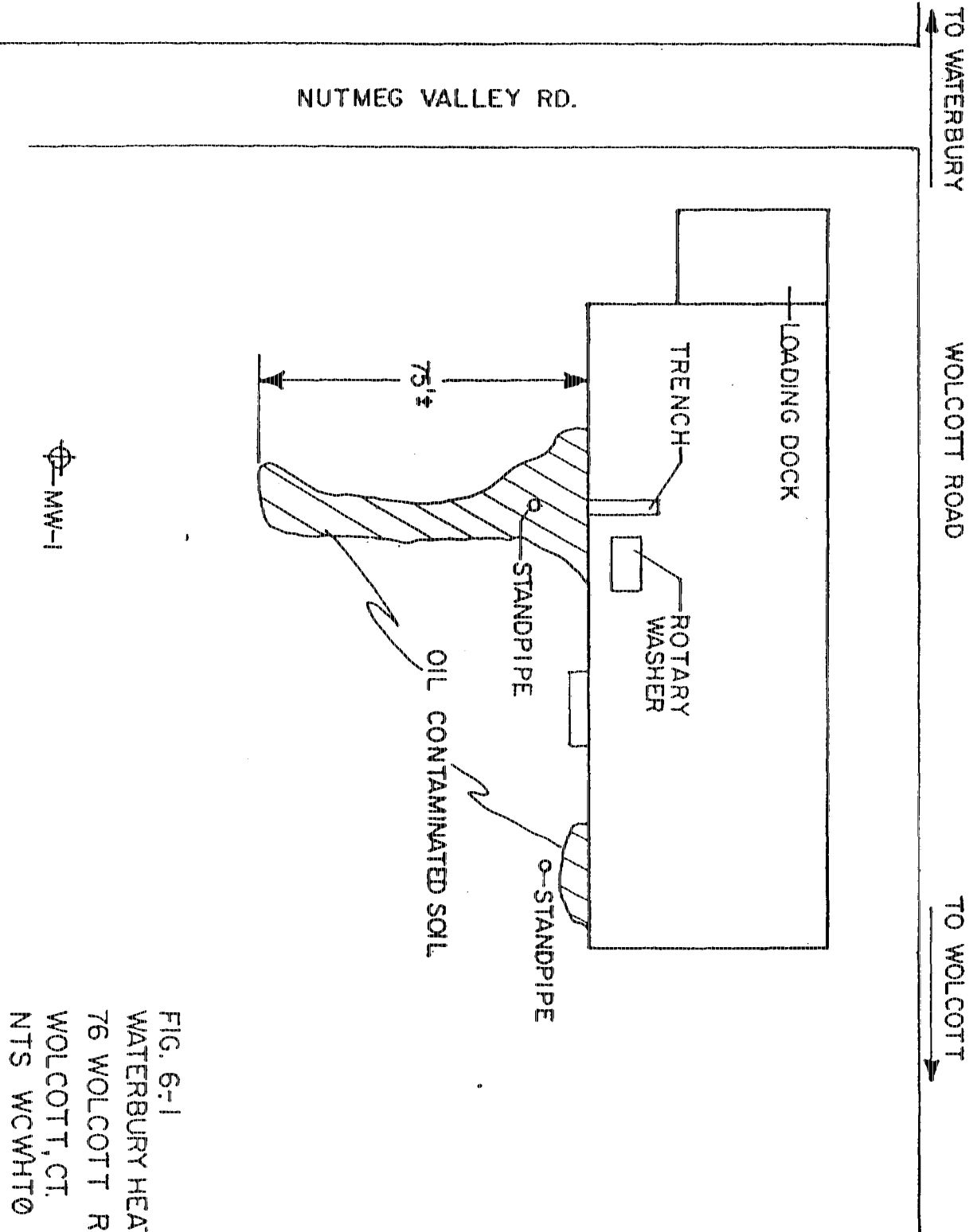


FIG. 6-1
 WATERBURY HEAT TREATING INC.
 76 WOLCOTT RD.
 WOLCOTT, CT.
 NTS WCMHTO

7.0 PROPOSED SCOPE OF STUDY

On July 28, 1986 HRP engineers accompanied by Mr. Scott Wing (DEP) and Mr. Roger Pelletier (Waterbury Heat Treating, Inc.) conducted a site inspection of the plant's facilities and property. Based upon the information gathered during this inspection, and a review of DEP sampling data for the site, and HRP's experience with similar waste, it was possible to outline the following scope of work to meet the requirements of Order #WC4253. A map which indicates the location of the various areas of concern is included as Figure 6.1.

Scope of Work

- A. Removal of all brush, shrubs, etc. from the rear of the building to determine the extent of soil contamination and location of any underground tanks, standard pipes or vents.
- B. Off-site disposal of the brush and shrubs to the City of Waterbury's landfill following the DEP approval. In the interim, this material will be stored at the rear of the facility's property.
- C. Sampling of the underground storage tanks, located under task A, the on-site septic tank, the production well and the underground quench water cooling tank. Samples are to be analyzed for the following:

Water

Cyanide (Total)
Cyanide (Amenable)
Halogenated Volatile
 Organics (8010)
Aromatic Volatile
 Organics (8020)

Oil

Cyanide (Total)
Cyanide (Amenable)
Halogenated Volatile
 Organics (8010)
Aromatic Volatile
 Organics (8020)
EP Toxic Metals:
Arsenic
Cadmium
Chromium
Lead
Flash Point

- D. Excavation of all visible contaminated soil which is to be stored on-site on an impervious base, (plastic liner, etc...) for ultimate disposal following sampling and the DEP approval. Soil will be analyzed for the parameters listed under Task C for oil.
- E. Based on the analytical results determined under Task D, the remaining soil in the excavation areas will be sampled and analyzed for any parameters which exceed the drinking water standard. Any remaining contaminated soil will be excavated and disposed of off-site in accordance with DEP standards.
- F. Excavation and removal of the on-site septic system and any idle underground storage tanks. The tanks will be removed and disposed of off-site in accordance with DEP standards and local fire marshall standards.
- G. Installation of one (1) groundwater monitoring well downgradient of the contaminated area. The monitoring well will be installed, sampled and analyzed in accordance with DEP standards.
- H. Preparation of a report summarizing the clean-up activities conducted and the results of all analytical testing.

8.0 SAMPLING AND ANALYSIS PROTOCOL

All soil and water/oil samples will be collected, labeled and assigned continuous chain-of-custody by an HRP staff engineer or geologist. Chain-of-custody records will be maintained by use of the HRP Custody Form contained in Appendix A.

Soil samples will be collected using a hand auger. The sampling procedure will be as follows:

- A. Auger a test hole.
- B. Prepare a log describing soil horizons character, grain size, odors, etc., for materials observed in each excavation.
- C. Place individual samples in new zip-lock polyethylene bags, label and store for transportation to laboratory.

All equipment will be cleaned before and between sample locations, using the following procedures:

- A. Rinse with tap water;
- B. Wash with laboratory soap (Liquinox) and tap water;
- C. Rinse with dilute nitric acid (pH4);
- D. Rinse with distilled water;
- E. Wipe with isopropyl alcohol; and
- F. Air dry.

All individual samples will be stored in a cooler, on ice, and delivered to the laboratory for analysis on the day of collection.

Composite samples will be prepared by an HRP technician at the laboratory and placed in clean glass jars.

Individual samples will be retained in refrigeration at the laboratory pending additional testing, as necessary.

The DEP will be informed as to sampling dates and is welcome to observe sample collection and take split samples. It is anticipated that sampling will require one day to complete.

8.1 Analytical Procedures

Presented on Table 8.1 are the analytical procedures to be followed for the samples collected under Section 6.0. The method numbers listed under this table refer to the procedures listed in Environmental Protection Agency Publication SW-846, July, 1982.

TABLE 8-1

ANALYTICAL PROCEDURES

<u>Parameter</u>	<u>Extraction Procedure</u>	<u>Method</u>
Cyanide (Total)		9010
Cyanide (Amenable)		9010
Arsenic	3010	7060
Cadmium	3010	7130
Chromium	3010	7190
Lead	3010	7420
Flash Point		1010
Halogenated Volatile Organics		8010
Aromatic Volatile Organics		8020

9.0 GROUND WATER MONITORING SAMPLING AND ANALYSIS PROGRAM

In order to identify the nature, degree and extent of ground water contamination (if any) which is occurring on-site, HRP proposes the installation of one (1) downgradient monitoring well. The well will be located as indicated on Figure 6-1.

Construction details for the monitoring well are presented in Figure 9-1.

Anticipated installation depths and screened sections are the following:

<u>Depth Below Land Surface</u>	<u>Screened Interval</u>
25 feet	10-25 feet

Well installation procedures will be in accordance with DEP specifications.

After the well is installed, an elevation survey will be performed by an HRP field team to determine the elevation of the ground surface and the top of the casing of the well.

The survey will be performed using a surveyor's bench-mark or other known surveyed elevation, if possible.

For interpretation of hydrogeologic data relative elevations are satisfactory. Therefore, if there is no known surveyed elevation reasonably available, an assumed elevation of 100.00 feet will be assigned to a permanent fixture at the facility such as the corner of the building foundation.

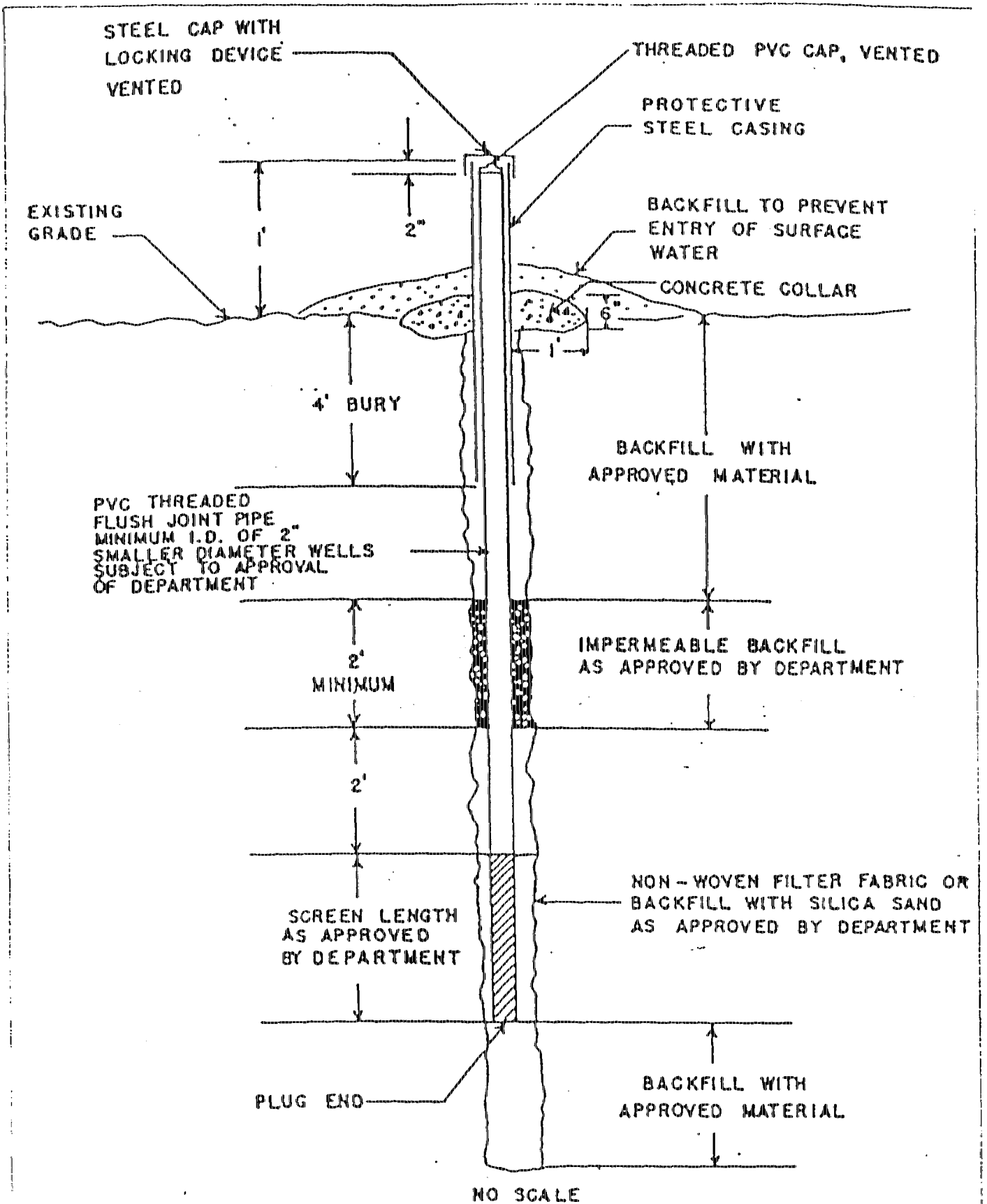


FIG. 9-1

TYPICAL MONITOR WELL INSTALLATION

9.1 Ground Water Monitoring Parameters

Based on the facility use and previous analyses conducted on soils by the Connecticut DEP, ground water samples will be analyzed for halogenated and aromatic volatile organics, heavy metals and cyanide by the same procedures and methods indicated in Section 8.1.

9.2 Sample Collection Procedures

Sample collection will comply with the EPA protocol set forth in the Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities (EPA 530/SW 611, August, 1977).

Monitor Well Sampling Procedure Summary

1. Measure water level in well. This is accomplished through the use of a 150 foot fiberglass tape (graduated in hundredths of a foot) equipped with a "plover" (sounding device).
2. Sample wells in order of least contaminated to most contaminated. This reduces chance of cross-contamination.
3. Evacuate a minimum of three well volumes (there are approximately 1.6 gallons of water in a 10-foot section of 2" casing).
4. Allow water level in the well to recover to static water level condition.
5. Collect the samples required for both in-field test and laboratory analyses.
6. Add required preservatives.
7. Properly label each sample container.
8. Store samples in a cooler.

Well evacuation and sample withdrawal at the Waterbury Heat Treating site will be performed with a mechanical (PVC) bailer. To eliminate any contamination from the bailers, the following decontamination procedure will be followed before the well is sampled:

- 1) Wash with a suitable laboratory soap (Liquinox);
- 2) Rinse well with tap water;
- 3) Nitric acid rinse (pH <2);
- 4) Rinse thoroughly with distilled water;
- 5) Rinse with Hexane; and
- 6) Air dry.

All sampling will be performed by an HRP field technician. In the event that time or equipment constraints require, it is possible that a peristaltic pump will be used to sample the well. In this case, new tubing (tygon for the pump head and polypropylene for the down-the-well extension) will be used to eliminate any chance of cross-contamination.

9.3 Sampling Records and Chain-of-Custody Control

The field technician performing the sampling will maintain a record of sampling activities.

HRP's field technician will be responsible for the care and custody of the samples collected until they are properly relinquished to the receiving laboratory or turned over to an assigned custodian. The field technician will assure that each container is in his/her physical possession or

view at all times, or stored in a locked place where no one may tamper with them.

Chain-of-custody will be controlled by allowing as few people as possible to handle the samples. The HRP field technician responsible for collecting and delivering the samples will utilize the HRP Chain-of-Custody Form (included as Appendix A). The laboratory custodian will sign the chain-of-custody form for all samples recieved.

10.0 REPORTING PROCEDURES

Following collection and analysis of soil and groundwater samples, HRP Associates, Inc. will review the results of the analyses and prepare a detailed report for submission to DEP. The report will contain:

- A. The results of the laboratory analyses.
- B. The logs of all soil samples/borings collected.
- C. A discussion of the nature, extent and degree of soil and/or ground water contamination of the site (if any).
- D. Proposed location of the downgradient ground water monitoring well.
- E. Recommendations in regard to necessary remedial actions.

APPENDIX A

10 Lexington Street
 Post Office Box 732
 New Britain, Ct. 06050

CHAIN OF CUSTODY RECORD

Place & Address Of Collection					Sampler Name (Signature)							
					Assistant (Witness) (Signature)							
					Job Number							
Sample Number	Sample Location	Type Container	Total Volume	Preservative	Date	Time	Sample Type				Remarks	
							Water	Soil	Air	Waste		
Relinquished By (Signature)				Received By (Signature)				Date	Time			
Relinquished By (Signature)				Received By (Signature)				Date	Time			
Relinquished By (Signature)				Received By (Signature)				Date	Time			
Name & Address Of Laboratory												
ANALYSIS REQUIRED												
SAMPLE IDENTIFICATION												
Parameters	Sample Number					Parameters	Sample Number					
Al						NO ₂ -N						
As						[Ortho] PO ₄ -P						
Ba						[Total] PO ₄ -P						
Cd						Oil & Grease						
Cd						Phenols						
Cr ⁶						CN ⁻ -A						
Cr ³						CN ⁻ -T						
Cu						TKN						
Fe ⁰						Organic-N						
Fe ²						TOC						
Pb						pH						
Mg						STD Water						
Mn ⁰						Fecal Coliform						
Mn ²						Fecal Strept.						
Na						Total Coliform						
Hg						Fluoride						
Ni						Chloride						
Ag						8010						
Sn						8020						
V.						8080						
Zn						8015						
TSS						TOx						
TDS												
TS												
Sp Cond.												
NO ₃ -N												
Remarks												

hrp associates inc.

engineering & geology

December 11, 1986

Mr. Scott Wing
Water Compliance Unit
Department of Environmental Protection
122 Washington Street
Hartford, Connecticut 06106

RE: GROUNDWATER MONITORING PROGRAM

Dear Mr. Wing:

Under the Scope of Study report prepared by HRP Associates, Inc. for Waterbury Heat Treating, Inc. (owned by Dr. Celinda W. Mayo) the installation of one (1) downgradient monitoring well was proposed to identify the nature, degree and extent of any on-site ground water contamination. Per your office request and further review of the site, the installation of an additional downgradient well and one (1) upgradient well have been included. General locations of the three (3) monitoring wells are shown on Figure 1.

Following installation of the wells, a brief report including monitor well completion reports, monitor well installation diagram and driller's logs (see Attachment #1) will be submitted to the DEP-WCU for review. Each well will be sampled per the procedures outlined under Section 9.0 of the Scope of Study report and analyzed by a certified laboratory for the following parameters:

<u>Parameter</u>	<u>Method</u>
Cyanide, total	9010
Cadmium	7130
Chromium, total	7190
Lead	7420
Halogenated Volatile Organics	8010
Aromatic Volatile Organics	8020

Following each sampling event which will be conducted on a quarterly basis, all analytical results will be submitted to the DEP-WCU no more than two months after the completion of each sampling event. After completing the fourth quarterly sampling event, the first year annual report of groundwater monitoring results will be submitted to the DEP-WCU within ninety days. Subsequently, quarterly and annual reports will be submitted to the DEP-WCU for the life of the facility and/or until authorization is received from the Commissioner to cease ground water monitoring.

If you require any additional information with regard to the Waterbury Heat Treating, Inc. groundwater monitoring program, please do not hesitate to contact me or Richard McFee.

Sincerely yours,

HRP ASSOCIATES, INC.

Mark C. Possidento

Mark C. Possidento, P.E. (KIS)
Manager, Engineering Services

cc: Dr. Elliott Mayo

MCP/klS

WOLCOTT RD.

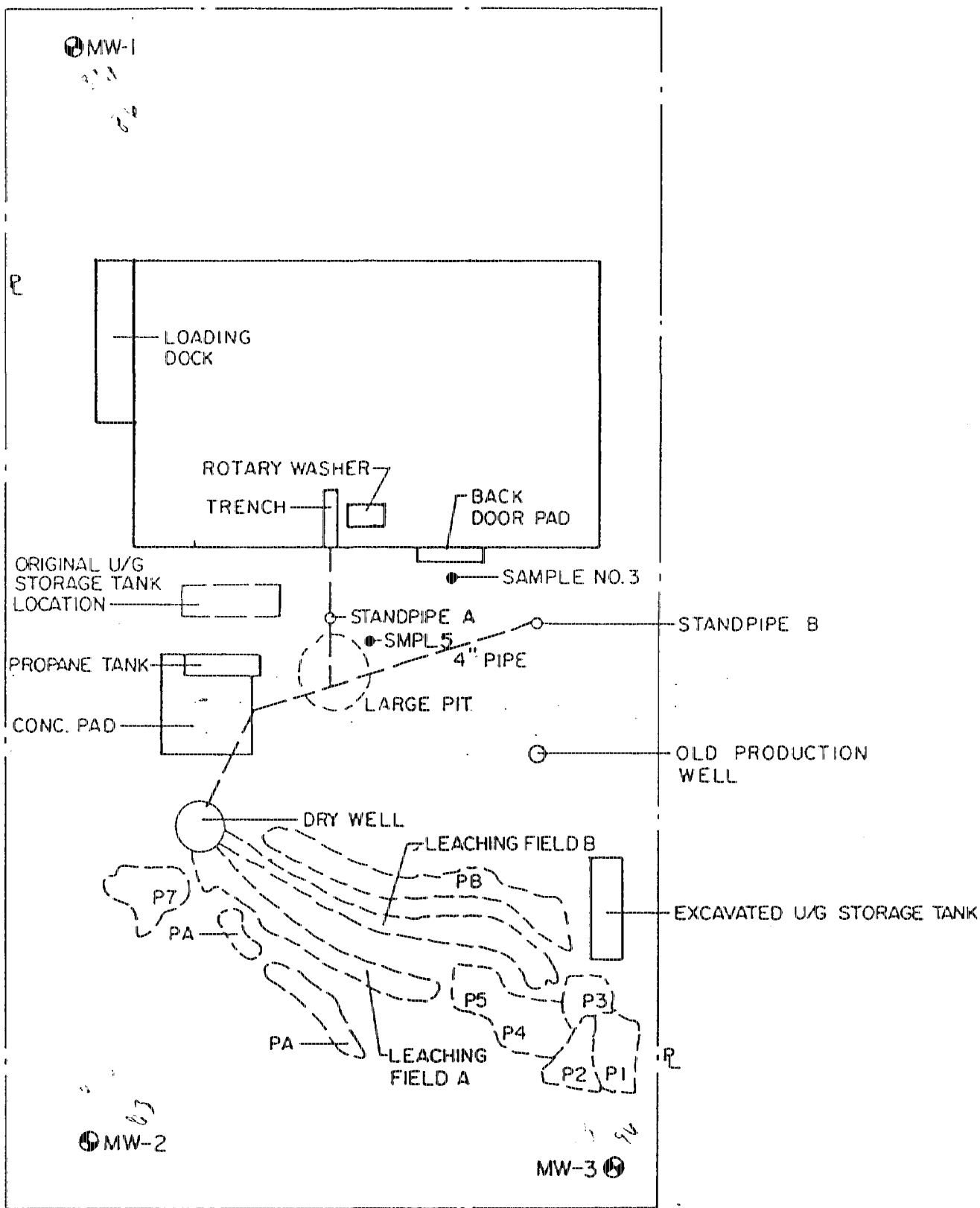


FIG. 1
FACILITY SITE
WATERBURY HEAT TREATING, INC.
WOLCOTT, CT.

1" = 30' WCHWHTØ

ATTACHMENT #1

MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: _____ Site: _____
Monitoring Point I.D. No.: _____ Date of completion: _____
DEP/WPC I.D. No: _____
Monitoring Point Location (relative to site features): _____
Drilling Contractor: _____ Supervising Engineer/Geologist: _____
Well Construction Method: _____

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): _____ Well depth below ground surface: _____
Refusal: _____ Yes _____ No
Top of casing elevation (MSL): _____ Screened interval: _____
Length of Screen: _____
Length of riser pipe: _____
Screen type: _____ Screen Slot size: _____
Filter fabric: _____ Yes _____ No Screen packing: _____ Yes _____ No
If yes, Thickness: _____
Well inside diameter: _____ Material: _____
grain size: _____
Impermeable Backfill: _____
Well casing material and schedule: _____ Estimated K screened interval: _____
Method of well development: _____ Time spent developing: _____
Locking _____ or threaded cap _____ Impermeable backfill: _____

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer:

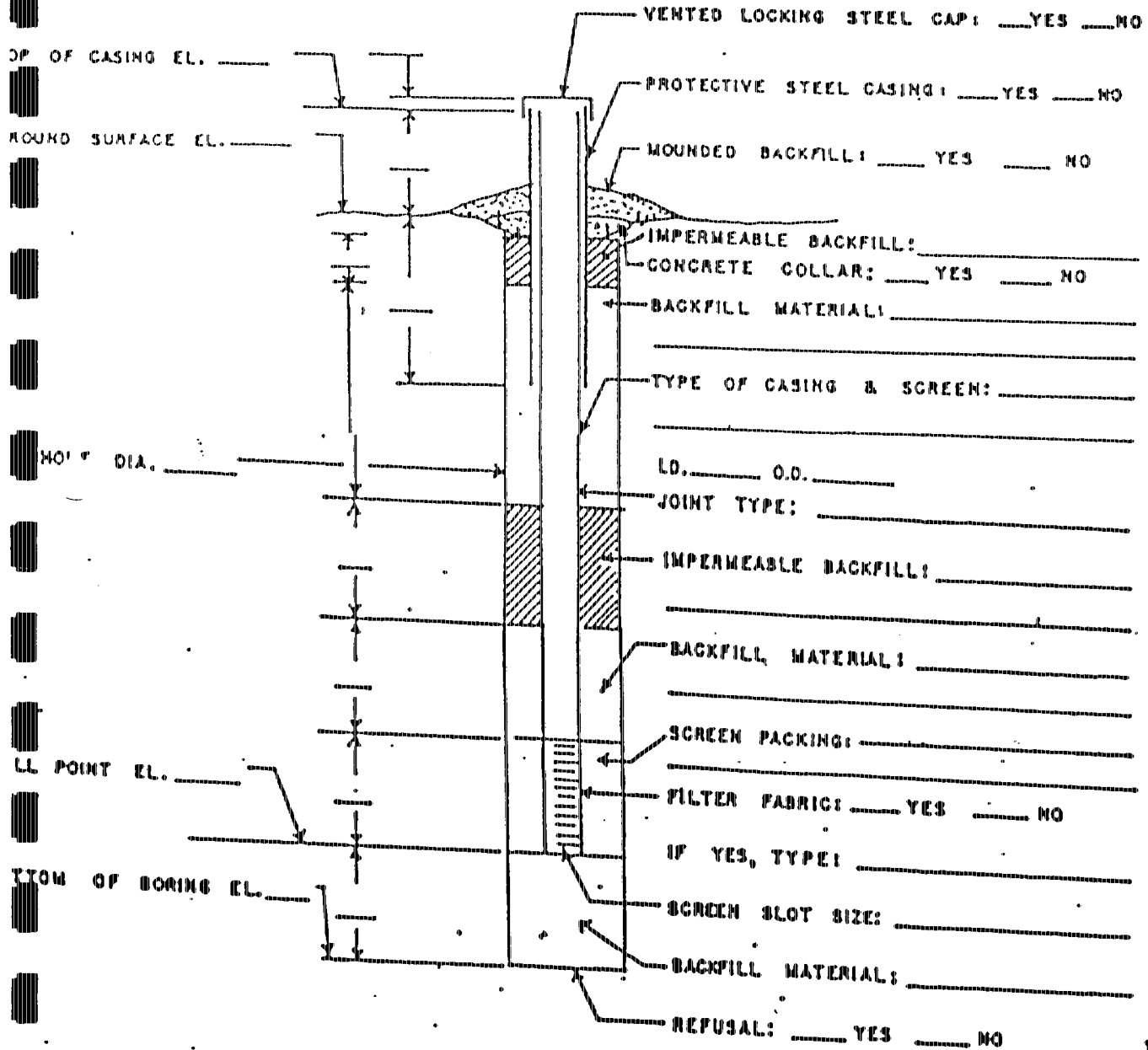
Inferred relationship to plume: Within Outside Edge

Watershed (plume discharge watercourse):

Aquifer materials (attach boring log):

Attach maps and plans required of G.1.j. and G.4.

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT



SUMMARY OF REMEDIAL ACTIONS
TO COMPLETE
STEPS 3D AND 3E OF
CONSENT ORDER #WC4253

WATERBURY HEAT TREATING COMPANY, INC.
76 WOLCOTT ROAD
WOLCOTT, CONNECTICUT

HRP # WC-WHT-0

JUNE, 1987

Prepared by:

Michael S. Seguljic
Project Engineer

Richard D. McFee
Project Manager

Submitted to:

Dr. Elliot Mayo, M.D.
129 Prospect Street
Waterbury, CT 06710

Submitted by:

HRP Associates, Inc.
P.O. Box 732
New Britain, CT 06050

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
I.	Introduction	1
II.	Summary of Off-Site Disposal of Contaminated Soil, Backfilling and Grading of all Excavated Areas.	3
III.	Summary of Off-Site Disposal of 5,000 Gallon Storage Tank and all Associated Piping	4
IV.	Summary of the Installation of Two (2) Downgradient Monitoring Wells and One (1) Upgradient Monitoring Well	5
V.	Summary of Well Development and Subsequent Sampling	7
VI.	Summary of Abandonment of Inactive Production Well	9
VII.	Recommendations	10

APPENDICES

APPENDIX A:	Approval letter for disposal of contaminated soil at the Plainville landfill
APPENDIX B:	National Oil Services, Inc. receipt for cleaning 5,000 gallon storage tank
APPENDIX C:	National Oil Services, Inc. confirmation letter for disposal of 5,000 gallon storage tank and residue
APPENDIX D:	Boring logs for three ground water monitoring wells
APPENDIX E:	Analytical reports for three ground water monitoring wells
APPENDIX F:	Well abandonment completion report
APPENDIX G:	East Coast Drilling, Inc. sign-off sheet for well abandonment

I. INTRODUCTION

In response to Consent Order # WC4253, HRP Associates, Inc. was retained by Mrs. Celinda W. Mayo, owner of the property located at 76 Wolcott Road in Wolcott, Connecticut to investigate the extent of soil and ground water contamination resulting from historic quenching oil discharges to the ground. To determine the extent of contamination, a site investigation was conducted by HRP Engineers with Mr. Scott Wing of the Department of Environmental Protection, Water Compliance Unit (DEP-WCU) on July 28, 1986. In September, 1986 approval by Mr. Scott Wing was given to proceed with sampling and excavation as described in a "Scope of Study Report", September 1986, prepared by HRP Associates, Inc.

Summarized in this report are the actions taken to meet the requirements of Steps 3D and 3E of Order # WC4253 and to comply with the scope of services outlined under HRP's September, 1986 report. The following actions were taken:

- o backfilling and grading of all excavated areas;
- o off-site disposal of 5,000 gallon storage tank and associated piping;
- o installation of two (2) downgradient monitoring wells and one (1) upgradient monitoring wells;

- o sampling and analysis of the three (3) monitoring wells; and

- o abandonment of an inactive production well per Section 25-128-57 of the State of Connecticut's Well Drilling Board and Rules and Regulations.

Information regarding the actions taken to excavate the contaminated soil at this site is provided under the Summary of Remedial Actions Report dated November 26, 1986.

Information regarding the actions taken to excavate the contaminated soil at this site is provided under the Summary of Remedial Actions Report dated November 26, 1986.

II. Summary of Off-Site Disposal of Contaminated Soil, Backfilling and Grading of All Excavated Areas

February 4, 1987

- o Permission was granted by the Department of Environmental Protection, Solid Waste Management Unit in correspondence dated February 4, 1987, to use the excavated material as cover material at the Plainville Landfill (see Appendix A).

March 3, 1987

- o The J.J. Brennen Company using the combination of a front-end loader and triaxle dump trucks removed and disposed of approximately 180 cubic yards of contaminated soil at the Plainville Landfill.

March 4, 1987

- o The J. J. Berren Company removed and disposed of additional 180 cubic yards of contaminated soil at the Plainville landfill
- o 270 cubic yards of backfill material was hauled to the site and graded by the J. J. Brennen Company

March 5, 1987

- o 180 cubic yards of backfill material was hauled on-site and graded by the J.J. Brennen Company
- o Additional material was required to backfill the area occupied by the 5,000 gallon underground storage tank
- o The site was graded to the original topography.

III. Off-Site Disposal of 5,000 Gallon Storage Tank and All Associated Piping

April 29, 1987

- o Tank cleaning and residue removal was performed by the National Oil Service, Inc. from Branford, Connecticut (see Appendix B)
- o Tank was cleaned by physically scraping the residue from the tank's inner wall. After the scraping was completed, the material was removed and contained in a vacuum truck.
- o The residue waste (~100 gallons) was manifested off-site (CTB 0083923) as a Connecticut regulated waste and shipped to Bell Harbor Refining for treatment/disposal (see Appendix C).

May 1, 1987

- o The tank and all associated piping was removed off-site by National Oil Service, Inc. and disposed of at Schiavone's Scrapyard (see Appendix C).

IV. Installation of Two (2) Downgradient and One (1) Upgradient Monitoring Wells

April 30, 1987

- o Kennedy & Sons of Naugatuck, Connecticut were contracted to install the monitoring wells.
- o All wells were constructed with: (see Appendix D)
 - Two (2) inch inside diameter PVC schedule 40 pipe
 - Ten (10) feet of PVC schedule 40 screen with 0.010 inch slot size
 - Schedule 40 PVC risers
 - Bentonite used as the impervious seal
 - Ottawa sand for backfill & screen packing

Note: Well WHT B-2 MW did not have Ottawa sand since the hole collapsed in onto itself and the well.

- Curb boxes (to facilitate possible future development by new owners) with threaded cap.
- Cement was used for mounded backfill
- o All wells were developed by by bailing.
- o Monitoring well # WHTB-1AMW refused at 9 feet. The soil encountered was fine-medium grained sand and was clean in appearance and odor.
- o Monitoring well # WH B1 MW moved 3 feet west of well # WHTB-1AMW and refused at 13.5 feet. The soil encountered was fine-course grained sand, with gravel and some broken rock. All material was clean in appearance and odor.
- o Monitoring well # WHT-1B-MW (downgradient) moved 3.0 feet west of well # WHT B1 MW was installed on the northeastern corner of the property (see Figure I for Monitoring Well Locations). It is located ~24.5 feet and from the northern edge of the propoerty and ~24.5 feet from the eastern edge.

The soil augered through was fine-medium sand and gravel with small cobbles and boulders. Refusal was met at 20.0 feet, which is the depth the well was set. The material from this boring was clean in appearance and odor.

WOLCOTT RD.

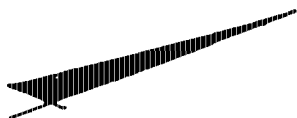
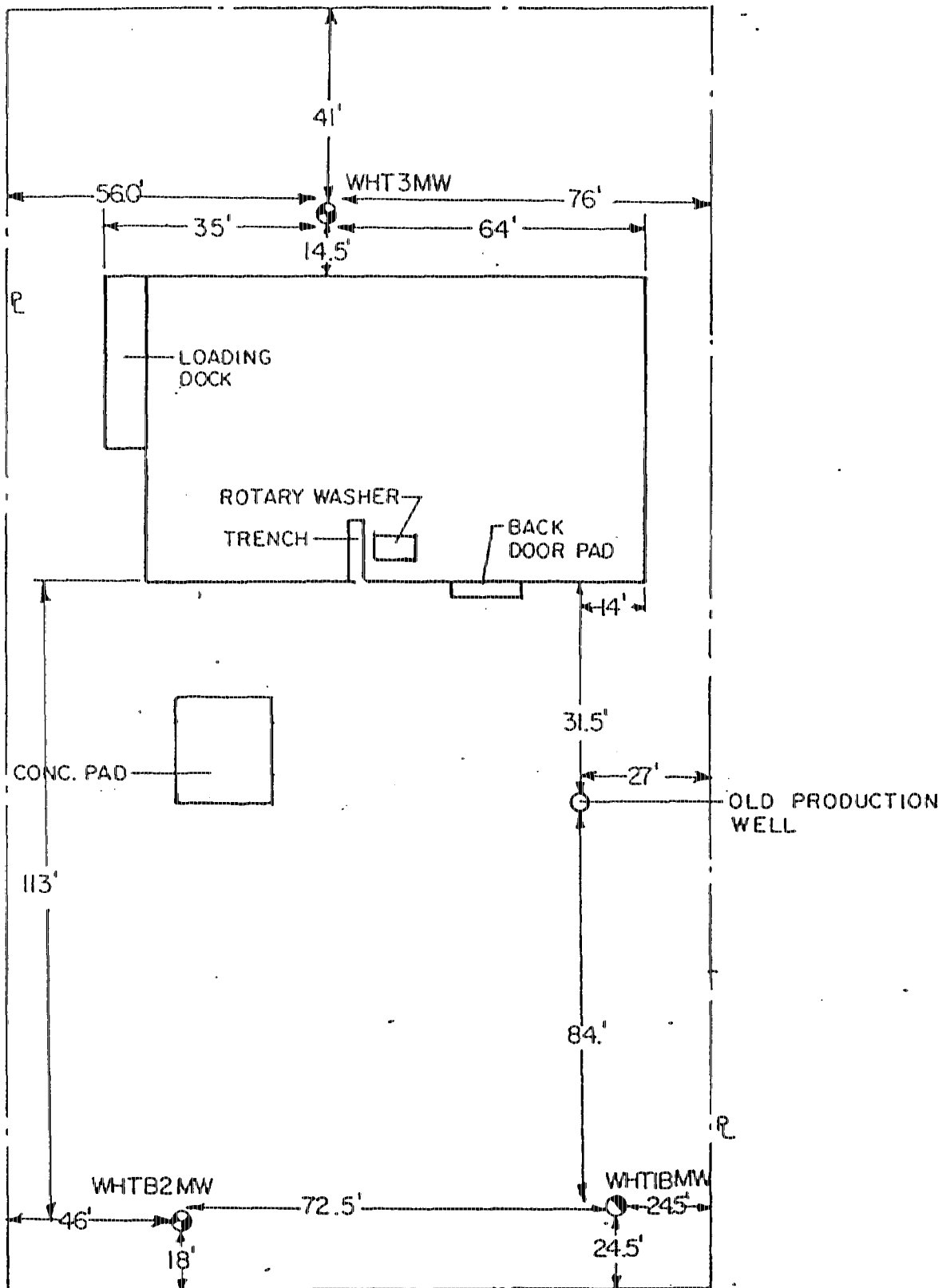


FIG. I
MONITORING WELLS LOCATIONS
WATERBURY HEAT TREATING, INC.
WOLCOTT, CT.

WCWHTØ

- o Monitoring well # WHT B-2 MW (downgradient) was installed on the south eastern corner of the property. It is located approximately 46.0 feet from the southern border of the property and approximately 18.0 feet from the eastern edge. The material bored through was fine-medium grained sand, and some fine, coarse gravel with cobbles and boulders. This material was clean in appearance and odor.

Refusal was met at 19.0 feet at which time a cave-in occurred. The hole was reaugered to 19.0 feet and the well set prior to a second cave-in. Since the cave-in material (fine-medium grain sand) was suitable for screen packing, no additional Ottawa sand was used for packing.

- o Monitoring well #WHT 3 MW (upgradient) was installed in the front of the building. This is on the western side of the property slightly south of the center of the property. It is located approximately 56.0 feet from the southern border and approximately 41.0 feet from the western edge (adjacent to Route 69) of the property. Material bored through was fine-coarse sand, fine-coarse gravel, silt and broken rock.

Since the original hole could only be augered down to a depth of 8 feet, the drill rig was moved 5 feet to the north. Refusal at this location occurred at 20 feet and the well was set at 19.8 feet. All material was clean in appearance and odor was identical to that described above except for traces of gneiss.

V. Well Development and Subsequent Sampling

Since all the wells are two (2) inches in diameter there is 1.6 gallons in a ten (10.0) foot section. By measuring the height of the water in the well we were able to determine how many gallons of water were in each well. Normally, to develop a well, three (3) times the volume of water should be removed, then prior to sampling an additional three (3) times the volume should also be removed. However, due to very poor well recovery, only about 1 - 1½ times the volume of water was removed from each well prior to the actual sampling.

Sampling, as well as the development, was done by the use of bailers. Each well had a dedicated bailer.

Collected samples which were submitted to a certified laboratory for analysis were preserved as follows in the field:

Metals - filtered and pH adjusted to <2 with nitric acid

Cyanide - filtered and pH adjusted to >12 with sodium hydroxide

Oil & Grease - cool to 4°C

8010 & 8020 - cool to 4°C

Provided as Table 1 is a summary of the analytical results.

APPENDIX A

APPROVAL LETTER FOR DISPOSAL OF
CONTAMINATED SOIL AT THE PLAINVILLE LANDFILL

Phone: (203) 488-4888
(205) 624-6262 24 hrs.
(203) 932-8461

No 52937

NATIONAL OIL SERVICE, INC.

P.O. Box 2145, SHORT BEACH STATION
SHORT BEACH, BRANFORD, CONN. 06405

Date 4/29/87

Name H.R.P. Associates

Address 10 Lexington ST P.O. Box 732, New Britain CT

Bill of Lading/Pickup Receipt

Oil N.O.S. Combustible liquid N.A. 1270

CT B, 0083922

Quantity	Description
<u>100</u> <u>gallons</u>	<u>#2 oil Tank</u> <u>cleaned + wiped down</u> <u>2 people + Rack Truck</u> <u>+ Vacuum Trucks</u>

This product is non-hazardous waste as per Federal Regulations Title 49 Parts 100 to 177.

P.O. # _____ Customer Sig. X Michael S. G...

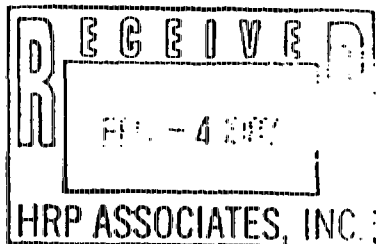
Driver Sig. M. G...

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



January 27, 1987

Mr. Mark Possidento
HRP Associates, Inc.
P.O. Box 732
New Britain, CT 06050



Re: Disposal of 350 cubic yards of containing quench oil, Waterbury Heat Treating, Inc., Wolcott.

Dear Mr. Possidento:

The Solid Waste Management Unit has determined that the above referenced material is suitable for disposal at the Plainville solid waste disposal area, subject to the following condition:

1. it should be used as cover material at the landfill.

Please contact Jim Dziuba of my staff at 566-5847 if you have any questions.

Very truly yours,

For James Dziuba

Charles Kurker
Director
Solid Waste Management Unit

CK/JD
cc:

Mr. Carl Bratt
Public Works Director
One Central Square
Plainville, CT 06062

Phone:

165 Capitol Avenue • Hartford, Connecticut 06106

An Equal Opportunity Employer

APPENDIX B

NATIONAL OIL SERVICES, INC. RECEIPT
FOR CLEANING 5,000 GALLON STORAGE TANK

Phone: (203) 488-4888
(205) 624-6262 24 hrs.
(203) 932-8461

No. 52937

NATIONAL OIL SERVICE, INC.

P.O. Box 2145, SHORT BEACH STATION
SHORT BEACH, BRANFORD, CONN. 06405

Date 4/28/87

Name H.R.P. Associates

Address 10 Lexington ST P.O. Box 732, New Britain CT

Bill of Lading/Pickup Receipt

Oil N.O.S. Combustible liquid N.A. 1270

CT B, 0083923

Quantity	Description
<u>100</u> <u>gallons</u>	<u>#2 oil Tank</u> <u>cleaned + wiped down</u> <u>2 people + Rack Trucks</u> <u>+ Vacuum Trucks</u>

This product is non-hazardous waste as per Federal Regulations Title 49 Parts 100 to 177.

P.O. # _____ Customer Sig. [Signature]

Driver Sig. [Signature]

TABLE 1
ANALYTICAL RESULTS
FOR
MONITORING WELLS

<u>Parameter</u>	<u>MW#WHT-1B-MW (downgradient)</u>	<u>MW#WHT B-2 MW (downgradient)</u>	<u>MW#WHT 3 MW (upgradient)</u>
Cadmium	ND<0.01 mg/l	ND<0.01 mg/l	ND<0.01 mg/l
Chromium, total	ND<0.01 mg/l	ND<0.01 mg/l	ND<0.01 mg/l
Cyanide	0.20 mg/l	<0.05 mg/l	<0.05 mg/l
Lead	ND<0.05 mg/l	ND<0.05 mg/l	ND<0.05 mg/l
Oil & Grease	34.4 mg/l	30.8 mg/l	28.4 mg/l
EPA Method 601/8010	ND	ND	ND
EPA Method 602/8020/8015	ND	ND	ND

ND = Not detected.

Note: Laboratory analysis reports are provided in Appendix E where:

MW1 = WHT-1B-MW
MW2 = WHT B-2 MW
MW3 = WHT 3 MW

VII. Recommendations

Due to the presence of cyanide within one (1) of the down gradient monitoring wells, HRP Associates, Inc., recommends that the wells be monitored for at least three (3) additional quarters to determine if the cyanide concentration will increase or decrease over time. The limit established by the Connecticut DEP for cyanide with a ground water classification of GB/GA is 0.20 mg/l.

VII. Recommendations

Due to the presence of cyanide within one (1) of the down gradient monitoring wells, HRP Associates, Inc., recommends that the wells be monitored for at least three (3) additional quarters to determine if the cyanide concentration will increase or decrease over time. The limit established by the Connecticut DEP for cyanide with a ground water classification of GB/GA is 0.20 mg/l.

APPENDIX C

NATIONAL OIL SERVICES, INC.
CONFIRMATION LETTER FOR DISPOSAL
OF 5,000 GALLON STORAGE TANK
AND RESIDUE

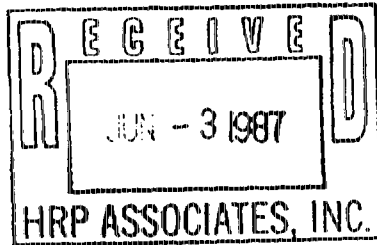


NATIONAL OIL SERVICE, INC.

P.O. Box 2145, Branford, CT 06405

Facility: 16 Elm St., West Haven, CT 06516

- Waste Oil
- Liquid Waste Collection
- Waste Disposal
- Tank Cleaning Service
- Hazardous Waste



June 2, 1987

Telephones
24 Hours (203) 624-6262
Office (203) 488-4888
Office (203) 932-8461

H.R.P. Associates
P.O. Box 732
New Britain, Ct. 06050

Attn: Mr. McFee

Dear Mr. McFee,

This will serve to confirm the work carried out by your direction at the Waterbury Heat Treating Company.

The work done consisted of cleaning an excavated underground tank, opening the tank, and transporting and disposing the tank at a scrap recycling yard. The liquid waste was disposed of at Bell Harbor Refining, CTD 084382472, and the tank and related piping at Schiavone's Scrapyard.

This information should complete your environmental file.

If additional information is required, please call us.

Sincerely yours,

James W. Milne, Jr.

JWM:ap

APPENDIX D

BORING LOGS FOR THREE GROUND WATER MONITORING WELLS

Soil Sampling Log

SHEET 1 of 1

DATE START 4/30/87

DATE FINISH 4/30/87

KENNEDY & SONS TEST BORING, INC.

PROJ. NO. WC-WKT-0

HEIGHT OF HAMMER X 140 300

Sub-Surface Exploration

LOCATION Wolcott

ANVIL X 30" 24"

P.O. Box 735

LINE & STA.

Naugatuck, Connecticut 06770

Bus. (203) 723-0686

OFFSET

GROUND WATER OBSERVATIONS

ESPECIALLY COMPILED FOR

GROUND ELEVATION

DATE TIME DEPTH

MRP Associates

HOLE NO. WKT B-1A MW

SAMPLER O.D. 1 5/8" I.D. 1 3/8"

10 Lexington St.

CASING SAMPLER CORE BAR

New Britain, CT

TYPE MSA SS

TYPE OF RIG CME 55

SIZE I.D. 2 1/4" 1 3/8"

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 4" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From		To				NO.	PEN	REC
			0-6	6-12	12-18						
							0-5' Brown fine to medium sand, some medium gravel				
							5'-8' Brown fine to medium sand				
							Augers refused 9'				
- 10											
- 20											
- 30											

Proportions used: trace = 0-10%, little = 10-20%, some = 20-33%, and = 33-50%

DRILLER: B.K.
 HELPER: M.K.
 SOILS ENGINEER: _____
 DRILLING INSPECTOR: Kevin

SAMPLE TYPE
 C = CORED W = WASHED
 SS = SPLIT SPOON
 UP = UNDISTURBED PISTON
 TP = TEST PIT
 UT = UNDISTURBED THINWALL

COMESIONLESS DENSITY
 0-10 LOOSE
 10-30 MED. COMP.
 30-50 DENSE
 50+ VERY DENSE

TOTAL FOOTAGE:
 Earth Boring Ft.
 Rock Coring Ft.
 HOLE NO. WKT B-1A M

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DATE START 4/30/87
 DATE FINISH 4/30/87
 WEIGHT OF HAMMER X 140 300
 HAZ FALL X 30' 24'
 GROUND WATER OBSERVATIONS
 DATE TIME DEPTH
 4/30/87 0 hrs. 12'
 SAMPLER O.D. 1 5/8" I.D. 1 3/8"
 TYPE OF RIG CME 55

Soil Sampling Log

KENNEDY & SONS TEST BORING, INC.
 Sub-Surface Exploration
 P.O. Box 735
 Naugatuck, Connecticut 06770
 Bus. (203) 723-0686
 ESPECIALLY COMPILED FOR
 HRP Associates
 10 Lexington St.
 New Britain, CT

PROJ. NO. WC-WHT-0
 LOCATION Wolcott
 LINE & STA.
 OFFSET
 GROUND ELEVATION
 HOLE NO. WH B1 MW
 CASING SAMPLER CORE BAI L
 TYPE HSA SS
 SIZE I.D. 2 1/4" 1 3/8"

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 4" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From	To					NO.	PEN	RE.
			0-4	4-12	12-18						
							.6' Dark brown top soil, brown fine to medium sand, little silt				
	5'-6.3'	SS	50	50	50	.3' very dense damp	Brown medium to coarse sand, gravel, some broken rock	1	1.3	1.	
	13'-	SS	50	5			Dark brown medium sand	2	.5		
							Augers refused at 13.5'				

Proportions used: trace = 0-10%, little = 10-30%, some = 30-35%, and = 35-50%

DRILLER: B.K.
 HELPER: M.K.
 SOILS ENGINEER:
 DRILLING INSPECTOR: Kevin

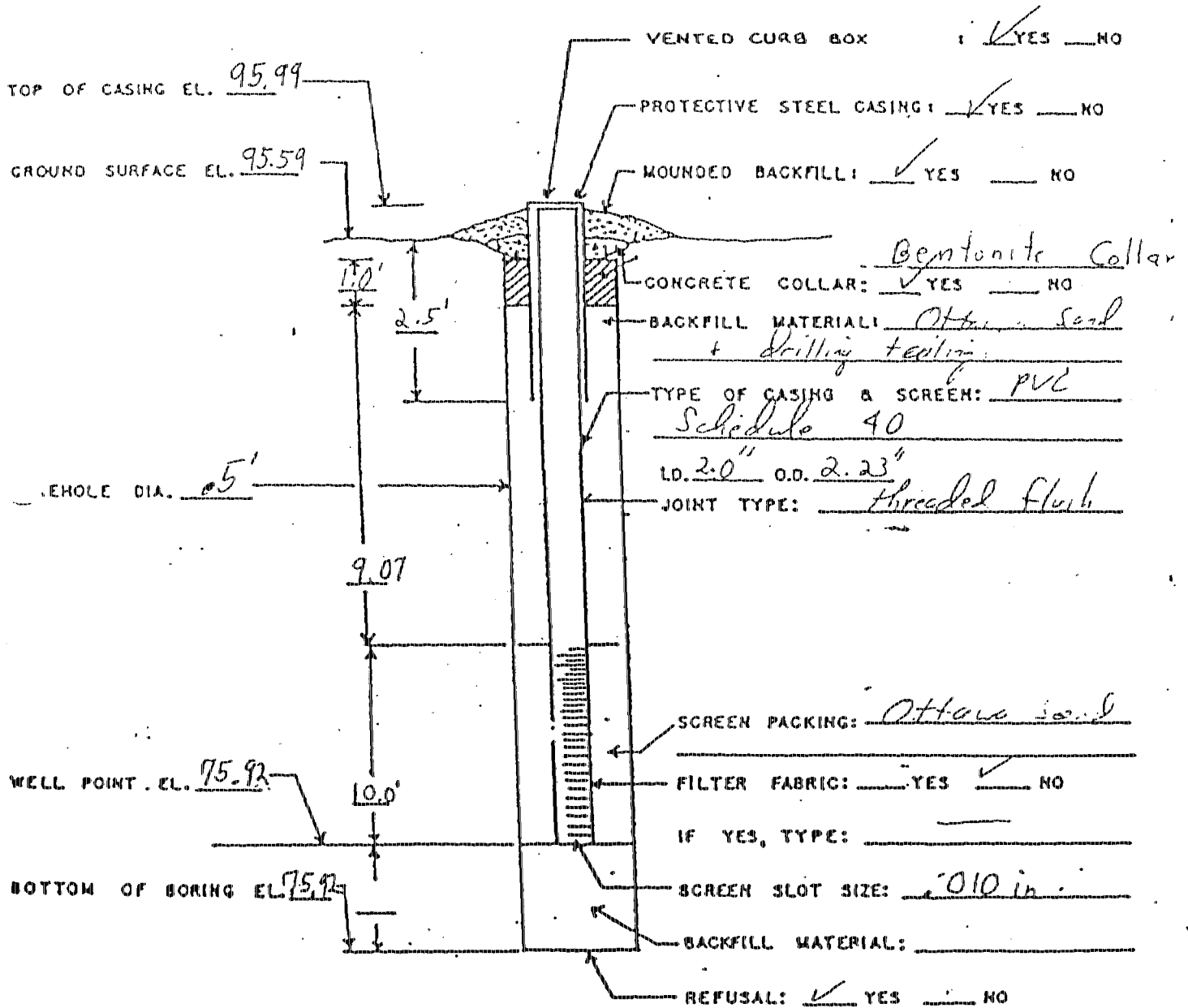
SAMPLE TYPE
 C = CORED W = WASHED
 SS = SPLIT SPOON
 UP = UNDISTURBED PISTON
 TP = TEST PIT
 UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY
 0-10 LOOSE
 10-30 MED. COMP.
 30-50 DENSE
 50+ VERY DENSE

TOTAL FOOTAGE:
 Earth Boring Ft.
 Rock Coring Ft.
 HOLE NO. WHB-1M.J

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT11B MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: *Wolcott* Site: *Waterbury Heat Treat*
Monitoring Point I.D. No.: *W.H.T. 1 B MW* Date of completion: *4/30/87*
DEP/WPC I.D. No:
Monitoring Point Location (relative to site features):
Drilling Contractor: *Kennedy + Sons* Supervising Engineer/Geologist: *Kevin McCarty*
Well Construction Method: *Hollow Stem Auger 3 1/4" I.D.*

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): *95.59* Well depth below ground surface: *20.07*
Refusal: Yes No
Top of casing elevation (MSL): *95.99* Screened interval: *20.01 - 10.07*
Length of Screen: *10'*
Length of riser pipe: *9.07'*
Screen type: *PVC schedule 40* Screen slot size: *0.010 m*
Filter fabric: Yes No Screen packing: Yes No
If yes, Thickness: *10.0'*
Well inside diameter: *2.0"* Material: *Ottawa sand*
grain size: *coarse*
Impermeable Backfill:
Well casing material and schedule: *PVC 40* Estimated K screened interval:
Method of well development: *Bailing* Time spent developing:
Locking or threaded cap Impermeable backfill: *Bentonite*

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: Sand, Gravel

Inferred relationship to plume: Within Outside Edge

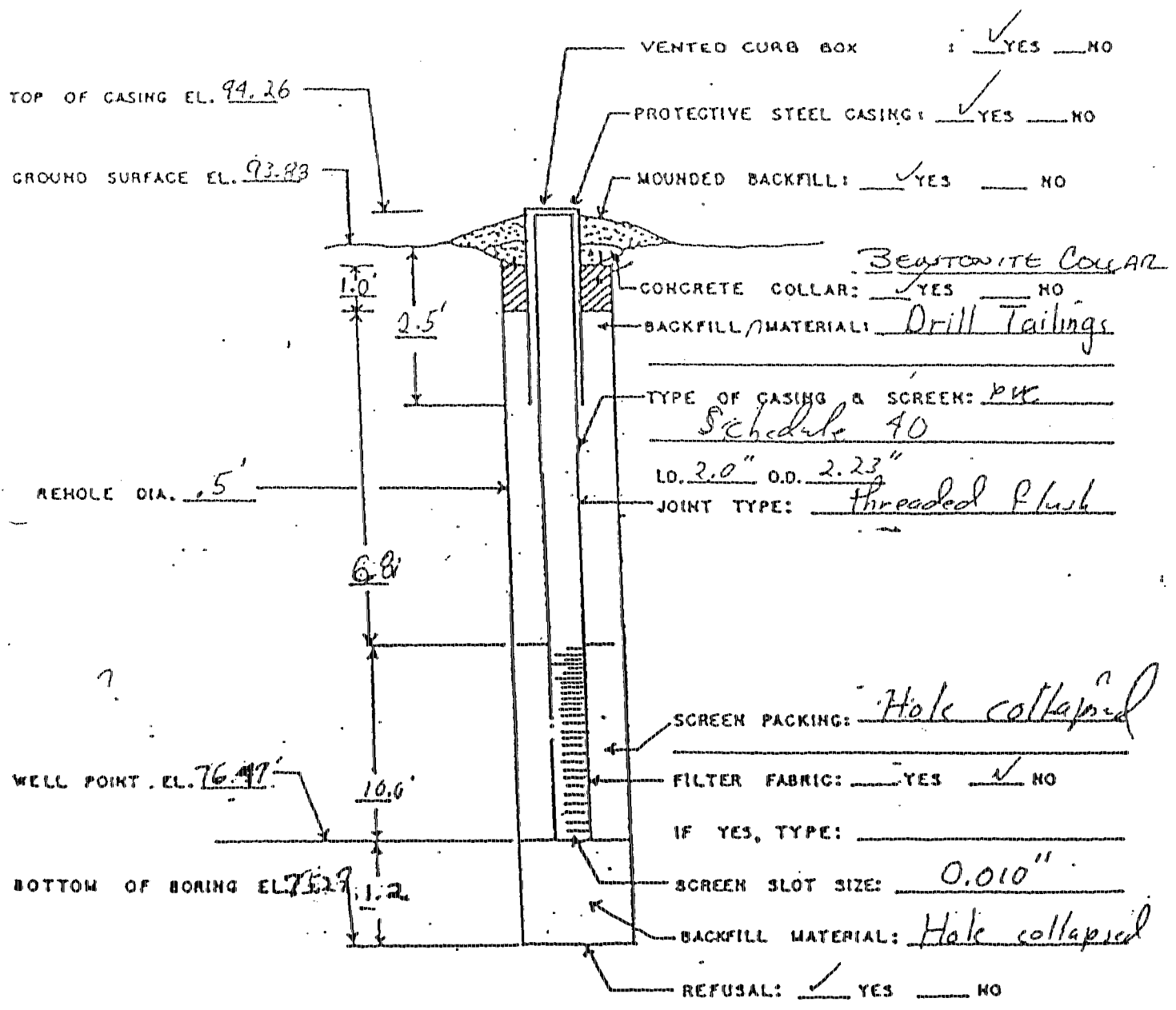
Watershed (plume discharge watercourse): MAD River

Aquifer materials (attach boring log): Sand, Gravel

Attach maps and plans required of G.1.j. and G.4.

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT B-2 MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: *Wolcott*

Site: *Waterbury Heat Treat*

Monitoring Point I.D. No.: *WHT B-2 MW*

Date of completion: *4/30/87*

DEP/WPC I.D. No:

Monitoring Point Location (relative to site features):

Drilling Contractor: *Kennedy & Sons*

Supervising Engineer/Geologist:

Well Construction Method: *Hollow Stem Auger 3 1/4" I.D.*

Kevin McCarty

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): *93.88*

Well depth below ground surface: *17.80*

Top of casing elevation (MSL): *94.26*

Refusal: Yes No

Length of Screen: *10.0'*

Screened interval: *17.8-7.8'*

Length of riser pipe: *6.87'*

Screen type: *PVC SCHEDULE 40*

Screen Slot size: *0.010 in*

Filter fabric: Yes No

Screen packing: Yes No *Hole Collapsed*

Well inside diameter: *2.0"*

If yes, Thickness:

Material:

grain size:

Impermeable Backfill:

Well casing material and schedule: *PVC 40*

Estimated K screened interval:

Method of well development: *BAILING*

Time spent developing:

Locking or threaded cap

Impermeable backfill: *BENTONITE*

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: SAND, GRAVEL

Inferred relationship to plume: Within Outside Edge

Watershed (plume discharge watercourse): MAD RIVER

Aquifer materials (attach boring log): SAND, GRAVEL

Attach maps and plans required of G.1.j. and G.4.

DATE START 4/30/87

Soil Sampling Log

SHEET 1 of 1

DATE FINISH 4/30/87

KENNEDY & SONS TEST BORING, INC.

PROJ. NO.

WEIGHT OF HAMMER X 140 300

Sub-Surface Exploration

LOCATION Wolcott

HAMMER FALL X 30" 24"

P.O. Box 735

LINE & STA.

Naugatuck, Connecticut 06770

OFFSET

GROUND WATER OBSERVATIONS

ESPECIALLY COMPILED FOR

GROUND ELEVATION

DATE 4/30/87 TIME 0 hrs. DEPTH 13.8'

MRP Associates

MOLE NO. WMT 3 MW

SAMPLER O.D. 1 5/8" I.D. 1 3/8"

10 Lexington St.

CASING SAMPLER CORE BARREL

TYPE OF RIG CME 55

New Britain, CT

TYPE MSA SS
SIZE I.D. 2 1/2" 1 3/8"

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	To 6-12	To 12-18				NO.	PEN	REC.
	5'-6'	SS	25	50	.5'	damp very dense	5.5'	6" Top soil fine to coarse sand, fine to coarse gravel, trace silt Brown-orange medium to coarse sand w/little fine gravel	1	1.0	.5
								Fine to coarse gravel, broken rock some medium sand			
								Auger refused at 8.0' offset 5' north			
	10'-11.3'	SS	51	46	50/.3'	damp very dense	10.4'	Light brown fine to coarse sand, some fine to medium gravel	2	1.3	1.0
								Gray brown fine to medium sand and silt, some broken rock (medium compact till)			
								Brown fine sand w/little silt, w/mixed gravel			
	15'-15.3'	SS	50	.3'		wet very dense		Fine to medium sand, little coarse to fine gravel, trace weathered gneiss	3	.3	.2
								Auger refused at 20.0' set 2" well at 19.8'			
								10' screen 10' riser 1 curb box 1 plug 1 bag sand 10 lbs. bentonite 1/2 bag cement			

Proportions used: trace = 0-10%, little = 10-20%, some = 20-33%, and = 33-50%

DRILLER: B.K.
HELPER: H.K.
SOILS ENGINEER:
DRILLING INSPECTOR: Kevin

SAMPLE TYPE
C = CORED W = WASHED
SS = SPLIT SPOON
UP = UNDISTURBED PISTON
TP = TEST PIT
UT = UNDISTURBED THINWALL

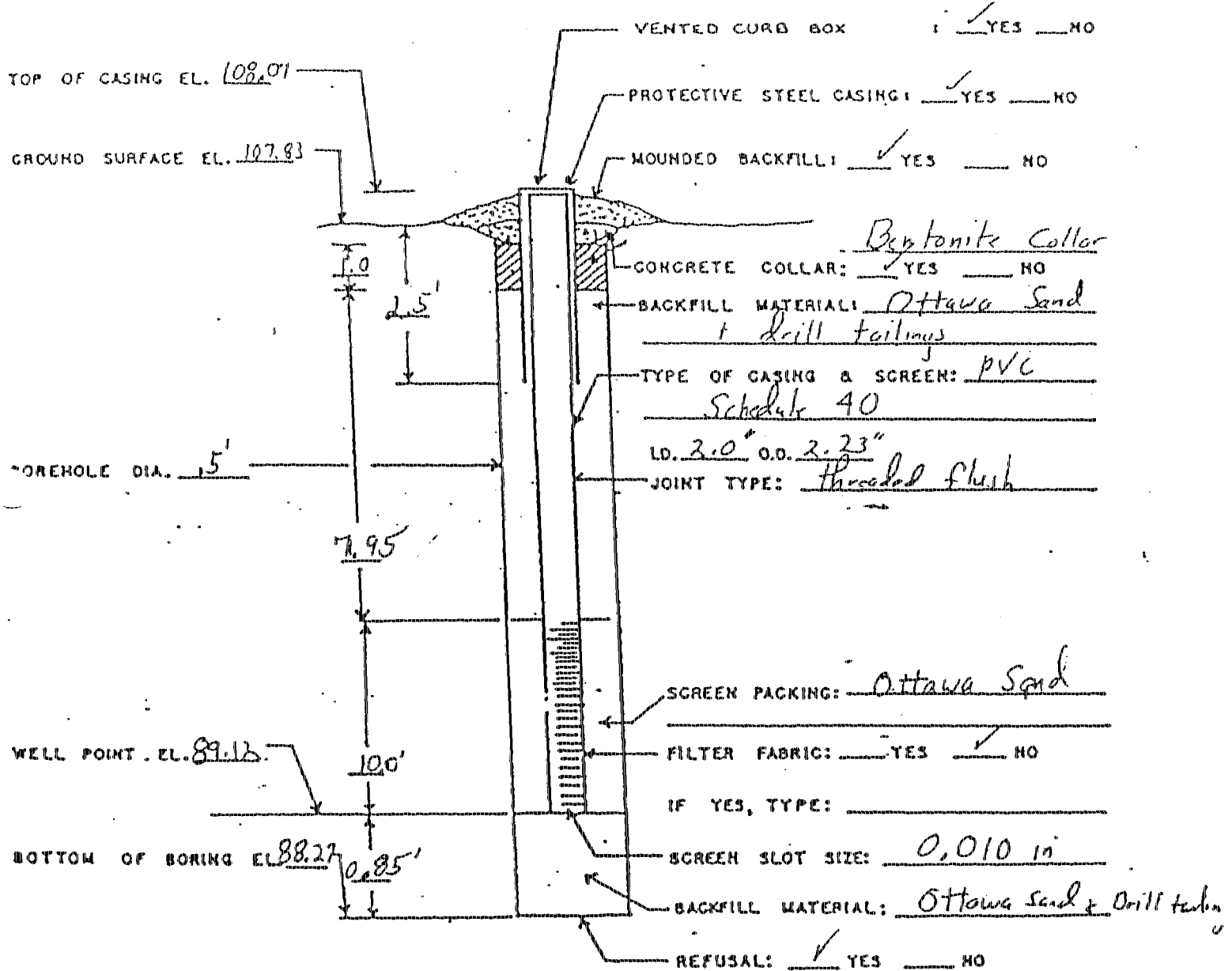
COHESIONLESS DENSITY
0-10 LOOSE
10-30 MED. COMP.
30-50 DENSE
50+ VERY DENSE

TOTAL FOOTAGE:
Earth Boring ft.
Rock Coring ft.
MOLE NO. WMT 3 MW

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT 3MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: *Wolcott* Site: *Waterbury Heat Treat*
Monitoring Point I.D. No.: *M.H.F. 3MW* Date of completion: *4/30/87*
DEP/WPC I.D. No:

Monitoring Point Location (relative to site features):

Drilling Contractor: *Kennedy & Sons* Supervising Engineer/Geologist: *Kevin McCarty*
Well Construction Method: *Hollow Stem Auger 3 1/4" I.D.*

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): *107.83* Well depth below ground surface: *18.95*

Refusal: Yes No

Top of casing elevation (MSL): *108.07* Screened interval: *18.95 - 8.95*

Length of Screen: *10.0'*

Length of riser pipe: *7.95'*

Screen type: *PVC Schedule 40*

Screen Slot size: *0.010 in*

Filter fabric: Yes No

Screen packing: Yes No

If yes, Thickness:

Well inside diameter: *2.0"*

Material: *Ottawa Sand*

grain size:

Impermeable Backfill:

Well casing material and schedule: *PVC 40* Estimated K screened interval:

Method of well development: *Bailing* Time spent developing:

Locking or threaded cap Impermeable backfill: *Dentonite*

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: Sand, Gravel

Inferred relationship to plume: Within Outside Edge

Watershed (plume discharge watercourse): MAD River

Aquifer materials (attach boring log): Sand, Gravel

Attach maps and plans required of G.1.j. and G.4.

APPENDIX E

ANALYTICAL REPORTS FOR THREE GROUND WATER MONITORING WELLS

EPA METHOD 601/8010-ppb

	MW1	MW2	MW3
Chloromethane			
Bromomethane			
Vinylchloride *			
Chloroethane *			
Methylenechloride			
Trichlorofluoromethane			
11-Dichloroethylene			
11-Dichloroethane			
112-Dichloroethylene			
Chloroform			
12-Dichloroethane			
111-Trichloroethane			
Carbontetrachloride			
Bromodichloromethane			
12-Dichloropropane			
113-Dichloropropylene			
Trichloroethylene			
Dibromochloromethane			
112-Trichloroethane			
Cis13-Dichloropropylene			
2-Chlorethylvinylether *			
Bromoform			
1122-Tetrachloroethane			
Tetrachloroethylene			
Chlorobenzene			
Benzyl Chloride			
Bis (2-chloroethoxy)methane *			
Bis(2-chloroisopropyl) ether *			
Bromobenzene			
Chloroacetaldehyde *			
1-Chlorohexane			
Chloromethyl methyl ether *			
Chlorotoluene			
Dibromomethane			
12-Dichlorobenzene			
13-Dichlorobenzene			
14-Dichlorobenzene			
Trichloropropane			

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 10 ppb.

WATER

May 21, 1987

RECEIVED
MAY 22 1987
HRP ASSOCIATES

SOIL

HRP Associates, Inc.
P.O. Box 732
New Britain, Ct. 06050

Att: Debbie Brasile

AIR

RE: Lab. No. 57-064-3
Job. No. WC-WHT-O
Inv. No. 778

Dear Ms. Brasile:

The following is a report of analysis on samples received May 8, 1987.

	MW1	MW2	MW3
Cadmium - mg/l	ND<0.01	ND<0.01	ND<0.01
Chromium, Total - mg/l	ND<0.01	ND<0.01	ND<0.01
Lead - mg/l	ND<0.05	ND<0.05	ND<0.05
Oil & Grease - mg/l	34.4	30.8	28.4
Cyanide, Total - mg/l	0.20	<0.05	<0.05

EP FRANCISCO
abc Director

TEST CERTIFICATION
PH-0547

Please contact me if you have any questions.

Very truly yours,

Stephen J. Franco

Stephen J. Franco
Laboratory Director

SJF:hc

CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

HRP Associates, Inc.
 Lab. No. 57-039-3
 Job. No. WC-WHT-O
 Inv. No. 744
 Page 3
 May 18, 1987

EPA METHOD 602/8020/8015-ppb

	MW1	MW2	MW3	
Benzene				
Toluene				
Ethyl Benzene				
P-Xylene				
M-Xylene				
O-Xylene				
1,4-Dichlorobenzene				
1,3-Dichlorobenzene				
1,2-Dichlorobenzene				
Methyl Ethyl Ketone*				
Methyl Isobutyl Ketone*				
Acrylamide*	---	---	---	
Carbon Disulfide*	---	---	---	
Diethyl Ether*	---	---	---	
Paraldehyde*	---	---	---	

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 50 ppb.

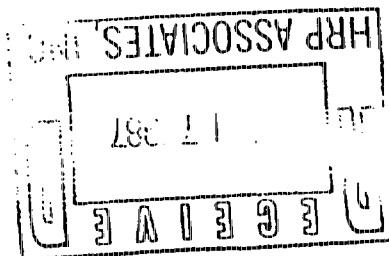
APPENDIX F

WELL ABANDONMENT COMPLETION REPORT

APPENDIX G

EAST COAST DRILLING, INC. SIGN-OFF
SHEET FOR WELL ABANDONMENT

Waterbury Heat treat Wdcott et
Jobno.-87-285 5/27



Job description: one well abandonment
lump sum cost

4 bags cement 1 granular bent 2 gallons clorox

well abandonment done according to regulations set
by the Well drilling board*, and to inspectors
satisfaction

East coast X James Cutler
client X Michael S. Lyden

* complies with the regulations in Sec. 25-128-57. "Procedure of abandonment"

hrp associates inc.

engineering & geology

File

April 19, 1988

Ms. Elsie B. Patton
Principal Environmental Analyst
Department of Environmental Protection
Water Compliance Unit
122 Washington Street
Hartford, CT 06106

RE: FIRST YEAR ANNUAL GROUND WATER MONITORING
REPORT FOR THE FORMER WATERBURY HEAT TREATING, INC.
SITE IN WOLCOTT, CONNECTICUT
(HRP#WC-WHT-0)

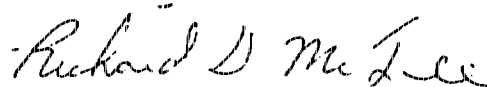
Dear Ms. Patton:

On behalf of Mrs. Celinda W. Mayo, owner of the property and building located at 76 Wolcott Road in Wolcott, Connecticut (former Waterbury Heat Treating Site), HRP Associates, Inc. has prepared and enclosed for your review a copy of the report entitled, "First Year Annual Ground Water Monitoring Report - Former Site of Waterbury Heat Treating, Inc.". Based on the ground water monitoring data presented under this report, it is HRP's opinion, that the requirements of Consent Order Number WC4253 have been fulfilled.

If you any questions or comments in regard to this report, please do not hesitate to contact me at 827-1333.

Sincerely yours,

HRP ASSOCIATES, INC.



Richard D. McFee
Project Manager

cc: Dr. Elliot Mayo, M.D.
Mr. Carl Peterson

RDM/dmk
KS*

T. GIANNI AND SONS, INC.

— BUILDERS —

1 Nutmeg Valley Road
Wolcott, Connecticut 06716
Phone 879-6475

FIRST YEAR ANNUAL
GROUND WATER MONITORING REPORT

FORMER SITE OF WATERBURY HEAT TREATING, INC.
76 WOLCOTT ROAD
WOLCOTT, CONNECTICUT

HRP #WC-WHT-O

APRIL 1988

Prepared by:

Keith J. Ziobron, E.I.T.
Project Engineer

Richard D. McFee, E.I.T.
Project Manager

Submitted to:

Dr. Elliot Mayo, M.D.
129 Prospect Street
Waterbury, Connecticut 06710

Submitted by:

HRP Associates, Inc.
10 Lexington Street
P.O. Box 732
New Britain, CT 06050

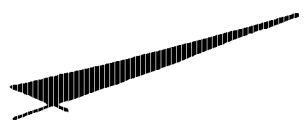
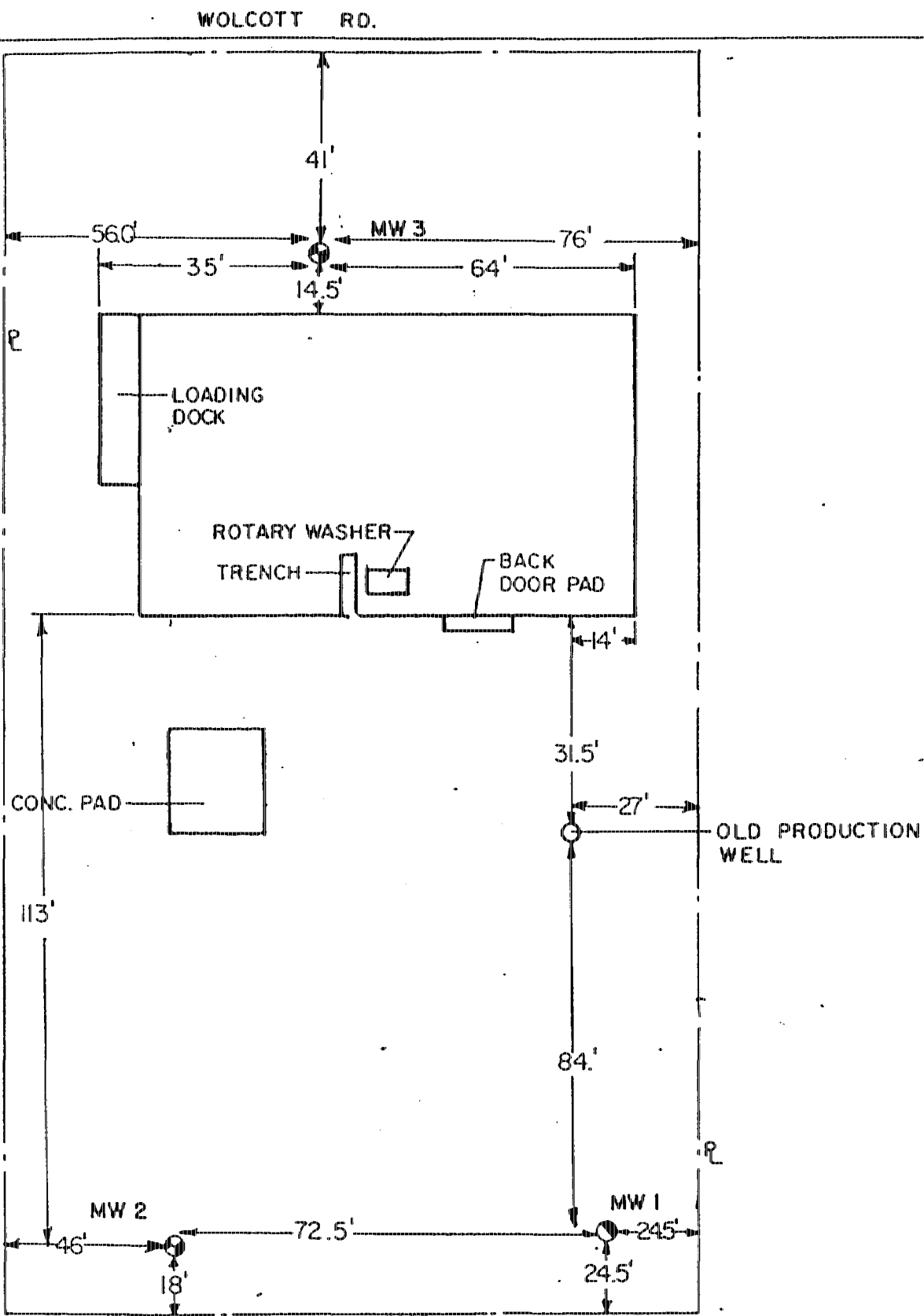


FIG. 1
 MONITORING WELLS LOCATIONS
 WATERBURY HEAT TREATING, INC.
 WOLCOTT, CT.

WCWHT0

II.0 GROUND WATER QUALITY

The first year of ground water monitoring, sampling, and analysis conducted at the former site of Waterbury Heat Treating, Inc. included sampling events in May and September of 1987 and January and April of 1988. The ground water samples were analyzed for the following parameters:

<u>Parameters</u>	<u>EPA Method of Analysis</u>
Cadmium	7130
Chromium, total	7140
Cyanide, total	9010
Lead	7420
Aromatic Volatile Organics	8020
Halogenated Volatile Organics	8010
Oil and Grease	9071

The following narratives provide a brief overview of trends in the measured concentration for each parameter during the first year of ground water monitoring.

II.1 Cadmium

The State and Federal Primary Drinking Water Standard for cadmium is 0.01 mg/l. The samples collected from all three (3) of the on-site monitoring wells during each of the four (4) sampling events showed cadmium levels which were below detectable limits (ND <0.01 mg/l) in every case.

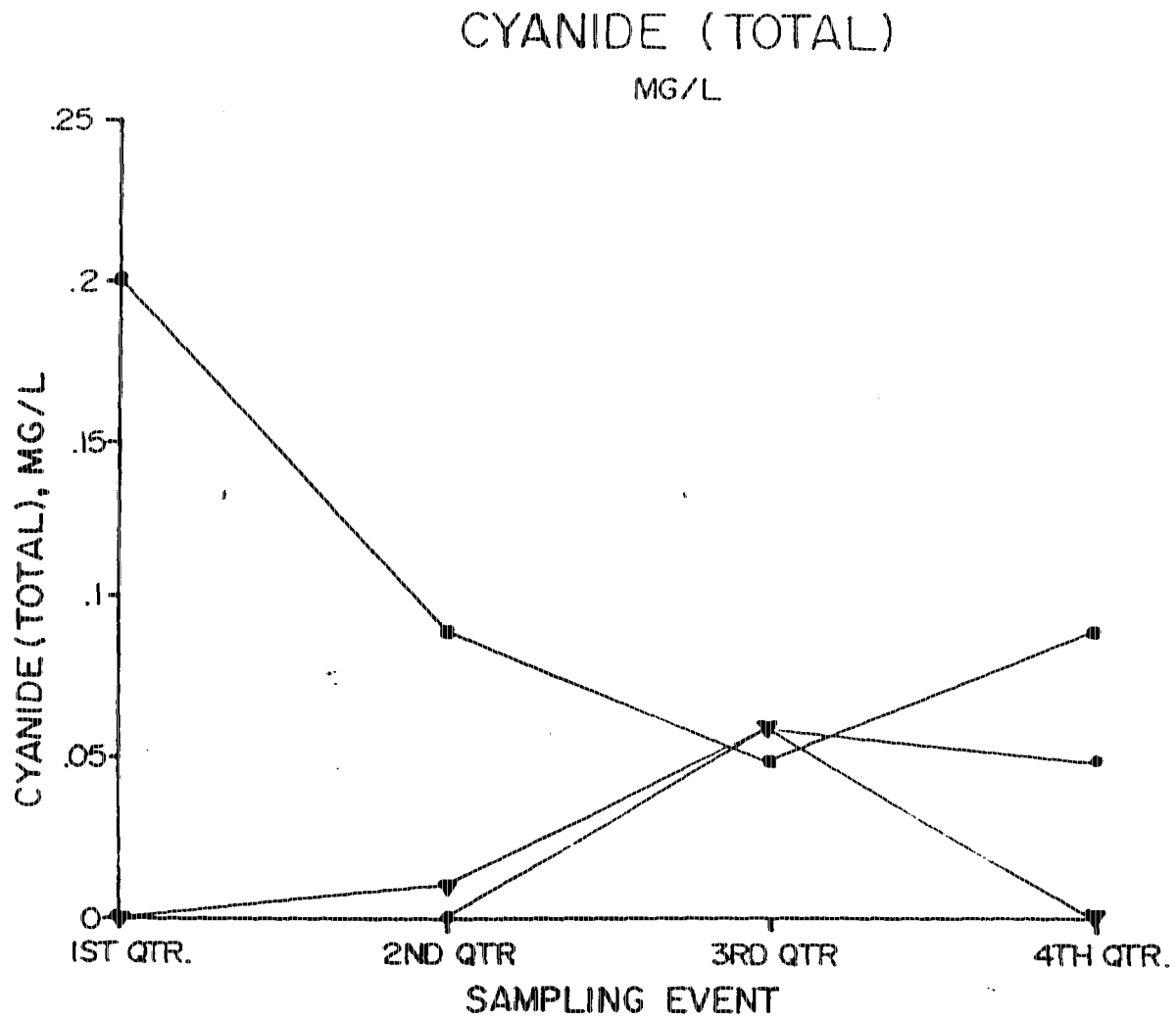
II.2 Chromium, Total

The State and Federal Primary Drinking Water Standard for Chromium, total is 0.05 mg/l. The samples collected from the three on-site monitoring wells during each of the four (4) sampling events showed limits which were below detectable levels (ND <0.05 mg/l) in every case.

II.3 Cyanide, Total

The State and Federal Primary Drinking Water Standard for cyanide is 0.2 mg/l. During the first sampling event (5/8/87), cyanide was detected above detectable levels (ND <0.05 mg/l) in monitoring well MW-1 only. The concentration of cyanide in the sample was reported at 0.2 mg/l. During the second monitoring event (9/16/87), cyanide was detected in both monitoring wells MW-1 and MW-2 at concentrations of 0.09 mg/l and 0.10 mg/l, respectively. Cyanide was detected in all of the monitoring wells during the third sampling event (1/15/88), at a concentration of approximately 0.06 mg/l. Finally, the samples collected during the last sampling event (4/1/88) showed levels of 0.09 mg/l in MW-1, 0.05 mg/l in MW-2, and no less than 0.5 mg/l in MW-3.

Figure 2 illustrates the change of cyanide concentration reported in each of the monitoring wells during the first year of ground water monitoring at the former site of Waterbury Heat Treating, Inc. The associated data is tabulated in Appendix D.



- - MW-1
- ▼ - MW-2
- ◆ - MW-3

FIG. 2
FORMER LOCATION OF
WATERBURY HEAT TREATING, INC.
76 WOLCOTT RD.
WOLCOTT, CT.

II.4 Lead

The State and Federal Primary Drinking Water Standard for Lead is 0.05 mg/l. The samples collected from all three (3) of the on-site monitoring wells during each of the four (4) sampling periods indicated lead levels below detectable levels (ND <0.05 mg/l) in every case.

II.5 Aromatic Volatile Organics

During the first year of ground water monitoring the samples collected were analyzed for aromatic volatile organics using EPA Method 8020. This scan analyzed for the following organic compounds:

Benzene	Methyl Ethyl Ketone
1,2 - Dichlorobenzene	Methyl Isobutyl Ketone
1,3 - Dichlorobenzene	Acrylamide
1,4 - Dichlorobenzene	Carbon Disulfide
Ethyl benzene	Diethyl Ether
Toluene	Paraldehyde
Xylenes (Dimethyl benzenes)	

The above aromatic volatile organic compounds were not detected in the upgradient or either of the two (2) downgradient monitoring wells during the four quarterly sampling events.

II.6 Halogenated Volatile Organics

During the first year of ground water monitoring the samples collected were analyzed for halogenated volatile organics using EPA Method 8010. This scan analyzed for the following organic compounds:

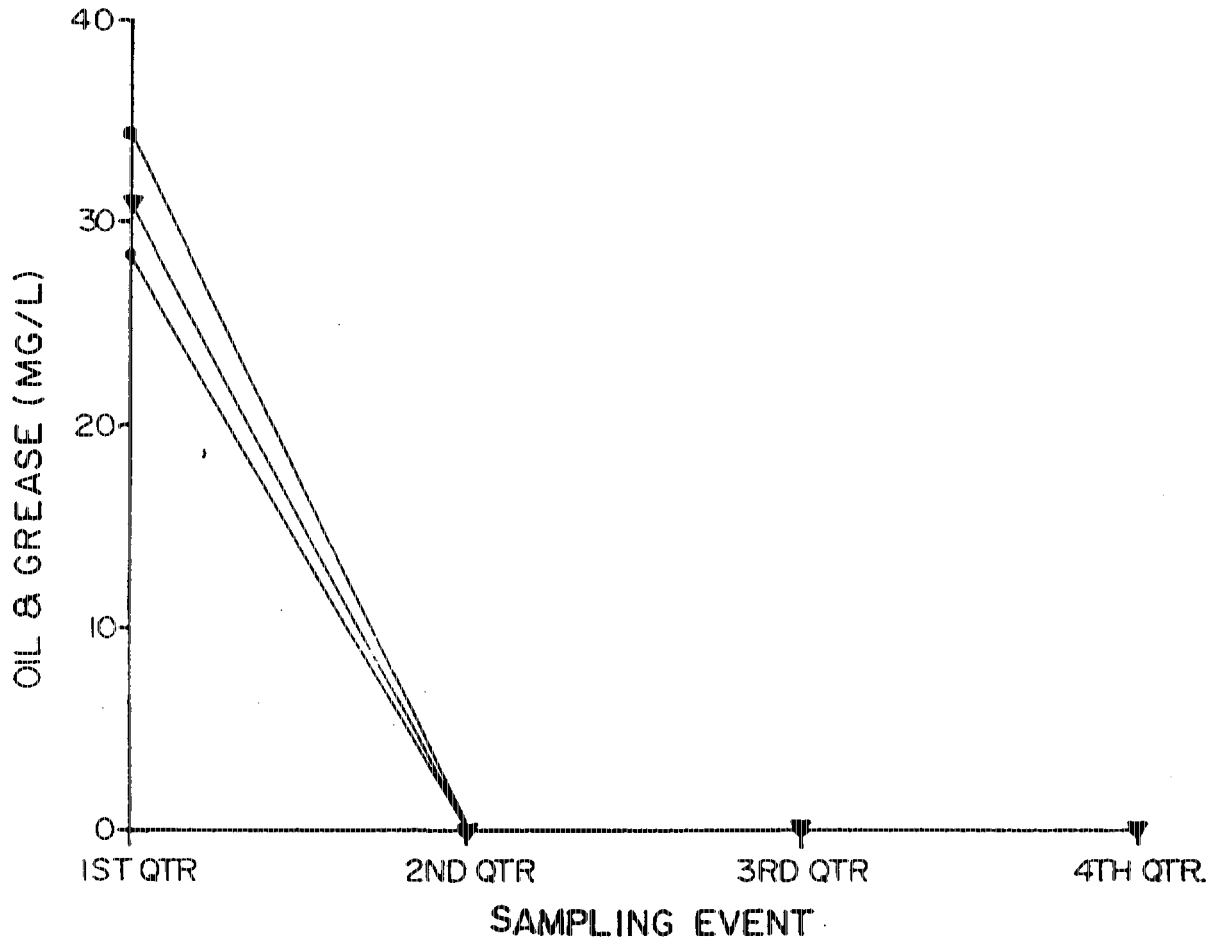
Benzyl Chloride	1,2 - Dichlorobenzene
Bis (2-chloroethoxy) methane	1,3 - Dichlorobenzene
Bis (2-chloroisopropyl) ether	1,4 - Dichlorobenzene
Bromobenzene	- CIS-1,3 - Dichloropropylene
Bromodichloromethane	1,1 - Dichloroethane
Bromoform	1,2 - Dichloroethane
Bromomethane	1,1 - Dichloroethylene
Carbon tetrachloride	trans-1,2 - Dichloroethylene
Chloroacetaldehyde	1,2 - Dichloropropane
Chlorobenzene	trans-1,3 - Dichloropropylene
Chloroethane	Methylene Chloride
Chloroform	1,1,2,2 - Tetrachloroethane
1 - Chlorohexane	Tetrachloroethylene
2 - Chloroethyl vinyl ether	1,1,1 - Trichloroethane
Chloromethane	1,1,2 - Trichloroethane
Chloromethyl methyl ether	Trichloroethylene
Chlorotoluene	Trichlorofluoromethane
Dibromochloromethane	Trichloropropane
Dibromomethane	Vinyl Chloride

The above organic compounds were not detected in the upgradient or either of the two (2) downgradient monitoring wells during the four quarterly sampling events.

II.7 Oil and Grease

At present there are no State or Federal Primary Drinking Water Standards for Oil and Grease in ground water. Oil and grease was detected at levels of approximately 30 mg/l in the samples collected from each of the three (3) on-site monitoring wells during the first sampling event (5/8/87). The samples collected during each of the three (3) subsequent sampling events showed oil and grease concentrations below detectable levels (ND <4.0 mg/l) in every case. Figure 3 illustrates the change in oil and grease concentration over the first year of ground water monitoring at the former site of Waterbury Heat Treating, Inc. The associated data is tabulated in Appendix D.

OIL AND GREASE MG/L



- ◆ -MW-1
- ▼ -MW-2
- -MW-3

FIG. 3
FORMER LOCATION OF
WATERBURY HEAT TREATING, INC.
76 WOLCOTT RD.
WOLCOTT, CT.

II.8 Conclusions

The results obtained from the first year of ground water monitoring at the former Waterbury Heat Treating, Inc. site in Wolcott, Connecticut, illustrate that the removal of approximately 350 cubic yards of contaminated soil from this site during September, 1986, through March 1987, has achieved the following:

1. The extent and degree of on-site soil contamination resulting from historic quenching oil discharges to the ground and septic system was properly identified and removed.
2. The degree of ground water contamination resulting from this site which is located in a GB/GA area is approaching zero and/or the detection limits of the EPA approved test methods.

Review of the four quarterly sampling events of the ground water monitoring wells show that the following parameters were at all times below detection limits:

- Cadmium;
- Chromium, Total;
- Lead;
- Aromatic Volatile Organics; and
- Halogenated Volatile Organics.

Oil and grease, (for which no federal or state drinking water standard has been established to date), was detected at approximately 30 mg/l in all monitoring wells during the first sampling event (5/8/87). However, during the last three sampling events, non detectable levels have been observed for all ground water monitoring wells.

Trace concentrations of cyanide (ranging from 0.2 mg/l to 0.05 mg/l) have been detected in the two (2) downgradient monitoring wells (MW-1 and MW-2) during all four sampling events (except MW-2 on 5/8/87). Trace concentrations of

hrp associates inc.

Cyanide was also detected in the upgradient well (MW-3) during the 3rd sampling event (1/15/88) at a concentration of 0.06 mg/l. However, review of this analytical data indicates the following:

- The concentration of cyanide detected in all cases was well below the Federal and State Drinking Water Standard of 0.2 mg/l (except MW-1 on 5/8/87); and
- Concentration of cyanide within the ground water is decreasing over time:

In conclusion, based on the ground water monitoring data presented in this report, it is HRP's opinion that the requirements of Step E of Consent Order Number WC4253 have been fulfilled. Fulfillment of Consent Order Number WC4253 should also eliminate the need for future monitoring of the site's ground water.

III.0 GROUND WATER FLOW DIRECTION

Neither the flow rate of ground water on-site nor the coefficient of hydraulic conductivity were determined during the four quarterly sampling events. Data collected on ground water elevations clearly indicate that ground water is flowing from west to east.

Figure 4 illustrates the dynamic state of the water table observed at the former site of Waterbury Heat Treating, Inc. during the first year of ground water monitoring. The associated data is tabulated in Appendix D.

TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
I.0	INTRODUCTION	1
II.0	GROUND WATER QUALITY	3
III.0	GROUND WATER FLOW DIRECTION	11
IV.0	PHYSICAL CONDITION AND SETTING OF MONITORING WELLS	13
V.0	EVALUATION OF CURRENT MONITORING PROGRAMS	14

APPENDICES

APPENDIX A:	SUMMARY OF REMEDIAL ACTIONS TO COMPLETE STEPS 3D AND 3E OF CONSENT ORDER #WC4253	
APPENDIX B:	FIRST YEAR QUARTERLY MONITORING RESULTS	
APPENDIX C:	MONITORING WELL COMPLETION REPORTS AND TEST BORING LOGS	
APPENDIX D:	TABULATED DATA	

FIGURES

FIGURE 1	MONITORING WELL LOCATIONS	2
FIGURE 2	TOTAL CYANIDE CONCENTRATIONS vs. TIME	5
FIGURE 3	OIL AND GREASE CONCENTRATIONS vs. TIME	8
FIGURE 4	GROUND WATER ELEVATIONS vs. TIME	12

I.0 INTRODUCTION

On April 1, 1988, HRP Associates, Inc. completed one year of required ground water monitoring, sampling and analysis at the former Waterbury Heat Treating facility in Wolcott, Connecticut. Groundwater samples were collected on May 8, 1987; September 16, 1987; January 15, 1988; and on April 1, 1988. All monitoring was completed in accordance with the monitoring specifications and procedures specified in the report entitled, "Summary of Remedial Actions to Complete Steps 3D and 3E of Consent Order #WC4253". This report, which is included as Appendix A, was submitted to the DEP in September of 1987.

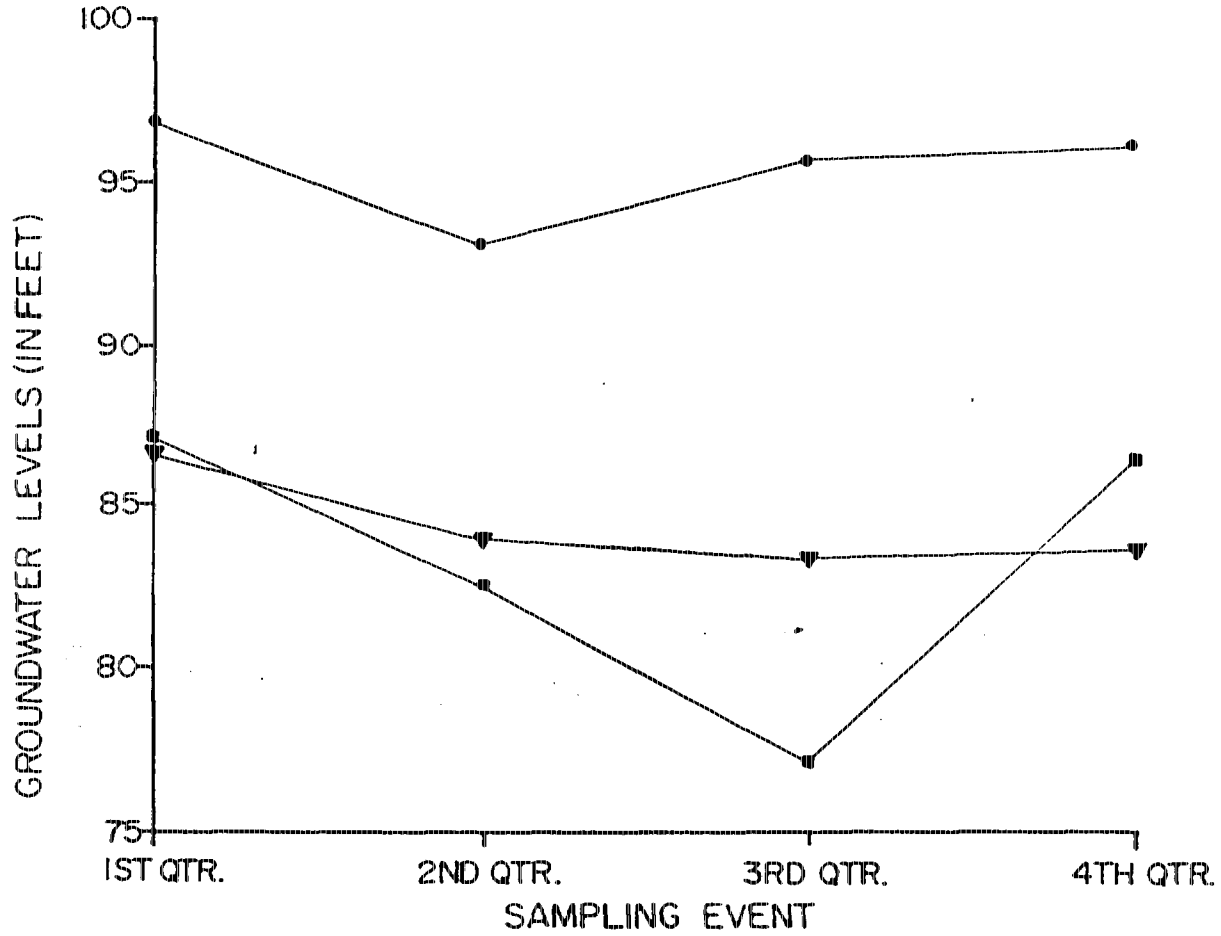
The purpose of this report is to present the results of the first year of ground water monitoring at the former Waterbury Heat Treating, Inc. site

This document contains the data and analysis necessary to meet DEP guidelines and fulfills the annual reporting requirements. Copies of the laboratory results for the first year of monitoring are included in this report as Appendix B and the monitoring well completion reports and test boring logs are included as Appendix C.

The locations of the three (3) on-site monitoring wells are shown on Figure 1.

GROUND WATER ELEVATIONS

FEET



- - MW-1
- ▼ - MW-2
- - MW-3

FIG. 4
FORMER LOCATION OF
WATERBURY HEAT TREATING, INC.
76 WOLCOTT RD.
WOLCOTT, CT.

IV.0 PHYSICAL CONDITION AND SETTING OF MONITORING WELLS

The three (3) wells which make up the present ground water monitoring network at the former site of Waterbury Heat Treating, Inc. are in very good condition as of the last sampling event (4/1/88). The original well drillers logs and well completion report are included as Appendix C of the report.

The upgradient monitoring well MW-3 and downgradient wells, MW-1 and MW-2 are protected by bolted venting water curb boxes, and show no evidence of having been tampered with.

All monitor alignments continue to be plumb and the 1.75 inch O.D. bailers easily passing the length of the wells with no obstructions. Siltation of the wells appear to be minimal with no well exceeding 0.5 feet of silt accumulation.

The setting of the monitor wells is in an area of moderate topographic relief. Maximum variance in the elevation of the wells is approximately 13.95 feet (MW-3 and MW-2). All wells are located in clear areas with unrestricted access. Surface drainage across the site is slight, due to the moderate topographic relief and the large areas of impervious surface (i.e., pavement, site structures) on-site. No surface contamination appears present on the site at this time.

V.0 EVALUATION OF CURRENT MONITORING PROGRAM

Upgradient monitoring well (MW-3) is located in an area which due to both hydraulic and surface gradient, yields samples representing the quality of ground water entering the site and is unaffected by present or past site activities.

The downgradient wells are properly situated with respect to the former on-site contaminated areas since the ground water flow from these areas is from west to east. Due to the downgradient location, any potential contaminated plume would be intersected as it moved off site.

APPENDIX A

SUMMARY OF REMEDIAL ACTIONS TO COMPLETE
STEPS 3D AND 3E OF CONSENT ORDER #WC4253

SUMMARY OF REMEDIAL ACTIONS
TO COMPLETE
STEPS 3D AND 3E OF
CONSENT ORDER #WC4253

WATERBURY HEAT TREATING COMPANY, INC.
76 WOLCOTT ROAD
WOLCOTT, CONNECTICUT

HRP # WC-WHT-0

JUNE, 1987

Prepared by:

Michael S. Seguljic
Project Engineer

Richard D. McFee
Project Manager

Submitted to:

Dr. Elliot Mayo, M.D.
129 Prospect Street
Waterbury, CT 06710

Submitted by:

HRP Associates, Inc.
P.O. Box 732
New Britain, CT 06050

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
I.	Introduction	1
II.	Summary of Off-Site Disposal of Contaminated Soil, Backfilling and Grading of all Excavated Areas.	3
III.	Summary of Off-Site Disposal of 5,000 Gallon Storage Tank and all Associated Piping	4
IV.	Summary of the Installation of Two (2) Downgradient Monitoring Wells and One (1) Upgradient Monitoring Well	5
V.	Summary of Well Development and Subsequent Sampling	7
VI.	Summary of Abandonment of Inactive Production Well	9
VII.	Recommendations	10

APPENDICES

APPENDIX A:	Approval letter for disposal of contaminated soil at the Plainville landfill
APPENDIX B:	National Oil Services, Inc. receipt for cleaning 5,000 gallon storage tank
APPENDIX C:	National Oil Services, Inc. confirmation letter for disposal of 5,000 gallon storage tank and residue
APPENDIX D:	Boring logs for three ground water monitoring wells
APPENDIX E:	Analytical reports for three ground water monitoring wells
APPENDIX F:	Well abandonment completion report
APPENDIX G:	East Coast Drilling, Inc. sign-off sheet for well abandonment

I. INTRODUCTION

In response to Consent Order # WC4253, HRP Associates, Inc. was retained by Mrs. Celinda W. Mayo, owner of the property located at 76 Wolcott Road in Wolcott, Connecticut to investigate the extent of soil and ground water contamination resulting from historic quenching oil discharges to the ground. To determine the extent of contamination, a site investigation was conducted by HRP Engineers with Mr. Scott Wing of the Department of Environmental Protection, Water Compliance Unit (DEP-WCU) on July 28, 1986. In September, 1986 approval by Mr. Scott Wing was given to proceed with sampling and excavation as described in a "Scope of Study Report", September 1986, prepared by HRP Associates, Inc.

Summarized in this report are the actions taken to meet the requirements of Steps 3D and 3E of Order # WC4253 and to comply with the scope of services outlined under HRP's September, 1986 report. The following actions were taken:

- o backfilling and grading of all excavated areas;
- o off-site disposal of 5,000 gallon storage tank and associated piping;
- o installation of two (2) downgradient monitoring wells and one (1) upgradient monitoring wells;

- o sampling and analysis of the three (3) monitoring wells; and

- o abandonment of an inactive production well per Section 25-128-57 of the State of Connecticut's Well Drilling Board and Rules and Regulations.

Information regarding the actions taken to excavate the contaminated soil at this site is provided under the Summary of Remedial Actions Report dated November 26, 1986.

Information regarding the actions taken to excavate the contaminated soil at this site is provided under the Summary of Remedial Actions Report dated November 26, 1986.

II. Summary of Off-Site Disposal of Contaminated Soil,
Backfilling and Grading of All Excavated Areas

February 4, 1987

- o Permission was granted by the Department of Environmental Protection, Solid Waste Management Unit in correspondence dated February 4, 1987, to use the excavated material as cover material at the Plainville Landfill (see Appendix A).

March 3, 1987

- o The J.J. Brennen Company using the combination of a front-end loader and triaxle dump trucks removed and disposed of approximately 180 cubic yards of contaminated soil at the Plainville Landfill.

March 4, 1987

- o The J. J. Berren Company removed and disposed of additional 180 cubic yards of contaminated soil at the Plainville landfill
- o 270 cubic yards of backfill material was hauled to the site and graded by the J. J. Brennen Company

March 5, 1987

- o 180 cubic yards of backfill material was hauled on-site and graded by the J.J. Brennen Company
- o Additional material was required to backfill the area occupied by the 5,000 gallon underground storage tank
- o The site was graded to the original topography.

III. Off-Site Disposal of 5,000 Gallon Storage Tank and All Associated Piping

April 29, 1987

- o Tank cleaning and residue removal was performed by the National Oil Service, Inc. from Branford, Connecticut (see Appendix B)
- o Tank was cleaned by physically scraping the residue from the tank's inner wall. After the scraping was completed, the material was removed and contained in a vacuum truck.
- o The residue waste (~100 gallons) was manifested off-site (CTB 0083923) as a Connecticut regulated waste and shipped to Bell Harbor Refining for treatment/disposal (see Appendix C).

May 1, 1987

- o The tank and all associated piping was removed off-site by National Oil Service, Inc. and disposed of at Schiavone's Scrapyard (see Appendix C).

IV. Installation of Two (2) Downgradient and One (1) Upgradient Monitoring Wells

April 30, 1987

- o Kennedy & Sons of Naugatuck, Connecticut were contracted to install the monitoring wells.
- o All wells were constructed with: (see Appendix D)
 - Two (2) inch inside diameter PVC schedule 40 pipe
 - Ten (10) feet of PVC schedule 40 screen with 0.010 inch slot size
 - Schedule 40 PVC risers
 - Bentonite used as the impervious seal
 - Ottawa sand for backfill & screen packing

Note: Well WHT B-2 MW did not have Ottawa sand since the hole collapsed in onto itself and the well.

- Curb boxes (to facilitate possible future development by new owners) with threaded cap.
- Cement was used for mounded backfill
- o All wells were developed by by bailing.
- o Monitoring well # WHTB-1AMW refused at 9 feet. The soil encountered was fine-medium grained sand and was clean in appearance and odor.
- o Monitoring well # WH B1 MW moved 3 feet west of well # WHTB-1AMW and refused at 13.5 feet. The soil encountered was fine-course grained sand, with gravel and some broken rock. All material was clean in appearance and odor.
- o Monitoring well # WHT-1B-MW (downgradient) moved 3.0 feet west of well # WHT B1 MW was installed on the northeastern corner of the property (see Figure I for Monitoring Well Locations). It is located ~24.5 feet and from the northern edge of the propoerty and ~24.5 feet from the eastern edge.

The soil augered through was fine-medium sand and gravel with small cobbles and boulders. Refusal was met at 20.0 feet, which is the depth the well was set. The material from this boring was clean in appearance and odor.

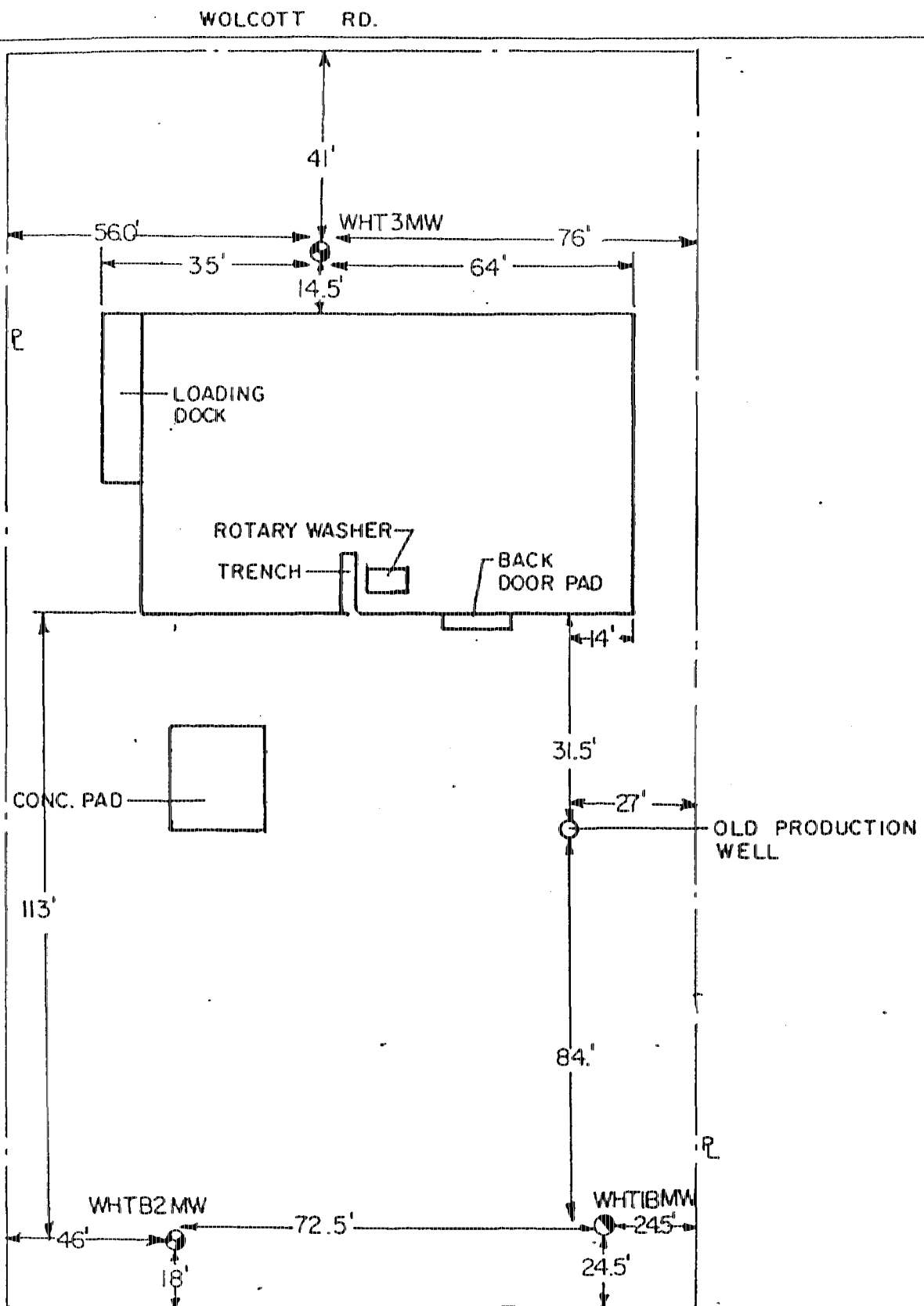
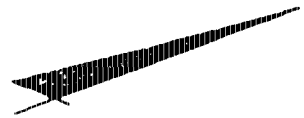


FIG. I
 MONITORING WELLS LOCATIONS
 WATERBURY HEAT TREATING, INC.
 WOLCOTT, CT.



- o Monitoring well # WHT B-2 MW (downgradient) was installed on the south eastern corner of the property. It is located approximately 46.0 feet from the southern border of the property and approximately 18.0 feet from the eastern edge. The material bored through was fine-medium grained sand, and some fine, coarse gravel with cobbles and boulders. This material was clean in appearance and odor.

Refusal was met at 19.0 feet at which time a cave-in occurred. The hole was reaugered to 19.0 feet and the well set prior to a second cave-in. Since the cave-in material (fine-medium grain sand) was suitable for screen packing, no additional Ottawa sand was used for packing.

- o Monitoring well #WHT 3 MW (upgradient) was installed in the front of the building. This is on the western side of the property slightly south of the center of the property. It is located approximately 56.0 feet from the southern border and approximately 41.0 feet from the western edge (adjacent to Route 69) of the property. Material bored through was fine-coarse sand, fine-coarse gravel, silt and broken rock.

Since the original hole could only be augered down to a depth of 8 feet, the drill rig was moved 5 feet to the north. Refusal at this location occurred at 20 feet and the well was set at 19.8 feet. All material was clean in appearance and odor was identical to that described above except for traces of gneiss.

V. Well Development and Subsequent Sampling

Since all the wells are two (2) inches in diameter there is 1.6 gallons in a ten (10.0) foot section. By measuring the height of the water in the well we were able to determine how many gallons of water were in each well. Normally, to develop a well, three (3) times the volume of water should be removed, then prior to sampling an additional three (3) times the volume should also be removed. However, due to very poor well recovery, only about 1 - 1½ times the volume of water was removed from each well prior to the actual sampling.

Sampling, as well as the development, was done by the use of bailers. Each well had a dedicated bailer.

Collected samples which were submitted to a certified laboratory for analysis were preserved as follows in the field:

Metals - filtered and pH adjusted to <2 with nitric acid

Cyanide - filtered and pH adjusted to >12 with sodium hydroxide

Oil & Grease - cool to 4°C

8010 & 8020 - cool to 4°C

Provided as Table 1 is a summary of the analytical results.

TABLE 1
ANALYTICAL RESULTS
FOR
MONITORING WELLS

<u>Parameter</u>	<u>MW#WHT-1B-MW (downgradient)</u>	<u>MW#WHT B-2 MW (downgradient)</u>	<u>MW#WHT 3 MW (upgradient)</u>
Cadmium	ND<0.01 mg/l	ND<0.01 mg/l	ND<0.01 mg/l
Chromium, total	ND<0.01 mg/l	ND<0.01 mg/l	ND<0.01 mg/l
Cyanide	0.20 mg/l	<0.05 mg/l	<0.05 mg/l
Lead	ND<0.05 mg/l	ND<0.05 mg/l	ND<0.05 mg/l
Oil & Grease ,	34.4 mg/l	30.8 mg/l	28.4 mg/l
EPA Method 601/8010	ND	ND	ND
EPA Method 602/8020/8015	ND	ND	ND

ND = Not detected.

Note: Laboratory analysis reports are provided in Appendix E where:

MW1 = WHT-1B-MW
MW2 = WHT B-2 MW
MW3 = WHT 3 MW

VI. Summary of Abandonment of Inactive Production Well

The abandonment of the inactive production well was carried out per section 25-128-57-Procedure of Abandonment of the State of Connecticut's Well Drilling Board's Rules and Regulations.

May 27, 1987

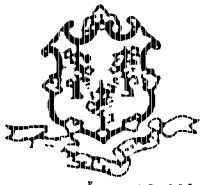
- o Abandonment was performed by a licensed Well Driller, East Coast Drilling, Inc.
- o The well was plugged to prevent the entrance of surface water, circulation of water between or among producing zones, or any other process resulting in the contamination or pollution of ground water resources.
- o The well was chlorinated prior to abandonment using a chlorine solution of 1 gallon of chlorine bleach per 10 gallons of water (per Patrick Accardi of the Chesporcotti Health District). A total of 2 gallons of chlorox was added to approximately 20 gallons of water in the 6.0" diameter by 15.0' deep well.
- o The well was checked from land surface to the entire depth of the well before it was sealed to insure against the presence of any obstruction that will interfere with sealing operations.
- o The well boring was filled with a slurry of bentonite cement grout.
- o The grout material was placed through a pipe extending to the bottom of the well, which was raised as the well was filled.
- o Upon completion of abandonment of the well, the top of the casing and grout material was terminated four (4) feet below the ground surface.
- o Well abandonment was completed May 27, 1987.
- o Well abandonment completion report is attached as Appendix F.
- o The sign-off sheet from East Coast Drilling, Inc. for the completed work is attached as Appendix G.

VII. Recommendations

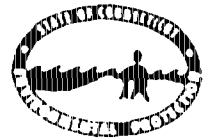
Due to the presence of cyanide within one (1) of the down gradient monitoring wells, HRP Associates, Inc., recommends that the wells be monitored for at least three (3) additional quarters to determine if the cyanide concentration will increase or decrease over time. The limit established by the Connecticut DEP for cyanide with a ground water classification of GB/GA is 0.20 mg/l.

APPENDIX A

APPROVAL LETTER FOR DISPOSAL OF
CONTAMINATED SOIL AT THE PLAINVILLE LANDFILL

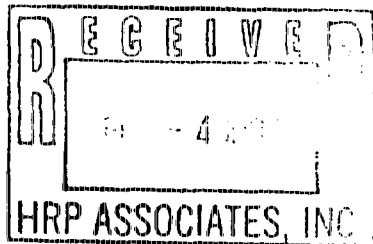


STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



January 27, 1987

Mr. Mark Possidento
HRP Associates, Inc.
P.O. Box 732
New Britain, CT 06050



Re: Disposal of 350 cubic yards of containing quench oil, Waterbury Heat Treating, Inc., Wolcott.

Dear Mr. Possidento:

The Solid Waste Management Unit has determined that the above referenced material is suitable for disposal at the Plainville solid waste disposal area, subject to the following condition:

1. it should be used as cover material at the landfill.

Please contact Jim Dziuba of my staff at 566-5847 if you have any questions.

Very truly yours,

James Dziuba
for Charles Kurker

Director
Solid Waste Management Unit

CK/JD
cc:

Mr. Carl Bradt
Public Works Director
One Central Square
Plainville, CT 06062

Phone:

165 Capitol Avenue • Hartford, Connecticut 06106

An Equal Opportunity Employer

APPENDIX B

NATIONAL OIL SERVICES, INC. RECEIPT
FOR CLEANING 5,000 GALLON STORAGE TANK

Phone: (203) 488-4888
(203) 624-6262 24 hrs.
(203) 932-8461

NY 52977

NATIONAL OIL SERVICE, INC.

P.O. Box 2145, SHORT BEACH STATION
SHORT BEACH, BRANFORD, CONN. 06405

Name H.R.P. Associates Date 4/29/87
Address 10 Lexington ST P.O. Box 732, New Britain CT

Bill of Lading/Pickup Receipt Oil N.O.S. Combustible liquid N.A. 1270
CT B, 0083923

Quantity	Description
<u>100</u> <u>gallons</u>	<u>#2 oil Tank</u> <u>cleaned + wiped down</u> <u>2 people + Rack Trucks</u> <u>+ Vacuum Trucks</u>

This product is non-hazardous waste as per Federal Regulations Title 49 Parts 100 to 177.

P.O. # _____ Customer Sig. [Signature]
Driver Sig. [Signature]

APPENDIX C

NATIONAL OIL SERVICES, INC.
CONFIRMATION LETTER FOR DISPOSAL
OF 5,000 GALLON STORAGE TANK
AND RESIDUE

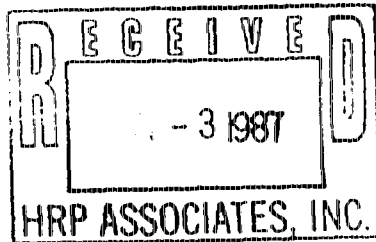


NATIONAL OIL SERVICE, INC.

P.O. Box 2145, Branford, CT 06405

Facility: 16 Elm St., West Haven, CT 06516

- Waste Oil
- Liquid Waste Collection
- Waste Disposal
- Tank Cleaning Service
- Hazardous Waste



Telephones

24 Hours (203) 624-6262
Office (203) 488-4888
Office (203) 932-8461

June 2, 1987

H.R.P. Associates
P.O. Box 732
New Britain, Ct. 06050

Attn: Mr. McFee

Dear Mr. McFee,

This will serve to confirm the work carried out by your direction at the Waterbury Heat Treating Company.

The work done consisted of cleaning an excavated underground tank, opening the tank, and transporting and disposing the tank at a scrap recycling yard. The liquid waste was disposed of at Bell Harbor Refining, CTD 084382472 and the tank and related piping at Schiavone's Scrapyard.

This information should complete your environmental file.

If additional information is required, please call us.

Sincerely yours,

James W. Milne, Jr.

JWM:ap

APPENDIX D

BORING LOGS FOR THREE GROUND WATER MONITORING WELLS

DATE START 6/30/87

Soil Sampling Log

SHEET 1 of 1

DATE FINISH 4/30/87

KENNEDY & SONS TEST BORING, INC.

Sub-Surface Exploration

P.O. Box 735

Naugatuck, Connecticut 06770

Bus. (203) 723-0686

PROJ. NO.

LOCATION Wolcott

LINE & STA.

OFFSET

GROUND ELEVATION

HOLE NO. WHT 1 B MW

CASING SAMPLER CORE BARREL

TYPE HSA SS

SIZE I.D. 2 1/4" 1 3/8"

WEIGHT OF HAMMER X 140 300

HA ER FALL X 30" 24"

GROUND WATER OBSERVATIONS

DATE TIME DEPTH

ESPECIALLY COMPILED FOR

MRP Associates

10 Lexington St.

New Britain, CT

SAMPLER O.D. 1 5/8" I.D. 1 3/8"

TYPE OF RIG CMS 55

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 4" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From		To				NO.	PEN	REC.
			0-6	6-12	12-18						
- 10							Augered through brown fine to medium sand, gravel and small cobbles 10-15' small boulders, cobbles B.O.B. 20' (refused) 2" PVC Well in drill hole 10' screen 10' riser 1 curb box 1 plug 1 bag sand 10 lbs. bentonite 1/2 bag cement				
- 30											
- 40											

Proportions used: trace = 0-10%, fine = 10-20%, sand = 20-33%, and = 33-50%

DRILLER: H.K.
HELPER: H.K.
SOILS ENGINEER: KATH
DRILLING INSPECTOR: KATH

SAMPLE TYPE
C = CORED W = WASHED
SS = SPLIT SPOON
UP = UNDISTURBED PISTON
TP = TEST PIT
UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY
0-10 LOOSE
10-30 MED. COMP.
30-50 DENSE
50+ VERY DENSE

TOTAL FOOTAGE:
Earth Boring Ft.
Rock Coring Ft.
HOLE NO. WHT 1 B MW

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

DATE START 7/30/87

Soil Sampling Log

SHEET 1 of 1

DATE FINISH 7/30/87

KENNEDY & SONS TEST BORING, INC.

PROJ. NO. WC-WHT-0

WEIGHT OF HAMMER X 140 300

Sub-Surface Exploration

P.O. Box 735

Naugatuck, Connecticut 06770

Bus. (203) 723-0686

LOCATION Wolcott

MAX FALL X 30' 24'

LINE & STA.

GROUND WATER OBSERVATIONS

DATE 7/30/87 TIME 3 hrs. DEPTH 12'

OFFSET

ESPECIALLY COMPILED FOR

GROUND ELEVATION

HRP Associates

HOLE NO. WH B1 MW

SAMPLER O.D. 1 5/8" I.D. 1 3/8"

10 Lexington St.

CASINO SAMPLER CORE BARREL

TYPE OF RIG CME 55

New Britain, CT

TYPE HSA SS

SIZE I.D. 2 1/4" 1 3/8"

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 4" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From		To				NO.	PEN	REC.
			0-6	6-12	12-18						
							.6' Dark brown top soil, brown fine to medium sand, little silt				
	5'-	SS			50/	31 dry 4.0 Comp	Brown medium to coarse sand, gravel, some broken shell	1	1.0	1.0	
							Dark brown medium sand				
- 10							Augers refused at 15.5'				
- 20											
- 30											

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

DRILLER: B.K.
HELPER: M.K.
SOILS ENGINEER:
DRILLING INSPECTOR: Kevin

SAMPLE TYPE
C = CORED W = WASHED
SS = SPLIT SPOON
UP = UNDISTURBED PISTON
TP = TEST PIT
UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY
0-10 LOOSE
10-30 MED. COMP.
30-50 DENSE
50+ VERY DENSE

TOTAL FOOTAGE:
Earth Boring Ft.
Rock Coring Ft.
HOLE NO. WHB-1MW

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

Soil Sampling Log

SHEET 1 of 1

DATE START 1/30/87

DATE FINISH 1/30/87

WEIGHT OF HAMMER X 140 300

NAM FALL X 30" 24"

GROUND WATER OBSERVATIONS

DATE TIME DEPTH

SAMPLER O.D. 1 5/8" I.D. 1 3/8"

TYPE OF RIG CME 55

KENNEDY & SONS TEST BORING, INC.

Sub-Surface Exploration

P.O. Box 735

Naugatuck, Connecticut 06770

Bus. (203) 723-0686

PROJ. NO. WC-WNT-0

LOCATION Wolcott

LINE & STA.

OFFSET

GROUND ELEVATION

MOLE NO. WNT B-1A MW

ESPECIALLY COMPILED FOR

MRP Associates

10 Lexington St.

New Britain, CT

CASING SAMPLER CORE BARREL

TYPE MSA SS

SIZE I.D. 2 1/4" 1 3/8"

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From		To				NO.	PEN	REC.
			0-6	6-12	12-18						
							0-5' Brown fine to medium sand, some medium gravel				
							5'-8' Brown fine to medium sand				
							Augers refused 9'				
- 10											
- 20											
- 30											
0											

Proportions used: trace = 0-10%, little = 10-20%, some = 20-33%, and = 33-50%

DRILLER: B.K.
 HELPER: M.K.
 SOILS ENGINEER:
 DRILLING INSPECTOR: Kevin

SAMPLE TYPE
 C = CORED W = WASHED
 SS = SPLIT SPOON
 UP = UNDISTURBED PISTON
 TP = TEST PIT
 UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY
 0-10 LOOSE
 10-30 MED. COMP.
 30-50 DENSE
 50+ VERY DENSE

TOTAL FOOTAGE:

Earth Boring Ft.

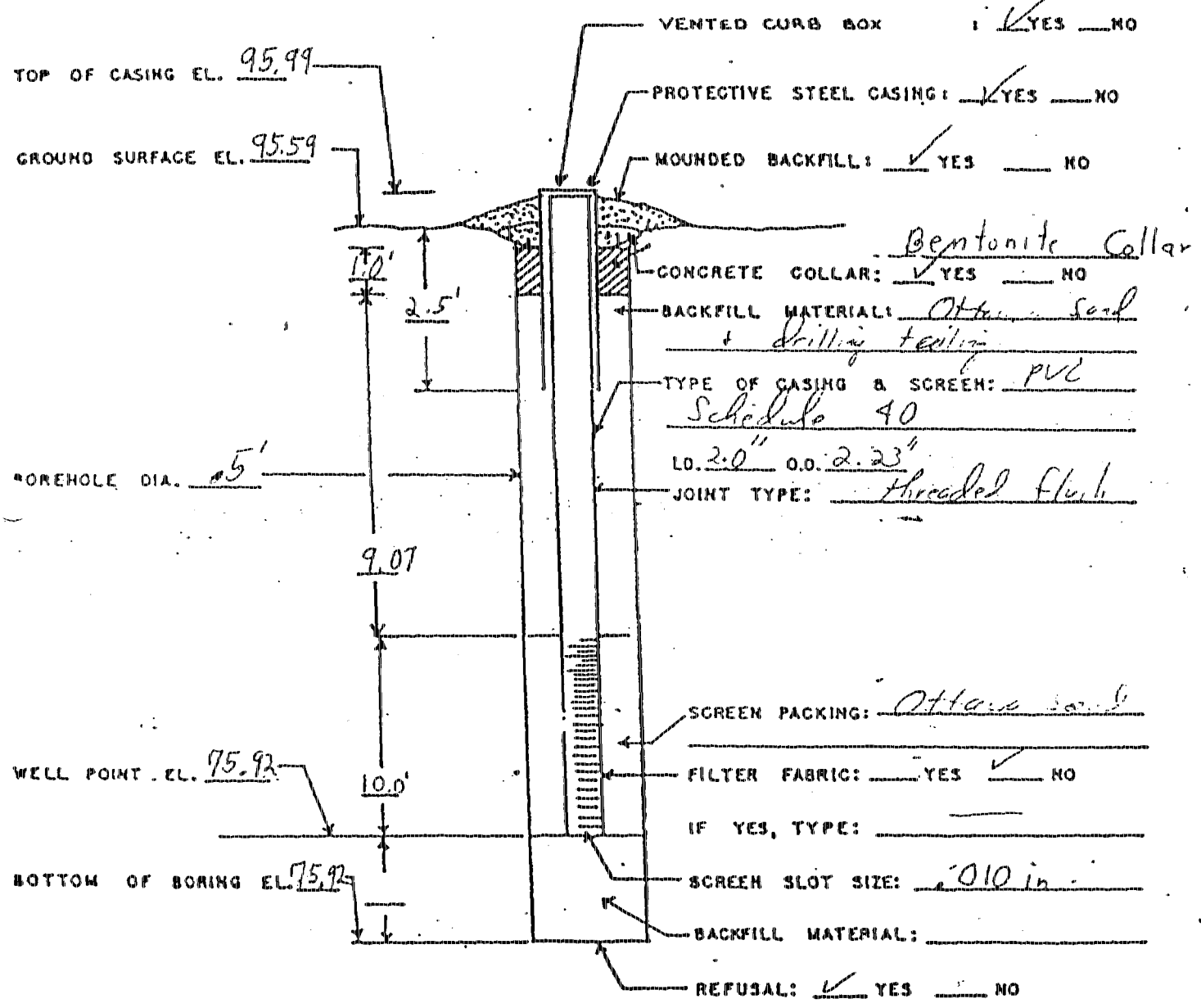
Rock Coring Ft.

MOLE NO. WNT B-1A MW

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT/1 B MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: *Wolcott* Site: *Waterbury Heat Treat*
Monitoring Point I.D. No.: *WHT 1 B MW* Date of completion: *4/30/87*
DEP/WPC I.D. No:
Monitoring Point Location (relative to site features):
Drilling Contractor: *Kennedy + Sons* Supervising Engineer/Geologist: *Kevin McCarty*
Well Construction Method: *Hollow Stem Auger 3 1/4" I.D.*

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): *95.59* Well depth below ground surface: *20.07*

Refusal: Yes No

Top of casing elevation (MSL): *95.99* Screened interval: *20.07-10.07*

Length of Screen: *10'*

Length of riser pipe: *9.07'*

Screen type: *PVC Schedule 40*

Screen Slot size: *0.010 in*

Filter fabric: Yes No

Screen packing: Yes No

If yes, Thickness: *10.0'*

Well inside diameter: *2.0"*

Material: *Ottawa Sand*
grain size: *coarse*

Impermeable Backfill:

Well casing material and schedule: *PVC 40*

Estimated K screened interval:

Method of well development: *Bailing*

Time spent developing:

Locking or threaded cap

Impermeable backfill: *Bentonite*

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: *Sand, Gravel*

Inferred relationship to plume: Within Outside Edge

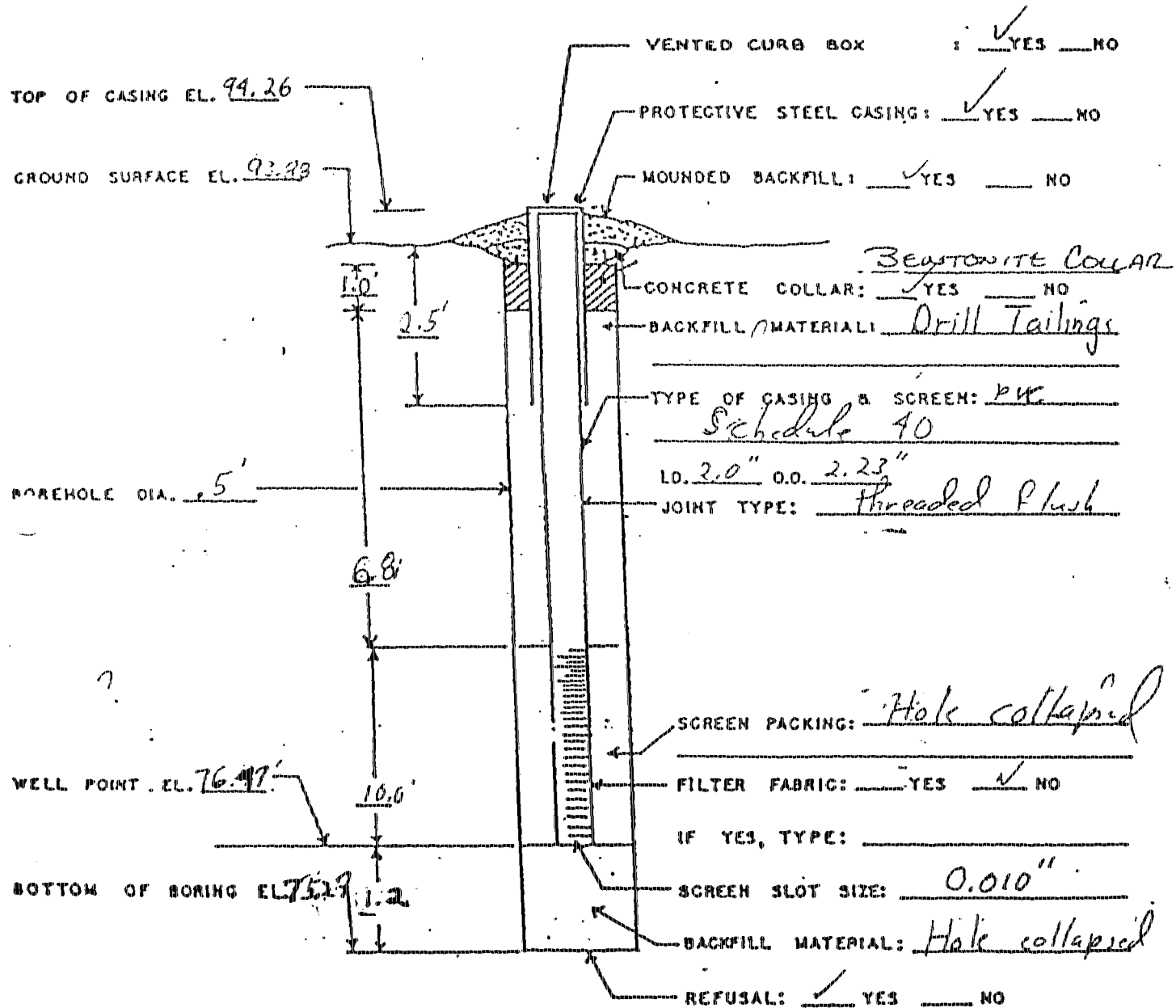
Watershed (plume discharge watercourse): *MAD River*

Aquifer materials (attach boring log): *Sand, Gravel*

Attach maps and plans required of G.1.j. and G.4.

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT B-2 MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: *Walcott* Site: *Waterbury Heat Treat*
Monitoring Point I.D. No.: *WHT B-2 MW* Date of completion: *4/30/87*
DEP/WPC I.D. No:
Monitoring Point Location (relative to site features):
Drilling Contractor: *Kennedy & Sons* Supervising Engineer/Geologist:
Well Construction Method: *Hollow Stem Auger 3 1/4" I.D.* *Kevin McCarty*

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): *93.88* Well depth below ground surface: *17.80*
Refusal: Yes No
Top of casing elevation (MSL): *94.26* Screened interval: *17.8-7.8'*
Length of Screen: *10.0'*
Length of riser pipe: *6.87'*
Screen type: *PVC SCHEDULE 40* Screen Slot size: *0.010 in*
Filter fabric: Yes No Screen packing: Yes No *Hole Collapsed*
If yes, Thickness:
Well inside diameter: *2.0"* Material:
grain size:
Impermeable Backfill:
Well casing material and schedule: *PVC 40* Estimated K screened interval:
Method of well development: *BAILING* Time spent developing:
Locking or threaded cap Impermeable backfill: *BENTONITE*

Redrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: SAND, GRAVEL

Inferred relationship to plume: Within Outside Edge

Watershed (plume discharge watercourse): MAD RIVER

Aquifer materials (attach boring log): SAND, GRAVEL

Attach maps and plans required of G.1.j. and G.4.

DATE START 4/30/87

Soil Sampling Log

SHEET 1 of 1

DATE FINISH 4/30/87

KENNEDY & SONS TEST BORING, INC.

WEIGHT OF HAMMER X 140 300

Sub-Surface Exploration

P.O. Box 735

Naugatuck, Connecticut 06770

Bus. (203) 723-0686

HAMMER FALL X 30" 24"

GROUND WATER OBSERVATIONS

DATE 4/30/87 TIME 0 hrs. DEPTH 13.8'

ESPECIALLY COMPILED FOR

MRP Associates

SAMPLER O.D. 1 5/8" I.D. 1 3/8"

10 Lexington St.

New Britain, CT

TYPE OF RIG CME 55

PROJ. NO.

LOCATION Wolcott

LINE & STA.

OFFSET

GROUND ELEVATION

HOLE NO. WMT 3 NW

CASING SAMPLER CORE BARR

TYPE MSA SS

SIZE I.D. 2 1/2" 1 3/8"

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	4-12	To 12-18				NO.	PEN	REC.
								6" Top soil fine to coarse sand, fine to coarse gravel, trace silt			
	5'-6"	SS	25	50	5'	damp very dense	5.5'	Brown-orange medium to coarse sand w/little fine gravel	1	1.0	.
								Fine to coarse gravel, broken rock some medium sand			
- 10								Auger refused at 8.0' offset 5' north			
	10'-11.3'	SS	51	46	50/3'	damp very dn	10.4'	Light brown fine to coarse sand, some fine to medium gravel	2	1.3	1.
								Gray brown fine to medium sand and silt, some broken rock (medium compact till)			
- 20								Brown fine sand w/little silt, w/mixed gravel			
	15'-15.3'	SS	50	3'		wet very dense		Fine to medium sand, little coarse to fine gravel, trace weathered glass	3	.9	.2
								Auger refused at 20.0' set 2" well at 19.8'			
- 30								10' screen 10' riser 1 curb box 1 plug 1 bag sand 10 lbs. bentonite 1/2 bag cement			
40											

Proportions used: trace = 0-10%, little = 10-20%, some = 20-33%, and = 33-50%

DRILLER: B.K.
HELPER: M.K.
SOILS ENGINEER:
DRILLING INSPECTOR: Kevin

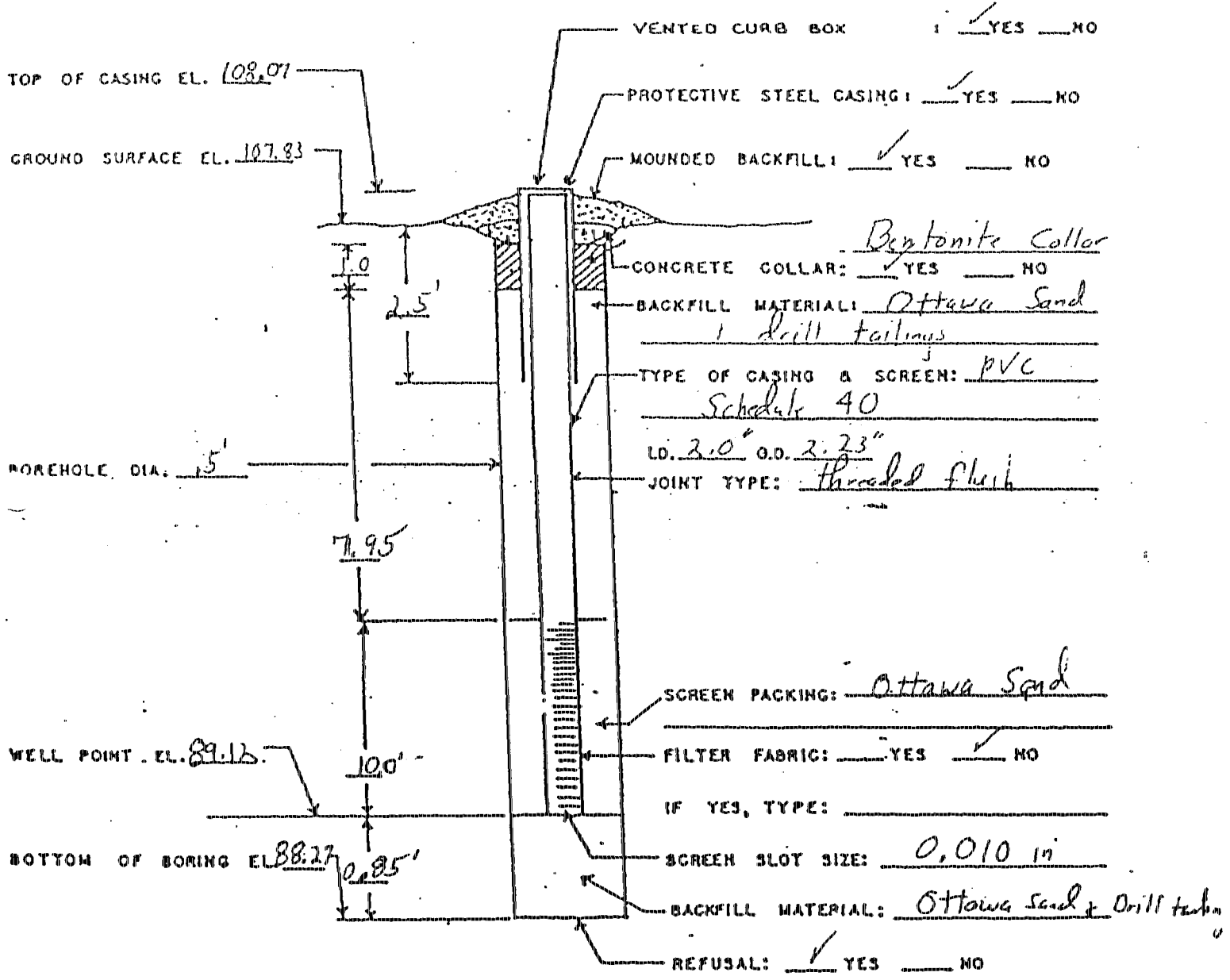
SAMPLE TYPE
C = CORED W = WASHED
SS = SPLIT SPOON
UP = UNDISTURBED PISTON
TP = TEST PIT
UT = UNDISTURBED THINWALL

COHESIONLESS DENSITY
0-10 LOOSE
10-30 MED. COMP.
30-50 DENSE
50+ VERY DENSE

TOTAL FOOTAGE:
Earth Boring Ft.
Rock Coring Ft.
HOLE NO. WMT 3 NW

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT 3MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: *Wolcott*

Site: *Waterbury Heat Treat*

Monitoring Point I.D. No.: *MHF 3MW*

Date of completion: *4/30/87*

DEP/WPC I.D. No:

Monitoring Point Location (relative to site features):

Drilling Contractor: *Kennedy + Sons*

Supervising Engineer/Geologist: *Kevin*

Well Construction Method: *Hollow Stem Auger 3 1/4" I.D.*

McCarty

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): *107.83*

Well depth below ground surface: *18.95*

Refusal: Yes No

Top of casing elevation (MSL): *108.07*

Screened interval: *18.95 - 8.95*

Length of Screen: *10.0'*

Length of riser pipe: *17.95'*

Screen type: *PVC Schedule 40*

Screen Slot size: *0.010 in*

Filter fabric: Yes No

Screen packing: Yes No

If yes, Thickness:

Well inside diameter: *2.0"*

Material: *O'Hara Sand*

grain size:

Impermeable Backfill:

Well casing material and schedule: *PVC 40* Estimated K screened interval:

Method of well development: *Bailing*

Time spent developing:

Locking or threaded cap

Impermeable backfill: *Dentonite*

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: *Sand, Gravel*

Inferred relationship to plume: Within Outside Edge

Watershed (plume discharge watercourse): *MAD River*

Aquifer materials (attach boring log): *Sand, Gravel*

Attach maps and plans required of G.1.j. and G.4.

APPENDIX E

ANALYTICAL REPORTS FOR THREE GROUND WATER MONITORING WELLS

WATER

May 21, 1987

RECEIVED
MAY 22 1987
HRP ASSOCIATES

SOIL

HRP Associates, Inc.
P.O. Box 732
New Britain, Ct. 06050

Att: Debbie Brasile

RE: Lab. No. 57-064-3
Job. No. WC-WHT-0
Inv. No. 778

AIR

Dear Ms. Brasile:

The following is a report of analysis on samples received May 8, 1987.

	MW1	MW2	MW3
Cadmium - mg/l	ND<0.01	ND<0.01	ND<0.01
Chromium, Total - mg/l	ND<0.01	ND<0.01	ND<0.01
Lead - mg/l	ND<0.05	ND<0.05	ND<0.05
Oil & Grease - mg/l	34.4	30.8	28.4
Cyanide, Total - mg/l	0.20	<0.05	<0.05

STEPHEN J. FRANCO
Laboratory Director

CT. CERTIFICATION
PH-0547

Please contact me if you have any questions.

Very truly yours,

Stephen J. Franco

Stephen J. Franco
Laboratory Director

SJF:hc

CONNECTICUT TESTING LABORATORIES, INC.

140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

EPA METHOD 601/8010-ppb

	MW1	MW2	MW3
Chloromethane			
Bromomethane			
Vinylchloride *			
Chloroethane *			
Methylenechloride			
Trichlorofluoromethane			
11-Dichloroethylene			
11-Dichloroethane			
11,2-Dichloroethylene			
Chloroform			
1,2-Dichloroethane			
1,1,1-Trichloroethane			
Carbontetrachloride			
Bromodichloromethane			
1,2-Dichloropropane			
1,1,3-Dichloropropylene			
Trichloroethylene			
Dibromochloromethane			
1,1,2-Trichloroethane			
Cis-1,3-Dichloropropylene			
2-Chlorethylvinylether *			
Bromoform			
1,1,2,2-Tetrachloroethane			
Tetrachloroethylene			
Chlorobenzene			
Benzyl Chloride			
Bis (2-chloroethoxy)methane *			
Bis(2-chloroisopropyl) ether *			
Bromobenzene			
Chloroacetaldehyde *			
1-Chlorohexane			
Chloromethyl methyl ether *			
Chlorotoluene			
Dibromomethane			
1,2-Dichlorobenzene			
1,3-Dichlorobenzene			
1,4-Dichlorobenzene			
Trichloropropane			

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb .

The minimum detectable level for these () parameters was 10 ppb .

HRP Associates, Inc.
 Lab. No. 57-039-3
 Job. No. WC-WHT-O
 Inv. No. 744
 Page 3
 May 18, 1987

EPA METHOD 602/8020/8015-ppb

	MW1	MW2	MW3	
Benzene				
Toluene				
Ethyl Benzene				
P-Xylene				
M-Xylene				
O-Xylene				
1,4-Dichlorobenzene				
1,3-Dichlorobenzene				
1,2-Dichlorobenzene				
Methyl Ethyl Ketone*				
Methyl Isobutyl Ketone*				
Acrylamide*	-----	-----	-----	
Carbon Disulfide*	-----	-----	-----	
Diethyl Ether*	-----	-----	-----	
Paraldehyde*	-----	-----	-----	

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb .

The minimum detectable level for these () parameters was 50 ppb .

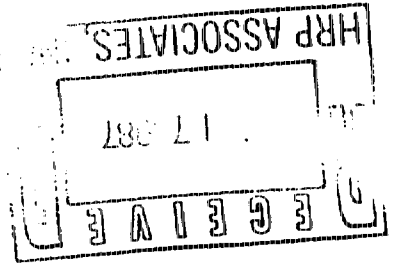
APPENDIX G

EAST COAST DRILLING, INC. SIGN-OFF
SHEET FOR WELL ABANDONMENT

APPENDIX F

WELL ABANDONMENT COMPLETION REPORT

Waterbury Heat treatment Wdcott et
Jobno.-87-285 5/27



Job description: one well abandonment
lump sum cost

4 bags cement 1 granular bent 2 gallons clorox

well abandonment done according to regulations set
by the Well drilling board*, and to inspectors
satisfaction

East coast X James C. Cully
client X Michael S. Lyffe

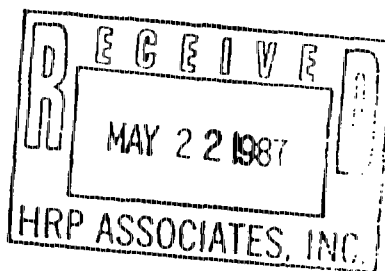
* complies with the regulations in Sec. 25-128-57 "Procedure of abandonment"

APPENDIX B

FIRST YEAR QUARTERLY MONITORING RESULTS

FIRST QUARTER MONITORING RESULTS

Samples Collected May 8, 1987



WATER

May 21, 1987

HRP Associates, Inc.
P.O. Box 732
New Britain, Ct. 06050

SOIL

Att: Debbie Brasile

RE: Lab. No. 57-064-3
Job. No. WC-WHT-0
Inv. No. 778

AIR

Dear Ms. Brasile:

The following is a report of analysis on samples received May 8, 1987.

	MW1	MW2	MW3
Cadmium - mg/l	ND<0.01	ND<0.01	ND<0.01
Chromium, Total - mg/l	ND<0.01	ND<0.01	ND<0.01
Lead - mg/l	ND<0.05	ND<0.05	ND<0.05
Oil & Grease - mg/l	34.4	30.8	28.4
Cyanide, Total - mg/l	0.20	<0.05	<0.05

STEPHEN J. FRANCO
Laboratory Director

Please contact me if you have any questions.

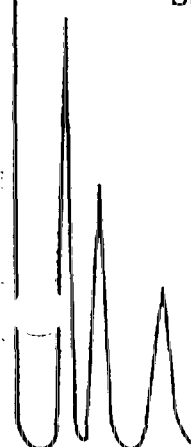
Very truly yours,

Stephen J. Franco

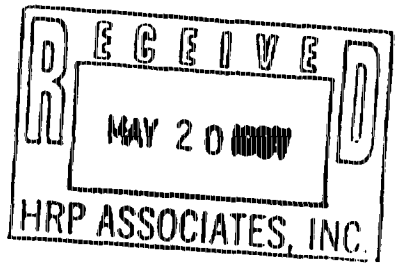
Stephen J. Franco
Laboratory Director

SJF:hc

CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731



Wtby. Heat Treating/WC
WHTφ



May 18, 1987

HRP Associates Inc.
P.O. Box 732
New Britain, Ct. 06050

Att: Debbie Brasile

RE: Lab. No. 57-039-3
Job. No. WC-WHT-O
Inv. No. 744

Dear Ms. Brasile:

The attached report are results of analysis for samples received May 8, 1987.

The samples were analyzed by Gas Chromatography and results are reported in ppb.

Please contact me if you have any questions.

Very truly yours,
Stephen J. Franco

Stephen J. Franco
Laboratory Director

SJF:hc

CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

WATER

SOIL

AIR

STEPHEN J. FRANCO
Laboratory Director

CERTIFICATION
PH-0547



	MW1	MW2	MW3
Chloromethane			
Bromomethane			
Vinylchloride *			
Chloroethane *			
Methylenechloride			
Trichlorofluoromethane			
11-Dichloroethylene			
11-Dichloroethane			
112-Dichloroethylene			
Chloroform			
12-Dichloroethane			
111-Trichloroethane			
Carbontetrachloride			
Bromodichloromethane			
12-Dichloropropane			
113-Dichloropropylene			
Trichloroethylene			
Dibromochloromethane			
112-Trichloroethane			
Cis13-Dichloropropylene			
2-Chlorethylvinylether *			
Bromoform			
1122-Tetrachloroethane			
Tetrachloroethylene			
Chlorobenzene			
Benzyl Chloride			
Bis (2-chloroethoxy)methane *			
Bis(2-chloroisopropyl) ether *			
Bromobenzene			
Chloracetaldehyde *			
1-Chlorohexane			
Chloromethyl methyl ether *			
Chlorotoluene			
Dibromomethane			
12-Dichlorobenzene			
13-Dichlorobenzene			
14-Dichlorobenzene			
Trichloropropane			

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 10 ppb.

HRP Associates, Inc.
 Lab. No. 57-039-3
 Job. No. WC-WHT-O
 Inv. No. 744
 Page 3
 May 18, 1987

EPA METHOD 602/8020/8015-ppb

	MW1	MW2	MW3	
Benzene				
Toluene				
Ethyl Benzene				
P-Xylene				
M-Xylene				
O-Xylene				
1,4-Dichlorobenzene				
1,3-Dichlorobenzene				
1,2-Dichlorobenzene				
Methyl Ethyl Ketone*				
Methyl Isobutyl Ketone*				
Acrylamide*	-----	-----	-----	
Carbon Disulfide*	-----	-----	-----	
Diethyl Ether*	-----	-----	-----	
Paraldehyde*	-----	-----	-----	

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 50 ppb.

10 Lexington Street
 Post Office Box 732
 New Britain, Ct. 06050

CHAIN OF CUSTODY RECORD

Place & Address Of Collection Waterbury, CT Trout					Sampler's Name (Signature) <i>[Signature]</i>						
					Assistant (Witness) (Signature) <i>[Signature]</i>						
					Job Number WC-WTR-0						
Sample Number	Sample Location	Type Container	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
1 MW		cubi	1 L	log	5/7	2:00	X				
1 MW		jar	1 pt								
1 MW		vial	90ml								
2 MW		cubi	1 L								
2 MW		jar	1 pt								
2 MW		vial	90ml								
3 MW		cubi	1 L								
3 MW		jar	1 pt								
3 MW		vial	90ml								
Relinquished By (Signature) <i>[Signature]</i>					Received By (Signature) <i>[Signature]</i>					Date 5/8	Time 9:40
Relinquished By (Signature)					Received By (Signature)					Date	Time
Relinquished By (Signature)					Received By (Signature)					Date	Time

Name & Address Of Laboratory

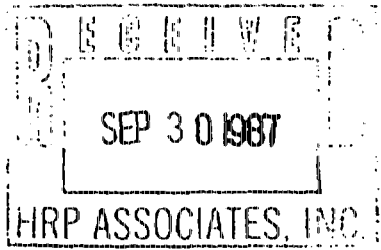
ANALYSIS REQUIRED
 SAMPLE IDENTIFICATION 00

Parameters	Sample Number			Parameters	Sample Number		
	1	2	3		1	2	3
	M	M	M		M	M	M
	W	W	W		W	W	W
Al				NO ₂ -N			
As				(Ortho) PO ₄ -P			
Ba				(Total) PO ₄ -P			
Cd	✓	✓	✓	Oil & Grease	✓	✓	✓
Cr ⁶				Phenols			
Cr-T	✓	✓	✓	CN-A			
Cu				CN-T	✓	✓	✓
Fe-D				TKN			
Fe-T				Organic-N			
Pb	✓	✓	✓	TOC			
Mg				pH			
Mn-D				STD Water			
Mn-T				Fecal Coliform			
Hg				Fecal Strep			
Hg				Total Coliform			
Ni				Fluoride			
Ag				Chloride			
Sa				BO10	✓	✓	✓
V				BO20	✓	✓	✓
Zn				BO80			
TSS				BO15			
TDS				TOX			
TS				ASTD			
Sp Cond.							
NO ₃ -N							
Remarks	<p><i>[Signature]</i> E. Foxiri - Lexington M. [Signature]</p>						

SECOND QUARTERLY MONITORING RESULTS

Samples Collected September 16, 1987

Waterbury Heat Treating / WCWHTØ



September 29, 1987

HRP Associates, Inc.
P.O. Box 732
New Britain, Ct. 06050

Att: Debbie Brasile

RE: Lab. No. 97-168-3
Job.No. WC-WHT-O
Inv. No. 1648

Dear Ms. Brasile:

The following is a report of analysis on samples received September 16, 1987

	MW-1	MW-2	MW-3
Cadmium - mg/l	ND<0.01	ND<0.01	ND<0.01
Chromium, Total - mg/l	ND<0.01	ND<0.01	ND<0.01
Lead - mg/l	ND<0.05	ND<0.05	ND<0.05
Oil & Grease - mg/l	ND<4.0	ND<4.0	ND<4.0
Cyanide, Total - mg/l	0.09	0.10	ND<0.05

Please contact me if you have any questions.

Very truly yours,
Stephen J. Franco
Stephen J. Franco
Laboratory Director

SJF:hc

CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

WATER

SOIL

AIR

STEPHEN J. FRANCO
Laboratory Director

TEST CERTIFICATION
PH-0547



WATER

September 22, 1987

SOIL

HRP Associates, Inc.
P.O. Box 732
New Britain, Ct. 06050

Att: Debbie Brasile

RE: Lab. No. 97-114-3
P.O. No. WC-WHT-0
Inv. No. 1590

AIR

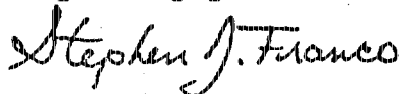
Dear Ms. Brasile:

The attached report are results of analysis for samples received September 16, 1987.

The samples were analyzed by Gas Chromatography and results are reported in ppb.

Please contact me if you have any questions.

Very truly yours,



Stephen J. Franco
Laboratory Director

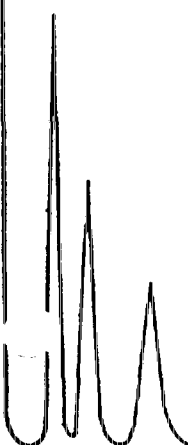
SJF/hc

CONNECTICUT TESTING LABORATORIES, INC.

140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731

PHEN J FRANCO
Laboratory Director

CERTIFICATION
PH-0547



EPA METHOD 601/8010-ppb

	MW-1	MW-2	MW-3
Chloromethane			
Bromomethane			
Vinylchloride *			
Chloroethane *			
Methylenechloride			
Trichlorofluoromethane			
11-Dichloroethylene			
11-Dichloroethane			
112-Dichloroethylene			
Chloroform			
12-Dichloroethane			
111-Trichloroethane			
Carbontetrachloride			
Bromodichloromethane			
12-Dichloropropane			
113-Dichloropropylene			
Trichloroethylene			
Dibromochloromethane			
112-Trichloroethane			
Cis13-Dichloropropylene			
2-Chlorethylvinylether *			
Bromoform			
1122-Tetrachloroethane			
Tetrachloroethylene			
Chlorobenzene			
Benzyl Chloride			
Bis (2-chloroethoxy)methane *			
Bis(2-chloroisopropyl)ether *			
Bromobenzene			
Chloracetaldehyde *			
1-Chlorohexane			
Chloromethyl methyl ether *			
Chlorotoluene			
Dibromomethane			
12-Dichlorobenzene			
13-Dichlorobenzene			
14-Dichlorobenzene			
Trichloropropane			

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 10 ppb.

HRP Associates, Inc.
 Lab. No. 97-114-3
 P.O. No. WC-WHT-0
 Inv. No. 1590
 Page 3
 September 22, 1987

EPA METHOD 602/8020/8015-ppb

	MW-1	MW-2	MW-3	
Benzene				
Toluene				
Ethyl Benzene				
P-Xylene				
M-Xylene				
O-Xylene				
1,4-Dichlorobenzene				
1,3-Dichlorobenzene				
1,2-Dichlorobenzene				
Methyl Ethyl Ketone*				
Methyl Isobutyl Ketone*				
Acrylamide*	-----	-----	-----	
Carbon Disulfide*	-----	-----	-----	
Diethyl Ether*	-----	-----	-----	
Paraldehyde*	-----	-----	-----	

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 50 ppb.

10 lexington street
post office box 732
new britain, ct. 06050

CHAIN OF CUSTODY RECORD

Place & Address Of Collection WATERBURY HEAT TREAT						Sampler Name (Signature) <i>Michael S. Segler</i>					
Job Number WC-WHT-0						Assistant (Witness) (Signature)					
Location Wolcott, CT						Job Number WC-WHT-0					
Sample Number	Sample Location	Type Container	Total Volume	Preservative	Date	Time	Sample Type			Remarks	
MW1		can	2L	SPPT	9/5	2:00	X				
MW1		jar	1/2 pt	cool							
MW1		vial	40ml	cool							
MW2		can	2L	SPPT							
MW2		jar	1/2 pt	cool							
MW2		vial	40ml	cool							
MW3		can	2L	SPPT							
MW3		jar	1/2 pt	cool							
MW3		vial	40ml	cool							
Relinquished By (Signature) <i>Michael S. Segler</i>				Received By (Signature) <i>George O'Hara</i>				Date 9/16/87		Time 2:30	
Relinquished By (Signature) <i>George O'Hara</i>				Received By (Signature) <i>BT</i>				Date 9/16/87		Time 9:15	
Relinquished By (Signature)				Received By (Signature)				Date		Time	

Name & Address Of Laboratory
CTL

ANALYSIS REQUIRED
SAMPLE IDENTIFICATION (X)

Parameters	Sample Number			Parameters	Sample Number		
	M	M	M		M	M	M
	W	W	W		W	W	W
	1	2	3		1	2	3
Al				NO ₂ -N			
As				(Ortho) PO ₄ -P			
B				(Total) PO ₄ -P			
Ca				Oil & Grease	✓	✓	✓
Cd	✓	✓	✓	Phenols			
Cr ⁺⁶				CN ^{-A}			
Cr ^{-T}	✓	✓	✓	CN ^{-T}	✓	✓	✓
Cu				TKN			
Fe ^{-D}				Organic-N			
Fe ^{-T}				TOC			
Pb	✓	✓	✓	pH			
Mg				STD Water			
Mn ^{-D}				Fecal Coliform			
Mn ^{-T}				Fecal Strep.			
Na				Total Coliform			
Hg				Fluoride			
Ni				Chloride			
Ag				BO10	✓	✓	✓
Se				BO20	✓	✓	✓
V				BO80			
Zn				BO15			
TSS				TOX			
TDS							
TS							
Sp Cond.							
NO ₃ -N							
Remarks							

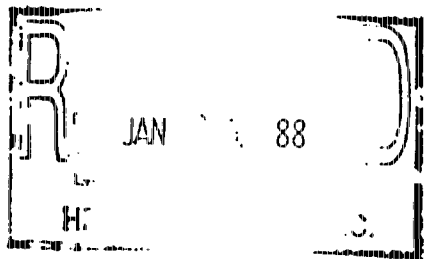
THIRD QUARTERLY MONITORING RESULTS

Samples Collected on January 15, 1988

Water by Hand Test, WC WHT 8

WATER

January 24, 1988



HRP Associates, Inc.
P.O. Box 732
New Britain, Ct. 06050

Att: Alayne Anderson

RE: Lab. No. 18-109-3
P.O. No. WC-WHT-0
Inv. No. 2586

SOIL

AIR

Dear Ms. Anderson:

The attached report are results of analysis for samples received January 15, 1988.

The samples were analyzed by Gas Chromatography and results are reported in ppb.

Please contact me if you have any questions.

Very truly yours,

Stephen J. Franco

Stephen J. Franco
Laboratory Director

SJF/hc

STEPHEN J. FRANCO
Director

TEST CERTIFICATION
PH-0547

CONNECTICUT TESTING LABORATORIES, INC.

140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731



Lab. No. 18-109-3
 P.O. No. WC-WHT-0
 Inv. No. 2586
 Page 2

EPA METHOD 601/8010-ppb

	MW-1	MW-2	MW-3
Chloromethane			
Bromomethane			
Vinylchloride *			
Chloroethane *			
Methylenechloride			
Trichlorofluoromethane			
11-Dichloroethylene			
11-Dichloroethane			
112-Dichloroethylene			
Chloroform			
12-Dichloroethane			
111-Trichloroethane			
Carbontetrachloride			
Bromodichloromethane			
12-Dichloropropane			
113-Dichloropropylene			
Trichloroethylene			
Dibromochloromethane			
112-Trichloroethane			
Cis13-Dichloropropylene			
2-Chlorethylvinylether *			
Bromoform			
1122-Tetrachloroethane			
Tetrachloroethylene			
Chlorobenzene			
Benzyl Chloride			
Bis (2-chloroethoxy)methane *			
Bis (2-chloroisopropyl) ether *			
Bromobenzene			
Chloroacetaldehyde *			
1-Chlorohexane			
Chloromethyl methyl ether *			
Chlorotoluene			
Dibromomethane			
12-Dichlorobenzene			
13-Dichlorobenzene			
14-Dichlorobenzene			
Trichloropropane			

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 10 ppb.

HRP Associates, Inc.
 Lab. No. 18-109-3
 P.O. NO. WC-WHT-O
 Inv. No. 2586
 Page 3
 January 24, 1988

EPA METHOD 602/8020/8015--ppb

	MW-1	MW-2	MW-3	
Benzene				
Toluene				
Ethyl Benzene				
P-Xylene				
M-Xylene				
O-Xylene				
1,4-Dichlorobenzene				
1,3-Dichlorobenzene				
1,2-Dichlorobenzene				
Methyl Ethyl Ketone*				
Methyl Isobutyl Ketone*				
Acrylamide*	-----	-----	-----	
Carbon Disulfide*	-----	-----	-----	
Diethyl Ether*	-----	-----	-----	
Paraldehyde*	-----	-----	-----	

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

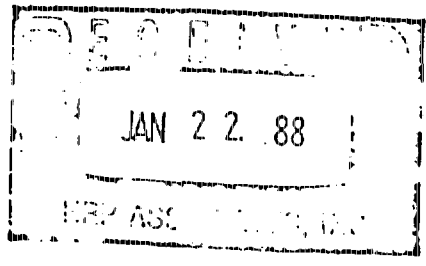
The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 50 ppb.

Handwritten: Heart Throat / WC WHT 17

WATER

January 21, 1988



HRP Associates, Inc.
P.O. Box 732
New Britain, Ct. 06050

Att: Alayne Anderson

RE: Lab. No. 18-085-3
P.O. No. WC-WHT-O
Inv. No. 2578

Dear Ms. Anderson:

The following is a report of analysis on samples received January 15, 1988.

	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>
Cadmium - mg/l	ND<0.01	ND<0.01	ND<0.01
Chromium, Total - mg/l	ND<0.05	ND<0.05	ND<0.05
Lead - mg/l	ND<0.05	ND<0.05	ND<0.05
Oil & Grease - mg/l	ND<4.0	ND<4.0	ND<4.0
Cyanide, Total - mg/l	0.05	0.06	0.06

Please contact me if you have any questions.

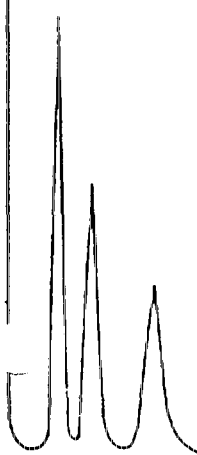
Very truly yours,
Stephen J. Franco
Stephen J. Franco
Laboratory Director

SJF:hc

STEPHEN J. FRANCO
Laboratory Director

CT CERTIFICATION
PH-0547

CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731



10 lexington street
 post office box 732
 new britain, ct. 06050

CHAIN OF CUSTODY RECORD

Place & Address Of Collection W. Kent Rk Wolcott CT				Sampler Name (Signature) Michael J. Szymanski				Assistant (Witness) (Signature)			
Job Number WC-WHT-1											
Sample Number	Sample Location	Type Container	Total Volume	Preservative	Date	Time	Sample Type				Remarks
							Water	Soil	Air	Waste	
MW1	Back to back A & E	Cubi	2L	pH 2.2, H ₂ O ₂	11/19/83	~11:00	X				
MW1	"	jar	5pt	cool							
MW1	"	vial	90ml	cool							
MW2	Back to back	Cubi	2L	pH 2.2, H ₂ O ₂							
MW2		jar	5pt	cool							
MW2		vial	90ml	cool							
MW3	Front on Rt 67	Cubi	2L	pH 2.2, H ₂ O ₂							
MW3	"	jar	5pt	cool							
MW3	"	vial	90ml	cool							
Relinquished By (Signature) Michael J. Szymanski				Received By (Signature) George B. O'Neil				Date 11/19/83		Time 5:30	
Relinquished By (Signature) George B. O'Neil				Received By (Signature) Peter C. Smith				Date 1/15/88		Time 9:15	
Relinquished By (Signature)				Received By (Signature)				Date		Time	

Name & Address Of Laboratory

ANALYSIS REQUIRED
 SAMPLE IDENTIFICATION ☐

Parameters	Sample Number			Parameters	Sample Number		
	M	M	M		M	M	M
	W	W	W	W	W	W	
	1	2	3	1	2	3	
Al				NO ₂ -N			
As				(Ortho) PO ₄ -P			
Ba				(Total) PO ₄ -P			
Cd	✓	✓	✓	Oil & Grease	✓	✓	✓
Cr ⁺⁶				Phenols			
Cr-T	✓	✓	✓	CN ⁻ -A			
Cu				CN ⁻ -T	✓	✓	✓
Fe-D				TKN			
Fe-T				Organic-N			
Pb	✓	✓	✓	TOC			
Mg				pH			
Mn-D				STD Water			
Mn-T				Fecal Coliform			
Na				Fecal Strep.			
NH				Total Coliform			
NI				Fluoride			
Ag				Chloride			
Se				8010	✓	✓	✓
V.				8020	✓	✓	✓
Zn				8080			
TSS				8015			
TDS				TOX			
TS							
Sp Cond.							
NO ₂ -N							
Remarks							

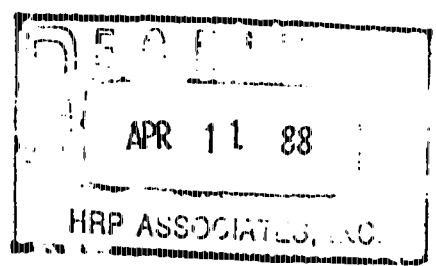
FOURTH QUARTER MONITORING RESULTS

Samples Collected April 1, 1988

WATERWAY FUEL LABORATORY

IER

April 7, 1988



SOIL

HRP Associates, Inc.
P.O. Box 732
New Britain, Ct. 06050

Att: Alayne Anderson

AIR

RE: Lab. No. 48-011-3P
P.O. No. WC-WHT-0
Inv. No. 3236

Dear Ms. Anderson:

The attached report are results of analysis for samples received April 4, 1988.

The samples were analyzed by Gas Chromatography and results are reported in ppb.

Please contact me if you have any questions.

Very truly yours,

Stephen J. Franco

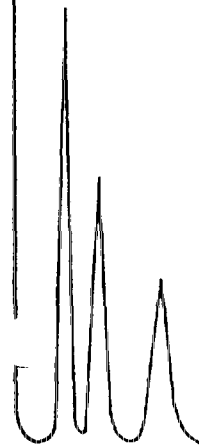
Stephen J. Franco
Laboratory Director

STEPHEN J. FRANCO
Laboratory Director

TEST CERTIFICATION
PH 0547

SJF:hc

CONNECTICUT TESTING LABORATORIES, INC.
140 Gracey Avenue
Meriden, Connecticut 06450
(203) 634-3731



EPA METHOD 601/8010-ppb

	MW-1	MW-2	MW-3
Chloromethane			
Bromomethane			
Vinylchloride *			
Chloroethane *			
Methylenechloride			
Trichlorofluoromethane			
11-Dichloroethylene			
11-Dichloroethane			
112-Dichloroethylene			
Chloroform			
12-Dichloroethane			
111-Trichloroethane			
Carbontetrachloride			
Bromodichloromethane			
12-Dichloropropane			
113-Dichloropropylene			
Trichloroethylene			
Dibromochloromethane			
112-Trichloroethane			
Cis13-Dichloropropylene			
2-Chlorethylvinylether *			
Bromoform			
1122-Tetrachloroethane			
Tetrachloroethylene			
Chlorobenzene			
Benzyl Chloride			
Bis (2-chloroethoxy)methane *			
Bis (2-chloroisopropyl) ether *			
Bromobenzene			
Chloroacetaldehyde *			
1-Chlorohexane			
Chloromethyl methyl ether *			
Chlorotoluene			
Dibromomethane			
12-Dichlorobenzene			
13-Dichlorobenzene			
14-Dichlorobenzene			
Trichloropropane			

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 10 ppb.

HRP Associates, Inc.
 Lab. No. 48-011-3P
 P.O. No. WC-WHT-O
 Inv. No. 3236
 Page 3
 April 7, 1988

EPA METHOD 602/8020/8015-ppb

	MW-1	MW-2	MW-2
Benzene			
Toluene			
Ethyl Benzene			
P-Xylene			
M-Xylene			
O-Xylene			
1,4-Dichlorobenzene			
1,3-Dichlorobenzene			
1,2-Dichlorobenzene			
Methyl Ethyl Ketone*			
Methyl Isobutyl Ketone*			
Acrylamide*	---	---	---
Carbon Disulfide*	---	---	---
Diethyl Ether*	---	---	---
Paraldehyde*	---	---	---

Blanks indicate the analyte was tested and found to be below the minimum detectable level.

The minimum detectable level was less than 1 ppb.

The minimum detectable level for these () parameters was 50 ppb.

10 Lexington Street
 Post Office Box 732
 New Britain, Ct. 06050

PRIORITY

CHAIN OF CUSTODY RECORD

SHEET _____ OF _____

Place & Address Of Collection <i>Former WTRV West Street</i>					Sampler Name (Signature) <i>Michael S. Lynch</i>							
					Assistant (Witness) (Signature)							
<i>Wolcott, CT</i>					Job Number <i>WC-WHT-0</i>							
Sample Number	Sample Location	Type Container	Total Volume	Preservative	Date	Time	Sample Type				Remarks	
							Water	Soil	Air	Waste		
MW1	Back-AsE side	cup.	2L	<i>100% HCl</i>	4/1	~1235	X					
MW1	" " "	jar	1/2 pt									
MW1	" " "	vial	40ml									
MW2	Back beach	cup.	2L	<i>100% HCl</i>								
MW2	" " "	jar	1/2 pt									
MW2	" " "	vial	40ml									
MW3	Front of Rt 69	cup.	2L	<i>100% HCl</i>								
MW3	" " "	jar	1/2 pt									
MW3	" " "	vial	40ml									
Relinquished By (Signature) <i>Michael S. Lynch</i>				Received By (Signature) <i>George Oberg</i>				Date <i>4/1/88</i>		Time <i>3:00 PM</i>		
Relinquished By (Signature) <i>George Oberg</i>				Received By (Signature) <i>Michael Lynch</i>				Date <i>4/3/88</i>		Time <i>1:00</i>		
Relinquished By (Signature)				Received By (Signature)				Date		Time		

Name & Address Of Laboratory
CT Testing Meriden

ANALYSIS REQUIRED												
SAMPLE IDENTIFICATION (SI)						SAMPLE IDENTIFICATION (SI)						
Parameters	Sample Number					Parameters	Sample Number					
	M	M	M				M	M	M			
	W	W	W				W	W	W			
	1	2	3				1	2	3			
Al						NO ₂ -N						
As						(Ortho) PO ₄ -P						
Ba						(Total) PO ₄ -P						
Cc	✓	✓	✓			Oil & Grease	✓	✓	✓			
Cd	✓	✓	✓			Phenols						
Cr ⁺⁶						CH ⁻ A						
Cr ^{-T}	✓	✓	✓			CN ⁻ T	✓	✓	✓			
Cu						TKN						
Fe ^{-D}						Organic-N						
Fe ^{-T}						TOC						
Pb	✓	✓	✓			pH						
Mn						STO Water						
Mn ^{-D}						Fecal Coliform						
Mn ^{-T}						Fecal Strept.						
Hg						Total Coliform						
Mg						Fluoride						
Kl						Chloride						
Ag						8010	✓	✓	✓			
Ca						8020	✓	✓	✓			
V.						8080						
Zn						8015						
TSS						TOX						
TDS												
TS												
Sp Cond.												
NO ₃ -N												
Remarks	<i>**Priority**</i>											

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



Reading

CERTIFICATE OF COMPLIANCE

This is to certify that Celinda W. Mayo has fully complied with Order Number WC4253 of the Commissioner of Environmental Protection dated July 15, 1986.

June 14, 1988

Date

Handwritten signature of Michael J. Harder in cursive.

Michael J. Harder
Assistant Director

MJH:SW;ser

TOWN OF WOLCOTT

LAND RECORDS

FACILITY: WATERBURY HEAT TREATING INC.

MAIL TO:

CELINDA W. MAYO
129 PROSPECT ST.
WATERBURY, CT. 06704

CERTIFIED MAIL

Phone:

APPENDIX C

MONITORING WELL COMPLETION REPORTS AND
TEST BORING LOGS

Soil Sampling Log

SHEET 1 of 1

DATE START 4/30/87

DATE FINISH 4/30/87

KENNEDY & SONS TEST BORING, INC.

Sub-Surface Exploration

P.O. Box 735

Naugatuck, Connecticut 06770

Bus. (203) 723-0686

PROJ. NO. WC-WHT-0

LOCATION Wolcott

LINE & STA.

OFFSET

GROUND ELEVATION

HOLE NO. WH B1 MW

CASING SAMPLER CORE BARREL

TYPE HSA SS

SIZE I.D. 2 1/4" 1 3/8"

WEIGHT OF HAMMER X 140 300

MA. FALL X 30" 24"

GROUND WATER OBSERVATIONS

DATE 4/30/87 TIME 3 hrs. DEPTH 12'

ESPECIALLY COMPILED FOR

HRP Associates

10 Lexington St.

New Britain, CT

SAMPLER O.D. 1 5/8" I.D. 1 3/8"

TYPE OF RIG CME 55

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From	To					NO.	PEN	REC.
			0-4	4-12	12-18						
							.6' Dark brown top soil, brown fine to medium sand, little silt				
	5'-6.3'	SS	40	45	50	.3' very dense damp	Brown medium to coarse sand, gravel, some broken rock	1	1.3	1.3	
	10'-10.5'	SS	50	55			Dark brown medium sand	2	.5	.2	
- 10							Augers refused at 13.5'				
- 20											
- 30											

Proportions used trace = 0-10%, little = 10-20%, some = 20-33%, and = 33-50%

DRILLER: _____
 HELPER: _____
 SOILS ENGINEER _____
 DRILLING INSPECTOR _____

SAMPLE TYPE
 C = CORED W = WASHED
 SS = SPLIT SPOON
 UP = UNDISTURBED PISTON
 TP = TEST PIT
 UT = UNDISTURBED THINWALL

COMESIONLESS DENSITY
 0-10 LOOSE
 10-30 MED. COMP.
 30-50 DENSE
 50+ VERY DENSE

TOTAL FOOTAGE:
 Earth Boring ft.
 Back Coring ft.
 HOLE NO. _____

Soil Sampling Log

SHEET 1 of 1

DATE START 4/30/87

DATE FINISH 4/30/87

WEIGHT OF HAMMER 140 300

HAMMER FALL 30" 24"

GROUND WATER OBSERVATIONS

DATE TIME DEPTH

SAMPLER O.D. 1 5/8" I.D. 1 3/8"

TYPE OF RIG CME 55

KENNEDY & SONS TEST BORING, INC.

Sub-Surface Exploration

P.O. Box 735

Naugatuck, Connecticut 06770

Bus. (203) 723-0686

PROJ. NO. WC-WHT-0

LOCATION Wolcott

LINE & STA.

OFFSET

GROUND ELEVATION

HOLE NO. WHT B-1A MW

CASING SAMPLER CORE BARRE

TYPE MSA SS

SIZE I.D. 2 1/4" 1 3/8"

ESPECIALLY COMPILED FOR

MRP Associates

10 Lexington St.

New Britain, CT

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 4" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From	To					NO.	PEN	REC.
			0.6	6.12	12.18			0-5' Brown fine to medium sand, some medium gravel			
								5'-8' Brown fine to medium sand			
								Augers refused 9'			
- 10											
- 20											
- 30											

Proportions used: waco = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

DRILLER: B.K.
 HELPER: M.K.
 SOILS ENGINEER _____
 DRILLING INSPECTOR: Kevin

SAMPLE TYPE
 C = CORED W = WASHED
 SS = SPLIT SPOON
 UP = UNDISTURBED PISTON
 TP = TEST PIT
 UT = UNDISTURBED THINWALL

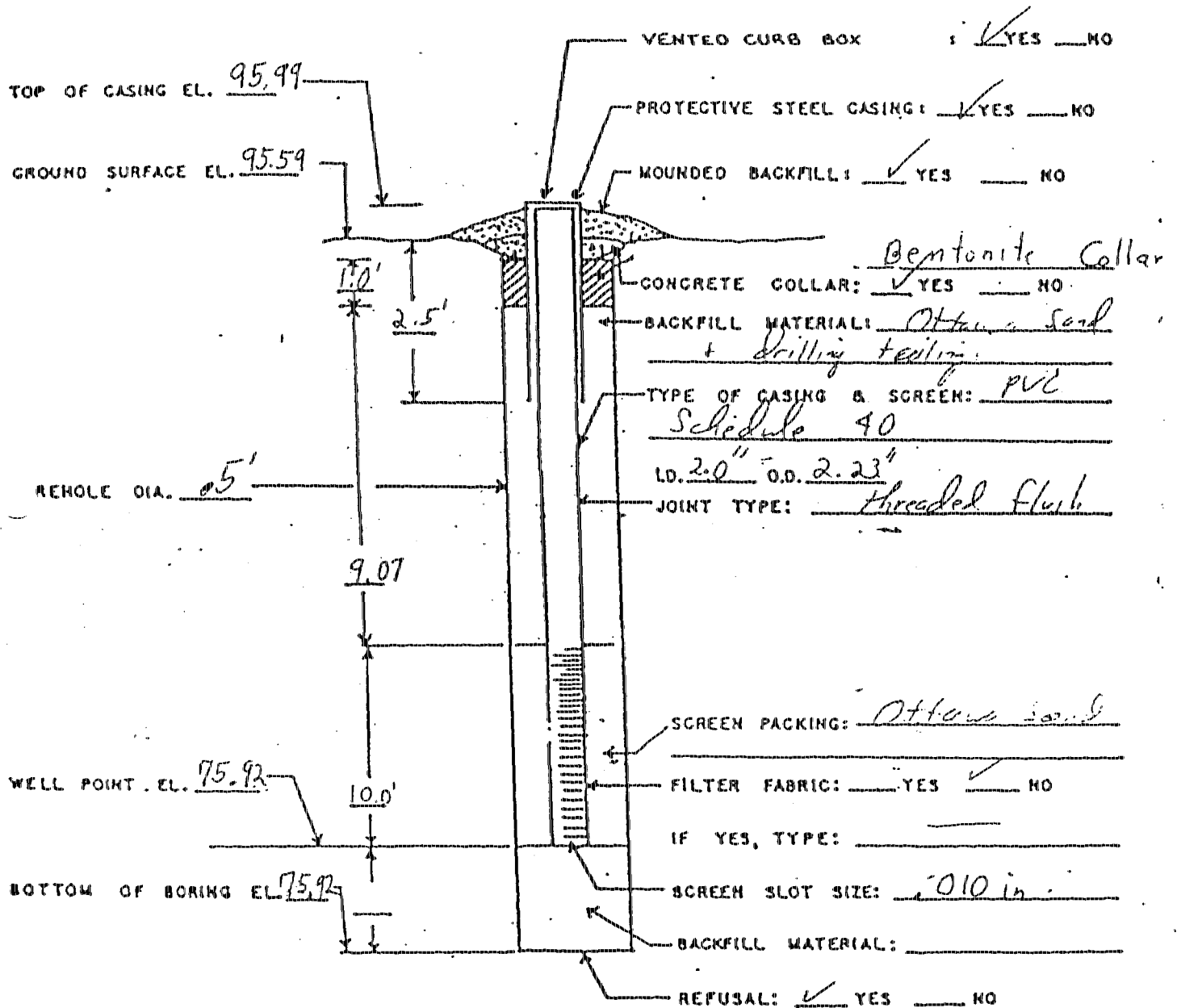
COHESIONLESS DENSITY
 0-10 LOOSE
 10-30 MED. COMP.
 30-50 DENSE
 50+ VERY DENSE

TOTAL FOOTAGE:
 Earth Boring _____ ft.
 Rock Coring _____ ft.
 HOLE NO. WHT B-1A MW

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT/1 B MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: *Wolcott*

Site: *Waterbury Heat Treat*

Monitoring Point I.D. No.: *WHT 1 B MW*

Date of completion: *4/30/87*

DEP/WPC I.D. No:

Monitoring Point Location (relative to site features):

Drilling Contractor: *Kennedy + Sons*

Supervising Engineer/Geologist: *Kevin*

Well Construction Method: *Hollow Stem Auger 3 1/4" I.D.*

McCarthy

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): *95.59*

Well depth below ground surface: *20.07*

Refusal: Yes No

Top of casing elevation (MSL): *95.99*

Screened interval: *20.01 - 10.07*

Length of Screen: *10'*

Length of riser pipe: *9.07'*

Screen type: *PVC Schedule 40*

Screen Slot size: *0.010 in*

Filter fabric: Yes No

Screen packing: Yes No

If yes, Thickness: *10.0'*

Well inside diameter: *2.0"*

Material: *Ottawa Sand*

grain size: *coarse*

Impermeable Backfill:

Well casing material and schedule: *PVC 40*

Estimated K screened interval:

Method of well development: *Bailing*

Time spent developing:

Locking or threaded cap

Impermeable backfill: *Bentonite*

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: *Sand, Gravel*

Inferred relationship to plume: Within Outside Edge

Watershed (plume discharge watercourse): *MAD River*

Aquifer materials (attach boring log): *Sand, Gravel*

Attach maps and plans required of G.1.j. and G.4.

Soil Sampling Log

DATE START 4/30/87
 DATE FINISH 4/30/87
 HEIGHT OF HAMMER X 140 300
 HAMMER FALL X 20' 24'
 GROUND WATER OBSERVATIONS
 DATE 4/30/87 TIME 0 hrs. DEPTH 11.3'
 SAMPLER OD 1 5/8" I.D. 1 3/8"
 TYPE OF BCG CME 55

KENNEDY & SONS TEST BORING, INC.
 Sub-Surface Exploration
 P.O. Box 735
 Naugatuck, Connecticut 06770
 Bus. (203) 723-0666
 ESPECIALLY COMPILED FOR
HRP Associates
 10 Lexington St.
 New Britain, CT

PROJ. NO. _____
 LOCATION **Wolcott**
 LINE & STA. _____
 OFFSET _____
 GROUND ELEVATION _____
 HOLE NO. **WMT B-2 MW**
 CASING **RSA** SAMPLER **SS** CORE BARREL
 TYPE **2 1/2"** **1 3/8"**
 SIZE I.D. _____

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	To 6-12	To 12-18				NO.	PEN	REC.
- 10											
- 20											
- 30											

Brown fine to medium sand, some fine to coarse gravel, cobbles and boulders
 Augered to 19' (refused)
 pulled augers attempted to set 2" PVC Well hole caved in
 Re-augered using 3 1/2" augers
 Set 2" PVC Monitor Well at 19'
 10' screen
 10' riser
 1 curb box
 1 plug
 10 lbs. bentonite
 1/2 bag cement

Proportions used: trace = 0-10%, little = 10-20%, some = 20-35%, and = 35-50%

DRILLER: B.K.
 HELPER: M.K.
 SOILS ENGINEER _____
 DRILLING INSPECTOR Kevin

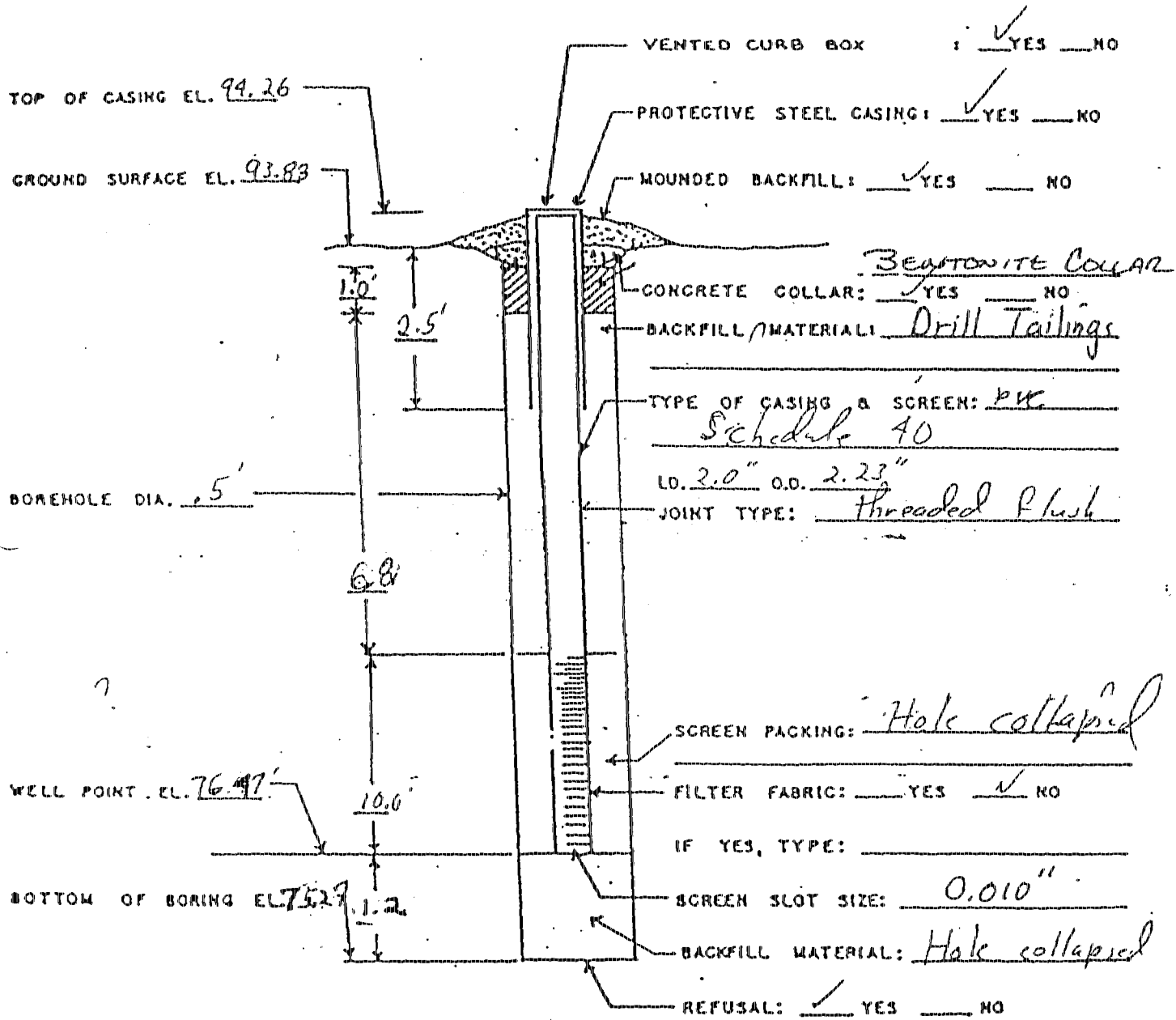
SAMPLE TYPE
 C = CORED W = WASHED
 SS = SPLIT SPOON
 UP = UNDISTURBED PISTON
 TP = TEST PIT
 UT = UNDISTURBED THINWALL

COMESIONLESS DENSITY
 0-10 LOOSE
 10-30 MED. COMP.
 30-50 DENSE
 50+ VERY DENSE

TOTAL FOOTAGE:
 Earth Boring _____ Ft.
 Rock Coring _____ Ft.
 HOLE NO. **WMT B-2 MW**

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT B-2 MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: Walcott Site: Waterbury Heat Treat
Monitoring Point I.D. No.: WHT B-2 MW Date of completion: 4/30/87
DEP/WPC I.D. No:
Monitoring Point Location (relative to site features):
Drilling Contractor: Kennedy & Sons Supervising Engineer/Geologist:
Well Construction Method: Hollow Stem Auger 3 1/4" I.D. i. Kevin McCarty

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): 93.88 Well depth below ground surface: 17.80
Refusal: Yes No
Top of casing elevation (MSL): 94.26 Screened interval: 17.8-7.8
Length of Screen: 10.0
Length of riser pipe: 6.8
Screen type: PVC SCHEDULE 40 Screen Slot size: 0.010 in
Filter fabric: Yes No Screen packing: Yes No Hole Collapsed
If yes, Thickness:
Well inside diameter: 2.0" Material:
grain size:
Impermeable Backfill:
Well casing material and schedule: PVC 40 Estimated K screened interval:
Method of well development: BAILING Time spent developing:
Locking or threaded cap Impermeable backfill: BENTONITE

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: SAND, GRAVEL

Inferred relationship to plume: Within Outside Edge

Watershed (plume discharge watercourse): MAD RIVER

Aquifer materials (attach boring log): SAND, GRAVEL

Attach maps and plans required of G.1.j. and G.4.

DATE START 4/30/87
 DATE FINISH 4/30/87
 WEIGHT OF HAMMER X 140 300
 HAMMER FALL X .50' 24"
 GROUND WATER OBSERVATIONS
 DATE 4/30/87 TIME 0 hrs. DEPTH 13.8'
 SAMPLER OD 1 5/8" ID 1 3/8"
 TYPE OF RIG CME 55

KENNEDY & SONS TEST BORING, INC.
 Sub-Surface Exploration
 P.O. Box 735
 Naugatuck, Connecticut 06770
 Bus. (203) 723-0686
 ESPECIALLY COMPILED FOR
 MRP Associates
 10 Lexington St.
 New Britain, CT

SHEET 1 of 1
 PROJ. NO.
 LOCATION Wolcott
 LINE & STA.
 OFFSET
 GROUND ELEVATION
 HOLE NO. WNT 3 MW
 CASING NSA SAMPLER SS CORE BARREL
 TYPE NSA SS
 SIZE I.D. 2 1/4" 1 3/8"

Depth Below Surface	SAMPLE NO. DEPTHS ELEV. FT.	Type of Sample	BLOWS PER 4" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOILS REMARKS	SAMPLE		
			From 0-6	6-12	To 12-18				NO.	PEN	REC.
								6" Top soil fine to coarse sand, fine to coarse gravel, trace silt			
	5'-6'	SS	25	50	.5'	damp very dense	5.5'	Brown-orange medium to coarse sand w/little fine gravel	1	1.0	.5
- 10								Fine to coarse gravel, broken rock some medium sand			
								Auger refused at 8.0' offset 5' north			
	10'-11.3'	SS	51	46	50/.3	damp very dn	10.4'	Light brown fine to coarse sand, some fine to medium gravel	2	1.3	1.0
- 30								Gray brown fine to medium sand and silt, some broken rock (medium compact till)			
								Brown fine sand w/little silt, w/mixed gravel			
	15'-15.3'	SS	50		.3'	wet very dense		Fine to medium sand, little coarse to fine gravel, trace weathered gneiss	3	.3	.2
- 40								Auger refused at 20.0' set 2" well at 19.8'			
								10' screen 10' riser 1 curb box 1 plug 1 bag sand 10 lbs. bentonite 1/4 bag cement			

Proportions used: trace = 0-10%, little = 10-20%, some = 20-33%, and = 33-50%

DRILLER: B.K.
 HELPER: M.K.
 SOILS ENGINEER
 DRILLING INSPECTOR Kevin

SAMPLE TYPE
 C = CORED W = WASHED
 SS = SPLIT SPOON
 UP = UNDISTURBED PISTON
 TP = TEST PIT
 UT = UNDISTURBED THINWALL

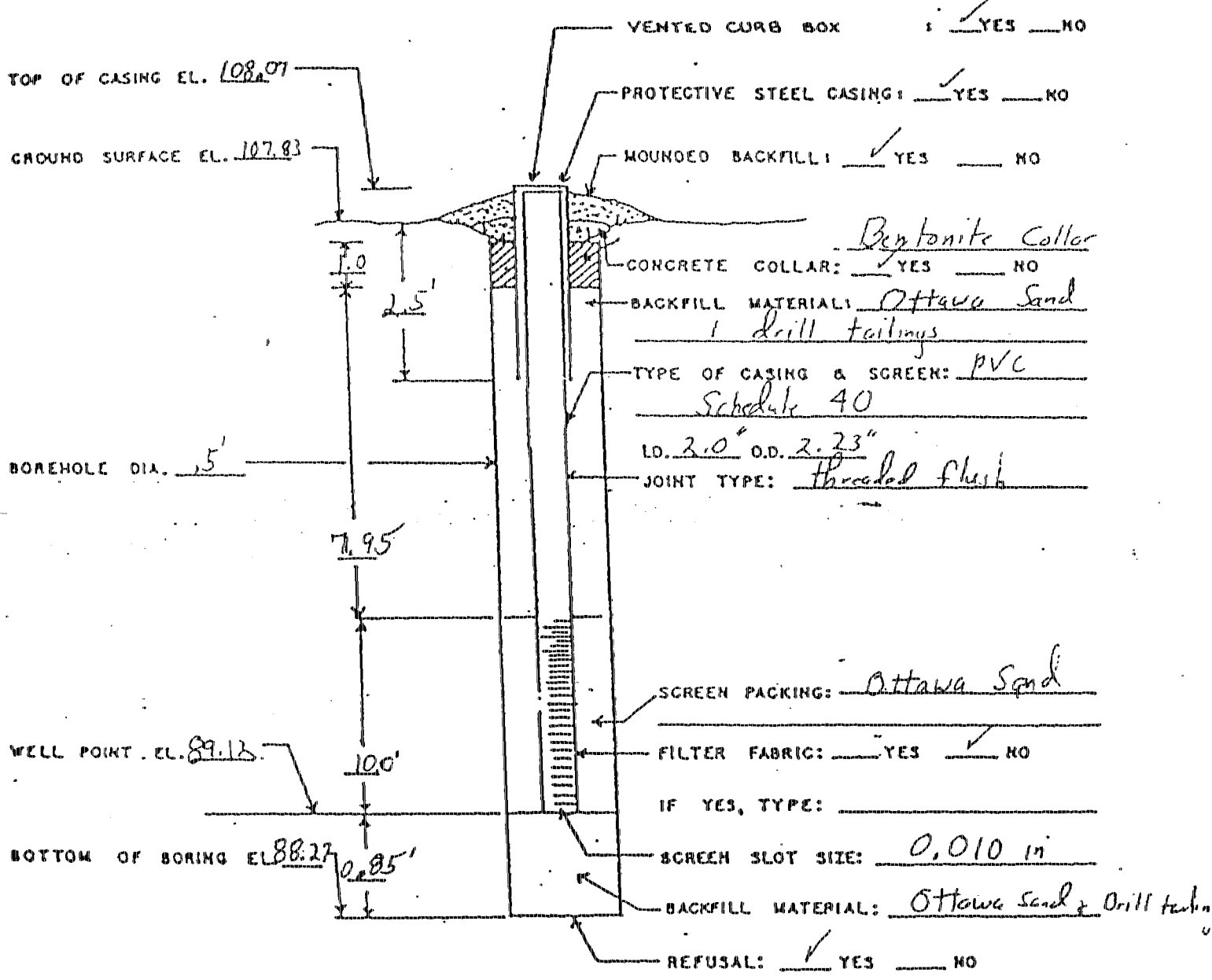
COHESIONLESS DENSITY
 0-10 LOOSE
 10-30 MED. COMP.
 30-50 DENSE
 50+ VERY DENSE

TOTAL FOOTAGE:
 Earth Boring ft.
 Rock Coring ft.
 HOLE NO. WNT 3 MW

NOT RESPONSIBLE FOR SAMPLE STORAGE AFTER 30 DAYS

MONITOR WELL INSTALLATION DETAIL FOR WELL IN UNCONSOLIDATED DEPOSIT

WHT 3MW



MONITOR WELL COMPLETION REPORT

GENERAL INFORMATION

Town: *Wolcott* Site: *Waterbury Heat Treat*
Monitoring Point I.D. No.: *M.H.F. 3MW* Date of completion: *4/30/87*
DEP/WPC I.D. No: _____
Monitoring Point Location (relative to site features): _____
Drilling Contractor: *Kennedy & Sons* Supervising Engineer/Geologist: *Kevin*
Well Construction Method: *Hollow Stem Auger 3 1/4" I.D.* *McCarty*

WELL INFORMATION (ELEVATIONS TO NEAREST 0.1 FEET)

Ground surface elevation (MSL): *107.83* Well depth below ground surface: *18.95*
Refusal: Yes No
Top of casing elevation (MSL): *108.07* Screened interval: *18.95 - 8.95*
Length of Screen: *10.0'*
Length of riser pipe: *7.95'*
Screen type: *PVC Schedule 40* Screen Slot size: *0.010 in*
Filter fabric: Yes No Screen packing: Yes No
If yes, Thickness: _____
Well inside diameter: *2.0"* Material: *Ottawa Sand*
grain size: _____
Impermeable Backfill: _____
Well casing material and schedule: *PVC 40* Estimated K screened interval: _____
Method of well development: *Bailing* Time spent developing: _____
Locking or threaded cap Impermeable backfill: *Dentonite*

Bedrock wells

Casing length:

Water-bearing rock unit:

Water bearing sections (depths and approximate yields):

Length of rock core:

Diameter of core hole:

Thickness and depth of impermeable backfill:

O-rings seals: Yes No

GEOLOGIC INFORMATION

Aquifer: *Sand, Gravel*

Inferred relationship to plume: Within Outside Edge

Watershed (plume discharge watercourse): *MAD River*

Aquifer materials (attach boring log): *Sand, Gravel*

Attach maps and plans required of G.1.j. and G.4.

APPENDIX D

TABULATED DATA FOR:

Cyanide, Total;
Oil and Grease;
and
Ground Water Elevations

FORMER WATERBURY HEAT TREATING FACILITY
 76 WOLCOTT ROAD
 WOLCOTT, CONNECTICUT

SAMPLING EVENT	CYANIDE (TOTAL) mg/L		
	MW-1	MW-2	MW-3
1ST QTR (5/8/87)	.2	ND<0.05	ND<0.05
2ND QTR (9/16/87)	.09	.10	ND<0.05
3RD QTR (1/15/88)	.05	.06	.06
4TH QTR (4/1/88)	.09	.05	ND<0.05

SAMPLING EVENT	OIL AND GREASE mg/L		
	MW-1	MW-2	MW-3
1ST QTR (5/8/87)	34.4	30.8	28.4
2ND QTR (9/16/87)	ND< 4.0	ND< 4.0	ND< 4.0
3RD QTR (1/15/88)	ND< 4.0	ND< 4.0	ND< 4.0
4TH QTR (4/1/88)	ND< 4.0	ND< 4.0	ND< 4.0

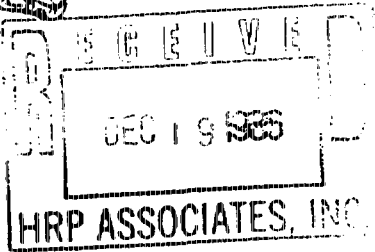
SAMPLING EVENT	GROUND WATER ELEVATIONS feet		
	MW-1	MW-2	MW-3
1ST QTR (5/8/87)	87.1	86.63	96.84
2ND QTR (9/16/87)	82.57	83.95	93.06
3RD QTR (1/15/88)	77.08	83.34	95.79
4TH QTR (4/1/88)	86.43	83.59	96.16



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



December 16, 1986



APPROVAL OF SCOPE OF STUDY

Dr. Celinda W. Mayo
129 Prospect Street
Waterbury, Ct.

RE: DEP/WPC NO. 166-015
Waterbury Heat Treating
Waterbury, Conn.

Dear Dr. Mayo,

The Proposed Scope of Study prepared for your property at 76 Wolcott Road by H.R.P. Associates, Inc. dated September 5, 1986 has been reviewed by the Department of Environmental Protection.

The Scope of Study complies with the requirements of Step B of the Department of Environmental Protections' Water Compliance Consent Agreement No. WC4253. Please note, however, that as a result of the investigation carried out in accordance with the scope of study hereby approved additional hydrogeologic information may be necessary to comply with Paragraph 3 of Consent Order WC4253.

The Approval does not relieve you of the obligation to obtain any other authorizations as may be required by other provisions of the Connecticut General Statutes or the Regulations of Connecticut State Agencies.

Sincerely yours,

Richard Barlow
Director
WATER COMPLIANCE UNIT

SW/pc
cc: Mark C. Possidento

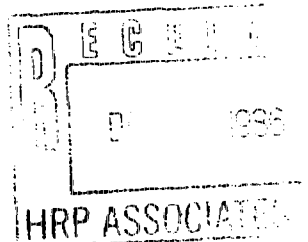
Phone:

165 Capitol Avenue • Hartford, Connecticut 06106

An Equal Opportunity Employer



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



December 24, 1986

Celinda W. Mayo
129 Prospect St.
Waterbury, CT

RE: DEP/WPC-166-015
City/Town of Wolcott
Naugatuck River Watershed

Dear Mr. Mayo:

The Summary of Remedial Actions dated November 26, 1986, and the Groundwater Monitoring Program dated December 11, 1986 prepared for Celinda W. Mayo by H.R.P. Associates has been reviewed by the Department of Environmental Protection.

This report addresses some of the requirements of the Department of Environmental Protection, Water Compliance Unit's ORDER NO. WC4253 to Celinda W. Mayo entered on July 15, 1986. Additional work to assess the extent and degree of ground water contamination and complete removal of contaminated soil from the site is necessary to fulfill the requirements of Step E of the Order.

Progress towards compliance with this order has clearly been made and we look forward to complete compliance in the near future.

Sincerely,

Elsie B. Patton

Elsie B. Patton
Principal Environmental Analyst
Water Compliance Unit

EBP/lmm

cc: H.R.P. Associates ✓

Phone:

165 Capitol Avenue • Hartford, Connecticut 06106

An Equal Opportunity Employer