

FIELD INVESTIGATION REPORT

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LIBERTY INDUSTRIAL FINISHING CORPORATION

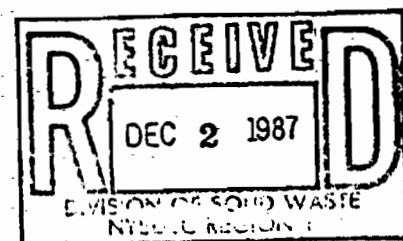
BRENTWOOD, NEW YORK

JULY 1987
(AMENDED NOV. 1987)



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BACKGROUND

SCOPE

This study and report was authorized by the management of Liberty Industrial Finishing Corporation (Liberty) following negotiations with the New York State Department of Environmental Conservation (NYSDEC) Order on Consent. The consent order was issued based upon Liberty's alleged violations of New York State's Environmental Conservation Law. Specifically, Liberty is being investigated for incidents of leaking underground storage tanks and documented discharges to sanitary wastewater and storm-water disposal systems in excess of effluent standards

GENERAL

Liberty is located at 550 Suffolk Avenue in Brentwood, New York, immediately north of the Long Island Rail Road tracks on approximately 3.5 acres of land. There are no significant commercial or industrial sites immediately north (upgradient) of the site. Within a 2.5 mile radius extending outward from the site, there are a number of commercial and industrial plants, which by the nature of their business, present a potential to adversely

affect local groundwater conditions. The majority of these commercial and industrial plants are located in the Hauppauge area, 2.5 miles north of Liberty and their activities include textile finishing, printing, machinery manufacturing, electronics, plastics and pharmaceuticals.

PLANT BACKGROUND

Liberty Industrial Finishing Corp. is a medium-sized metal finishing facility engaged in the finishing and plating of parts and components used primarily in the aircraft industry. The facility has operated at its present Brentwood, Long Island location since 1978 and employs approximately 80 people.

Metal finishing activities include passivation, phosphatizing, electroplating, conversion coating and anodizing. Liberty's operations also include painting and non-destructive testing. All operations are conducted inside a single-story building affording approximately 30,000 square feet of floor area.

As a result of its metal finishing activities, Liberty generates a variety of waste products. These products can be divided into four principal categories, namely, metal finishing rinse waters, spent metal finishing baths, waste paints and thinners, and spent degreasing solvents.

Metal finishing rinse waters are treated in a closed-loop system and reused in the plant. The closed-loop treatment system includes six (6) underground holding tanks and a double-effect vacuum distillation unit (Waste-Saver). Metal finishing rinse waters are directed to Holding Tanks 1 and 2, which in turn feed

the Waste-Saver unit. Distillate from the Waste-Saver is directed to Holding Tanks 3 and 4 for reuse in the plant. Waste concentrates from the Waste-Saver are directed to Holding Tanks 5 and 6 to await off-site disposal. A more detailed description of the underground holding tanks is provided in the following section.

Spent degreasing solvents and waste paints and thinners are placed in secure 55-gallon drum containers and disposed of off-site at licensed TSD facilities. Depending upon the volume and chemistry, spent plating baths are either placed in 55-gallon drum containers or combined with the Waste-Saver concentrates in Holding Tanks 5 and 6 and disposed of off-site.

HOLDING TANKS

Liberty's six (6) underground holding tanks were installed in 1977 and are located immediately south of the plant building. The tanks were constructed with precast concrete rings atop a poured concrete slab. Tanks 1, 2, 5 and 6 were equipped with PVC liners. Tanks 3 and 4 were coated with a watertight sealant. In 1980, Tanks 5 and 6 were upgraded to the standards of Suffolk County Sanitary Code, Article 12, by the addition of a second PVC liner and leak detection system between the old (outer) and new (inner) liners.

In the summer of 1983, results of a routine tank inspection indicated a potential leak in Holding Tank 3. The tank was emptied and placed out of service. In June 1985, Holding Tanks 2, 3 and 5 were leak tested by Hunter Environmental Services Inc.

Test results confirmed a leak in Tank 3. Tanks 2 and 5 were found to be secure within the test procedure accuracy of 0.05 gallons per hour.

Tanks 1, 2, 3 and 4 were upgraded to County standards in August 1985. Modifications included the addition of PVC liners to Tanks 3 and 4 and high density polyethylene inner tanks to Holding Tanks 1, 2, 3 and 4. Leak detection systems were installed on all four tanks. With the completion of work in August 1985, all six underground holding tanks are in compliance with the requisite County standards. (Suffolk County Sanitary Code, Article 12).

INVESTIGATION BACKGROUND

On September 18, 1984, NYSDEC personnel collected a number of samples from the Liberty site. Samples were collected from underground Holding Tanks 2, 3, 5 and 6, the sanitary disposal system, one of four on-site groundwater monitoring wells, a parking lot dry well and a pipe discharge on the north side of the plant building.

Split samples were provided by NYSDEC for independent analyses by H2M. The results of NYSDEC and H2M sample analyses are provided in Appendix A. With some exceptions, the analytical results reported by NYSDEC and H2M were in general agreement. Major discrepancies were attributed to differences in the split samples themselves.

As expected, samples from Holding Tanks 2, 5 and 6 contained significant levels of cyanide and heavy metals, primarily cadmium

and chromium, with lesser amounts of copper, lead, nickel and zinc. Samples collected from Tank 3 contained trace amounts of heavy metals and cyanide. Although tank 3 had been out of service since 1983, rainwater had accumulated in the bottom of the tank. The metals and cyanide detected in tank 3 were attributed to residuals remaining in the tank. No organic analyses were performed on samples from tanks 2, 3 and 5. H2M's analyses of the sample from tank 6 indicated non-detectable levels of volatile halogenated organics (detection limit 20 ppb for 1,1,1-trichloroethane, 3 ppb for all other compounds).

Samples collected from groundwater monitoring well 4 contained chromium with smaller concentrations of cadmium and zinc. Organic analyses indicated trace amounts of chloroform, benzene and ethylbenzene.

Analyses of samples collected from Liberty's sanitary wastewater disposal system indicated significant levels of cadmium, copper, lead, nickel, silver, zinc and cyanide. An E.P. Toxicity analyses indicated cadmium, lead and silver levels below the E.P. Toxic limits. Organic analyses indicated 1,1,1-trichloroethane levels between 1.8 and 3.8 mg/l. The contamination of the sanitary system is believed to have been caused primarily by the dumping of a janitor's mop buckets.

Soil and wastewater samples collected from an unidentified pipe discharge on the north side of Liberty's plant building were found to be marginally contaminated with cadmium, copper, lead, nickel and zinc. E.P. Toxicity analyses indicate that cadmium

and lead levels were below E.P. Toxic limits. Upon investigation, the pipe discharge was found to be non-contact cooling water. It was also determined that boiler blowdown wastewater may have been discharged at this location in the past. All lines in the area of the pipe discharge have since been capped off. At the time of the April 1987 visit to the facility by the NYSDEC, one of the cement plugs had chipped away. Since this time, however, the discharge pipe has been re-plugged.

Samples collected from a stormwater dry well on the north-east side of the property were found to contain lead with lesser amounts of cadmium, chromium, copper, nickel and zinc. E.P. Toxicity analysis indicated that lead levels were below the E.P. Toxic limit. While the exact source of contamination is unclear, a number of potential sources have been identified. Contaminated boiler blowdown from the area of the pipe discharge on the north side of the plant building may have flowed across the parking lot to the dry well. Another possible source is the residues generated by the sandblasting of the Brentwood Water District water tower. Prior to repainting the water tower in 1984, its surface was sandblasted to remove the old paint. Residues from the sandblasting settled over the general area of Liberty. Analysis of the sandblasting residue indicated a lead content of 29,000 mg/kg.

CORRECTIVE ACTION

In accordance with an approved work plan, Liberty's sanitary wastewater disposal system and stormwater dry well were pumped

and cleaned in July 1985. Pumping and cleaning activities were conducted by RGM Corp. (EPA I.D. No. NYD 050592807). All waste materials removed from the disposal systems were disposed of via Chemical Management, Inc. (EPA I.D. No. NYD 000691949).

After pumping and cleaning the disposal systems, soil samples were collected from the bottom and side walls of the sanitary leaching pools and stormwater dry well. Each sample was analyzed for volatile organics and priority pollutant metals. Soil samples from both disposal systems indicated all priority pollutant metals within groundwater discharge levels. One of five sanitary system soil samples analyzed for volatile organics indicated 1,1-dichloroethene and 1,1,1-trichloroethane levels of 470 ug/kg and 440 ug/kg, respectively. Copies of H2M's lab reports are provided in Appendix B.

SITE INVESTIGATION

FIELD INVESTIGATION - GENERAL

Potential impacts of the relatively large volumes of hazardous materials maintained by Liberty in above-ground process bath tanks and below-grade storage tanks were evaluated through air, soil and groundwater quality analysis on-site and downgradient from the site. The possibility of groundwater contamination is of special concern because of the proximity of two currently active Brentwood Water District public supply wells (Nos. 1-3 and 1-4) located immediately downgradient of Liberty. Originally, four wells were active at the Water District, two deep wells (screened in the Magothy aquifer) and two shallow wells (screened in the Glacial aquifer). One shallower supply well (No. 1-1) is no longer in use due to contamination resulting from a leaking gasoline tank in the vicinity. Another shallow supply well (No. 1-2) was also abandoned due to quality in 1982. The remaining two active deep supply wells, Nos. 1-3 and 1-4, are screened in the Magothy aquifer and have capacities of 1200 gpm and 1400 gpm, respectively. These two supply wells, in combination with three additional wells located at two other well fields service a 20,000 person populus within the water district.

OBJECTIVES

The objectives of the field investigation were to evaluate the geologic and hydrogeologic regime of the site as it relates

to the past release(s) of hazardous substances. This was accomplished by analyzing the aquifer's physical state by determining:

- Soil characteristics
- Site-specific aquifer contacts
- Direction of groundwater flow
- Rate(s) of groundwater flow
- Extent of vertical flow through quantitative and qualitative analyses of site-specific properties

Following the groundwater flow study, air, soil and groundwater sampling analyses identified:

- Nature of the wastes
- Areal extent and vertical distribution of the wastes
- Documented past, current and the potential for future releases, and
- Evaluated the impacts of such releases on the environment

TECHNICAL PROCEDURES AND RESULTS

I. GEOPHYSICAL SURVEY

Metal Detector - Prior to the commencement of air, soil and groundwater sampling programs, a metal detecting geophysical sensing survey was performed. The metal detector responds to changes in electrical conductivity caused by the presence of metallic objects. The survey focused on the back area of the Liberty site in the vicinity of the underground tanks. Due to interference caused by a metal fence enclosing the storage tank area, the survey was unsuccessful in identifying below-grade metallic objects.

Downhole Logging - Electric, gamma-ray and self-potential downhole geophysical logging was also conducted. Upon reaching a depth of 300 feet in Borehole No. 6, Paulus, Sokolowski and Sartor (PS&S), Consulting Engineers, recorded the electric and gamma responses in an effort to ascertain zones of substantial ionic contamination and select an appropriate interval to screen the well. Self-potential was not recorded due to very erratic readings, which may have been caused by interference within the facility, or by the drill rig. The electric and gamma logs were consistent with the split spoon samples (this will be discussed in detail in following sections) and did not reveal zones indicative of substantial ionic contamination. See Figure 1, Downhole Logging, for the gamma and electric logs.

**LIBERTY INDUSTRIAL
4/15/87 R. FENZ (PS&S) MW-6**

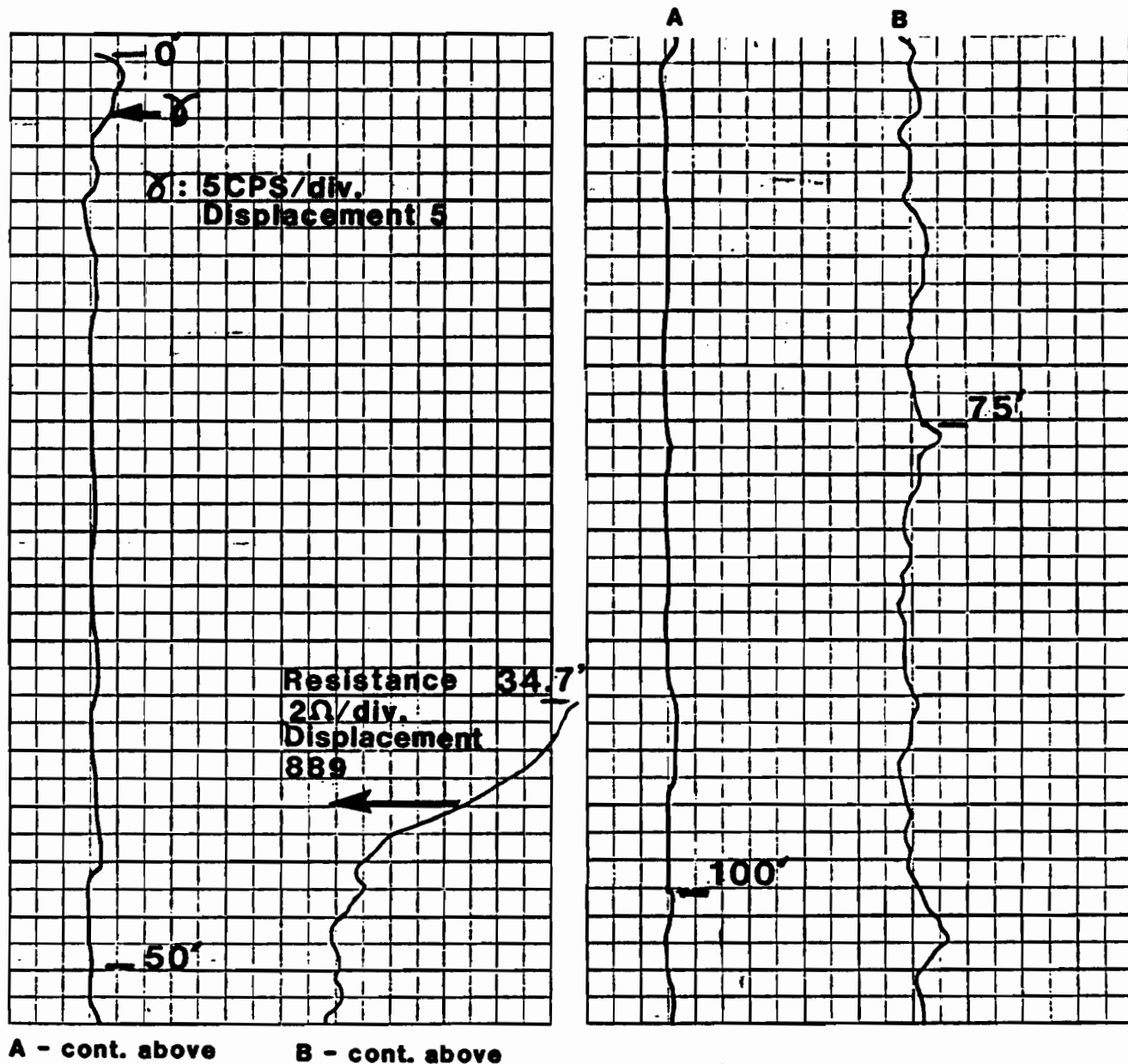


**FIGURE 1
DOWNHOLE LOGGING
(SHEET 1 of 3)**

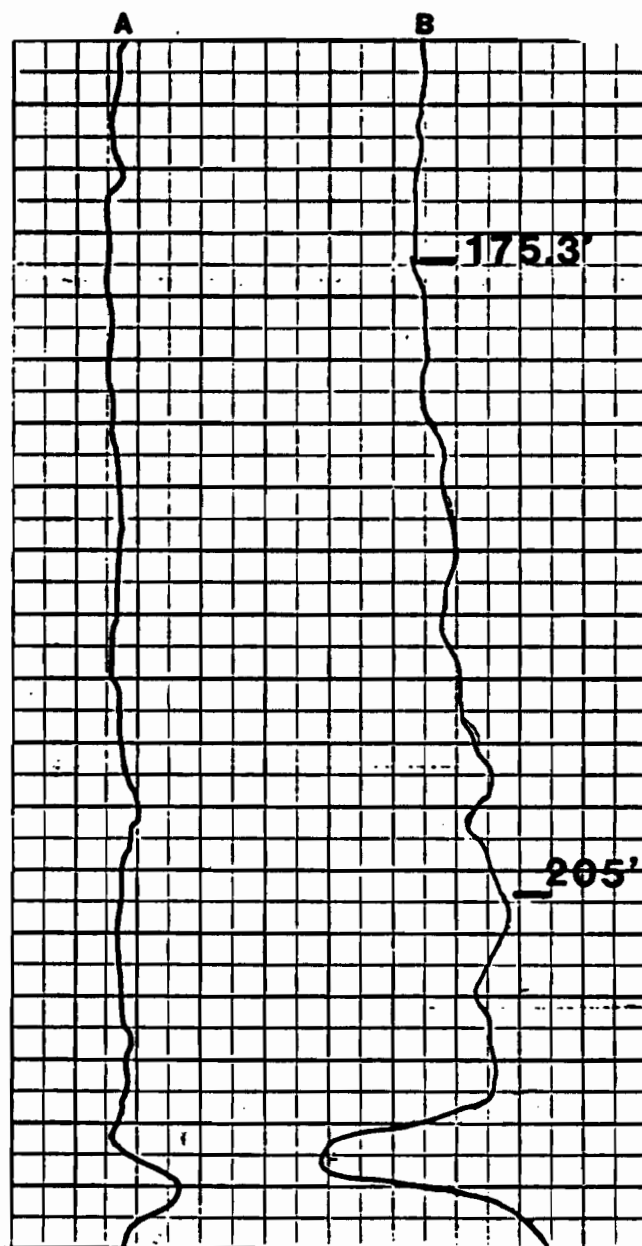
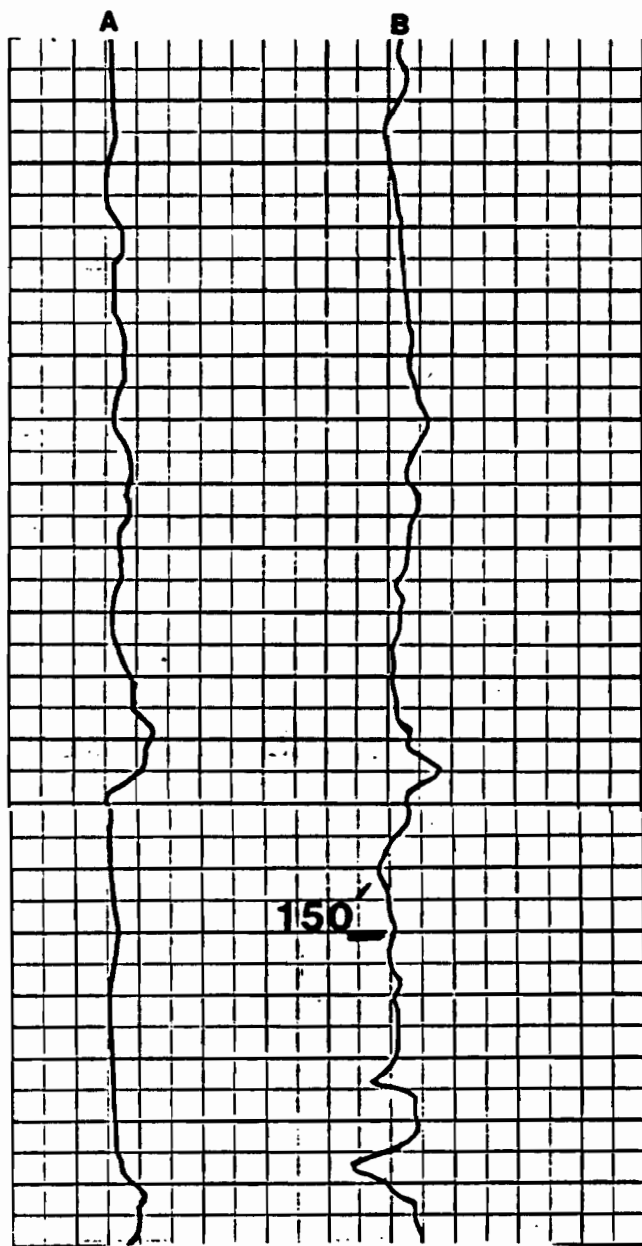


FIGURE 1
DOWNHOLE LOGGING
(SHEET 2 of 3)



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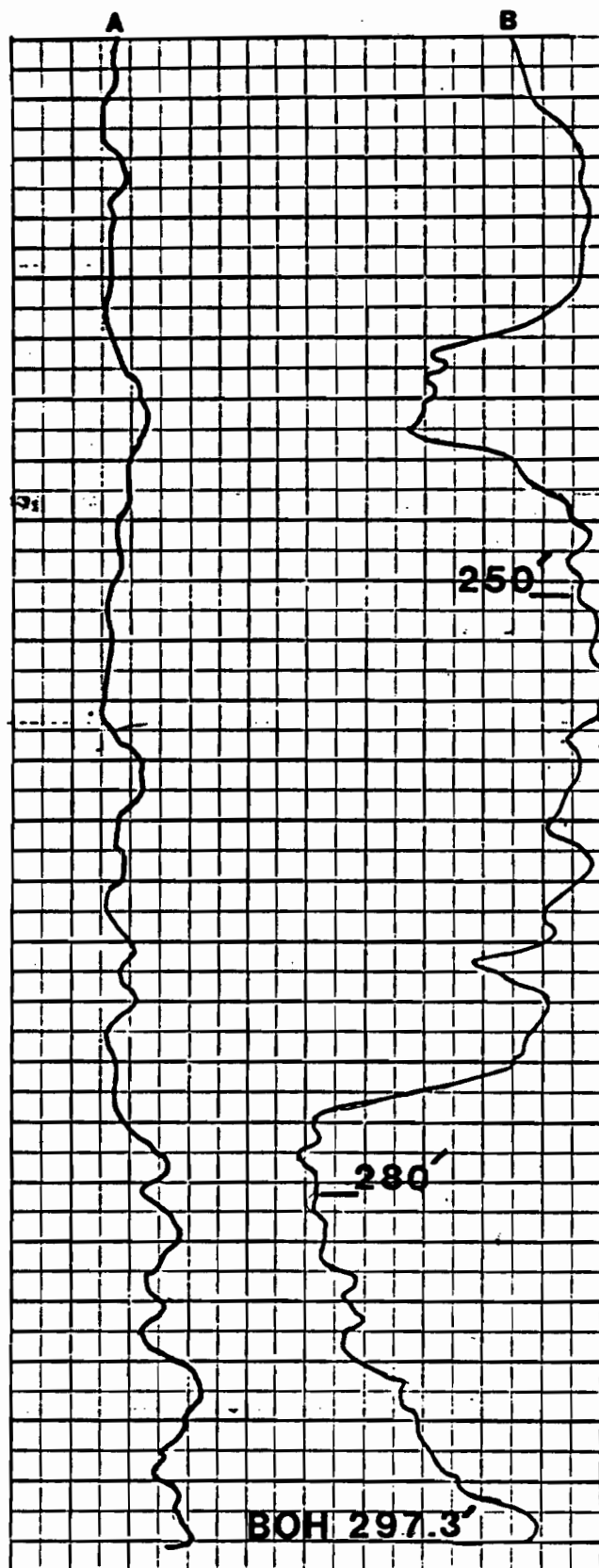


FIGURE 1
DOWNHOLE LOGGING
(SHEET 3 of 3)



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II. AIR QUALITY

Ambient and confined space air quality was measured throughout the field investigation. Ambient air quality was monitored with an HNu (11.7 uv) photoionization meter prior to well drilling activities and at regular intervals throughout the installation procedures. Confined space air quality was monitored with cyanide drager tubes and the HNu meter. The drager tubes were placed inside the hollow stem augers during the well installation to measure for the potential of hydrogen cyanide releases. Upon placing split spoon samples into laboratory bottles, an HNu measured the soils off gases in a confined space. In combination, the HNu meter and drager tubes identified ambient air quality, hot spots in the soil, and served to protect the health and safety of the field personnel, as per the specifications of the Health and Safety Plan.

Drager Tubes - Drager tube readings were taken at Boreholes 5, 7, 8 and 9 at 5-foot intervals during drilling. All hydrogen cyanide readings were non-detectable (less than 1 mg/m³). The method employed to measure hydrogen cyanide gas escape consisted of placing the drager assembly at the top of the augers (after being advanced to their sampling depth) and using the following procedure:

- Place tube with arrow pointing down into the drager assembly
- Stroke the hand-held gas detector pump 10 times
- Remove assembly from the top of the augers and observe color change (from yellow to red), if any

- Remove tube from pump
- Crack tube between the two black dots
- Tap tube so that the liquid reactant releases into the crystals
- Place tube back into pump and pump 2 strokes of ambient air
- Record response

Drager readings were not obtained in Boring No. 6 because the hole was drilled with mud, which was kept at a constant head.

HNu Meter - Ambient air quality was monitored prior to the commencement of drilling activities upwind and downwind at each location for the purposes of establishing background levels. Subsequent readings were obtained during drilling when gas escape was suspected. In one instance, during the installation of MW #8, HNu responses were elevated and remained elevated. Initially, it was suspected the readings were indicative of contamination. However, the needle indicator remained at the same value when the scale was changed, which suggested that the instrument was malfunctioning. For health and safety purposes, work was stopped, field personnel were removed from the immediate work zone and a replacement HNu was retained in addition to an OVA as a backup unit. When the replacement HNu and OVA indicated background conditions, work was resumed.

SOIL CHARACTERISTICS AND QUALITY

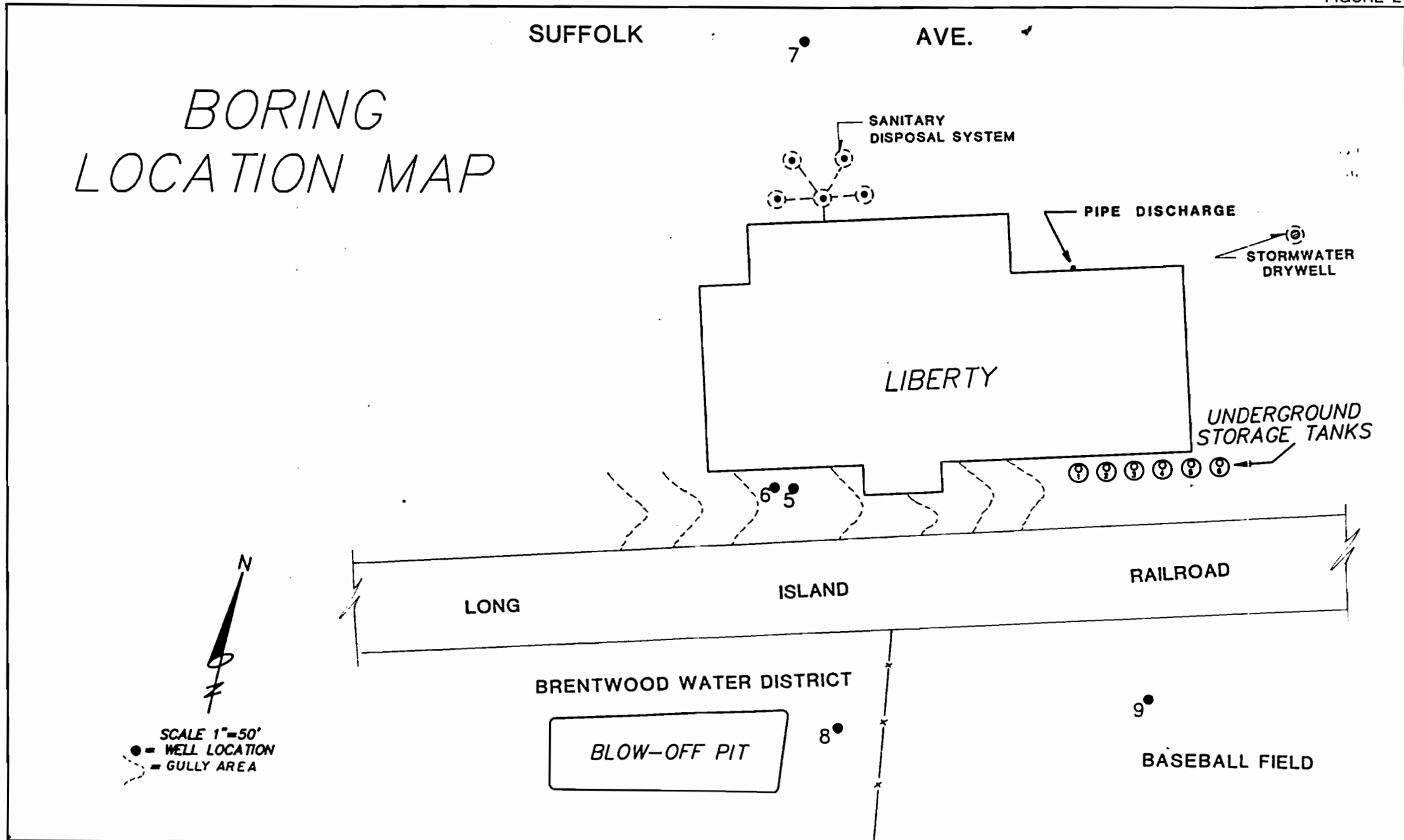
III. SOIL CHARACTERISTICS

Five soil borings were drilled to the north and south of Liberty. See Figure 2, Boring Location Plan, for locations and arrangement. The purpose of the borings was to evaluate the subsurface geology and provide soil quality profiles with the HNu meter during drilling. Upon completion of the soil borings, groundwater monitoring wells were installed in the five respective boreholes.

Four of the five boreholes were constructed utilizing a hollow stem auger drilling rig. The fifth borehole was constructed utilizing a mud rotary method. A split barrel core sampler retrieved soil samples at 5 foot intervals as the augers advance to the final drilling depth of approximately 55 feet. Each 5 foot interval soil sample was field screened for organic constituents, and a duplicate was obtained for laboratory analyses, if necessary. Soil samples and HNu readings were obtained until the boring was completed. All the soils which emanated from the boreholes (as return) were placed in secure 55-gallon drums. Each drum was labeled indicating boring number and depth interval. Currently, these barrels are stored near the southern loading dock at the facility.

Soil sampling and on-site quality testing was conducted as follows:

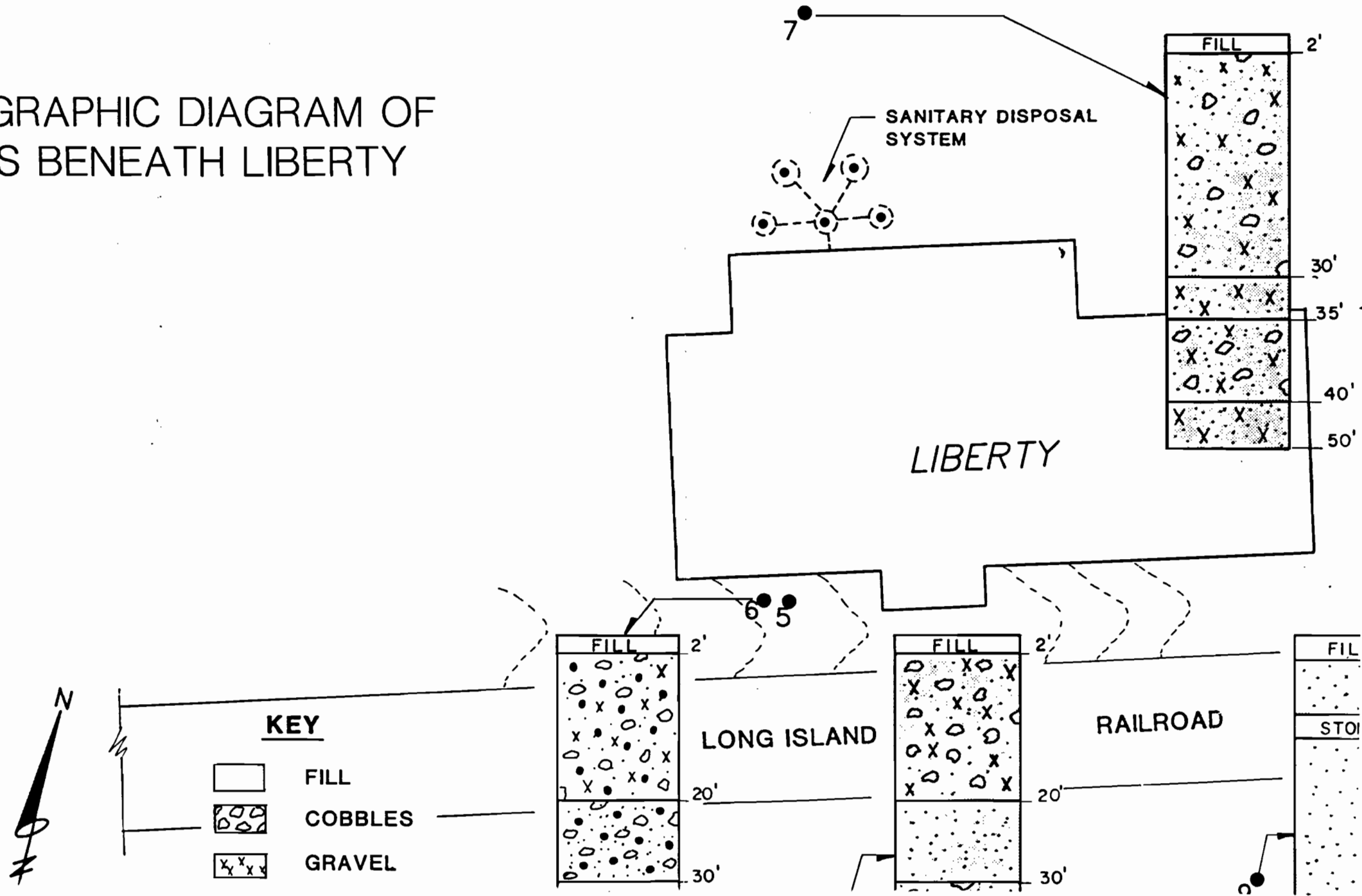
FIGURE 2



1. Assemble the soil sampler by aligning both sides of barrel and then screwing the bit on the bottom and the heavier headpiece on top.
2. Place the sampler in a perpendicular position on the material to be sampled.
3. Drive the tube utilizing a drilling rig.
4. Record the length of the tube that penetrated the material being sampled and the number of blows required to obtain this depth.
5. Withdraw the sampler and open by unscrewing bit and head and splitting barrel.
6. Place the soil in the two prescribed sample containers and label the containers.
7. The first sample was prepared for delivery to the laboratory.
8. The second sample was capped with aluminum foil and heated for approximately two minutes with a portable Sterno stove.
9. The second sample was then field tested with an HNu photoionization meter by inserting the probe through the foil cap. The HNu reading was recorded.

The collected split barrel samples were classified by the on-site geologist and logged by the drillers on a test boring log. A copy of the driller's test boring results are provided in Appendix C. A stratigraphic diagram has been constructed to illustrate the soil conditions beneath the site. See Figure 3, Stratigraphic Diagram.

STATIGRAPHIC DIAGRAM OF SOILS BENEATH LIBERTY



The surficial soils found in the general vicinity of the site are composed primarily of Haven loam and Riverhead-Haven type soils, both of which are conducive to rapid water transport. Beneath the surficial soils, the site is underlain by sorted sands, gravels and cobbles. Very little silts or clays were encountered. Borings No. 6, 7 and 8 contained coarse sediments while Boring No. 9 contained finer sediments. In Boring No. 5, split spoon samples were not obtained until 40 feet due to the proximity to Boring No. 6. Based upon the site-specific data, and data from areal monitoring wells, the site-specific geology appears to be consistent with local/regional characteristics.

Selected split spoon samples, which were representative of the subsurface conditions in each borehole, were utilized to determine site-specific grain size distribution, Atterberg limits and moisture content. This data is provided in Appendix D. The unconsolidated deposits encountered consist predominantly of glacial outwash which has an approximate thickness of 150 feet (based upon the split spoon samples obtained at Boring No. 6). Based upon the grain size distribution results, the gravel content ranges from 6 to 30 percent by dry weight, and a sand content from 67 to 88 percent. The percentage of silts and clay is less than 5. Based upon the site-specific geologic profile, a relationship between grain size distribution and estimated hydraulic conductivity can be made. These hydraulic flow parameters will be discussed in the groundwater monitoring program section.

IV. SOIL QUALITY

Each soil sample obtained was field screened for organic constituents. The HNu results for each boring are presented in Table 1, Soil HNu Responses. HNu results in Borings No. 5, 6, 7 and the 0 to 17 foot depth in Boring No. 8 were obtained using an 11.7 photoionization lamp. The remaining HNu readings were taken with a 10.2 photoionization lamp. A second HNu (10.2 photoionization lamp) was used in Borings No. 8 and 9 when the original instrument began to malfunction.

Delineation of Areas of Soil Contamination

Although elevated HNu responses were encountered, subsequent laboratory analyses did not detect organic contamination. HNu responses serve as relative indicators. In each boring "worst case" soil samples (based on HNu response) were subjected to laboratory analyses.

Boring No. 6 was drilled to a depth of 300 feet, with split spoon soil samples collected at 5 foot intervals. Boring No. 5 was a shallow boring drilled to a depth of 58 feet. Split spoon samples were obtained from a depth of five feet above the water table, continuously through the water table to the end of the borehole. The purpose of the two "cluster" boreholes was to determine the vertical extent of potential soil contamination and vertical recharge. Based upon the HNu responses in these two boreholes, selected samples were submitted to the laboratory for analysis. Specifically, in Boring No. 5, the 55 to 57 foot interval was analyzed and in Boring No. 6, the 20 to 22 foot, 55 to 57 foot and 225 to 227 foot intervals were analyzed. The soils were

TABLE 1
SOIL HNu RESPONSES

<u>Depth</u>	<u>Boring Number</u>				
	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
0-2	-	0.2	0.3	0.4	7.4 (0.4)
5-7	-	0.2	0.2	0.4	7.4 (0.4)
10-12	-	0.2	0.1	0.4	7.4 (0.4)
15-17	-	0.8	0.4	0.3	7.6 (0.4)
20-22	-	2.8*	0.2	-	7.8 (0.4)
25-27	-	0.2	0.2	-	8.2 (0.6) *
30-32	-	0.2	0.2	5.8 (1.6)	8.0 (0.4)
35-37	-	0.6	0.3	7.0 (4.0)	8.2 (0.6)
40-42	1.2	1.0 (.4)	0.3	7.0 (2.4)	8.2 (0.6)
42-44	0.8	-	-	-	-
44-46	0.8	-	-	-	-
46-48	0.5	0.8	0.1	7.4 (2.4)	8.2 (0.6)
48-50	3.2	-	-	-	8.2 (0.6)
50-52	0.5	0.4	0.3*	7.4 (2.4) *	8.4 (0.5)
52-54	0.6	-	-	-	8.2 (0.4)
54-56	0.6	1.4*	-	-	8.2 (0.4)
56-58	7.8 (.3) *	-	0.2	6.2 (2.4)	8.8 (0.4) *

Boring No. 6 continued on next page.

TABLE 1 (CONT'D.)

SOIL HNu RESPONSES

BORING NO. 6 (CONT'D.)

<u>Depth</u>		<u>Depth</u>		<u>Depth</u>	
60-62	0.4	140-142	0.4 (0.3)	220-222	0.4 (0.4)
65-67	0.4	145-147	0.4	225-227	0.8*
70-72	0.4	150-152	0.8	230-232	0.3
75-77	0.2	155-157	0.3	235-237	0.3
80-82	0.4	160-162	0.2 (0.4)	240-242	0.3 (0.4)
85-87	0.2	165-167	0.3	245-247	0.2
90-92	0.2	170-172	0.2	250-252	0.3 (0.1)
95-97	0.2 (0.1)	175-177	0.6	255-257	0.4
100-102	0.2 (0.1)	180-182	0.4	260-262	0.2
105-107	0.4 (0.4)	185-187	0.4	265-267	0.3
110-112	0.2	190-192	0.3	270-272	0.3
115-117	0.4	195-197	0.4	275-277	0.2
120-122	0.2 (0.6)	200-202	0.3	280-282	0.2
125-127	0.2	205-207	0.2	285-287	0.1 (0.1)
130-132	0.4	210-212	0.4	290-292	0.1 (0.1)
135-137	0.3	215-217	0.5 (0.3)	295-297	0.1
				300-302	0.1

NOTES

*Soil samples submitted to laboratory for analysis.

All results in ppm.

Background reading at 0.2 unless denoted in ().

All results are based upon a 0.00 span setting.

-No HNu reading obtained due either to:

a) machine malfunction (Boring #8 (20-22) & (25-27)).

b) lack of sample taken due to cluster well (Boring #5 (0-37)).

c) samples taken at 5-foot intervals, not continuous.

HNu readings in Borings 5, 6, 7 and 8 (0-17) taken with 11.7 photoionization lamp.

HNu readings in Borings 8 (30-38) and 9 taken with 10.2 photoionization lamp.

analyzed for priority pollutant metals, volatile halogenated and non-halogenated organics and cyanide. The results of these analyses are presented in Table 2, Soil Analyses. Volatile organic analyses were performed by gas chromatography. Heavy metals and cyanide analyses were performed by USEPA E.P. Toxicity extraction procedure. Copies of H2M lab reports are provided in Appendix E.

Boring No. 7 was drilled for the purpose of determining up-gradient quality. At this location, split spoon samples were collected at 5 foot intervals. In this borehole, the 50 to 52 foot sample interval was selected for analysis because it revealed the highest HNu response below the water table, and as such, could be an indication of incoming water quality.

Boring No. 8 was drilled at a location downgradient of the sanitary disposal system. Sanitary wastes are discharged to a subsurface disposal system consisting of five cesspools. Water migration at the cesspools will be vertical until the water table is encountered. The split spoon sample at the 50 to 52 foot interval was selected for analysis because it is below the water table and it indicated an elevated HNu response.

Boring No. 9 was drilled at a location downgradient of Tank No. 3 which has experienced documented incidents of leakage. Relative to Borings 5, 6, 7 and 8, Boring No. 9 indicated the highest HNu responses. In the unsaturated zone, the 25 to 27 foot interval was laboratory analyzed, and in the saturated zone, the 49 to 51 foot and 55 to 57 foot intervals were analyzed.

TABLE 2

SOIL ANALYSES

EP Tox

INORGANIC ANALYSIS (mg/l)

	(56-57') MW #5	(20-22') MW #6	(55-57') MW #6	(225-227') MW #6	(50-52') MW #7
Antimony	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	<0.5	<0.5	<0.5	<0.5	<0.5
Beryllium	0.025	<0.005	<0.005	<0.005	<0.005
Cadmium	0.030	<0.005	<0.005	<0.005	<0.005
Chromium	<0.02	<0.02	<0.02	<0.02	<0.02
Hex. Chromium	<0.02	<0.02	<0.02	<0.02	<0.02
Copper	0.030	<0.03	<0.03	0.27	<0.03
Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	<0.1	<0.1	<0.1	<0.1	<0.1
Mercury	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Nickel	<0.04	<0.04	0.06	<0.04	<0.04
Selenium	<0.2	<0.005	<0.2	<0.2	<0.2
Silver	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	0.05	0.05	0.06	0.04	<0.02

ORGANIC ANALYSIS (mg/kg) DRY WEIGHT

1,1-dichloroethylene	<0.02	<0.03	<0.03	<0.02	<0.02
1,1-dichloroethane	<0.02	<0.03	<0.03	<0.02	<0.02
Chloroform	<0.02	<0.03	<0.03	<0.02	<0.02
1,1,1-trichloroethane	<0.02	<0.03	<0.03	<0.02	<0.02
Benzene	<0.02	<0.03	<0.03	<0.02	<0.02
Ethylbenzene	<0.02	<0.03	<0.03	<0.02	<0.02
Toluene	<0.02	<0.03	<0.03	<0.02	<0.02
Total Solids	89%	85%	92%	81%	87%

TABLE 2

SOIL ANALYSES

EP Tox

INORGANIC ANALYSIS (mg/l) (CONT'D.)

	(50-52') MW #8	(25-27') MW #9	(49-51') MW #9	(55-57') MW #9	Effluent Standard for Class GA Waters in N.Y. State
Antimony	<0.1	<0.1	<0.1	<0.1	—
Arsenic	<0.5	<0.5	<0.5	<0.1	0.05
Beryllium	<0.0005	<0.005	0.015	<0.005	—
Cadmium	<0.0005	<0.005	0.01	<0.005	0.02
Chromium	<0.02	<0.02	<0.02	<0.02	—
Hex. Chromium	<0.02	<0.02	<0.02	<0.02	0.1
Copper	0.03	<0.03	<0.03	0.05	1.0
Cyanide	<0.01	<0.01	<0.01	<0.01	0.4
Lead	<0.1	<0.1	<0.1	<0.1	0.05
Mercury	<0.0005	<0.0005	0.0048	<0.0005	0.004
Nickel	<0.04	<0.04	<0.04	<0.04	2.0
Selenium	<0.2	<0.2	<0.2	<0.2	0.04
Silver	<0.02	<0.02	<0.02	<0.02	0.1
Thallium	<0.005	<0.005	<0.005	<0.005	—
Zinc	0.04	<0.02	0.03	<0.02	5.0

ORGANIC ANALYSIS (mg/kg) DRY WEIGHT

1,1-dichloroethylene	<0.02	<0.02	<0.03	<0.02	—
1,1-dichloroethane	<0.02	<0.02	<0.03	<0.02	—
Chloroform	<0.02	<0.02	<0.03	<0.02	—
1,1,1-trichloroethane	<0.02	<0.02	<0.03	<0.02	—
Benzene	<0.02	<0.02	<0.03	<0.02	—
Ethylbenzene	<0.02	<0.02	<0.03	<0.02	—
Toluene	<0.02	<0.02	<0.03	<0.02	—
Total Solids	85%	95%	88%	88%	—

As shown in Table 2, the inorganic results indicate that Boring No. 5 contained extractable cadmium and Boring No. 9 contained extractable mercury in excess of effluent standards. However, mercury is not a contaminant attributable to Liberty's normal operations. Liberty has never used mercury in its metal finishing operations. All other parameters were non-detectable or within groundwater discharge standards.

Upon completion of each boring, a groundwater monitoring well was constructed inside each boring. The intent of the groundwater monitoring wells is to determine the direction of groundwater flow and evaluate groundwater quality. The locations and configuration of the monitoring wells were selected to investigate potential impacts to groundwater quality from the underground storage tanks (Well No. 9) and sanitary disposal system (Well No. 8), vertical recharge (Wells No. 5 and 6) and upgradient groundwater quality from the northerly property boundary (Well No. 7).

V. INSTALLATION OF GROUNDWATER MONITORING WELLS

The purpose of installing on-site and off-site groundwater monitoring wells was:

- (1) To provide groundwater and soil quality profiles with the HNu meter during drilling.
- (2) To evaluate subsurface conditions.
- (3) To determine groundwater flow direction and rate of flow.

- (4) To determine the extent of vertical flow.
- (5) To evaluate groundwater quality.

Four groundwater monitoring wells installed by Fenley & Nicol (well driller) exist on-site at Liberty. However, these wells alone are not sufficient for the purposes of determining groundwater flow direction and identifying any potential upgradient source of contamination. In addition, NYSDEC has questioned the integrity of these wells. Thus, to investigate the point source, scope and concentrations of soil and groundwater contamination, the four existing on-site wells (1, 2, 3 & 4), three newly installed on-site wells (5, 6 & 7) and two off-site wells (8 & 9) were utilized. The location and arrangement of the monitoring wells in relation to the sanitary disposal system and underground storage tanks are shown in Plate 1, Site Plan.

The four existing on-site wells are located along Liberty's southeastern property boundary (Wells No. 1 to 4) and are screened from 40 to 55 feet below-grade. Five off-site wells are located to the southwest of Liberty and are screened 5 feet above and 10 feet below the water table. Three existing off-site wells (1A to 4A & 28A) were installed by the Department of Transportation (DOT) for an independent study. The construction details for these wells are contained in a closed file with the NYSDEC Oil Spills Division. Access to this file via an FIA (Freedom of Information Act) request has not as yet been granted. Discussions with the NYSDEC suggest that the wells were not installed according to current specifications. As such, the NYSDEC would not allow the usage of the wells for water quality purposes.

However, they were utilized for constructing groundwater contour maps.

Upon reviewing the locations of the four existing on-site wells and the inferred direction of groundwater flow, relative to the location of the sanitary disposal system and underground tanks, one shallow upgradient well, and one on-site cluster well (one deep and one shallow well), and two shallow off-site wells were installed. The five new wells, in conjunction with the nine existing on-site and off-site wells (Wells No. 1 through 4 and Wells No. 1A to 4A & 28A), were utilized for the purposes of defining the direction of groundwater flow.

VI. MATERIALS OF CONSTRUCTION

The construction method used to install the shallow monitoring wells consisted of drilling a 8-inch hole to the desired depth with a hollow stem auger (6-inch outside diameter) and placing the well casing and screen through the hollow stem. Soils emanating from the hole were placed in secure 55-gallon drums and are currently stored on-site. The casing and screen consist of Schedule 40, 4-inch diameter PVC, screw joint, threaded casing and 15 feet of 4-inch diameter screen. Joint compound was not used. A bentonite seal approximately 5 foot thick was placed above the screened zone. The open space below the screened zone was filled with a sand pack, and the remainder of the open space above the screened zone was backfilled with a bentonite/cement slurry. Only the bentonite/cement slurry was tremie piped.

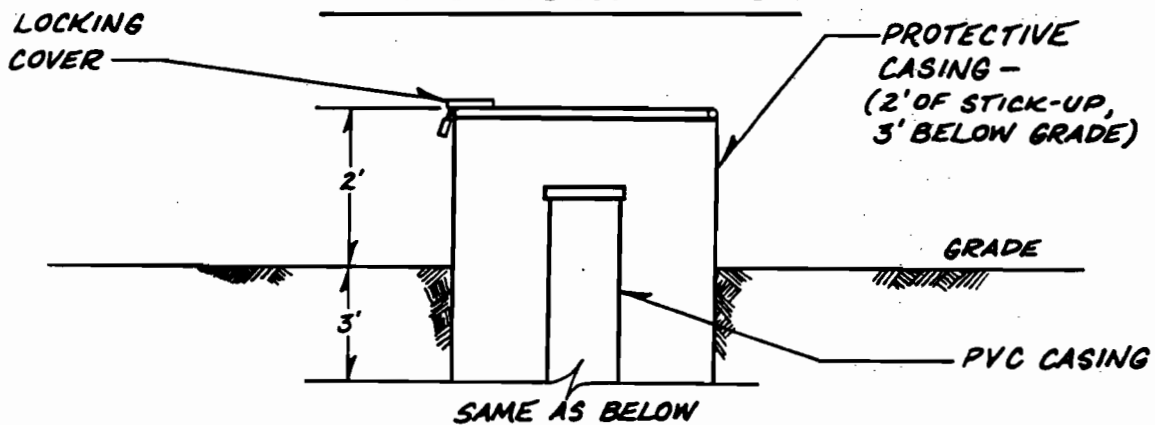
Following installation, each well was adequately developed by pumping (deep well) or clearing with compressed air (shallow well). A 6-inch protective steel pipe and threaded cap with locking cover was installed over the top of the PVC casing and cemented into place. The well construction diagram is shown in Figure 4, Monitoring Well Construction Details.

A reverse rotary drilling method was used to install the 4-inch diameter deep well (MW #6). The drilling method consists of cutting a borehole by means of a rotating bit (6-inch outside diameter) and removing the cuttings by continuous circulation of drilling fluid as the bit penetrates the formation. The bit is attached to the end of a string of drill pipe. The drilling fluid (a pure Wyoming bentonite) and cuttings move upward inside the drill pipe and are discharged into a settling pit. The fluid returns to the borehole by gravity flow. It moves down the annular space around the drill pipe to the bottom of the hole, picks up cuttings and re-enters the drill pipe through the drill bit. The fluid that did not return to the hole was placed in 55-gallon drums.

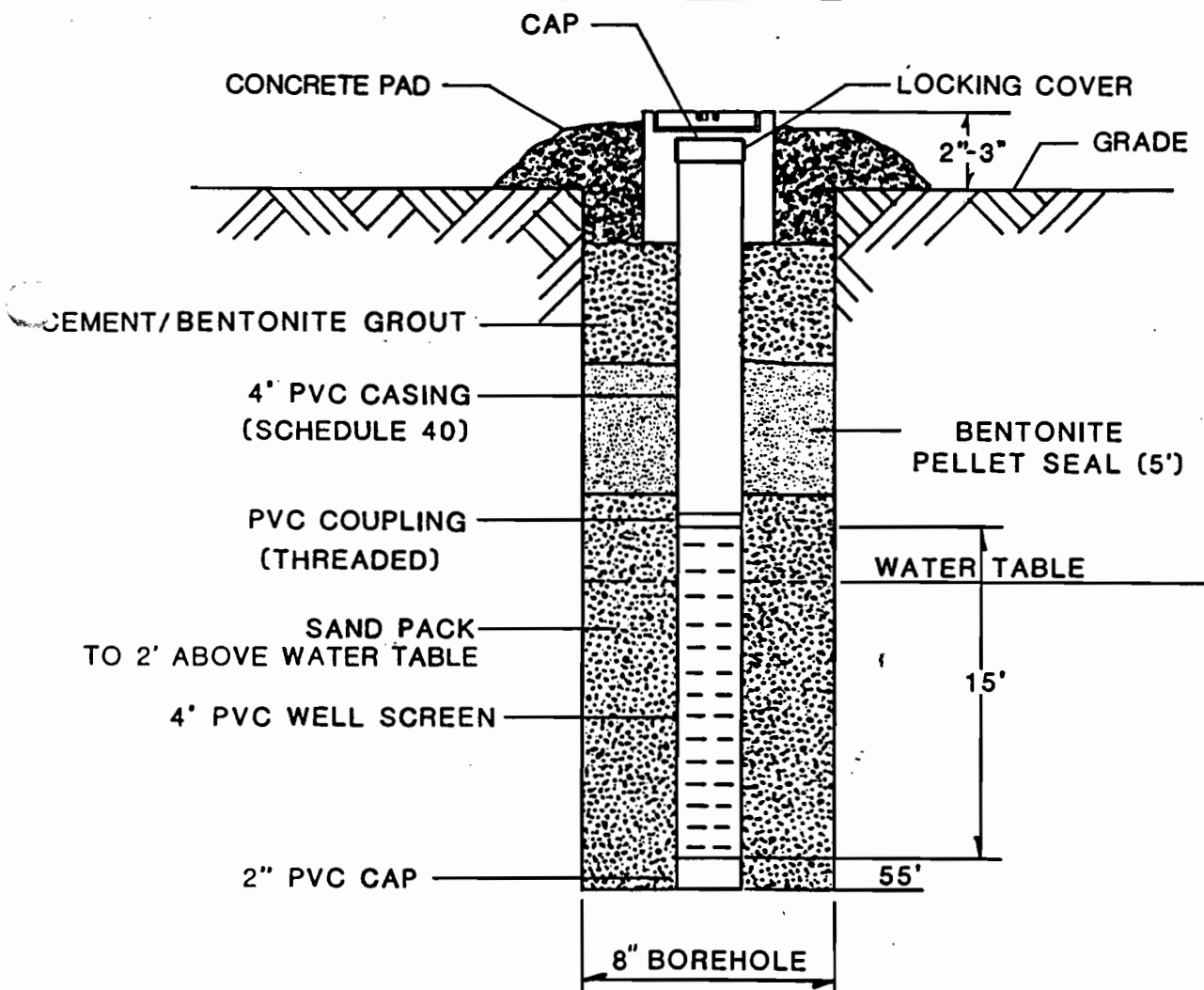
When the depth of 300 feet was reached, the well was electric, gamma-ray and self-potential logged (see geophysical survey section for details). Based upon a joint H2M and NYDEC review, the screened interval of 255 to 265 feet was selected. Thirty feet of continuous clay was encountered from 270 feet to the bottom of the hole at 299 feet, 6 inches. Interbedded lenses and layers of clay were encountered beginning from 150 feet, where

FIGURE 4

RAISED INSTALLATION



FLUSH MOUNT



MONITORING WELL CONSTRUCTION DETAILS LIBERTY INDUSTRIAL



HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS

MELVILLE, N.Y.
FARMINGDALE, N.Y.
RIVERHEAD, N.Y.

the contact of the Magothy is estimated (see Appendix C, Well Log).

The casing and screen were placed in the well at the 265 foot interval. The remainder of the open hole below 265 feet was filled when the hole was reamed. The casing consisted of Schedule 40, 4-inch diameter PVC, screw joint, threaded casing and 10 feet of 4-inch diameter screen. Joint compound was not used. A 5 foot thick seal of bentonite was tremie piped above the screen zone. The open space below the screened zone was filled with a sand pack and the remainder of the hole above the screen was backfilled with a bentonite/cement slurry. The bentonite/cement slurry was also tremie piped. The well was adequately developed by pumping with a submersible pump. The water emanating from the hole is contained in secured above-ground holding tanks. A 6-inch diameter protective steel pipe, threaded cap and locking cover was installed over the top of the PVC casing and cemented into place.

VII. DECONTAMINATION

All drilling tools, augers and other drilling equipment were steam cleaned prior to use. Between holes, all foreign matter was removed prior to steam cleaning. Steam cleaning was conducted in one designated location, contained on a black PVC liner. The decontaminated water remained on the liner until it naturally evaporated, and as such was not collected.

VIII. GROUNDWATER MONITORING PROGRAM

A survey establishing land surface elevations and top of casing elevations at all measuring points, as well as precise relative locations of all points, was conducted. Weekly water level monitoring then commenced at the seven on-site observation wells (Nos. 1 to 7) and seven off-site wells (Nos. 8, 9, 1A to 4A & 28A). Well No. 4A was dry on all occasions. Well 4A is a Department of Transportation groundwater monitoring well which was installed for an independent project. This well is considered off-spec by NYSDEC and would have served solely as an additional water level data point.

Monitoring of the water levels at all points was conducted as close to simultaneously as practicable. Water levels were measured using a conductivity probe. The monitoring program consisted of weekly level measurements for a period of five weeks. A water table map for each week was developed, indicating the direction of groundwater flow.

IX. HYDRAULIC PARAMETERS

1. Direction of Groundwater Flow

The depth to groundwater at each location was recorded, then subtracted from the elevation of the measuring point to derive the elevation of the water surface. From the elevations, groundwater contour maps were developed for the site. See Figures 5 through 9, Groundwater Contour Maps. The direction of groundwater flow is then assumed to be perpendicular to the

FIGURE 5

WATER TABLE OF 5/14/87

INFERRED DIRECTION
OF REGIONAL
GROUNDWATER FLOW

SANITARY
DISPOSAL SYSTEM

STORMWATER
DRYWELL

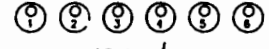
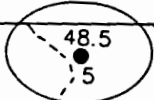
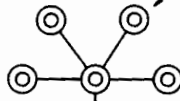
LIBERTY

UNDERGROUND
STORAGE TANKS

LONG ISLAND RAILROAD

BLOW-OFF PIT

48.4
7



48.3
28A

48.3
4

48.0
2

47.9
3A

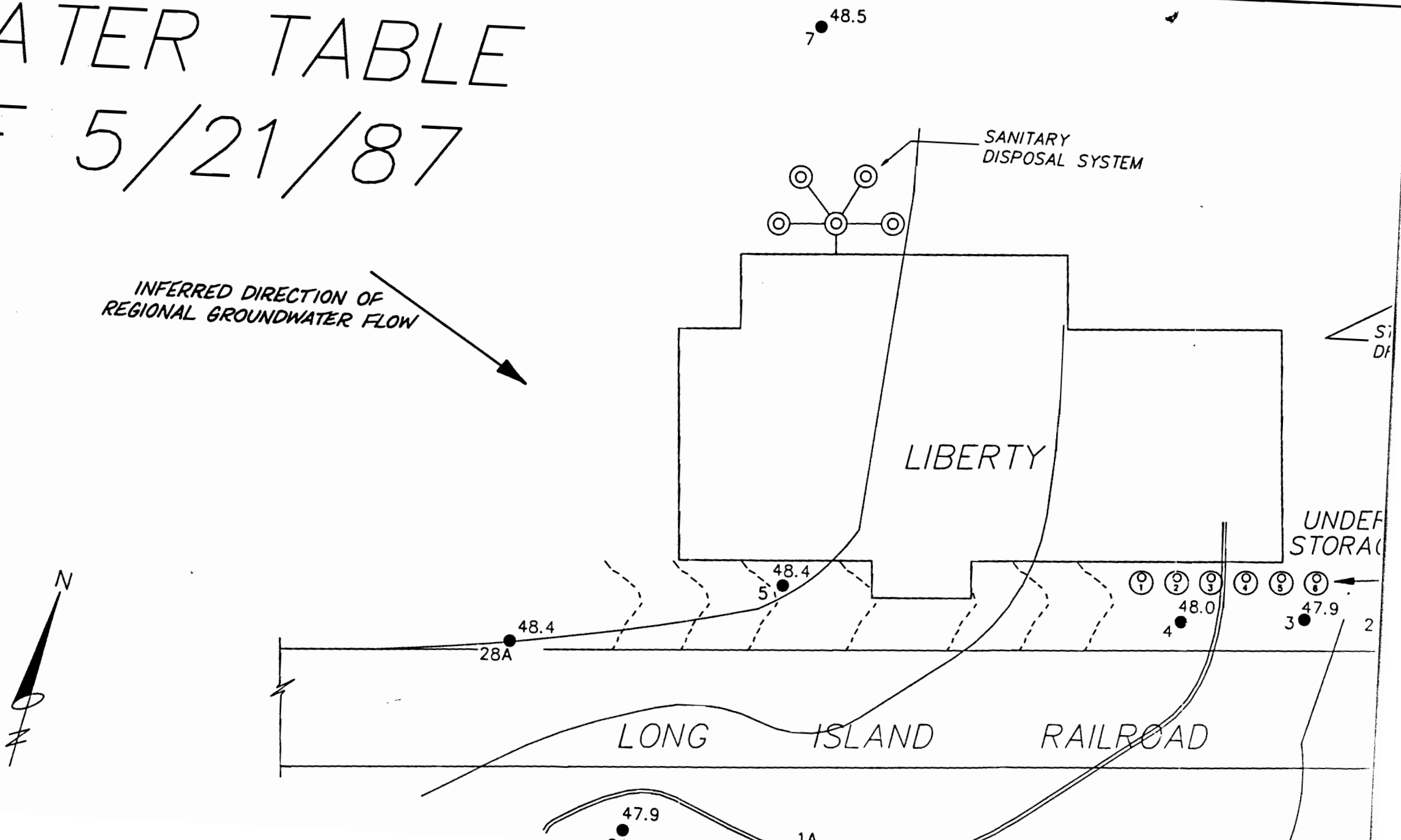
47.8
1A
47.8
8

47.8
9

SCALE: 1"=50'
CONTOUR INTERVAL = .2 FT
ELEVATIONS ARE IN FEET (AMSL)

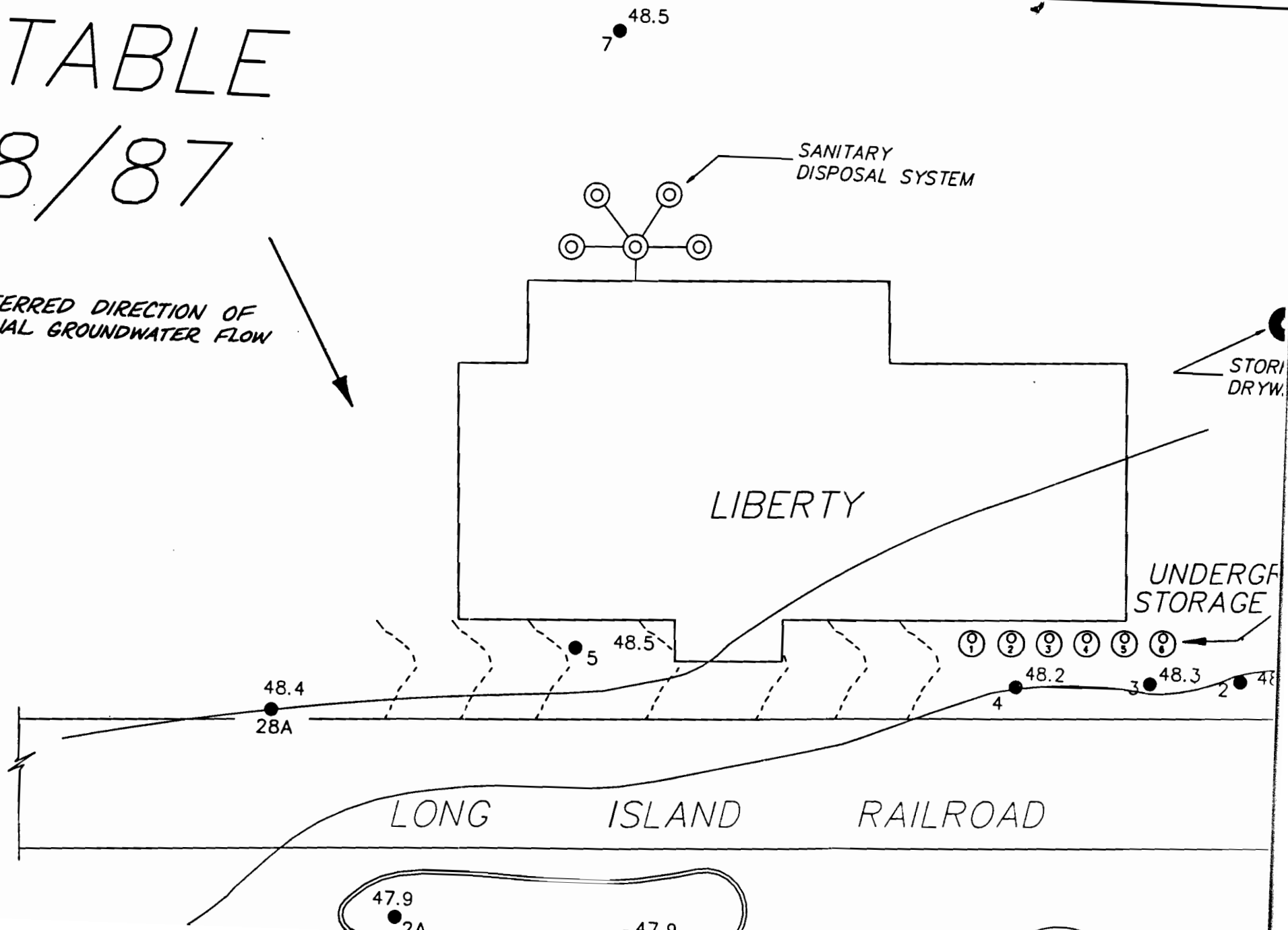
● = WELL LOCATION
--- = GULLY AREA

WATER TABLE OF 5/21/87

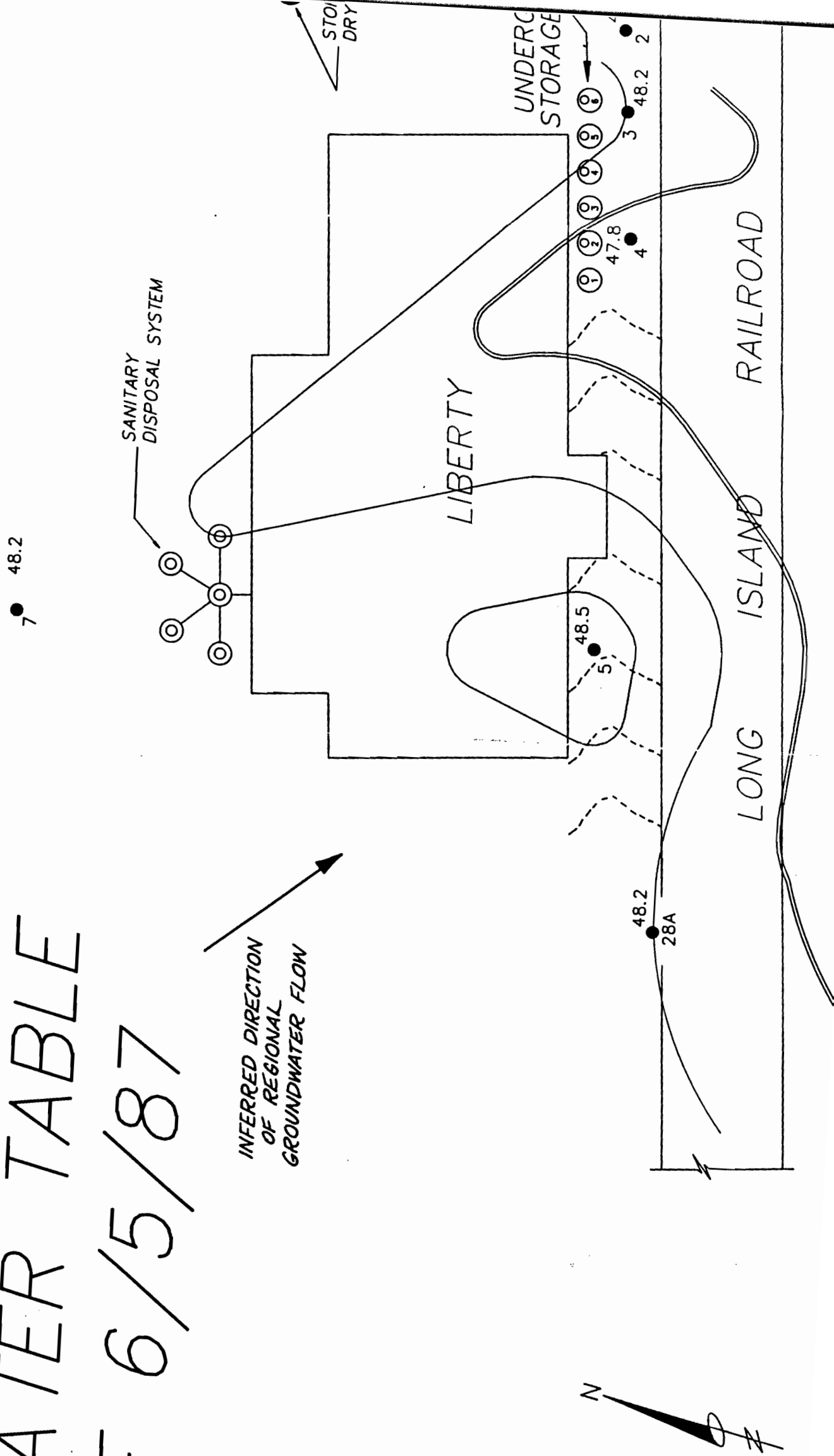


WATER TABLE OF 5/28/87

INFERRED DIRECTION OF
REGIONAL GROUNDWATER FLOW



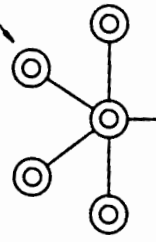
WATER TABLE
OF 6/5/87



WATER TABLE OF 6/12/87

7 48.6

SANITARY
DISPOSAL SYSTEM



INFERRED DIRECTION
OF REGIONAL
GROUNDWATER FLOW



S
D

LIBERTY

UNDER
STORA



48.4

5

48.3
28A

48.1

4

48.1

3

LONG ISLAND RAILROAD

47.8

groundwater contours. (This assumes variations in permeability are minimal.) It is vital to remember that the groundwater contours are schematic representations which depict general trends. Consistently, the figures indicate that the direction of groundwater movement is towards the south-southeast.

Two of the contours indicate slight groundwater mounding has occurred in the vicinity of wells 5 & 6, adjacent to the drainage gully along the railroad. This mounding may be attributed to stormwater runoff from adjacent areas; roof drains; and possibly from discharges to the sanitary disposal system. Throughout the April drilling activities, this area was constantly wet with standing water. A combination of typical heavy rainfall in April along with these other sources may be the result of this slight mounding.

Based upon water meter readings, Liberty discharges to their sanitary system approximately 2,200 gpd. Roof drainage is estimated to be approximately 1,500 gpd (averaged over 365 days). This number assumes 45 inches of annual rainfall where 80% is recharged to the ground. However, as the observed mounding in this area is only on the order of a few tenths of a foot, these discharges are not considered significant enough to influence the overall flow direction.

Similarly, the slight depression in the water table indicated north of the blow-off pit is considered only a temporal condition, with a maximum depression in the water table of only 0.1 to 0.3 feet.

2. Rate of Horizontal Groundwater Flow

When groundwater contamination is detected, the plume or the "extent of spread" of the contaminants dissolved in water will be dictated primarily by the direction and rate of groundwater flow. The direction of groundwater flow has already been established. So, in order to predict the extent of potential contamination and the vertical migration rates through each aquifer, it is first necessary to estimate the horizontal groundwater velocity.

Due to the variable nature of the hydraulic conductivity and porosity, estimates of horizontal velocity can only be recorded as order of magnitudes. These estimates are based upon the available information pertaining to the porosities and permeabilities of the soils beneath the site and an average groundwater gradient estimated at 0.0051 ft/ft. The calculations are based on Darcy's Law and estimated values for porosity and permeability for the site (as estimated through grain size distribution). As a generalization, within the Upper Glacial aquifer, the site is underlain by gravels and sorted sands and very little silts and clay were encountered. Based upon these soil characteristics, the expected ranges of porosity and permeability* of the soils beneath the site which dictate the rate of groundwater flow are:

	<u>PERMEABILITY RANGE FT/DAY</u>	<u>POROSITY RANGE PERCENT</u>	<u>GROUNDWATER VELOCITY FT/DAY</u>
Fine to Coarse Sand	100-1000	30-35	1.5-17
Clayey Sand	0.1-10	35-40	0.001-0.150

According to the calculated velocities, it is anticipated that the groundwater is flowing horizontally at a rate of 1.5 to 17 feet per day. When a contaminant is present in the water, there generally is some retardation of the contaminant due to absorption onto the soils, solubility and density differences between the fluids. These factors make the contaminant transport rate less than the groundwater flow velocity.

* WATER TRANSMITTING PROPERTIES OF AQUIFERS ON L.I. N.Y. 1972

Slug Tests

An attempt was made to confirm the value for hydraulic conductivity through in-situ testing and evaluating grain size data. Specifically, slug testing was performed on Monitoring Well No. 5. Unfortunately, insignificant drawdown (0.5 feet) and fast recovery did not allow ample data points to be recorded. After a constant head was obtained, drawdown in the well was only one-half a foot. When the pump was turned off, the well recharged the 0.5 feet in less than ten seconds.

Given the groundwater flow conditions that the monitoring wells have provided, conclusions can be drawn with respect to the hydrogeological regime. Groundwater contours indicate the horizontal direction of groundwater movement is in a south-southeast direction, where the rate of groundwater flow was calculated

between a range of 1.5 and 17 feet per day, based solely on soil characteristics.

3. Rate of Vertical Groundwater Flow

The rate at which groundwater migrates vertically through the Glacial and Magothy aquifers is dependent on the vertical permeabilities of each aquifer and the difference in piezometric head between the two. Water level data from shallow Well No. 5 and deep Well No. 6, installed close to one another, indicate a head difference of 0.83 feet. Well No. 6 was drilled to 300 feet and screened at 265 feet, while Well No. 5 was drilled to and screened at 58 feet. From the well log data, the contact between the Glacial and Magothy can be considered to be at 150 feet below-grade (where clay begins in the stratigraphic column). The component of vertical permeability is based upon the vertical resistances with the Glacial and Magothy aquifers of 1:10 and 1:40 of the hydraulic conductivity of each aquifer. These proportions are in accordance with the Geological Survey Professional Paper 982, "Analog-Model Analysis of Regional Three Dimensional Flow in the Groundwater Reservoir on Long Island, New York". Given the hydraulic conductivity of the Glacial and Magothy aquifers converted according to a 1:10 and 1:40 vertical resistant ratio, respectively, the vertical permeability for the Glacial is estimated at 26 feet/day, and for the Magothy 1.3 feet/day is estimated. Within the Magothy, intermittent clay layers were encountered. These clay layers will significantly retard the aquifer's infiltration capabilities and create flow

towards the horizontal due to the change in permeabilities. Based upon these estimates, the groundwater beneath Liberty will flow vertically through this material at an average rate of approximately 12 feet per year.

X. WATER QUALITY SAMPLING PROCEDURES

The objective of the groundwater sampling plan was to obtain water quality data needed to identify and characterize the extent of contamination, if any, beneath the site.

Groundwater sampling was originally scheduled to be conducted in two phases. Each round of sampling was to include the five (5) newly installed monitoring wells and selected existing monitoring wells considered off-spec by NYSDEC. See Plate 1 for location and arrangement of wells. Round I sampling included the five new wells installed to NYSDEC specifications (Nos. 5, 6, 7, 8 and 9), and existing monitoring wells 2, 4, 1A, 3A and 28A. Round II sampling, scheduled one week following Round I, was to include the same five newly installed "on-spec" monitoring wells (Nos. 5, 6, 7, 8 and 9), and existing wells 1, 3, 2A and 27A. However, through conversations with NYSDEC, it was agreed that only one round of water quality sampling was necessary at this time. Depending upon the analytical results, and after evaluation of the hydrogeological study in conjunction with water quality data, a second round of groundwater sampling may be required by NYSDEC.

Water samples were subsequently collected by H2M on May 14 and 15, 1987 from a total of nine (9) out of the ten (10) specified sampling points for Round I groundwater sampling. Well No. 7, screened in the Upper Glacial aquifer, is located along Suffolk Avenue, north of Liberty's parking lot and serves as an upgradient well used to characterize background water quality. Monitoring Wells No. 2, 4, 5, 8, 9, 3A and 28A, all shallow wells set in the Upper Glacial aquifer, and MW #6, a deep well screened in the Magothy aquifer are all downgradient wells used to monitor water quality leaving the Liberty site. A water sample was not obtained from Well 1A, since this well was dry at the time of sampling.

Sampling was conducted one week following well development. Prior to sample collection, the pH, temperature and conductivity meters were calibrated and the water level probe cleaned and decontaminated. A 4 foot by 4 foot piece of plastic, slit in the center, was placed on the ground around the well. All well sampling operations were conducted on this plastic to minimize the potential of splashing water around the well casing, and to prevent the potential for the purged water to "run down" the casing.

At each well, a water level indicator was used to establish groundwater elevations. The elevation measured was subtracted from the total depth of the well and used to calculate the static water volume. Each well was then purged for the amount of time necessary to comply with USEPA Publication SW-611, Part 6.2.1, "Sampling Withdrawal Methods", which states a minimum of three

casing volumes of water must be removed from a well to ensure that the sample is representative of water from the aquifer.

The shallow monitoring wells (MW 2, 4, 5, 7, 8, 9, 28A and 3A) were all purged by bailing using dedicated stainless steel bailers attached to a polypropylene rope. The stainless steel bailers were pre-cleaned in the laboratory, wrapped in autoclave aluminum foil and dedicated to a particular sampling point. A new polypropylene rope was used and then discarded after use at each sampling point. Water bailed from these wells was placed in a 5-gallon bucket and discharged several feet downgradient from the well, as agreed upon by NYSDEC representatives.

The deep monitoring well, MW #6, was purged using a submersible pump. A minimum of three well casing volumes were removed. The water evacuated from the deep well was collected in outdoor above-ground holding tanks, as required by NYSDEC, to await water sample analysis before determining the proper method of disposal.

During the required purging for each well, the pH, temperature and specific conductance of the groundwater were measured at regular intervals to determine if the well water had come to equilibrium with respect to the field parameters being tested for. See Table 3, Analytical Field Tests. The wells were bailed or pumped until the field test parameters (pH, temperature and specific conductivity) stabilized. Concurrent with the well purging, the field sampling notes were recorded and sample bottles labeled.

TABLE 3
ANALYTICAL FIELD TESTS

<u>Monitoring Well #</u>	<u>pH</u>	<u>Temperature (in degrees C)</u>	<u>Conductivity (in ohms)</u>
7 (5 gal.)	6.81	12.8	195
7 (10 gal.)	6.70	12.6	180
7 (15 gal.)	6.67	12.6	180
7 (20 gal.)	6.68	12.7	180
5 (5 gal.)	5.86	14.7	270
5 (10 gal.)	5.69	14.4	265
5 (15 gal.)	5.74	14.6	250
5 (20 gal.)	5.61	14.3	250
5 (25 gal.)	5.67	14.7	250
8 (5 gal.)	6.13	14.4	155
8 (10 gal.)	5.96	14.1	155
8 (15 gal.)	6.06	13.9	140
8 (20 gal.)	5.85	14.2	140
8 (23 gal.)	5.74	13.9	140
3A (5 gal.)	5.33	13.1	90
3A (10 gal.)	5.36	13.0	90
3A (15 gal.)	5.39	13.0	90
1A	No sample collected - dry well		
28A (5 gal.)	5.19	13.0	60
28A (10 gal.)	5.22	12.8	60
28A (13 gal.)	5.24	12.6	60
9 (5 gal.)	6.01	13.6	160
9 (10 gal.)	6.12	13.4	160
9 (15 gal.)	6.14	13.4	160
9 (20 gal.)	6.07	13.5	160
2 (5 gal.)	5.81	14.1	140
2 (10 gal.)	5.84	14.0	130
2 (15 gal.)	5.90	14.0	120
2 (20 gal.)	5.93	14.0	135
4 (5 gal.)	6.82	14.2	500
4 (10 gal.)	6.84	14.2	500
4 (15 gal.)	6.88	14.2	500
4 (20 gal.)	6.73	14.1	500
6 - Over 400 gallons of water removed. pH, temperature and con- ductivity measured periodically.	9.04	17.2	200
	8.30	16.4	165
	7.70	16.0	135
	7.30	15.8	100
	7.45	15.1	120
	7.12	14.4	95
	7.12	14.3	85

Following the required well water evacuation, analytical field testing was performed on the groundwater. This was done at the site because of the relatively low holding time on some parameters. The three parameters measured in the field included pH, temperature and specific conductance.

A dedicated stainless steel bailer was used to transfer the well water into a 1 quart plastic container. Temperature was measured immediately as it is subject to the most rapid change due to atmospheric conditions. pH and conductivity were measured with electronic probes which were cleaned and calibrated prior to use at each well location. Field measurements, observations and sampling methods were recorded on the field sampling records and are summarized in Table 3. Copies of the field sampling records are provided in Appendix F.

Water samples collected from monitoring wells MW 5, 7 and 8 were split with NYSDEC. The samples collected for metals analyses were filtered in the field with the use of a portable handheld vacuum pump and a 0.45 micron filter to remove any silts. The filtrate was split with NYSDEC and placed into sample bottles for preservation in the laboratory. The remainder of the monitoring well samples (MW Nos. 2, 4, 9, 3A and 28A) collected for metals analyses, were not split with NYSDEC. Due to the inability to perform field filtering in a time-effective manner, these samples were collected in unpreserved sample bottles and delivered to the laboratory at the end of the day for filtration and sample preservation.

In sampling the deep monitoring well (MW #6), a laboratory pre-cleaned stainless steel bailer with a stainless steel chain was used to collect the samples following the required purging. Purging was conducted using a submersible pump to evacuate approximately 425 gallons of water (equivalent of three well volumes) from the deep well into on-site holding tanks. Following purging, the well was bailed three times with the stainless steel bailer prior to sampling. Temperature, pH and conductivity readings were recorded and a sample was obtained. The water sample collected for metals analyses was placed in unpreserved sample bottles and subsequently filtered and preserved in the laboratory at the end of the day. Samples collected for volatile halogenated and non-halogenated organics, and for cyanide were collected using a dedicated stainless steel bailer and then placed into individual preserved sample bottles.

After all sample bottles were filled, they were wrapped in bubble plastic to prevent breakage and placed in a cooler, which was then custody sealed for delivery to H2M Labs, Inc. A chain-of-custody form was filed in after each sample location, placed in a zip-lock plastic bag and taped to the top of the cooler.

Each day of sampling was accompanied by a field blank for quality assurance/quality control (QA/QC) of the integrity of transport and sampling methodologies. In addition, one bailer blank was collected to ensure the integrity of the cleanliness of the bailer prior to sampling monitoring Well No. 8. This blank was analyzed for volatile halogenated and non-halogenated organics and metals parameters.

XI. GROUNDWATER SAMPLE ANALYSIS

Groundwater samples, collected from on-site and off-site monitoring wells were retained for analyses by H2M Labs, Inc. Water samples were analyzed for priority pollutant metals, volatile halogenated and non-halogenated organics and cyanide.

Analyses were performed on the water samples using standard EPA analytical methods for the thirteen (13) priority pollutant metals (antimony, (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), hexavalent chromium (Cr⁺⁶), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl) and zinc (Zn)), and cyanide. The water samples collected for metals analyses were passed through a 0.45 micron filter either in the field or laboratory prior to sample preservation. The purpose of filtering the sample prior to sample preservation and analysis is to obtain data representative of actual metals content in the water column and not the metals contained in any fine silts. The results of our inorganic analyses are presented in Table 4, Water Quality Data.

As indicated in Table 4, cadmium, chromium, copper, nickel and/or zinc were detected in the shallow monitoring wells. Cadmium was the only heavy metal detected at concentrations in excess of groundwater quality standards. In both cases, the samples were collected from wells of questionable integrity (MW #2 and 4). Cadmium was detected at 0.05 mg/l in monitoring wells No. 2 and No. 4 and in the range of 0.005 to 0.009 mg/l in the other six shallow monitoring wells, including upgradient well MW

TABLE 4

WATER QUALITY DATA

INORGANIC ANALYSES (mg/l)

filtered

	<u>MW #7 (a)</u>	<u>MW #5 (a)</u>	<u>MW #8 (a)</u>	<u>MW #3A (a)</u>	<u>Field (a)</u> <u>Blank</u>	<u>Bailer (a)</u> <u>Blank</u>
Antimony	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Beryllium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cadmium	<0.005*	<0.005*	<0.005*	<0.005	<0.005	<0.005
Chromium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Hex. Chromium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01	--
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Nickel	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thallium	<0.005	<0.005	<0.005	<0.005	<0.005	0.005
Zinc	0.02	<0.02	<0.02	0.07	<0.02	<0.02

(a) Samples obtained 5/14/87.

(b) Samples obtained 5/15/87.

* Corrected for field blank concentration.

TABLE 4 (CONT'D.)

WATER QUALITY DATA

INORGANIC ANALYSES (mg/l)

Filtered

	MW ^(b) #2	MW ^(b) #4	MW ^(b) #6	MW ^(b) #9	MW ^(b) #28A	Field ^(b) Blank	Class GA Groundwater Standards
Antimony	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	—
Arsenic	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.025
Beryllium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	—
Cadmium	0.05	0.05	<0.005	0.009	<0.005	<0.005	0.01
Chromium	0.21	8.12	<0.02	<0.02	<0.02	<0.02	—
Hex. Chromium	—	—	<0.02	<0.02	<0.02	<0.02	0.05
Copper	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	1.0
Cyanide	<0.01	0.30	<0.01	<0.01	<0.01	<0.01	0.2
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.025
Mercury	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.002
Nickel	<0.04	0.08	<0.04	<0.04	<0.04	<0.04	—
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.02
Silver	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05
Thallium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	—
Zinc	0.04	0.07	<0.02	0.02	0.06	<0.02	5.0

(a) Samples obtained 5/14/87

(b) Samples obtained 5/15/87

* Corrected for field blank concentration.

#7. However, cadmium was also detected at 0.005 mg/l in the field and bailer blank samples collected on the first sampling day (5/14/87). Cadmium concentrations detected in monitoring wells 5, 7 and 8 are 7 ug/l, 7 ug/l and 8 ug/l, respectively. The concentration of cadmium shown in Table 4 for these monitoring wells (5, 7 and 8) has been adjusted by subtracting out the concentration of cadmium detected in the field blank and bailer blank samples. Cadmium concentrations identified in wells 2 and 4 exceed the New York State Groundwater Quality Standards for Class GA Water (6 NYCRR Part 703).

Concentrations of total chromium were also detected in monitoring wells 2 and 4, at concentrations of 0.210 mg/l and 8.12 mg/l, respectively. Currently, there are no New York State Groundwater Quality Standards for Class GA Water for total chromium.

Other heavy metals; copper, nickel and zinc were identified at concentrations up to 0.06 mg/l, 0.08 mg/l and 0.07 mg/l, respectively, in several of the shallow monitoring wells. The concentrations at which copper and zinc were detected are significantly below the state's groundwater quality standards. No water quality standards are currently available for nickel. Cyanide was detected at 0.3 mg/l in MW #4. This exceeds the groundwater quality standard of 0.2 mg/l. Cyanide was not identified at the method detection limit in any of the remaining wells.

Analyses for volatile halogenated and non-halogenated organic compounds were performed by gas chromatography. Table 5,

Water Quality Data, Organic Analyses, presents the results of the volatile organic analyses for the well water samples. Table 5 includes only selected parameters. Lab reports are provided in Appendix G.

Volatile organic compounds (VOCs) were detected in monitoring wells 2, 5 and 9. 1,1,1-trichloroethane was detected in monitoring well 2 at a concentration of 0.013 mg/l. Other VOCs identified, 1,1-dichloroethylene and toluene, were each detected at a trace concentration of 0.001 mg/l, and 1,1-dichloroethane at 0.005 mg/l. The concentrations identified are all below available state groundwater discharge limits and groundwater quality standards, as shown in Table 5. Chloroform was also detected in sample MW 5, as well as in the (5/15/87) trip, (5/14/87 and 5/15/87) field and bailer blank samples. The concentration of chloroform in well 5, shown in Table 5, has not been adjusted for blank contamination. Other VOC parameters analyzed for were not detected at the method detection limit.

XII. GROUNDWATER VS. SOIL QUALITY ANALYSIS

As a cross-check procedure, the water analysis can be compared to the selected split-spoon soil samples collected during monitoring well installation. These samples were chosen for analysis based on head space readings using the HNu photoionization analyzer during the well drilling process. Samples corresponding to the highest elevated HNu readings for each of the newly installed wells were submitted to the laboratory for

TABLE 5
WATER QUALITY DATA
ORGANIC ANALYSES (mg/l)

	<u>1,1- Dichloroethylene</u>	<u>1,1- Dichloroethane</u>	<u>Chloroform</u>	<u>1,1,1- Trichloroethane</u>	<u>Benzene</u>	<u>Ethylbenzene</u>	<u>Toluene</u>
Field Blank 5/14/87	<0.001	<0.001	0.008	<0.001	<0.001	<0.001	<0.001
Trip Blank	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bailer Blank	<0.001	<0.001	0.005	<0.001	<0.001	<0.001	<0.001
MW #7	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW #5	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001
MW #8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW #3A	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Field Blank 5/15/87	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
Trip Blank	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001
MW #2	0.001	<0.001	<0.001	0.013	<0.001	<0.001	0.001
MW #4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW #6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MW #9	0.001	0.005	<0.001	0.008	<0.001	<0.001	<0.001
MW #28A	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Groundwater Discharge Limits	--	--	0.100	--	ND	--	--
Class GA Groundwater Standards	--	--	0.100	--	ND	--	--

ND = Non-detectable.

priority pollutant metals, cyanide and volatile halogenated and non-halogenated organics analyses. In instances where only one soil sample was submitted for analysis, the sample with the highest relative HNu reading, collected from the saturated well screen zone, was selected. A list of all soil samples analyzed, labeled with their corresponding depths, is summarized in Table 2, Section IV.

Metals and cyanide analyses of the soil samples were performed using the USEPA E.P. Toxicity extraction procedure. The concentration of extractable metals can be interpreted to represent the quantity of metals leaching from the soils, and can then be compared to groundwater discharge standards.

Six metals, beryllium, cadmium, copper, mercury, nickel and zinc were detected in the soils analysis, as extraction concentrations expressed in mg/l. Two compounds, cadmium and mercury were detected at concentrations above the New York State Groundwater Discharge Standards for Class GA Water. Cadmium was detected at a concentration of 0.03 mg/l in well MW #5 (49 to 51 feet). Mercury was also identified in sample MW #9 (49 to 51 feet) at a concentration of 0.0048 ug/l. NYS groundwater discharge standards for cadmium and mercury are 0.02 mg/l and 0.004 mg/l, respectively. It should be noted that mercury is not a contaminant indicative of Liberty's normal operations.

The extraction concentrations of cadmium and mercury detected in the saturated soil samples do not appear to pose a problem. Water samples collected from MW #5 and MW #9 (see Table 4)

do not show levels of cadmium above the discharge standards. Mercury was not detected at the method detection limit in either of these well water samples.

Beryllium, copper, nickel and zinc were also detected in the soil samples at concentrations up to 0.025 mg/l, 0.27 mg/l, 0.06 mg/l and 0.06 mg/l, respectively. As discussed earlier, state groundwater discharge standards for copper, nickel and zinc are 1.0 mg/l, 2.0 mg/l and 5.0 mg/l, respectively. No standards are currently available for beryllium.

The soil samples were also analyzed for volatile halogenated and non-halogenated organics by gas chromatography. Volatile organics were not detected in any of the soil samples at the method detection limit. This was expected, since no significant levels of volatile organics were detected in any of the groundwater samples. These results appear to correlate with the VOC analyses data for the corresponding well water samples.

XIII. SUMMARY OF ANALYTICAL FINDINGS

Water quality samples indicate the presence of metals, cyanide and volatile organics in the groundwater. Cadmium, chromium and cyanide were detected at levels in excess of groundwater quality standards. Specifically, elevated cadmium and chromium concentrations have been identified in monitoring wells MW 2 and 4, both located immediately downgradient of Liberty's underground holding tanks. Cyanide was detected only in MW 4. It should again be noted that the integrity of these two wells is questionable.

Slightly elevated levels of cadmium were also detected in soil samples collected from MW 5 (56 to 57 feet) and MW 9 (49 to 51 feet). However, since metals tend to adhere to soils, the concentrations of cadmium released to the water do not appear to pose a problem. This is supported by examining the analytical data for water samples collected from Wells MW 5 and MW 9. Concentrations of cadmium detected in these two wells (<0.005 mg/l and 0.009 mg/l) do not exceed groundwater quality standards.

Other heavy metals detected in either the groundwater samples or the soil samples identified in notable concentrations (i.e., copper, nickel and zinc) were within the requisite groundwater quality standards. Regulatory standards or guidelines are not currently available for beryllium.

Volatile organics were detected in three monitoring well samples (MW 2, 5 and 9), but all at trace concentrations. With the exception of 1,1,1-trichloroethane, all were detected at concentrations less than or equal to 0.005 mg/l (see Table 5). 1,1,1-trichloroethane was detected in Wells MW 2 and MW 9 (at 0.013 mg/l and 0.008 mg/l, respectively) which is less than the water quality guidance value of 0.050 mg/l for a Class GA aquifer (6 NYCRR Part 701.15).

Contaminants were not detected at the method detection limit in any of the samples collected from the deep well MW 6. This would indicate that contaminant transport has not migrated downward to the deeper aquifer. This is largely due to the presence of interbedded lenses of clay commonly found in the Magothy aquifer. The difference in permeability between the highly porous

Upper Glacial sand and gravel aquifer and the less permeable Magothy aquifer is effective in retarding vertical contaminant migration. The presence of the intermittent clay layers (see Liberty MW 6 and Brentwood Water District Supply Well 1-4 Well Logs) beneath the site appear in the stratigraphic section beginning at the depth of 150 feet. It is at this depth (150 feet) where the contact between the Glacial and Magothy aquifers is estimated. Groundwater, when passing from material of higher conductivity to lower conductivity will "refract towards the normal" which serves to retard vertical flow.

Discussion of Monitoring Wells No. 2 and No. 4

Water quality samples indicate the presence of metals, cyanide and volatile organics in groundwater; the most contaminated wells being MW 2 and MW 4. Prior to this field investigation, four groundwater monitoring wells (installed by Fenley & Nicole) existed on-site due south of Liberty's underground holding tanks (MW #1-4). The NYSDEC has questioned the integrity of these wells and as such deemed additional on-site wells needed to be installed. Despite the NYSDEC opinion, (relative to the integrity of the wells), groundwater quality samples were obtained from these wells. Both samples revealed measurable quantities of chromium and cadmium. MW 4 revealed an elevated level of cyanide. Immediately downgradient of these wells is MW #9, a newly installed "on-spec" well. This well does not reveal the magnitude of contaminants detected in MW #2 and MW #4. Not to disclaim the validity that groundwater contamination does exist on-site at

Liberty, but based on groundwater contours and water quality at the downgradient wells MW #9 and MW #8, it is not suspected that the operations at Liberty pose a threat to the Brentwood Water District public supply wells, or for that matter the downgradient area. Given the groundwater flow rate and time frame in which the suspected holding tank (Tank #3) release occurred, if a contaminant plume from the Liberty site exists, its impact on the Upper Glacial aquifer downgradient of the site would appear to be minimal.

XIV. H.R.S. SCORE

One objective of the Liberty site investigation study was to obtain sufficient data necessary to tabulate a score using the Hazard Ranking System (HRS). HRS assesses the relative potentials of a release to occur which may be harmful to the public health and/or environment.

In applying the Hazard Ranking System to a hazardous waste facility, three scores, Sm, Sfe and Sdc are assigned. Sm takes into account three potential routes of contaminant migration (via groundwater, surface water and air), and may be used in determining the site's applicability for inclusion into the Federal National Priorities List. Scores Sfe and Sdc are used to determine fire and explosion, and direct contact exposure potential, respectively.

HRS score Sm, for the Liberty site, was determined based solely on the groundwater migration pathway. The aquifers below

the Liberty site are the Upper Glacial sand and gravel aquifer and the Magothy aquifer. The interface between the shallow and deeper aquifer is continuous with no significant layers of impermeable materials present. However, intermittent clay lenses in the Magothy aquifer are apparent. (See MW 6 and Brentwood Water District supply well logs, respectively). Since, based on available well log data, it is not conclusive that a clay layer exists continuously beneath the site, the "aquifer of concern" for the purpose of this ranking will be both the Upper Glacial aquifer and the Magothy aquifer.

The groundwater migration pathway was scored based on the potential for a contaminant from the facility to enter the groundwater system. Chemicals at the facility with the potential of a release were determined based on adequacy of the contaminant systems. The facility contains a total of six (6) underground waste storage tanks. Routine leak tests have been performed on these tanks. With the exception of Tank No. 3, all tanks showed no signs of having leaked. All six tanks have since been upgraded to include an inner liner and/or tank and a leak detection system.

Tank No. 3 was used for the storage of treated rinse waters (Waste-Saver distillate) to be reused within Liberty's metal plating processes. The volume of this tank is 7,000 gallons, equivalent to 127 55-gallon drums. Chemicals evaluated for toxicity and persistence include cadmium, chromium, cyanide and 1,1,1-trichloroethane.

The Magothy is chiefly used to supply area residents with a public drinking water source. Brentwood Water District operates three well fields with a total of five wells within a 3-mile radius of the Liberty site. Wells 1-3 (550 feet deep) and 1-4 (750 feet deep) are located less than 500 feet southwest of the site. Population served by the Brentwood Water District is approximately 20,000 people within a 6.25 square mile area. The Suffolk County Water Authority also operates three pumping stations within a 3-mile radius of the Liberty site. Total population served by both the Brentwood Water District supply system and three Suffolk County Water Authority wells is in excess of 50,000 people. The Upper Glacial aquifer is not used as a potable water source within a 3-mile radius of the site.

Surface water and air migration pathways were negligible. No surface water bodies are within three miles of the site, and therefore eliminates the migration pathway from consideration. Similarly, no observed air release has occurred. Air pathway was also eliminated from evaluation.

The score for groundwater migration pathway Sgw was calculated to be 36.84. The HRS score, Sm for the facility was calculated as 21.29. This score is significantly lower than the score of 28.5 currently used for inclusion into the NPL. Fire and explosion and direct contact exposure potentials are negligible. HRS tabulation forms and documentation are provided in Appendix H.

XV. CONCLUSIONS AND RECOMMENDATIONS

Analyses of groundwater samples collected from on-site and off-site monitoring wells indicate the presence of contaminants indicative of Liberty's operations and activities. However, with the exception of two existing on-site wells (MW #2 and MW #4), contaminant concentrations were within the prescribed groundwater quality standards. It should also be noted that the two wells with contaminant concentrations exceeding discharge standards were of questionable integrity, and monitoring wells further down-gradient (MW #8 and MW #9) exhibited much lower contaminant concentrations. All contaminants in downgradient off-site wells were within groundwater quality standards.

Because some degree of contamination was exhibited in the existing and newly installed shallow on-site wells, we recommend continued monitoring of all on-site and off-site wells. These data would be used to confirm the first round of sampling as well as track any fluctuations in groundwater quality attributable to seasonal variations in groundwater recharge. We recommend that monthly sampling be conducted for three (3) months followed by quarterly sampling for nine (9) months. Monitoring should include volatile organics, priority pollutant metals and cyanide.

APPENDIX A

H2M AND GSA LABORATORY RESULTS

(SEPTEMBER 1984 SAMPLES)

TABLE 1
LAB REPORT SUMMARY

<u>Sampling Location</u>	<u>GCA</u>		<u>H2M</u>	
	<u>Sample No.</u>	<u>Analyses</u>	<u>Lab No.</u>	<u>Analyses</u>
Holding Tank #2	P-184-G18-01A	Metals	462850	Metals & CN
	P-184-G18-01B	CN		
	P-184-G18-01C	Hex.Cr.		
Holding Tank #3	P-184-G18-02A	Metals	462851	Metals & CN
	P-184-G18-02B	CN		
	P-184-G18-02C	Hex.Cr.		
Holding Tank #5	P-184-G18-03A	Metals	462852	Metals & CN
	P-184-G18-03B	CN		
	P-184-G18-03C	Hex.Cr.		
Holding Tank #6	P-184-G18-04A	Metals	462853	Metals & CN
	P-184-G18-04B	CN	462902	VHO
	P-184-G18-04C	pH & Hex.Cr.		
	P-184-G18-04D	E.P. Tox.		
Monitoring Well #1	P-184-G18-05A	Metals	462854	Metals & CN
	P-184-G18-05B	CN	462903	VHO
	P-184-G18-05C	Hex.Cr.		
	P-184-G18-05D	B/N & A		
	P-184-G18-05E	Purgeables		
Sanitary Cesspool	P-184-G18-06A	E.P. Tox.	462855	Metals & CN
	P-184-G18-06B	CN	462904	VHO
	P-184-G18-06C	Hex.Cr.		
	P-184-G18-06D	B/N & A		
	P-184-G18-06E	Purgeables		
Cistern	P-184-G18-07A	E.P. Tox.	462856	Metals & CN
	P-184-G18-07B	CN		
	P-184-G18-07C	Hex.Cr.		
Pipe Discharge	P-184-G18-09A	Metals	462857	Metals
	P-184-G18-09B	CN	462858	E.P. Tox.
	P-184-G18-09C	Hex.Cr. & E.P.Tox.		

NOTES: CN = Cyanide
Hex.Cr. = Hexavalent Chromium
E.P. Tox. = E.P. Toxicity Test
VHO = Volatile Halogenated Organics
B/N & A = Base/Neutral & Acid Extractable Organics
Purgeables = Purgeable Organics

TABLE 2
TANK NO. 2 (UNTREATED RINSE WATERS)
WASTEWATER ANALYSES

<u>PARAMETERS</u>	<u>H2M LAB RESULTS</u>	<u>GCA LAB RESULTS</u>	<u>EFFLUENT LIMITS</u>
I. METALS			
Antimony	-	6.9	-
Arsenic	-	<0.4	0.05
Beryllium	-	0.53	-
Cadmium	3020	1740	0.02
Chromium	2860	3550	1.0
Hex. Chromium	-	49.1	0.1
Copper	710	396	1.0
Lead	38	1.27	0.05
Mercury	-	0.02	0.004
Nickel	178	413	2.0
Selenium	-	6.9	0.04
Silver	-	4.18	0.1
Thallium	-	<0.4	-
Zinc	330	256	5.0
II. CYANIDE	305	21,000 (2.1%)	0.4
III. ORGANICS			
Chloroform	-	-	0.100
Benzene	-	-	Non-Detectable
Ethylbenzene	-	-	-
Methylene Chloride	-	-	-
1,1,1-Trichloroethane	-	-	0.035

All figures are presented in mg/l (ppm)

TABLE 3
TANK NO. 3 (TREATED RINSE WATERS)
WASTEWATER ANALYSES

<u>PARAMETERS</u>	<u>H2M LAB RESULTS</u>	<u>GCA LAB RESULTS</u>	<u>EFFLUENT LIMITS</u>
I. METALS			
Antimony	-	<0.04	-
Arsenic	-	0.04	0.05
Beryllium	-	0.015	-
Cadmium	0.15	0.48	0.02
Chromium	0.45	1.37	1.0
Hex. Chromium	-	0.49	0.1
Copper	0.04	0.64	1.0
Lead	<0.20	0.71	0.05
Mercury	-	0.002	0.004
Nickel	<0.02	0.53	2.0
Selenium	-	<0.02	0.04
Silver	-	<0.014	0.1
Thallium	-	<0.04	-
Zinc	0.03	2.62	5.0
II. CYANIDE	0.08	0.50	0.4
III. ORGANICS			
Chloroform	-	-	0.100
Benzene	-	-	Non-Detectable
Ethylbenzene	-	-	-
Methylene Chloride	-	-	-
1,1,1-Trichloroethane	-	-	0.035

All figures are presented in mg/l (ppm)

TABLE 4
TANK NO. 5 (WASTE SAVER CONCENTRATE)
WASTEWATER ANALYSES

<u>PARAMETERS</u>	<u>H2M LAB RESULTS</u>	<u>GCA LAB RESULTS</u>	<u>EFFLUENT LIMITS</u>
I. METALS			
Antimony	-	1.0	-
Arsenic	-	<0.4	0.05
Beryllium	-	0.02	-
Cadmium	4840	458	0.02
Chromium	8680	764	1.0
Hex. Chromium	-	38	0.1
Copper	790	563	1.0
Lead	80	1.95	0.05
Mercury	-	0.003	0.004
Nickel	920	589	2.0
Selenium	-	1.75	0.04
Silver	-	4.17	0.1
Thallium	-	<0.40	-
Zinc	310	67	5.0
II. CYANIDE	845	15,000 (1.5%)	0.4
III. ORGANICS			
Chloroform	-	-	0.100
Benzene	-	-	Non-Detectable
Ethylbenzene	-	-	-
Methylene Chloride	-	-	-
1,1,1-Trichloroethane	-	-	0.035

All figures are presented in mg/l (ppm)

TABLE 5
TANK NO. 6 (WASTE SAVER CONCENTRATE)
WASTEWATER ANALYSES

<u>PARAMETERS</u>	<u>H2M LAB RESULTS</u>	<u>GCA LAB RESULTS</u>		<u>EFFLUENT LIMITS</u>
I. METALS		<u>TOTAL</u>	<u>E.P. TOX.</u>	
Antimony	-	1.5	-	-
Arsenic	-	<0.40	<0.02	0.05
Beryllium	-	0.25	-	-
Cadmium	3200	2770	2480	0.02
Chromium	1210	1130	-	1.0
Hex. Chromium	-	2.12	2.50	0.1
Copper	52.0	37.9	-	1.0
Lead	20.0	7.02	5.2	0.05
Mercury	-	0.010	0.0086	0.004
Nickel	128	71.3	-	2.0
Selenium	-	<0.20	<0.02	0.04
Silver	-	<0.14	0.01	0.1
Thallium	-	<0.4	-	-
Zinc	180	184	-	5.0
II. CYANIDE	89.0	-	-	0.4
III. ORGANICS				
Chloroform	<0.003	-	-	0.100
Benzene	-	-	-	Non-Detectable
Ethylbenzene	-	-	-	-
Methylene Chloride	<0.003	-	-	-
1,1,1-Trichloro-ethane	<0.020	-	-	0.035

All figures are presented in mg/l (ppm)

TABLE 6
MONITORING WELL (GROUNDWATER)
WASTEWATER ANALYSES

<u>PARAMETERS</u>	<u>H2M LAB RESULTS</u>	<u>GCA LAB RESULTS</u>	<u>EFFLUENT LIMITS</u>
I. METALS			
Antimony	-	0.12	-
Arsenic	-	<0.04	0.05
Beryllium	-	0.009	-
Cadmium	0.07	0.24	0.02
Chromium	1.49	2.01	1.0
Hex. Chromium	-	1.51	0.1
Copper	<0.02	0.37	1.0
Lead	<0.20	0.22	0.05
Mercury	-	<0.001	0.004
Nickel	<0.02	0.23	2.0
Selenium	-	<0.02	0.04
Silver	-	<0.014	0.1
Thallium	-	<0.04	-
Zinc	0.04	0.38	5.0
II. CYANIDE	<0.01	<0.20	0.4
III. ORGANICS			
Chloroform	<0.002	0.051	0.100
Benzene	-	0.013	Non-Detectable
Ethylbenzene	-	0.007	-
Methylene Chloride	<0.002	<0.005	-
1,1,1-Trichloro-ethane	<0.008	<0.005	0.035

All figures are presented in mg/l (ppm)

TABLE 7
SANITARY CESSPOOL
WASTEWATER ANALYSES

<u>PARAMETERS</u>	<u>H2M LAB RESULTS</u>	<u>GCA LAB RESULTS</u>		<u>EFFLUENT LIMITS</u>
I. METALS		<u>TOTAL</u>	<u>E.P.TOX.</u>	
Antimony	-	-	-	-
Arsenic	0.160	-	<0.02	0.05
Beryllium	-	-	-	-
Cadmium	33.0	-	0.533	0.02
Chromium	0.23	-	-	1.0
Hex. Chromium	-	0.105	0.039	0.1
Copper	35.9	-	-	1.0
Lead	6.0	-	<0.02	0.05
Mercury	-	-	<0.0005	0.004
Nickel	3.58	-	-	2.0
Selenium	0.060	-	<0.02	0.04
Silver	6.0	-	<0.001	0.1
Thallium	-	-	-	-
Zinc	17.0	-	-	5.0
II. CYANIDE	0.66		0.80	0.4
III. ORGANICS				
Chloroform	0.003	<0.005		0.100
Benzene	-	<0.005	Non-Detectable	
Ethylbenzene	-	<0.005		-
Methylene Chloride	<0.003	<0.005		-
1,1,1-Trichloro-ethane	1.800	3.827		0.035

All figures are presented in mg/l (ppm)

TABLE 8
CISTERN (STORMWATER DRY WELL)
WASTEWATER ANALYSES

<u>PARAMETERS</u>	<u>H2M LAB RESULTS</u>	<u>GCA LAB RESULTS</u>	<u>EFFLUENT LIMITS</u>
I. METALS		<u>TOTAL</u> <u>E.P.TOX.</u>	
Antimony	-	-	-
Arsenic	-	-	<0.02 0.05
Beryllium	-	-	-
Cadmium	0.29	-	0.086 0.02
Chromium	0.37	-	- 1.0
Hex. Chromium	-	0.152	0.008 0.1
Copper	0.20	-	- 1.0
Lead	6.0	-	<0.02 0.05
Mercury	-	-	<0.0005 0.004
Nickel	0.19	-	- 2.0
Selenium	-	-	<0.02 0.04
Silver	-	-	<0.001 0.1
Thallium	-	-	-
Zinc	1.29	-	- 5.0
II. CYANIDE	<0.01	<0.2	0.4
III. ORGANICS			
Chloroform	-	-	0.100
Benzene	-	-	Non-Detectable
Ethylbenzene	-	-	-
Methylene Chloride	-	-	-
1,1,1-Trichloro-ethane	-	-	0.035

All figures are presented in mg/l (ppm)

TABLE 9
PIPE DISCHARGE
WASTEWATER ANALYSES

<u>PARAMETERS</u>		<u>H2M LAB RESULTS</u>		<u>GCA LAB RESULTS</u>	<u>EFFLUENT LIMITS</u>
I.	METALS	<u>WATER</u>	<u>SOIL</u>	<u>WATER & SOIL</u>	
		<u>(TOTAL)</u>	<u>(E.P.TOX.)</u>	<u>TOTAL</u>	<u>E.P.TOX.</u>
	Antimony	-	-	0.084	-
	Arsenic	-	-	<0.04	<0.02
	Beryllium	-	-	0.003	-
	Cadmium	4.0	3.04	0.005	0.343
	Chromium	0.31	0.20	0.052	-
	Hex. Chrom.	-	-	0.21	0.025
	Copper	8.3	-	0.48	-
	Lead	5.0	<0.2	<0.10	<0.02
	Mercury	-	<0.0005	<0.001	<0.0005
	Nickel	4.5	-	0.028	-
	Selenium	-	<0.002	0.4	<0.02
	Silver	-	0.06	<0.014	<0.001
	Thallium	-	-	<0.04	-
	Zinc	18.0	-	0.06	-
II.	CYANIDE		-	<0.2	0.4
III.	ORGANICS				
	Chloroform		-	-	0.100
	Benzene		-	-	Non-Detectable
	Ethylbenzene		-	-	-
	Methylene Chloride		-	-	-
	1,1,1-Trichloro-ethane		-	-	0.035

All figures are presented in mg/l (ppm)

APPENDIX B

POST-REMEDIATION LABORATORY REPORTS

(JULY 1985 SAMPLES)

LIBERTY INDUSTRIAL FINISHING CORP.

7/18/85

PUMP OUT

SOIL SAMPLE LOCATIONS

Leaching Pool #1:

- 1) Side wall sample #1 - north leaching port
- 2) Side wall sample #2 - west leaching port
- 3) Side wall sample #3 - south leaching port
- 4) Side wall sample #4 - east leaching port
- 5) Bottom sample

Leaching Pool #2:

- 1) Side wall sample #1 - north leaching port
- 2) Side wall sample #2 - west leaching port
- 3) Side wall sample #3 - south leaching port
- 4) Side wall sample #4 - east leaching port
- 5) Bottom sample

Storm Drain:

- 1) Side wall sample #1 - north side
- 2) Side wall sample #2 - west side
- 3) Side wall sample #3 - south side
- 4) Side wall sample #4 - east side
- 5) Bottom sample



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575 BROAD HOLLOW ROAD, MELVILLE, N.Y. 11747 • 516-694-3040

CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788
c/o Clayton, Miller & Mayer

Lab No. 559206
Type: Misc.
Point: Leaching Pool #1 Side Wall Sample #1
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg	Dry Weight
Chloromethane	ND	Method limit of detection:
Bromomethane	ND	lower than 10 ug/kg.
Vinyl Chloride	ND	
Chloroethane	ND	
Methylene Chloride	ND	Quantification limit: 10 ug/kg.
Trichlorofluoromethane	ND	
1,1-dichloroethene	ND	ND - Not detected, under
1,1-dichloroethane	ND	quantification limit.
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	
1,1,1-trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

* *S.C. McLendon* *

S.C. McLendon, P.E.
Lab Director



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575 BROAD HOLLOW ROAD, MELVILLE, N.Y. 11747 • 516-694-3040

CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559207
Type: Misc.
Point: Leaching Pool #1 Side Wall Sample #2
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	ND	Method limit of detection: lower than 10 ug/kg.
Bromomethane	ND	
Vinyl Chloride	ND	Quantification limit: 10 ug/kg.
Chloroethane	ND	
Methylene Chloride	ND	ND - Not detected, under quantification limit.
Trichlorofluoromethane	ND	
1,1-dichloroethene	ND	
1,1-dichloroethane	ND	
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	
1,1,1-trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

S.C. McLendon

S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY-11788

Lab No. 559208
Type: Misc.
Point: Leaching Pool #1 Side Wall Sample #3
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	ND	Method limit of detection: lower than 10 ug/kg.
Bromomethane	ND	
Vinyl Chloride	ND	Quantification limit: 10 ug/kg.
Chloroethane	ND	
Methylene Chloride	ND	ND - Not detected, under quantification limit.
Trichlorofluoromethane	ND	
1,1-dichloroethene	ND	
1,1-dichloroethane	ND	
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	
1,1,1-trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

S.C. McLendon

S.C. McLendon, P.E.
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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559209
Type: Misc.
Point: Leaching Pool #1 Side Wall Sample #4
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	ND	Method limit of detection: lower than 10 ug/kg.
Bromomethane	ND	
Vinyl Chloride	ND	
Chloroethane	ND	Quantification limit: 10 ug/kg.
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-dichloroethene	ND	ND - Not detected, under quantification limit.
1,1-dichloroethane	ND	
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	
1,1,1-trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

S.C. McLendon

S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559210
Type: Misc.
Point: Leaching Pool #1 - Bottom Sample
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	ND	Method limit of detection:
Bromomethane	ND	lower than 10 ug/kg.
Vinyl Chloride	ND	
Chloroethane	ND	
Methylene Chloride	ND	Quantification limit: 10 ug/kg.
Trichlorofluoromethane	ND	
1,1-dichloroethene	ND	ND - Not detected, under
1,1-dichloroethane	ND	quantification limit.
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	
1,1,1-trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

S.C. McLendon

S.C. McLendon, P.E.
Lab Director



Environmental Engineers & Scientists

HOLZMACHER, McLENDON and MURRELL, P.C.

575 BROAD HOLLOW ROAD, MELVILLE, NEW YORK 11747 (516) 694-3040

WATER RESOURCES • WATER SUPPLY & TREATMENT • SEWERAGE & TREATMENT • ECOLOGICAL & IMPACT STUDIES
MODEL STUDIES • PILOT PLANT STUDIES • WATER/WASTE WATER LABORATORY AND ANALYTICAL SERVICESLABORATORY
REPORT

LAB NO. 559222

PROJECT NO. LIBT 83-01 LA

CLIENT'S NAME AND ADDRESS

LIBERTY IND. FINISHING CORP.

38 KINGS HWY.

HAUPPAUGE, NY 11788

TYPE OF SAMPLE - MISCELLANEOUS

DATE COLLECTED - 7/18/85

COLLECTED BY KMR 03

DATE RECEIVED - 7/18/85

E.P. TOXICITY PROCEDURE
PRIORITY POLLUTANT METALS
LEACHING POOL #1 - BOTTOM SAMPLE

PARAM-ETER	RESULT	PARAM-ETER	RESULT
------------	--------	------------	--------

ANTI-MONY	<0.20	SELEN-IUM	<2.00#
-----------	-------	-----------	--------

ARSENIC	<2.00#	SILVER	<0.02
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BERYL-LIUM	<0.02	THAL-LIUM	<0.20
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CADMIUM	<0.02	ZINC	0.04
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CHROM-IUM	<0.02	HEX. CHROM.	<0.02
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COPPER	0.02		
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LEAD	<0.20		
------	-------	--	--

MERCURY	<0.30#		
---------	--------	--	--

NICKEL	<0.02		
--------	-------	--	--

REMARKS - C/O/ CLAYTON, MILLER, & MAYER

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND
T.COLI BACT. & FECAL COLI (MPN/100ML)
COLOR, ODOR, TURBIDITY & PH (UNITS)
APC & FECAL STREP (COUNTS/ML)
SPEC.COND. (UMHOS) SETT.SOLIDS (ML/L)

DATE REPORTED 8/19/85

S.C. McLENDON, P.E., LABORATORY DIRECTOR



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Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559211
Date Collected: 7/18/85
Date Received: 7/18/85
Type: Misc.
Point: Leaching Pool #2 Side wall Sample #1
Collected By: KMR 03

PURGEABLE ORGANICS - PRIORITY POLLUTANTS

Compound	Dry Weight ug/kg	
Chloromethane	2) ND	
Bromomethane	ND	
Dichlorodifluoromethane	ND	
Vinyl chloride	ND	Method limit of detection:
Chloroethane	ND	10 ug/kg.
Methylene chloride	ND	
Trichlorofluoromethane	ND	Quantification limit: 10 ug/kg.
1,1-dichloroethene	20	
1,1-dichloroethane	ND	ND - Under detection limit.
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	1) Method limit of detection:
1,2-dichloroethane	ND	100 ug/kg.
1,1,1-trichloroethane	3) ND	
Carbon tetrachloride	ND	2) Quantification limit in presence
Bromodichloromethane	ND	of interference: 25 ug/kg.
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	3) Quantification limit in presence
Trichloroethene	ND	of interference: 15 ug/kg.
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	48	
Chlorobenzene	ND	
Ethylbenzene	ND	
Acrolein	1) ND	
Acrylonitrile	1) ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/22/85

* 7/18/85 *

S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559212
Type: Misc.
Point: Leaching Pool #2 Side Wall Sample #2
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg	Dry Weight
Chloromethane	ND	Method limit of detection: lower than 10 ug/kg.
Bromomethane	ND	
Vinyl Chloride	ND	Quantification limit: 10 ug/kg.
Chloroethane	ND	
Methylene Chloride	ND	ND - Not detected, under quantification limit.
Trichlorofluoromethane	ND	
1,1-dichloroethene	83	
1,1-dichloroethane	27	
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
2-dichloroethane	72	
1,1,1-trichloroethane	50	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

S.M. McLendon

S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559213
Type: Misc.
Point: Leaching Pool #2 Side Wall Sample #3
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg	Dry Weight
Chloromethane	ND	Method limit of detection: lower than 10 ug/kg.
Bromomethane	ND	
Vinyl Chloride	ND	
Chloroethane	ND	Quantification limit: 10 ug/kg.
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-dichloroethene	40	ND - Not detected, under quantification limit.
1,1-dichloroethane	48	
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	
1,1,1-trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	17	
Toluene	33	
Chlorobenzene	ND	
Ethylbenzene	12	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

* *G.C. McLendon* *

G.C. McLendon, P.E.
Lab Director



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575 BROAD HOLLOW ROAD, MELVILLE, N.Y. 11747 • 516-694-3040

CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559214
Type: Misc.
Point: Leaching Pool #2 - Side Wall Sample #4
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	ND	Method limit of detection: lower than 10 ug/kg.
Bromomethane	ND	
Vinyl Chloride	ND	
Chloroethane	ND	Quantification limit: 10 ug/kg.
Methylene Chloride	ND	
Trichlorofluoromethane	ND	
1,1-dichloroethene	470	ND - Not detected, under quantification limit.
1,1-dichloroethane	ND	
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	
1,1,1-trichloroethane	440	
Carbon Tetrachloride	54	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	17	
Toluene	25	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

J. McLendon

S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY-11788

Lab No. 559215
Type: Misc.
Point: Leaching Pool #2 Bottom Sample
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight
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Chloromethane	ND
Bromomethane	ND
Vinyl Chloride	ND
Chloroethane	ND
Methylene Chloride	ND
Trichlorofluoromethane	ND
1,1-dichloroethene	13
1,1-dichloroethane	ND
Cis/Trans-1,2-dichloroethene	ND
Chloroform	ND
1,2-dichloroethane	ND
1,1,1-trichloroethane	ND
Carbon Tetrachloride	ND
Bromodichloromethane	ND
1,2-dichloropropane	ND
Trans-1,3-dichloropropane	ND
Trichloroethene	ND
Dibromochloromethane	ND
1,1,2-trichloroethane	ND
Cis-1,3-dichloropropane	ND
Benzene	ND
2-chloroethylvinyl ether	ND
Bromoform	ND
1,1,2,2-tetrachloroethane	ND
Tetrachloroethene	ND
Toluene	ND
Chlorobenzene	ND
Ethylbenzene	ND
1,2-dichlorobenzene	ND
1,3-dichlorobenzene	ND
1,4-dichlorobenzene	ND

Method limit of detection:
lower than 10 ug/kg.

Quantification limit: 10 ug/kg.

ND - Not detected, under
quantification limit.

Date Reported: 8/13/85

S.C. McLendon

S.C. McLendon, P.E.
Lab Director



Environmental Engineers & Scientists

HOLZMACHER, McLENDON and MURRELL, P.C.

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MODEL STUDIES • PILOT PLANT STUDIES • WATER/WASTE WATER LABORATORY AND ANALYTICAL SERVICESLABORATORY
REPORT

LAB NO. 559224

PROJECT NO. LIBT 83-01 LA

CLIENT'S NAME AND ADDRESS

LIBERTY IND. FINISHING CORP.

38 KINGS HWY.

HAUPPAUGE, NY 11788

TYPE OF SAMPLE - MISCELLANEOUS

DATE COLLECTED - 7/18/85

COLLECTED BY KMR 03

DATE RECEIVED - 7/18/85

E.P. TOXICITY PROCEDURE
PRIORITY POLLUTANT METALS
LEACHING POOL #2 - BOTTOM SAMPLE

PARAM-ETER	RESULT	PARAM-ETER	RESULT
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ANTI-MONY	<0.20	SELENIUM	<2.00#
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ARSENIC	<2.00#	SILVER	<0.02
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BERYLLIUM	<0.02	THALLIUM	<0.20
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CADMIUM	0.05	ZINC	0.10
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CHROMIUM	<0.02	HEX. CHROM.	<0.02
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COPPER	0.08		
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LEAD	<0.20		
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MERCURY	<0.30#		
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NICKEL	0.04		
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REMARKS - C/O CLAYTON, MILLER, & MAYER

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND
 T.COLI BACT. & FECAL COLI (MPN/100ML)
 COLOR, ODOR, TURBIDITY & PH (UNITS)
 APC & FECAL STREP (COUNTS/ML)
 SPEC.COND. (UMHOS) SETT.SOLIDS (ML/L)

DATE REPORTED 8/19/85

S. C. McLENDON, P.E., LABORATORY DIRECTOR



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575 BROAD HOLLOW ROAD, MELVILLE, N.Y. 11747 • 516-694-3040

CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559216
Type: Misc.
Point: Storm Drainage - Side Wall #1
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	1) ND	Method limit of detection:
Bromomethane	ND	lower than 10 ug/kg.
Vinyl Chloride	ND	
Chloroethane	ND	
Methylene Chloride	ND	Quantification limit: 10 ug/kg.
Trichlorofluoromethane	ND	
1,1-dichloroethene	14	ND - Not detected, under
1,1-dichloroethane	ND	quantification limit.
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	1) Quantification limit in
1,1,1-trichloroethane	ND	presence of interference: 30 ug/kg.
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

S.C. McLendon

S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559217
Type: Misc.
Point: Storm Drainage - Side Wall #2
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	1) ND	Method limit of detection:
Bromomethane	ND	lower than 10 ug/kg.
Vinyl Chloride	ND	
Chloroethane	ND	
Methylene Chloride	ND	Quantification limit: 10 ug/kg.
Trichlorofluoromethane	ND	
1,1-dichloroethene	ND	ND - Not detected, under
1,1-dichloroethane	ND	quantification limit.
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	1) Quantification limit in
1,1,1-trichloroethane	ND	presence of interference: 20 ug/kg.
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85



S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559218
Type: Misc.
Point: Storm Drainage - Side Wall #3
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	ND	Method limit of detection:
Bromomethane	ND	lower than 10 ug/kg.
Vinyl Chloride	ND	
Chloroethane	ND	
Methylene Chloride	ND	Quantification limit: 10 ug/kg.
Trichlorofluoromethane	ND	
1,1-dichloroethene	ND	ND - Not detected, under
1,1-dichloroethane	ND	quantification limit.
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	1) Quantification limit in
1,2-dichloroethane	ND	presence of interference 15 ug/kg.
1,1,1-trichloroethane	1) ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy.
Hauppauge, NY 11788

Lab No. 559219
Type: Misc.
Point: Storm Drainage Side Wall #4
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	ND	Method limit of detection:
Bromomethane	ND	lower than 10 ug/kg.
Vinyl Chloride	ND	
Chloroethane	ND	
Methylene Chloride	ND	Quantification limit: 10 ug/kg.
Trichlorofluoromethane	ND	
1,1-dichloroethene	ND	ND - Not detected, under
1,1-dichloroethane	ND	quantification limit.
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	
1,2-dichloroethane	ND	
1,1,1-trichloroethane	ND	
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85

J.M. McLendon

S.C. McLendon, P.E.
Lab Director



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CLIENT NAME AND ADDRESS

Liberty Ind. Finishing Corp.
38 Kings Hwy. •
Hauppauge, NY 11788

Lab No. 559220
Type: Misc.
Point: Storm Drainage Bottom Sample
Date Collected: 7/18/85
Date Received: 7/18/85
Collected By: KMR 03

PURGEABLE ORGANICS PRIORITY POLLUTANTS

Compound	ug/kg Dry Weight	
Chloromethane	ND	Method limit of detection:
Bromomethane	ND	lower than 10 ug/kg.
Vinyl Chloride	ND	
Chloroethane	ND	
Methylene Chloride	ND	Quantification limit: 10 ug/kg.
Trichlorofluoromethane	ND	
1,1-dichloroethene	11	ND - Not detected, under
1,1-dichloroethane	ND	quantification limit.
Cis/Trans-1,2-dichloroethene	ND	
Chloroform	ND	1) Quantification limit in
1,2-dichloroethane	ND	presence of interference lower
1,1,1-trichloroethane	1) ND	than 25 ug/kg.
Carbon Tetrachloride	ND	
Bromodichloromethane	ND	
1,2-dichloropropane	ND	
Trans-1,3-dichloropropene	ND	
Trichloroethene	ND	
Dibromochloromethane	ND	
1,1,2-trichloroethane	ND	
Cis-1,3-dichloropropene	ND	
Benzene	ND	
2-chloroethylvinyl ether	ND	
Bromoform	ND	
1,1,2,2-tetrachloroethane	ND	
Tetrachloroethene	ND	
Toluene	ND	
Chlorobenzene	ND	
Ethylbenzene	ND	
1,2-dichlorobenzene	ND	
1,3-dichlorobenzene	ND	
1,4-dichlorobenzene	ND	

Date Reported: 8/13/85



S.C. McLendon, P.E.
Lab Director



Environmental Engineers & Scientists

HOLZMACHER, McLENDON and MURRELL, P.C.

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REPORT

LAB NO. 559226

PROJECT NO. LIBT 83-01 LA

CLIENT'S NAME AND ADDRESS

LIBERTY IND. FINISHING CORP.

38 KINGS HWY.

HAUPPAUGE, NY 11788

TYPE OF SAMPLE - MISCELLANEOUS

DATE COLLECTED - 7/18/85

COLLECTED BY KHR 03

DATE RECEIVED - 7/18/85

E.P. TOXICITY PROCEDURE
PRIORITY POLLUTANT METALS
STORM DRAINAGE - BOTTOM SAMPLE

PARAM-ETER	RESULT	PARAM-ETER	RESULT
------------	--------	------------	--------

ANTI-MONY	<0.20	SELEN-IUM	<2.00#
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ARSENIC	<2.00#	SILVER	<0.02
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BERYL-LIUM	<0.02	THAL-LIUM	<0.20
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CADMIUM	<0.02	ZINC	0.05
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CHROM-IUM	<0.02	HEX. CHROM.	<0.02
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COPPER	<0.02		
--------	-------	--	--

LEAD	<0.20		
------	-------	--	--

MERCURY	<0.30#		
---------	--------	--	--

NICKEL	<0.02		
--------	-------	--	--

REMARKS - C/O CLAYTON, MILLER, & HAYER

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND
T.COLI BACT. & FECAL COLI (MPN/100ML)
COLOR, ODOR, TURBIDITY & PH (UNITS)
APC & FECAL STREP (COUNTS/ML)
SPEC.COND. (UMHOS) SETT.SOLIDS (ML/L)

DATE REPORTED 8/19/85

S. McLENDON, P.E., LABORATORY DIRECTOR

APPENDIX C

DRILLER'S TEST BORING RESULTS

JOB LOCATION: <u>Brentwood N.Y.</u> 	WARREN GEORGE. INC. FOOT OF JERSEY AVENUE P. O. BOX 413 JERSEY CITY, N.J. 07303 FOR: <u>Liberty Industries</u>	SHEET <u>1</u> OF <u>8</u> LOCATION <u>Brentwood N.Y.</u> HOLE NO. <u>MW-6</u> LINE & STA. _____ OFFSET _____
--	---	---

DEPTH _____ FT. CASING OUT DATE: _____	DATE, START: <u>4/8/87</u>	GROUND ELEVATION _____
DEPTH _____ FT. ALL CASING OUT DATE: _____	DATE, FINISH: <u>4/17/87</u>	GROUND WATER ELEVATION _____

CASING O.D. <u>6" Auger</u> I.D. _____ SAMPLER O.D. <u>2"</u> I.D. _____ DIAMOND BIT SIZE _____	WEIGHT OF HAMMER <u>300-140</u> LBS. INSIDE LENGTH OF SAMPLER _____ IN.	HAMMER FALL _____ CASING <u>24"</u> SAMPLER <u>30"</u>
---	--	---

DEPTH BELOW SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
0		1	0'-2'		2-	1-	1-1			
		2	5'-7'		9-	13-	13-9			Light brown medium to coarse Sand, cobbles, some medium Gravel
10		3	10'-12'		10-	20-	31-39			0'-10'
		4	15'-17'		18-	30-	42-44			
20		5	20'-22'		11-	22-	25-22			Light brown medium to coarse Sand, medium Gravel
		6	25'-27'		21-	26-	36-39			10'-28'
30		7	30'-32'		22-	36-	41-36			Light brown medium to coarse Sand, some Cobbles
		8	35'-37'		30-	38-	46-54			28'-35'
40										

Soils Engineer: _____	Driller: <u>Victor Aimar</u>
Drilling Inspector: _____	Helper: <u>Don McMahon</u>

JOB LOCATION: <u>Brentwood N.Y.</u>	WARREN GEORGE. INC. FOOT OF JERSEY AVENUE P. O. BOX 413 JERSEY CITY, N.J. 07303	SHEET <u>2</u> OF <u>8</u> LOCATION <u>Brentwood N.Y.</u> HOLE NO. <u>MW-6</u> LINE & STA. _____ OFFSET _____
FOR: <u>Liberty Industries</u>		

DEPTH _____ FT.	FT. CASING OUT DATE: _____	DATE, START: <u>4/8/87</u>	GROUND ELEVATION _____
DEPTH _____ FT.	ALL CASING OUT DATE: _____	DATE, FINISH: <u>4/17/87</u>	GROUND WATER ELEVATION _____
CASING O.D. <u>6" Auger</u> I.D. _____ SAMPLER O.D. <u>2"</u> I.D. _____ DIAMOND BIT SIZE _____		WEIGHT OF HAMMER <u>300-140</u> LBS. INSIDE LENGTH OF SAMPLER _____ IN.	HAMMER FALL _____ CASING <u>24"</u> SAMPLER <u>30"</u>

DEPTH BELOW SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
40		9	40'-42'		27-	39-	38-32			
		10	45'-47'		29-	26-	52-52			
10		11	50'-52'		17-	27-	28-39			
		12	55'-57'		25-	30-	32-19			
20										
60		13	60'-62'		21-	34-	28-38			
		14	65'-67'		34-	47-	38-38			
30										
70		15	70'-72'		30-	35-	38-35			
		16	75'-77'		34-	41-	40-43			

Soils Engineer: _____	Driller: <u>Victor Aimar</u>	
Drilling Inspector: _____	Helper: <u>Don McMahon</u>	

JOB LOCATION:

Brentwood N.Y.

WARREN GEORGE. INC.

FOOT OF JERSEY AVENUE

P. O. BOX 413

JERSEY CITY, N.J. 07303

FOR:

Liberty Industries

SHEET 3 OF 8

LOCATION Brentwood N.Y.

HOLE NO. MW-6

LINE & STA.

OFFSET

DEPTH _____ FT. _____ FT. CASING OUT DATE: _____

DATE, START: 4/8/87

GROUND ELEVATION _____

DEPTH _____ FT. ALL CASING OUT DATE: _____

DATE, FINISH: 4/17/87

GROUND WATER ELEVATION _____

CASING O.D. 6" Auger I.D. _____

WEIGHT OF HAMMER 300-140 LBS.

HAMMER FALL

SAMPLER O.D. 2" I.D. _____

INSIDE LENGTH OF SAMPLER _____ IN.

CASING 24" SAMPLER 30"

DIAMOND BIT SIZE _____

DEPTH BEL- ON SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
80		17	80'-82'		22-	21-	23-25			Brown medium to coarse Sand, some Gravel
										60'-85'
		18	85'-87'		23-	25-	35-32			Brown medium to coarse Sand, Cobbles
										85'-90'
90		19	90'-92'		36-	35-	47-47			
		20	95'-97'		32-	50-	68-66			
100		21	100'-102'		20-	21-	18-23			
		22	105'-107'		38-	42-	48-57			
110		23	110'-112'		23-	31-	50-50			
		24	115'-117'		38-	42-	58-57			
120										

Soils Engineer: _____

Driller: _____

Victor Aimar

Drilling Inspector: _____

Helper: _____

Don McMahon

JOB LOCATION: <u>Brentwood N.Y.</u>		WARREN GEORGE. INC. FOOT OF JERSEY AVENUE P. O. BOX 413 JERSEY CITY, N.J. 07303		SHEET <u>4</u> OF <u>8</u> LOCATION <u>Brentwood N.Y.</u> HOLE NO. <u>MW-6</u> LINE & STA. _____ OFFSET _____	
FOR: <u>Liberty Industries</u>					
DEPTH _____ FT. _____ FT. CASING OUT DATE: _____		DATE, START: <u>4/8/87</u>		GROUND ELEVATION _____	
DEPTH _____ FT. ALL CASING OUT DATE: _____		DATE, FINISH: <u>4/17/87</u>		GROUND WATER ELEVATION _____	
CASING O.D. <u>6" Auger</u> I.D. _____ SAMPLER O.D. <u>2"</u> I.D. _____ DIAMOND BIT SIZE _____		WEIGHT OF HAMMER <u>300-140</u> LBS. INSIDE LENGTH OF SAMPLER _____ IN.		HAMMER FALL _____ CASING <u>24"</u> SAMPLER <u>30"</u>	

DEPTH BELOW SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 5" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
0										
120		25	120'-122'		31-	40-	34-30			
		26	125'-126'6"		25-	73-	80			
10										
130		27	130'-132'		27-	51-	62-67			
		28	135'-137'		35-	43-	63-68			
20										
140		29	140'-141'5"		61-	98-	100/5"			
		30	145'-147'		35-	54-	54-48			
30										
150		31	150'-152'		38-	40-	34-60			
		32	155'-156'6"		40-	77-	74			
40										
160										

Soils Engineer: _____ Drilling Inspector: _____	Driller: <u>Victor Aimar</u> Helper: <u>don McMahon</u>
--	--

JOB LOCATION: <u>Brentwood N.Y.</u>		WARREN GEORGE. INC. FOOT OF JERSEY AVENUE P. O. BOX 413 JERSEY CITY, N.J. 07303 FOR: <u>Liberty Industries</u>			SHEET <u>5</u> OF <u>8</u> LOCATION <u>Brentwood N.Y.</u> HOLE NO. <u>MIV-6</u> LINE & STA. _____ OFFSET _____	
DEPTH _____ FT. _____ FT. CASING OUT DATE: _____ DEPTH _____ FT. ALL CASING OUT DATE: _____		DATE, START: <u>4/8/87</u> DATE, FINISH: <u>4/17/87</u>		GROUND ELEVATION _____ GROUND WATER ELEVATION _____		
CASING O.D. <u>6" Auger</u> I.D. _____ SAMPLER O.D. <u>2"</u> I.D. _____ DIAMOND BIT SIZE _____		WEIGHT OF HAMMER <u>300-140</u> LBS. INSIDE LENGTH OF SAMPLER _____ IN.		HAMMER FALL _____ CASING <u>24"</u> SAMPLER <u>30"</u>		

DEPTH BEL- ON SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
0										
160		33	160'-162'		45-	48-	68-62			
		34	165'-166'6"		38-	44-	84			
10		35	170'-171'6"		35-	78-	90			
170										
		36	175'-175'11"		76-	100'5"				
20										
180		37	180'-182'		34-	53-	62-67			
		38	185'-186'6"		40-	82-	86			
30										
190		39	190'-192'		28-	35-	50-73			
		40	195'-197'		30-	53-	54-60			
40										
200										

Soils Engineer: _____	Driller: <u>Victor Aimar</u>
Drilling Inspector: _____	Helper: <u>Don McMahon</u>

JOB LOCATION: <u>Brentwood N.Y.</u>		WARREN GEORGE. INC. FOOT OF JERSEY AVENUE P. O. BOX 413 JERSEY CITY, N.J. 07303		SHEET <u>6</u> OF <u>6</u> LOCATION <u>Brentwood N.Y.</u> HOLE NO. <u>MW-6</u> LINE & STA. _____ OFFSET _____	
		FOR: <u>Liberty Industries</u>			
DEPTH _____ FT. _____ FT. CASING OUT DATE: _____		DATE, START: <u>4/8/87</u>		GROUND ELEVATION _____	
DEPTH _____ FT. ALL CASING OUT DATE: _____		DATE, FINISH: <u>4/17/87</u>		GROUND WATER ELEVATION _____	
CASING O.D. <u>6" Auger</u> I.D. _____ SAMPLER O.D. <u>2"</u> I.D. _____ DIAMOND BIT SIZE _____		WEIGHT OF HAMMER <u>300-140</u> LBS. INSIDE LENGTH OF SAMPLER _____ IN.		HAMMER FALL _____ CASING <u>24"</u> SAMPLER <u>30"</u>	

DEPTH BEL- OW SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
0										
200		41	200'-202'		20-	31-	26-58			
		42	205'-207'		27-	35-	44-43			
10										
210		43	210'-212'		38-	31-	28-31			
		44	215'-217'		35-	52-	63-74			
20										
220		45	220'-222'		18-	33-	56-62			
		46	225'-227'		30-	46-	62-68			
30										
230		47	230'-231'5"		56-	83-	100/5"			
		48	235'-236'		73-	126/6"				
40										
240										

Soils Engineer: _____ Drilling Inspector: _____	Driller: <u>Victor Aimar</u> Helper: <u>Don McMahon</u>
--	--

JOB LOCATION: <u>Brentwood N.Y.</u>	WARREN GEORGE. INC. FOOT OF JERSEY AVENUE P. O. BOX 413 JERSEY CITY, N.J. 07303	SHEET <u>7</u> OF <u>8</u> LOCATION <u>Brentwood N.Y.</u> HOLE NO. <u>MW-6</u> LINE & STA. _____ OFFSET _____
FOR: <u>Liberty Industries</u>		

DEPTH _____ FT. FT. CASING OUT DATE: _____	DATE, START: <u>4/8/87</u>	GROUND ELEVATION _____
DEPTH _____ FT. ALL CASING OUT DATE: _____	DATE, FINISH: <u>4/17/87</u>	GROUND WATER ELEVATION _____
CASING O.D. <u>6" Auger</u> I.D. _____ SAMPLER O.D. <u>2"</u> I.D. _____ DIAMOND BIT SIZE _____	WEIGHT OF HAMMER <u>300-140</u> LBS. INSIDE LENGTH OF SAMPLER _____ IN.	HAMMER FALL _____ CASING <u>24"</u> SAMPLER <u>30"</u>

DEPTH BEL- OW SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
0										
240		49	240'-242'		WR-5-	53-70				
		50	245'-247'		WR-24-	35-70				
-10										
250		51	250'-252'		40-	49- 51-52				
		52	255'-257'		24-	38- 56-50				
-20										
260		53	260'-262'		27-	35- 45-48				
		54	265'-267'		25-	31- 32-54				
-30										
270		55	270'-272'		34-	36- 46-47				
		56	275'-277'		16-	31- 31-36				
		57	280'-280'10"		54-	100/4"				

Soils Engineer: _____	Driller: <u>Victor Aimar</u>
Drilling Inspector: _____	Helper: <u>Don McMahon</u>

JOB LOCATION: <u>Brentwood N.Y.</u>	WARREN GEORGE. INC. FOOT OF JERSEY AVENUE P. O. BOX 413 JERSEY CITY, N.J. 07303 FOR: Liberty Industries	SHEET <u>1</u> OF <u>2</u> LOCATION <u>Brentwood N.Y.</u> HOLE NO. <u>MW-7</u> LINE & STA. _____ OFFSET _____
---	---	---

DEPTH _____ FT. FT. CASING OUT DATE: _____ DEPTH _____ FT. ALL CASING OUT DATE: _____	DATE, START: <u>4/20/87</u> DATE, FINISH: <u>4/20/87</u>	GROUND ELEVATION _____ GROUND WATER ELEVATION <u>45'</u>
CASING O.D. <u>6" Auger</u> I.D. _____ SAMPLER O.D. <u>2"</u> I.D. _____ DIAMOND BIT SIZE _____	WEIGHT OF HAMMER <u>300-140</u> LBS. INSIDE LENGTH OF SAMPLER _____ IN.	HAMMER FALL _____ CASING <u>24"</u> SAMPLER <u>30"</u>

DEPTH BEL- OW SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
0		1	0'-2'		3-	6-	6-8			
		2	5'-7'		11-	19-	41-37			
-10		3	10'-12'		7-	16-	19-21			
		4	15'-17'		15-	13-	19-17			
-20		5	20'-22'		11-	11-	15-15			
		6	25'-27'		16-	19-	15-17			
-30		7	30'-32'		22-	23-	26-29			
		8	35'-37'		13-	28-	34-32			
-40										

Soils Engineer: _____	Driller: <u>Reynolds Bridgpal</u>
Drilling Inspector: _____	Helper: _____

JOB LOCATION: <u>Brentwood N.Y.</u>	WARREN GEORGE. INC. FOOT OF JERSEY AVENUE P. O. BOX 413 JERSEY CITY, N.J. 07303 FOR: <u>Liberty Industries</u>	SHEET <u>1</u> OF <u>2</u> LOCATION <u>Brentwood N.Y.</u> HOLE NO. <u>MW-8</u> LINE & STA. _____ OFFSET _____
--	---	---

DEPTH _____ FT. CASING OUT DATE: _____ DEPTH _____ FT. ALL CASING OUT DATE: _____	DATE, START: <u>4/23/87</u> DATE, FINISH: <u>4/23/87</u>	GROUND ELEVATION _____ GROUND WATER ELEVATION <u>45'</u>
CASING O.D. <u>6" Auger</u> I.D. _____ SAMPLER O.D. <u>2"</u> I.D. _____ DIAMOND BIT SIZE _____	WEIGHT OF HAMMER <u>300-140</u> LBS. INSIDE LENGTH OF SAMPLER _____ IN.	HAMMER FALL _____ CASING <u>24"</u> SAMPLER <u>30"</u>

DEPTH BEL- ON SURFACE	CASING BLOWS PER FOOT	SAMPLE NUMBER	SAMPLE DEPTHS ELEV. / FEET	SAMPLE RECOVERY	BLOWS PER 6" ON SAMPLER			DENSITY OR CONSIST. MOISTURE	PROFILE CHANGE DEPTH	FIELD IDENTIFICATION OF SOILS REMARKS
					0-6	6-12	12-18			
0		1	0'-2'		5-	4-	3-3			
		2	5'-7'		4-	20-	24-31			
-10		3	10'-12'		13-	20-	23-32			
		4	15'-17'		8-	11-	16-18			
-20		5	20'-22'		10-	15-	12-15			
		6	25'-27'		18-	27-	41-50			
-30		7	30'-32'		10-	16-	16-23			
		8	35'-37'		15-	32-	44-48			
-40										

Soils Engineer: _____	Driller: <u>Reynolds Bridgpal</u>
Drilling Inspector: _____	Helper: _____

SUBSOIL
INVESTIGATIONS



87-483

SOIL MECHANICS DRILLING CORP.

3770 MERRICK ROAD • SEAFORD, L. I., NEW YORK 11783 • (516) 221-2333

July 2, 1987

H2M Group
575 Broad Hollow Road
Melville, N.Y. 11747

Re: Lab Testing

Attention: Karen Shanahan

<u>SAMPLE NUMBER</u>	<u>DEPTH</u>	<u>*ATTERBERG LIMIT RESULTS</u>	<u>SOIL CLASSIFICATION</u>
MW #5 Liberty	40-42'	Nonplastic (NP)	Tan-Fine to Coarse Sand
MW #6 Liberty	150-152'	Nonplastic (NP)	Gray Brown-Fine to Medium Sand, Trace Silt
MW #6 Liberty	200-202'	Nonplastic (NP)	Gray-Fine Sand, Little Silt
MW #7 Liberty	10-12'	Nonplastic (NP)	Tan-Fine to Coarse Sand
MW #8 Liberty	20-22'	Nonplastic (NP)	Tan-Fine to Coarse Sand, Trace Fine Gravel
MW #9 Liberty	30-32'	Nonplastic (NP)	Tan-Medium to Coarse Sand

*ASTM D 4318, 20. 1. 4 if the liquid limit or plastic limit could not be performed,
report the soil as nonplastic.

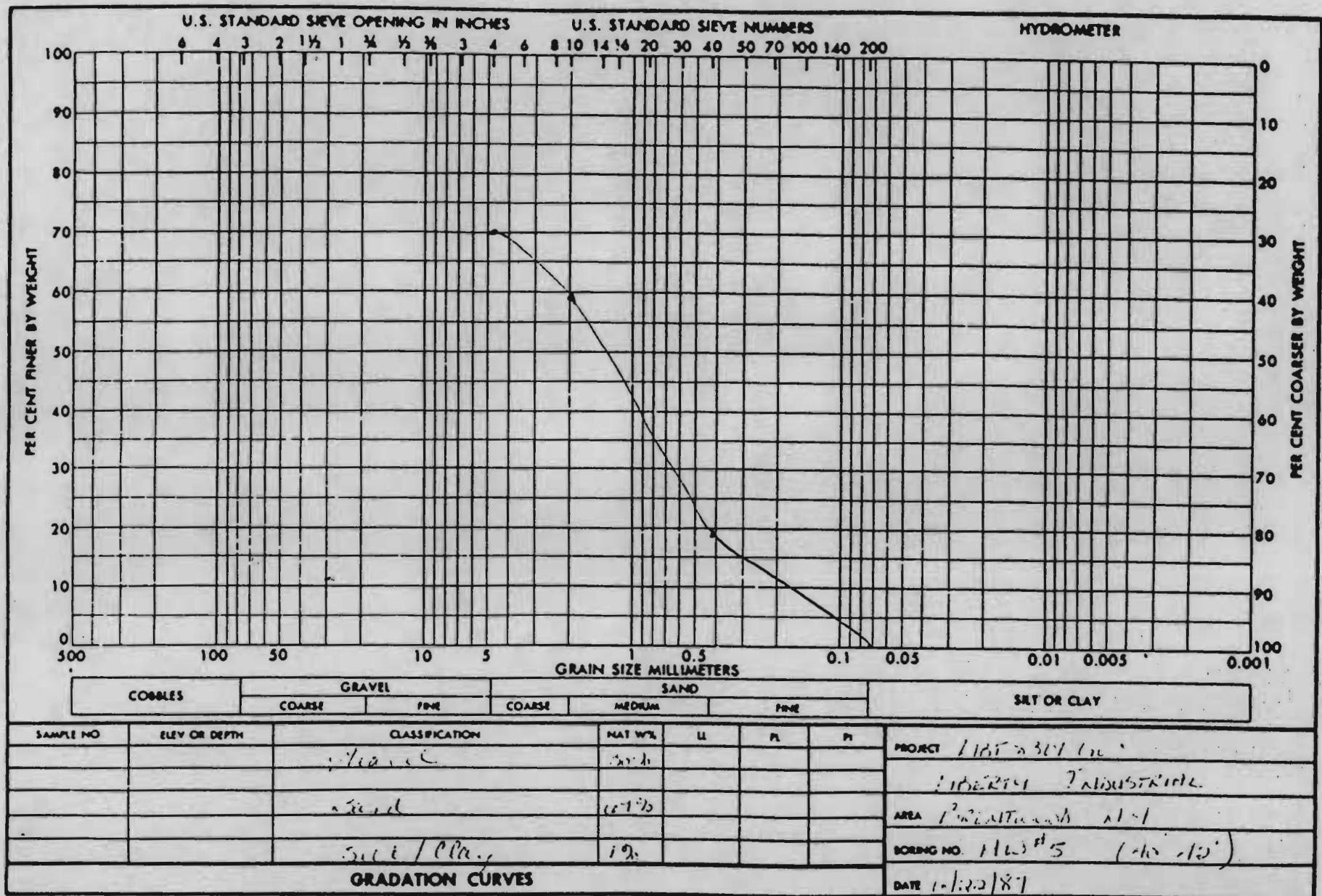
Very truly yours,

SOIL MECHANICS DRILLING CORP.

Carl Vernick, President

CV/1v

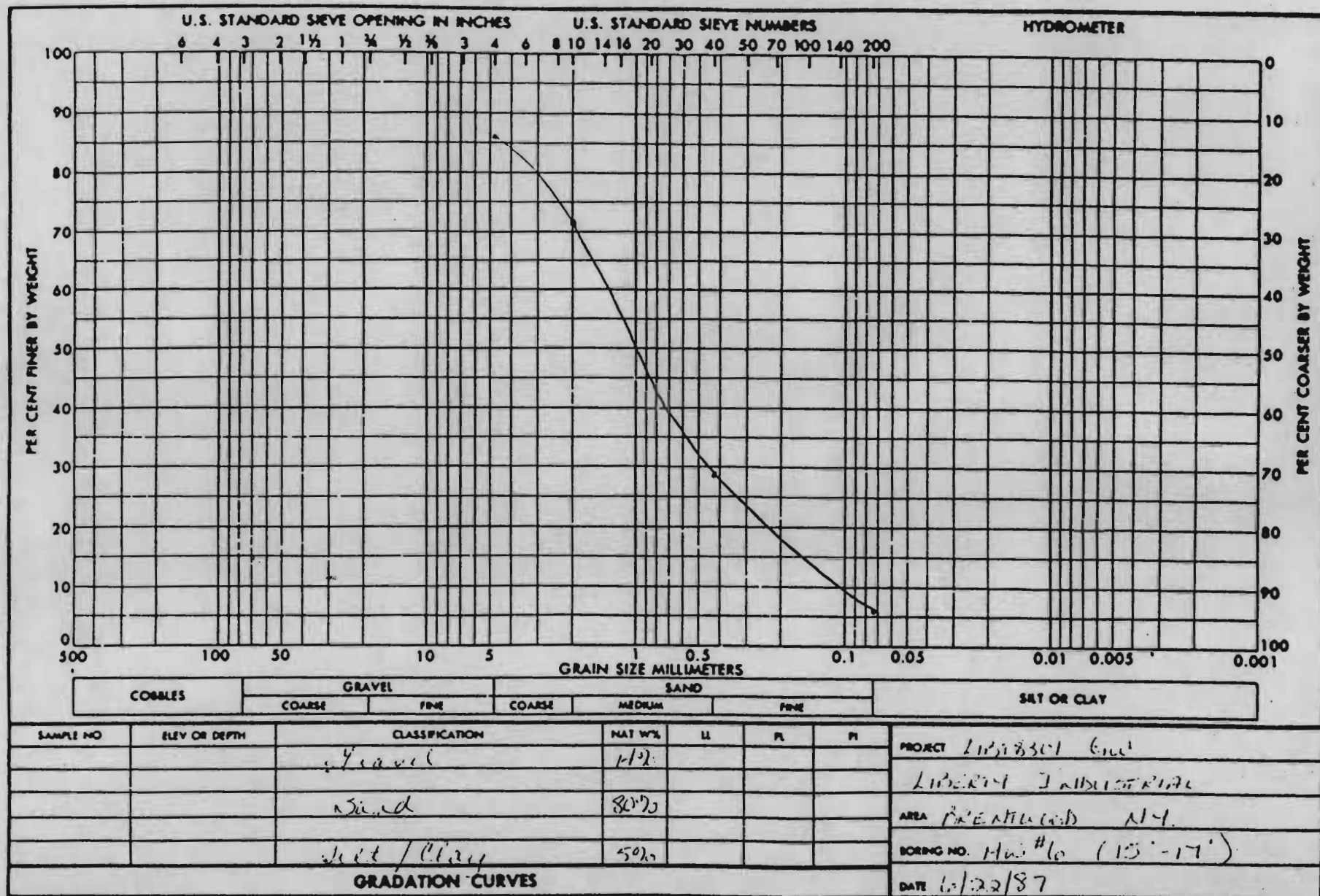
TEST BORINGS • GROUND WATER DETERMINATIONS • FOUNDATION RECOMMENDATIONS • HOLLOW STEM AUGER BORINGS
LABORATORY ANALYSES • CONTROLLED LANDFILL • DIAMOND CORE DRILLING • SAND & GRAVEL PROSPECTING
BEARING VALUES • WELL POINT INSTALLATIONS • ENGINEERING SUPERVISION • PERCOLATION TESTS
SANITARY INVESTIGATIONS • UNDISTURBED SAMPLING • TEST PITS • TOP SOIL ANALYSES



ENG FORM 2087
1 MAY 63

REPLACES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE.

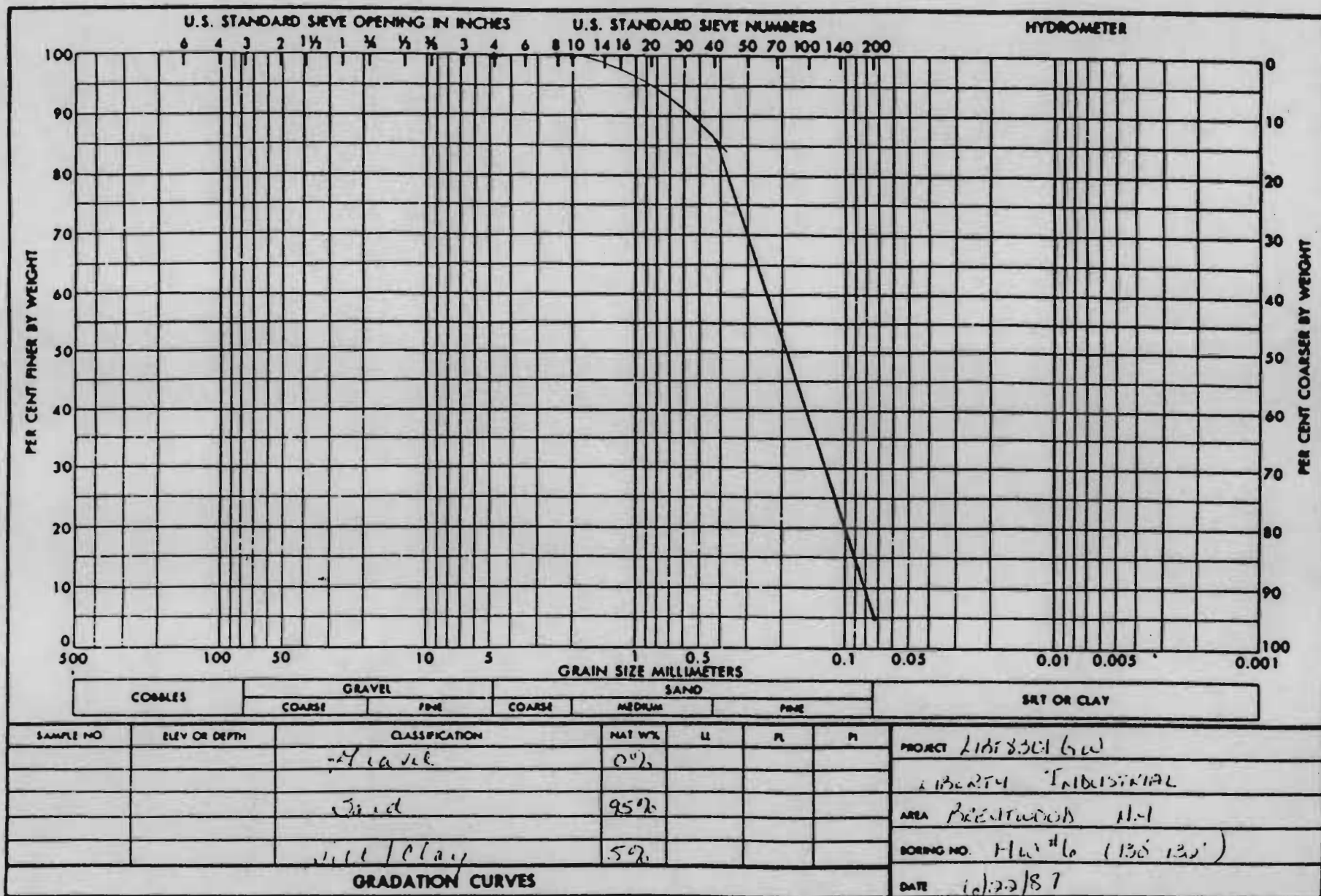
U.S. GOVERNMENT PRINTING OFFICE 1962 07-700-104



ENG FORM 2087
1 MAY 63

REPLACES WES FORM NO. 1241, SEP 1962, WHICH IS OBSOLETE.

U.S. GOVERNMENT PRINTING OFFICE 1968 O-770-106

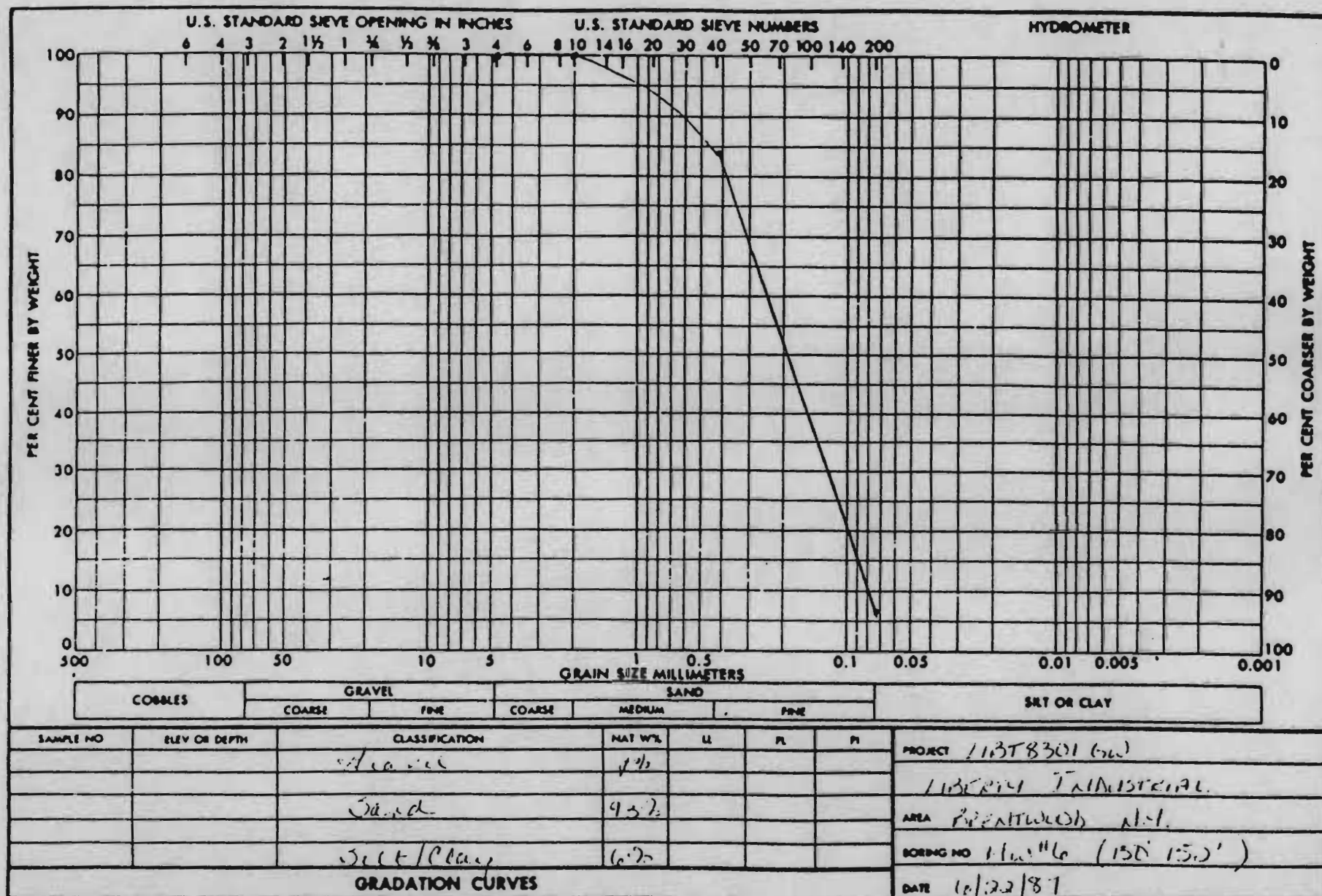


ENG FORM
1 MAY 63

2087

REPLACES WES FORM NO. 1241, SEP 1962, WHICH IS OBSOLETE.

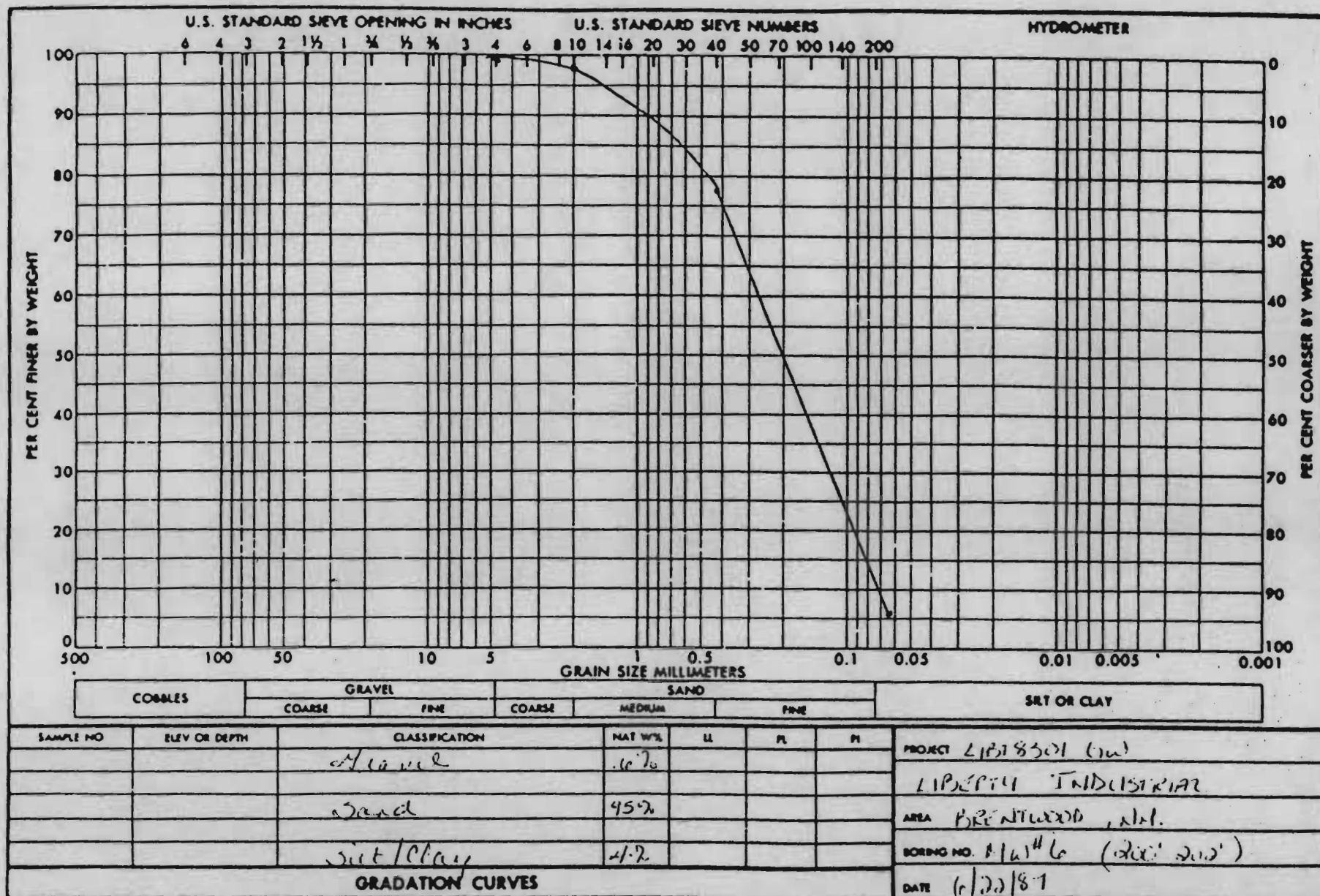
U.S. GOVERNMENT PRINTING OFFICE: 1965 O-700-126



ENG FORM 2087
1 MAY 63

REPLACES WES FORM NO. 1241, SEP 1962, WHICH IS OBSOLETE.

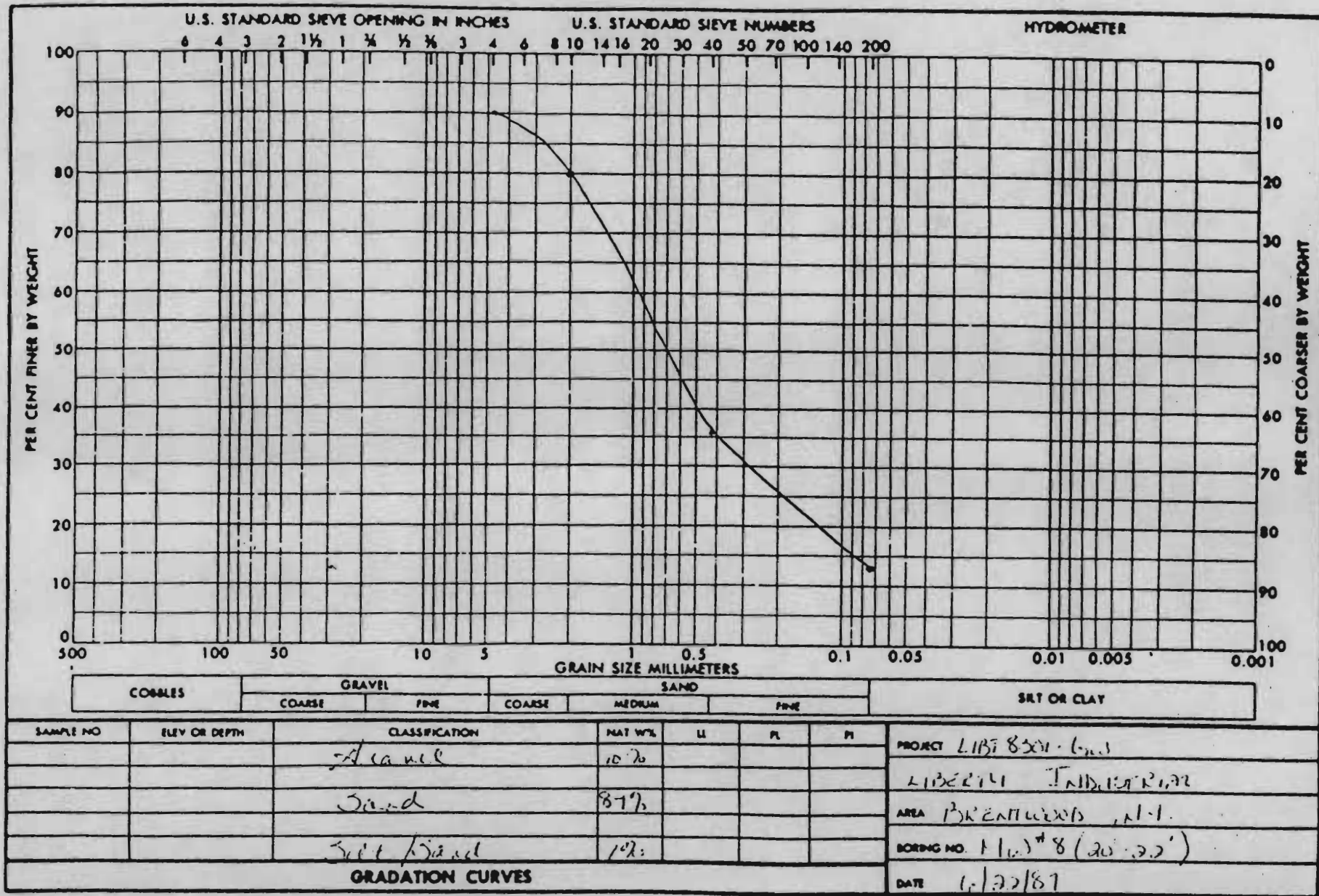
U.S. GOVERNMENT PRINTING OFFICE: 1968 O-7-700-100



ENG FORM 2087
1 MAY 63

REPLACES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE.

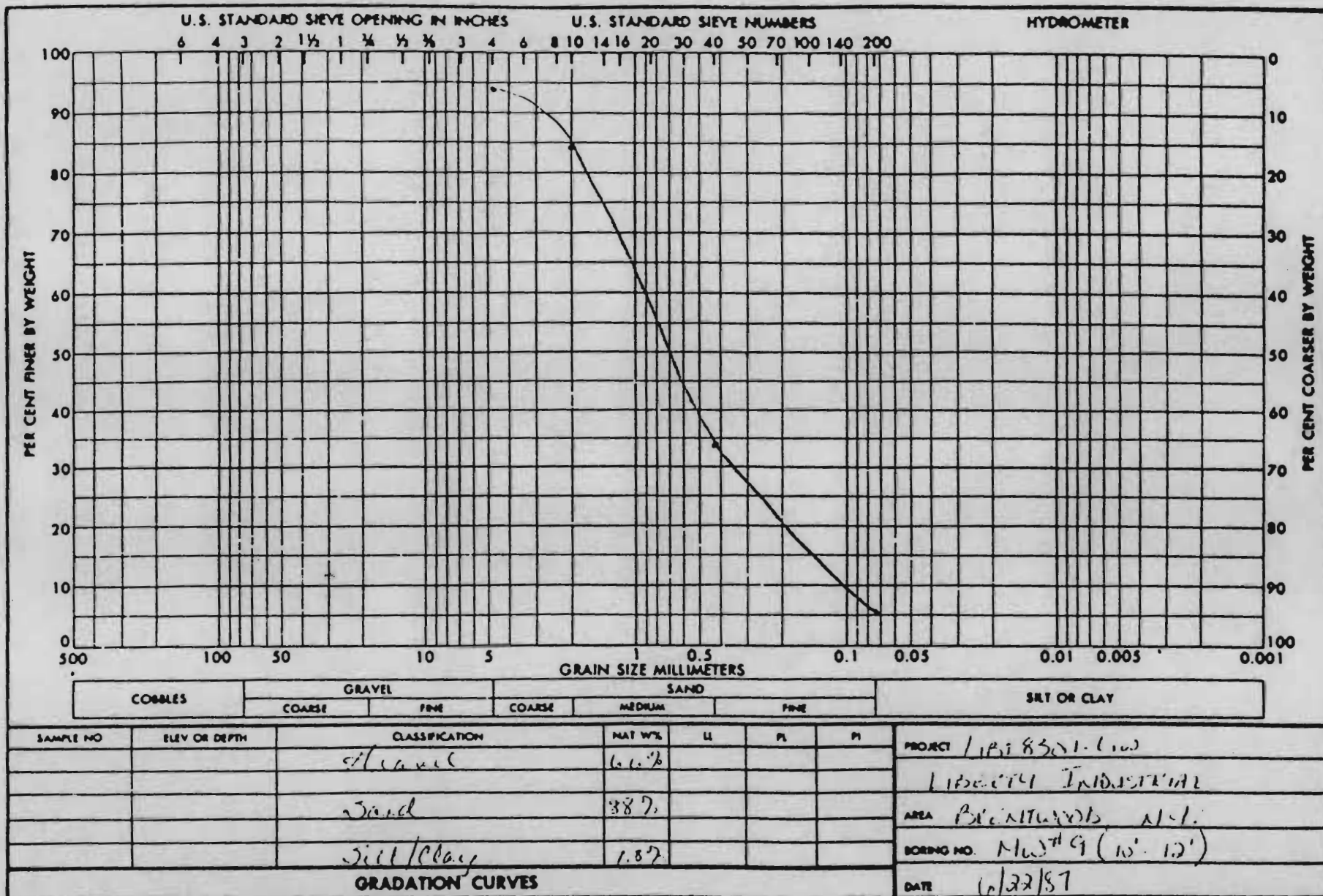
U.S. GOVERNMENT PRINTING OFFICE 1065 07-700-106



ENG FORM 2087
1 MAY 63

REPLACES WES FORM NO 1241, SEP 1962, WHICH IS OBSOLETE.

U.S. GOVERNMENT PRINTING OFFICE : 1963 OF-700-106



APPENDIX D

GRAIN SIZE DISTRIBUTION, MOISTURE CONTENT
AND ATTERBURG LIMITS

SOIL CHARACTERISTICS VIA
GRAIN SIZE DISTRIBUTION/ATTERBURG LIMITS/MOISTURE CONTENT
FOR SELECTED SOIL DEPTHS

<u>Boring No.</u>	<u>Depth (Ft.)</u>	<u>Percent Gravel</u>	<u>Percent Sand</u>	<u>Percent Silt/Clay</u>	<u>Liquid Limit</u>	<u>Plastic Limit</u>	<u>Shrinkage Limit</u>	<u>Moisture Content</u>	<u>Estimated Hydraulic Conductivity</u>
5	40-42	30	67	1	--	--	--	2%	10^{-2} cm/s
6	15-17	14	80	5	--	--	--	11%	10^{-3} cm/s
6	130-132	0	95	5	--	--	--	16%	10^{-4} cm/s
6	150-152	0	93	6	--	--	--	14%	10^{-4} cm/s
6	200-202	0.6	95	4	--	--	--	15%	10^{-4} cm/s
7	10-12	27	69	2	--	--	--	3%	10^{-2} cm/s
8	20-22	10	87	1	--	--	--	1%	10^{-2} cm/s
9	10-12	6.6	88	1.8	--	--	--	3%	10^{-2} cm/s

-- See attached laboratory sheet.

APPENDIX E

SOIL SAMPLES LABORATORY REPORTS

(APRIL 1987 SAMPLES)



H2M LABS, INC.

Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

LABORATORY REPORT

LAB NO. 755886

PROJECT NO. LIBT 8301 LA

COLLECTED BY KFS 03

DATE RECEIVED - 5/28/87

CLIENT'S NAME AND ADDRESS

LIBERTY INDUSTRIAL FINISHING

500 SUFFOLK AVE.

BRENTWOOD, NY 11717

TYPE OF SAMPLE - MISCELLANEOUS

DATE COLLECTED - 5/28/87

LIBERTY SOIL SAMPLE

MW #5 - 56-57 FT

EP TOXICITY PROCEDURE

PARAM- ETER	RESULT	PARAM- ETER	RESULT
ANTI- MONY	<0.10	NICKEL	<0.04
ARSENIC	<0.50	SELEN- IUM	<0.20
BERYL- LIUM	25.0 #	SILVER	<0.02
CADMIUM	30.0 #	THAL- LIUM	<5.00#
CHROM- IUM	<0.02	ZINC	0.05
HEX. CHROM.	<0.02	CYANIDE	<10.0 #
COPPER	0.03		
LEAD	<0.10		
MERCURY	<0.50#		

REMARKS - BILLS AND RPTS: GJM, COPY TO KFS

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND

T. COLI BACT. & FECAL COLI (MPN/100ML)

COLOR, ODOR, TURBIDITY & PH (UNITS)

APC & FECAL STREP (COUNTS/ML)

SPEC. COND. (UMHOS) SETT. SOLIDS (ML/L)

DATE REPORTED 6/30/87

LABORATORY DIRECTOR



H2M LABS, INC.

Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

LABORATORY REPORT

Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

LAB NO. 755887

PROJECT NO. LIST 3301 LA

COLLECTED BY KFS 03

DATE RECEIVED - 5/28/87

CLIENT'S NAME AND ADDRESS

LIBERTY INDUSTRIAL FINISHING
500 SUFFOLK AVE.
BRENTWOOD, NY 11717

TYPE OF SAMPLE - MISCELLANEOUS

DATE COLLECTED - 5/28/87

LIBERTY SOIL SAMPLE
MW #6 - 20-22 FT.

EP TOXICITY PROEDURE

PARAM- ETER	RESULT	PARAM- ETER	RESULT
----------------	--------	----------------	--------

ANTI-
MONY

<0.10

NICKEL
SELEN-

<0.04

ARSENIC

<0.50

IUM

<5.00#

BERYL-
LIUM

<5.00#

SILVER

<0.02

CADMIUM

<5.00#

THAL-
LIUM

<5.00#

CHROM-
IUM

<0.02

ZINC

0.05

HEX.
CHROM.

<0.02

CYANIDE

<10.0 #

COPPER

<0.03

LEAD

<0.10

MERCURY

<0.50#

REMARKS - BILLS AND RPTS: GJM, COPY TO KFS

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND

T.COLI BACT. & FECAL COLI (MPN/100ML)

COLOR, ODOR, TURBIDITY & PH (UNITS)

APC & FECAL STREP (COUNTS/ML)

SPEC.COND. (UMHOS) SETT.SOLIDS (ML/L)

DATE REPORTED 7/ 1/87

Jms

LABORATORY DIRECTOR

THE LIABILITY OF H2M LABS, INC. SHALL BE LIMITED TO THE PRICE OF THE SERVICE RENDERED AND PAID.

**H2M LABS, INC.**Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services**LABORATORY
REPORT**

PAGE 1 OF 1

LAB NO. 755888

PROJECT NO. LIBT 0301 LA

COLLECTED BY KFS 03

DATE RECEIVED - 5/28/87

CLIENT'S NAME AND ADDRESS

LIBERTY INDUSTRIAL FINISHING

500 SUFFOLK AVE.

BRENTWOOD, NY 11717

TYPE OF SAMPLE - MISCELLANEOUS

DATE COLLECTED - 5/28/87

LIBERTY SOIL SAMPLE

MW #6 - 55-57 FT

EP TOXICITY PROCEDURE

PARAM- ETER	RESULT	PARAM- ETER	RESULT
ANTI- MONY	<0.10	NICKEL	0.06
ARSENIC	<0.50	SELEN- IUM	<0.20
BERYL- LIUM	<5.00#	SILVER	<0.02
CADMIUM	<5.00#	THAL- LIUM	<5.00#
CHROM- IUM	<0.02	ZINC	0.06
HEX. CHROM.	<0.02	CYANIDE	<10.0 #
COPPER	<0.03		
LEAD	<0.10		
MERCURY	<0.50#		

REMARKS - BILLS AND RPTS: GJM, COPY TO KFS

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND

T. COLI BACT. & FECAL COLI (MPN/100ML)

COLOR, ODOR, TURBIDITY & PH (UNITS)

APC & FECAL STREP (COUNTS/ML)

SPEC. COND. (UMHOS) SETT. SOLIDS (ML/L)

DATE REPORTED 6/30/87

LABORATORY DIRECTOR

THE LIABILITY OF H2M LABS, INC. SHALL BE LIMITED TO THE PRICE OF THE SERVICE RENDERED AND PAID.



H2M LABS INC.

Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

LABORATORY REPORT

Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

LAB NO. 755889

PROJECT NO. LIBT 8301 LA

CLIENT'S NAME AND ADDRESS

LIBERTY INDUSTRIAL FINISHING
500 SUFFOLK AVE.
BRENTWOOD, NY 11717

TYPE OF SAMPLE - MISCELLANEOUS
DATE COLLECTED - 5/28/87

COLLECTED BY KFS 03
DATE RECEIVED - 5/28/87

LIBERTY SOIL SAMPLE
MW #6 - 225-227 FT.

EP TOXICITY PROCEDURE

PARAM-ETER	RESULT	PARAM-ETER	RESULT
ANTI-MONY	<0.10	NICKEL	<0.04
ARSENIC	<0.50	SELENIUM	<0.20
BERYLLIUM	<5.00#	SILVER	<0.02
CADMIUM	<5.00#	THALLIUM	<5.00#
CHROMIUM	<0.02	ZINC	0.04
HEX, CHROM.	<0.02	CYANIDE	<10.0 #
COPPER	0.27		
LEAD	<0.10		
MERCURY	<0.50#		

REMARKS - BILLS AND RPTS: GJM, COPY TO KFS

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND
T.COLI BACT. & FECAL COLI (MPN/100ML)
COLOR, ODOR, TURBIDITY & PH (UNITS)
APC & FECAL STREP (COUNTS/ML)
SPEC.COND. (UMHOS) SETT.SOLIDS (ML/L)

DATE REPORTED 6/30/87

Jmell
LABORATORY DIRECTOR



H2M LABS, INC.

Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

**LABORATORY
REPORT**

Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

LAB NO. 755890

PROJECT NO. LIBT 8301 LA

CLIENT'S NAME AND ADDRESS LIBERTY INDUSTRIAL FINISHING 500 SUFFOLK AVE. BRENTWOOD, NY 11717	TYPE OF SAMPLE - MISCELLANEOUS DATE COLLECTED - 5/28/87 LIBERTY SOIL SAMPLE MW #7 - 50-52 FT. EP TOXICITY PROCEDURE
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PARAM-ETER	RESULT	PARAM-ETER	RESULT
ANTI-MONY	<0.10	NICKEL	<0.04
ARSENIC	<0.50	SELEN-IUM	<0.20
BERYL-IUM	<5.00#	SILVER	<0.02
CADMIUM	<5.00#	THAL-IUM	<5.00#
CHROM-IUM	<0.02	ZINC	<0.02
HEX. CHROM.	<0.02	CYANIDE	<10.0 #
COPPER	<0.03		
LEAD	<0.10		
MERCURY	<0.50#		

REMARKS - BILLS AND RPTS: GJM, COPY TO KFS ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND T.COLI BACT. & FECAL COLI (MPN/100ML) COLOR, ODOR, TURBIDITY & PH (UNITS) APC & FECAL STREP (COUNTS/ML) SPEC.COND. (UMHOS) SETT.SOLIDS (ML/L)	DATE REPORTED 6/30/87 LABORATORY DIRECTOR
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H2M LABS INC.

Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

LABORATORY REPORT

LAB NO. 755891

PROJECT NO. LIBT 8301 LA

COLLECTED BY KFS 03

DATE RECEIVED - 5/28/87

CLIENT'S NAME AND ADDRESS

LIBERTY INDUSTRIAL FINISHING
500 SUFFOLK AVE.
BRENTWOOD, NY 11717

TYPE OF SAMPLE - MISCELLANEOUS

DATE COLLECTED - 5/28/87

LIBERTY SOIL SAMPLE
MW #8 - 50-52 FT.

EP TOXICITY PROCEDURE

PARAM- ETER	RESULT	PARAM- ETER	RESULT
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ANTI-MONY	<0.10	NICKEL	<0.04
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ARSENIC	<0.50	SELENIUM	<0.20
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BERYLLIUM	<5.00#	SILVER	<0.02
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CADMIUM	<5.00#	THALLIUM	<5.00#
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CHROMIUM	<0.02	ZINC	0.04
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HEX. CHROM.	<0.02	CYANIDE	<10.0 #
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COPPER	0.03		
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LEAD	<0.10		
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MERCURY	<0.50#		
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REMARKS - BILLS AND RPTS: GJM, COPY TO KFS

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND
T.COLI BACT. & FECAL COLI (MPN/100ML)
COLOR, ODOR, TURBIDITY & PH (UNITS)
APC & FECAL STREP (COUNTS/ML)
SPEC.COND. (UMHOS) SETT.SOLIDIDS (ML/L)

DATE REPORTED 6/30/87

LABORATORY DIRECTOR



H2M LABS, INC.

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575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

LABORATORY REPORT

Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

LAB NO. 755092

PROJECT NO. LIST 8301 LA

CLIENT'S NAME AND ADDRESS	TYPE OF SAMPLE - MISCELLANEOUS	COLLECTED BY KFS 03
LIBERTY INDUSTRIAL FINISHING	DATE COLLECTED - 5/28/87	DATE RECEIVED - 5/28/87
500 SUFFOLK AVE.	LIBERTY SOIL SAMPLE	
BRENTWOOD, NY 11717	MW 19 - 25-27 FT.	
	EP TOXICITY PROCEDURE	

PARAM-ETER	RESULT	PARAM-ETER	RESULT
ANTI-MONY	<0.10	NICKEL	<0.04
ARSENIC	<0.50	SELENIUM	<0.20
BERYLLIUM	<5.00*	SILVER	<0.02
CADMIUM	<5.00*	THALLIUM	<5.00*
CHROMIUM	<0.02	ZINC	<0.02
HEX. CHROM.	<0.02	CYANIDE	<10.0 *
COPPER	<0.03		
LEAD	<0.10		
MERCURY	<0.50*		

REMARKS - BILLS AND RPTS: GJM; COPY TO KFS

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY * (UG/L) OR % (PERCENT) AND
T. COLI BACT. & FECAL COLI (MPN/100ML)
COLOR, ODOR, TURBIDITY & PH (UNITS)
APC & FECAL STREP (COUNTS/ML)
SPEC. COND. (UMHOS) SETT. SOLIDS (ML/L)

DATE REPORTED 6/30/87

Jms
LABORATORY DIRECTOR

THE LIABILITY OF H2M LABS, INC. SHALL BE LIMITED TO THE PRICE OF THE SERVICE RENDERED AND PAID.


H2M LABS INC.

 Environmental Testing Laboratories
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**LABORATORY
REPORT**

 Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
 Pilot Plant Studies and Other Analytical Services

LAB NO. 755893

PROJECT NO. LIBT 8301 LA

CLIENT'S NAME AND ADDRESS

 LIBERTY INDUSTRIAL FINISHING

 500 SUFFOLK AVE.

 BRENTWOOD, NY 11717

 TYPE OF SAMPLE - MISCELLANEOUS
 DATE COLLECTED - 5/28/87

 COLLECTED BY KFS 03
 DATE RECEIVED - 5/28/87

 LIBERTY SOIL SAMPLE
 MW #9 - 42 - 51 FT.

EP TOXICITY PROCEDURE

PARAM- ETER	RESULT	PARAM- ETER	RESULT
ANTI-MONY	<0.10	NICKEL	<0.04
ARSENIC	<0.50	SELENIUM	<0.20
BERYLLIUM	15.0 #	SILVER	<0.02
CADMIUM	10.0 #	THALLIUM	<5.00#
CHROMIUM	<0.02	ZINC	0.03
HEX. CHROM.	<0.02	CYANIDE	<10.0 #
COPPER	<0.03		
LEAD	<0.10		
MERCURY	4.80#		

REMARKS - BILLS AND RPTS: GJM, COPY TO KFS

ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND

T. COLI BACT. & FECAL COLI (MPN/100ML)

COLOR, ODOR, TURBIDITY & PH (UNITS)

APC & FECAL STREP (COUNTS/ML)

SPEC. COND. (UMHOS) SETT. SOLIDS (ML/L)

DATE REPORTED 6/30/87

LABORATORY DIRECTOR

THE LIABILITY OF H2M LABS, INC. SHALL BE LIMITED TO THE PRICE OF THE SERVICE RENDERED AND PAID.


H2M LAB INC.

 Environmental Testing Laboratories
 575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

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**LABORATORY
REPORT**

LAB NO. 755894

PROJECT NO. LIRT 8301 LA

COLLECTED BY KFS 03

DATE RECEIVED - 5/28/87

CLIENT'S NAME AND ADDRESS

 LIBERTY INDUSTRIAL FINISHING

 500 SUFFOLK AVE.

 BRENTWOOD, NY 11717

 TYPE OF SAMPLE - MISCELLANEOUS
 DATE COLLECTED - 5/28/87

 LIBERTY SOIL SAMPLE
 MW #9 - 55-57 FT.

E P TOXICITY PROCEDURE

PARAM-ETER	RESULT	PARAM-ETER	RESULT
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ANTI-MONY	<0.10	NICKEL	<0.04
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ARSENIC	<0.10	SELENIUM	<0.20
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BERYL-LIUM	<5.00#	SILVER	<0.02
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CADMIUM	<5.00#	THALLIUM	<5.00#
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CHROMIUM	<0.02	ZINC	<0.02
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HEX. CHROM.	<0.02	CYANIDE	<10.0 #
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COPPER	0.05		
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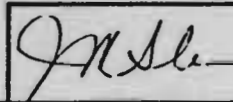
LEAD	<0.10		
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MERCURY	<0.50#		
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REMARKS - BILLS AND RPTS: GJM, COPY TO KFS

 ALL RESULTS IN (MG/L) EXCEPT AS NOTED BY # (UG/L) OR % (PERCENT) AND
 T. COLI BACT. & FECAL COLI (MPN/100ML)
 COLOR, ODOR, TURBIDITY & PH (UNITS)
 APC & FECAL STREP (COUNTS/ML)
 SPEC. COND. (UMHOS) SETT. SOLIDS (HL/L)

DATE REPORTED 6/30/87


 LABORATORY DIRECTOR

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755877
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #5 56 - 57 FT.
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (Dry Weight)	
Chloromethane	< 30	
Bromomethane	< 30	
Vinyl Chloride	< 30	
Dichlorodifluoromethane	< 20	
Methylene Chloride	< 20	
Trichlorofluoromethane	< 40	
1,1-Dichloroethylene	< 20	
1,1-Dichloroethane	< 20	
trans-1,2-Dichloroethylene	< 20	
cis-1,2-Dichloroethylene	< 20	
Chloroform	< 20	
1,1,2-Trichlorotrifluoroethane	< 20	
1,2-Dichloroethane	< 20	
1,1,1-Trichloroethane	< 20	
Carbon Tetrachloride	< 20	
Bromodichloromethane	< 20	
1,2-Dichloropropane	< 20	
2,3-Dichloropropene	< 20	
cis-1,3-Dichloropropene	< 20	
Trichloroethylene	< 20	
Chlorodibromomethane	< 20	
1,1,2-Trichloroethane	< 20	
trans-1,3-Dichloropropene	< 20	
Bromoform	< 20	
1,1,1,2-Tetrachloroethane	< 20	
Tetrachloroethylene	< 20	
1,1,2,2-Tetrachloroethane	< 20	
Chlorobenzene	< 20	
1,3-Dichlorobenzene	< 20	*****
1,2-Dichlorobenzene	< 20	* * *
1,4-Dichlorobenzene	< 20	* <i>McLendon</i> *
VOLATILE NON-HALOGENATED ORGANICS		*****
Benzene	< 20	S.C. McLendon, P.E.
Toluene	< 20	Laboratory Director
Ethylbenzene	< 20	
1,3-Xylene	< 20	
1,2-Xylene	< 20	
1,4-Xylene	< 20	
Total solids	89%	

Date Reported: 6/9/87

HOLZMACHER, McLENDON and MURRELL, P.C. • ENVIRONMENTAL and INDUSTRIAL ANALYTICAL SERVICES

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755878
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #6 20 - 22 FT.
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (dry weight)
Chloromethane	< 60
Bromomethane	< 60
Vinyl Chloride	< 60
Dichlorodifluoromethane	< 30
Methylene Chloride	< 30
Trichlorofluoromethane	< 30
1,1-Dichloroethylene	< 30
1,1-Dichloroethane	< 30
trans-1,2-Dichloroethylene	< 30
cis-1,2-Dichloroethylene	< 30
Chloroform	< 30
1,1,2-Trichlorotrifluoroethane	< 30
1,2-Dichloroethane	< 30
1,1,1-Trichloroethane	< 30
Carbon Tetrachloride	< 30
Bromodichloromethane	< 30
1,2-Dichloropropane	< 30
2,3-Dichloropropene	< 30
cis-1,3-Dichloropropene	< 30
Trichloroethylene	< 30
Chlorodibromomethane	< 30
1,1,2-Trichloroethane	< 30
trans-1,3-Dichloropropene	< 30
Bromoform	< 30
1,1,1,2-Tetrachloroethane	< 30
Tetrachloroethylene	< 30
1,1,2,2-Tetrachloroethane	< 30
Chlorobenzene	< 30
1,3-Dichlorobenzene	< 30
1,2-Dichlorobenzene	< 30
1,4-Dichlorobenzene	< 30

VOLATILE NON-HALOGENATED ORGANICS

Benzene	< 30
Toluene	< 30
Ethylbenzene	< 30
1,3-Xylene	< 30
1,2-Xylene	< 30
1,4-Xylene	< 30
Total solids	85%

Date Reported: 6/9/87

* * *

* *J. McLendon* *

S.C. McLendon, P.E.
Laboratory Director

HOLZMACHER, McLENDON and MURRELL, P.C. • ENVIRONMENTAL and INDUSTRIAL ANALYTICAL SERVICES

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755879
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #6 55 - 57 FT.
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (dry weight)
Chloromethane	< 50
Bromomethane	< 50
Vinyl Chloride	< 50
Dichlorodifluoromethane	< 30
Methylene Chloride	< 30
Trichlorofluoromethane	< 40
1,1-Dichloroethylene	< 30
1,1-Dichloroethane	< 30
trans-1,2-Dichloroethylene	< 30
cis-1,2-Dichloroethylene	< 30
Chloroform	< 30
1,1,2-Trichlorotrifluoroethane	< 30
1,2-Dichloroethane	< 30
1,1,1-Trichloroethane	< 30
Carbon Tetrachloride	< 30
Bromodichloromethane	< 30
1,2-Dichloropropane	< 30
2,3-Dichloropropene	< 30
cis-1,3-Dichloropropene	< 30
Trichloroethylene	< 30
Chlorodibromomethane	< 30
1,1,2-Trichloroethane	< 30
trans-1,3-Dichloropropene	< 30
Bromoform	< 30
1,1,1,2-Tetrachloroethane	< 30
Tetrachloroethylene	< 30
1,1,2,2-Tetrachloroethane	< 30
Chlorobenzene	< 30
1,3-Dichlorobenzene	< 30
1,2-Dichlorobenzene	< 30
1,4-Dichlorobenzene	< 30

* <i>J. McLendon</i> *	

VOLATILE NON-HALOGENATED ORGANICS	
Benzene	< 30
Toluene	< 30
Ethylbenzene	< 30
1,3-Xylene	< 30
1,2-Xylene	< 30
1,4-Xylene	< 30
Total solids	92%
Date Reported: 6/9/87	

S.C. McLendon, P.E.
Laboratory Director

HOLZMACHER, McLENDON and MURRELL, P.C. • ENVIRONMENTAL and INDUSTRIAL ANALYTICAL SERVICES

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755880
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #6 225 - 227 FT
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (dry weight)
Chloromethane	< 40
Bromomethane	< 40
Vinyl Chloride	< 40
Dichlorodifluoromethane	< 20
Methylene Chloride	< 20
Trichlorofluoromethane	< 20
1,1-Dichloroethylene	< 20
1,1-Dichloroethane	< 20
trans-1,2-Dichloroethylene	< 20
cis-1,2-Dichloroethylene	< 20
Chloroform	< 20
1,1,2-Trichlorotrifluoroethane	< 20
1,2-Dichloroethane	< 20
1,1,1-Trichloroethane	< 20
Carbon Tetrachloride	< 20
Bromodichloromethane	< 20
1,2-Dichloropropane	< 20
2,3-Dichloropropene	< 20
cis-1,3-Dichloropropene	< 20
Trichloroethylene	< 20
Chlorodibromomethane	< 20
1,1,2-Trichloroethane	< 20
trans-1,3-Dichloropropene	< 20
Bromoform	< 20
1,1,1,2-Tetrachloroethane	< 20
Tetrachloroethylene	< 20
1,1,2,2-Tetrachloroethane	< 20
Chlorobenzene	< 20
1,3-Dichlorobenzene	< 20
1,2-Dichlorobenzene	< 20
1,4-Dichlorobenzene	< 20

VOLATILE NON-HALOGENATED ORGANICS

Benzene	< 20
Toluene	< 20
Ethylbenzene	< 20
1,3-Xylene	< 20
1,2-Xylene	< 20
1,4-Xylene	< 20
Total solids	81%

Date Reported: 6/9/87

*
*

S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755881
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #7 50 - 52 FT
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (dry weight)
Chloromethane	< 30
Bromomethane	< 30
Vinyl Chloride	< 30
Dichlorodifluoromethane	< 20
Methylene Chloride	< 20
Trichlorofluoromethane	< 20
1,1-Dichloroethylene	< 20
1,1-Dichloroethane	< 20
trans-1,2-Dichloroethylene	< 20
cis-1,2-Dichloroethylene	< 20
Chloroform	< 20
1,1,2-Trichlorotrifluoroethane	< 20
1,2-Dichloroethane	< 20
1,1,1-Trichloroethane	< 20
Carbon Tetrachloride	< 20
Bromodichloromethane	< 20
1,2-Dichloropropane	< 20
2,3-Dichloropropene	< 20
cis-1,3-Dichloropropene	< 20
Trichloroethylene	< 20
Chlorodibromomethane	< 20
1,1,2-Trichloroethane	< 20
trans-1,3-Dichloropropene	< 20
Bromoform	< 20
1,1,1,2-Tetrachloroethane	< 20
Tetrachloroethylene	< 20
1,1,2,2-Tetrachloroethane	< 20
Chlorobenzene	< 20
1,3-Dichlorobenzene	< 20
1,2-Dichlorobenzene	< 20
1,4-Dichlorobenzene	< 20

VOLATILE NON-HALOGENATED ORGANICS

Benzene	< 20
Toluene	< 20
Ethylbenzene	< 20
1,3-Xylene	< 20
1,2-Xylene	< 20
1,4-Xylene	< 20
Total solids	87%

Date Reported: 6/9/87

* * *

* *James* *

S.C. McLendon, P.E.
Laboratory Director

HOLZMACHER, McLENDON and MURRELL, P.C. • ENVIRONMENTAL and INDUSTRIAL ANALYTICAL SERVICES

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755882
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #8 50 - 52 FT
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (dry weight)
Chloromethane	< 40
Bromomethane	< 40
Vinyl Chloride	< 40
Dichlorodifluoromethane	< 20
Methylene Chloride	< 20
Trichlorofluoromethane	< 70
1,1-Dichloroethylene	< 20
1,1-Dichloroethane	< 20
trans-1,2-Dichloroethylene	< 20
cis-1,2-Dichloroethylene	< 20
Chloroform	< 20
1,1,2-Trichlorotrifluoroethane	< 20
1,2-Dichloroethane	< 20
1,1,1-Trichloroethane	< 20
Carbon Tetrachloride	< 20
Bromodichloromethane	< 20
1,2-Dichloropropane	< 20
2,3-Dichloropropene	< 20
cis-1,3-Dichloropropene	< 20
Trichloroethylene	< 20
Chlorodibromomethane	< 20
1,1,2-Trichloroethane	< 20
trans-1,3-Dichloropropene	< 20
Bromoform	< 20
1,1,1,2-Tetrachloroethane	< 20
Tetrachloroethylene	< 20
1,1,2,2-Tetrachloroethane	< 20
Chlorobenzene	< 20
1,3-Dichlorobenzene	< 20
1,2-Dichlorobenzene	< 20
1,4-Dichlorobenzene	< 20

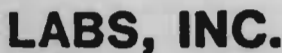
VOLATILE NON-HALOGENATED ORGANICS

Benzene	< 20
Toluene	< 20
Ethylbenzene	< 20
1,3-Xylene	< 20
1,2-Xylene	< 20
1,4-Xylene	< 20
Total solids	85%
Date Reported: 6/9/87	

* * *

* *Jim McLendon* *

S.C. McLendon, P.E.
Laboratory Director



575 BROAD HOLLOW ROAD, MELVILLE, N.Y. 11747 • 516-694-3040

HOLZMACHER, McLENDON and MURRELL, P.C. • ENVIRONMENTAL and INDUSTRIAL ANALYTICAL SERVICES

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755883
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #9 25 - 27 FT
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (dry weight)	
Chloromethane	< 40	
Bromomethane	< 40	
Vinyl Chloride	< 40	
Dichlorodifluoromethane	< 20	
Methylene Chloride	< 30	
Trichlorofluoromethane	< 90	
1,1-Dichloroethylene	< 20	
1,1-Dichloroethane	< 20	
trans-1,2-Dichloroethylene	< 20	
cis-1,2-Dichloroethylene	< 20	
Chloroform	< 20	
1,1,2-Trichlorotrifluoroethane	< 20	
1,2-Dichloroethane	< 20	
1,1,1-Trichloroethane	< 20	
Carbon Tetrachloride	< 20	
Bromodichloromethane	< 20	
1,2-Dichloropropane	< 20	
2,3-Dichloropropene	< 20	
cis-1,3-Dichloropropene	< 20	
Trichloroethylene	< 20	
Chlorodibromomethane	< 20	
1,1,2-Trichloroethane	< 20	
trans-1,3-Dichloropropene	< 20	
Bromoform	< 20	
1,1,1,2-Tetrachloroethane	< 20	
Tetrachloroethylene	< 20	
1,1,2,2-Tetrachloroethane	< 20	
Chlorobenzene	< 20	
1,3-Dichlorobenzene	< 20	*****
1,2-Dichlorobenzene	< 20	* * *
1,4-Dichlorobenzene	< 20	* <i>G. McLendon</i> *
VOLATILE NON-HALOGENATED ORGANICS		*****
Benzene	< 20	S.C. McLendon, P.E.
Toluene	< 20	Laboratory Director
Ethylbenzene	< 20	
1,3-Xylene	< 20	
1,2-Xylene	< 20	
1,4-Xylene	< 20	
Total solids	95%	
Date Reported: 6/9/87		

OLZMACHER, McLENDON and MURRELL, P.C. • ENVIRONMENTAL and INDUSTRIAL ANALYTICAL SERVICES

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755884
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #9 49 - 51 FT
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (dry weight)
Chloromethane	< 60
Bromomethane	< 60
Vinyl Chloride	< 60
Dichlorodifluoromethane	< 30
Methylene Chloride	< 30
Trichlorofluoromethane	< 90
1,1-Dichloroethylene	< 30
1,1-Dichloroethane	< 30
trans-1,2-Dichloroethylene	< 30
cis-1,2-Dichloroethylene	< 30
Chloroform	< 30
1,1,2-Trichlorotrifluoroethane	< 30
1,2-Dichloroethane	< 30
1,1,1-Trichloroethane	< 30
Carbon Tetrachloride	< 30
Bromodichloromethane	< 30
1,2-Dichloropropane	< 30
2,3-Dichloropropene	< 30
cis-1,3-Dichloropropene	< 30
Trichloroethylene	< 30
Chlorodibromomethane	< 30
1,1,2-Trichloroethane	< 30
trans-1,3-Dichloropropene	< 30
Bromoform	< 30
1,1,1,2-Tetrachloroethane	< 30
Tetrachloroethylene	< 30
1,1,2,2-Tetrachloroethane	< 30
Chlorobenzene	< 30
1,3-Dichlorobenzene	< 30
1,2-Dichlorobenzene	< 30
1,4-Dichlorobenzene	< 30

VOLATILE NON-HALOGENATED ORGANICS

Benzene	< 30
Toluene	< 30
Ethylbenzene	< 30
1,3-Xylene	< 30
1,2-Xylene	< 30
1,4-Xylene	< 30
Total solids	88%

Date Reported: 6/9/87

* * *

* *John Slawson* *

S.C. McLendon, P.E.

Laboratory Director

HOLZMACHER, McLENDON and MURRELL, P.C. • ENVIRONMENTAL and INDUSTRIAL ANALYTICAL SERVICES

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755885
Date Collected: 5/28/87
Date Received: 5/28/87
Type: Misc.
Point: MW #9 55 - 57 FT
Liberty Soil Samples
Collected By: KFS 03

VOLATILE HALOGENATED ORGANICS

	ug/kg (dry weight)
Chloromethane	< 30
Bromomethane	< 30
Vinyl Chloride	< 30
Dichlorodifluoromethane	< 20
Methylene Chloride	< 20
Trichlorofluoromethane	< 20
1,1-Dichloroethylene	< 20
1,1-Dichloroethane	< 20
trans-1,2-Dichloroethylene	< 20
cis-1,2-Dichloroethylene	< 20
Chloroform	< 20
1,1,2-Trichlorotrifluoroethane	< 20
1,2-Dichloroethane	< 20
1,1,1-Trichloroethane	< 20
Carbon Tetrachloride	< 20
Bromodichloromethane	< 20
1,2-Dichloropropane	< 20
2,3-Dichloropropane	< 20
cis-1,3-Dichloropropene	< 20
Trichloroethylene	< 20
Chlorodibromomethane	< 20
1,1,2-Trichloroethane	< 20
trans-1,3-Dichloropropene	< 20
Bromoform	< 20
1,1,1,2-Tetrachloroethane	< 20
Tetrachloroethylene	< 20
1,1,2,2-Tetrachloroethane	< 20
Chlorobenzene	< 20
1,3-Dichlorobenzene	< 20
1,2-Dichlorobenzene	< 20
1,4-Dichlorobenzene	< 20

VOLATILE NON-HALOGENATED ORGANICS

Benzene	< 20
Toluene	< 20
Ethylbenzene	< 20
1,3-Xylene	< 20
1,2-Xylene	< 20
1,4-Xylene	< 20
Total solids	88%

Date Reported: 6/9/87

* *S.C. McLendon* *

S.C. McLendon, P.E.
Laboratory Director

APPENDIX F

FIELD SAMPLING RECORDS

FIELD SAMPLING RECORD

SITE Liberty Industrial

JOB# LEBT 8301 GW

DATE 5/14/87

TIME 9.45 AM

SAMPLE LOCATION m.w. # 7

SAMPLERS MRF/SYL

WEATHER mostly clear, light breeze

DEPTH TO H2O 45.1'

MEAS. POINT ^{Top of PVC casing} (.16' below casing top)

STATIC H2O LEVEL 9.37'

STATIC VOLUME 6.1128176 g

VOLUME H2O TO BE REMOVED 18.338452 g

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS ^{20 gal. meas with} 5 gal. bucket.

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☐

TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

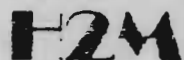
SAMPLE CHARACTERISTICS: slightly cloudy, metals
filtered in field.

REFRIGERATION:

DATE 5/14/87 TIME 11.55 am COOLER #

FIELD PARAMETERS:

pH	TEMP	CONDUCTIVITY
6.81/6.70/6.67/6.68	12.8/12.6/12.6/12.7	195/180/180/180



HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS

MELVILLE, N.Y.
FARMINGDALE, N.Y.
ROVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE LIBERTY INDUSTRIAL

JOB# LIBT 8301 GW

DATE 5/14/87

TIME 2:15 pm

SAMPLE LOCATION MW #5

SAMPLERS MRF/SYL

WEATHER mostly clear, calm

DEPTH TO H2O 46.33'

MEAS. POINT Top of PVC casing

STATIC H2O LEVEL $58.27 - 46.33 = 11.94$

STATIC VOLUME 7.79386099

VOLUME H2O TO BE REMOVED 23.38 gal

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS 25 gallons removed
5 gal. bucket measurement

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☐

TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: slightly cloudy

REFRIGERATION:

DATE 5/14/87 TIME 2:30 COOLER # 1

FIELD PARAMETERS:

pH

TEMP

CONDUCTIVITY

5.86/5.65/5.74/5.61/5.67 14.7/14.4/14.6/14.3/14.7 270/265/250/250/250

H2M

HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS AND PLANNERS

BEVILLE, N.Y.
CARMINSDALE, N.Y.
RYERHACK, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE Liberty Industries

JOB# LIBT 8301

DATE 5/14/87

TIME 4:00 pm

SAMPLE LOCATION MW #8

SAMPLERS MRF/.5YL

WEATHER mostly clear, Light Breeze

DEPTH TO H2O 46.16'

MEAS. POINT ^{Top of PVC} casing

STATIC H2O LEVEL 56.76

STATIC VOLUME

VOLUME H2O TO BE REMOVED

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS ^{239mi removed} 5 ^{50ft bucket mens}

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☐

TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: clear

REFRIGERATION:

DATE 5/14/87

TIME 4:00

COOLER #

FIELD PARAMETERS:

pH

TEMP^{°C}

CONDUCTIVITY

6.13 / 5.96 / 6.06 / 5.85 / 5.74 // 14.4 / 14.1 / 13.9 / 14.2 / 13.9 // 155 / 155 / 140 / 140 / 140

H2M

HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS

DELYLE, N.Y.
FARMINGDALE, N.Y.
RIVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE LIBERTY INDUSTRIAL

JOB# LIBT8301

DATE 5/14/87

TIME 5:00 PM

SAMPLE LOCATION MW #3A

SAMPLERS MRF/SYL

WEATHER Clear / Sunny

DEPTH TO H2O 46.65'

MEAS. POINT Top of PVC casing

STATIC H2O LEVEL 6.34'

STATIC VOLUME 4.105 gal

VOLUME H2O TO BE REMOVED 12.3 gal $\Rightarrow$ 15 gal. removed

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS 15 gals.
5 gal. bucket

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☐

TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: very cloudy - high silt,
dark brown color

REFRIGERATION:

DATE 5/14/87 TIME 6:15 COOLER #

FIELD PARAMETERS:

pH		TEMP	CONDUCTIVITY
5.33 / 5.36	5.39	13.1 / 13.0 / 13.0	98 / 98 / 90

H2M

HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS

SELVILLE, N.Y.
FARMINGDALE, N.Y.
REVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE LIBERTY INDUSTRIAL JOB# LIST 8301

DATE 5/14/87

TIME 6:15 PM

SAMPLE LOCATION MW 1A

SAMPLERS MRF/SYL

WEATHER ~~80% cloud~~ / clear / breezy

DEPTH TO H2O 46.59'

MEAS. POINT Top of PVC casing

42.81 - 46.59' =
STATIC H2O LEVEL 2.22'

STATIC VOLUME 144 gal

VOLUME H2O TO BE REMOVED 4.3 gal $\Rightarrow$.5 gal

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS - 5 gal bucket

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☐

TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: * No Sample collected

Sent bailer down well 3 times. Bailer dry all three times

REFRIGERATION:

DATE

TIME

COOLER #

FIELD PARAMETERS:

pH

TEMP

CONDUCTIVITY

None taken

None taken

None taken

H2M

HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS AND PLANNERS

DELVILLE, N.Y.
FARMINGDALE, N.Y.
OVERHEAD, N.Y.
PARFIELD, N.J.

FIELD SAMPLING RECORD

SITE LIBERTY INDUSTRIAL

JOB# LIST 8301

DATE 5/15/87

TIME 9:00

SAMPLE LOCATION MW 28A

SAMPLERS MRF/SYL

WEATHER ~~NOON~~ / Rain / drizzle

DEPTH TO H2O 44.9 ft

MEAS. POINT Top of ^{Pvc} well casing

STATIC H2O LEVEL $50.22 - 44.9 = 5.32$

STATIC VOLUME 3.44 gal

VOLUME H2O TO BE REMOVED 10.33 gal $\Rightarrow$ 13 gals

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS 13 gals
5 gal bucket

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☐

TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: Cloudy, brownish, high silt

REFRIGERATION:

DATE 5/15/87 TIME 10:30 COOLER # 1

FIELD PARAMETERS:

pH

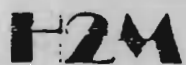
TEMP

CONDUCTIVITY

5.19 / 5.22 / 5.24

13.0 / 12.8 / 12.6

60 / 60 / 60



HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS

WELLSVILLE, N.Y.
FARMINGDALE, N.Y.
ROVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE LIBERTY INDUSTRIAL

JOB# LIST 8301

DATE 5/15/87

TIME 10:00

SAMPLE LOCATION 110 ft

SAMPLERS MRF/SYL

WEATHER Rain / ~~cloud~~ calm

DEPTH TO H2O 43.99 ft

MEAS. POINT Top of the casing

STATIC H2O LEVEL 9.63 ft

STATIC VOLUME 6.234 gal

VOLUME H2O TO BE REMOVED 18.7 gal $\Rightarrow$ 20 gals

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS 20 gals /
5 bucket

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☐

TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: clear

REFRIGERATION:

DATE

TIME

COOLER #

FIELD PARAMETERS:

pH

TEMP

CONDUCTIVITY

6.01 / 6.12 / 6.14 / 6.17 // 13.6 / 13.4 / 13.4 / 13.5 // 160 / 160 / 160 / 160

H2M

HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS

BEVERLY, N.Y.
FARMINGDALE, N.Y.
ROVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE LIBERTY INDUSTRIAL JOB# LIBTE301

DATE 5/15/87 TIME 11:30

SAMPLE LOCATION mw #2

SAMPLERS mrf/syl

WEATHER Rain / ~~rain~~ calm

DEPTH TO H2O 44.45 ft MEAS. POINT Top of PVC casing

STATIC H2O LEVEL 10.25 ft STATIC VOLUME 6.64 gal

VOLUME H2O TO BE REMOVED 19.91 gal $\Rightarrow$ 20 gal

EVACUATION TECHNIQUE:

BAILED ☒ # OF BAILS 20 gal.
5 gal buckets

CENT. PUMP ☐ FLOW RATE

SUBM. PUMP ☐ TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

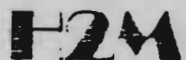
SAMPLE CHARACTERISTICS: cloudy.

REFRIGERATION:

DATE 5/15/87 TIME 1:00 COOLER # 1

FIELD PARAMETERS:

pH	TEMP	CONDUCTIVITY
5.81/5.84/5.90/5.93/5.73	14.1/14.0/14.0/14.0/14.1	140/136/120/135/120



HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS

BEVILL, N.Y.
FARMINGDALE, N.Y.
RIVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE LIBERTY INDUSTRIAL

JOB# LIBT8301

DATE 5/15/87

TIME 11:40

SAMPLE LOCATION mw #4

SAMPLERS ~~RAM/ROX~~ MRF/SYL

WEATHER Rain (light) / calm

DEPTH TO H2O 44.8'

MEAS. POINT ^{TOP of well} _{GROUND SURFACE}

STATIC H2O LEVEL 10.2'

STATIC VOLUME 6.60 / 576g

VOLUME H2O TO BE REMOVED 19.8047g

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS ^{20 gals removed}
5 gal. measurement

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☐

TIME PUMPED

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: cloudy, brownish

REFRIGERATION:

DATE 5/15/87 TIME 1:20 COOLER # 1

FIELD PARAMETERS:

pH

TEMP

CONDUCTIVITY

6.82/6.84/6.88/6.73 // 14.2/14.2/14.2/14.1 // 500/500/500/500

H2M

HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS AND PLANNERS

MELVILLE, N.Y.
FAIRHURSTDALE, N.Y.
ROVERHEAD, N.Y.
FAIRFIELD, N.J.

FIELD SAMPLING RECORD

SITE Liberty INDUSTRIAL

JOB# LTBT 8301

DATE 5/15/87

TIME 5:00

SAMPLE LOCATION MW #6

SAMPLERS MRF/S&L

WEATHER mostly clear, light BREEZE

DEPTH TO H2O 46.35'

MEAS. POINT Top of PVC casing

STATIC H2O LEVEL 218.65'

STATIC VOLUME 141.513189

VOLUME H2O TO BE REMOVED

EVACUATION TECHNIQUE:

BAILED ☒

OF BAILS 3 bails after pumping

CENT. PUMP ☐

FLOW RATE

SUBM. PUMP ☒

TIME PUMPED 400+ gallons removed

TRIP BLANK I.D. #

SAMPLE BLANK I.D. #

CONTAINERS FILLED AND I.D. #'S

SAMPLE CHARACTERISTICS: cloudy

REFRIGERATION:

DATE 5/15/87 TIME 6:00 COOLER # 1

FIELD PARAMETERS:

pH	TEMP	CONDUCTIVITY
9.04/8.30/7.70/7.30/7.45/7.12/7.12	17.2/16.4/16.0/15.8/15.1/14.4/14.3	230/165/135/100 120/95/25

H2M

HOLZMACHER, McLENDON & MURRELL, P.C.
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS and PLANNERS

BEVILL, NY.
FARMINGDALE, NY.
RIVERHEAD, NY.
FAIRFIELD, NJ.

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Distribution: Original Accompanied Shipment; Copy to Coordinator Field Files

$755 \div 86 \rightarrow 292$

APPENDIX G

GROUNDWATER SAMPLES LABORATORY REPORTS

(MAY 1987 SAMPLES)

**H2M LABS, INC.**Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

Page 1 of 3

**LABORATORY
REPORT**Lab No. 755293
Proj. No. LIBT 83-01Collected By MRF 03
Date Received - 5/14/87**CLIENT'S NAME AND ADDRESS**Liberty Industrial Finishing

500 Suffolk Ave.

Brentwood, NY 11717Type of Sample - Groundwater
Date Collected - 5/14/87

Monitoring Wells
Priority Pollutant Metals
Samples Field Filtered

Lab No.	Sample I.D.	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Hexavalent Chromium
755293	MW #7	<10.0*	<5.0*	<5.0*	7.0*	<0.02	<0.02
755294	MW #5	<10.0*	<5.0*	<5.0*	7.0*	<0.02	<0.02
755295	MW #8	<10.0*	<5.0*	<5.0*	8.0*	<0.02	<0.02
755297	Field Blank	<10.0*	<5.0*	<5.0*	5.0*	<0.02	<0.02
755298	Bailer Blank	<10.0*	<5.0*	<5.0*	5.0*	<0.02	<0.02

All results reported as mg/l
except as noted as * ug/l

Date Reported 6/18/87

LABORATORY DIRECTOR

**H2M LAE, INC.**Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

Page 2 of 3

**LABORATORY
REPORT**Lab No. 755293
Proj. No. LIBT 83-01**CLIENT'S NAME AND ADDRESS**Liberty Industrial Finishing

500 Suffolk Ave.

Bentwood, NY 11717Type of Sample - Groundwater
Date Collected - 5/14/87Monitoring Wells
Priority Pollutant Metals
Samples Field FilteredCollected By MRF 03
Date Received - 5/14/87

Lab No.	Sample I.D.	Copper	Lead	Mercury	Nickel	Selenium	Silver
755293	MW #7	<0.02	<5.0*	<0.5*	<0.04	<5.0*	<0.02
755294	MW #5	<0.02	<5.0*	<0.5	<0.04	<5.0*	<0.02
755295	MW #8	<0.02	<5.0*	<0.5*	<0.04	<5.0*	<0.02
755297	Field Blank	<0.02	<5.0*	<0.5*	<0.04	<5.0*	<0.02
755298	Bailer Blank	<0.02	<5.0*	<0.5*	<0.04	<5.0*	<0.02

All results reported as mg/l
except as noted as * ug/l

Date reported 6/18/87

LABORATORY DIRECTOR

**H2M LAE, INC.**Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

Page 3 of 3

**LABORATORY
REPORT**Lab No. 755293
Proj. No. LIBT 83-01**CLIENT'S NAME AND ADDRESS**Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717Type of Sample - Groundwater
Date Collected - 5/14/87Monitoring Wells
Priority Pollutant Metals
Samples Field FilteredCollected By MRF 03
Date Received - 5/14/87

Lab No.	Sample I.D.	Thallium	Zinc	Cyanide
755293	MW #7	<5.0*	0.02	<10.0*
755294	MW #5	<5.0*	<0.02	<10.0*
755295	MW #8	<5.0*	<0.02	<10.0*
755297	Field Blank	<5.0*	<0.02	<10.0*
755298	Bailer Blank	5.0*	<0.02	

All results reported as mg/l
except as noted as * ug/l

Date Reported 6/18/87

LABORATORY DIRECTOR


H2M LABS INC.

 Environmental Testing Laboratories
 575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

 Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
 Pilot Plant Studies and Other Analytical Services

**LABORATORY
REPORT**

Lab No. 755296

Proj. No. LIBT 83-01

CLIENT'S NAME AND ADDRESS

Liberty Industrial Finishing

500 Suffolk Ave.

Brentwood, NY 11717

Type of Sample - Groundwater

Date Collected - 5/14/87

5/15/87

Collected By MRF 03

Date Received - 5/14/87

5/15/87

Monitoring Wells

Priority Pollutant Metals

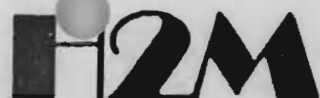
Samples Field Filtered

Lab No.	Sample I.D.	Lead	Mercury	Nickel	Selenium	Silver	Thallium
755296	MW #3A	<5.0*	<0.5*	<0.04	<5.0*	<0.02	<5.0*
755397	MW #2	<5.0*	<0.5*	<0.04	<5.0*	<0.02	<5.0*
755398	MW #4	<5.0*	<0.5*	0.08	<5.0*	<0.02	<5.0*
755401	MW #28A	<5.0*	<0.5*	<0.04	<5.0*	<0.02	<5.0*

 All results reported as mg/l
 except as noted as * ug/l

Date Reported 6/22/87

LABORATORY DIRECTOR



H2M LABS INC.

Environmental Testing Laboratories
575 Broad Hollow Road, Melville, New York 11747-5076 • (516) 694-3040

Water/Waste Water Laboratory • Hazardous Waste Laboratory • Air Testing Laboratory
Pilot Plant Studies and Other Analytical Services

LABORATORY REPORT

Lab No. 755296
Proj. No. IJBT 83-01

CLIENT'S NAME AND ADDRESS

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Type of Sample - Groundwater
Date Collected - 5/14/87
5/15/87

Monitoring Wells
Priority Pollutant Metals
Samples Field Filtered

Collected By MRF 03
Date Received 5/14/87
5/15/87

Lab No.	Sample I.D.	Zinc	Cyanide
755296	MW #3A	0.07	<10.0*
755397	MW #2	0.04	<10.0*
755398	MW #4	0.07	300 *
755401	MW #28A	0.06	<10.0*

All results reported as mg/l
except as noted as * ug/l

Date reported 6/22/87

LABORATORY DIRECTOR

Liberty Industrial

Sample Lab No. 755286

Date Collected: 5-14-87

Date Received: 5-14-87

Type: Misc.

Point: MW #7 Monitoring Well Sample

Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-22-87

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*
*****S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial

Sample Lab No. 755287

Date Collected: 5-14-87

Date Received: 5-14-87

Type: Potable Water

Point: MW #5 Monitoring Well Sample

Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
----------	------

chloromethane	< 1
-------------------------	-----

bromomethane	< 1
------------------------	-----

vinyl chloride	< 1
--------------------------	-----

dichlorodifluoromethane.	< 1
----------------------------------	-----

chloroethane	< 1
------------------------	-----

methylene chloride	< 1
------------------------------	-----

trichlorofluoromethane	< 1
----------------------------------	-----

1,1-dichloroethylene	< 1
--------------------------------	-----

1,1-dichloroethane	< 1
------------------------------	-----

trans-1,2-dichloroethylene	< 1
--------------------------------------	-----

cis-1,2-dichloroethylene	< 1
------------------------------------	-----

* chloroform	1
------------------------	---

1,1,2-trichlorotrifluoroethane.	< 1
---	-----

1,2-dichloroethane	< 1
------------------------------	-----

1,1,1-trichloroethane.	1
--------------------------------	---

carbon tetrachloride	< 1
--------------------------------	-----

bromodichloromethane	< 1
--------------------------------	-----

1,2-dichloropropane.	< 1
------------------------------	-----

2,3-dichloropropene.	< 1
------------------------------	-----

cis-1,3-dichloropropene.	< 1
----------------------------------	-----

trichloroethylene.	< 1
----------------------------	-----

chlorodibromomethane	< 1
--------------------------------	-----

1,1,2-trichloroethane.	< 1
--------------------------------	-----

trans-1,3-dichloropropene.	< 1
------------------------------------	-----

bromoform.	< 1
--------------------	-----

1,1,1,2-tetrachloroethane.	< 1
------------------------------------	-----

tetrachloroethylene.	< 1
------------------------------	-----

1,1,2,2-tetrachloroethane.	< 1
------------------------------------	-----

chlorobenzene.	< 1
------------------------	-----

1,3-dichlorobenzene.	< 1
------------------------------	-----

1,2-dichlorobenzene.	< 1
------------------------------	-----

1,4-dichlorobenzene.	< 1
------------------------------	-----

VOLATILE NON-HALOGENATED ORGANICS

benzene	< 1
-------------------	-----

toluene	< 1
-------------------	-----

ethylbenzene.	< 1
-----------------------	-----

1,3-xylene.	< 1
---------------------	-----

1,2-xylene.	< 1
---------------------	-----

1,4-xylene.	< 1
---------------------	-----

*Reported value represents total.

Date Reported: 5-22-87

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S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial

Sample Lab No. 755288

Date Collected: 5-14-87

Date Received: 5-14-87

Type: Misc.

Point: MW #8 Monitoring Well Sample

Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromoethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-22-87

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*

S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial

Sample Lab No. 755289

Date Collected: 5-14-87

Date Received: 5-14-87

Type: Misc.

Point: MW #3A Monitoring Well Sample

Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropane.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-22-87

*
* *S. C. McLendon* *
*

S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial

Sample Lab No. 155290

Date Collected: 5-14-87

Date Received: 5-14-87

Type: Misc.

Point: Bailer Blank

Collected By: MRF' U3

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
----------	------

chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 3
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
* chloroform	5
1,1,2-trichlorotrifluoroethane.	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1

VOLATILE NON-HALOGENATED ORGANICS

benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

*Reported value represents total.

Date Reported: 5-22-87

*
* *S. C. McLendon* *

S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial

Sample Lab No. 755291

Date Collected: 5-14-87

Date Received: 5-14-87

Type: Misc.

Point: Field Blank

Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
----------	------

chloromethane	< 1
-------------------------	-----

bromomethane	< 1
------------------------	-----

vinyl chloride	< 1
--------------------------	-----

dichlorodifluoromethane.	< 1
----------------------------------	-----

chloroethane	< 1
------------------------	-----

methylene chloride	< 3
------------------------------	-----

trichlorofluoromethane	< 1
----------------------------------	-----

1,1-dichloroethylene	< 1
--------------------------------	-----

1,1-dichloroethane	< 1
------------------------------	-----

trans-1,2-dichloroethylene	< 1
--------------------------------------	-----

cis-1,2-dichloroethylene	< 1
------------------------------------	-----

chloroform	8
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* 1,1,2-trichlorotrifluoroethane.

1,2-dichloroethane	< 1
------------------------------	-----

1,1,1-trichloroethane.	< 1
--------------------------------	-----

carbon tetrachloride	< 1
--------------------------------	-----

bromodichloromethane	< 1
--------------------------------	-----

1,2-dichloropropane.	< 1
------------------------------	-----

2,3-dichloropropene.	< 1
------------------------------	-----

cis-1,3-dichloropropene.	< 1
----------------------------------	-----

trichloroethylene.	< 1
----------------------------	-----

chlorodibromomethane	< 1
--------------------------------	-----

1,1,2-trichloroethane.	< 1
--------------------------------	-----

trans-1,3-dichloropropene.	< 1
------------------------------------	-----

bromoform.	< 1
--------------------	-----

1,1,1,2-tetrachloroethane.	< 1
------------------------------------	-----

tetrachloroethylene.	< 1
------------------------------	-----

1,1,2,2-tetrachloroethane.	< 1
------------------------------------	-----

chlorobenzene.	< 1
------------------------	-----

1,3-dichlorobenzene.	< 1
------------------------------	-----

1,2-dichlorobenzene.	< 1
------------------------------	-----

1,4-dichlorobenzene.	< 1
------------------------------	-----

VOLATILE NON-HALOGENATED ORGANICS

benzene	< 1
-------------------	-----

toluene	< 1
-------------------	-----

ethylbenzene.	< 1
-----------------------	-----

1,3-xylene.	< 1
---------------------	-----

1,2-xylene.	< 1
---------------------	-----

1,4-xylene.	< 1
---------------------	-----

*Reported value represents total.

Date Reported: 5-22-87

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S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial

Sample Lab No. 755292

Date Collected: 5-14-87

Date Received: 5-14-87

Type: Misc.

Point: Trip Blank

Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-22-87

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*
*****S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755390
Date Collected: 5-15-87
Date Received: 5-15-87
Type: Misc.
Point: MW #2
Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	13
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropane.	< 1
cis-1,3-dichloropropane.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropane.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-28-87

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S.C. McLendon, P.E.
Laboratory Director

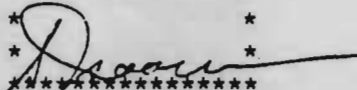
Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755391
Date Collected: 5-15-87
Date Received: 5-15-87
Type: Misc.
Point: MW #4
Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-28-87

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S.C. McLendon, P.E.
Laboratory Director

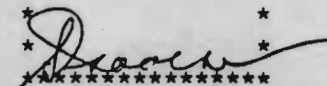
Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755392
Date Collected: 5-15-87
Date Received: 5-15-87
Type: Misc.
Point: MW #6
Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-28-87

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S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial Finishing
5009 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755393
Date Collected: 5-15-87
Date Received: 5-15-87
Type: Misc.
Point: MW #9
Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	1
1,1-dichloroethane	5
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	8
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-28-87

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S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755394
Date Collected: 5-15-87
Date Received: 5-15-87
Type: Misc.
Point: MW #28A
Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

<u>Compound</u>	<u>ug/l</u>
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	< 1
1,1,2-trichlorotrifluoroethane. < 1	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

Date Reported: 5-28-87

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S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755395
Date Collected: 5-15-87
Date Received: 5-15-87
Type: Misc.
Point: Field Blank
Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	1
* 1,1,2-trichlorotrifluoroethane.	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

*Reported value represents total.

Date Reported: 5-28-87

*
*
*

S.C. McLendon, P.E.
Laboratory Director

Liberty Industrial Finishing
500 Suffolk Ave.
Brentwood, NY 11717

Sample Lab No. 755396
Date Collected: 5-15-87
Date Received: 5-15-87
Type: Misc.
Point: Trip Blank
Collected By: MRF 03

RESULTS FOR VOLATILE HALOGENATED ORGANICS

Compound	ug/l
chloromethane	< 1
bromomethane	< 1
vinyl chloride	< 1
dichlorodifluoromethane.	< 1
chloroethane	< 1
methylene chloride	< 1
trichlorofluoromethane	< 1
1,1-dichloroethylene	< 1
1,1-dichloroethane	< 1
trans-1,2-dichloroethylene	< 1
cis-1,2-dichloroethylene	< 1
chloroform	1
* 1,1,2-trichlorotrifluoroethane.	
1,2-dichloroethane	< 1
1,1,1-trichloroethane.	< 1
carbon tetrachloride	< 1
bromodichloromethane	< 1
1,2-dichloropropane.	< 1
2,3-dichloropropene.	< 1
cis-1,3-dichloropropene.	< 1
trichloroethylene.	< 1
chlorodibromomethane	< 1
1,1,2-trichloroethane.	< 1
trans-1,3-dichloropropene.	< 1
bromoform.	< 1
1,1,1,2-tetrachloroethane.	< 1
tetrachloroethylene.	< 1
1,1,2,2-tetrachloroethane.	< 1
chlorobenzene.	< 1
1,3-dichlorobenzene.	< 1
1,2-dichlorobenzene.	< 1
1,4-dichlorobenzene.	< 1
VOLATILE NON-HALOGENATED ORGANICS	
benzene	< 1
toluene	< 1
ethylbenzene.	< 1
1,3-xylene.	< 1
1,2-xylene.	< 1
1,4-xylene.	< 1

*Reported value represents total.

Date Reported: 5-28-87

S. C. McLendon

S.C. McLendon, P.E.
Laboratory Director

APPENDIX H

HRS SCORE SHEETS

Facility name: LIBERTY INDUSTRIAL FINISHING CORP.

Location: 550 SUFFOLK AVENUE, BRENTWOOD, SUFFOLK COUNTY, NEW YORK

EPA Region: II

Person(s) in charge of the facility: _____

Name of Reviewer: _____ Date: _____

General description of the facility:
 (For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Liberty Industrial Finishing Corp. is a medium-sized metal
finishing facility engaged in the finishing and plating of parts
and components. Hazardous wastes generated at the facility
include metal finishing rinsewaters, spent metal finishing baths,
waste paints and thinners, and spent degreasing solvents. The
site contains six (6) underground holding tanks of which one
was found to have potentially leaked.

Scores: $S_M = 21.29$ $S_{GW} = 36.84$ $S_{SW} = 0$ $S_a = 0$)
 $S_{FE} = N/A$
 $S_{DC} = 16.67$

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	0	45	3.1	
If observed release is given a score of 45, proceed to line 4 . If observed release is given a score of 0, proceed to line 2 .						
2 Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 (2) 3	2	4	6		
Net Precipitation	0 1 (2) 3	1	2	3		
Permeability of the Unsaturated Zone	0 1 2 (3)	1	3	3		
Physical State	0 1 2 (3)	1	3	3		
Total Route Characteristics Score			12	15		
3 Containment	0 1 (2) 3	1	2	3	3.3	
4 Waste Characteristics					3.4	
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18		
Hazardous Waste Quantity	0 1 (2) 3 4 5 6 7 8	1	2	8		
Total Waste Characteristics Score			20	26		
5 Targets					3.5	
Ground Water Use	0 1 2 (3)	3	9	9		
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 (35) 40	1	35	40		
Total Targets Score			44	49		
6 If line 1 is 45, multiply 1 x 4 x 5						
If line 1 is 0, multiply 2 x 3 x 4 x 5			21120	57,330		
7 Divide line 6 by 57,330 and multiply by 100			S _{gw} = 36.84			

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	0	45	4.1	
If observed release is given a value of 45, proceed to line 4 . If observed release is given a value of 0, proceed to line 2 .						
2 Route Characteristics					4.2	
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3		
1-yr. 24-hr. Rainfall	0 1 2 3	1	2	3		
Distance to Nearest Surface Water	0 1 2 3	2	0	6		
Physical State	0 1 2 3	1	3	3		
Total Route Characteristics Score			5	15		
3 Containment	0 1 2 3	1	0	3	4.3	
4 Waste Characteristics					4.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	0	8		
Total Waste Characteristics Score			18	26		
5 Targets					4.5	
Surface Water Use	0 1 2 3	3	0	9		
Distance to a Sensitive Environment	0 1 2 3	2	0	6		
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40		
Total Targets Score			0	55		
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	64,350		
7 Divide line 6 by 64,350 and multiply by 100			$S_{sw} = 0$			

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet N/A						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
1 Observed Release	0 45	1	0	45	5.1	
Date and Location:						
Sampling Protocol:						
If line 1 is 0, the $S_a = 0$. Enter on line 5 . If line 1 is 45, then proceed to line 2 .						
2 Waste Characteristics					5.2	
Reactivity and Incompatibility	0 1 2 3	1		3		
Toxicity	0 1 2 3	3		9		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Waste Characteristics Score			N/A	20		
3 Targets					5.3	
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30		
Distance to Sensitive Environment	0 1 2 3	2		6		
Land Use	0 1 2 3	1		3		
Total Targets Score			N/A	39		
4 Multiply 1 x 2 x 3			0	35,100		
5 Divide line 4 by 35,100 and multiply by 100			$S_a = 0$			

FIGURE 9
AIR ROUTE WORK SHEET

	s	s ²
Groundwater Route Score (S _{gw})	36.84	1,357.19
Surface Water Route Score (S _{sw})	0	0
Air Route Score (S _a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		1,357.19
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		36.84
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		21.29

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet N/A							
Rating Factor	Assigned Value (Circle One)		Multi- plier	Score	Max. Score	Ref. (Section)	
1 Containment	1	3	1	N/A	3	7.1	
2 Waste Characteristics						7.2	
Direct Evidence	0	3	1		3		
Ignitability	0	1 2 3	1		3		
Reactivity	0	1 2 3	1		3		
Incompatibility	0	1 2 3	1		3		
Hazardous Waste Quantity	0	1 2 3 4 5 6 7 8	1		8		
Total Waste Characteristics Score				N/A	20		
3 Targets						7.3	
Distance to Nearest Population	0	1 2 3 4 5	1		5		
Distance to Nearest Building	0	1 2 3	1		3		
Distance to Sensitive Environment	0	1 2 3	1		3		
Land Use	0	1 2 3	1		3		
Population Within 2-Mile Radius	0	1 2 3 4 5	1		5		
Buildings Within 2-Mile Radius	0	1 2 3 4 5	1		5		
Total Targets Score				N/A	24		
4 Multiply 1 x 2 x 3				N/A	1,440		
5 Divide line 4 by 1,440 and multiply by 100				SFE = N/A			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: LIBERTY INDUSTRIAL FINISHING CORP.

LOCATION: 550 SUFFOLK AVENUE, BRENTWOOD, SUFFOLK COUNTY, NEW YORK

DATE SCORED: JUNE 1987 (Revised November 1987)

PERSON SCORING: HOLZMACHER, McLENDON & MURRELL, P.C. (H2M)

PRIMARY SOURCE(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.):

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

COMMENTS OR QUALIFICATIONS:

Direct Contact Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi- plier	Score	Max. Score	Ref. (Section)	
1 Observed Incident	0 45	1	0	45	8.1	
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2						
2 Accessibility	0 1 2 3	1	1	3	8.2	
3 Containment	0 15	1	15	15	8.3	
4 Waste Characteristics Toxicity	0 1 2 3	5	15	15	8.4	
5 Targets					8.5	
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	16	20		
Distance to a Critical Habitat	0 1 2 3	4	0	12		
Total Targets Score			16	32		
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			3,600	21,600		
7 Divide line 6 by 21,600 and multiply by 100			SDC = 16.67			

FIGURE 12
DIRECT CONTACT WORK SHEET

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (3 maximum):

None. No contaminants were detected in any of the down gradient monitoring wells considered "on-spec" by NYSDEC at concentrations to constitute an observed release.

ref: 1 (HRS User's Manual)

Rationale for attributing the contaminants to the facility:

Both the Upper Glacial aquifer and the Magothy aquifer are considered the "aquifer of concern". Although intermittent clay lenses are observed beginning at 150 feet below grade (see well log MW-6), for the purpose of scoring, it is assumed that the Glacial and Magothy aquifers are hydraulically interconnected.

Contaminants were detected in monitoring well MW-4, which is screened at 40 feet deep in the Glacial aquifer. MW-4 however is not considered to be an "on-spec" well by NYSDEC.

2 ROUTE CHARACTERISTICS

ref: 3 (H2M, 1987)

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

The Glacial aquifer is composed of fine to medium sands, cobbles, with some gravels. The Magothy aquifer is characterized as being composed of fine sands, sandy clays, and silty clays. The interface between the two aquifers is estimated at 150 feet below ground surface.

ref: 3 (H2M, 1987)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

The groundwater table is measured at depths between 45 feet to 50 feet below ground surface. (Water level measuring data conducted by H2M.)

ref: 3(H2M, 1987)

Depth from the ground surface to the lowest point of waste disposal/storage:

Depth from the ground surface to the bottom of the underground holding tanks (of which all are 9.5 feet deep) is approximately 10 feet.

Depth to water : 45 feet - 10 feet = 35 feet

Assigned value = 2

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

None. No contaminants were detected in any of the down gradient monitoring wells considered "on-spec" by NYSDEC at concentrations to constitute an observed release.

ref: 1 (HRS User's Manual)

Rationale for attributing the contaminants to the facility:

Both the Upper Glacial aquifer and the Magothy aquifer are considered the "aquifer of concern". Although intermittent clay lenses are observed beginning at 150 feet below grade (see well log MW-6), for the purpose of scoring, it is assumed that the Glacial and Magothy aquifers are hydraulically interconnected.

Contaminants were detected in monitoring well MW-4, which is screened at 40 feet deep in the Glacial aquifer. MW-4 however is not considered to be an "on-spec" well by NYSDEC.

2 ROUTE CHARACTERISTICS

ref: 3 (H2M, 1987)

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

The Glacial aquifer is composed of fine to medium sands, cobbles, with some gravels. The Magothy aquifer is characterized as being composed of fine sands, sandy clays, and silty clays. The interface between the two aquifers is estimated at 150 feet below ground surface.

ref: 3 (H2M, 1987)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone (water table(s)) of the aquifer of concern:

The groundwater table is measured at depths between 45 feet to 50 feet below ground surface. (Water level measuring data conducted by H2M.)

ref: 3 (H2M, 1987)

Depth from the ground surface to the lowest point of waste disposal/storage:

Depth from the ground surface to the bottom of the underground holding tanks (of which all are 9.5 feet deep) is approximately 10 feet.

Depth to water : 45 feet - 10 feet = 35 feet

Assigned value = 2

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

40 inches

ref: 4 (NOAA, Climatological Data-Annual Summary, New York. 1985,
Volume 97, No. 13)

Mean annual lake or seasonal evaporation (list months for seasonal):

30 inches

ref: 1 (HRS User's Manual)

Net precipitation (subtract the above figures):

40 - 30 inches

Assigned value = 2

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Unsaturated zone refers to the sand above the water table of the
Glacial aquifer. Soil type: fine to medium sands, cobbles, with some
gravels.

ref: 3 (H2M, 1987)
Permeability associated with soil type:

Permeability : $> 10^{-3}$ cm/sec

Assigned value = 3

ref: 1 (HRS User's Manual)

Physical State

Physical state of substances at time of disposal (or at present time for
generated gases):

Underground holding tanks are used to contain both treated and
untreated rinsewaters from metal plating processes.

ref : 3 (H2M, 1987)
2 (H2M, 1986)

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Hazardous wastes are contained in either underground holding tanks or 55-gallon drums:

a) Tanks Nos. 1,2,4,5,6 - Containers are sealed, in sound condition, with adequate liner and leak detection system. Assigned Value = 0

b) Tank No. 3 - Container sealed, leaking with a moderately permeable liner (water tight seal). Assigned value =2

Method with highest score: c) Waste paints, thinners and degreasing solvents - placed in sealed 55-gallon drums and stored within secondary spill containment zone. Assigned Value = 0

Tank No. 3 was the only tank found to have failed a routine leak test prior to upgrading to comply with Suffolk County Article XII regulations.

ref: 2 (H2M, 1986)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

	<u>Toxicity</u>	<u>Persistence</u>	<u>Matrix Value</u>
Cadmium	3	3	18
Chromium	3	3	18
Cyanide	1	3	12
1,1,1-Trichloroethane	1	3	12

Assigned Value = 18

Compound with highest score:

Cadmium

Assigned Value = 18

ref: 5 (SAX, Dangerous Properties of Industrial Materials)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Volume of Tank No. 3 is 7,000 gallons; equivalent in volume to 127 55-gallon drums.

Assigned Value = 2

ref: 3 (H2M, 1987)

Basis of estimating and/or computing waste quantity:

Only Tank No. 3 was found to have failed a routine leak test. Other tanks (Nos. 1,2,4,5 and 6) all did not show signs of leakage.

ref: 2 (H2M, 1987)

2 (H2M, 1986)

* * *

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Primary use of the Magothy aquifer is as a public drinking water supply with no alternate source of potable water. The aquifer beneath Suffolk County, Long Island is a designated sole source aquifer.

The Glacial aquifer is not used as a potable water source within a 3-mile radius of the site. Assigned Value = 3
Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

Brentwood Water District Supply wells 1-3 and 1-4.

ref: 3 (H2M, 1987, Plate 1)

Distance to above well or building:

Distance to Brentwood water supply wells:

Well 1-3 - 2,600 feet southwest of Liberty well MW 4.

Well 1-4 - 3,300 feet southwest of Liberty well MW 4.

Assigned Value = 3

ref: 3 (H2M, 1987, Plate 1)

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

	<u>Population Served</u>
Brentwood Water Supply Wells (5)	20,000
Suffolk County Water Authority Supply Wells (3)	30,000
Estimated total population served	50,000

ref: 3 (H2M, 1987. : Personal communications with Brentwood Water
Computation of land area irrigated by supply well(s) drawing from District)
aquifer(s) of concern within a 3-mile radius, and conversion to
population (1.5 people per acre):

N/A - Area developed; primarily residential and industrial. -

ref: 6 (USGS Topo Quads; Greenlawn, Central Islip, Bayshore East, Bayshore West,
New York)

Total population served by ground water within a 3-mile radius:

Groundwater used as a drinking water supply; population served is estimated to be greater than 50,000.

Assigned Value = 5

Matrix Value = 35

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

None

Rationale for attributing the contaminants to the facility:

No surface water body at or downhill from the site.

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

≤ 3 %

Name/description of nearest downslope surface water:

None - Downslope terrain to the south of the facility property. The facility is bordered on the south by a Long Island Railroad track embankment.

ref: 6 (H2M, 1987)

Average slope of terrain between facility and above-cited surface water body in percent:

N/A - No downslope surface water body within 3-mile of site.

ref: (USGS Topo Quads: Greenlawn, Central Islp, Bayshore East, Bayshore West)

Is the facility located either totally or partially in surface water?

No

Is the facility completely surrounded by areas of higher elevation?

No

1-Year 24-Hour Rainfall in Inches

2.8 inches

Assigned Value = 2

ref: 1 (HRS User's Manual, Figure 8)

Distance to Nearest Downslope Surface Water

N/A - No downslope surface water body within 3-miles of facility.
Also, facility is bordered by a LIRR track embankment to the south.

Physical State of Waste

Liquid

(See Groundwater Route.)

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Liberty's hazardous wastes are stored in 55-gallon drums or underground holding tanks:

- a) Waste paints, thinners, and spent degreasing solvents - placed in sealed 55-gallon drums and stored within a sound secondary spill containment structure. Assigned Value = 0
- b) Underground holding tanks - N/A for surface water route (see groundwater route).

Method with highest score:

Containers sealed and in sound condition, and surrounded by a sound diversion or containment system.

Assigned Value = 0

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Cadmium
Chromium
Cyanide
1,1,1-Trichloroethane

Compound with highest score:

Cadmium

Assigned Value = 18

(See Groundwater Route)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

0

Assigned Value = 0

Basis of estimating and/or computing waste quantity:

No hazardous wastes are stored at the site with a containment score not equal to zero, (with respect to surface water route.)

Assigned Value = 0

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

No surface water body within 3-miles of the site.

Assigned Value = 0

ref: 6 (USGS Topo Quads: Greenlawn, Central Islip, Bayshore East, Bayshore West)

Is there tidal influence?

N/A

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to coastal wetlands is greater than 2 miles.

ref: 6 (USGS Topo Quads: Greenlawn, Central Islip, Bayshore East, Bayshore West)

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to fresh-water wetlands is greater than 1-mile.

ref: 6 (USGS Topo Quads: Greenlawn, Central Islip, Bayshore East, Bayshore West)

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

N/A

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

N/A

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

N/A

Total population served:

N/A

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes, measured in stream miles.

N/A

AIR ROUTE N/A

1 OBSERVED RELEASE

Contaminants detected:

N/A - No documented air release.

Date and location of detection of contaminants

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

N/A

Hazardous Waste Quantity

Total quantity of hazardous waste:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

N/A

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

N/A

Distance to critical habitat of an endangered species, if 1 mile or less:

N/A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

N/A

FIRE AND EXPLOSION N/A

1 CONTAINMENT

Hazardous substances present:

N/A - No documented threats of fire or explosion potential at the facility.

Type of containment, if applicable:

N/A

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

N/A

Ignitability

Compound used:

N/A

Reactivity

Most reactive compound:

N/A

Incompatibility

Most incompatible pair of compounds:

N/A

* * *

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Distance to Nearest Population

N/A

Distance to Nearest Building

N/A

Distance to Sensitive Environment

Distance to wetlands:

N/A

Distance to critical habitat:

N/A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

N/A

Population Within 2-Mile Radius

N/A

Buildings Within 2-Mile Radius

N/A

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

No documented incidents.

Assigned Value = 0

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

Area above the underground holding tank manholes are contained within a locked chain linked fence. All hazardous wastes are stored indoors within the plant. The facility is patrolled by a security surveillance team during non-operating hours.

Assigned Value = 1

* * *

3 CONTAINMENT

Type of containment, if applicable:

Should a spill occur, the spill would flow downslope and collect immediately south of the facility between the plant building and the LIRR track embankment. This area is accessible by individuals walking along the railroad tracks.

Assigned Value = 15

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Toxicity

Cadmium	3
Chromium	3
Cyanide	1
1,1,1-Trichloroethane	1

Compound with highest score:

Cadmium

(See groundwater route)

Assigned Value = 3

* * *

5 TARGETS

Population within one-mile radius

Population within one-mile is estimated at between 3,001 to 10,000.

Assigned Value = 4

Distance to critical habitat (of endangered species)

N/A

REFERENCES

If the entire reference is not available for public review in the EPA regional files on this site, indicate where the reference may be found:

Reference Number	Description of the Reference
1	Uncontrolled Hazardous Waste Site Ranking System; A Users Manual. National Oil and Hazardous Substances Contingency Plan, Appendix A (40 CFR 300)(47 FR 31219), July 16, 1982.
2.	Helzmacher, McLendon & Murrell, P.C. (H2M), proposed field investigation. Liberty Industrial Finishing Corp. September 1986
3.	H2M, Field Investigation Report. Liberty Industrial Corp. July 1987.
4.	National Oceanic and Atmosphere Administration (NOAA), Climatological Data, Annual Summary, New York 1985, Volume 97, Number 13.
5.	Sax, Irving N. Dangerous Properties of Industrial Materials, 4th Edition.
6.	United States Department of the Interior Geological Survey (USGS) Quadrangles: Greenlawn, NY (1967) Central Islip, NY (1967) Bayshore East, N.Y. (1967) Bayshore West, N.Y. (1969)

Well #	5"	DEPTH	G.P.M.	H.P.	Aux. Power H.P.	N.OCL SODIUM HYPOCHLORITE	TYPE Pump	N.OH SODIUM HYDROXIDE	TYPE Pump	
(1)										
1-3	S-2494L	550	20	1200	125	from 1-4	Liquor 15%	B.I.F.	50%	Waufric
1-4	S-430PP	750	20	1400	125	DIESEL GEN 900	"	"	"	"
2-2 (2)	S-2031P	436	20	1200	125	DIESEL 250	"	"	"	"
2-3	S-3241B	755	20	1400	150	DIESEL GEN 380	"	"	"	"
3-1 (3)	S-73063	765	20	1400	150	NONE	"	"	"	"

WELL FIELD 7 300,000 GAL
2 1,000,000 GAL

ALL WELL G.P.M. = 6,600
" " M.G.D. 9,524,000

STREET VALVES

— Hydrants with STEAMER CONNECTIONS
— " Lateral Valves - All 6"

Brentwood Water District Service 6.25 sq. miles or — % of Fire District
Presently serving 6,500 consumers or 20,000 people

Received from Brentwood
Water District

DATE —

LAYNE-NEW YORK CO., INC.

1250 WEST ELIZABETH AVE., LINDEN, N. J.

LOG OF WELL

Well No. 1-4 S-43088T Job No. 0-800-01 Test No. _____
 Log for (Owner) BRENTWOOD WATER DISTRICT
 Address Town of Islip, Third Ave. Brentwood
 Representative, if any _____
 Well located at 3rd Av. w/o 1st Ave. Brentwood, Suffolk County, State of New York
 Furnish sketch of location _____ Date Drilling started 5/15/72 Date Test Hole Completed 5/15/72
 Total depth to bottom of Well _____ Diameter Test Hole _____ Elevation at Ground Level, if available _____
 Elevation at Ground Level, if available _____ Distance from where measurements were taken to ground level _____
 Water stands when not pumping; _____ feet _____ inches from the surface of the ground
 All Measurements taken from Ground Level

THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATA	Length of Core Taken	FORMATION FOUND EACH STRATUM	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATA	Length of Core Taken	FORMATION FOUND EACH STRATUM
156	156		Fine, med & coarse brn sand & gravel	22	476		Fine brn sand, lignite stks of brn & grey cl.
1	157		Light grey clay	3	479		Grey clay & lignite
28	185		Med. brn sand stks of white clay	4	483		Fine brn sand, stks br clay & lignite
2	187		Solid grey sandy clay	2	485		Solid grey clay
24	211		Med. to coarse brn sand stks of grey clay & lignite	12	497		Fine grey sand, stks grey clay
				3	500		Grey clay, stks of fine sand
10	221		Solid brn & grey clay & hardpan stks of lignite	6	506		Clayey fine grey sand stks of grey clay
				34	540		Brn & grey sandy clay stks of grey clay
13	234		Fine grey sand, stks of grey clay & lignite	26	566		Clayey grey sand
12	246		Med. brown sand	67	633		Fine grey sand, stks grey & brn clay
7	253		Med. brn sand, stks of multicolored clay	59	692		Fine to med grey sand
23	276		Fine sand, dk blue clay pyrite & hardpan	7	699		grits stks grey & brn cl.
14	290		Fine sand, hardpan, pyrite & clay stks	33	732		Fine to med dark brown sand
13	303		Solid grey clay	30	762		Fine to med grey sand grey clay stks
84	387		Clayey fine grey sand stks of grey clay	16	778		Coarse grey sand & gravel, clay stks
5	392		Solid grey clay	25	803		Coarse sand, gravel gravel embedded in clay
60	452		Fine grey sand, grey clay strips	31	834		Clayey fine grey sand stks of grey clay
2	454		Brown sandy clay	12	846		Med to coarse grey sand gravel & some clay
				56	902		Fine to med. sand, gravel stks sandy clay
							Fine brn clayey sand & gravel, stks brn clay

Remarks and opinion of Test

CHECK TYPE OF
RIG USED

Reverse XXX
KINGS
KILNDRICK
XXXX
BILLY

(signed) Cicogna, Booth, Tucker

Driller

