EXHIBIT C-4

RTN 3-0010367, Within Complex on Chapel St@ Power Plant

Site Information			
Site Number:	3-0010367	Category:	TWO HR
Site Name:	WITHIN COMPLEX ON CHAPEL ST@ POWER PLANT	Release Type:	RAO
Address:	200 TRAPELO RD	Current date:	6/28/2002
Town:	WALTHAM	Phase:	PHASE IV
Zipcode:		RAO class:	
Official notification date:	12/29/1993	Location type:	SCHOOL
Initial status date:	2/24/1995	Source:	PIPE

save as 3-13467

Response Action Information	
Response Action Type:	PHSIII - Phase 3
Status:	CSRCVD - Completion Statement Received
Submittal Date:	6/28/2002
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	RAO - Response Action Outcome - RAO
Status:	RAORCD - RAO Statement Received
Submittal Date:	6/28/2002
RAO class:	C1
Activity & Use Limitation:	NONE

Response Action Information	
Response Action Type:	TCLASS - Tier Classification
Status:	TIERII - Tier 2 Classification
Submittal Date:	4/3/1997
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	PHASEI - Phase 1
Status:	CSRCVD - Completion Statement Received
Submittal Date:	4/3/1997
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	8/30/1994
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	IRA - Immediate Response Action
Status:	CSRCVD - Completion Statement Received
Submittal Date:	6/27/1994
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	RNF - Release Notification Form Received
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	3/4/1994
RAO class:	
Activity & Use Limitation:	

Response Action Information	
Response Action Type:	REL - Potential Release or Threat of Release
Status:	REPORT - Reportable Release or Threat of Release
Submittal Date:	12/29/1993
RAO class:	
Activity & Use Limitation:	

Chemicals		
Chemical	Amount	Units
#6 FUEL OIL	20	GAL
#6 FUEL OIL	300	GAL

LSPs	
LSP#	Name
N/A	LORD, HENRY J
9092	OBRIEN, JAMES B

RAO Detail			
Class	Method	GW Category	Soil Category
C1	1	1	2
C1	1	1	2

Tier Classification Detail							
NRS Totals	II	III	IV	V	VI	Zone 2	Imminent Hazard
270	55	75	30	110	0	N	N
270	55	75	30	110	0	N	N

Location

N/A
Please forward to
Chris Cooley

3-10367
WALTHAM
200 TRAPELO Rd

PHASE I SITE INVESTIGATION

FOR THE:

POWER PLANT
FERNALD DEVELOPMENTAL CENTER
WALTHAM, MA

JULY 11, 1995

PREPARED BY:

LORD ASSOCIATES, INC.
91 PROVIDENCE HIGHWAY
WESTWOOD, MA 02090
(617) 326-3130

PHASE I
INITIAL SITE INVESTIGATION REPORT

GENERAL DISPOSAL SITE INFORMATION

DEP Release Tracking Number: 3-10367

Address: Power Plant
Fernald Developmental Center
200 Trapelo Road
Waltham, MA 02154
Middlesex Countly
See Figures 1-3 for site locus map and site plans

USGS Quad: Boston North

UTM Coordinates: N 19 46 95 24
E 03 18 25

Site Owner: Massachusetts Department of Mental Retardation
160 North Washington Street
Boston, MA 02114

Populations: Fernald School Workforce: +/- 1,500
Power Plant Workforce: 13
Residential Population Within 1/2 mile Radius: +/- 1,800

Surrounding Land Uses:

North: Approximately 140', Fernald School Greenhouse
West: Immediate, Brook
Approximately 350', Fernald School Groundskeeping Building
South: Immediate, Wetlands/Brook
Approximately 750', Waverly Oaks Road
East: Approximately 750', gasoline service station

The Fernald school is itself an institution. There are no other institutions located within 500 feet of the disposal site. The nearest institutions to the site are the Fitzgerald School, which is approximately 2,100' south of the site, and Bentley College, which is approximately 2,500' west of the site.

Natural Resource Areas within 500' of disposal site:

Surface Waters: West (borders site) -- Brook (5'-10' wide tributary to Clematus Brook)
Southwest -- Approximately 275' to Clematus Brook
South/Southwest -- Wetlands

Drinking Water Supplies -- None
Areas of Critical Environmental Concern (ACECs) -- None
Protected open Space -- None
Fish Habitats -- None
Species of Special Concern -- None
Threatened or Endangered Species -- None

All of the above information was obtained from MA GIS (Waltham) and USGS (Boston North).

DISPOSAL SITE HISTORY

The disposal site is the physical plant (power plant) of the Fernald School, a state operated developmental center for the mentally retarded, located between Trapelo Road and Waverly Oaks Road in Waltham, Massachusetts. The Fernald School is owned and maintained by the Massachusetts Department of Mental Retardation (DMR). The disposal site has been owned by the DMR and operated as a power plant for its entire history as applicable for this report. The parcel on which the power plant is located is considered to be the area bounded by the access road, the retaining wall, the dirt path behind the building and a boundary fifty feet east of the plant (See figure 2). The area of this parcel is approximately 1 acre.

According to Mo O'Connell of DMR, the Fernald School has functioned in its capacity for approximately 102 years, and the disposal site location has contained a power plant for most of this period. Prior to the mid 1930s it was operated as a coal fired plant. Other than the power plant itself, the only nearby structure is a greenhouse located roughly 140' north and upgradient from the site.

RELEASE HISTORY

On December 29, 1993, after routine filling of a #6 fuel oil tank to the west of the power plant, a volume of product was released from the spill box to the ground surface. Observers working at the plant originally estimated this volume to be 15-20 gallons. The release occurred due to the oil expanding upon heating to a volume larger than the capacity of the tank. Also on December 29, 1993, Zenone, Inc., a remediation contractor to the DCPO (Division of Capital Planning and Operations), was summoned to the site in response to the spill. Zenone personnel observed that a portion of the fuel oil had flowed over a concrete retaining wall and into a brook due west of the plant. Free phase floating product and oil stained debris were observed in several standing pools as far as 300 feet downgradient (south) of the power plant. On December 29, 1993, verbal approval was given by the Massachusetts Department of Environmental Protection (MDEP) to perform Immediate Response Actions (IRA) described below. A document entitled "IRA Plan" was later submitted to the MDEP as required on February 28, 1994, after most of the work had been completed. This is included in Appendix 2. The objective of the IRA was to remove all free-phase fuel oil observed in the brook and any petroleum contaminated debris from in or around the brook.

Sorbent booms were placed in the brook at several locations downgradient of the power plant in order to contain any further migration of petroleum. A containment fence was placed approximately 150 feet downgradient of the power plant. Photographs of the containment fence and a sorbent boom are shown in Appendix 3 (Zenone report "IRA Completion Statement").

On December 29-30, 1993, approximately 150 gallons of separate phase product was removed from the brook by Evergreen Environmental using a vacuum truck. Petroleum

contaminated debris (wood, soil, hay, rocks...) was collected from in and around the brook and stockpiled on polyethylene sheeting. The used sorbent booms were also stockpiled on polyethylene sheeting. All of the oil contaminated debris was disposed at Jetline, Inc., in Stoughton, MA, on April 15, 1994. Copies of the hazardous wast manifests are included in Appendix 3. At the request of MDEP, on April 15, 1994, all #6 fuel oil remaining in the fillboxes was removed and placed in drums. These drums were removed from the site on April 25, 1994 by Evergreen Environmental, Inc. The fillboxes were then steam cleaned and observed to be open at the bottom.

To complete the IRA, surface water samples were collected on May 31, 1994 both upgradient (SW-1) and downgradient (SW-2) of the power plant to assess the impacts of the fuel oil spill on the brook. The samples were analyzed for TPH via EPA method 418.1 and PAHs via method 8270. No contaminants were detected in either sample. Laboratory reports for the May 31 surface water samples are included in the IRA Completion Statement in Appendix 3.

OIL USE AND STORAGE HISTORY

The only type of oil stored on the site is #6 fuel oil. Approximately 1,700,000 gallons/year of #6 fuel oil is used for boiler plant operation in producing heat for the entire facility. The power plant is in operation on a 24 hour per day basis. There are three underground storage tanks on site for storage of the #6 fuel oil, each installed in 1954. The tanks, shown in Figures 2 & 3, are 23K, 25K and 28K gallons in volume. Information on oil storage prior to 1954 is not available.

WASTE MANAGEMENT HISTORY

-Land Disposal - None
-The power plant has no septic tank or leaching fields, however there are at least five floor drains located at the base of the building which are believed to empy into the wetlands to the south of the site. The outfall pipe could not be located. The drains are used to remove condensate water from the building (see figure 2)
-There are no known surface water discharges from the building (see Figure 2 for location of surface water discharge from unknown source)
-Water and sewage from the power plant is discharged into the municipal wastewater treatment system.

ENVIRONMENTAL PERMITS AND COMPLIANCE HISTORY

According to Mo O'Connel, there are no records indicating that Environmental Permits have ever been obtained for any operation at the power plant This includes local, state and federal environmental permits as well as hazardous material storage permits. Hazardous waste manifests are included for the oil and oil contaminated material which was removed from the

site on April 15, 1994. These manifests are included in the IRA Completion Statement in Appendix 3.

POTENTIALLY RESPONSIBLE PARTIES

The Department of Mental Retardation is the only responsible party for the disposal site discussed herein. As mentioned above, the address for DMR is:

Massachusetts Department of Mental Retardation
160 North Washington Street
Boston, MA 02114

SITE HYDROGEOLOGICAL CHARACTERISTICS

On December 8, 1994, four 4 1/4 inch diameter soil borings (B-1 ⇨ B-4) were installed in the vicinity of the #6 fuel oil tanks to assess the presence or extent of subsurface soil or groundwater contamination. These borings were advanced to depths ranging from eleven to sixteen feet. Split spoon sampling and soil classification indicated that a majority of the soil penetrated was loose fine sand with traces of gravel and silt for the entire length of the borings. Bedrock was not encountered during the installation of any of the four borings. Well logs for Borings 1-4 are included in Appendix 1.

The northern portion of the site has been filled to a level approximately ten feet higher than the elevation of the brook. A concrete retaining wall, over which the oil release occurred, exists between the site and the brook. The southern portion of the site, which borders the wetlands and the brook, is approximately one foot above the elevation of the brook. A steep slope exists between the northern and southern portions of the site. The power plant has been constructed over both halves of the site so that the base of the building exists at two different elevations. Only one boring, B-1, was located in the filled portion of the site because this area is upgradient of the fuel oil tank.

2" monitoring wells were installed in each of the four soil borings on December 8, 1994. Using an electronic water-level indicator, Depth to Water analyses were performed in the monitoring wells on January 17, 1995. This data is shown in the following table.

WELL #	DEPTH TO FREE PRODUCT	DEPTH TO WATER	FREE-PRODUCT THICKNESS
MW-1	ND	8.62'	ND
MW-2	ND	0.38'	ND
MW-3	ND	2.61'	ND
MW-4	ND	3.45'	ND

A groundwater flow diagram produced with this data is shown in Figure 3 and demonstrates that the groundwater gradient is to the south and toward the brook.

NATURE AND EXTENT OF CONTAMINATION

On the day of the release, December 29, 1993, oil contamination was visually evident at the tank fill box, between the fill box and the retaining wall and in the brook. After execution of the approved IRA Plan on December 29-30, 1993, this contamination was no longer apparent. As noted above, water samples were collected from the brook on May 31, 1994 to determine the impact of the release on the brook. No contamination was detected either upstream or downstream from the power plant.

As part of the Initial Site Investigation, surface water samples were collected again on January 20, 1995 and analyzed for Total Petroleum Hydrocarbons via EPA method 8100. On this occasion, samples were collected from three locations; upstream and downstream from the power plant, and several hundred feet downstream from the power plant in the swamp area. Although a slight sheen was visible downstream, again, no contamination was detected in the surface water samples. Laboratory reports are included in Appendix IV.

During drilling operations on December 8, 1994, one split spoon sample from each boring was sent to Geolabs, Inc. for TPH analysis via EPA method 8100. Geolabs reported that the TPH concentration in B-1, at a depth of 14'-16', was 68 ppm and that the TPH concentration in B-2, at a depth of 4'-6', was 290 ppm. No TPH contamination was detected in soil samples from B-3 (5'-7') or B-4 (9'-11'). This data is shown in Table 1. Laboratory reports for soil boring samples are also included in Appendix V.

After bailing each well of three times its water volume, groundwater samples were collected from the 4 monitoring wells (MW 1-4) on January 17, 1995, and analyzed for TPH (418.1) and VOCs (8240) by Geolabs, Inc. No contamination was detected in any of the wells. Laboratory reports are included in Appendix VI.

On January 20, 1995, two composite soil samples were collected of the brook sediment, and sent to Geolabs, Inc. for TPH analysis via EPA method 8100. The first (TANK SEDIMENT)

was taken along the base of the retaining wall in the area which appeared to be nearest the spill location and downgradient from the fuel oil tank. Geolabs reported the TPH concentration in this sample to be 966 ppm. The second sample was collected approximately two hundred feet downstream from the power plant toward the wetland (WETLAND SEDIMENT). Geolabs reported that the TPH concentration in this sample was 687 ppm. In both cases, samples were composed of soils from both underneath the brook surface and from the unsaturated banks of the brook. This data is attached in Appendix VII.

PREVIOUS RELEASES

According to Mo O'Connel, the only previous release on record occured on November 30, 1980. On this date, the Metropolitan Petroleum Company, during a routing delivery, spilled what was estimated to be 200 gallons of #6 fuel oil onto the ground surrounding the tanks. Jet Line Services was notified to mitigate the release. Jet Line reported collecting an estimated 100 gallons of oil/water mixture from the brook, and the proper notifications were made.

HORIZONTAL AND VERTICAL EXTENT

Split spoon sampling data indicates that subsurface soil contamination extends beyond -6' only in B-1 (14'-16'), which is immediately adjacent to the fuel oil tank. TPH was detected in this sample at a concentration of 68 ppm. TPH was also detected in soils approximately 50' southeast of the tank in B-2 (290 ppm), however this was at a depth of only 4'-6' and may be attributable to a localized spill event. As noted earlier, no groundwater or surface water contamination was detected in any sample. Free-phase petroleum product has not been detected in any of the four monitoring wells.

January 20, 1995 sediment sampling of the brook did demonstrate that some horizontal migration of TPH contamination via the moving surface water has occurred. TPH was detectable in soil samples at a concentration of 687 ppm approximately 200 feet downstream from the plant. The horizontal and vertical extents of the sediment contamination is currently undefined.

MIGRATION PATHWAYS AND EXPOSURE POTENTIAL

Potential for migration of oil via:

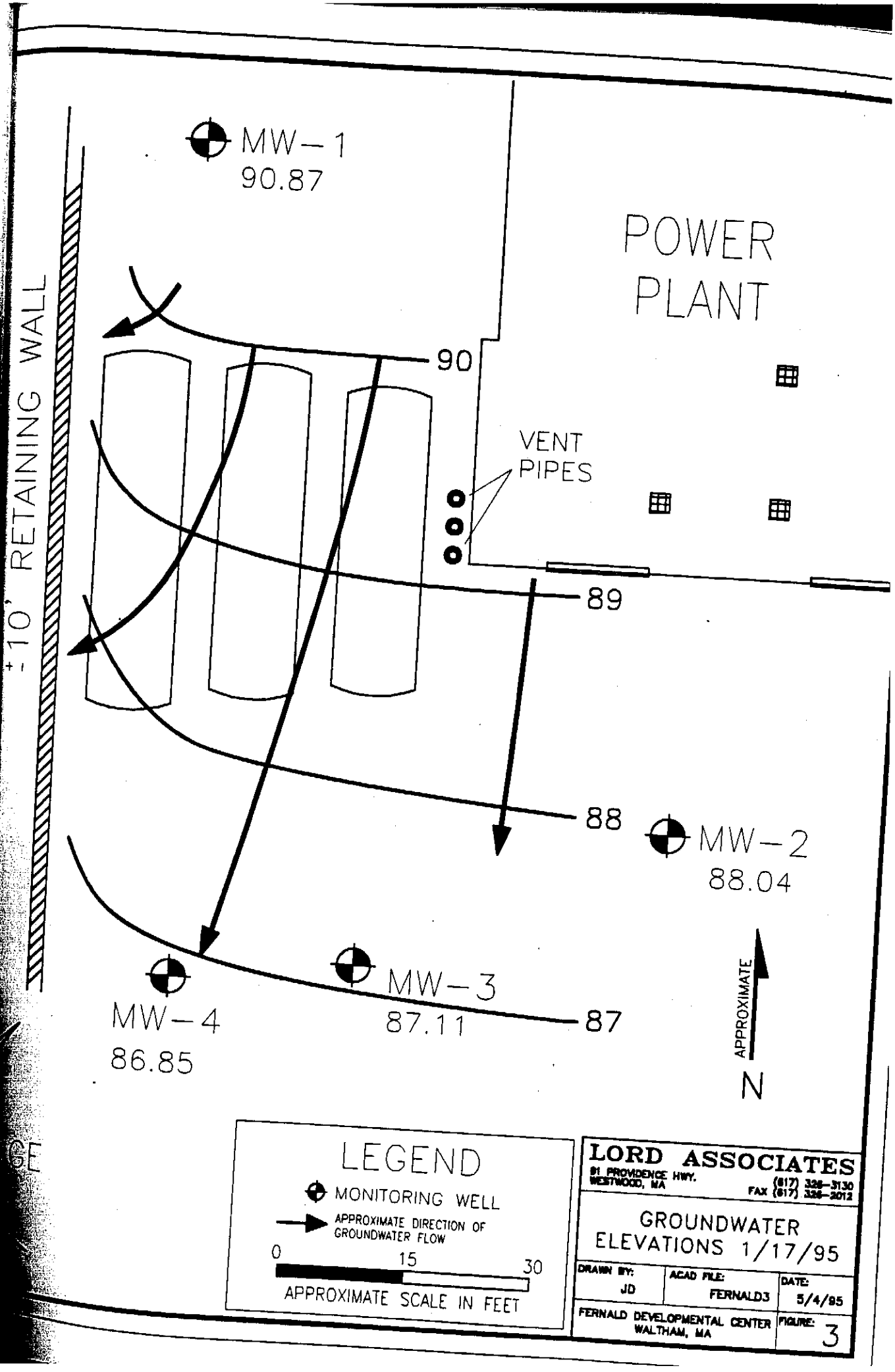
1. Air -- None
2. Soil -- None
3. Groundwater -- None (no groundwater contamination detected)
4. Surface water -- None (no surface water contamination detected)
5. Sediments -- Sampling has confirmed the potential for the migration of contamination through the brook sediments.

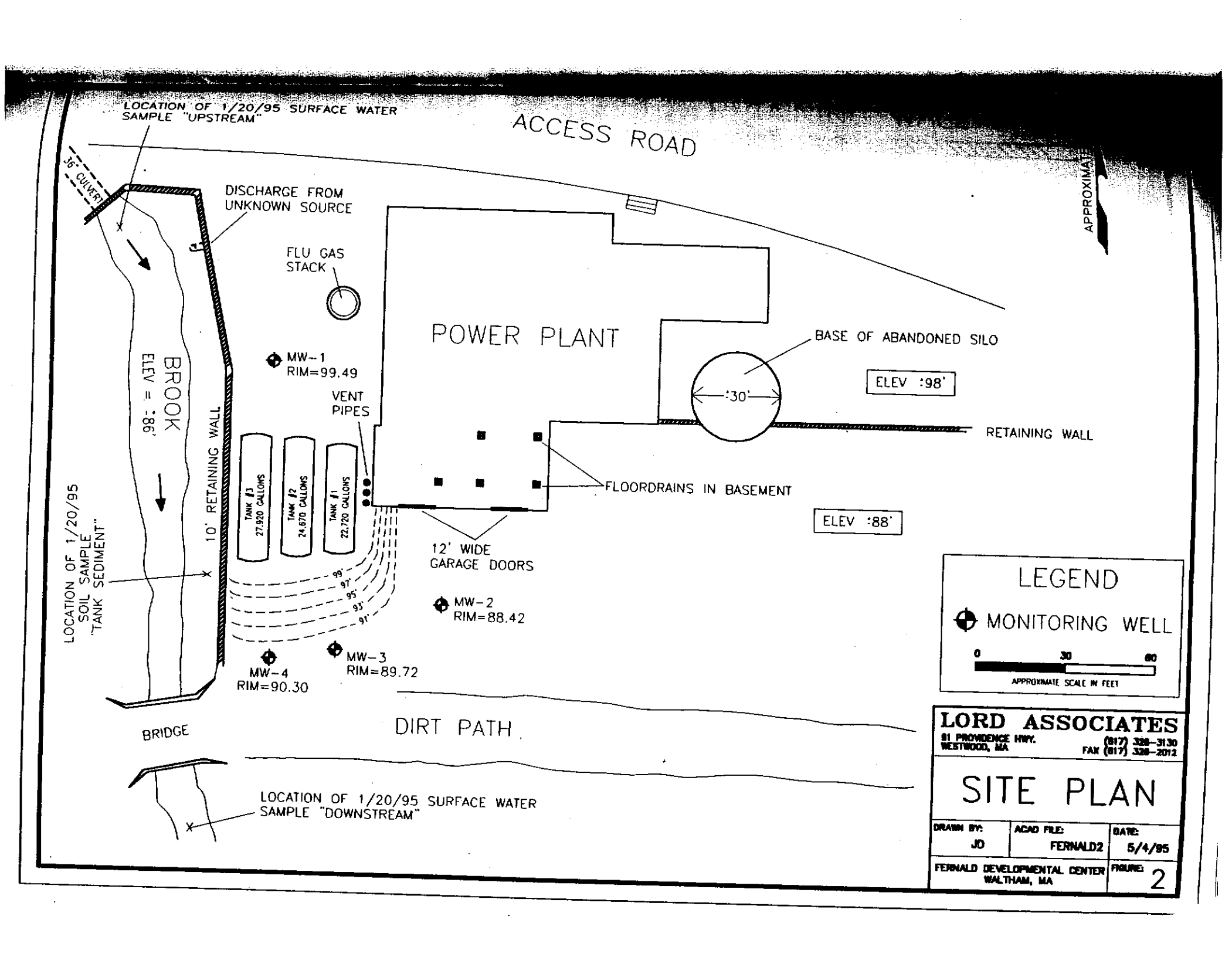
TABLE 1
SPLIT SPOON SAMPLING DATA
FERNALD DEVELOPMENT CENTER
WALTHAM, MA

TOTAL PETROLEUM HYDROCARBONS

SOIL BORING SAMPLES COLLECTED ON 12/08/94

BORING NUMBER	DEPTH	TPH (PPM)
B-1	14'-16'	68.1
B-2	4'-6'	290
B-3	5'-7'	ND
B-4	9'-11'	ND


MW-1
90.87
POWER
PLANT
±10' RETAINING WALL
90
VENT
PIPES
89
88
MW-2
88.04
MW-3
87.11
MW-4
86.85
87
APPROXIMATE
N
LEGEND
MONITORING WELL
APPROXIMATE DIRECTION OF GROUNDWATER FLOW
0
15
30
APPROXIMATE SCALE IN FEET
LORD ASSOCIATES
81 PROVIDENCE HWY.
WESTWOOD, MA
(617) 326-3130
FAX (617) 326-2012
GROUNDWATER
ELEVATIONS 1/17/95
DRAWN BY: JD
ACAD FILE: FERNALD3
DATE: 5/4/95
FERNALD DEVELOPMENTAL CENTER
WALTHAM, MA
FIGURE: 3


LOCATION OF 1/20/95 SURFACE WATER SAMPLE "UPSTREAM"
ACCESS ROAD
36" CULVERT
DISCHARGE FROM UNKNOWN SOURCE
APPROXIMATE
FLU GAS STACK
POWER PLANT
BASE OF ABANDONED SILO
MW-1 RIM=99.49
ELEV :98'
:30'
VENT PIPES
BROOK
ELEV = :86'
10' RETAINING WALL
RETAINING WALL
TANK #3 27,920 GALLONS
TANK #2 24,670 GALLONS
TANK #1 22,720 GALLONS
FLOORDRAINS IN BASEMENT
ELEV :88'
LOCATION OF 1/20/95 SOIL SAMPLE "TANK SEDIMENT"
12' WIDE GARAGE DOORS
99'
97'
95'
93'
91'
MW-2 RIM=88.42
MW-4 RIM=90.30
MW-3 RIM=89.72
BRIDGE
DIRT PATH
LOCATION OF 1/20/95 SURFACE WATER SAMPLE "DOWNSTREAM"
LEGEND
MONITORING WELL
0
30
60
APPROXIMATE SCALE IN FEET
LORD ASSOCIATES
91 PROVIDENCE HWY.
WESTWOOD, MA
(617) 329-3130
FAX (617) 329-2012
SITE PLAN
DRAWN BY: JD
ACAD FILE: FERNALD2
DATE: 5/4/95
FERNALD DEVELOPMENTAL CENTER
WALTHAM, MA
FIGURE: 2

Potential for human exposure through:

1. Inhalation -- None
2. Dermal Contact -- See below
3. Ingestion -- None

The potential for dermal contact to the brook sediments exists, however, the contaminated area is remote and accessible only from the power plant side. A six foot barbed wire/chain link fence divides the brook/wetland from public access to the area.

Potential impacts

Low concentrations of TPH detected in two of the four soil borings pose no threat to any environmental receptors. The subsurface #6 fuel oil contamination is apparently local to the tank and not likely to migrate. The TPH contamination, to the extent confirmed, detected in the brook sediment poses little environmental threat as there are no special or threatened species, drinking water supplies, ACECs or fish habitats on or near of the area. However, the extent of this sediment contamination should be further studied to ensure that the areas with the highest concentrations have been discovered.

EVALUATION FOR IMMEDIATE RESPONSE ACTIONS

There are no additional Immediate Response Actions necessary in response to the December, 1993 release incident.

CONCLUSIONS

As noted above, additional samples should be taken of the brook sediment and analyzed for TPH and PAHs. Sediment samples should be taken at several locations along the brook, including upstream and several hundred feet downstream from the power plant. The latter samples should be taken from beyond the chain link fence to see if oil contamination has migrated into the wetlands south of the site. Also, a hand auger should be used to collect sediment samples at several depths to confirm the vertical extent of the oil presence.