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Document Control No.: 4200-16-ADBD

FINAL
SITE INSPECTION REPORT
ALPHA PORTLAND CEMENT
JAMESVILLE, NEW YORK

CERCLIS ID No.: NYD002225878

February 11, 1994

Work Order No.: 04200-016-081-0019

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Prepared by:

ROY F. WESTON, INC.
Raritan Plaza I
4th Floor
Raritan Center
Edison, New Jersey 08837

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for MON

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WESTON

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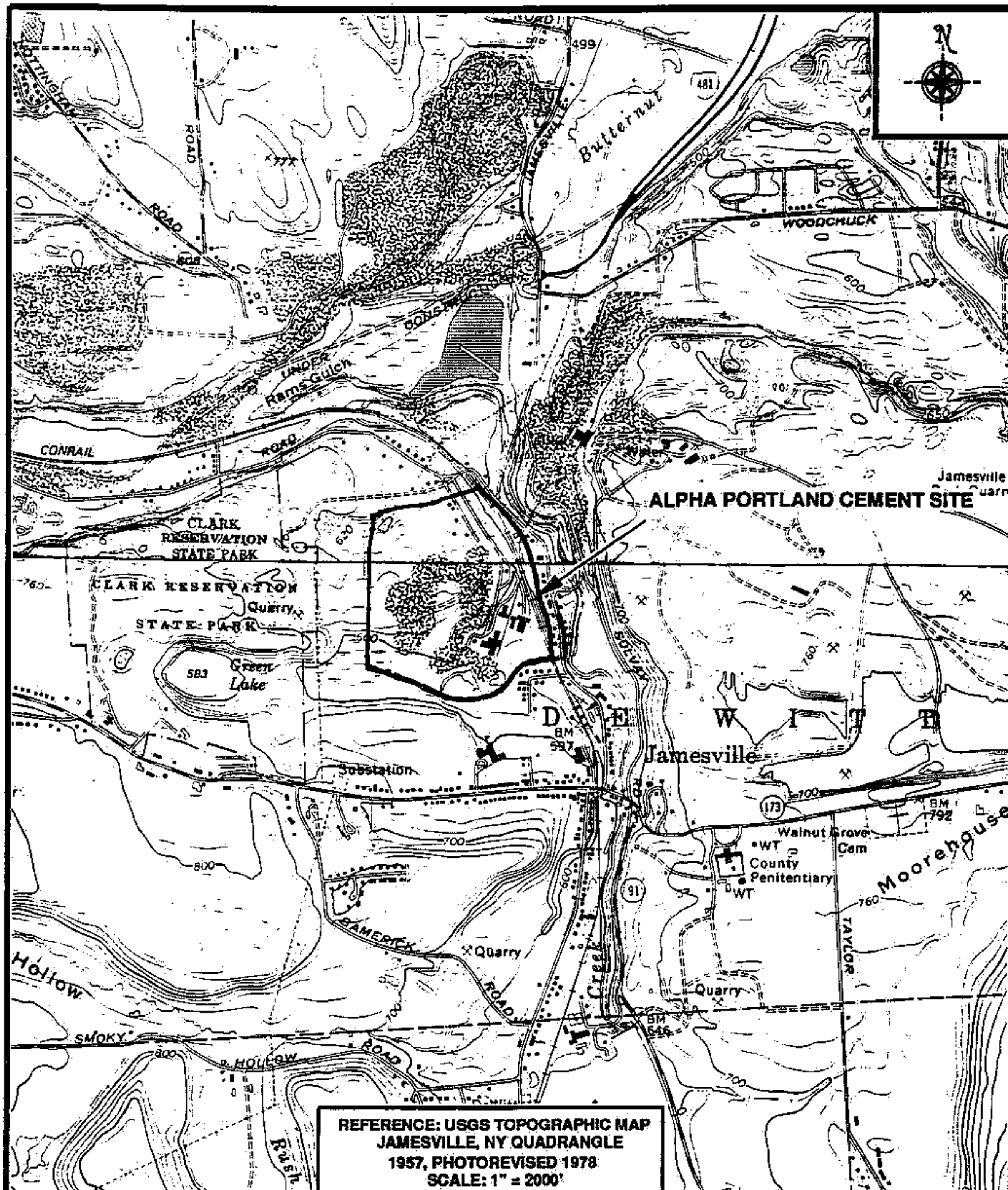
SITE SUMMARY

The Alpha Portland Cement (Alpha) facility is an inactive 125-acre site located in the town of Jamesville, Onondaga County, New York (Ref. Nos. 1;12). The site is situated in a rural area and is bordered by the Jamesville Quarry to the east and the Clark Reservation State Park to the west. Figure 1 provides a Site Location Map. Cement manufacturing operations occurred from 1914 to 1980 and involved several acres of the site (Ref. Nos. 1; 2, pp. 3). In 1985, the property was purchased by Otisca Industries of Syracuse, New York (Ref. No. 12). On September 8, 1993, during preparation of this report, Getty Oil foreclosed on the property and is now the current owner (Ref. No. 27).

In 1975 Alpha began experimenting with burning hazardous wastes, primarily liquid solvents and hydrocarbons, as fuel supplements (Ref. Nos. 6, p. 2; 7). Most of the conveyance, handling and storage activities associated with burning hazardous materials were confined to an area just south of the plant known as the hazardous waste storage area. It is believed that localized spillage of hazardous substances may have occurred in this area (Ref. Nos. 6, p. 2; 11). Figure 2 provides a Site Map. During the same time period, Alpha installed a baghouse and electrostatic precipitator to clean the kiln stack gases. The nonhazardous clinker and clinker dust generated during the cement manufacturing process was collected by the air pollution control equipment and disposed of in the southern portion of the former gravel quarry. In the late 1970s, Alpha also disposed of an old corroding tanker in the former gravel quarry. In 1980, Alpha ceased cement manufacturing at this site, and in 1981 removed the waste which had been left in the hazardous waste storage area (Ref. Nos. 2, p. 12; 6, p. 2).

In July 1985 Otisca Industries (Otisca), a small research and development company, purchased the Alpha site to construct a "coal liquification" demonstration pilot plant (Ref. Nos. 6, p. 2; 12). With the purchase, Otisca voluntarily assumed the liabilities associated with remediating the remaining hazardous waste contamination and closing the Alpha site. On July 30, 1986, the buried tanker was located in the southwest corner of the clinker fill area, and was found to contain polychlorinated biphenyls (PCBs) (Ref. No. 6, p. 2). The tanker and surrounding contaminated soil were subsequently removed by Otisca as part of the 1987 Closure Plan for the Alpha site (Ref. No. 3). To date it is unknown whether the facility has been certified as closed by the New York State Department of Environmental Conservation. This action is considered a qualifying waste removal under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (Ref. Nos. 2; 4; 5; 26).

In June 1986 an investigation of the hazardous waste storage area revealed a two- to three-inch layer of what appeared to be encrusted, oxidized hydrocarbons. Although surface samples were found to contain a high total hydrocarbon content, analysis of subsurface samples revealed much lower concentrations, indicating impedance of infiltration (Ref. No. 2, p. 16). This area has also been remediated per the 1987 Closure Plan through removal of the contaminated soil. This action is considered a qualifying waste removal under CERCLA (Ref. Nos. 2; 4; 5; 26).



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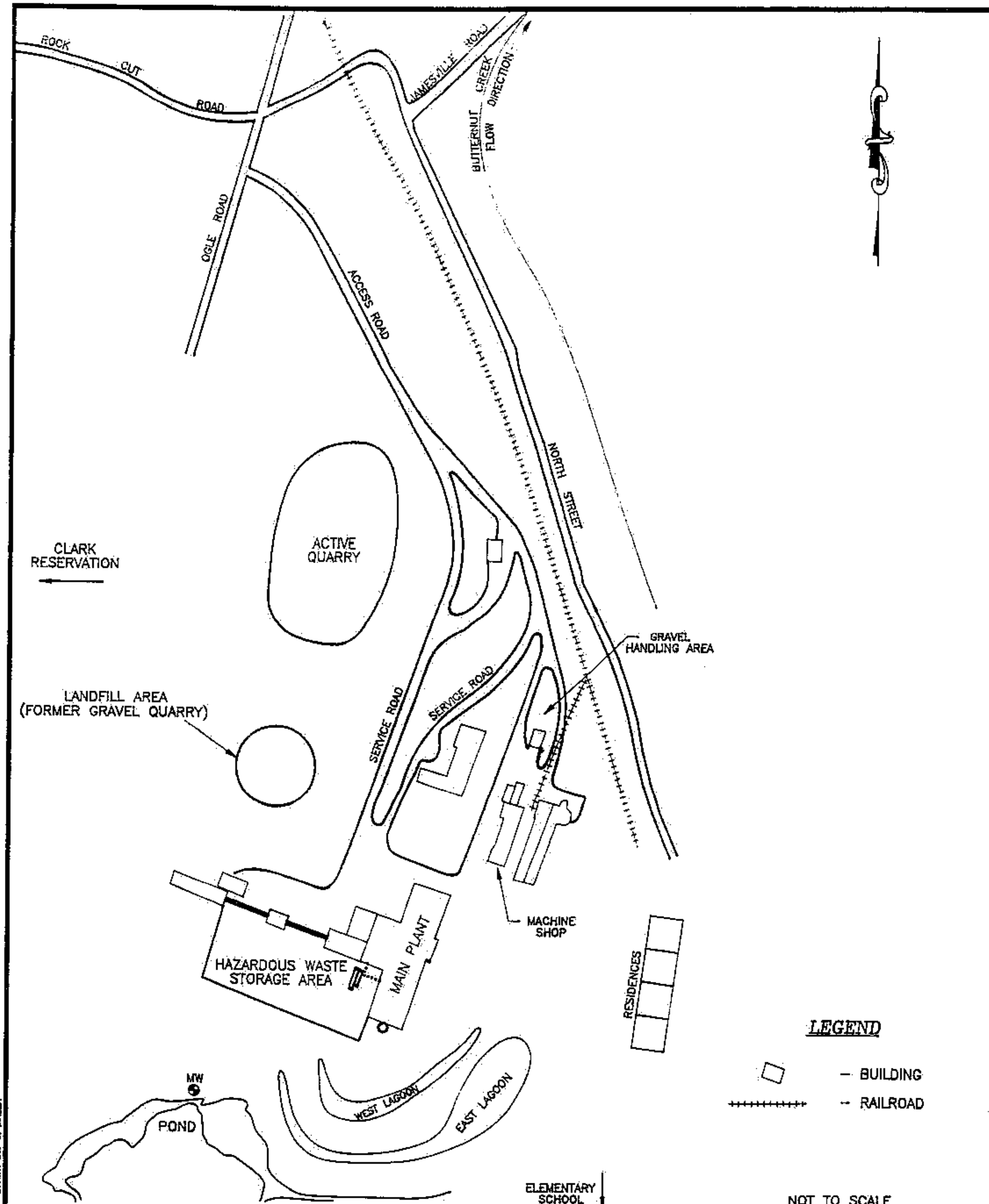
SITE LOCATION MAP

FIGURE 1

ALPHA PORTLAND CEMENT
ROCK CUT ROAD
JAMESVILLE, NY



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PROJECT NAME: ALPHA PORTLAND CEMENT SCREENING SITE INSPECTION JAMESVILLE, NEW YORK	SITE MAP
CLIENT NAME: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	DATE: 08/06/93 — FIGURE #: 2

Otisca performed coal agglomeration at the site for one year beginning in late 1988 or early 1989 and ending in 1990. The process physically cleaned rock coal using fine grinding and selective agglomeration to produce a coal water slurry product. This product was then sold as a fuel. No hazardous wastes were used or produced in this process (Ref. No. 12, pp. 7, 8).

During both Alpha Portland Cement's and Otisca's occupation of the facility, the floor drains inside the production buildings were drained to two unlined on-site lagoons. During WESTON's August 19, 1993 site visit the eastern lagoon appeared to be a dark green color with plant life surrounding the lagoon. The western lagoon had what appeared to be a black sludge settled in it. According to Clay Smith from Otisca, this "sludge" may be black coal mixed with sediment (Ref. No. 12).

There are currently four tenants on site: Hooker, the Rail Road Historical Society, Maxim, and General Crush Stone. General Crush Stone operates a quarry within 200 feet of the former quarry. The Rail Road Historical Society holds it's meetings within 200 feet of the former production area. The other two tenants, Hooker and Maxim, operate quarries at the site, but not within 200 feet of a waste source area (Ref. No. 12).

Drinking water for the area is obtained through public and private water supply wells. However, no public supply wells are located within four miles of the site. The nearest surface water is an on-site pond which discharges to Butternut Creek, which is located approximately 1,200 feet southeast of the site. Butternut Creek is a fishery (Ref. No. 12). Drainage patterns at the site allow for runoff to migrate from the former hazardous waste storage area to the on-site pond and lagoons (Ref. No. 12).

There is an elementary school located approximately 300 feet from the lagoons. The school uses a trail, located approximately 150 feet from the lagoons, for supervised nature hikes. There are approximately 18 residences within 200 feet of the site, the closest of which is located about 100 feet from the eastern lagoon (Ref. No. 12).

Alpha was listed as a treatment, storage and disposal (TSD) facility. Alpha originally intended to utilize waste oils as a substitute fuel in the cement kiln. However, Alpha never actually operated as a TSD, and ceased all operations in 1980. In June 1983, Alpha requested termination of their TSD permit. To date this request has not been granted (Ref. Nos. 1; 18).

WESTON

SITE ASSESSMENT REPORT: SITE INSPECTION

PART I: SITE INFORMATION

1. **Site Name/Alias** Alpha Portland Cement
   Street Rock Cut Road
   City Jamesville **State** New York **Zip** 13078
2. **County** Onondaga **County Code** 067 **Cong. Dist.** 27
3. **EPA ID No.** NYD002225878
4. **Block No.** 083-01-07
5. **Latitude** 42° 59' 51" N **Longitude** 76° 04' 42" W
   USGS Quad. Jamesville, NY
6. **Owner** Getty Oil Company **Tel. No.** (516) 338-1225
   Street 125 Jeriko Turnpike
   City Jeriko **State** New York **Zip** 11753
7. **Operator** N/A **Tel. No.** ____
   Street ____
   City ____ **State** ____ **Zip** ____
8. **Type of Ownership**
   _X_ Private ___ Federal ___ State
   ___ County ___ Municipal ___ Unknown ___ Other
9. **Owner/Operator Notification on File**
   ___ RCRA 3001 Date ____ ___ CERCLA 103c Date ____
   ___ None _X_ Unknown
10. **Permit Information**

Permit	Permit No.	Date Issued	Expiration Date	Comments

   There are no permits known to be associated with the facility.
11. **Site Status**
   ___ Active _X_ Inactive
12. **Years of Operation** 1914 to 1989

13. Identify the types of waste sources (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.

(a) Waste Sources

Waste Unit No.	Waste Source Type	Facility Name for Unit
1.	Landfill	Clinker Disposal Area
2.	Contaminated Soil	Hazardous Waste Storage Area
3.	Containers	Transformers
4.	Surface Impoundment	Lagoons

(b) Other Areas of Concern

Identify any miscellaneous spills, dumping, etc. on site; describe the materials and identify their locations on site.

When Otisca Industries purchased the property in 1985, they found and removed rusted drums scattered around the property; however they did not observe any residues in or around the drums. During a 1983 inspection conducted by NYSDEC, approximately 50 gallons of waste oil, 25 gallons of methanol antifreeze and 20 gallons of some type of coating compound located in the machine shop area were noted. This site is the current location of the Rail Road Historical Society. During WESTON's August 19, 1993 on-site reconnaissance, six empty miscellaneous drums, two half-full Valvoline fuel oil drums and one full "drydene motor oils, grease" drum were found in the area. No evidence of leaks or spills were noted. Assuming that the markings on these drums accurately indicate their contents, they will not be evaluated in this report since unadulterated petroleum products are excluded under CERCLA.

Ref. Nos. 2, p. 3; 9; 12; 27; 32; 33

14. **Information available from**

Contact Juan Davila **Agency** U.S. EPA **Tel. No.** (212) 264-6669

Preparer Gretchen L. Chapman **Date** 11 February 1994

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following items.

Waste Unit 1 - Clinker Disposal Area
No. **Facility Name for Unit**

Source Type

X	**Landfill**	___	**Contaminated Soil**
___	**Surface Impoundment**	___	**Pile**
___	**Drums**	___	**Land Treatment**
___	**Tanks/Containers**	___	**Other**

Description:

Alpha used an area of the former quarry to dispose of their nonhazardous clinker and clinker dust collected from the plant's baghouse and electrostatic precipitator. In the late 1970s, Alpha also disposed of an old corroding tanker in the quarry. On July 30, 1986, the buried tanker was located in the southwest corner of the clinker fill area in the former quarry, and was found to contain PCBs. The internal contents of the tanker were removed and disposed of as per New York State Department of Environmental Conservation (NYSDEC) approval. The NYSDEC-approved 1987 Closure Plan for the Alpha site called for soil cleaning to lower the PCB concentration from a spacial average of 16 parts per million (ppm) to below 10 ppm, and the sum total of priority pollutants below 50 ppm. The contaminated soil surrounding the tanker was subsequently removed and disposed of at a secure NYSDEC-approved landfill (Envirosafe) in accordance with the approved Closure Plan. The final soils cleanup level was 4 ppm of PCBs for a spatial composite sample collected on December 11, 1986. On October 20, 1987, remediation at the site was complete as per the approved Closure Plan by Otisca. To date the site is not known to have been formally certified as closed by the NYSDEC. This action constitutes a qualifying waste removal under CERCLA.

Hazardous Waste Quantity

In remediating this area in 1987, 14 barrels of PCB-contaminated soil were removed from the Alpha site. There is currently no hazardous waste known to be present at the site. Since this area has undergone a qualifying waste removal, the minimum waste quantity will be used to evaluate this waste source.

Hazardous Substances/Physical State

Samples were collected from the tanker contents as well as from surrounding soils. Results of analysis of sludge samples collected from inside the tanker indicate the presence PCBs at a concentration of approximately 700 ppm. Results of a Priority Pollutant analysis for a composite sample of soils surrounding the tanker show that most of the components are well below detectable limits with the exception of PCBs at a concentration of 15 ppm. However, a qualifying removal action under CERCLA took place in the clinker disposal area of the former quarry; therefore, there are no hazardous substances known to be currently present in this area.

Ref. Nos. 2, pp. 17, 26; 3; 4; 5; 6; 11; 17; 26

PART II: WASTE SOURCE INFORMATION (Continued)

For each of the waste units identified in Part I, complete the following items.

Waste Unit 2 - Hazardous Waste Storage Area
No. **Facility Name for Unit**

Source Type

___	**Landfill**	X	**Contaminated Soil**
___	**Surface Impoundment**	___	**Pile**
___	**Drums**	___	**Land Treatment**
___	**Tanks/Containers**	___	**Other**

Description:

Reportedly, over a five year period between 1975 and 1980, mainly during 1978 through June 1979, this area was used to store a wide variety of contaminated liquid solvents and hydrocarbons. These liquids were burned in a cement kiln to recover their heat value. The waste solvents were brought to this area in drums and tanker trucks by Haz-O-Waste Corporation, and some spillage did occur during waste transfer operations. All handling and storage of hazardous waste occurred in and was limited to this area. All drums and tankers used for on-site storage and transfer were cleaned and removed in late 1981 in accordance with Department of Transportation (DOT) and United States Environmental Protection Agency (U.S. EPA) approved procedures at the time. This cleanup project was completed in February 1982 by Alpha Portland Cement. In 1987 Otisca submitted a Closure Plan for the facility calling for a cleanup effort in accordance with NYSDEC requirements, and specifying that any soils left on site should contain less than 1 ppm of total volatile organic compounds, less than 10 ppm of any single hazardous organic and less than 50 ppm of total hazardous organics (i.e., Priority Pollutants). In addition, all waste materials were to be removed to a secure NYSDEC-approved landfill. On October 20, 1987 this cleanup was certified as complete by Otisca in accordance with the NYSDEC-approved Closure Plan; therefore, this area has undergone a qualifying waste removal under CERCLA. To date it is not known if the site has been formally certified as closed by the NYSDEC.

Hazardous Waste Quantity

Approximately 300,000 gallons of chemical waste was burned at the plant in 1977 and 422,000 gallons were burned in 1978/1979. During the removal activities completed in 1981, the remaining 22,850 gallons of waste were consolidated into 457 50-gallon drums. Approximately 11,500 gallons of liquid solvents were also disposed of. As part of the 1987 cleanup, 700 tons of hydrocarbon contaminated soil was removed and transported to Seneca Meadows Landfill, Waterloo, New York. Sample characterization analysis revealed that the contaminated soils were a "nonhazardous waste." Since this area has undergone a qualifying waste removal, the minimum waste quantity will be used to evaluate this waste source.

Hazardous Substances/Physical State

During Alpha's 1981 removal of waste only one sample was collected. The sample was a composite collected from a tank which was subsequently analyzed and found to contain PCBs at a concentration of 14 ppm. In March 1985, Otisca performed sampling and analysis of surface scrapings collected from inside buildings and tanks, surface excavations and subsurface borings, and water and sediment sampling in the lagoon, stream and pond areas. Analyses of these samples revealed elevated concentrations of No. 2 fuel oil, hydrocarbons, toluene, and PCBs in the hazardous waste storage area. In June 1986, Otisca conducted an additional investigation of the area. Upon inspection of the area it was noted that at the surface there was a thin uneven covering of clinker. However, just below the clinker was a two- or three-inch layer of encrusted, oxidized hydrocarbons which appeared to be similar to "blacktop" surfacing material. Subsequent analyses of samples collected at depths ranging from zero to six feet below ground surface indicated high concentrations of total hydrocarbons in surface soils. Subsurface samples showed much lower concentrations. When the soil was manifested off site during the removal, it was classified as nonhazardous.

Ref. Nos. 2, pp. 11, 12, 14-16; 4; 7; 8; 26

PART II: WASTE SOURCE INFORMATION (Continued)

For each of the waste units identified in Part I, complete the following items.

Waste Unit 3 - Transformers
No. **Facility Name for Unit**

Source Type

___	**Landfill**	___	**Contaminated Soil**
___	**Surface Impoundment**	___	**Pile**
___	**Drums**	___	**Land Treatment**
X	**Tanks/Containers**	___	**Other**

Description:

On April 15, 1983, officials from NYSDEC Region 7, accompanied by officials from the Town of Dewitt, inspected the Alpha Portland Cement site for the presence, or lack thereof, of dangerous or hazardous materials. During this inspection, seven electrical transformers were identified, "several" of which were known to contain PCBs. By 1987 the PCB-containing transformers were removed and incinerated by an outside contractor. They were replaced by "above spec" PCB-containing transformers.

Hazardous Waste Quantity

Seven transformers were noted on site in 1983. "Several" of them were known to contain PCBs; therefore, the exact quantity of PCB-contaminated oil associated with the transformers is unknown.

Hazardous Substances/Physical State

Several of the transformers were known to contain PCBs which would have been in a liquid state.

Ref. Nos. 2, p. 12; 9; 12

WESTON

PART II: WASTE SOURCE INFORMATION (Continued)

For each of the waste units identified in Part I, complete the following items.

Waste Unit 4 (**No.**) - Lagoons (**Facility Name for Unit**)

Source Type

___	**Landfill**	___	**Contaminated Soil**
X	**Surface Impoundment**	___	**Pile**
___	**Drums**	___	**Land Treatment**
___	**Tanks/Containers**	___	**Other**

Description:

The facility floor drains used by both Alpha and Otisca drained to two on-site lagoons. The lagoons are located in the southern portion of the site. Neither of the lagoons are known to be lined, thus allowing water contained in the lagoons to percolate into the ground. No berms were noted around the lagoons during WESTON's 19 August 1993 on-site reconnaissance. During the reconnaissance the area immediately surrounding the lagoons was noted to possess characteristics of a wetland environment; however, this area is not indicated as such on the U.S. Fish and Wildlife National Wetlands Inventory Maps.

During the WESTON on-site reconnaissance, the southern lagoon was observed to contain opaque green water. The northern lagoon was observed to contain a thick black sludge-like material. The black sludge-like substance is reportedly coal from Otisca's processes, mixed with sediment.

Hazardous Waste Quantity

The approximate area of the southern lagoon is 186,000 square feet and the northern lagoon is 168,000 square feet. However, the lagoons are not known to have received any hazardous waste.

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Hazardous Substances/Physical State

The southern lagoon contained opaque green water. The northern lagoon contained a thick black sludge. Samples collected from the area in March 1985 did not indicate the presence of any hazardous substances.

Ref. Nos. 2, p. 15, Appendix D; 8; 12; 23; 24; 33.

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PART III: SAMPLING RESULTS

EXISTING ANALYTICAL DATA

HAZARDOUS WASTE STORAGE AREA

As required by the Closure Plan, in late 1981, Alpha reportedly removed the waste material contained in drums and tanks located in the hazardous waste storage area in accordance with DOT and U.S. EPA approved procedures at that time. Liquids, solids and sludges were removed from the bulk transport tankers. Only one composite sample was collected and subsequently analyzed for PCBs. Analytical results from this sample, collected from a tank, indicated the presence of PCBs at a concentration of 14 ppm. In March 1985, Otisca voluntarily retained Galson Technical Services (GTS) and Calocerinos and Spina Consulting Engineers (C&S) to investigate the alleged soils contamination in the immediate vicinity of the hazardous waste storage area. The purpose of the study was to determine if, and to what extent, the surficial soils within the former storage and unloading areas were contaminated by chemical spills. Test pit excavations and subsurface test bores were completed as part of this preliminary investigation. Laboratory analyses of the samples collected in this area indicated that the soils were relatively free of contamination with the following exceptions:

Table I. Summary of Analytical Results, Area A (Hazardous Waste Storage Area)

Lab***	Location	Substance	Concentration (ppm)	Depth (ft)
GTS	Test Pit 1	#2 Fuel Oil	83 175	1-2 2-3
OB&G	Test Pit A	Hydrocarbons	7,200 33 31	surface 2-3 6
OB&G	Test Pit B	Hydrocarbons	1,300 1.5 1.6	surface 2 6
GTS	Test Pit 8	#2 Fuel Oil Arochlor 1016	1,100 40(0.3)**	0-2 0-2
GTS	Test Bore 1	#2 Fuel Oil Toluene	2,500 5(0.96)** 5(0.50)**	0-2 40-41.5 40-41.5
GTS	Test Bore 2	Toluene	17	5-6.5
GTS	Test Bore 3	Toluene	26 57(ND)*	5-6.5 10
GTS	Drainage	PCB Sluiceway Water	0.7	–

* analytical error corrected to not detected (ND) May 15, 1985 (GTS)
** Reanalysis obtained values shown in parenthesis on July 26, 1985 (GTS)
*** Contract Analytical Laboratories; Galson Technical Services (GTS); O'Brien & Gere Laboratories (OB&G)

In June 1986, Otisca conducted an additional investigation of the hazardous waste storage area. Upon inspection of the area, a thin uneven covering of clinker was noted at the surface. However, just below the clinker was a two- or three-inch layer of encrusted, oxidized hydrocarbons which appeared to be similar to "blacktop" surfacing material. Subsequent analyses of samples collected from zero to six feet below ground surface indicated that the surface soils were high in total hydrocarbon content. Subsurface samples showed much lower concentrations. Analytical results for this investigation are presented in the previous table (Table 1) as OB&G Test Pits A and B.

The closure plan required a cleanup effort such that any soils left on site should contain less than 1 ppm for total volatile organic compounds, less than 10 ppm for any single hazardous organic and less than 50 ppm for total hazardous organics (i.e., Priority Pollutants). This cleanup was certified complete by Otisca on October 20, 1987. To date it is unknown if the site has been formally certified as closed by the NYSDEC.

Ref. Nos. 2, pp. 12-17; 4; 11

CLINKER DISPOSAL AREA

In September 1986 a tanker was discovered in the Clinker Disposal Area of the former quarry. Samples were collected from the buried tanker contents as well as surrounding soils. Results of analyses for sludge samples collected from inside the buried tanker indicated the presence of PCBs at a concentration of approximately 700 ppm. Results of Priority Pollutant analysis for a composite sample of soils surrounding the tanker indicated that most of the components were below detectable limits with the exception of PCBs at a concentration of 15 ppm (later composites revealed a maximum concentration of 22 ppm). Since there was some concern that the tanker contents may have been paint sludges, x-ray diffraction analysis for heavy metals was conducted by Otisca Industries to determine if elevated levels of heavy metals were present. Iron was present at a significant concentration, presumably due to the substantial corrosion of the tanker structure. The tanker and surrounding soil were removed. Final analytical results for the remediated soil indicated that the average spatial PCB concentration of the excavation area had been reduced to 4 ppm. Duplicate analysis confirmed this result. On December 21, 1986, NYSDEC was notified by Otisca of the completion of the cleanup activities in this area.

Ref. Nos. 2, Appendix H; 3

SITE INSPECTION RESULTS

Sampling was not performed by WESTON during this investigation.

WESTON

PART IV: HAZARD ASSESSMENT

GROUNDWATER ROUTE

1. **Describe the likelihood of a release of contaminant(s) to groundwater as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence.**

   A release to groundwater is not observed or suspected. Contaminated soils associated with the site have been removed in accordance with the 1987 Closure Plan. There is one groundwater monitoring well on site. Although no analytical data are available for this well, background information indicates that surface water and groundwater sampling and analyses completed in accordance with the 1987 Closure Plan revealed no contamination by any hazardous substance.

   Ref. No. 2, pp. 26-27

2. **Describe the aquifer of concern; include information such as depth, thickness, geologic composition, areas of karst terrain, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.**

   Potable water in the areas of Alpha Portland Cement is obtainable from both surficial materials and bedrock. The surficial materials such as sand and gravel terrace deposits and glacial till and the upper underlying fractured bedrock are hydraulically connected.

   The site is situated at an elevation of 590 feet above mean sea level on the northern flank of the east-west trending Clark Reservation Channel. The soil in the channel and under the Alpha site is "Honeoye Very Stony". The bedrock beneath the site consists of nearly flat lying stratified limestones and dolostones of the Devonian age Manlius Group. Beneath these rocks are gypsum-bearing carbonate rocks and shales of the Silurian Salina Group. Fractures and joints caused by regional tectonic events that occurred millions of years ago are ubiquitous in the bedrock throughout the Jamesville area and can be assumed to occur beneath the Alpha site. The total thickness of sand and gravel under the Alpha site are presumed to range from 60 to 100 feet, based on available background information.

   Groundwater generally flows northward in the major buried bedrock valleys. Groundwater also flows northward in bedrock under the Allied Quarry located east of the Alpha site. The on-site pond is a groundwater mound and the underlying soils are saturated to the water table. Groundwater flow in the area of the site north of the pond is probably easterly towards Butternut Creek. The median yield from wells completed in limestone around Jamesville is 25 gallons per minute (gpm), whereas yields from the sand and gravel above the bedrock near the Alpha site can be as high as 100 gpm, depending on lithology and thickness. The hydraulic conductivity of the sand and gravel under the site is relatively high, ranging from approximately 0.0001 to 0.001 centimeters per second (cm/sec). The water table at the site is probably located between 10 and 60 feet below the ground surface, depending on the location.

Ref. Nos. 2, p.7, Appendix A; 15

3. **Is a designated well head protection area within 4 miles of the site?**

The nearest well head protection area is located approximately two miles south of the Alpha Portland Cement site.

Ref. Nos. 13; 14

4. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

The hazardous waste tanker truck was found 30 to 40 feet below ground surface (BGS). Groundwater at the site has been reported between 10 and 60 feet BGS. No groundwater was encountered at 40 feet in the truck excavation. Therefore, the depth from the lowest point of waste disposal/storage to the saturated zone of the aquifer of concern is between 0 and 20 feet.

Ref. Nos. 2, pp. 10, 17; 10

5. **What is the permeability value of the least permeable continuous intervening stratum between the ground surface and the aquifer of concern?**

The unconsolidated aquifer beneath the site consists of sand, gravel, cobbles and boulders deposited as glacial outwash and till. The hydraulic conductivity of the sand and gravel under the site has been reported at 0.0001 to 0.001 cm/sec.

Ref. No. 2, p. 7

6. **What is the distance to and depth of the nearest well that is currently used for drinking purposes?**

The nearest drinking supply wells are located at Cliffside Mobile Homes, located approximately 1.2 miles west of the Alpha Portland Cement site. Approximately 270 people are served by these wells. The depths of these wells are unknown.

Ref. Nos. 20, 21

7. **If a release to groundwater is observed or suspected, determine the number of people that obtain drinking water from wells that are documented or suspected to be located within the contamination boundary of the release.**

A release to groundwater is not observed or suspected; refer to question 1.

8. **Identify the population served by wells located within 4 miles of the site that draw from the aquifer of concern and all overlying aquifers.**

Distance	Population
0-¼ mi	0
>¼ - ½ mi	0
>½ - 1 mi	0
>1 - 2 mi	410
>2 - 3 mi	450
>3 - 4 mi	470

State whether groundwater is blended with surface water or with groundwater from other wells. Also provide an explanation on how each ring population was determined.

All wells located within four miles of the site are private wells. Groundwater is not known to be blended with surface water or with groundwater from any other well.

Ref. Nos. 20, 21

9. **Identify uses of groundwater within 4 miles of the site (i.e., private drinking source, municipal source, commercial, irrigation, unusable).**

   Groundwater within four miles of the site is used as a private drinking water source.

   Ref. No. 20

SURFACE WATER ROUTE

10. **Describe the likelihood of a release of contaminant(s) to surface water as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence.**

    A release to surface water at or near the site is not observed or suspected. The nearest surface water is an on-site pond. Although the surrounding area drains to the pond, upstream water samples collected from the pond in 1985 revealed no surface water contamination. During WESTON's August 19, 1993 on-site reconnaissance, the pond was observed to be vegetated and showed no signs of contamination. All contaminated soils associated with the site have been removed per the 1987 Closure Plan.

    Ref. Nos. 2, Appendix D; 12

11. **Identify the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.**

    The site drains towards an on-site pond which discharges via an unnamed creek to Butternut Creek located east of the site.

    Ref. No. 12; 23

12. **What is the distance to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.**

    The nearest downslope surface water is an on-site pond. This pond is located approximately 25 feet north of the on-site lagoons.

    Ref. No. 12

13. Determine the type of floodplain that the site is located within.

The site is located in "Zone C", which is not in a floodplain.

Ref. No. 30

14. Identify drinking water intakes in surface waters within 15 miles downstream of the site. For each intake identify: the distance from the point of surface water entry, population served, and stream flow at the intake location.

Intake	Distance	Population Served	Flow (cfs)

There are no surface water intakes within 15 miles downstream of the site.

Ref. No. 20

15. Identify fisheries that exist within 15 miles downstream of the point of surface water entry. For each fishery specify the following information:

Fishery Name	Water Body Type	Flow (cfs)	Saline/Fresh/Brackish
On-Site Pond	Minimal Stream	<10	Fresh
Butternut Creek	Small to moderate stream	49.5	Fresh
Cedar Bay	Minimal stream	<10	Fresh
Old Erie Canal	Minimal stream	<10	Fresh
Limestone Creek	Large stream to river	1,260	Fresh

Ref. Nos. 20; 28; 31

16. Identify sensitive environments that exist within 15 miles downstream of the point of surface water entry. For each sensitive environment specify the following:

Environment	Water Body Type	Flow (cfs)	Wetland Frontage (miles)
Wetlands	Small to moderate stream	50.55	0.20 (Butternut Creek)
Wetlands	Minimal stream	<10	0.20 (Cedar Bay)

Environment	Water Body Type	Flow (cfs)	Wetland Frontage (miles)
Wetlands	Minimal stream	<10	0.55 (Old Erie Canal)
Wetlands	Large stream to river	1,260	0.30 (Limestone Creek)
Federal-Listed Endangered or Threatened Habitats (7)	Large stream	1,260	NA
State-Listed Endangered or Threatened Habitat (3)	Large stream	1,260	NA

Ref. No. 19; 24

17. If a release to surface water is observed or suspected, identify any intakes, fisheries, and sensitive environments from question Nos. 14-16 that are or may be located within the contamination boundary of the release.

A release to surface water is not observed or suspected; refer to question 10.

SOIL EXPOSURE PATHWAY

18. Determine the number of people that occupy residences or attend school or day care on or within 200 feet of the site property.

There are no schools or daycare facilities within 200 feet of the site. There are 18 residences within 200 feet of the site. The local school uses a trail on the Alpha site for supervised nature hikes.

Ref. Nos. 12; 16

19. Determine the number of people that work on or within 200 feet of the site property.

Less than 50 people work on or within 200 feet of the site property.

Ref. No. 12

20. Identify terrestrial sensitive environments on or within 200 feet of the site property.

No terrestrial sensitive environments are known to exist within 200 feet of the site property.

Ref. No. 19

AIR ROUTE

21. Describe the likelihood of release of contaminants to air as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release define the supporting analytical evidence.

A release of contaminants to air is not observed or suspected at the site. All contaminated soil and hazardous waste associated with the site has been removed per the approved 1987 Closure Plan. During WESTON's on-site reconnaissance, no air readings above background were detected on the HNu photoionization detector or organic vapor analyzer (OVA).

Ref. No. 12

22. Determine populations that reside within 4 miles of the site.

Distance	Population
On Site	<50
>0-¼ mi	70
>¼ - ½ mi	190
>½ - 1 mi	700
>1 - 2 mi	3,130
>2 - 3 mi	17,530
>3 - 4 mi	50,280

Ref. No. 29

23. Identify sensitive environments and wetlands acreage within 4 miles of the site.

Distance	Sensitive Environments	Wetland Acreage
On Site	None	None
>0-¼ mi	0	0.25
>¼ - ½ mi	Federal-Listed Endangered or Threatened Habitat (1)	13
>½ - 1 mi	Federal-Listed Endangered or Threatened Habitat (7)	49
	State-Listed Endangered or Threatened Habitat (1)	
>1 - 2 mi	Federal-Listed Endangered or Threatened Habitat (4)	155
	State-Listed Endangered or Threatened Habitat (1)	
>2 - 3 mi	Federal-Listed Endangered or Threatened Habitat (2)	100
	State-Listed Endangered or Threatened Habitat (2)	
>3 - 4 mi	Federal-Listed Endangered or Threatened Habitat (1)	235

Ref. No. 19, 24

24. If a release to air is observed or suspected, determine the number of people that reside or are suspected to reside within the area of air contamination from the release.

A release to air is not observed or suspected at the site; refer to question No. 21.

25. If a release to air is observed or suspected, identify any sensitive environments, listed in question No. 23, that are or may be located within the area of air contamination from the release.

A release to air is not observed or suspected at the site; refer to question No. 21.

ATTACHMENT 1

PHOTOGRAPH LOG

ALPHA PORTLAND CEMENT
JAMESVILLE, NEW YORK

On-Site Reconnaissance: August 19, 1993

WESTON

Document Control No.: 4200-16-ADBD
February 11, 1994

ALPHA PORTLAND CEMENT
JAMESVILLE, NEW YORK

On-Site Reconnaissance:
August 19, 1993

"All photographs taken by Gretchen Chapman"

Photo Number	Description	Time
1P-1	Looking southwest at the cement manufacturing building, across the former quarry and buried truck location.	0925
1P-3	Two empty tanks (contents unknown) formerly used by Alpha Portland Cement.	0935
1P-5	The transformer area looking north.	0945
1P-7	Looking west at the on-site pond.	0950
1P-10	Outfall pipe from manufacturing building floor drains to the lagoons.	1005
1P-11	The eastern lagoon.	1008
1P-12	The western lagoon.	1013
1P-13	Outfall pipe from floor drains to ground near pond.	1018
1P-16	Eastern lagoon.	1028
1P-20	Machine shop area looking southwest.	1042
1P-21	General crush stone quarry.	1050

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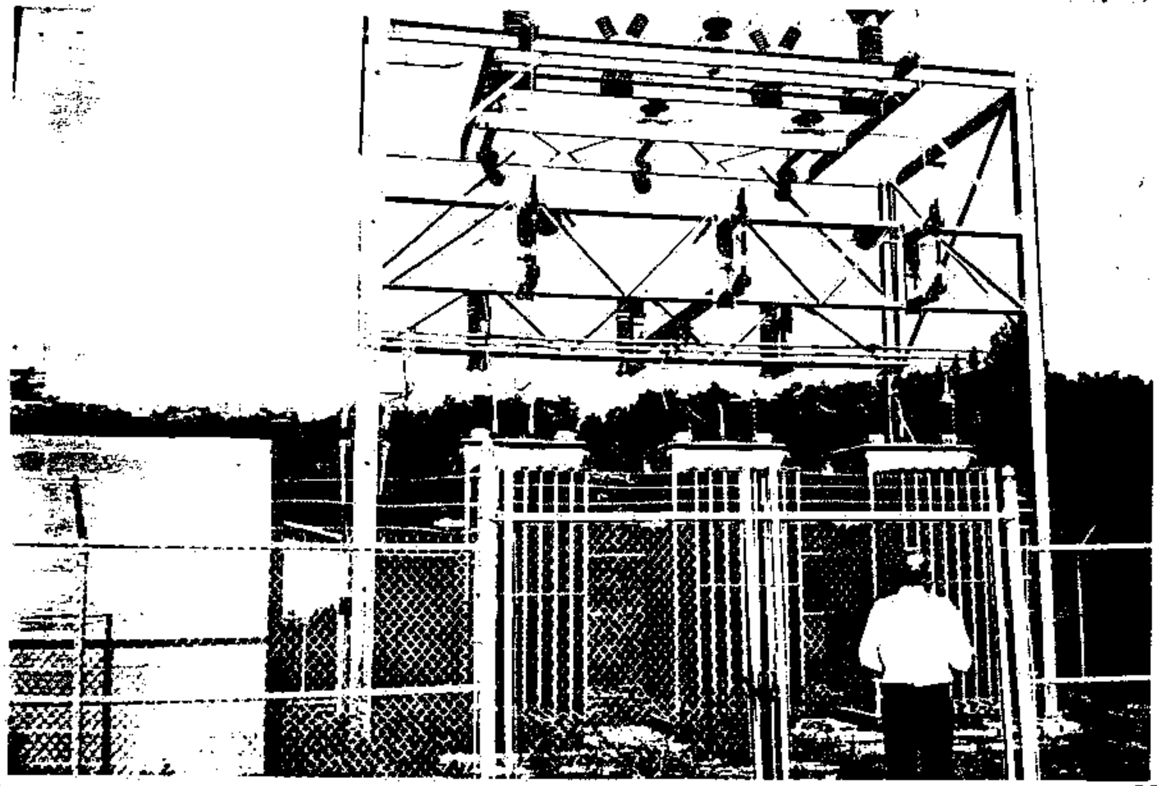
DBD
1994

1P-1 0925

Looking southwest at the cement manufacturing building
across the former quarry and buried truck location.

1P-3 0935

Two empty tanks (contents unknown) formerly used by Alpha Portland Cement.



1P-5 0945

The transformer area looking north.

1P-7 0950

Looking west at the on-site pond.

1P-10 1005

Outfall pipe from manufacturing building floor drains to the lagoons.

1P-11 1008

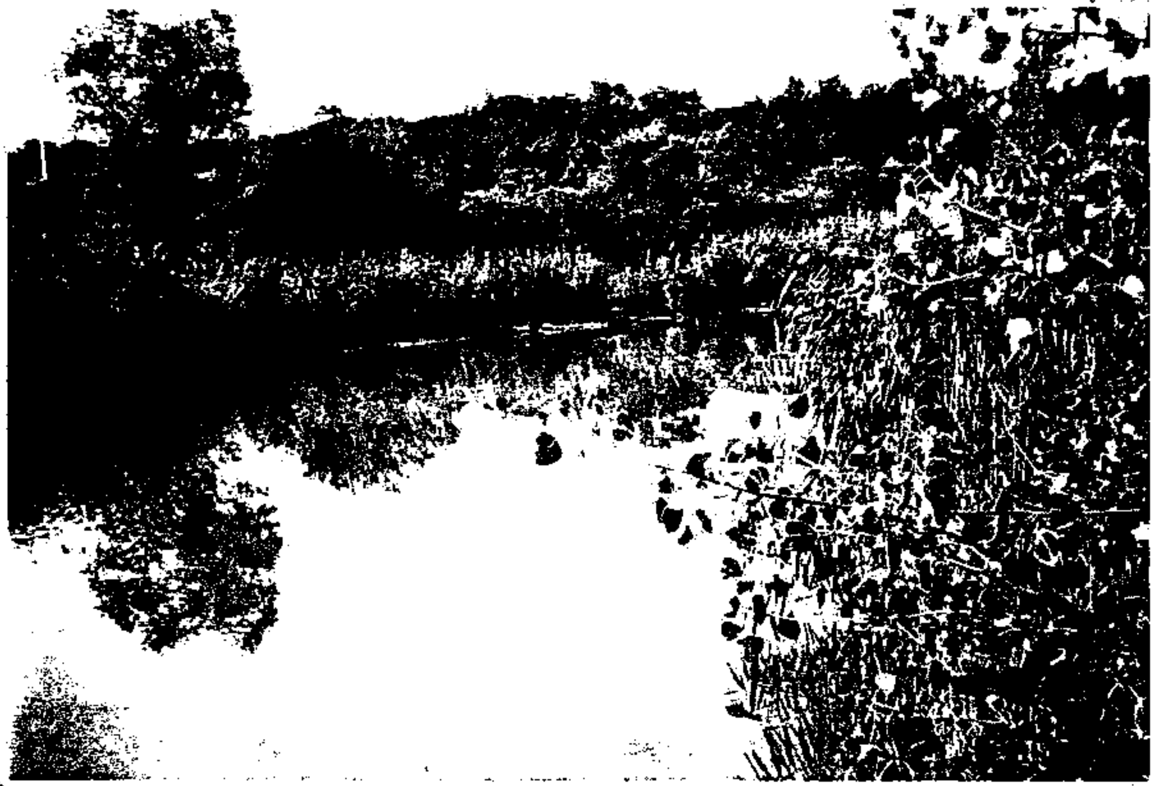
The eastern lagoon.

1P-12 1013

The western lagoon.

1P-13 1018

Outfall pipe from floor drains to ground near pond.



1P-16 1028

Eastern lagoon.

1P-20 1042

Machine shop area looking southwest.

1P-21 1050

General crush stone quarry.

Document Control No.: 4200-16-ADBD
February 11, 1994

ATTACHMENT 2

REFERENCES

sk\SITEINSP\ALPHPORT.

REFERENCES

1. Letter from Neil M. Gingold, Esquire, Attorney for Alpha Portland Cement Company, to Dr. Ernest A. Regna, USEPA, Solid Waste Branch. September 1, 1983, Attachment (Alpha Portland Cement Closure Plan, August 10, 1983).

2. Closure Plan, EPA I.D. No. NYD002225878, Alpha Portland Cement Site, 1987.

3. Letter from Keith A. Schimel, Ph.D., P.E., to Mr. Tom Killeen, NYSDEC, Facilities Closure Section. February 5, 1988.

4. Letter from Keith A. Schimel, Ph.D., P.E., to Mr. George Heitzman, NYSDEC, Remedial Action Section. October 20, 1987.

5. Letter from Clay D. Smith, Otisca Industries, Ltd., to Mr. James Moran, Facility Closure Section, NYSDEC. January 20, 1988.

6. Environmental Statement, Otisca Industries Plant Site, Jamesville, NY, May 3, 1991.

7. Letter from Keith A. Schimel, Ph.D., P.E., to Mr. Ed Miles, NYSDEC, Bureau of Hazardous Waste Technology. June 29, 1987.

8. Letter from Norm F. Boyce, P.E., NYSDEC, to Ms. Phyllis Burton. June 21, 1988.

9. Letter from Charles J. Branagh, P.E., Region 7, Environmental Quality Office, to Mr. Neil Gingold, Gingold and Gingold. April 19, 1983.

10. Letter from Paul L. Sheneman, P.E., to Mr. Raymond J. Nolan, NYSDEC. May 6, 1991.

11. Letter from Keith A. Schimel, Ph.D., P.E. to Mr. George Heitzman, NYSDEC, Permit Section. March 19, 1987.

12. Field Logbook, Document Control No. 4200-16-ADBE, Alpha Portland Cement , Work Order No. 04200-016-081-0019, On-Site Reconnaissance conducted by Roy F. Weston, Inc. on August 19, 1993.

Document Control No.: 4200-16-ADBD
February 11, 1994

REFERENCES (CONTINUED)

13. U.S. Department of the Interior, Geological Survey Map, Unconsolidated Aquifers in Upstate New York - Finger Lakes Sheet, Water Resources Investigations Report 87-4122.

14. Letter from Maureen Krudner, U.S. EPA, to Ed Knyfd, NUS Corporation, Attachment, (Proposed NY State Wellhead Protection Program, May 1990).

15. Letter from Keith Schimel, Ph.D., P.E. to Mr. Joseph Galloway, NYSDEC. November 5, 1986.

16. Project Note from Gretchen Chapman, WESTON, to file, Subject: Residences within 200 feet of Alpha, November 8, 1993.

17. Letter from George Heitzman, NYSDEC, to Mr. Keith Schimel. June 11, 1987.

18. Letter from Neil M. Gingold, Esq. to USEPA Permits Administration Branch. June 30, 1983.

19. Letter from Burrel Buffington, NYSDEC, NY Natural Heritage Program, to Christian Agnew, WESTON. July 28, 1993, with Attachment (Sensitive Environments Project Note).

20. Project Note from Gretchen Chapman, WESTON, to file, Subject: Alpha - 4-mile water supply and fisheries, with attachments, September 28, 1993.

21. Four Mile Vicinity Map of private wells compiled from the following U.S. Department of the Interior U.S. Geological Survey Topographic Maps, 7.5 minute series, Quadrangles for: Syracuse West, 1957, photorevised 1978, Syracuse East, 1957, photorevised 1978, Manlius, South Onondaga, Jamesville, 1973, photorevised 1978, and Oran, New York, 1978.

22. Letter from Clay Smith, Otisca Industries to Gretchen Chapman, WESTON. October 22, 1993, with attachment (aerial photograph).

REFERENCES (CONTINUED)

23. Four Mile Vicinity Map compiled from the following U.S. Department of the Interior U.S. Geological Survey Topographic Maps, 7.5 minute series, Quadrangles for: Syracuse West, 1981, Syracuse East, 1981, Manlius, 1991, South Onondaga, 1991, Jamesville, 1991, and Oran, New York, 1978.

24. Fifteen Mile Sensitive Environments Pathway, compiled from the following U.S. Fish and Wildlife National Wetlands Inventory Maps: Quadrangles for: Syracuse West, Syracuse East, Manlius, South Onondaga, Jamesville and Oran, New York, 1991.

25. Letter from Robert A. Torba, Regional Permit Administrator, NYSDEC to James Malvasi, Maxim Construction Services Corp. July 14, 1992.

26. The Revised Hazard Ranking System: Evaluating Sites After Waste Removal, U.S. EPA Publication 9345.1-03FS, October 1991.

27. Phone Conversation Record: Conversation between Clay Smith, Otisca Industries, and Gretchen Chapman, WESTON. September 30, 1993.

28. Water Resources Data, New York, Water Year 1992 Volume 3. Western New York, U.S. Geological Survey Water Data Report NY-92-3.

29. Letter from Bob Frost, Frost Associates, to Jan Holderness, WESTON, September 24, 1993, Attachment (Population Data).

30. Phone Conversation Record: Conversation between Les Monestary, Onondaga County Planning Board, and Gretchen Chapman, WESTON, June 3, 1993.

31. Phone Conversation Record: Conversation between Lloyd Wagner, U.S. Geological Survey, and Gretchen Chapman, WESTON. September 30, 1993.

32. Phone Conversation Record: Conversation between Tax Assessor, Town of Dewitt, and Gretchen Chapman, WESTON. September 24, 1993.

33. U.S. Environmental Protection Agency Superfund Program, Comprehensive Environmental Response, Compensation and Liability System (CERCLIS), Site/Event Listing, p. 271. October 1, 1992.

REFERENCE NO. 1

File
Alpha Port
Onon. Co.

RECEIVED

SEP 1983

DEPT. ENVIRONMENTAL
CONSERVATION, SYRACUSE

September 1, 1983

Dr. Ernest A. Regna
Chief, Solid Waste Branch
United States Environmental Protection Agency, Region II
26 Federal Plaza
New York, New York 10278

Re: Alpha Portland Cement Company
EPA I.D. No. NYD002225878

Dear Dr. Regna:

In response to your letter to me under date of August 10, 1983 regarding the above-referenced matter, enclosed please find the closure plan for the above-referenced facility, as required under 40 CFR part 265 subpart G. This is being submitted to you, after conversations I had with Catherine Massimino of your staff and EPA attorney Bruce Adler. In light of the specific circumstances of this submittal, certain of the requirements as required under part 265 can obviously not be complied with.

Should there be any questions regarding this matter, or additional information is needed, please feel free to contact me at (315) 423-5362, or at 1071 Federal Building, 100 South Clinton Street, Syracuse, New York 13260. I would appreciate this closure plan being processed in due course, so that hopefully this matter can be put to rest as soon as possible. Thank you for your cooperation.

Very truly yours,

Neil M. Gingold, Esquire
Attorney for Alpha Portland Cement Company

taf/NMG
Enclosure

cc: Mr. Walter Hinckley
President
Energy and Resource Recovery Corporation
111 Washington Avenue
Albany, New York 12210

New York State Department of Environmental Conservation
Division of Environmental Quality
7481 Henry Clay Boulevard
Liverpool, New York 13088

CLOSURE PLAN

EPA I.D. No.	NYD002225878
Owner's Name	Alpha Portland Cement Company, Division of Alpha Portland Industries, Inc.
Address	c/o Energy and Resource Recovery Corporation, 111 Washington Avenue, Albany, New York 12210
Facility Address	Jamesville, New York

I. FACILITY CONDITIONS

A. General information

1. On an approximately 385 acre site in the towns of DeWitt and Pompey, Onondaga County, State of New York, Alpha Portland Cement Company operated a cement manufacturing operation, which manufacturing operation only encompassed several acres of the entire site.

   For purposes of background information relative to this closure plan, it is important to bear in mind that Alpha Portland never entered into any ongoing operation as a treatment, storage or disposal facility, as envisioned under the RCRA statutes or regulations. In the late 1970's, as a result of escalating costs of energy, Alpha Portland allowed its cement kiln to be randomly utilized for testing, wherein various liquid industrial waste streams were substituted for fuels in the heating of the kiln. This was done under the watchful eye of the New York State Department of Environmental Conservation.

   In 1979, after some testing previously, and again under the supervision of the New York State Department of Environmental Conservation, Alpha Portland entered into a contract with Haz-O-Waste Corporation, of Canastota, New York, to provide Alpha with fuels for Alpha to operate its kiln. This contract provided that Haz-O-Waste was to bring on site and operate all of the equipment necessary to provide a fuel to the point of the fuel jets that fed and fired the kiln itself. All responsibility to the point of the kiln was the responsibility of Haz-O-Waste Corporation. Because of various problems associated with the operation, Haz-O-Waste Corporation operated at the Alpha site up through late 1979. Thereafter that company left the Alpha site, leaving its tanks, drums of waste, and several tanks owned by Alpha, on site, partially filled with waste material.

   At the time in question in 1979, anticipating that it would be utilizing waste fuels in the future as substitute fuel in its processes, particularly as to its Cementon, New York facility, Alpha Portland applied for permits to operate TSD facilities at both its Cementon and Jamesville, New York facilities. In actuality, at no time did Alpha ever operate a TSD facility at Jamesville, New York.

In November, 1980, over a year after it last had any burning done of waste fuels at its site, Alpha Portland Cement Company at Jamesville, New York, shut down its cement manufacturing due to escalating costs in the manufacturing process, and due to foreign competition.

In late 1981, at the request of the New York State Department of Environmental Conservation, Alpha Portland Cement Company voluntarily had the waste drums and waste remaining in the tanks on its site, that were left there by Haz-O-Waste Corporation, removed by West Central Environmental Corporation, of Renssalaer, New York.

2. Storage facility description: On site, in late 1981, were approximately 428 55-gallon drums of waste material, 2 3000-gallon horizontal tanks, 3 6800-gallon tank trucks, 1 8000-gallon vertical tank, and a sump next to the pump house.

3. As to waste characterization, please note that this material was brought onto the Alpha site by an outside third party, as noted above, and the exact content of this material was unknown to the owner. As set forth below, this material was removed to SCA Chemical Waste Services, Inc. at its Model City, New York site and to Solvent Recovery Systems, Inc. at its Linden, New Jersey site. Both of these facilities tested prior to disposal. In addition to that, West Central Environmental Corporation had a sample of the material at the Jamesville site tested for purposes of determining the content of P.C.B.s, and that testing revealed that the material contained 14 parts per million of P.C.B.s (a copy of this testing as well as a copy of the records on the actual cleanup of this site were previously provided to the Region II EPA).

B. The maximum amount of inventory on site was as previously stated above, the quantities being only those previously placed on site, under a situation which is not to be repeated.

C. There was no inventory associated with any auxiliary equipment.

D. Schedule of final closure

1. The final date that wastes were accepted was June 12, 1979.

2. The final date that the facility was decontaminated was February 2, 1982.

3. Based upon the fact that the EPA requires certification by a professional engineer for closure, and based upon the fact that the cleanup occurred without the presence of a professional engineer, closure cannot be certified to and hence is not completed.

4. The total time required to close the facility was approximately eight months.

5. The reason the closure took more than six months is due to the fact that contracts had to be bid for the closure and the winter months required significant work above and beyond what might be required under warm weather conditions.

II. REMOVING ALL INVENTORY

A. Maximum amount of waste on site.

1. The total amount of waste/residue in drums, as expressed in the number of drums on site, was approximately 428 55-gallon drums.

2. The total amount of waste/residue in tanks, as expressed in number of tanks, was 2 3000-gallon horizontal tanks, 3 6800-gallon tank trucks, 1 8000-gallon vertical tank.

3. The total amount of waste/residue in other forms of storage, consisted of one sump, which was adjacent to the pump house.

B. Pretreatment

No pretreatment on site.

C. Where needed, and as a result of the cold weather, all waste material was heated to provide that the waste could be consolidated where necessary in a liquid form, placed into approved barrels for transportation and/or into tankers, and transported to approved waste disposal sites. The approximately 428 drums were consolidated into 350 drums, and delivered to SCA Chemical Waste Services, Inc., at Model Cities, New York. The old barrels, once emptied, were removed to Model Cities as well. As to the tanks, and sump, the vessels were heated when necessary to provide sufficient viscosity, in light of the cold weather, and were pumped into tankers for shipment to Solvents Recovery Service, Inc., at Linden, New Jersey.

III. DECONTAMINATING THE FACILITY

A. The area of the facility with potential for soil contamination, that being the area where the drums were stored in general, was inspected at the time of cleanup, and found to be free of contaminated soil. The State of New York, Department of Environmental Conservation, has indicated a desire to come onsite in the near future to do subsurface soil sampling to verify the non-existence of subsurface contamination, which Alpha willingly consented to.

All of the tanks and the sump area were heated to provide necessary viscosity for pumping. Once each of the vessels was pumped, they were each scraped by hand to remove any solids still remaining, and those solids were placed into barrels and disposed of along with the barrel wastes. Following scraping, each of the vessels was steam cleaned by the personnel of West Central Environmental Corporation.

IV. CLOSURE CERTIFICATION

As stated above, no professional engineer was present during the cleanup of this site, to the knowledge of the owner, and therefore closure certification cannot be made at this time.

As previously indicated, documentation relative to the work on site was previously submitted to the Region II office of the United States Environmental Protection Agency several months ago.

REFERENCE NO. 2

ALPHA PORTLAND CEMENT CO. SITE

CLOSURE WORK PLAN

EPA I.D. No:	NYD002225878

Former Owner's Name:	Alpha Portland Cement Co., Division of Alpha Portland Industries, Inc.
Address:	1044 northern Blvd P.O. Box C Roslyn, NY 11576
Current Owner's Name:	Jamesville Holding Co.
Address:	501 Butternut St. Syracuse, NY 13208
Current Tenent:	Otisca Industries, Ltd.
Address:	501 Butternut St. P.O. Box 127 Syracuse, NY 13208
Prepared By:	Keith A. Schimel, Ph.D., P.E.

Preliminary: Pending Review and Approval

RECEIVED APR 2 1 1987

Table of Contents

ALPHA CLOSURE WORK PLAN

A. Site Characterization

The former Jamesville Plant of the Alpha Portland Cement Company is situated on approximately 125 acres site in the towns of Dewitt and Pompey, Onondaga County, State of New York. The site can be located in the USGS Jamesville NY quadrangle at the following coordinates 76° 5' 20" west longitude, 42° 59' 50" north latitude. See figure I for the USGS quadrant location. The former Cement manufacturing site is located approximately a half mile northwest of Jamesville, NY, an unincorporated hamlet in the town of Dewitt. The population of Jamesville is approximately 1300. A number of residential homes are in close proximity to the site boundaries. According to Onondaga County Health Department records,the greater Jamesville area is completely serviced by Onondaga County water mains. The only in-service public wells are providing potable water to a trailer park off route 481, over a mile northwest of the Alpha site. There are two abandoned wells just outside Green Lake State Park. All other abandoned or in-service wells are located east of Jamesville road. See Figure V, for the water service and well locations.

From 1914 to 1980, Alpha Portland Cement Co. utilized several acres of the 125 acre site for a cement manufacturing operation. The most recent operation was a coal fired wet process cement kiln, 375 feet long, eleven feet in diameterwhich had a firing rate of five tons/hour of 12,500 BTU/pound coal. The kiln normally produced twenty tons of cement clinker per hour(1). See Figure II for a definition of the area utilized by the Alpha's operation.

As the cement manufacturing operation grew older, a number of operational problems, principally stack emissions, became apparent. In addition, between 1975 and 1980, the plant, the first of it's kind in the U.S., experimented with burning hazardous waste as a fuel supplement. However, the methods employed in transport, handling and storage of the hazardous materials on-site were less than acceptable when judged by today's standards. As a result of this early practice(pre-RCRA), localized spillage of hazardous substances may have occured(2). See Figure II, contamination area A. A historical chronology of Alpha Waste Burning operation can be

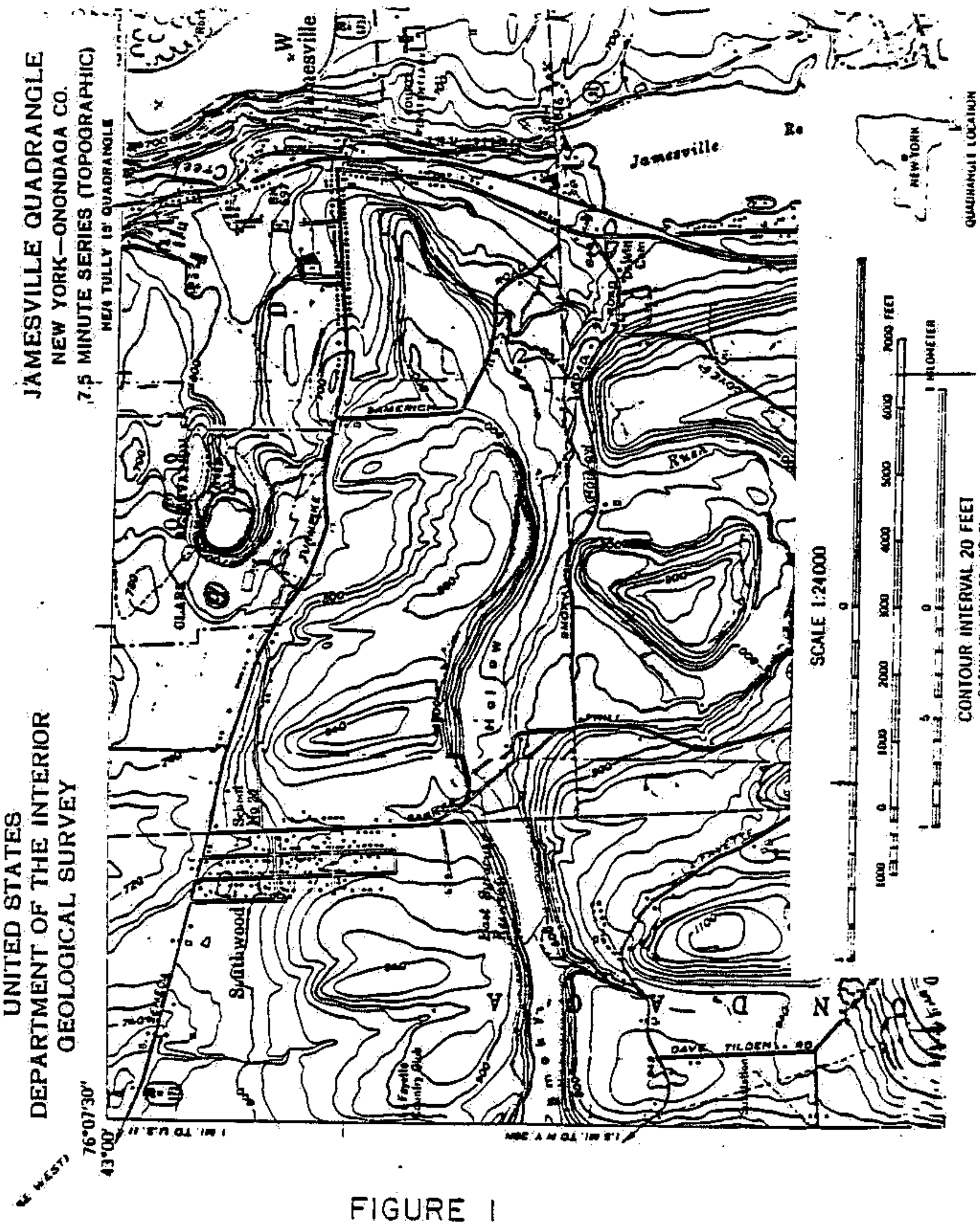

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
JAMESVILLE QUADRANGLE
NEW YORK—ONONDAGA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 TULLY 15' QUADRANGLE
Jamesville
SCALE 1:24000
CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL
NEW YORK
QUADRANGLE LOCATION
76°07'30"
43°00'

FIGURE I

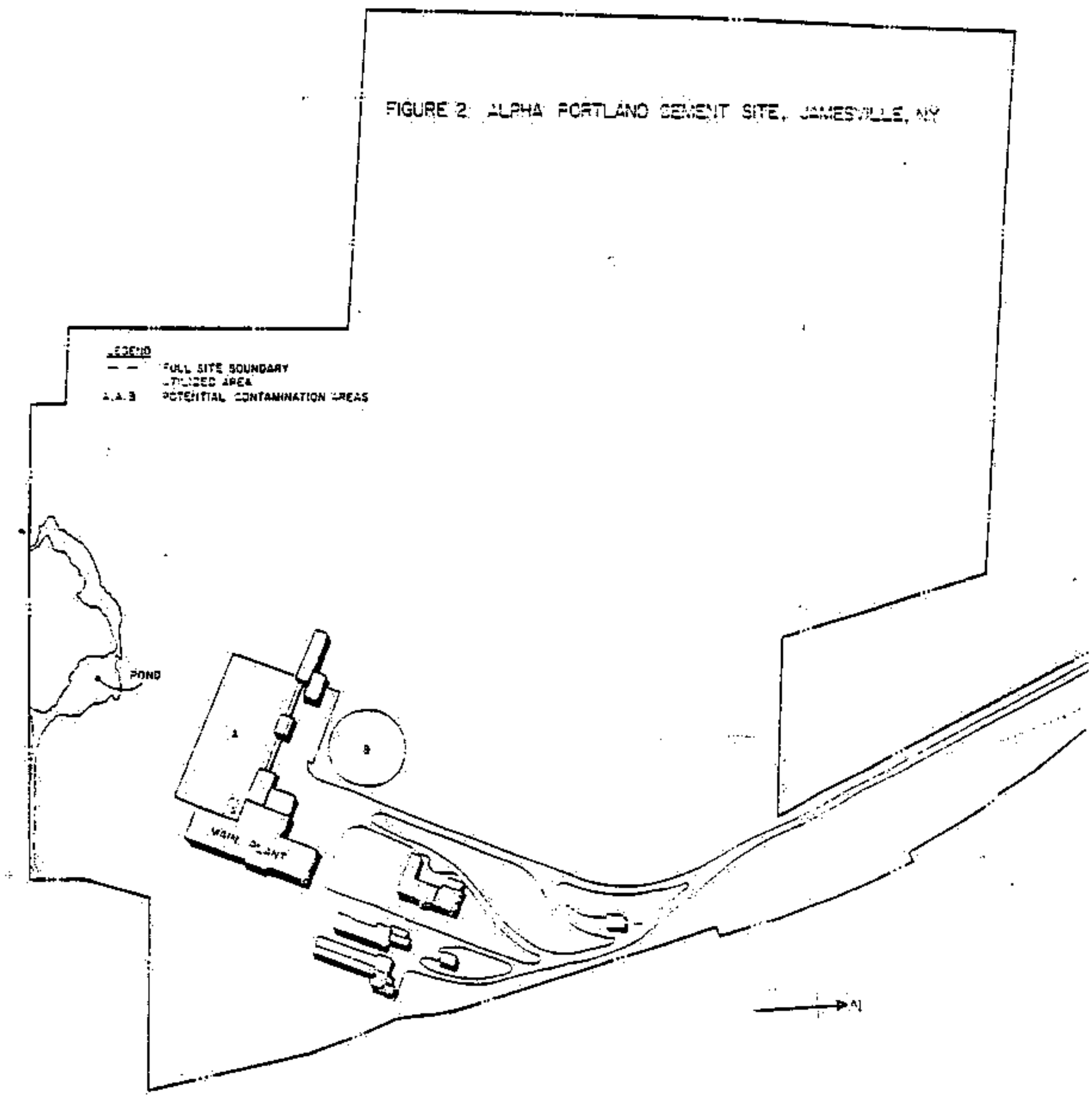
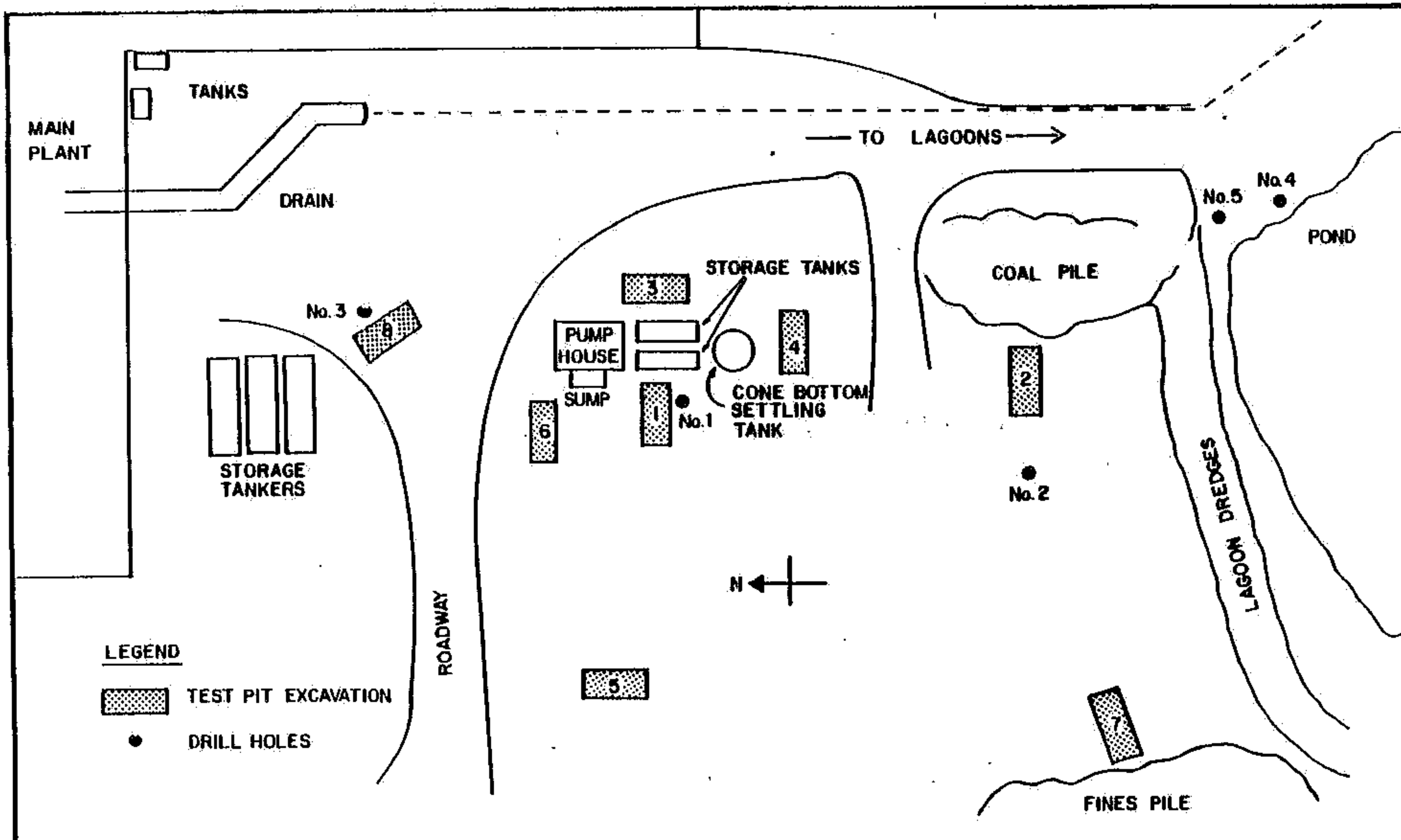


FIGURE 2: ALPHA PORTLAND CEMENT SITE, JAMESVILLE, NY



DRAWING NOT TO SCALE

FIGURE 3: CONTAMINATION AREA A

found in NYSDEC, Region 7, files.

A.1 Site Hydrogeology

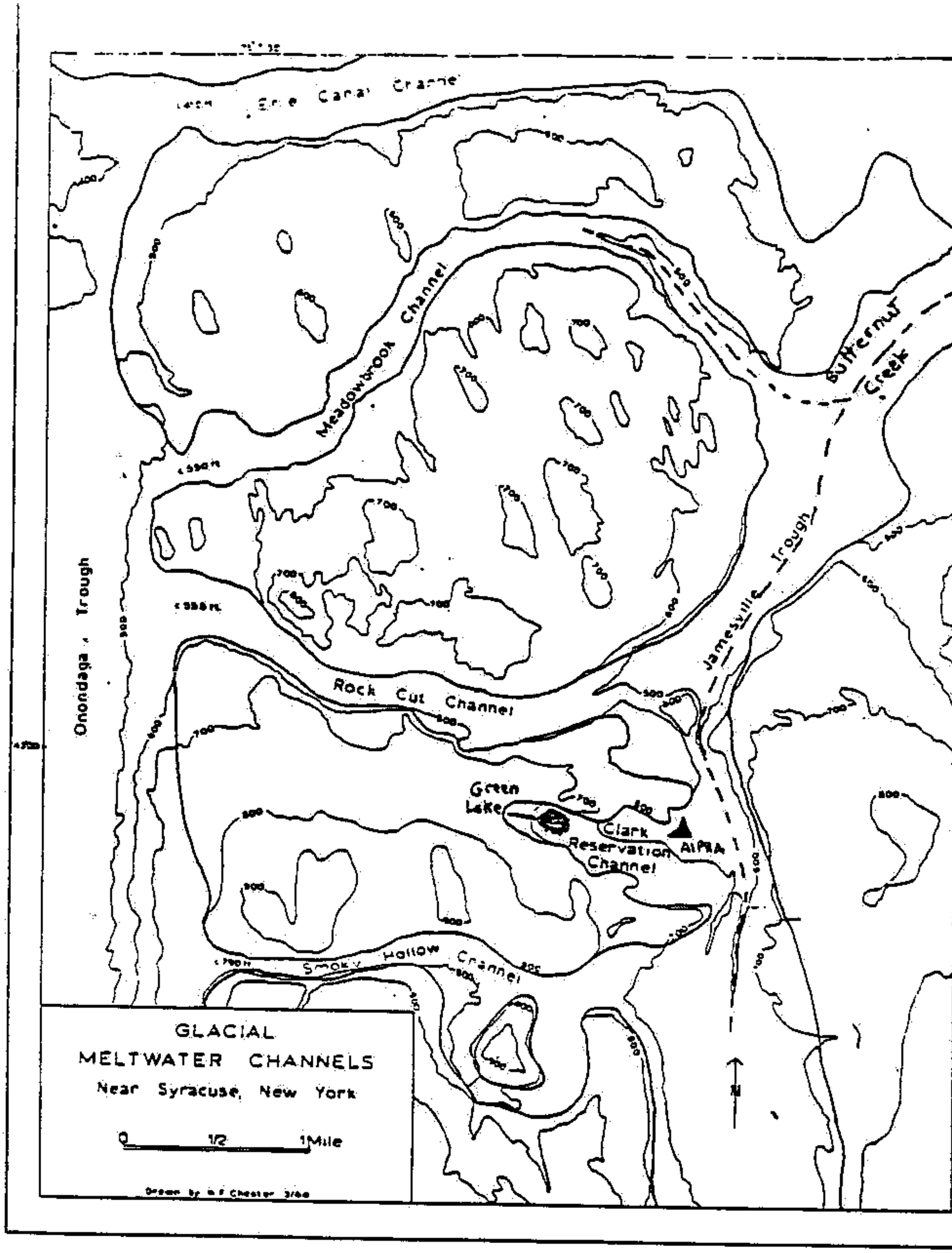
The former Alpha Portland Cement site is situated at the 590 foot elevation on the northern flank of the east-west trending Clark Reservation Channel. For a more complete description of this topographic depression see the Alpha Site Hydrogeological Investigation report in Appendix B. This topographic depression is 30 to 50 feet lower than the surrounding hills.

The hydrogeology of the Alpha site is truly unique because here three regional channels, Rock Cut Channel, Smoky Hollow Channel, and the Clark Reservation Channel(Alpha site), intersect the north-south Jamesville trough that contains butternut creek. Because of the convergence of these channels near this site, the hydrogeology is localized, as opposed to regional, and very complex. See Figure IV for channel topography.

A small pond, situated approximately 100 yards to the south (Figure II) of the main plant kiln building, is a discharge point in the Clark Reservation Channel. Water levels in the pond are sustained by runoff from the channel watershed and the discharge of two natural springs. The first of the springs is located about 600 feet west of the pond and is the headwater of the pond's inlet creek. The second spring discharges to the pond bottom near its eastern margin. An unnamed creek, the ponds outlet, flows eastward from the pond to Butternut creek. This creek and pond then are headwaters to the butternut creek, which is classified as NYS class A stream.

The soil in the channel and under the Alpha site is a "Honeoye Very Stony" type soil typified by large glacial boulders and cobbles. The site appears to be on a sand and gravel terrace. Shallow test holes drilled at the site penetrated a minimum of 40 feet of stratified sand, gravel and cobbles. See Parratt Wolf boring logs (1985) in Appendix C. The total thickness of sand and gravel under the Alpha site probably ranges from 60 to 100 feet. The physical characteristics of the soil are very low in organic content, low mean soil moisture content (15%), moderate percolation rate (10 inches/yr) and a low runoff potential. The pH of the surface soils on the site are very basic (pH>9.0) which is due to the abundance of clinker dust.

The groundwater resources in Onondaga County have only been documented on a regional



Erie Canal Channel
Meadowbrook Channel
Butternut Creek
Jamesville Trough
Onondaga Trough
Rock Cut Channel
Green Lake
Clark Reservation Channel
AlPHA
Smoky Hollow Channel
N
GLACIAL
MELTWATER CHANNELS
Near Syracuse, New York
0 1/2 1Mile

FIGURE 4

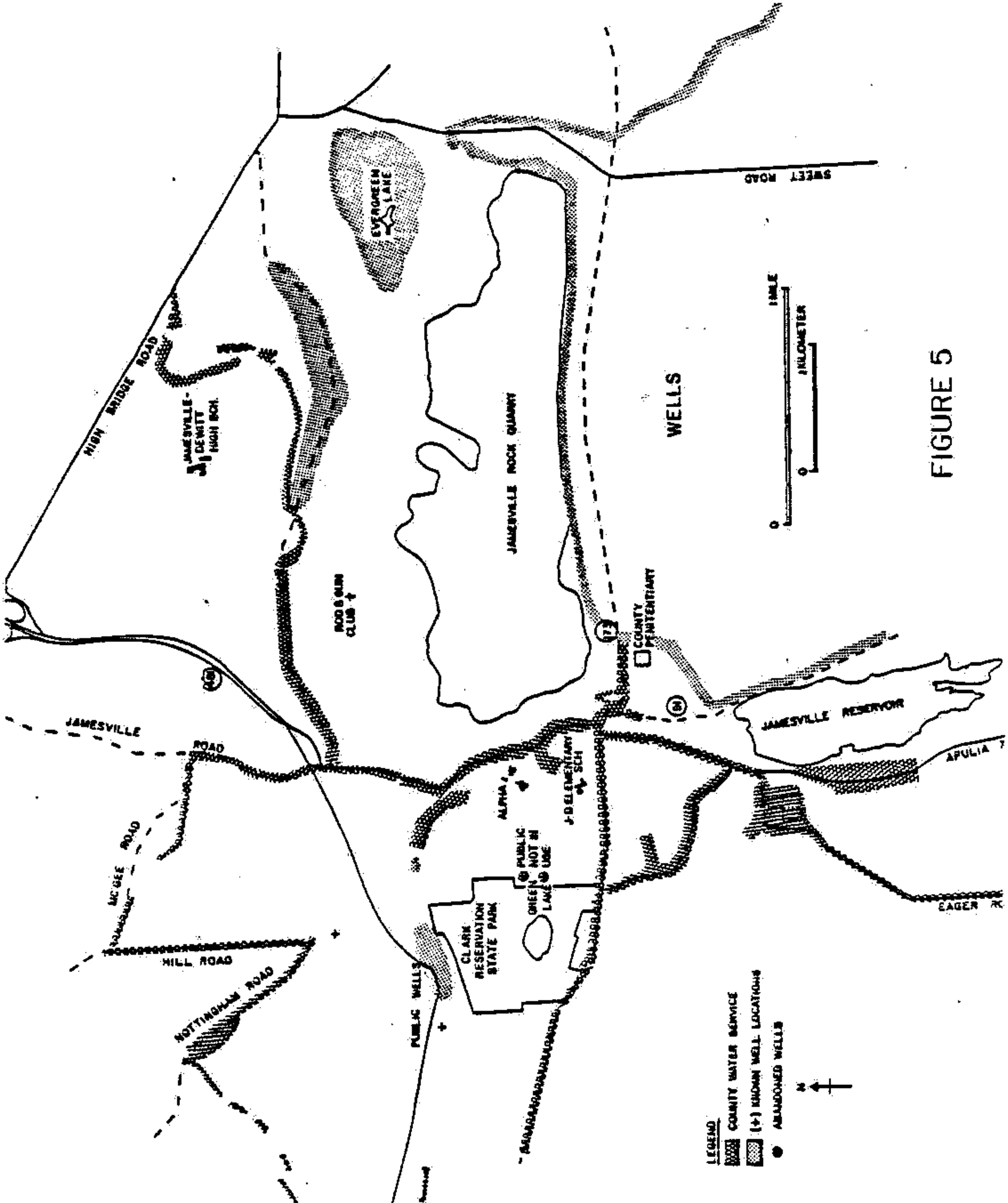

HIGH BRIDGE ROAD
JAMESVILLE-DEWITT HIGH SCH.
EVERGREEN LAKE
SWEET ROAD
JAMESVILLE ROCK QUARRY
WELLS
1 MILE
1 KILOMETER
FIGURE 5
ROD & GUN CLUB
COUNTY PENITENTIARY
JAMESVILLE RESERVOIR
JAMESVILLE ROAD
APULIA
J-D ELEMENTARY SCH
PUBLIC NOT IN USE
GREEN LAKE
CLARK RESERVATION STATE PARK
PUBLIC WELLS
MCGEE ROAD
HILL ROAD
NOTTINGHAM ROAD
EAGER RD
LEGEND
COUNTY WATER SERVICE
(+) KNOWN WELL LOCATIONS
ABANDONED WELLS
N

FIGURE 5

level with the exception of the Allied Quarry just east of the Alpha site (3). In both cases, the net direction of groundwter flow is northward. Yields from wells in the sand and gravel above bedrock in the Jamesville area have been as high as 100 gpm. The hydraulic conductivity of the sand and gravel under the site is relatively high, ranging from 0.0001 to 0.001 cm/sec (4). The water table is located approximately 60 feet below mean surface elevation. This area experiences an average annual precipitation of 50 inches per year, so recharge via infiltration can be significant.

The Clark Reservation channel is the groundwater discharge zone for the flow recharge on topographic highlands south and west of the channel. The Alpha pond and creek are the apparent discharge area for groundwater contained in surficial channel materials and in hydraulically connected fractured bedrock. Groundwater flow in the main part of the channel is upwards towards the land surface. Natural springs caused by this discharge occur in the Alpha pond next to the plant. Although most of the channel is a discharge area, the springs in the pond are most likely focused by fractures in the underlying bedrock. Measurements taken on December 17, 1985 showed the discharge of the western upgradient spring was about 10 cfs and and the discharge from the eastern margin spring was significant enough to prevent the pond surface from freezing. The chemical composition of the springs indicates that the groundwater discharge into the pond originates from overlying surficial materials and not the below bedrock regional groundwater system. Consequently, the glacial soils below the Alpha pond and stream system must be saturated to the water table. Test piezometer readings adjacent to the pond support this conclusion. The level of the pond, the spring inflows and stream outflows observed are in part maintained by increased headloss caused by fine grained sediments and organic materials on the bottom of the pond slowing seepage downgradient. The pH of the pond water and sediments is slightly basic possibly indicating some solubilization of clinker dust.

The net effect on the local groundwater flow and direction is significant. Groundwater discharge in the Clark Reservation channel precludes groundwater movement and any contaminant transport across the channel to Jamesville, NY. The channel is a hydrogeologic no-flow boundary for north to south flow. Locally at the Alpha site, the pond and saturated seeping condition below it creates a local groundwater mound condition. Elsewhere on the site, north of the pond, the groundwater flow direction is probably easterly (lateral) toward butternut creek. However, land immdediately adjacent to the pond, the northern edge, the groundwater flow is influenced by the outward flow from the pond's recharge of the underlying groundwater system. This produces three important effects. First, this movement sustained by the static head of the pond surface elevation will bend the local easterly groundwater flow toward a more northeasterly path. Secondly, any contamination derived from spills on soils adjacent to the pond, percolation of contaminates downward to the groundwater table, will be significantly diluted by flows from the pond recharge/groundwater mound. Lastly, exclusive of direct contaminate runoff to the pond, the pond is protected from contamination since the direction of flow is away from the pond and the presence of the groundwater mound forms a barrier to contaminant transport. Analysis of the pond and stream water (Appendix D) showed no contamination by any substance which supports the above conclusion.

The description put forth above and conclusions derived thereof are based on evidence gathered during the site investigation and a full literature review. Additional test drilling and measurements are being planned to verify or deny this description.

A.2 Hazardous Waste Characterization

Alpha Portland Cement Hazardous Waste Fuel burning program has been well documented since the program proceeded under agreement with NYSDEC. As shown in figure II and III the toxic materials were delivered onsite to areas A and A'. According to the record, all handling and storage occured in and was limited to this area of the site. A wide variety and large quantity of liquid toxic wastes were brought to this site for disposal over a five year period between 1975 and 1980(1). A complete inventory of substances and characteristics was never compiled. Consequently, anticipation of those substances which might have been spilled in this area is not possible. However, a great deal of cleanup of this area was accomplished by Alpha in late 1981 at the request of NYSDEC. It bears mentioning here. In addition, Otisca Industries has completed a significant amount of investigative work on this site. The results of their investigation of alledged soil contamination problem is presented herein.

A.2.1 Alpha Facility Decontamination

In late 1981, at the request of NYSDEC, Alpha voluntarily had the waste contained in drums and tanks, that had been left in staging area A (Figures II and III) by Hazowaste, removed by the West Central Environmental Corporation of Renssalaer, New York (6). West Central utilized removal, separation, and transporting procedures in accordance with DOT and USEPA approved procedures at that time. They removed the liquids, solids and sludge from the bulk transport tankers. They then segragated the liquids from the solids or sludge. These solids were then solidified and repackaged in DOT approved 17-H drums. The existing #428, 55 gallon drums of wastes were consolidated into #457, 50 gallon drums, totalling approximately 22,850 gallons, and delivered to SCA Chemical Waste Services Inc., an approved TSD facility at Model Cities, New York. The old barrels (428), once emptied, were removed to this same facility also. Approximately, 11,500 gallons of liquid solvents were pumped into a tanker truck and sent to Solvent Recovery Systems, Inc. (SRS) at its Linden, New Jersey site. SRS reblended the liquid solvents and sold the mixtures to a facility which recovered their heat value. Appropriate waste manifests were obtained for all shipments of these wastes. The cleaning of equipment such as tanks and sump were done by manual means only. Only one composite sample of a tanks contents was collected at the time and subsequently analyzed for PCB's (14 ppm). Both SCA and SRS were required by law to analyze these wastes prior to disposal. All appropriate information regarding the Alpha site cleanup was sent to USEPA region II headquarters. The cleanup project was completed in February of 1982 at a total cost of $60,273.13 (6).

On April 15, 1983, Officials from NYSDEC (region 7) accompanied by officials from the town of Dewitt inspected the Alpha Portland Cement Site at Jamesville for the prescence or lack thereof of dangerous or hazardous materials (7). They reported finding assorted materials "in the general vicinity of the former waste storage area" and in the machine shop area. Chief among their concerns was the presence of seven electrical transformers and their vulnerability to vandalism (7). There was no onsite security nor had steps been taken to secure the transformer areas. Furthermore, NYSDEC and town officials were concerned about the possible risk of groundwater or surface water contamination from contaminated soils. NYSDEC had volunteered to carry out subsurface testing, but had to scrub the investigation due to budget constraints. This requirement was based on a "grey area" of the RCRA regulations. The regulations, at that time, did not address the need for subsurface investigation because contaminated soil was not considered a hazardous waste (6). In addition, the Alpha site could not be required to monitor groundwater because they had never operated a surface impoundment,landfill, or land treatment facility at the site according to Part 265, Subpart F (6). Consequently, Alpha did not comply with any of these requests. Instead, on June 30, 1983, Alpha requested that USEPA remove the Alpha site from it's inventory list and grant closure of the site (8). On August 10, 1983, USEPA informed Alpha that a formal closure plan in accordance with 40 CFR Part 265 Subpart G of the USEPA hazardouswaste regulations promulgated under RCRA would be required (9). On September 1, 1983, Alpha submitted their closure plan, which generally documents the cleanup performed by West Central Environmental Inc. in the winter of 1981-1982 (5). On December 2, 1983, the USEPA rejected the closure plan (10). This plan was missing important information regarding work reports, waste analysis, volumes of wastes contained in various container (ie. the sump and tanks), identification of hazardous components, specific procedures used in the cleanup effort, verification of decontamination, comparison with baseline data, documentation of hazardous waste components in the soils in the hazardous waste operation areas, certification by a Professional Engineer, documentation of sampling procedures, analytical methods used, and QA/QC protocols followed. Alpha maintained that much of this information had been sent to USEPA prior to the submission of the closure Plan and therefore, they were "in substantial compliance" (10).

In late 1984, Otisca Industries, a small R&D Company, became interested in purchasing the Alpha site to construct a demonstration pilot plant facility for their ultra clean coal water slurry (CWS or Otisca-T) process. However, influencing Otisca's decision to exercise a purchase offer were concerns about liabilities associated with Alpha's unresolved facility closure.

Specifically, there were unresolved questions concerning the details and verification of auxilliary equipment decontamination, possible transformer leakage and alledged soil contamination. In March of 1985, Otisca voluntarily retained Galson Technical Services (GTS) and Calocerinos and Spina Consulting Engineers (C&S) to investigate the contamination problem. The purpose of the study was to determine if the surficial soils within the former storage and unloading areas were contaminated by chemical spills and, if so, to what areal extent. The scope of work completed included the sampling and analysis of surface scrapings inside buildings and tanks, surface excavations and subsurface borings in the soil environment, water and sediment in the lagoon, stream and pond areas. Investigation of the alledged soil contamination was focused on staging area A and A', as shown in Figure II. Figure III is a magnification of Figure II staging areas A and A'. Figure III discloses the approximate location of test pit excavations and subsurface test bores completed in this preliminary investigation.

Laboratory analysis of the samples collected in staging areas A and A' (all data given in Appendix C through G) show that on the whole the soils are relatively innocuous with the following exceptions:

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Table I. Summary of Analytical Results, Area A

Lab***	Location	Substance	Concentration(ppm)	Depth(ft)
GTS	Test Pit 1	#2 Fuel Oil	83	1-2
		#2 Fuel Oil	175	2-3
OB&G	Test Pit A	Hydrocarbons	7200	surface
			33	2-3
			31	6
OB&G	Test Pit B	Hydrocarbons	1300	surface
			1.5	2
			1.6	6
GTS	Test Pit 8	#2 Fuel Oil	1100	0-2
		Arochlor 1016	40(0.3)**	0-2
GTS	Test Bore 1	#2 Fuel Oil	2500	0-2
		Toluene	5(0.96)**	40-41.5
			5(0.50)**	40-41.5
GTS	Test Bore 2	Toluene	17	5-6.5
GTS	Test Bore 3	Toluene	26	5-6.5
		Toluene	57(ND)*	10
GTS	Drainage	PCB sluiceway water	0.7	-

References:
Appendix C-G

* analytical error corrected to not detected (ND) May 15, 1985(GTS)

** Reanalysis obtained values shown in parenthesis on July 26, 1985(GTS)

*** Contract Analytical Laboratories; Galson Technical Services(GTS)
O'Brien & Gere Laboratories(OB&G)

Full disclosure of all sample analysis raw data has been compiled and presented in Appendices C through G. The reanalysis described above in Table I notes were conducted to check for possible analytical/protocol errors or blunders. The lower values obtained may be explained by analytical error but also sample matrix variations and in some cases volatilization during storage may be contributing factors. Note that the source of contamination in area A and A' appears to be at the surface.

The results of this preliminary investigation were encouraging. Consequently, Otisca Industries went forward with purchasing the Alpha Portland Cement Site in June of 1985. In so doing, Otisca became tentatively committed to further site investigation and ultimately closure on behalf of the former owners, Alpha Portland Cement Co. The alternative, of course, was to apply for state and federal superfund monies to cleanup the site, since it was listed on the hazardous waste inventory and had been utilized for legitimate experimental purposes under agreement with and regulation by NYSDEC. However, this option would have only served to delay cleanup; possibly burdening the public with the cost of cleanup and possibly delaying the development of the site for productive use.

The findings of this preliminary investigation were sent to NYSDEC personnel at the region 7 Office and Albany headquarters in June 1985. Based on their interpretation of the preliminary data, NYSDEC responded (Oct. 9, 1985) by requiring a cleanup effort such that any soils left on site should contain less than 1 ppm for total volatile organic compounds, less than 10 ppm for any single hazardous organic and less than 50 ppm for total hazardous organics (ie. priority pollutants) (13). In addition, NYSDEC has required the preparation of this detailed work plan (13).

In June of 1986, Otisca conducted an additional investigation of area A in order to delineate the location and character of the contamination source which appeared to be at the surface. Upon inspection of area A, Figure III, at the surface there was a thin uneven covering of clinker. However, just below the clinker was a two or three inch layer of encrusted, oxidized hydrocarbons which looked much like "blacktop". Subsequent analysis of samples from the surface to six foot horizons show that the surface is high in total hydrocarbon content. Subsurface samples showed much lower magnitudes indicating impedence of infiltration through the surface hydrocarbon layer and low solubilization of the hydrocarbons. Biological oxidation of this layer may also be occuring. Analytical results for this investigation are presented in Table I, OB&G Test Pits A and B. Test Pit A was located about ten feet south of GTS Test Pit 1, Figure III. Test Pit B was located about ten feet south of GTS Test Pit 2 as shown in Figure III.

In development of this work plan, interviews with former Alpha employees were conducted to obtain detailed information concerning Alpha's handling of hazardous wastes at the site. As a result of these discussions, the identification of area B (shown in Figure II) as possibly containing a buried tanker truck was obtained. Acting on this information, Otisca industries conducted a magnetometer survey of the filled portion of the gravel pit (Area B). This former gravel pit had been filled in with clinker and clinker dust collected from the plants baghouse and electrostatic precipitator (ESP). Two anomolous regions were identified and excavation commenced. In September 1986 the tanker was found at a depth of approximately 30 feet. Samples were taken of the Tanker contents as well as surrounding soils. Results of analysis on sludge samples taken from inside the tanker show PCB containation at approximately 700 ppm. The internal contents of the tanker have been removed and placed in DOT approved drums. Shipment to a secure disposal facility is awaiting NYSDEC approval and necessary manifests. Results of Priority Pollutant analysis on a composite sample of soils surrounding the tanker show that most of the components are well below detectable limits with the exception of PCB at 15 ppm. Since there was some concern that the tanker contents may have been paint sludges, X-ray diffraction analysis for heavy metals was conducted by Otisca Industries to determine if elevated levels of heavy metals were present. Only iron was present in significant concentration, presumably due to the substantial corrosion of the tanker structure. Complete analytical data results on all buried tanker related samples are presented in Appendix H.

B. Standard Operating Procedure

The principle purpose of this section is to describe the quality assurance (QA) and quality control (QC) program adopted to evaluate and generally document sampling and analytical methodologies utilized in this hazardous waste investigation and assessment. Also included in this section are brief descriptions of the Health and Safety Plan, the existing site security and a contingency plan in case of emergencies.

B.1 QA/QC Sampling and Analytical Protocols

The field investigation previously described, sample aquisition and support activities, have been conducted in acccordance with standard EPA methodologies presented in "Characterization of Hazardous Waste Sites - A Methods Manual, Volume I - Site Investigations", EPA 600-4-84-075, April 1985. The methods utilized in sampling contaminated soils have

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been conducted in accordance with "Characterization of Hazardous Waste Sites - A Methods Manual , Volume II - Available Sampling Methods", EPA 600-4-84-075, April 1985. The required analytical methods conducted by contract laboratories are in accordance with "Characterization of Hazardous Waste Sites - A methods Manual, Volume III - Available Laboratory Analytical Methods", EPA 600-4-84-075, April 1985. These standard methods have been adopted where required.

Specifically, to insure the conformance with EPA standard methods and objectives, Otisca Industries, Ltd. has established the following standard operating procedure for investigating and sampling the Alpha site.

1. QA/QC Organization - Otisca Industries is the QA coordinator. The organization and Management of the QA/QC function is the responsibility of Otisca Management; Mr. Clay D. Smith, President of Otisca Industries, and Dr. Douglas V. Keller, Vice President of Otisca Industries. Onsite QA/QC coordination and supervision of investigative sampling are provided by contract consultants; Dr. Keith A. Schimel, P.E. and/or Dr. Donald I. Siegel. Where and when appropriate, contract laboratories, such as Galson Technical Services or O'Brien & Gere Laboratories may also provide this service. All quality control documentation, sampling logs and chain of sample custody etc. shall be and has been compiled by contract consultants and delivered to Otisca Management. Approval of data and results is the responsibility of Otisca Management. Resposibilities for all corrective action which may be undertaken at the Alpha site is the responsibility of Otisca Management.

2. Facilities and Equipment - All facilities and equipment necessary for the investigative sampling will be provided by Otisca Industries or contractors, which ever is most feasible. All sampling implements, shovels, spades, cleaning equipment, chain of custody documents, qualified personnel, appropriate sampling containers, protective clothing etc. will be provided by Otisca Industries. Contract Laboratories will provide the facilities and equipment for all standard analyses.

3. Analytical Methodology - Contract Laboratories will be responsible for the sample integrity through the analytical process, execution of standard Calibration and operating procedures, laboratory quality control procedures, proper execution and documentation and chain of custody through the analytical process, precise data reduction and reporting and required data validation. The contract Laboratory must be a NYSDEC certified. The contract laboratories must provide standard NYSDEC organic QA/QC procedures necessary to satisfy the analytical requirements associated with the determination of HSL compounds in water and soil/sediment samples. These procedures are given in "NYSDEC Superfund and Contract Laboratory Protocol", August 1985. The analytical methodologies to be utilized are standard EPA organic and inorganic analysis procedures for water and soil/sediment samples (ie. EPA methods 601,602, SW-846, 820,8010,8020,624,625, 40 CFR 136, etc.).

4. Sample Custody Procedures - Indentification and documentation of field samples, labeling, sampling log etc., is the responsibility of Otisca Management. If Otisca Management is not present at the time of sampling then their designated contract consultant is responsible for the fulfillment of the chain of custody procedures. All labeling, sample location, dates, bills of ladings, manifests, mail receipts, sample custody log and other related specifications shall be delivered to Otisca Industries and duly noted in the custody records. Once the sample(s) have been delivered to the contract laboratory, the designated laboratory is responsible for

the "chain of custody" while the sample is in their possesion. Evidence of this custody log must accompany transveral of data results to Otisca Industries.

5. Quality Control and Data Handling - All onsite intended adjustments to samples or observed corruption of samples must be duly reported. Either Otisca Management or their designated contract consultant has the responibility of maintaining sample integrity and representativeness. Any intended compositing of samples, inclusion of blanks, matrix spikes, duplicates, preservation must be recorded to avoid misinterpretation in the following assessment process. The same quality control procedures must be followed by designated contract laboratories and verification delivered to Otisca Industries. All data reduction and reporting will follow standard, easy to read, formats. In addition, all data must be validated, checked against instrument calibration, values averaged and checked for outliers, method (instrument) analytical precision checked, before transferal of results to Otisca Industries.

The past and ongoing Alpha site investigation has followed the above described standard operating QA/QC procedures with excellent results. An internal audit of the analytical results obtained to date show that few, if any, results have been called into question for completeness, precision, accuracy, documentation, or comparability.

B.2 Health and Safety Plan

To prevent against any possible acute or chronic exposure to toxic or chemically active substances associated with the investigation of the former storage facility, Otisca Industries has developed a health and safety plan. This plan has been formed in conjunction with site security (see following section) and the ongoing construction of the Otisca Coal Water Slurry (CWS) demonstration plant at the site.

A preliminary onsite evaluation was conducted to determine if any health risks existed. Possible soil contamination was localized to contamination area A and A'. On the whole, the site contained no dectectable toxic air pollutants, radioactive materials, oxygen deficiency areas, explosives, flammable or corrosive materials, evidence of open or leaking drums of waste, potential for splashing, immersion or unexpected inhalation, and subsurface garbage dumps. Two work zones correspond to contamination zones A and B. Both zones can be accessed by vehicle or on foot providing easy emergency escape routes. The construction crew house, located midway between the zones and under the rotary kiln, contains a outside telephone and list of emergency numbers, high pressure potable water source, showers and an emergency first aid kit. General construction safety is strictly enforced by contractors and Otisca at the site. Most of the construction workers have been briefed on safety precautions, procedures for neutralizing imminent hazards, and application of first aid. The construction crew house serves as a support zone (zone 3) since it has unimpeded visual contact of the work zones and is within shouting distance. Thus, the site only requires level D protection, requiring minimal protection via work uniform. The risk associated with this site is not sufficiently high enough to warrant more protection.

Provision for a medical emergency situation consists of onsite treatment of toxic exposures(first aid), alerting the local ambulance, emergency fire, and police services. The Jamesville fire house is less than 1 mile away. Estimated response time is less than 10 minutes. Full hospital facilities to treat acute or chronic exposures are available in the city of Syracuse, which is less than 20 minutes transit time by ambulance.

B.3 Site Security

Control of site activities including traffic, movement of contaminated soil and unauthorized trespass is provided by a combination of full time site security, fences, and natural barriers. The entrance to the site (northern property boundary) and the western site boundary bordering residential homes are restricted by a gate and fence, respectfully. Access is restricted on the southern border by the the pond and associated wetland. Access is restricted on the eastern property boundary by a trenched railroad track line. Control of the site is not limited to natural barriers, however. A full time security officer patrols the site during business hours. He lives within walking distance of the site and often checks the site at night for unauthorized entrance. In addition, the security officer is a volunteer fireman for the Jamesville fire Department. Consequently, he also has an integral role in site safety.

C. Risk Assessment

A general assessment is needed to provide a basis for a reasonable decontamination proposal for this site. Most important is an accurate depiction of the existing toxicity potential and fate processes expected to occur.

C.1 Pollutant Characterization

A number of pollutants have been discovered at both contamination area A and B which apparently exist above analytical detection limits in the surficial materials. Some are categorized as hazardous (#2 fuel oil) because of flammability and others because of potential toxicity (priority pollutants). None appear to be particularly reactive. Table II is a summary of the toxicity character of these materials.

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Table II. Summary of Toxic Effects of Identified Substances

Location	Sub.	Flame	Carcinogen*	TCL**	TDL***	TLM#
Area A	#2 Fuel Oil	yes	no	-	-	-
	Toluene	yes	yes	100	NG	12.6
	Arochlor 1016	no	yes	1.0	2300	NG
Area B	Methylene Chloride	no	yes	500	5000	100
	Toluene	yes	yes	100	NG	12.6
	Acenaphthene	no	yes	NG	NG	NG
	Hexachlorobenzene	no	yes	NG	220	NG
	Phthalate ester	no	yes	500	143	NG
	Arochlor 1242	no	yes	10	NG	NG
	Arochlor 1260	no	yes	1.0	2000	NG

Source: RTECS (12,13)

NG = Not Given

* Known animal carcinogen, suspected human carcinogen.

** TCL - human inhalation lowest toxic concentration in air (ppm).

*** TDL - human lowest toxic Dose ingested by any means other than inhalation (mg/kg).

TLM-96 Aquatic Toxicity, 96 hour maximum toxic limit dose (concentration in ppm), response by most sensitive freshwater organism.

While the information given in Table II gives pertinent information concerning human and aquatic effects, it is not a complete view of the toxicity of these compounds. Fuel oil, for instance (14), contains three subgroups of toxicological significance. These are Volatile Liquid Hydrocarbons (VLH) which are C6 through C14 normal and branched chain alkanes, monocycloalkanes, and aromatics (toluene, o-xylene etc.). These and substituted analogues can produce nausea and narcotic effects if inhaled or ingested in high doses. In addition, these compounds produce a bad taste in water. The second subgroup is light aromatics such as benzenes and napthalenes which are immediately toxic if inhaled or ingested. The third subgroup is Polynuclear Aromatic Hydrocarbons (PAH), also known as carcinogenic hydrocarbons (CHC) which are complex compounds of four to seven unsaturated benzene rings (Benzanthracenes and Benzpyrenes) formed during cracking and pyrolysis in the oil refining process. Most the compounds in these subgroups are volatile and thus are likely to volatilize into the atmosphere soon after spillage has occured. In general, they have low solubilities in water. The slow movement of Toluene, however, can be explained by it's relatively high solubility in water (13).

The priority pollutants, primarily for area B, have been related to a number of irritations (skin and eye) as well as mutagenic (chromosonal aberrations), tumorogenic (reproductive), teratogenic (bioaccumulation, PCB) problems. In most cases, the doses necessary to cause these acute effects are orders of magnitude higher their than published solubilities, their allowable National Interim Primary Drinking Water Standards (NIPDWS) levels (12), and the concentration levels found in the soils at the Alpha site.

C.2 Fate Processes

The ultimate fate of a hazardous substances is normally a complex combination of many processes occuring simultaneously. The behavior of a substance in a specific environment (Chemical process), transport mechanisms, and biological transformation processes are all integral parts of the whole (15,16). In the natural soil environment the rates at which these processes proceed are less than optimum. Therefore, the transformation of any substance and/or it's transport downward to the groundwater table and movement through the groundwater are all very slow processes.

The situation at the Alpha site, areas A and B, is a mixed bag. On one hand, the rather high permeability of the natural soils encourages downward mobility. On the other hand, the prescence of large cobbles and boulders typical in glacial tills, encourages dispersion (spreading)

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and dilution of solubilized contaminates. The high pH of the surface materials caused by the deposition of clinker dust over sixty years of operation of the cement plant will impede bacterial degradation by hydrocarbon utilizing microbes (HUM) and provide significant retardation of contaminant movement. The latter is especially true for heavy metals and to a much lesser extent for organic priority pollutants. All of the compounds cited are biodegradeable to some degree. If you combine these observations with the limitation of time during the year in which infiltration occurs due to rainfall (ie. spring and fall, winter upper five feet is frozen), then downward movement through the vadose zone must be a very slow process. The subsurface concentration levels obtained from sample analysis tend to support this conclusion.

An estimate of the time and contaminant dilution can be obtained from applying the Rapid Assessment Method(17). This model is a one dimensional nomographic method commonly used by Emergency response managers to assess pollution potential. Because of the lack of sufficiently reslovable data in this case, presentation here is a worst case scenario with the following conservatively assumed attributes:

1. Worst contaminant - toluene (C=10 ppm)
2. Worst site - Alpha contamination area A
3. Vadose zone pulse input over three years (1978 - 1980 area A)
4. Distance to groundwater = 60 feet
5. Effective porosity = 25% for glacial till
6. Organic carbon content = 1.6% (w/w)
7. Average over depth bulk density = 1.5 gm/cc
8. Pore water velocity = 0.6 cm/day
9. Volumetric water content = 20%
10. Biological degradation/decay rate for toluene = 0.001 (1/day)
11. Dispersion Coefficient = 0.01 (cm*cm/day)
12. Partition/adsorption coefficient for toluene (kd) = 0.485 (ml/gm)
13. Octanol/water Partition Coefficient (Kow) = 489.8 (ml/gm)

Results of this analysis show that after three years of pulse input of toluene into the vadose zone, contamination has barely penetrated four feet. The toluene never reaches the capillary fringe or the groundwater phreatic surface. The analytical results obtained from both field investigations supports this conclusion. This is not an unusual result. If the spill is small enough relative to the surface area (adsorption sites), the body of oil is exhausted in downward migration to such a degree as it saturates the soils adsorption capacity effectively immobilizing or reaching a "maximum residual saturation". The American Petroleum Institute (API) refers to this phenomenon as "pellecular" oil (18). The API has documented many such case studies, particularly in oil field spills, where immobilization of oil near the soil surface has occured. Subsequent rainfall infiltration may reverse the adsorption process somewhat and carry minor amounts of dissolved residuals farther into the subsoils. However, dissolved concentrations are reduced orders of magnitude. What is most important is that the risk of a contaminate reaching the groundwater table or capillary fringe zone has been greatly reduced. This appears to be the situation occuring at area A.

C.3 Risk Assessment

There does not appear to be much risk to man or his environment associated with the substances which have been spilled in areas A or B. There is no risk of contaminating the pond of stream just south of the plant because of the prescence of the groundwater mound. There is very little risk of contaminating the groundwater resources because the measured soil concentrations, except #2 fuel oil (hydrocarbons), are very low and the soil adsorptive capacity, including clinker dust, appears to be sufficient to minimize downward mobility. Since there is little risk of groundwater contamination then there is virtually no risk of contaminating Butternut Creek. There is virtually no risk to surrounding public because there are no inuse drinking water wells between the Alpha site and Butternut Creek. All flows are away from all known potable wells inuse or abandoned. There is no risk to onsite construction workers or other personnel since contact with these substances in the soil and in such low concentrations is virtually impossible. All investigative personnel wear minimum protective clothing. What little risk there may be is apparently associated with the toxicological properties of some of the substances present.

D. Decontamination Proposal

Contamination Area A - The most reasonable approach to decontamination at this site is the removal of the source of the hydrocarbons. That is, the three to six inch surface layer. The contaminated area is approximately 29,000 square feet. The oil lens concentration is

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approximately 0.7% total hydrocarbons. Otisca Industries proposes the following:

- The Renshaw Bay Corporation, general contractors, provide all equipment, labor and transportation to remove the surface 6 inches of contaminated soil, approximately 30 truck loads, from site A. To insure proper cleanup, not hampered by poor weather conditions, it is suggested cleanup commence in April 1987 or after spring thaw. A professional Engineer will be present during the removal of the contaminated soils to certify cleanup procedure(s). All required documentation, manifests, work orders and certification will be submitted to NYSDEC Region 7 office. The decontamination effort will proceed in accordance with standard remdial practice as outlined in USEPA, "Handbook - Remedial Action at Waste Disposal Sites", EPA - 625/6-82-006, June 1982. The contaminated surface soils will be disposed of at a secure landfill approved by NYSDEC.

Contamination Area B - The contents of the buried tanker discovered at site B have already been removed and drummed. Disposition awaits NYSDEC approval, manifest documentation, and ultimate disposal at a secure landfill. This work has been accomplished by the Renshaw Bay Corporation. Most all priority pollutants found under and surrounding the tanker fall within NYSDEC cleanup guidelines with the exception of PCB at approximately 15 ppm. Consequently, Otisca Industries proposes the following:

-The surficial soil materials surrounding the buried tanker at site B will be removed and drummed until composite sample analysis reveals that the PCB level has fallen below the 10 ppm single priority pollutant limitation and the total of all hazardous substances does not exceed 50 ppm limitation. All of the removed contaminated soils from Area B will be properly drummed and transported to a NYSDEC approved secure landfill facility.

Groundwater Monitoring Wells - As stated previously in this work plan, the local hydrogeology of this site is very complex. Because of this, placement and design of monitoring wells has been temporarily posponed until discussions with NYSDEC concerning the placement and number of wells can occur. All surface and groundwater sampling and analyses completed as part of this investigation show no comtamination by any hazardous substance. Otisca Industries intends to monitor the groundwater under this site in accordance with RCRA closure regulations.

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Appendix A

Hydrogeological Investigation : D. I. Siegel, Ph.D.

HYDROGEOLOGIC INVESTIGATION OF THE ALPHA PORTLAND CEMENT COMPANY SITE, JAMESVILLE, NEW YORK

Prepared For

Otisca Industries Ltd.

Syracuse, New York

by

D. I. Siegel, PhD.

Consulting Hydrogeologist

GENERAL PHYSIOGRAPHIC SETTING

The Alpha Portland Cement Company Plant (Alpha site) is located 1/2 mile northwest of Jamesville, New York and is at 590± foot elevation on the northern flank of the east-west trending Clark Reservation Channel (Fig. 1). This linear topographic depression, 30 to 100 feet lower than surrounding hills, begins at Green Lake in Clark Reservation and ends at Butternut Creek due east of the Alpha site. The Rock Cut and Smoky Hollow Channels, located about 1/2 mile north and south of the site respectively, parallel the Clark Reservation Channel. All three east-west trending channels intersect the north-south Jamesville trough that contains Butternut Creek (Fig. 1). The relief of the hills between the channels is as great as 450 feet, although the land surface elevation northwest of the Alpha site only increases about 100 feet before decreasing towards Rock Cut Channel.

Locally, a small pond is occurs in the Clark Reservation Channel immediately south-west of the Alpha site. Water levels in the pond are sustained by surface-water runoff and two springs. The first spring, located about 600 feet west of the pond, is the headwater of the pond's inlet creek. The second spring discharges to the pond bottom near its eastern margin (SCS, 1973). A recent beaver dam at the outlet of the pond has raised the pond water level less than 1 foot (Schimel, oral communication). An unnamed creek, the pond's outlet, flows through the dam east to Butternut Creek.

GEOLOGY

The bedrock beneath the site consists of nearly flat lying stratified limestones and dolostones of the Devonian age Manlius Group (Hopkins, 1914). Beneath these rocks are gypsum-bearing carbonate rocks and shales of the Silurian Salina Group.

Fractures and joints caused by regional tectonic events millions of years ago are ubiquitous to the bedrock throughout the Jamesville area and can be assumed to occur beneath the Alpha site. Major fracture and joint sets trend north-south and east-west; minor sets trend northwest and northeast (DeGross, 1950; Meaker, 1954; Chute, 1964). A southwest dipping thrust fault and its associated parallel joints occurs in the Jamesville Quarry east of the Alpha site (Meaker, 1958). This fault has not been traced across Butternut Creek to the Alpha site, although smaller thrust faults have been identified on outcrops located on the eastern side of the Jamesville trough (Hopkins,1914). The trace of the upper plate would probably occur slightly north of the Alpha site if the thrust fault extends across the valley.

The orientation of some topographic features in the Jamestown area is related to the underlying fracture pattern in the bedrock. Linearly oriented sinkholes caused by karstic solution of the carbonate rocks along fractures are common in the Jamesville area (Kappesser, 1976). The east-west trend of the Clark Reservation Channel and other glacial channels in the Jamesville Quadrangle probably also reflects the orientation of fractures enlarged by glacial meltwater erosion and karstic weathering (Hand and Muller, 1972). A deep depression east of Green Lake in Clark Reservation may be a sinkhole enlarged by groundwater activity during meltwater discharge (Hand and Muller, 1972).

Green Lake, itself, was formed as a plunge pool of a glacial meltwater stream and waterfall system which drained a glacial lake in the Onondaga trough and flowed eastward to the Jamesville trough (Fairbridge, 1932; Muller, 1964; Sissons, 1969; Hand and Muller, 1972). This stream cut the Clark Reservation Channel on the northern flank of which the Alpha site is located.

The Clark Reservation Channel, once filled with water, now contains sand, gravel, and boulders deposited by the glacial stream. The soil developed in the channel and under the Alpha site largely is a "Honeoye Very Stony" type soil typified by large glacial boulders and cobbles (SCS, 1977). Sand and gravel terraces, which formed as the water level of the glacial stream declined, have been mapped north and east of the Alpha site (Sisson, 1960).

The site also appears to be on a sand and gravel terrace. Shallow test holes drilled at the site penetrated a minimum of 40 feet of stratified sand, gravel and cobbles (Parratt Wolff, 1985), and a quarry located a few hundred yards to the north contains sand and gravel 40 feet deep. Total thickness of sand and gravel under the Alpha site probably ranges from 60 to 100 feet.

GROUND WATER

The groundwater resources in Onondaga County have only been studied at a regional level. The surficial materials, such as sand and gravel terrace deposits and glacial till, and the upper underlying fractured bedrock are hydraulically connected, and ground water generally flows northward in the major buried bedrock valleys (Kantrowitz, 1970). Ground water also flows [illegible]ward in bedrock under the Allied Quarry east of the Alpha site (Karpesser, 1976).

Potable water is obtainable from both surficial materials and bedrock. The median yield from wells completed in limestone around Jamesville is 25 gpm, whereas yields from the sand and gravel above the bedrock near the Alpha site can be as high as 100 gpm., depending on lithology and thickness (Kantrowitz, 1970). The hydraulic conductivity of the sand and gravel under the site is relatively high, ranging from about 0.0001 to 0.001 cm/s (SCS, 1973). The water table at the site is probably between 10 and 60 feet deep, depending on the location.

The Clark Reservation channel is the groundwater discharge zone for groundwater flow recharged on topographic highlands [illegible] of the channel. The channel and creek are the discharge areas for ground water in both surficial materials and in hydraulically connected fractured bedrock. Groundwater flow in the main part of the channel is upwards towards the land surface.

Natural springs caused by this discharge occur in the Clark Reservation Channel pond next to the plant (SCS, 1973) and upgradient of the pond about 600 feet to the west. Although most of the channel is a discharge area, the springs could be locally focused by fractures in the underlying bedrock. On December 17, 1985, the discharge of the upgradient spring was about 10 cfs, and the discharge of the spring in the pond was sufficient enough to prevent the pond surface from freezing.

The chemical composition of the springs indicates that groundwater flow in the Alpha site vicinity is only significant in the upper part of the bedrock and overlying surficial materials and not in the deeper regional groundwater systems. Spring water is of the calcium-magnesium-bicarbonate type, typical of ground water which obtains its solutes by the dissolution of carbonate minerals in drift or bedrock. Ground water from a well in carbonate bedrock near Green Lakes is also of the calcium-magnesium-bicarbonate type (unpublished data, Onondaga Health Department, 1985). This water [illegible] contrasts markedly with the calcium-sulfate type ground water typical of bedrock that contains gypsum in formations below the Manlius Group. Concentrations of sulfate in these ground waters ranges from about 300 to 2,000 mg/L (Kapasser, 1976; Kantrowitz, 1970). Sulfate concentration less than 50 mg/L in the spring waters near the site is strong indirect evidence that the ground water near the site is essentially divorced from that in the deeper bedrock.

Previous test hole drilling and a water level reported from a piezometer at the Alpha site (Parratt Wolff, 1985) show that ground water under the site is recharged by the pond. A water level measured in piezometer #4, located a couple of feet north of the pond, was 2-3 feet below the elevation of the pond surface (elevation differences estimated by hand-leveling by D. I. Siegel and K. Schimel). The level of the pond is probably maintained by fine-grained sediment and organic material on the pond bottom which inhibits the rate of vertical recharge of water to the water table in underlying sand and gravel.

The hydraulic gradient and direction of groundwater movement under the Alpha site is approximately northeast. The elevations of test holes # 1 and #2 are about 40 feet above the pond elevation whereas that of test hole #3 is about 30 feet above the pond elevation. These test holes did not penetrate the water table at the 40 foot depth (Parratt Wolff, 1985). Consequently, the water table at test-hole sites #1, #2, and #3 must be lower than the elevation of the pond surface and the direction of groundwater flow will be from the pond towards the plant. The direction of groundwater flow under the plant is probably northeast towards Butternut Creek in the Jamesville Trough, a major discharge zone.

The hydrogeologic setting of the Alpha site, illustrated in figure 2, is similar to that of a flow-through lake setting. Groundwater discharges, or seeps to one side of a lake or wetland which in turn recharges the groundwater system on its downgradient side. The water table north of the Alpha site probably has little topography and slopes gently towards Butternut Creek.

POTENTIAL FOR GROUNDWATER CONTAMINATION

Previous study

The upper 6 feet of soil immediately south of the main Alpha plant is contaminated in some places by organic substances (Galson, 1985a). However, there is no unequivocal evidence that organic contamination has penetrated far below the soil zone. A reported 5 ppm of toluene at the 40 foot depth in test hole #1 (Galson, 1985b) may be wrong. A re-analysis of the sample showed toluene below the detection level (Galson, 1985c). Toluene would also have been detected at shallower depths closer to the contaminated surface soil if it had significantly infiltrated into the deeper sand and gravels.

Groundwater Flow

Groundwater discharge in the Clark Reservation Channel precludes groundwater movement and any contaminant transport across the channel to Jamesville. The channel is a hydrogeologic no-flow boundary for north to south flow. Furthermore, any contamination of the groundwater system at the Alpha site will be significantly diluted by recharge water from the adjacent pond. Groundwater movement north of the pond is probably lateral except near the northern edge of the pond where pond water recharges downward to the groundwater system.

Suggestions for Future Work

Additional test drilling should be done to determine if sand and gravel is contaminated deeper than the soil zone and if groundwater has been contaminated. The work will also provide the necessary data to directly determine the direction and velocity of groundwater flow northwest and under the Alpha site. All test holes and piezometers should be surveyed to a common datum, as well as the elevation of the pond.

Test Drilling

Four test-holes should be drilled to about 10 feet below the water table. Samples should be collected as frequently as feasible, logged and stored for future needs. A 2-inch ID, schedule #80 PVC casing with 5-foot #10 slotted screen should be installed in each test hole to determine water-levels and for groundwater sampling. The piezometers should be constructed by standard methods with a sandpack around the screen. A small amount of air development or surge pumping should be done to develop the wells after drilling.

A qualified geologist should log the test holes and samples returned. Previous work did not identify differences in gravel/soil composition in sufficient detail to identify significant geological boundaries such as between the weathered bedrock and overlying glacial gravels.
Some logs do not record the transition between clinker and glacial materials. The glacial sands and gravels contain large boulders and cobbles through which it is difficult to drill (SCS, 1973; Farratt Wolff, 1985). Accurate logging of gravel lithology and sedimentological characteristics will be essential to determine when actual bedrock is penetrated.

Test-holes should be drilled in the following places: (Fig.3):

A. At boring site #1. The drilling and instrumentation at this location has two purposes.

1. Samples need to be re-taken at the 40-41 foot depths and analysed for organic contamination. This will determine if the previous sampling and analyses were valid. Given the importance of this data, I feel that chemical analyses should be done in duplicate, on two statistically valid sample splits from the sampled horizons. Using appropriate QA/QC protocols, the chemical analyses should be done immediately or shortly after sample collection to minimize sampling loss of possible volatile organics, if present.

2. The piezometer at this location will be used to measure the elevation of the water table and to collect groundwater samples immediately under the area of surface contamination by organic substances.

B. Near test boring site #4. The previous piezometer at this site has been vandalized, and it is important to measure the water table at this point to determine the hydraulic gradient near the edge of the pond.

C. Northeast of the main plant building. Water levels in this well will be used to determine the hydraulic gradient under the site and to monitor possible contaminant transport towards Butternut Creek.

D. At a site east of the Alpha plant. This test hole and piezometer will be the water quality "background" site. The well will also provide cross-gradient control for determining the configuration of the water table.

Water levels from these piezometers will be sufficient to determine, the lateral direction of groundwater flow under the Alpha site. Deeper piezometers need not be constructed to show that the Clark Reservation Channel is a discharge boundary. This is physically documented by the spring south of the Alpha site. For further verification, water levels should be measured in a PVC or metal casing and screen driven into the pond bottom near the spring.

Samples of ground water collected from the 4 piezometers and 2 springs should be sufficient to determine the extent, if any, of groundwater contamination. The locations of piezometers A, B, and C are placed along the most probable flow path from the contaminated part of the Alpha site.

Table 1. Chemical analyses of ground water and surface water at the Aloha site, December 17, 1985. (A) from a seepage face in dolomite located about 1/4 mile upgradient of the Clark Reservation Channel pond. (B) from a spring discharging at the head of the pond. (C) from the creek draining the pond at the beaver dam. All concentrations in mg/L*

	A	B	C
pH	7.4	7.5	---
HCO_3	290	270	---
SO_4+Cl	LT 30	LT 30	---
Ca	80	77	81
Mg	13.8	13.[illegible]	15.6
Na	4.3	5.6	4.6
K	2.5	2.7	2.9
Si	2.4	2.7	2.9

* Analyses done by D.I. Siegel at The Geochemistry Laboratory, Department of Geology, Syracuse University. pH by standard electrode measurement. HCO_3 by titration to end-point of pH 4.5. Metals by Direct-Current Plasma Emmission Spectroscopy. SO_4 + Cl equivalence balance.

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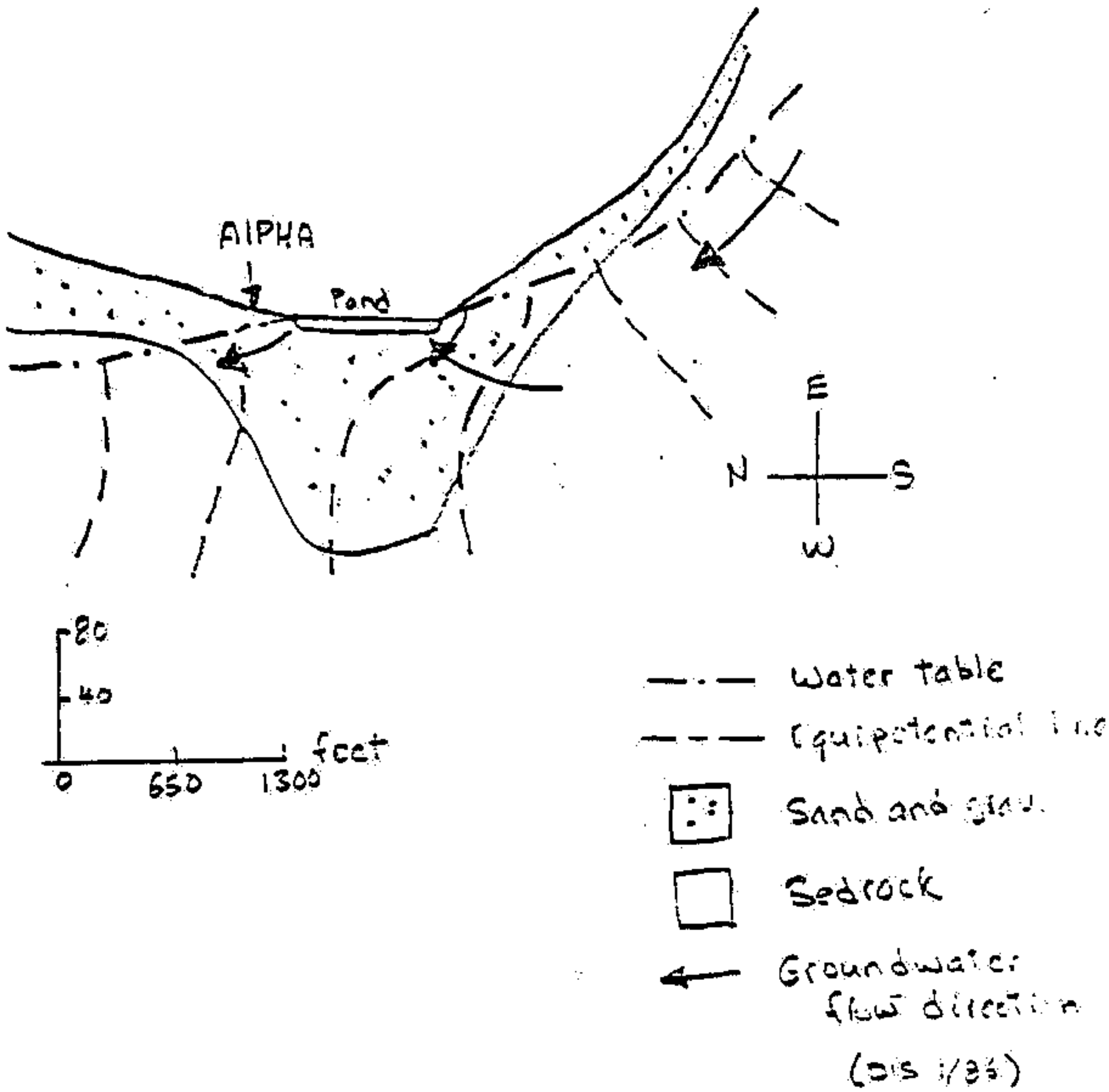

AlPHA
Pond
E
N
S
W
80
40
0
650
1300
feet
Water table
Sand and
Bedrock
Groundwater

Figure 2

Appendix B

Parrott-Wolfe Boring Logs

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TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT: Site Investigation
LOCATION: Alpha Cement Plant, Jamesville, New York
DATE STARTED: 4/8/85 DATE COMPLETED: 4/8/85

HOLE NO. TB-1
SURF. EL.
JOB NO. 8560

GROUND WATER DEPTH
WHILE DRILLING: Dry
BEFORE CASING REMOVED: Dry
AFTER CASING REMOVED: Dry

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER
DRILLER'S FIELD LOG

SHEET 1 OF 2

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	0.0'-	1		Auger		Brown moist very dense fine to coarse GRAVEL and COBBLES, little fine to coarse sand, little silt, few cinders	
	2.0'			Sample			
5.0							
	5.0'-	2		5/50-			
	5.9'			.4'			
10.0							10.0'
	10.0'-	3		50-.2'		BOULDER	
	10.2'						12.0'
	13.0'-	4		18/22		Brown moist very dense fine to coarse GRAVEL and COBBLES, little fine to coarse sand, little silt, few cinders	
15.0	14.5'			23	45		
	15.0'-	5		39/21			
	16.5'			24	45		
20.0							19.0'
	20.0'-	6		9/10		Brown-black moist medium dense fine to coarse GRAVEL and COBBLES, little fine to coarse sand, little silt	
	21.5'			12	22		
25.0							25.0'
	25.0'-	7		13/16		Brown-black moist dense fine to coarse GRAVEL, little fine to coarse sand, little cobbles, little silt	
	26.5'			12	22		
30.0							
	30.0'-	8		15/13			
	31.5'			17	30		
35.0							
	35.0'-	9		13/15			
	36.5'			19	34		
40.0							

parratt wolff inc.
FISHER RD., EAST SYRACUSE, N.Y. 1305
TELEPHONE AREA CODE 315/437-14

A BRIEF DESCRIPTION OF THE UNIFIED SOIL SYSTEM

The Unified Classification System is an engineering soil classification that is an outgrowth of the Air-Field classification developed by Casagrande.

The system incorporates the textural characteristics of a soil into the engineering classification. All soils are classified into fifteen groups, each group being designated by two letters. These letters are as follows: G—gravel, S—sand, M—Non plastic or low plasticity fines, C—plastic fines, Pt—peat, humus and swamp soils, O—organic, W—well graded, P—poorly graded, L—low liquid limit, H—high liquid limit.

GW and SW Groups

These groups comprise well graded gravelly and sandy soils which contain less than 5% of non plastic fines passing a #200 sieve. Fines which are present must not noticeably change the strength characteristics of the coarse grain fraction and must not interfere with its free draining characteristics. In areas subject to frost action the material should not contain more than about 3% of soil grains smaller than .02 millimeters in size.

GP and SP Groups

These groups are poorly graded gravels and sands containing less than 5% non plastic fines. They may consist of uniform gravels, uniform sands, or non uniform mixtures of very coarse material and very fine sand with intermediate sizes lacking. Materials of this latter type are sometimes referred to as skip graded, cap graded, or step graded.

GM and SM Groups

In general, these groups include gravels or sands which contain more than 12% of fines having little or no plasticity. The plasticity index and liquid limit of a soil in either of these groups plot below the "A" line on a plasticity chart. Gradation is not important and both low grade and poorly graded materials are included. Some sands and gravels in these groups may have a binder composed of natural cementing agents so proportioned that the mixture shows negligible swelling or shrinkage. Thus, the dry strength is provided by a small amount of soil binder or dry cementation of calcareous materials or iron oxide. A fine fraction of non cemented materials may be composed of silts or rock flour types having little or no plasticity, and the mixture will exhibit no dry strength.

GC and SC Groups

These groups comprise gravelly or sandy soils with more than 12% of fines which exhibit either low or high plasticity. The plasticity index and liquid limit of a soil in either of these groups plot above the "A" line on the plasticity chart. Gradation of these materials is not important. Plasticity of the binder fraction has more influence on the behavior of the soils than does the variation in gradation. A fine fraction is generally composed of clays.

ML and MH Groups

These groups include predominantly silty materials and micaceous or diatomaceous soils. An arbitrary division between the two groups has been established with a liquid limit of 50. Soils in these groups are sandy silts, clayey silts or organic silts with relatively low plasticity. Also included are loessial soils and rock flours. Micaceous and diatomaceous soils generally fall within the MH group, but may extend into the ML group when their liquid limit is less than 50. The same is true for certain types of kaolin clays and some illite clays having relatively low plasticity.

CL and CH Groups

The CL and CH groups embrace clays with low and high liquid limits respectively. They are primarily inorganic clays. Low plasticity clays are classified as CL and are usually lean clays, sandy clays, and silty clays. The medium plasticity and high plasticity clays are classified as CH. These include fat clays, gumbo clays, certain volcanic clays and bentonite.

OL and OH Groups

The soils in these groups are characterized by the presence of organic matter including organic silts and clays. They have a plasticity range that corresponds with the ML and MH groups.

Pt Group

Highly organic soils which are very compressible have undesirable construction characteristics and are classified in one group with the symbol Pt. Peat, humus and swamp soils with a highly organic texture are typical of the group. Particles of leaves, grass, branches of bushes and other fibrous vegetable matter are common components of these soils.

Borderline Classification

Soils in the GW, SW, GP and SP groups are non plastic materials having less than 5% passing the #200 sieve, while GM, SM, GC, and SC soils have more than 12% passing the #200 sieve. When these coarse grain materials contain between 5% and 12% of fines they are classified as borderline, and are designated by the dual symbol such as GW-GM. Similarly coarse grain soils which have less than 5% passing the #200 sieve, but which are not free draining or in which the fine fraction exhibits plasticity are also classed as borderline and are given a dual symbol. Still another type of borderline classification occurs when a liquid limit of a fine grain soil is less than 29 and the plasticity index lies in the range of four to seven. These limits are indicated by the shaded area on the plasticity chart.

Silty and Clayey

In the Unified System, these terms are used to describe soils whose Atterberg limits plot below and above the "A" line on the plasticity chart. The adjectives silty and clayey are used to describe soils whose limits plot close to the "A" line.

SOIL CLASSIFICATION SYSTEM

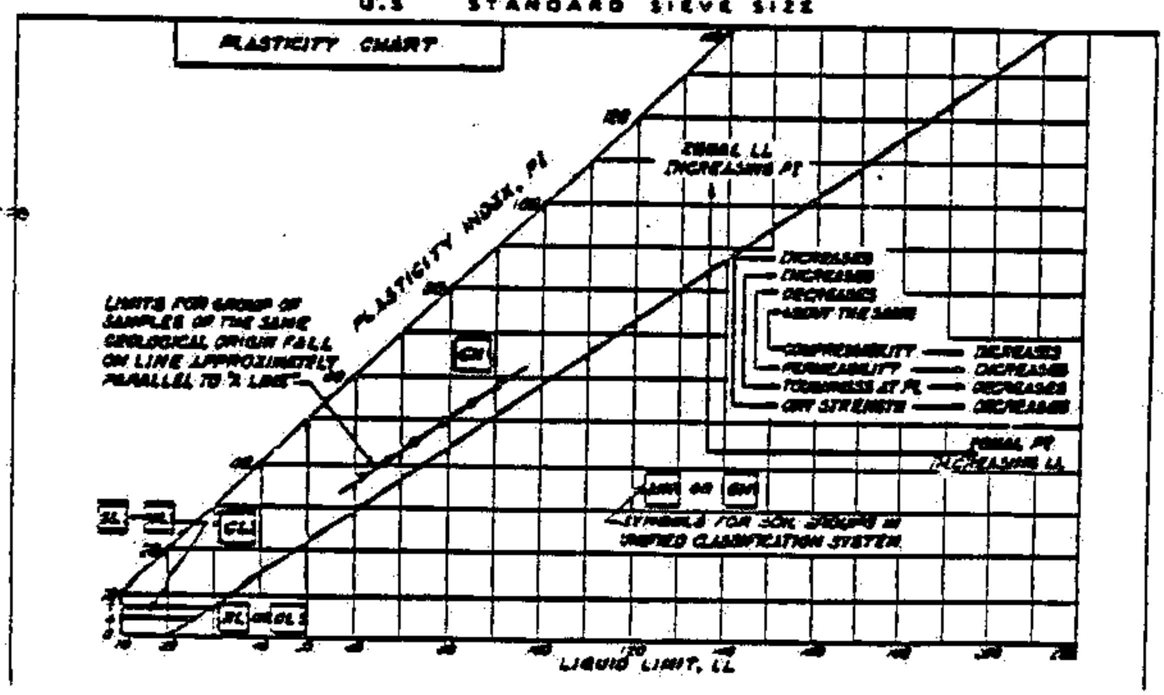
MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel - sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel - sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amt. of fines)	GM	Silty gravels, gravel - sand - silt mixtures.
			GC	Clayey gravels, gravel - sand - clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amt. of fines)	SM	Silty sands, sand-silt mixtures.
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

SILT OR CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		
	No. 200	No. 40	No. 10	No. 4	3/4 in.	3 in.	(12 in.)

U.S STANDARD SIEVE SIZE



parratt wolff inc

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

TEST BORING LOG

PROJECT Site Investigation
LOCATION Alpha Cement Plant
Jamesville, New York
DATE STARTED 4/8/85 DATE COMPLETED 4/8/85

HOLE NO. TB-1
SURF. EL.
JOB NO. 8560

GROUND WATER DEPTH
WHILE DRILLING Dry
BEFORE CASING REMOVED Dry
AFTER CASING REMOVED Dry

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER
DRILLER'S FIELD LOG

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	40.0'-	10		25/19			40.5'
	41.5'			16	35	Brown moist dense fine SAND and SILT, little clay	
45.0						Bottom of Boring	41.5'

parratt wolff inc

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

TEST BORING LOG

PROJECT Site Investigation
LOCATION Alpha Cement Plant
Jamesville, New York
DATE STARTED 4/9/85 DATE COMPLETED 4/9/85

HOLE NO. TB-2
SURF. EL.
JOB NO. 8560
GROUND WATER DEPTH
WHILE DRILLING Dry
BEFORE CASING REMOVED Dry
AFTER CASING REMOVED Dry
SHEET 1 OF 2

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER
DRILLER'S FIELD LOG

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
						Brown moist medium dense fine to coarse GRAVEL, COBBLES and fine to coarse SAND, little silt, few boulders	
5.0							
	5.0'-	1		19/5			
	6.5'			6	11		
							7.5'
						Brown moist very dense COBBLES and fine to coarse GRAVEL, some fine to coarse sand, little silt, few boulders	
10.0							
	10.0'-	2		16/30			
	11.5'			51	81		
15.0							
	15.0'-	3		73			
	15.5'						
							18.0'
						Brown moist dense to very dense fine to coarse GRAVEL, some fine to coarse sand, little cobbles, little silt	
20.0							
	20.0'-	4		35/24			
	21.5'			28	52		
25.0							
	25.0'-	5		15/17			
	26.5'			17	34		
30.0							
	30.0'-	6		15/20			
	31.5'			21	41		
35.0							
	35.0'-	7		12/15			
	36.5'			19	34		
40.0							

parratt wolff inc

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

TEST BORING LOG

PROJECT Site Investigation
LOCATION Alpha Cement Plant
Jamesville, New York
DATE STARTED 4/9/85 DATE COMPLETED 4/9/85

HOLE NO. TB-2
SURF. EL.
JOB NO. 8560

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

GROUND WATER DEPTH
WHILE DRILLING Dry
BEFORE CASING REMOVED Dry
AFTER CASING REMOVED Dry

CASING TYPE - HOLLOW STEM AUGER
DRILLER'S FIELD LOG

SHEET 2 OF 2

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	40.0'-40.3'	8		27/50-.3'		Brown moist dense to very dense fine to coarse GRAVEL, some fine to coarse sand, little cobbles, little silt	
45.0						Bottom of Boring	40.3'

parratt wolff inc

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT Site Investigation
LOCATION Alpha Cement Plant
Jamesville, New York
DATE STARTED 4/9/85 DATE COMPLETED 4/9/85

HOLE NO. TB-3
SURF. EL.
JOB NO. 8560

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

GROUND WATER DEPTH
WHILE DRILLING Dry
BEFORE CASING REMOVED Dry
AFTER CASING REMOVED Dry

CASING TYPE - HOLLOW STEM AUGER
DRILLER'S FIELD LOG

SHEET 1 OF 2

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
						Brown moist very dense fine to coarse GRAVEL, COBBLES and BOULDERS, little fine to coarse sand, little silt	
5.0	5.0'-	1		11/29			
	6.5'			32	61		
10.0							9.0'
	10.0'-	2		20/18		Brown-black moist dense fine to coarse GRAVEL, some fine to coarse sand, little cobbles, little silt	
	11.5'			18	36		
15.0	15.0'-	3		11/12			
	16.5'			18	30		
20.0	20.0'-	4		20/21			
	21.5'			25	46		
25.0	25.0'-	5		10/13			
	26.5'			19	32		
30.0	30.0'-	6		12/16			
	31.5'			23	39		
35.0							34.0'
	35.0'-	7		9/18		Brown moist hard SILT, trace fine sand, trace clay	
	36.5'			27	35		
40.0							

52

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TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT: Site Investigation
LOCATION: Alpha Cement Plant, Jamesville, New York
DATE STARTED: 4/9/85 DATE COMPLETED: 4/9/85

HOLE NO. TB-3
SURF. EL.
JOB NO. 8560

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

GROUND WATER DEPTH
WHILE DRILLING Dry
BEFORE CASING REMOVED Dry
AFTER CASING REMOVED Dry

CASING TYPE - HOLLOW STEM AUGER
DRILLER'S FIELD LOG

SHEET 2 OF 2

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
	40.0'-	8		12/25		Brown moist hard SILT, trace fine	
	41.5'			36	61	sand, trace clay	
						Bottom of Boring	41.5'
45.0							

parratt wolff inc

TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT Site Investigation
LOCATION Alpha Cement Plant
Jamesville, New York
DATE STARTED 4/9/85 DATE COMPLETED 4/9/85

HOLE NO. TB-4
SURF. EL.
JOB NO. 8560

GROUND WATER DEPTH
WHILE DRILLING 10.5'
BEFORE CASING REMOVED 16.0'
AFTER CASING REMOVED 10.0'

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

CASING TYPE - HOLLOW STEM AUGER
DRILLER'S FIELD LOG

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
						Brown-gray moist very dense fine to coarse GRAVEL, some concrete, some cobbles, little fine to coarse sand, little silt	
5.0	5.0'-	1		26/24			
	6.5'			27	51		
10.0 WL	10.0'-	2		18/6			10.5'
	11.5'			2	8	Brown wet loose fine to coarse SAND and fine to coarse GRAVEL, some silt	
15.0						Brown moist soft PEAT	14.0'
	15.0'-	3		3/4			16.0'
	16.5'			11	15	Green-gray wet stiff SILT, some clay, trace fine sand	
20.0						Brown wet medium dense fine to coarse SAND, little clay, little fine to medium gravel	18.5'
	20.0'-	4		8/9			
	21.5'			9	18	Bottom of Boring	21.5'
25.0						Note: Installed observation well to 19.0', 10.0' slotted screen.	

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TEST BORING LOG

FISHER ROAD
EAST SYRACUSE, N.Y. 13057

PROJECT Site Investigation
LOCATION Alpha Cement Plant
Jamesville, New York
DATE STARTED 4/9/85 DATE COMPLETED 4/9/85

HOLE NO. TB-5
SURF. EL.
JOB NO. 8560

N — NO. OF BLOWS TO DRIVE SAMPLER 12" W/140# HAMMER FALLING 30" — ASTM D-1586, STANDARD PENETRATION TEST

C — NO. OF BLOWS TO DRIVE CASING 12" W/ # HAMMER FALLING "/OR — % CORE RECOVERY

GROUND WATER DEPTH WHILE DRILLING Dry
BEFORE CASING REMOVED Dry
AFTER CASING REMOVED Dry

CASING TYPE - HOLLOW STEM AUGER
DRILLER'S FIELD LOG

SHEET 1 OF 1

DEPTH	SAMPLE DEPTH	SAMPLE NUMBER	C	SAMPLE DRIVE RECORD PER 6"	N	DESCRIPTION OF MATERIAL	STRATA CHANGE DEPTH
						Gray moist very dense fine to coarse GRAVEL, COBBLES and BOULDERS, little fien to coarse sand, little silt	
5.0							
	5.0'-	1		19/25		Refusal	6.2'
	6.2'			50-.2'		Bottom of Boring	6.2'
10.0							

Appendix C

Area A - Test Pit and Boring Samples

OBG LABORATORIES, INC.

Laboratory Report

CLIENT: OTISCA INDUSTRIES LTD. JOB NO. 3486.001.517

DESCRIPTION: FIDSCAN

DATE COLLECTED: 6-24-86 DATE REC'D.: 6-24-86 DATE ANALYZED: 7-7-86

	Sample #	TOTAL HYDRO-CARBON (ppb)[1]	SURROGATE RECOVERY (Octadecane)		
Pit A, 2-3ft. (ca)	A0786	33000.	108%		
Pit A, 6ft. (ca)	A0787	31000.	102%		
Pit A, Surface (ca)	A0788	2,200,000.	DL[2]		
Pit B, 2ft.	A0789	1500.	102%		
Pit B, 6ft.	A0790	1600.	114%		
Pit B, Surface	A0791	1,300,000.	DL[2]		

[1] ug/kg wet weight

[2] DL = Diluted Out

Methodology: Federal Register — 40 CFR, Part 136, October 26, 1984

Units: mg/l (ppm) unless otherwise noted

Comments:

OBG Laboratories, Inc
Box 4942 / 1304 Buckley Rd. / Syracuse, NY / 13221 / (315) 457-1494

Authorized: [signature]

Date: July 30, 1986

CHAIN OF CUSTODY RECORD

SURVEY				SAMPLERS: (Signature)			
OTESCA Fed.		PO # 7534		M. N. Pesterelli			
STATION NUMBER	STATION LOCATION	DATE	TIME	SAMPLE TYPE (Water: Comp. / Grab; Air)	SEQ. NO.	NO. OF CONTAINERS	ANALYSIS REQUIRED
	Pit A 2-3 FT	6/24/86	10:05	✓		3	- FID Scan
	Pit A 6 FT.	6/24/86	10:30	✓		3	
	Pit A surface	6/24/86		✓		1	
	Pit B 2 FT	6/24/86	10:55	✓		3	
	Pit B 6 FT	6/24/86	11:20	✓		3	
	Pit B surface	6/24/86		✓		1	

Relinquished by: (Signature) M. N. Pestrelli	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Received by Mobile Laboratory for field analysis: (Signature)	Date/Time
Dispatched by: (Signature) Date/Time	Received for Laboratory by: Ann Abbott	Date/Time 6/25/86 12:(
Method of Shipment:		

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

TEST PITS

SAMPLE ID	GTS #	FID SCAN PPM*	ECD SCAN PCB 1016 PPM	ECD SCAN OTHER HALOGENATED ORGANICS PPM**	601 SCAN HALL DETECTOR	601 SCAN PID DETECTOR	HALL SCAN SEMI VOLATILES
AP #1 1-2'	C6266	83	0.3	1.3	ND	ND	ND
AP #1 2-3'	C6267	175	2.4	4.2	ND	ND	ND
AP #2 1-2'	C6268	<90	3	1	NA	NA	NA
AP #3 24"	C6269	<90	4	0.8	NA	NA	NA
AP #4 24"	C6270	<90	5	5	NA	NA	NA
AP #5 24-40"	C6272	<90	4	0.4	NA	NA	NA
AP #6 0-2'	C6273	<90	1	2	NA	NA	NA
AP #7 0-2'	C6274	1100	5	0.8	NA	NA	NA
AP #8 0-2'	C6275	<90	20	40	NA	NA	NA

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: *AS #2 FUEL OIL
**AS PCB 1016
Submitted by: KQD
Approved by: E.Y
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040906
Location: SEE BELOW

Job Number: G3098

Date Sampled: 4/8/85

TEST BORING #1

SAMPLE ID	GTS #	FID SCAN PPM*	ECD SCAN PCB 1016 PPM	ECD SCAN OTHER HALOGENATED ORGANICS PPM**
S #1 0-2'	C6738	2,500	3	4
S #2 5-5.5'	C6739	<90	0.1	0.1
S #3 10-10.2'	C6740	<90	<0.1	0.7
S #4 13-14.5'	C6741	NA	NA	NA
S #5 15-16.5'	C6742	NA	NA	NA
S #6 20-21.5'	C6743	<90	0.1	0.2
S #7 25-26.5'	C6744	NA	NA	NA
S #8 30-31.5'	C6745	<90	<0.1	0.2
S #9 35-36.5'	C6746	NA	NA	NA
S #10 40-41.5'	C6747	<90	<0.1	<0.1

(<) - Less Than
(>) - Greater Than
NA - Not Analyzed
ND - Not Detectable
NS - Not Specified

Footnotes: *AS #2 FUEL OIL
**AS PCB 1016
Submitted by: Ka
Approved by: [illegible]
Date: 14-JUN-1985

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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040906
Location: SEE BELOW

Job Number: G3098

Date Sampled: 4/8/85

TEST BORING #2

SAMPLE ID	GTS #	FID SCAN PPM*	ECD SCAN PCB 1016 PPM	ECD SCAN OTHER HALOGENATED ORGANICS PPM**
S #1 5-6.5'	C6748	<90	<0.1	0.9
S #2 10-11.5'	C6749	<90	<0.1	0.1
S #3 15-16.5'	C6750	NA	NA	NA
S #4 20-21.5'	C6751	<90	<0.1	0.2
S #5 25-26.5'	C6752	NA	NA	NA
S #6 30.0-31.5'	C6778	<20	<0.1	0.2
S #7 35.0-36.5'	C6779	NA	NA	NA
S #8 40.0-41.0'	C6780	<20	<0.1	<0.1/<0.1

(<) - Less Than
(>) - Greater Than
NA - Not Analyzed
ND - Not Detectable
NS - Not Specified

Footnotes: *AS #2 FUEL OIL
**AS PCB 1016

Submitted by: Ka
Approved by: [illegible]
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040906
Location: SEE BELOW

Job Number: G3098

Date Sampled: 4/8/85

TEST BORING #3

SAMPLE ID	GTS #	FID SCAN PPM*	ECD SCAN PCB 1016 PPM	ECD SCAN OTHER HALOGENATED ORGANICS PPM**
S #1 5-6.5'	C6781	<20	<0.1	0.1
S #2 10-11.5'	C6782	<20	<0.1	0.2
S #3 15-16.5'	C6783	NA	NA	NA
S #4 20-21.5'	C6784	<20	<0.1	<0.1
S #5 25-26.5'	C6785	NA	NA	NA
S #6 30-31.5'	C6786	<20	<0.1	0.3
S #7 35-36.5'	C6787	NA	NA	NA
S #8 40-41.5'	C6788	<20	<0.1	<0.1

(<) - Less Than
(>) - Greater Than
NA - Not Analyzed
ND - Not Detectable
NS - Not Specified

Footnotes: *AS #2 FUEL OIL
**AS PCB 1016
Submitted by: [signature]
Approved by: [signature]
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040906
Location: SEE BELOW

Job Number: G3098

Date Sampled: 4/8/85

TEST BORING #4

SAMPLE ID	GTS #	FID SCAN PPM*	ECD SCAN PCB 1016 PPM	ECD SCAN OTHER HALOGENATED ORGANICS PPM**
S #1 5-6.5'	C6789	<20	<0.1	<0.1
S #2 10-11.5'	C6790	<20	<0.1	<0.1
S #3 15-16.5'	C6791	NA	NA	NA
S #4 20-21.5'	C6792	<20	<0.1	<0.1

(<) - Less Than
(>) - Greater Than
NA - Not Analyzed
ND - Not Detectable
NS - Not Specified

Footnotes: *AS #2 FUEL OIL
**AS PCB 1016
Submitted by: KAD
Approved by:
Date: 14-JUN-1985

Galson
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Job Number: G3098
Task Number: 85040906, 85041004
Location: SEE BELOW
Date Sampled: 5/8/85

VOLATILES (GC)

METHANOL/SONICATION   BORINGS, 1, 2, AND 3

SAMPLE ID	GTS #	PURGEABLE 602 SCAN (PPM)	PURGEABLE 601 SCAN (PPM)
BORING 1 S#2 5.0-5.5'	C6734	8*	ND
BORING 1 S#3 10.0-10.2'	C6740	ND	ND
BORING 1 S#8 30.0-31.5'	C6745	ND	ND
BORING 1 S#10 40.0-41.5'	C6747	5 TOLUENE	ND
BORING 2 S#1 5.0-6.5'	C6748	17* (50% TOLUENE)	ND
BORING 2 S#2 10.0-11.5'	C6749	ND	ND
BORING 2 S#8 40.0-40.8'	C6780	ND	ND
BORING 3 S#1 5.0-6.5'	C6781	26* (50% TOLUENE)	ND
BORING 3 S#2 10.0-11.5'	C6782	ND	ND
BORING 3 S#3 15.0-16.5'	C6783	ND	ND
BORING 3 S#4 20.0-21.5'	C6784	ND	ND
BORING 3 S#5 25.0-26.5'	C6785	ND	ND
BORING 3 S#6 30.0-31.5'	C6786	ND	ND
BORING 3 S#7 35.0-36.5'	C6787	ND	ND
BORING 3 S#8 40.0-41.5'	C6788	ND	ND

DETECTION LIMITS: 601 SCAN <1PPM AS TRICHLOROETHYLENE
602 SCAN <1 PPM AS TOLUENE

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA 846
*AS TOLUENE
Submitted by: J.D. [signature]
Approved by: [signature]
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040906, 85041004
Location: SEE BELOW

Job Number: G3098

Date Sampled: 4/8/85

COMPARISON OF TWO EXTRACTION METHODS

602 SCAN PURGEABLES 5 FT. LEVELS BORINGS 1, 2, AND 3

	METHANOL/SONICATION			METHANOL/SHAKER		
GC RETENTION TIME (MIN.)	C6781* TEST BORING #3 5.0-6.5'	C6748* TEST BORING #2 5.0-6.5'	C6739* TEST BORING #1 5.0-5.5'	C6781* TEST BORING #3 5.0-6.5'	C6748* TEST BORING #2 5.0-6.5'	C6739* TEST BORING 5.0-5.5'
8.0 UNKNOWN	NA	NA	NA	6 PPM	ND	ND
15.6 UNKNOWN	3 PPM	ND	ND	1 PPM	ND	ND
17.7 UNKNOWN	7 PPM	10 PPM	8 PPM	1 PPM	ND	ND
19.8 UNKNOWN	3 PPM	ND	ND	7 PPM	ND	ND
25.2 TOLUENE	13 PPM	7 PPM	ND	39 PPM	ND	ND
26.8 UNKNOWN	ND	ND	ND	ND	ND	10 PPM
29.1 UNKNOWN	ND	ND	ND	2 PPM	ND	ND

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD SW846
*CONCENTRATIONS CALCULATED AS TOLUENE
Submitted by: [signature]
Approved by: [signature]
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040906, 85041004
Location: SEE BELOW

Job Number: G3098

Date Sampled: 6/8/85

COMPARISON OF TWO EXTRACTION METHODS

601 SCAN PURGEABLES 5 FT. LEVEL BORINGS 1, 2, AND 3

	METHANOL/SONICATION			METHANOL/SHAKER		
GC RETENTION TIME (MIN.)	C6781 TEST BORING #3 5.0-6.5'	C6748 TEST BORING #2 5.0-6.5'	C6739 TEST BORING #1 5.0-5.5'	C6781 TEST BORING #3 5.0-6.5'	C6748 TEST BORING #2 5.0-6.5'	C6739 TEST BORING 5.0-5.5'
6.6 METHYLENE CHLORIDE	2 PPM	2 PPM	2 PPM	ND	ND	ND
8.0 UNKNOWN	ND	ND	ND	ND	ND	ND
12.0 UNKNOWN	ND	ND	ND	ND	ND	ND
19.8 UNKNOWN	ND	ND	ND	ND	ND	ND
25.2 TOLUENE	ND	ND	ND	ND	ND	ND

DETECTION LIMIT <1 PPM AS TRICHLOROETHYLENE

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD SW846

Submitted by: [signature]
Approved by: [signature]
Date: 14-JUN-1985

Galson
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85042204
Location: SEE BELOW

Job Number: G3098

Date Sampled: 4/8/85

TEST BORINGS

DUMP AREA

SAMPLE ID	GTS #	FID SCAN PPM*	ECD SCAN PCB 1260 PPM	ECD SCAN OTHER HALOGENATED ORGANICS PPM**
TEST BORING 4				
5'-7'	C7489	<80	<0.1	<0.5
15'-17'	C7491	<80	<0.1	<0.1
25'-25.5'	C7488	<70	<0.1	0.1
TEST BORING 5				
14'-15'	C7487	<80	<0.1	0.5

*AS #2 FUEL OIL
**AS PCB 1260. PCB 1260 USED AS A STANDARD BECAUSE PEAKS DUE TO HALOGENATED ORGANICS WERE IN PCB 1260 REGION OF THE CHROMATOGRAM

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD SW846

Submitted by: RAD
Approved by: GJ
Date: 14-JUN-1985

Appendix D

Area A - Water Samples

Galson
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6601 Kinnville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6238 LAGOON #1 WATER
ANTIMONY MG/L	<0.2
ARSENIC MG/L	<0.001
BERILLIUM MG/L	<0.02
CADMIUM MG/L	<0.01
CHROMIUM MG/L	<0.02
COPPER MG/L	<0.02
LEAD MG/L	<0.04
MERCURY MG/L	<0.0002
NICKEL MG/L	<0.03
SELENIUM MG/L	<0.001
SILVER MG/L	<0.01
THALLIUM MG/L	<0.2
ZINC MG/L	<0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by: [illegible signature]
Approved by: [illegible signature]
Date: 14-JUN-1985

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6239, C6240 LAGOON #1 WATER
CYANIDE MG/L	<0.02
PHENOL MG/L	<0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by:
Approved by:
Date: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6237   SAMPLE ID: LAGOON 1 WATER

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	ND	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY: [signature]
APPROVED BY: [signature]
DATE: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
5601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6244 LAGOON #2 WATER
ANTIMONY MG/L	<0.2
ARSENIC MG/L	<0.001
BERILLIUM MG/L	<0.02
CADMIUM MG/L	<0.01
CHROMIUM MG/L	<0.02
COPPER MG/L	<0.02
LEAD MG/L	<0.04
MERCURY MG/L	<0.0002
NICKEL MG/L	<0.03
SELENIUM MG/L	<0.001
SILVER MG/L	<0.01
THALLIUM MG/L	<0.2
ZINC MG/L	<0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by: [signature]
Approved by:
Date: 14-JUN-1985

Galson
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Post Office Box 546
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6245, 6246 LAGOON #2 WATER
CYANIDE MG/L	<0.02
PHENOL MG/L	<0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by: Adams
Approved by: E.Y
Date: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kinnville Road
Post Office Box 546
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Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6242 SAMPLE ID: LAGOON #2 WATER

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
BENZENE	ND	4
BROMOMETHANE	ND	10
BROMODICHLOROMETHANE	ND	2
BROMOFORM	ND	5
CARBON TETRACHLORIDE	ND	3
CHLOROBENZENE	ND	6
CHLOROETHANE	ND	10
2-CHLOROETHYLVINYL ETHER	ND	10
CHLOROFORM	ND	2
CHLOROMETHANE	ND	10
DIBROMOCHLOROMETHANE	ND	3
1,3-DICHLOROBENZENE	ND	5
1,2-DICHLOROBENZENE	ND	5
1,4-DICHLOROBENZENE	ND	5
1,1-DICHLOROETHANE	ND	5
1,2-DICHLOEOETHANE	ND	3
1,1-DICHLOROETHANE	ND	3
TRANS-1,2-DICHLOROETHANE	ND	2
1,2-DICHLOROPROPANE	ND	6
CIS-1,3-DICHLOROPROPANE	ND	5
TRANS-1,3-DICHLOROPROPANE	ND	5
ETHYLBENZENE	ND	7
METHYLENE CHLORIDE	ND	3
1,1,2,2-TETRACHLOROETHANE	ND	7
TETRACHLOROETHENE	ND	4
1,1,1-TRICHLOROETHANE	ND	4
1,1,2-TRICHLOROETHANE	ND	5
TRICHLOROETHENE	ND	2
TRICHLOROFLUOROMETHANE	ND	5
TOLUENE	ND	6
VINYL CHLORIDE	ND	10

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624

Submitted by: JS
Approved by: EJ
Date: 14-JUN-1985

Galson
Technical Services, Inc.
5601 Kirkville Road
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6243 SAMPLE ID: LAGOON 2 WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	ND	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY: CEG
APPROVED BY: G
DATE: 14-JUN-1985

Galson
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6601 Kirkville Road
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS   SAMPLE #C6243   SAMPLE ID: LAGOON 2 WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYRENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
✓ - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY: [signature]
APPROVED BY: [signature]
DATE: 14-JUN-1985

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Post Office Box 546
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS   SAMPLE #C6243   SAMPLE ID: LAGOON 2 WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY: CEW
APPROVED BY: EJ
DATE: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
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Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6243 SAMPLE ID LAGOON 2 WATER

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	[illegible]	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

LABORATORY ANALYSIS REPORT

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Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E Syracuse N Y 13057
Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6250 UPSTREAM WATER
ANTIMONY MG/L	<0.2
ARSENIC MG/L	<0.001
BERILLIUM MG/L	<0.02
CADMIUM MG/L	<0.01
CHROMIUM MG/L	<0.02
COPPER MG/L	<0.02
LEAD MG/L	<0.04
MERCURY MG/L	<0.0002
NICKEL MG/L	<0.03
SELENIUM MG/L	0.009
SILVER MG/L	<0.01
THALLIUM MG/L	<0.2
ZINC MG/L	0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by: CLM
Approved by:
Date: 14-JUN-1985

Galson
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6251, C6252 UPSTREAM WATER
CYANIDE MG/L	<0.02
PHENOL MG/L	<0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by:
Approved by:
Date: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6248 SAMPLE ID: UPSTREAM WATER

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
BENZENE	ND	4
BROMOMETHANE	ND	10
BROMODICHLOROMETHANE	ND	2
BROMOFORM	ND	5
CARBON TETRACHLORIDE	ND	3
CHLOROBENZENE	ND	6
CHLOROETHANE	ND	10
2-CHLOROETHYLVINYL ETHER	ND	10
CHLOROFORM	ND	2
CHLOROMETHANE	ND	10
DIBROMOCHLOROMETHANE	ND	3
1,3-DICHLOROBENZENE	ND	5
1,2-DICHLOROBENZENE	ND	5
1,4-DICHLOROBENZENE	ND	5
1,1-DICHLOROETHANE	ND	5
1,2-DICHLOEOETHANE	ND	3
1,1-DICHLOROETHANE	ND	3
TRANS-1,2-DICHLOROETHANE	ND	2
1,2-DICHLOROPROPANE	ND	6
CIS-1,3-DICHLOROPROPANE	ND	5
TRANS-1,3-DICHLOROPROPANE	ND	10
ETHYLBENZENE	ND	7
METHYLENE CHLORIDE	ND	3
1,1,2,2-TETRACHLOROETHANE	ND	7
TETRACHLOROETHENE	ND	4
1,1,1-TRICHLOROETHANE	ND	4
1,1,2-TRICHLOROETHANE	ND	5
TRICHLOROETHENE	ND	2
TRICHLOROFLUOROMETHANE	ND	5
TOLUENE	ND	6
VINYL CHLORIDE	ND	10
XYLENE	ND	5

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624

Submitted by: JC
Approved by: ES
Date: 14-JUN-1985

Galson
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6249 SAMPLE ID: UPSTREAM WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	<10	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY Cerr
APPROVED BY: ER
DATE: 14-JUN-1985

Galson
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Post Office Box 546
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS   SAMPLE #C6249   SAMPLE ID: UPSTREAM WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYRENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

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E Syracuse N Y 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS SAMPLE #C6249 SAMPLE ID: UPSTREAM WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: [signature]
DATE: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
5601 Kirkville Road
Post Office Box 546
E Syracuse, N.Y. 13057
Tel. (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6249   SAMPLE ID: UPSTREAM WATER

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	ND	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 545
E Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6255 DOWNSTREAM WATER
ANTIMONY MG/L	0.2
ARSENIC MG/L	<0.001
BERILLIUM MG/L	<0.02
CADMIUM MG/L	<0.01
CHROMIUM MG/L	<0.02
COPPER MG/L	<0.02
LEAD MG/L	<0.04
MERCURY MG/L	<0.0002
NICKEL MG/L	<0.03
SELENIUM MG/L	0.009
SILVER MG/L	<0.01
THALLIUM MG/L	<0.2
ZINC MG/L	0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by: Cem [illegible]
Approved by: [illegible]
Date: 14-JUN-1985

Galson
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6256, C6257 DOWNSTREAM WATER
CYANIDE MG/L	<0.02
PHENOL MG/L	<0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by:
Approved by:
Date: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
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Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6253 SAMPLE ID: DOWNSTREAM WATER

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
BENZENE	ND	4
BROMOMETHANE	ND	10
BROMODICHLOROMETHANE	ND	2
BROMOFORM	ND	5
CARBON TETRACHLORIDE	ND	3
CHLOROBENZENE	ND	6
CHLOROETHANE	ND	10
2-CHLOROETHYLVINYL ETHER	ND	10
CHLOROFORM	ND	2
CHLOROMETHANE	ND	10
DIBROMOCHLOROMETHANE	ND	3
1,3-DICHLOROBENZENE	ND	5
1,2-DICHLOROBENZENE	ND	5
1,4-DICHLOROBENZENE	ND	5
1,1-DICHLOROETHANE	ND	5
1,2-DICHLOEOETHANE	ND	3
1,1-DICHLOROETHANE	ND	3
TRANS-1,2-DICHLOROETHANE	ND	2
1,2-DICHLOROPROPANE	ND	6
CIS-1,3-DICHLOROPROPANE	ND	5
TRANS-1,3-DICHLOROPROPANE	ND	10
ETHYLBENZENE	ND	7
METHYLENE CHLORIDE	ND	3
1,1,2,2-TETRACHLOROETHANE	ND	7
TETRACHLOROETHENE	ND	4
1,1,1-TRICHLOROETHANE	ND	4
1,1,2-TRICHLOROETHANE	ND	5
TRICHLOROETHENE	ND	2
TRICHLOROFLUOROMETHANE	ND	10
TOLUENE	ND	6
VINYL CHLORIDE	ND	10
XYLENES (TOTAL)	ND	5

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624

Submitted by:
Approved by:
Date: 14-JUN-1985

Galson
Technical Services, Inc.
5601 Kirkville Road
Post Office Box 546
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA Job Number: G3098
Task Number: 85040206
Location: SEE BELOW Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6254 SAMPLE ID: DOWNSTREAM WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	<10	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6254 SAMPLE ID: DOWNSTREAM WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYRENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6254 SAMPLE ID: DOWNSTREAM WATER

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	ND	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS SAMPLE #C6254 SAMPLE ID: DOWNSTREAM WATER

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
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Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE ID	GTS #	PCB (PPB)	TYPE	OTHER CHLORINATED HYDROCARBONS AS 1254 PPB	VOLATILE ORGANICS (UG/L)
SLUICEWAY WATER	C6228, C6230	0.7	1254 (NOT PERFECT MATCH)	1.2	<5

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

Submitted by:
Approved by:
Date: 14-JUN-1985

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Client: OTISCA
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Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6233, C6234 SLUICEWAY WATER
CYANIDE MG/L	<0.02
PHENOL MG/L	<0.01

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: 40 CFR 136

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE: BNA BLANK SAMPLE ID: WATER BLANK

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
BENZENE	ND	12
BROMOMETHANE	ND	31
BROMODICHLOROMETHANE	ND	6
BROMOFORM	ND	15
CARBON TETRACHLORIDE	ND	9
CHLOROBENZENE	ND	18
CHLOROETHANE	ND	31
2-CHLOROETHYLVINYL ETHER	ND	31
CHLOROFORM	ND	6
CHLOROMETHANE	ND	31
DIBROMOCHLOROMETHANE	ND	9
1,1-DICHLOROETHANE	ND	15
1,2-DICHLOEOETHANE	ND	9
1,1-DICHLOROETHENE	ND	9
TRANS-1,2-DICHLOROETHENE	ND	6
1,2-DICHLOROPROPANE	ND	18
CIS-1,3-DICHLOROPROPENE	ND	15
TRANS-1,3-DICHLOROPROPENE	ND	31
ETHYLBENZENE	ND	22
METHYLENE CHLORIDE	ND	9
1,1,2,2-TETRACHLOROETHANE	ND	22
TETRACHLOROETHENE	ND	12
1,1,1-TRICHLOROETHANE	ND	12
1,1,2-TRICHLOROETHANE	ND	15
TRICHLOROETHENE	ND	6
TRICHLOROFLUOROMETHANE	ND	31
TOLUENE	ND	18
VINYL CHLORIDE	ND	31
XYLENES (TOTAL)	ND	15

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624

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LABORATORY ANALYSIS REPORT

Client: OTISCA Job Number: G3098
Task Number: 85040206
Location: SEE BELOW Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #BNA BLANK SAMPLE ID: WATER BLANK

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	ND	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

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Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #BNA BLANK SAMPLE ID: WATER BLANK

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYRENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS   SAMPLE #BNA BLANK   SAMPLE ID: WATER BLANK

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

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LABORATORY ANALYSIS REPORT

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Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE ID: WATER BLANK

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	ND	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

E.4

Appendix E

Area A - Sediment Samples

Galson
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6235 END OF SLUICEWAY SLUDGE DRY WEIGHT BASIS	DETECTION LIMIT BASED ON DRY WEIGHT
% SOLIDS	81	NA
ANTIMONY UG/G	60	8
ARSENIC UG/G	1.6	0.04
BERILLIUM UG/G	<1	<1
CADMIUM UG/G	3.0	0.4
CHROMIUM UG/G	4.5	0.8
COPPER UG/G	11	0.8
LEAD UG/G	38	1.6
MERCURY UG/G	0.01	0.005
NICKEL UG/G	20	1.2
SELENIUM UG/G	<1	<1
SILVER UG/G	2.6	0.8
THALLIUM UG/G	38	8
ZINC UG/G	24	0.8

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846

Submitted by:
Approved by:
Date: 14-JUN-1985

LABORATORY ANALYSIS REPORT

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Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6235 END OF SLUICEWAY SLUDGE DRY WEIGHT BASIS
CYANIDE UG/G	0.11
PHENOL UG/G	<0.1

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846

Submitted by:
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LABORATORY ANALYSIS REPORT

Client: OTISCA
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Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6235 SAMPLE ID: END OF SLUICEWAY SLUDGE

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (NG/G)	L.O.D. (NG/G OR PPB)
BENZENE	ND	33
BROMOMETHANE	ND	82
BROMODICHLOROMETHANE	ND	16
BROMOFORM	ND	41
CARBON TETRACHLORIDE	ND	25
CHLOROBENZENE	ND	49
CHLOROETHANE	ND	82
2-CHLOROETHYLVINYL ETHER	ND	82
CHLOROFORM	ND	16
CHLOROMETHANE	ND	82
DIBROMOCHLOROMETHANE	ND	25
1,1-DICHLOROETHANE	ND	41
1,2-DICHLOEDETHANE	ND	25
1,1-DICHLOROETHENE	ND	25
TRANS-1,2-DICHLOROETHENE	ND	16
1,2-DICHLOROPROPANE	ND	49
CIS-1,3-DICHLOROPROPENE	ND	41
TRANS-1,3-DICHLOROPROPENE	ND	82
ETHYLBENZENE	ND	58
METHYLENE CHLORIDE	69	25
1,1,2,2-TETRACHLOROETHANE	ND	58
TETRACHLOROETHENE	ND	33
1,1,1-TRICHLOROETHANE	ND	33
1,1,2-TRICHLOROETHANE	ND	41
TRICHLOROETHENE	ND	16
TRICHLOROFLUOROMETHANE	ND	82
TOLUENE	ND	49
VINYL CHLORIDE	ND	82
XYLENES (TOTAL)	ND	41

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
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Footnotes: EPA METHOD 624

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LABORATORY ANALYSIS REPORT

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Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6235 SAMPLE ID: END OF SLUICEWAY SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	ND	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: E.J
DATE: 14-JUN-1985

Galson
Technical Services, Inc.
6601 Kirkville Road
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA Job Number: G3098
Task Number: 85040206
Location: SEE BELOW Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6235 SAMPLE ID: END OF SLUICEWAY SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE.	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYRENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: E
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS   SAMPLE #C6235 (DUP)   SAMPLE ID: END OF SLUICEWAY SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	ND	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLORDISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLLENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: E. [illegible]
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS   SAMPLE #C6235 (DUP)   SAMPLE ID: END OF SLUICEWAY SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYPENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: G.A.
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS SAMPLE #C6235 SAMPLE ID: END OF SLUICEWAY SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS SAMPLE #C6235 SAMPLE ID: END OF SLUICEWAY SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

LABORATORY ANALYSIS REPORT

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Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6235 SAMPLE ID: END OF SLUICEWAY SLUDGE

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	ND	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
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SUBMITTED BY:
APPROVED BY: E J
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6241 LAGOON #1 SLUDGE DRY WEIGHT BASIS	DETECTION LIMIT BASED ON DRY WEIGHT
% SOLIDS	51	NA
ANTIMONY UG/G	90	11
ARSENIC UG/G	5.7	0.06
BERILLIUM UG/G	<1	<1
CADMIUM UG/G	4.5	0.6
CHROMIUM UG/G	11	1.2
COPPER UG/G	26	1.2
LEAD UG/G	56	2.5
MERCURY UG/G	0.03	0.012
NICKEL UG/G	32	1.8
SELENIUM UG/G	<2	<2
SILVER UG/G	3.1	1.2
THALLIUM UG/G	52	11
ZINC UG/G	45	1.2

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846

Submitted by: [illegible]
Approved by: [illegible]
Date: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
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Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6241 LAGOON #1 SLUDGE DRY WEIGHT BASIS
CYANIDE UG/G	0.12
PHENOL UG/G	<0.1
PH	8.9*

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846
*PH WILL RISE ON STANDING
Submitted by: [signature]
Approved by: [signature]
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6241 SAMPLE ID: LAGOON 1 SLUDGE

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (NG/G)	L.O.D. (NG/G OR PPB)
BENZENE	ND	38
BROMOMETHANE	ND	95
BROMODICHLOROMETHANE	ND	19
BROMOFORM	ND	48
CARBON TETRACHLORIDE	ND	29
CHLOROBENZENE	ND	57
CHLOROETHANE	ND	95
2-CHLOROETHYLVINYL ETHER	ND	95
CHLOROFORM	ND	19
CHLOROMETHANE	ND	95
DIBROMOCHLOROMETHANE	ND	29
1,1-DICHLOROETHANE	ND	48
1,2-DICHLOEOETHANE	ND	29
1,1-DICHLOROETHENE	ND	29
TRANS-1,2-DICHLOROETHENE	ND	19
1,2-DICHLOROPROPANE	ND	57
CIS-1,3-DICHLOROPROPENE	ND	48
TRANS-1,3-DICHLOROPROPENE	ND	95
ETHYLBENZENE	29	67
METHYLENE CHLORIDE	ND	29
1,1,2,2-TETRACHLOROETHANE	ND	67
TETRACHLOROETHENE	ND	38
1,1,1-TRICHLOROETHANE	ND	38
1,1,2-TRICHLOROETHANE	ND	48
TRICHLOROETHENE	ND	19
TRICHLOROFLUOROMETHANE	ND	95
TOLUENE	ND	57
VINYL CHLORIDE	ND	95
XYLENES (TOTAL)	ND	48

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624

Submitted by:
Approved by:
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6241 SAMPLE ID: LAGOON 1 SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	ND	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6241 SAMPLE ID: LAGOON 1 SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYRENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: E.J.
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS SAMPLE #C6241 SAMPLE ID: LAGOON 1 SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: E. 4/
DATE: 14-JUN-1985

LABORATORY ANALYSIS REPORT

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Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
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Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6241 SAMPLE ID: LAGOON I SLUDGE

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	ND	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098
Date Sampled: 3/28/85

PARAMETER	C6247 LAGOON #2 SLUDGE DRY WEIGHT BASIS	DETECTION LIMIT BASED ON DRY WEIGHT
% SOLIDS	40	NA
ANTIMONY UG/G	94	15
ARSENIC UG/G	5.1	0.08
BERILLIUM UG/G	<1	<1
CADMIUM UG/G	3.8	0.8
CHROMIUM UG/G	7.8	1.6
COPPER UG/G	22	1.6
LEAD UG/G	66	3
MERCURY UG/G	0.04	0.020
NICKEL UG/G	21	2.4
SELENIUM UG/G	<2	<2
SILVER UG/G	1.2	1.0
THALLIUM UG/G	47	15
ZINC UG/G	44	1.0

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846

Submitted by: CCM, [illegible]
Approved by: [illegible]
Date: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
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Client: OTTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6247 LAGOON #2 SLUDGE DRY WEIGHT BASIS
CYANIDE UG/G	0.62
PHENOL UG/G	1.5
PH	10.5*

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846
*PH WILL RISE ON STANDING
Submitted by: D. K. Fagan
Approved by:
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6247   SAMPLE ID: LAGOON 2 SLUDGE

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (NG/G)	L.O.D. (NG/G OR PPB)
BENZENE	ND	5
BROMOMETHANE	ND	12
BROMODICHLOROMETHANE	ND	2
BROMOFORM	ND	6
CARBON TETRACHLORIDE	ND	4
CHLOROBENZENE	ND	7
CHLOROETHANE	ND	12
2-CHLOROETHYLVINYL ETHER	ND	12
CHLOROFORM	ND	2
CHLOROMETHANE	ND	12
DIBROMOCHLOROMETHANE	ND	6
1,1-DICHLOROETHANE	ND	6
1,2-DICHLOEOETHANE	ND	4
1,1-DICHLOROETHENE	ND	4
TRANS-1,2-DICHLOROETHENE	5	2
1,2-DICHLOROPROPANE	ND	7
CIS-1,3-DICHLOROPROPENE	ND	6
TRANS-1,3-DICHLOROPROPENE	ND	12
ETHYLBENZENE	ND	8
METHYLENE CHLORIDE	14	4
1,1,2,2-TETRACHLOROETHANE	ND	8
TETRACHLOROETHENE	92	5
1,1,1-TRICHLOROETHANE	ND	5
1,1,2-TRICHLOROETHANE	ND	6
TRICHLOROETHENE	24	2
TRICHLOROFLUOROMETHANE	ND	12
TOLUENE	52	7
VINYL CHLORIDE	ND	12
XYLENES (TOTAL)	44	6

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624

Submitted by:
Approved by:
Date: 14-JUN-1985

Galson
Technical Services, Inc.
5601 Kinnville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS   SAMPLE #C6247   SAMPLE ID: LAGOON 2 SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	ND	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: ES
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS SAMPLE #C6247 SAMPLE ID: LAGOON 2 SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYRENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS   SAMPLE #C6247   SAMPLE ID: LAGOON 2 SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: C4
DATE: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
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Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6247 SAMPLE ID: LAGOON 2 SLUDGE

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	ND	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: E
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6241 SLUDGE LAGOON #1	C6247 SLUDGE LAGOON #2	BLANK	D.W. LIMITS	EP TOX LIMITS
EP TOXICITY	NON-TOXIC	NON-TOXIC	NA	-------	------
LEAD	0.35	0.35	<0.05	0.05	5.0
CADMIUM	0.03	0.03	<0.01	0.01	1.0
CHROMIUM	0.02	0.02	<0.02	0.05	5.0
INITIAL PH	8.9	9.2			

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA SW 846

Submitted by: CKM, D.K. Fuper JC
Approved by: E J
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA — Job Number: G3098
Task Number: 85040206
Location: SEE BELOW — Date Sampled: 3/28/85

PARAMETER	C6258 DOWNSTREAM SLUDGE DRY WEIGHT BASIS	DETECTION LIMIT BASED ON DRY WEIGHT
% SOLIDS	26	NA
ANTIMONY UG/G	58	23
ARSENIC UG/G	6.1	0.11
BERILLIUM UG/G	<2	<2
CADMIUM UG/G	2.3	1
CHROMIUM UG/G	16	2
COPPER UG/G	30	2
LEAD UG/G	83	4
MERCURY UG/G	0.08	0.038
NICKEL UG/G	24	3
SELENIUM UG/G	<4	<4
SILVER UG/G	<1	1
THALLIUM UG/G	23	23
ZINC UG/G	143	1

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846

Submitted by: [illegible]
Approved by: [illegible]
Date: 14-JUN-1985

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
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E. Syracuse, N.Y. 13057
Tel. (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

PARAMETER	C6258 DOWNSTREAM SLUDGE DRY WEIGHT BASIS
CYANIDE UG/G	0.5
PHENOL UG/G	3.8

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846

Submitted by:
Approved by:
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6258 (1.6232 G)   SAMPLE ID: DOWNSTREAM SLUDGE

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (NG/G)	L.O.D. (NG/G OR PPB)
BENZENE	ND	12
BROMOMETHANE	ND	31
BROMODICHLOROMETHANE	ND	6
BROMOFORM	ND	15
CARBON TETRACHLORIDE	ND	9
CHLOROBENZENE	ND	18
CHLOROETHANE	ND	31
2-CHLOROETHYLVINYL ETHER	ND	31
CHLOROFORM	ND	6
CHLOROMETHANE	ND	31
DIBROMOCHLOROMETHANE	ND	9
1,1-DICHLOROETHANE	ND	15
1,2-DICHLOEOETHANE	ND	9
1,1-DICHLOROETHENE	ND	9
TRANS-1,2-DICHLOROETHENE	ND	6
1,2-DICHLOROPROPANE	ND	18
CIS-1,3-DICHLOROPROPENE	ND	15
TRANS-1,3-DICHLOROPROPENE	ND	31
ETHYLBENZENE	9	22
METHYLENE CHLORIDE	ND	9
1,1,2,2-TETRACHLOROETHANE	ND	22
TETRACHLOROETHENE	ND	12
1,1,1-TRICHLOROETHANE	ND	12
1,1,2-TRICHLOROETHANE	ND	15
TRICHLOROETHENE	ND	6
TRICHLOROFLUOROMETHANE	ND	31
TOLUENE	ND	18
VINYL CHLORIDE	ND	31
XYLENES (TOTAL)	ND	15

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624

Submitted by:
Approved by:
Date: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS   SAMPLE #C6258   SAMPLE ID: DOWNSTREAM SLUDGE

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	ND	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: EH
DATE: 14-JUN-1985

Galson
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE ID: SLUDGE BLANK

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
BENZENE	ND	12
BROMOMETHANE	ND	31
BROMODICHLOROMETHANE	ND	6
BROMOFORM	ND	15
CARBON TETRACHLORIDE	ND	9
CHLOROBENZENE	ND	18
CHLOROETHANE	ND	31
2-CHLOROETHYLVINYL ETHER	ND	31
CHLOROFORM	ND	6
CHLOROMETHANE	ND	31
DIBROMOCHLOROMETHANE	ND	9
1,1-DICHLOROETHANE	ND	15
1,2-DICHLOEOETHANE	ND	9
1,1-DICHLOROETHENE	ND	9
TRANS-1,2-DICHLOROETHENE	ND	6
1,2-DICHLOROPROPANE	ND	18
CIS-1,3-DICHLOROPROPENE	ND	15
TRANS-1,3-DICHLOROPROPENE	ND	31
ETHYLBENZENE	9	22
METHYLENE CHLORIDE	ND	9
1,1,2,2-TETRACHLOROETHANE	ND	22
TETRACHLOROETHENE	ND	12
1,1,1-TRICHLOROETHANE	ND	12
1,1,2-TRICHLOROETHANE	ND	15
TRICHLOROETHENE	ND	6
TRICHLOROFLUOROMETHANE	ND	31
TOLUENE	ND	18
VINYL CHLORIDE	ND	31
XYLENES (TOTAL)	ND	15

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624

Submitted by: [illegible]
Approved by: [illegible]
Date: 14-JUN-1985

Galson
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS

SAMPLE ID: SLUDGE BLANK

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
ACENAPTHENE	ND	10
ACENAPHTHYLENE	ND	10
ANTHRACENE	ND	10
BENZO(a)ANTHRACENE	ND	10
BENZO(b)FLUORANTHENE	ND	10
BENZO(k)FLUROANTHENE	ND	10
BENZO(a)PYRENE	ND	10
BENZO(g,h,i)PERYLENE	ND	10
BENZIDENE	ND	10
BIS(2-CHLOROETHOXY)METHANE	ND	10
BIS(2-ETHYLHEXYL)PHTHALATE	ND	10
BIS(2-CHLOROETHYL) ETHER	ND	10
BIS(2-CHLOROISOPROPYL) ETHER	ND	10
4-BROMOPHENYL-PHENYL ETHER	ND	10
BUTYLBENZYL PHTHALATE	ND	10
2-CHLORONAPHTHALENE	ND	10
4-CHLOROPHENYL-PHENYL ETHER	ND	10
CHRYSENE	ND	10
DIBENZ(a,h)ANTHRACENE	ND	10
DI-n-BUTYL PHTHALATE	ND	10
1,3-DICHLOROBENZENE	ND	10
1,4-DICHLOROBENZENE	ND	10
1,2-DICHLOROBENZENE	ND	10
3,3-DICHLOROBENZIDENE	ND	10
DIETHYL PHTHALATE	ND	10
DIMETHYL PHTHALATE	ND	10
2,4-DINITROTOLUENE	ND	10
2,5-DINITROTOLUENE	ND	10
DI-N-OCTYL PHTHALATE	ND	10
FLUORANTHENE	ND	10
FLUORENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY:
DATE: 14-JUN-1985

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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

BASE/NEUTRAL FRACTION ANALYSIS

SAMPLE ID: SLUDGE BLANK

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
HEXACHLOROBENZENE	ND	10
HEXACHLOROBUTADIENE	ND	10
HEXACHLOROETHANE	ND	10
HEXACHLOROCYCLOPENTADIENE	ND	10
INDENO(1,2,3,cd)PYRENE	ND	10
ISOPHORONE	ND	10
NAPHTHALENE	ND	10
NITROBENZENE	ND	10
N-NITROSODIMETHYLAMINE	ND	10
N-NITRO-DI-n-PROPYLAMINE	ND	10
N-NITROSODIPHENYLAMINE	ND	10
PHENANTHRENE	ND	10
PYRENE	ND	10
1,2,4-TRICHLOROBENZENE	ND	10

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: E.Y.
DATE: 14-JUN-1985

Galson
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LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

ACID FRACTION ANALYSIS

SAMPLE ID: SLUDGE BLANK

COMPOUND NAME	AMOUNT DETECTED (UG/L)	L.O.D. (UG/L)
4-CHLORO-3-METHYLPHENOL	ND	25
2-CHLOROPHENOL	ND	25
PHENOL	ND	25
2,4-DICHLOROPHENOL	ND	25
2,4-DIMETHYLPHENOL	ND	25
2,4,6-TRICHLOROPHENOL	ND	25
2-NITROPHENOL	ND	25
4-NITROPHENOL	ND	25
4,6-DINITRO-2-METHYLPHENOL	ND	250
2,4-DINITROPHENOL	ND	250
PENTACHLOROPHENOL	ND	25

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: [signature]
DATE: 14-JUN-1985

Galson
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Post Office Box 546
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Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE ID: SLUDGE BLANK

PESTICIDE FRACTION ANALYSIS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
ALPHA-BHC	ND	5
BETA-BHC	ND	10
DELTA-BHC	ND	5
GAMMA-BHC (LINDANE)	ND	3
HEPTACHLOR	ND	6
ALDRIN	ND	6
HEPTACHLOR EPOXIDE	ND	5
ENDOSULFAN I	ND	20
DIELDRIN	ND	20
4,4-DDE	ND	20
ENDRIN	ND	10
ENDOSULFAN II	ND	10
4,4-DDD	ND	10
ENDRIN ALDEHYDE	ND	20
EDRIN SULFATE	ND	10
4-4-DDT	ND	10
ENDRIN KETONE	ND	100
METHOXYCHLOR	ND	40
CHLORDANE	ND	20
TOXAPHENE	ND	270
AROCHLOR-1016	ND	60
AROCHLOR-1221	ND	90
AROCHLOR-1232	ND	100
AROCHLOR-1242	ND	80
AROCHLOR-1248	ND	20
AROCHLOR-1254	ND	200
AROCHLOR-1260	ND	90

FOOTNOTES: EPA 625
L.O.D - LIMIT OF DETECTION
ND - NOT DETECTED AT L.O.D.
< - COMPOUND WAS DETECTED QUALITATIVELY AT A LEVEL AT WHICH QUANTIFICATION WOULD BE UNCERTAIN

SUBMITTED BY:
APPROVED BY: E.L.
DATE: 14-JUN-1985

Appendix F

Area A - Srapings Samples

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
5601 Kirkville Road
Post Office Box 546
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Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SCRAPING SAMPLES

SAMPLE ID	GTS #	ECD SCAN PCB 1260 (PPM)	ECD SCAN OTHER HALOGENATED ORGANICS AS PCB 1260 (PPM)	SAMPLE DESCRIPTION	CHROMATOGRAM DESCRIPTION
S1	C6276	<0.8	<0.8	"WET" DIRT WITH STICKY SUBSTANCE (OIL) THROUGHOUT, "MUDDY", DARK BROWN COLOR	NO SIGNIFICANT PEAKS - "CLEAN"
S2	C6277	<0.8	107	THICK GREASE SAMPLE WITH SOME LIQUID (OIL), DARK BROWN COLOR	LARGE PEAKS (3.64, 10.02) LONG, IRREGULAR PATTERN 1.44-19.23
S3	C6278	<0.8	44	MUDDY DIRT WITH "STICKY" SUBSTANCE (OIL) THROUGHOUT, DARK BROWN COLOR	SMALL PEAK-PATTERN, TO MID RANGE - LARGE PEAK @ 10.02
S4	C6279	<0.09	10.7	DRY, LIGHT GREY COLOR - DIRT	LONG, RANDOM PATTERN LARGE PEAKS @ 7.64-1
S5	C6280	0.5	0.3	DRY, LIGHT GREY COLOR DIRT, WITH FLAKES	1260 PATTERN, FEW SMALL EARLY PEAKS
S6	C6281	<0.09	0.4	MOIST, LIGHT BROWN COLOR - DIRT	FEW EARLY, SMALL PEAKS, REST "CLEAN"
S7	C6282	<0.8	<0.8	THICK, BLACK, WET SLUDGE-LIKE SOLIDS ON LOWER LAYER, THIN BLACK LIQUID LAYER ON TOP	FEW SMALL EARLY PEA FEW MID-SIZE MID-RAN PEAKS
S8	C6283	7.9	2.0	MOIST BLACK DIRT	1260 PATTERN, FEW E PEAKS

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EXTRACTION ACCORDING TO SW 846

Submitted by: KAQ
Approved by: EJ
Date: 14-JUN-1985

Appendix G

Area A - Tank and Truck Samples

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE ID	GTS #	FID SCAN* (PPM)	ECD SCAN PCB 1254 (PPM)	ECD SCAN OTHER HALOGENATED** ORGANICS (PPM)
TANK #1	C6262	#2 FUEL OIL	<4	<4
TANK #2	C6263	#2 FUEL OIL	<4	<4
TANK #3	C6264	#2 FUEL OIL	<4	<4

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EXTRACTION ACCORDING TO SW 846
*AS #2 FUEL OIL **AS PCB 1254
Submitted by: KAS
Approved by: E H
Date: 14-JUN-1985

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE ID	GTS #	FID SCAN (PPM*)	ECD SCAN PCB 1016 (PPM)	ECD SCAN-OTHER HALOGENATED ORGANICS (PPM**)	SAMPLE DESCRIPTION
TRUCK #1	C6259	ND	<0.7	<0.7	CLEAR AQUEOUS, SOME YELLOW PARTICULATES SUSPENDED AND SOME SETTLED OUT
TRUCK #2	C6260	ND	4.8	0.1	CLEAR (SLIGHTLY ORANGE COLOR) AQUEOUS, SOME ORANGE PARTICULATES SUSPENDED MORE SETTLED OUT
TRUCK #3	C6261	5400	<1.0	30	AQUEOUS WITH DARK BROWN COLOR, BROWN PARTICULATE SUSPENDED, DARK BROWN PARTICULATES SETTLED OU SMALL AMOUNT "OILY" SUB-STANCE FLOATING ON TOP.

*AS #2 FUEL OIL
**AS PCB 1016

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: DETECTION LIMIT 1500 PPM

Submitted by: KAS
Approved by: EH
Date: 14-JUN-1985

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

~~CHARACTERISTICS OF HAZARDOUS WASTE~~

PARAMETER	C6259 TRUCK #1	C6260 TRUCK #2	C6261 TRUCK #3
IGNITABILITY	NOT IGNITABLE	NOT IGNITABLE	IGNITABLE
FLASHPOINT DEGREES FAHRENHEIT	NA*	NA*	125
CORROSIVITY	NON CORROSIVE	NON CORROSIVE	NON CORROSIVE
PH	4.5	3.5	6.6
REACTIVITY	NOT REACTIVE	NOT REACTIVE	NOT REACTIVE
TO: HNO3	NEGATIVE	NEGATIVE	NEGATIVE
HCL	NEGATIVE	NEGATIVE	NEGATIVE
H2SO4	NEGATIVE	NEGATIVE	NEGATIVE
SCREEN FOR OXIDANTS	NEGATIVE**	NEGATIVE**	NEGATIVE**
SCREEN FOR SULFIDES	NEGATIVE***	NEGATIVE***	NEGATIVE***

*WATER SAMPLE SINGLE LAYER
**KI PAPER WET WITH GLACIAL ACETIC ACID
***LEAD ACETATE PAPER

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: SW 846

Submitted by: D. K. Fuyer CSAC
Approved by: E J
Date: 14-JUN-1985

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA
Task Number: 85040206
Location: SEE BELOW

Job Number: G3098

Date Sampled: 3/28/85

SAMPLE C6259 SAMPLE ID TRUCK #1

VOLATILE FRACTION ANALYSIS GC/MS

COMPOUND NAME	*CONCENTRATIONS (UG/L)	L.O.D. (UG/L)
BENZENE	ND	4
BROMOMETHANE	ND	10
BROMODICHLOROMETHANE	ND	2
BROMOFORM	ND	5
CARBON TETRACHLORIDE	ND	3
CHLOROBENZENE	ND	6
CHLOROETHANE	ND	10
2-CHLOROETHYLVINYL ETHER	ND	10
CHLOROFORM	ND	2
CHLOROMETHANE	ND	10
DIBROMOCHLOROMETHANE	ND	3
1,3-DICHLOROBENZENE	ND	5
1,2-DICHLOROBENZENE	ND	5
1,4-DICHLOROBENZENE	ND	5
1,1-DICHLOROETHANE	10-50	5
1,2-DICHLOEOETHANE	ND	3
1,1-DICHLOROETHENE	ND	3
TRANS-1,2-DICHLOROETHANE	ND	2
1,2-DICHLOROPROPANE	20-200	6
CIS-1,3-DICHLOROPROPANE	ND	5
TRANS-1,3-DICHLOROPROPANE	ND	10
ETHYLBENZENE	10-50	7
METHYLENE CHLORIDE	20-200	3
1,1,2,2-TETRACHLOROETHANE	ND	7
TETRACHLOROETHENE	10-50	4
1,1,1-TRICHLOROETHANE	ND	4
1,1,2-TRICHLOROETHANE	ND	5
TRICHLOROETHENE	20-200	2
TRICHLOROFLUOROMETHANE	ND	10
TOLUENE	20-200	6
VINYL CHLORIDE	ND	10
XYLENES (TOTAL)	10-50	5

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Footnotes: EPA METHOD 624
*ALL CONCENTRATIONS ARE ESTIMATES
Submitted by:
Approved by:
Date: 14-JUN-1985

APPENDIX H

Area B : Buried Tanker Internal and External Samples

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA IND.
Task Number: 86082116
Location: NS

Job Number: G7072

Date Sampled: NS

PO Number: 7436

			Lab ID: D19481	D19482
		Client ID:	SAMPLE #D	SAMPLE #E
PCBs	SOIL/SEDIMENT	PPM	578	<4
		TYPE	1242 or 1248	NA

--- Sample L = Sample

(<)	- Less Than
(>)	- Greater Than
NA	- Not Applicable
ND	- Not detectable
NS	- Not specified
MG	- Milligrams
L	- Liters
M^3	- Cubic Meter
MG/M^3	- Milligrams Per Cubic Meter
PPM	- Parts Per Million
μg	- Micrograms
NG	- Nanograms

Method(s): EPA 600/4-81-045
Footnotes:

Submitted by:
Approved by:
Date: 4-SEP-1986

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA INDUSTRIES
Task Number: 86081218
Location: NS

PONumber: 7427

Job Number: G7072

Date Sampled: NS

PCBs SOIL/SEDIMENT

SAMPLE ID	GTS #	PPM	TYPE
A	D18866	<0.4	NA
B	D18867	<0.4	NA
C	D18868	880	1242

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Method(s): EPA SW846
Footnotes:

Submitted by: BR
Approved by:
Date: 20-AUG-1986

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E Syracuse, N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA INDUSTRIES   Job Number: G7072
Task Number: 86091929
Location: NS   Date Sampled: NS

SOIL SAMPLE

PURGEABLES GC/MS

	Lab ID:	D22060	
	Client ID:	8605-3	LOQ
Benzene	µg/kg	ND	5
Bromomethane	µg/kg	ND	5
Bromodichloromethane	µg/kg	ND	5
Bromoform	µg/kg	ND	5
Carbon Tetrachloride	µg/kg	ND	5
Chlorobenzene	µg/kg	ND	5
Chloroethane	µg/kg	ND	5
2-Chloroethylvinyl Ether	µg/kg	ND	5
Chloroform	µg/kg	ND	5
Chloromethane	µg/kg	ND	5
Dibromochloromethane	µg/kg	ND	5
1,3-Dichlorobenzene	µg/kg	ND	5
1,2-Dichlorobenzene	µg/kg	ND	5
1,4-Dichlorobenzene	µg/kg	ND	5
1,1-Dichloroethane	µg/kg	ND	5
1,2-Dichloroethane	µg/kg	ND	5
1,1-Dichloroethene	µg/kg	ND	5
trans-1,2-Dichloroethene	µg/kg	ND	5
1,2-Dichloropropane	µg/kg	ND	5
cis-1,3-Dichloropropene	µg/kg	ND	5
trans-1,3-Dichloropropene	µg/kg	ND	5
Ethylbenzene	µg/kg	28	5
Methylene Chloride	µg/kg	9	5
1,1,2,2-Tetrachloroethane	µg/kg	ND	5
Tetrachloroethene	µg/kg	ND	5
1,1,1-Trichloroethane	µg/kg	ND	5
1,1,2-Trichloroethane	µg/kg	ND	5
Trichloroethane	µg/kg	ND	5
Trichlorofluoromethane	µg/kg	ND	5
Toluene	µg/kg	11	5
Vinyl Chloride	µg/kg	ND	5

Method(s): EPA SW846 AND 624
Footnotes:

(<) - Less Than LOQ
(>) - Greater Than
NA - Not Applicable
ND - Not detectable
NS - Not specified
µg/kg - Micrograms Per Kilogram

Submitted by: JC
Approved by:
Date: 10-OCT-1986

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 346
E. Syracuse N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA INDUSTRIES   Job Number: G7072
Task Number: 86091929
Location: NS   Date Sampled: NS

SOIL SAMPLE

BASE NEUTRAL/ACID FRACTION GC/MS

		Lab ID: D22060	
		Client ID: 8605-3	LOQ
n-Nitrosodimethylamine	µg/kg	ND	330
Phenol	µg/kg	<330	330
Aniline	µg/kg	ND	330
bis(2-chloroethyl) Ether	µg/kg	ND	330
2-Chlorophenol	µg/kg	<330	330
1,3-Dichlorobenzene	µg/kg	ND	330
1,4-Dichlorobenzene	µg/kg	ND	330
Benzyl Alcohol	µg/kg	ND	330
1,2-Dichlorobenzene	µg/kg	ND	330
2-Methylphenol	µg/kg	ND	330
bis(2-chloroisopropyl) Ether	µg/kg	ND	330
4-Methylphenol	µg/kg	ND	330
n-Nitroso-Dipropylamine	µg/kg	ND	330
Hexachloroethane	µg/kg	ND	330
Nitrobenzene	µg/kg	<330	330
Isophorone	µg/kg	ND	330
2-Nitrophenol	µg/kg	ND	330
2,4-Dimethylphenol	µg/kg	ND	330
Benzoic Acid	µg/kg	ND	330
bis(2-chloroethoxy) Methane	µg/kg	ND	330
2,4-Dichlorophenol	µg/kg	ND	330
1,2,4-Trichlorobenzene	µg/kg	ND	330
Naphthalene	µg/kg	<330	330
4-Chloroaniline	µg/kg	ND	330
Hexachlorobutadiene	µg/kg	ND	330
4-Chloro-3-methylphenol	µg/kg	<330	330
2-Methylnaphthalene	µg/kg	<330	330
Hexaclorocyclopentadiene	µg/kg	ND	330
2,4,6-Trichlorophenol	µg/kg	ND	330
2,4,5-Trichlorophenol	µg/kg	ND	1600

Method(s): EPA SW846 AND 625
Footnotes:

Submitted by: JC
Approved by:
Date: 10-OCT-1986

(<) - Less Than LOQ
(>) - Greater Than
NA - Not Applicable
ND - Not detectable
NS - Not specified
MG - Milligrams
µg/kg - Micrograms Per Kilogram
NG - Nanograms
LOQ - Limit of Quantitation

REFERENCE NO. 5

OTISCA INDUSTRIES, LTD.

501 BUTTERNUT STREET, P.O. BOX 127, SYRACUSE, NY 13208 315/475-5543

January 20, 1988

RECEIVED

JAN 25 1988

HAZARDOUS WASTE OPERATIONS

Mr. James Moran
Facility Closure Section
Dept. of Environmental Conservation
50 Wolf Road
Albany, New York 12233

Dear Mr. Moran:

Otisca Industries, Ltd. certifies that the closure plan for the prior Alpha Portland Cement Plant (EPA I.D. #NY002225878) has been carried out and completed as described in the plan, subject only to modification specifically described by Keith Schimel in his certification to New York State Department of Environmental Conservation dated October 20, 1987.

Very truly yours,

OTISCA INDUSTRIES, LTD.

Clay D. Smith

Clay D. Smith
President

CDS/cmt

REFERENCE NO. 6

ENVIRONMENTAL STATEMENT

OTISCA INDUSTRIES PLANT SITE, JAMESVILLE, NY

EPA ID NO: NYD002225878	NYSDEC CLASSIFICATION: 3

Former Owner:	Alpha Portland Cement Co.
Address:	Division of Alpha Portland Industries, Inc. 1044 Northern Blvd. P.O. Box C Roslyn, NY 11576

Current Owner:	Jamesville Holding Co.
Current Tenent:	Otisca Industries, Ltd.
Address:	501 Butternut St. Syracuse, NY 13208
Contact:	Mr. Clay D. Smith, Pres.

Prepared By:	Dr. Keith A. Schimel, PE.
Address:	330 Apple Street Syracuse, NY 13204
Tel:	(315) 425-7741

May 3, 1991

ENVIRONMENTAL STATEMENT

OTISCA INDUSTRIES PLANT SITE, JAMESVILLE, NY

I. Introduction

This statement will focus on the current environmental status of a small portion of the Otisca - Jamesville site, the former Alpha Portland Cement gravel quarry (Area B), located just north of the main plant building(s). See Figure I. for relative location.

II. Alpha Portland Cement History

This site sits upon a sand and gravel terrace. The excavated area of interest (Area B) was "mined out" (excavated to bedrock) by Alpha Portland Cement Co. as part of their Cement manufacturing operation. In 1975 Alpha began experimenting with burning hazardous waste(s) as fuel supplements. Most of the conveyance, handling and storage activities associated with the hazardous materials burning program were confined to an area just south of the plant (Area A, Fig. I). About the same time, Alpha installed a baghouse and electrostatic precipitator to clean the kiln stack gases. The clinker and clinker dust collected by the air pollution control equipment was disposed in the former gravel pit (Area B). Disposal occurred at the southern sector (pit volume closest to the plant) of the gravel pit. The remaining pit volume was unused and unaffected by the clinker disposal operation. Apparently, in the late 70's, Alpha also disposed of an old corroding tanker in the clinker disposal area that had previously been stored in Area A. Hence, this tanker was thought to contain some hazardous materials. In 1980, Alpha ceased cement manufacturing at this site. In 1981, Alpha completed a cursory remediation of the hazardous waste storage area (Area A).

III. Otisca Industries History

In 1984 Otisca Industries, a small R&D company, purchased the Alpha site to construct a "coal liquification" demonstration pilot plant. In addition, Otisca assumed the liabilities associated with remediating the remaining hazardous waste contamination.

A site investigation was started to assess the extent of the remaining contamination. Most importantly, a thorough magnetometer survey of the fill area (Area B) was conducted by Empire Soils Investigations Inc. of Groton New York. On July 30, 1986, the buried tanker was located in the southwest corner of the clinker fill area. It is important to note that the results of the magnetometer survey showed that no other buried containers (drums or otherwise) were present in the clinker fill area. Subsequent excavation revealed a tanker body of poor structural condition that contained a small amount of a solid sludge-like material collected at the downgradient end. Analyses of this material showed contamination with PCB's at approximately 800 ppm. The soils surrounding the tanker showed a spatial average of approximately 16 ppm. The sludge from inside the tanker was removed and drummed. Several layers of soil surrounding the tanker were removed and drummed. A total of fourteen drums filled with contaminated solids were collected and disposed at a secure landfill (Envirosafe). The final soils cleanup level was 4 ppm PCB, spatial composite sampled December 11, 1986. By October 1987, Remediation and/or corrective action at the site was complete.
For a more thorough discussion of the Alpha site remediation, see the Closure Work Plan which on file at NYSDEC Headquarters in Albany NY and NYSDEC Region 7 Office in Syracuse NY.

IV. Current Regulatory Status

According to NYSDEC, this site is an Interim Status-Inactive Hazardous Waste Disposal Site of Classification 3 (does not present a significant threat to the public health or environment -- action may be deferred). Even though the site cleanup has been completed and certified, it has not been formally closed (Classification 4 or 5) because NYSDEC is evaluating the need for further "corrective action" per the Hazardous and Solid Waste Amendments (HSWA) Section 3008(h). In particular, the need for post closure groundwater monitoring of the site is still being evaluated.
See attachments for Mar 9, 1988 Moran letter.

V. Prior Use Impact On Proposed New Use

Thre major arguments support a "no impact" conclusion; Location (proximity), gradient and lack of transport mechanism. The proposed virgin mining area(s) are located a considerable distance away from the former contaminated areas A & B. According to the above historical development, the PCB contamination was found buried 40 feet in a southern fill area and has completely removed. In addition, the proposed virgin mining area location is upgradient of the former contaminated areas A & B. The need for groundwater monitoring at the site has no bearing on mining activities in upgradient-virgin areas of the site. There is no apparent transport mechanism by which the proposed quarry activities could inadvertently spread residual contamination from the former Alpha waste incineration program.

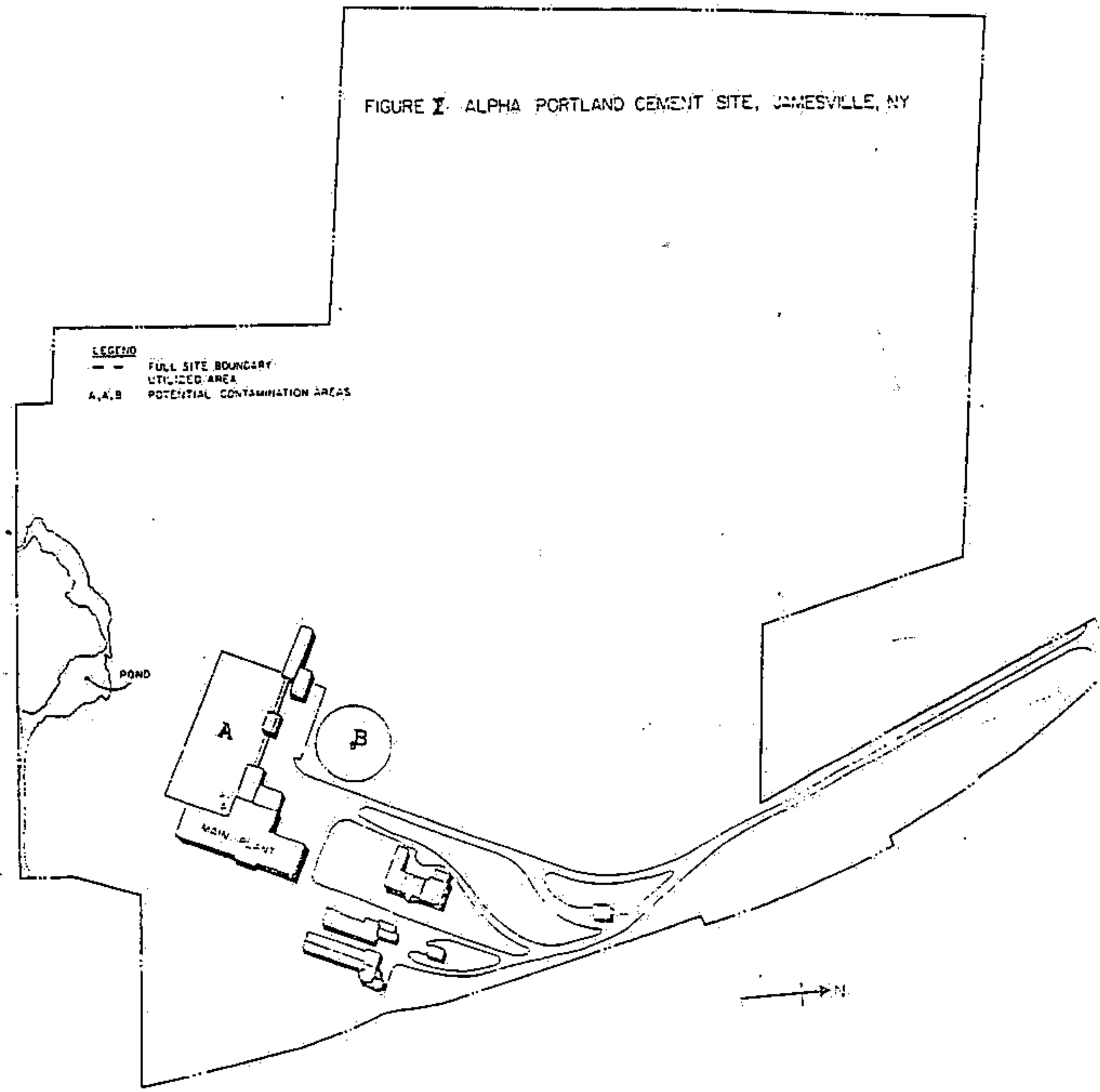

FIGURE I ALPHA PORTLAND CEMENT SITE, JAMESVILLE, NY

OTISCA INDUSTRIES, LTD.

501 BUTTERNUT STREET, P.O. BOX 127, SYRACUSE, NY 13208   315/475-5543

ATTACHMENT #2

SOLID SOIL
SAMPLES FROM TRUCK SITE

GALSON SAMPLE NO.	LOCATION (ppm)	ANALYSIS	DATE	
A	Under Truck Mid	ND*	8/20/86	
B	Under Truck Rear	ND	8/20/86	
C	In Truck Tank Area (rear)	880 (Type 1242)	8/20/86	[illegible] TANK
D	Repeat Sample "C"	578 (Type 1242 or 1248)	9/4/86	
E	Repeat Sample "B"	ND	9/4/86	
F	Depth 6" Under Truck Tank ("C") After Removal of Contaminated Soil	ND	9/15/86	
G	Depth 24" "	ND	9/15/86	
H	Depth 52" "	ND	9/15/86	
I	Sample entire pit around truck for priority pollutants	16.4 (Type 1242 1248)	10/15/86	
J	Mineral Sample of "I"			

Special: Mineral Chemistry of (I)

* detection limit 0.4 ppm EPA SW840 for PCB

D. V. Keller, Jr.
10/86

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel: (315) 432-0506

Client: OTISCA INDUSTRIES
Task Number: 86081218
Location: NS

PONumber: 7427

Job Number: G7072

Date Sampled: NS

PCBs SOIL/SEDIMENT

SAMPLE ID	GTS #	PPM	TYPE
A	D18866	<0.4	NA
B	D18867	<0.4	NA
C	D18868	880	1242

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not Detectable
NS - Not Specified

Method(s): EPA SW846
Footnotes:

Submitted by: BP
Approved by: [signature]
Date: 20-AUG-1986

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA IND.
Task Number: 86082116
Location: NS

Job Number: G7072

Date Sampled: NS

PO Number: 7436

		Lab ID:	D19481	D19482
		Client ID:	SAMPLE #D	SAMPLE #E
PCBs	SOIL/SEDIMENT	PPM	578	<4
		TYPE	1242 or 1248	NA

Method(s): EPA 600/4-81-045
Footnotes:

Submitted by:
Approved by:
Date: 4-SEP-1986

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not detectable
NS - Not specified
MG - Milligrams
L - Liters
M^3 - Cubic Meter
MG/M^3 - Milligrams Per Cubic Meter
PPM - Parts Per Million
µg - Micrograms
NG - Nanograms

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA INDUSTRIES Job Number: G7072
Task Number: 86091012
Location: NS Date Sampled: NS

REQUISITION #7465

		Lab ID:	D21084	D21085	D21086
		Client ID:	"F"	"G"	"H"
PCBs	SOIL/SEDIMENT	PPM	<4	<4	<4
		TYPE	NA	NA	NA

Method(s): EPA SW846
Footnotes: SAMPLES CONSISTED MORE OF GRAVEL THAN SOIL

Submitted by:
Approved by: Ezio Galson
Date: 15-SEP-1986

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not detectable
NS - Not specified
MG - Milligrams
L - Liters
M^3 - Cubic Meter
MG/M^3 - Milligrams Per Cubic Meter
PPM - Parts Per Million
µg - Micrograms
NG - Nanograms

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA INDUSTRIES Job Number: G7072
Task Number: 86091929
Location: NS Date Sampled: NS

SOIL SAMPLE

PURGEABLES GC/MS

		Lab ID: D22060	
		Client ID: 8605-3	LOQ
Benzene	µg/kg	ND	5
Bromomethane	µg/kg	ND	5
Bromodichloromethane	µg/kg	ND	5
Bromoform	µg/kg	ND	5
Carbon Tetrachloride	µg/kg	ND	5
Chlorobenzene	µg/kg	ND	5
Chloroethane	µg/kg	ND	5
2-Chloroethylvinyl Ether	µg/kg	ND	5
Chloroform	µg/kg	ND	5
Chloromethane	µg/kg	ND	5
Dibromochloromethane	µg/kg	ND	5
1,3-Dichlorobenzene	µg/kg	ND	5
1,2-Dichlorobenzene	µg/kg	ND	5
1,4-Dichlorobenzene	µg/kg	ND	5
1,1-Dichloroethane	µg/kg	ND	5
1,2-Dichloeoethane	µg/kg	ND	5
1,1-Dichloroethene	µg/kg	ND	5
trans-1,2-Dichloroethene	µg/kg	ND	5
1,2-Dichloropropane	µg/kg	ND	5
cis-1,3-Dichloropropene	µg/kg	ND	5
trans-1,3-Dichloropropene	µg/kg	ND	5
Ethylbenzene	µg/kg	28	5
Methylene Chloride	µg/kg	9	5
1,1,2,2-Tetrachloroethane	µg/kg	ND	5
Tetrachloroethene	µg/kg	ND	5
1,1,1-Trichloroethane	µg/kg	ND	5
1,1,2-Trichloroethane	µg/kg	ND	5
Trichloroethane	µg/kg	ND	5
Trichlorofluoromethane	µg/kg	ND	5
Toluene	µg/kg	11	5
Vinyl Chloride	µg/kg	ND	5

SAMPLE I - Composite

Method(s): EPA SW846 AND 624
Footnotes:

Submitted by: JC
Approved by:
Date: 10-OCT-1986

(<) - Less Than LOQ
(>) - Greater Than
NA - Not Applicable
ND - Not detectable
NS - Not specified
µg/kg - Micrograms Per Kilogram

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel: (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA INDUSTRIES
Task Number: 86091929
Location: NS

Job Number: G7072

Date Sampled: NS

SOIL SAMPLE

BASE NEUTAL/ACID FRACTION GC/MS

	Lab ID:	D22060	
	Client ID:	8605-3	LOQ
n-Nitrosodimethylamine	µg/kg	ND	330
Phenol	µg/kg	<330	330
Aniline	µg/kg	ND	330
bis(2-chloroethyl) Ether	µg/kg	ND	330
2-Chlorophenol	µg/kg	<330	330
1,3-Dichlorobenzene	µg/kg	ND	330
1,4-Dichlorobenzene	µg/kg	ND	330
Benzyl Alcohol	µg/kg	ND	330
1,2-Dichlorobenzene	µg/kg	ND	330
2-Methylphenol	µg/kg	ND	330
bis(2-chloroisopropyl) Ether	µg/kg	ND	330
4-Methylphenol	µg/kg	ND	330
n-Nitroso-Dipropylamine	µg/kg	ND	330
Hexachloroethane	µg/kg	ND	330
Nitrobenzene	µg/kg	<330	330
Isophorone	µg/kg	ND	330
2-Nitrophenol	µg/kg	ND	330
2,4-Dimethylphenol	µg/kg	ND	330
Benzoic Acid	µg/kg	ND	330
bis(2-chloroethoxy) Methane	µg/kg	ND	330
2,4-Dichlorophenol	µg/kg	ND	330
1,2,4-Trichlorobenzene	µg/kg	ND	330
Naphthalene	µg/kg	<330	330
4-Chloroaniline	µg/kg	ND	330
Hexachlorobutadiene	µg/kg	ND	330
4-Chloro-3-methylphenol	µg/kg	<330	330
2-Methylnaphthalene	µg/kg	<330	330
Hexaclorocyclopentadiene	µg/kg	ND	330
2,4,6-Trichlorophenol	µg/kg	ND	330
2,4,5-Trichlorophenol	µg/kg	ND	1600

Method(s): EPA SW846 AND 625
Footnotes:

Submitted by: JL
Approved by:
Date: 10-OCT-1986

(<) - Less Than LOQ
(>) - Greater Than
NA - Not Applicable
ND - Not detectable
NS - Not specified
MG - Milligrams
µg/kg - Micrograms Per Kilogram
NG - Nanograms
LOQ - Limit of Quantitation

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LABORATORY ANALYSIS REPORT

Client: OTISCA INDUSTRIES
Task Number: 86091929
Location: NS

Job Number: G7072

Date Sampled: NS

SOIL SAMPLE

BASE NEUTAL/ACID FRACTION GC/MS

	Lab ID:	D22060	
	Client ID:	8605-3	LOQ
2-Chloronaphthalene	µg/kg	<300	330
2-Nitroaniline	µg/kg	ND	1600
Dimethyl Phthalate	µg/kg	ND	330
Acenaphthylene	µg/kg	ND	330
3-Nitroaniline	µg/kg	ND	1600
Acenaphthene	µg/kg	3200	330
2,4-Dinitrophenol	µg/kg	ND	1600
4-Nitrophenol	µg/kg	<1600	1600
Dibenzofuran	µg/kg	ND	330
2,4-Dinitrotoluene	µg/kg	ND	330
2,6-Dinitrotoluene	µg/kg	ND	330
Diethylphthalate	µg/kg	ND	330
4-Chlorophenyl Phenyl Ether	µg/kg	ND	330
Fluorene	µg/kg	<330	330
4-Nitroaniline	µg/kg	ND	1600
4,6-Dinitro-2-methylphenol	µg/kg	ND	1600
N-Nitroso-diphenylamine	µg/kg	<330	330
4-Bromophenyl Phenyl Ether	µg/kg	ND	330
Hexachlorobenzene	µg/kg	380	330
Pentachlorophenol	µg/kg	ND	1600
Phenanthrene	µg/kg	ND	330
Anthracene	µg/kg	330	330
di-n-Butyl Phthalate	µg/kg	ND	330
Fluoranthene	µg/kg	<330	330
Benzidine	µg/kg	ND	1600
Pyrene	µg/kg	<330	330
Butyl Benzyl Phthalate	µg/kg	ND	330
3,3'-Dichlorobenzidine	µg/kg	ND	1600
Benzo(a)Anthracene	µg/kg	<330	330
bis(2-ethylhexyl)Phthalate	µg/kg	1400	330
Chrysene	µg/kg	ND	330
di-n-Octyl Phthalate	µg/kg	ND	330
Benzo(b)Fluoranthene	µg/kg	<330	330
Benzo(k)Fluoranthene	µg/kg	<330	330
Benzo(a)Pyrene	µg/kg	ND	330
Indeno(1,2,3-cd)Pyrene	µg/kg	ND	330

Method(s): EPA SW846 AND 625
Footnotes:

Submitted by:
Approved by:
Date: 10-OCT-1986

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LOQ - Limit of Quantitation

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Technical Services, Inc.
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Post Office Box 546
E. Syracuse, N.Y. 13057
Tel: (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA INDUSTRIES Job Number: G7072
Task Number: 86091929
Location: NS Date Sampled: NS

SOIL SAMPLE

PESTICIDES GC/MS

PARAMETER	Lab ID: / Client ID:	D22060 / 8605-3	LOQ
Alpha-BHC	µg/kg	ND	8
Beta-BHC	µg/kg	ND	8
Delta-BHC	µg/kg	ND	8
Gamma-BHC (Lindane)	µg/kg	ND	8
Aldrin	µg/kg	ND	8
Heptachlor Epoxide	µg/kg	ND	8
Endosulfan I	µg/kg	ND	8
Dieldrin	µg/kg	ND	16
4,4'-DDE	µg/kg	ND	20
Endrin	µg/kg	ND	16
Endosulfan II	µg/kg	ND	16
4,4'-DDD	µg/kg	ND	16
Endrin Aldehyde	µg/kg	ND	16
Endosulfan Sulfate	µg/kg	ND	16
4,4'-DDT	µg/kg	ND	16
Endrin Ketone	µg/kg	ND	16
Methoxychlor	µg/kg	ND	80
Chlordane	µg/kg	ND	80
Toxaphene	µg/kg	ND	80
Arochlor 1016	µg/kg	ND	80
Arochlor 1221	µg/kg	ND	80
Arochlor 1232	µg/kg	ND	80
Arochlor 1242	µg/kg	15,200	80
Arochlor 1248	µg/kg	ND	80
Arochlor 1254	µg/kg	ND	80
Arochlor 1260	µg/kg	1200	80

[illegible], Sample I

Method(s): EPA SW846 AND 608
Footnotes:

Submitted by: [signature]
Approved by:
Date: 10-OCT-1986

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(>) - Greater Than
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MG - Milligrams
µg/kg - Micrograms Per Kilogram
NG - Nanograms
LOQ - Limit of Quantitation

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel: (315) 432-0506

LABORATORY ANALYSIS REPORT

Client: OTISCA INDUSTRIES
Task Number: 86091929
Location: NS

Job Number: G7072

Date Sampled: NS

		Lab ID: D22060
		Client ID: 8605-3
Total Phenol	MG/KG	<5

Method(s): EPA 600/4-79-020
Footnotes:

Submitted by:
Approved by:
Date: 10-OCT-1986

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NA - Not Applicable
ND - Not detectable
NS - Not specified
MG - Milligrams
µg/kg - Micrograms Per Kilogram
NG - Nanograms
LOQ - Limit of Quantitation

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel: (315) 432-0506

Client: OTISCA INDUSTRIES
Task Number: 86091929
Location: NS

Job Number: G7072

Date Sampled: NS

Lab ID: D22060
Client ID: 8605-3

Total Cyanides	BULK	MG/KG	<5

Method(s): EPA 600/4-79-020
Footnotes:

Submitted by:
Approved by:
Date: 10-OCT-1986

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ND - Not detectable
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µg/kg - Micrograms Per Kilogram
NG - Nanograms
LOQ - Limit of Quantitation

Sept. 2?, 198?
To: D.?.Keller
From: E. Holloway

COMPOSITE SOIL SAMPLE FROM JAMESVILLE (J)

ELEMENT	CONCENTRATION (wt%)
Carbon	8.97
Oxygen	35.85
Magnesium	1.38
Aluminum	3.38
Silicon	7.55
Sulfur	3.37
Potassium	5.52
Calcium	29.94
Titanium	0.15
Chromium	0.011
Manganese	0.039
Iron	3.62
Copper	0.036
Zinc	0.013
Bromine	0.014
Rubidium	0.038
Strontium	0.037
Yttrium	0.0015
Zirconium	0.0044
Cadmium	0.012
Barium	0.023
Lead	0.047

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y 13057
Tel: (315) 432-0506

Client: OTISCA INDUSTRIES
Task Number: 86112115
Location: NS

Job Number: G7072

Date Sampled: 20-NOV-1986

PO Number: 7590

			Lab ID: D27000
			Client ID: SAMPLE L
PCBs	SOIL/SEDIMENT	PPM	22
		TYPE	1242

Method(s): EPA SW 846 (MODIFIED)
Footnotes:

Submitted by: mk/BK
Approved by:
Date: 25-NOV-1986

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not detectable
NS - Not specified
MG - Milligrams
L - Liters
M^3 - Cubic Meter
MG/M^3 - Milligrams Per Cubic Meter
PPM - Parts Per Million
μg - Micrograms
NG - Nanograms

LABORATORY ANALYSIS REPORT

Galson
Technical Services, Inc.
6601 Kirkville Road
Post Office Box 546
E. Syracuse, N.Y. 13057
Tel (315) 432-0506

Client: OTISCA
Task Number: 86121109
Location: NS

Job Number: G7072

Date Sampled: 11-DEC-1986

		Lab ID:	D28296
		Client ID:	SUP 6 "O"
PCBs	SOIL/SEDIMENT	PPM	4
		TYPE	1016 OR 1242

Method(s): EPA SW 846
Footnotes:

Submitted by:
Approved by:
Date: 12-DEC-1986

(<) - Less Than
(>) - Greater Than
NA - Not Applicable
ND - Not detectable
NS - Not specified
MG - Milligrams
L - Liters
M^3 - Cubic Meter
MG/M^3 - Milligrams Per Cubic Meter
PPM - Parts Per Million
µg - Micrograms
NG - Nanograms

Please print or type.

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SOLID AND HAZARDOUS WASTE

HAZARDOUS WASTE MANIFEST

P.O. Box 12820, Albany, New York 12212

RECEIVED OCT 1 9 1987

Form Approved. OMB No. 2050-0039. Expires 9-30-88

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA No. NYD0[illegible]2235[illegible]7[illegible] Manifest Document No.
2. Page 1 of 1

Information in the shaded areas is not required by Federal Law.

3. Generator's Name and Mailing Address
Jamesville Holding Co. (Alpha Portland Cement Co.)
501 Butternut Street, Syracuse, New York 13208
4. Generator's Phone (315) 475-5543

A. State Manifest Document No. NY A 616520 7
B. Generator's ID [illegible]

5. Transporter 1 (Company Name) LBKS Trucking, Inc.
6. US EPA ID Number [illegible]

C. State Transporter's ID
D. Transporter's Phone ([illegible]) 7[illegible]1-0[illegible]2

7. Transporter 2 (Company Name)
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone ( )

9. Designated Facility Name and Site Address
Environmental International Electric Services
1220 Wyoming Street
Kansas City, Missouri 64101
10. US EPA ID Number MOD[illegible]

G. State Facility's ID
H. Facility's Phone 816 [illegible]

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Hazardous Substance Solid NOS ORM-E, NA9188 (PCB) RQ	014	DM	05700	P	[illegible]
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Other PCB Waste [illegible]

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Avoid Contact; Dike and Contain Spill - Storage Date 10/7/87

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and state laws and regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Keith A. Schimel | Signature | Mo. Day Year

TRANSPORTER

17. Transporter 1 (Acknowledgement of Receipt of Materials)
Printed/Typed Name | Signature | Mo. Day Year

18. Transporter 2 (Acknowledgement of Receipt of Materials)
Printed/Typed Name | Signature | Mo. Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Mo. Day Year

In case of emergency or spill immediately call the National Response Center (800) 424-8802 and the N.Y. Department of Transportation (518) 457-7362.

EPA Form 8700-22 (Rev. 9-88) Previous edition is obsolete.

COPY 8—Generator—retained by generator

RENSHAW BAY CORPORATION

GENERAL CONTRACTORS

FISHER ROAD
EAST SYRACUSE, N. Y. 13057

A/C 315 - 437-3666

July 20, 1987

Envirosure
4626 Royal Avenue
Niagara Falls, New York 14303

Attention: Mr. Cosimo Polino

Re: Waste In Barrells
Jamesville, New York

Gentlemen:

Enclosed are the results of the analysis done on the drums (55 gallon) stockpiled on the Otisca site in Jamesville, New York.

In addition to the EPA metals test, a PCB test was done on each drum. The results are as follows:

Drum #2	220 ppm
Drum #4	600 ppm
Drum #5	550 ppm
Drum #6	540 ppm
Drum #7	820 ppm
Drum #8	500 ppm
Drum #9	840 ppm
Drum #11	200 ppm
Drum #1	<5 ppm
Drum #3	<5 ppm
Drum #10	<5 ppm
Drum #12	<5 ppm
Drum #13	<5 ppm
Drum #14	<5 ppm

Please advise us if you can be of any help with disposal of these drums. If you need any further information, please contact us.

Very truly yours,

RENSHAW BAY CORPORATION

Royden S. Parratt
RSP/lnc
encs:

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-0001

JUN 11 1987

Henry G. Williams
Commissioner

Mr. Keith Schimel
330 Apple Street
Syracuse, NY 13204

Dear Mr. Schimel:

Re: Closure of Facility EPA I.D. NYD002225878

This letter is to inform you that upon review of our records, the applicable regulatory requirements in conjunction with closure of the above-referenced facility have been met and, hereby, approval of the closure plan and public notice of April 22, 1987 is granted.

Please note that this approval in no way precludes your responsibility to submit closure certification to this office as noted in the closure plan. It is deemed that closure of the referenced facility is not complete until such certification is received by this office.

If you have any questions regarding this notice, please contact me at (518) 457-3274.

Sincerely,

George W Heitzman

George Heitzman
Assistant Sanitary Engineer
Permit Section
Bureau of Hazardous Waste Operations
Division of Solid and Hazardous Waste

cc: L. Gross - Regional Solid Waste Engineer, Region 7

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

Mr. Clay Smith
Otisca Industries Ltd.
501 Butternut Street
P.O. Box 127
Syracuse, NY 13208

Dear Mr. Smith:

Re: Closure of Otisca Industries Ltd.,
EPA I.D No. NYD002225878

This letter is to confirm the receipt of owner/operator and independent professional engineer's certification January, 25, 1988 and October 20, 1987 respectively) of RCRA closure for this facility. This notification in no way precludes further site investigation and groundwater monitoring requirements for your facility.

Please be advised that the United States Environmental Protection Agency has determined that the corrective action provisions of the Hazardous and Solid Waste Amendments (HSWA) Section 3008(h) apply to all Treatment, Storage, and Disposal Facilities (TSDF's) which have acquired interim status.

The New York State Department of Environmental Conservation has established a program to evaluate the corrective action measures necessary at closed and closing facilities within the State. Once the corrective action provisions of HSWA have been met by the facility or determined not to be necessary at the facility, the facility can have their interim status terminated. The program to identify the facilities at which corrective action is not necessary is presently underway. In order to determine your status within the program, please contact Mr. Thomas Killeen, of my staff at (518) 457-3274.

Sincerely,

James S Moran

James Sibbald Moran, P.E.
Chief
Facility Closure Section
Bureau of Hazardous Waste Operations
Division of Hazardous Substances Regulation

cc: H. Mulholland, EPA Region II
R. Mitrey, DEC, Region 7
L. Gross, DEC, Region 7
J. Galloway, DEC, Region 7, Kirkwood
K. Schimel

REFERENCE NO. 7

file C&T - HAZARDOUS WASTE

Keith A. Schimel, Ph.D., P.E.

330 Apple St.
Syracuse, NY 13204

(315) 425-7741

June 29, 1987

Mr. Ed Miles
Associate Engineering Geologist
NYSDEC
Bureau of Hazardous Waste Technology
Division of Solid and Hazardous Waste
50 Wolf Rd.
Albany, NY 12233-0001

RE: Variance for Alpha Site Groundwater Monitoring Program

Dear Mr. Miles:

On June 24, 1987, Otisca Industries presented a proposed closure monitoring program for the Alpha Site to NYSDEC as stipulated in Otisca's Alpha Site Closure Work Plan (April 22, 1987). In attendance at this briefing was George Heitzman (Albany, NYSDEC), Mike McPeck (Region 7, NYSDEC), Joe Galloway (Region 7, Binghampton, NYSDEC), Doug Keller (Vice President, Otisca Industries), Don Siegel (Hydrogeologist) and myself (Civil/Environmental Engineer). Since a NYSDEC gelogist was not in attendance, you were identified as the person to review our program and approve any variances from standard NYSDEC policy. Hopefully, George has briefed you on this program proposal.

The discussion and evaluation of the specific monitoring factors met with general agreement on all points except the sampling frequency and duration, proposal B.8, one (1) year monitoring duration and frequency proposal. NYSDEC's current policy requires a standard monitoring period of three (3) years with annual or bi-annual sampling frequency for closure of "cleaned sites". It may not be necessary to impose this arbitrary standard at this unusual hydrogeological site. The following considerations may be helpful;

(1) History - The contamination area of primary concern is Contamination Area A as shown in Figure 2, Alpha Closure Work Plan. Over a five year period between 1975 and 1980, mainly 1978 through 1980 this area was used to store a wide variety of contaminated liquid solvents and hydrocarbons. These liquids were burned in the cement kiln to recover their heat value. The waste solvents were brought to this area in drums and tanker trucks and some spillage did occur during waste transfer operations. All drums and tankers used for onsite storage and transfer were cleaned and removed in late 1981. Hence, a considerable amount of time (7 - 10 years) has elapsed in which significant migration and volatilization of spilled contaminates would be expected.

(2) Hydrogeology - The Alpha site is located on top of glacial outwash (drift) composed primarily of large cobbles and gravels as described in the bore logs (Appendix B, Alpha Closure Plan). There is a former gravel pit excavation located in Area B (Figure 2, Alpha Closure Plan) which was subsequently partially filled in with clinker dust. This surficial glacial soil, then, can be characterized as having a relatively high permeability and hydraulic conductivity (> 0.001 cm/sec) producing average horizontal velocities on the order of 10 feet per day. Conservatively, this means that the volumetric turnover of the groundwater may be as high as 35 times since the incidence of contaminate spillage seven to ten years ago.

(3) Contaminate Location/Character - As part of the site investigation, a search for transport or disposal inventories was conducted. These records do not exist since the site activities were pre-RCRA. In addition, a number of former Alpha employees were questioned as to the storage, transfer, and disposal activities which had occured at the site. The information received confirmed that storage and transfer operations were limited to contamination Area A and identified Area B as possibly containing a buried tanker. These areas are delineated in Figure 2, Alpha Closure Work Plan. Hence, a thorough analytical examination of the contaminated soils was conducted to try and determined what types and concentrations of materials were present in-lieu of the waste inventory. These analytical results are given Appendices C through H of the Alpha Closure Work Plan.

(4) Physical/Chemical Characterization - In consideration of 7 to 10 years elapsed time and the suspected variety and quantity of hazardous substances handled at this site, one might expect to see evidence of considerable migration downward from the spill area. However, analytical results from the site investigation suggest quite the opposite. Only a low level of volatile hydrocarbons (approx. 30 ppm) were detected to the six foot level. This suggests that some mechanism(s) is responsible for impeding downward migration from the top 3 to 6 inch spill layer. Certainly contributing to impedence of infiltration is the oxidized hydrocarbon surface layer. This dried, solid "blacktop" layer partially sealed the subsurface soils from contamination. The more soluble volatile hydrocarbons which show minor migration are all week acids and, therefore, will be susceptible to complexation with clinker dust contained in the surface soils. In addition, all of the hydrocarbons identified are biodegradeable to some degree in the aeration zone in which they are presently located. It is believed that the above combination of mechanisms is responsible for the retardation of contaminate movement observed in contamination area A. Not surprisingly, a one dimensional vadose zone model (Rapid Assessment Model) applied to contamination Area A predicts that the contaminants that have migrated downward have already reached a characteristic "maximum residual saturation". Hence, the risk of contaminants reaching the capillary fringe (depth of 40 - 50 feet) is virtually negligible.

Our suspicions of gross toxic waste contamination of the surficial materials at this site are unfounded. It follows, then, that contamination of local groundwater is highly unlikely.

However, this conclusion is based only on a thorough chemical/physical characterization of the surficial materials. As yet, there is no characterization of the groundwater at this site to confirm this conclusion. Hence, proposal B.8 of the Alpha Monitoring Program Proposal. It is the intent of B.8 to establish the groundwater character at the time of installation of the proposed monitoring well. The following one year duration/frequency variance proposal is contingent on the outcome of the initial sample analytical results confirming that regulated substances are not present above background levels or above detectable limits of the proposed analytical method(s). Justification for this variance request can be found in arguments (1) through (4) above or in the Alpha Monitoring Program Proposal. However, if the initial results should show contamination of the groundwater has occured, then efforts to determine the source and consideration of an appropriate accelerated monitoring scheme over a longer duration may be justifiable.

We would like to execute our monitoring program as soon as possible. I am looking forward to your comments on our variance request. After you have had an opportunity to digest the closure and monitoring presentations, perhaps a conference call to discuss your findings might be appropriate.

Sincerely,

Keith A. Schimel, Ph.D., P.E.

CC: Mr. Clay Smith

Dr. D. V. Keller

Mr. Mike McPeck

Mr. Joe Galloway

REFERENCE NO. 8

Mike m

File: ~~Alpha~~ Otisca RCRA

New York State Department of Environmental Conservation
7481 Henry Clay Blvd., Liverpool, New York 13088

Region 7, Environmental Quality Office
(315) 428-4484

Thomas C. Jorling
Commissioner

June 21, 1988

Ms. Phyllis Burton
6405 East Seneca Turnpike
Jamesville, NY 13078

RE: ALPHA PORTLAND CEMENT COMPANY - JAMESVILLE

Dear Ms. Burton:

Commissioner Jorling has referred a copy of your letter to the Syracuse Herald Journal dated May 4, 1988, to the Region 7 Office for comment.

The burning of chemical waste (solvents) at the cement plant occurred in 1977 (300,000 gallons) and in 1978 (422,000 gallons). Early in 1979 (February and March), efforts were made by DEC to obtain more detailed information on quality of the waste being supplied by Haz-O-Waste. By June, 1979, Haz-O-Waste was requested to stop delivery of waste solvents to the plant. In July, 1979, Alpha Portland was warned against any more solvent burning due to incomplete records on the origin and quality of the waste fuel.

The burning of waste solvents as a fuel at the plant occurred at a time when such activity was unregulated. As such, Alpha Portland carried out this activity on an experimental basis. The kiln operated at more than 2500 degrees Fahrenheit, and with adequate residence time to destroy toxic organics. At the same time, trace metals were specified at levels not to exceed the quantities contained in the coal which was the principle fuel (5 tons/hour).

It should be noted that Alpha Portland was shut down primarily because of their sloppy record keeping. We are not aware that substantial levels of toxics were released to the environment from their operations.

I have enclosed an article from the Journal of the Air Pollution Control Association, (July 1982), entitled, "Burning Chemical Wastes as Fuels in Cement Kilns", for your information.

By copy of this letter, I am informing both county and state health officials of your concerns regarding allergies. I am not a health expert, and such questions are outside my expertise.

Ms. Phyllis Burton
June 21, 1988

Regarding the proposed Onondaga County trash burning plant, guidance is now in-place, and regulations will soon be in-place to adequately control emissions from these facilities in New York State. Any health risks associated with trash burning facilities in New York State are now being addressed, and will be regulated by the new rule (6NYCRR219.2) which will apply to new facilities.

Any further health concerns should be addressed to either the County Health Department or the New York State Department of Health.

Should you need more information on solvent burning or municipal refuse combustion, please feel free to contact me at 428-4484.

Very truly yours,

Norman F. Boyce, P.E.
Regional Air Pollution Control Engineer

NFB/ls
Enclosure

CC: Commissioner Jorling
W. Krichbaum
J. McCarthy, NYS Dept. of Health
P. Guala, Onondaga County Dept. of Health
C. T. Male, III
L. Gross

REFERENCE NO. 9

File: Onondaga Co. General

Region 7, Environmental Quality Office
7481 Henry Clay Boulevard
Liverpool, NY 13088

XXXXXXXXXXXX
XXXXXXXXXX
HENRY G. WILLIAMS
COMMISSIONER

April 19, 1983

Mr. Neil Gingold
Gingold & Gingold
University Building
Syracuse, NY 13202

Re: INSPECTION OF ALPHA PORTLAND CEMENT PLANT, JAMESVILLE, NY, ON FRIDAY, APRIL 15, 1983

Dear Mr. Gingold:

The subject inspection was scheduled due to the concerns by both this Department and the Town of DeWitt that hazardous waste and hazardous materials may have been left at the closed Alpha Portland Cement Plant site that may endanger the local environment or residents of the Town of DeWitt.

During the subject inspection I observed the following materials that due to their condition appear to be waste or no longer of any value:

1. Eight 55-gallon barrels full of some type of grinding material
2. Three full barrels - contents unknown
3. One barrel approximately half full of what appears to be lubricating grease

This material was in the general vicinity of the former waste storage area.

The machine shop area also had the following materials and wastes left on-site:

1. Approximately fifty gallons of waste oil
2. Twenty-five gallons of methanol antifreeze
3. Twenty gallons of some type of coating compound

Also on-site there were three old tanker type trailers with a number of holes in evidence and open tops that had apparently allowed some rainwater to enter various compartments of these trailers.

While some of the material appears to be hazardous waste (waste oil and methanol) the other material would at least be classified as industrial waste and, therefore, require proper handling, storage, and disposal on the part of Alpha Portland Cement Company as generator of this material. While disposal of the hazardous waste formerly used at Alpha was discussed at the subject inspection, I would like documentation from

Alpha Portland Cement in writing detailing the individuals involved in and procedures used to remove the hazardous waste from this location. This report should include details of all clean up activities at the site with dates, procedures, transportation manifests, and a timetable for disposal of the remaining waste materials left at the Jamesville site.

Also of concern at the site were seven large electrical transformers several of which are known to contain PCBs. Because of the reported vandalism at the Jamesville location and the relatively easy access to these transformers, Alpha Portland Cement should take steps to secure the transformer areas or arrange for removal and proper disposal of the PCB equipment.

This information and requirements for action are required based on regulations requiring generators of industrial and hazardous waste to comply with both 6 NYCRR Part 360 and 6 NYCRR Part 365. You may wish to specifically review Sections 360.8 (a) (21), 360.8 (c) (6), and 365.2 (a) (8) and (9). and Sec 27-1301 / 1313 (inactive Hazardous waste Disposal site)

The subject report and schedule should be completed and sent to us within the next 30 days. If you have any questions regarding this matter, please let me know.

Very truly yours,

CHARLES J. BRANAGH, P.E.
Senior Sanitary Engineer
Solid Waste Management

cc: Mr. Brickwedde
Mr. Marko
Mr. Colnon
Mr. Paul

CJB/lma

REFERENCE NO. 10

PAUL L. SHENEMAN, P.E.
RR#3 Box 271 North Road
Tully, New York 13159
(315) 696-5252

Mr. Raymond J. Nolan
Senior Environmental Analyst
NYS DEC
Division of Regulatory Affairs
P.O. Box 5170
Cortland, New York 13045

May 6, 1991

Re: Mined Land Permit Application
#7-3126-00122/00001-1

Dear Mr. Nolan;

Attached is an Environmental Statement from Dr. Keith A. Schimel, P.E. on the background and status of a hazardous waste clean up on the former Alpha Portland Cement Manufacturing site. Dr. Schimel directed the clean up effort and has included laboratory data and correspondence relevant to the site.

The applicant for the referenced mined land permit is seeking to mine unconsolidated sand and gravel deposits on a separate portion of this property.

Dr. Schimel's statement indicates that hazardous waste contamination was limited to two areas identified as "A" and "B" on Figure 1 in his report. These areas have been marked on the enclosed copies of pages 1 and 2 of the Site Drawings which accompanied the Mined Land Permit Application to clarify the spatial relationship between the proposed mining activity and the former location of the PCB waste material.

It is also noteworthy in Dr. Schimel's statement that the PCB waste material was found at a depth of approximately 40-feet below the surface within area "B". The surface elevation of area "B" is between 600 and 610 (USGS datum) and the proposed floor of the mining activity is at a USGS elevation of 600. This places the former location of PCB contamination 30 to 40-feet below the level of the proposed mining activity.

This information will be reviewed at a meeting with Mr. Branagh on Tuesday May 7, 1991.

Please contact me if you require any further information at this time.

Very truly yours,

Paul L. Sheneman, P.E.
PLS/mls
enclosure
cc: C. Branagh
J. Moskiewicz
B. Borrow
S. Nappi

REFERENCE NO. 11

Keith A. Schimel, Ph.D., P.E.

330 Apple St.
Syracuse, NY 13204

(315) 425-7741

March 19, 1987

Mr. George Heitzman
NYSDEC, Permit Section
50 Wolf Rd.
Albany, NY 12233-0001

RE: Status of Alpha Site Closure Work Plan

Dear George:

On behalf of Otisca Industries, I would like to confirm the status of the Alpha Site Closure Work Plan. This Plan was submitted to you during your site visit on October 22, 1986. Since then, you, Joe, Mike and myself have had numerous phone conversations regarding the results of your review and site cleanup progress. To summarize, it is my understanding that the Closure Work Plan is in accordance with NYSDEC requirements as stipulated by Joe Galloway (Oct. 9, 1985) and has been approved subject to the following modifications;

(1) Site A - Former Waste Storage Area, material removed to a secure landfill(Joe Galloway, December 16, 1986).

(2) Site B - Buried Tanker Truck, additional soil cleaning is required to lower the PCB concentration from about 15 ppm to below 10 ppm and the sum total of priority pollutants below 50 ppm (Heitzman, NYSDEC memo, Oct. 31, 1986). In addition, data results on the contaminatev sludge removed from inside the tanker was omitted from

the original plan and must be supplied (see enclosure).

(3) General Site - as part of the site investigation only one groundwater monitoring well was installed. Others may be required for post remediation monitoring purposes. We have agreed to consult with NYSDEC Hydrogeologists before submitting a monitoring plan depicting the number of wells, well design, and location.

I have explained these modifications to Otisca and they agree to complete this additional work. To my knowledge, the incorporation of the above modifications into the Closure Work Plan followed by complete implementation should suffice to satisfy all closure requirements stipulated. If you agree, would you please indicate your agreement or approval to Otisca in writing. It is important for us to know, after we successfully complete the site cleanup, that we have acheived our objective (ie. site closure, reclassification, and eventually site delistment). Confirmation of NYSDEC approval would be most helpfull.

If you should have any questions regarding this matter, please contact me. Your cooperation in this matter is greatly appreciated.

Sincerely,

Keith A. Schimel, Ph.D., P.E.

CC: Mr. Clay Smith

Mr. Mike McPeck

Mr. Joe Galloway

REFERENCE NO. 12

W.O.# 04200016081001900
DOC. CONTROL NO. 4200-16-ADBE

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ROY F. WESTON, INC.
1 WESTON WAY
WEST CHESTER, PA 19380-9846

Alpha Portland Cement

[redacted]

8/19/93 On-Site Reconnaisance

8:50 AM Harold Hornung and (SHSC)
Gretchen Chapman (task manager)
arrive onsite

weather: 80°F
humid
overcast
0-5 mph wind S-W

9:05 AM Calibrating HNu 10.2eV EPA# 735051
Battery OK
calibration gas 98.7 ppm Isobutylene
intial span reading 6.63
expected response 54 ppm
actual response
span adjustment
Final reading

920 Clay Smith arrived onsite

930 Began reconnaisance

- elementary school uses nature trail onsite

- When Otisca purchased the property they found and removed rusted drums scattered around the property. No residues were noted.

- Otisca purchased the property July 1985

- 1986 or 1987 - removed PCB containing transformers. They were incinerated by outside Firm

- The transformers were replaced by "above spec" PCB containg transformers

- The transformers are currently de-energized. They appear to be in good, clean condition.

- There is hard cement kiln dust all over the site, but it is non-hazardous

- 4 tenants on site
  1) hooker - 5 employees
  2) Rail Road Historical Society 2, 3 employees
  3) Maxim - 1 employee
  4) general crush stone <10 empl.

- 125 acre site

[redacted]

- General Crush stone quarries with in 200' of the main Facility

- RR society w/in 200' of the main bldg.

- cement dust was washed to lagoon via Floor drain pipes

- on-site tank stores pentane It has secondary Containmen Built and used by Otisca

- Clay Smith reports snapping turtles in the pond on site. The pond is a Fishery. He reports seeing children Fishing in it. There is alot of plant life in the pond.

- There is a pump house on the pond. The cement manufacturing used the water in their process

- Purple loose strife in pond. It recently migrated to the pond (it is a purple plant)

- A monitoring well near pond. Sampling results should be in the closure report along w/ pond & lagoon sampling results.

- Site is very accessible to public. They have a problem w/ bikers on the site.

- The lagoon percs out or evaporates. It does not flow to another body of water.

- Muscrat houses noted in the lagoon.

- The eastern (northern) lagoon is a dirty, thick green color. No ~~th~~ plant life noted in lagoon, but plenty noted around lagoon. (approx. 60' x 25')

- The 2nd (western) southern lagoon is dry, with a lot of plant life (in parts). (approx. 75' x 20')

ring well near
pling results
n the closure
g w/ pond
ampling results.

accessible
- They have
bikers on

peres out or
- It does not
nother body

es noted

northern)
lagoon is
k green
plant life
on, but plenty
lagoon. (approx.
uthern
stern) lagoon
lot of plant
s) + (approx.

- Butternut Creek is a protected stream

- areas around and in lagoons and pond appear to be wetlands.

- The "dry" second lagoon has a black sludge" type bottom. (southern)

- Clay Smith says the black is from coal.

- The floor drains went to the lagoons,

- Elementary school approximate 300' from lagoon area.

- site drainage allows overland flow to the pond & lagoon from the hazwaste storage area.

- The train society is w/in 200' of manufacturing area.

- RR ties outside in Machine shop area (a.k.a. train society area)

- empty hydrosulFide drum upside down at machineshop area. No apparent leaks or Spills.

- 2 half Full valvoline Fuel oil drums. No apparent leaks or Spills.

- 1 Full drum of "drydene motor oils, grease".

- approximately 5 other empty Misc. drums.

- 18 residences w/in 200' of AEC's.

- one MW near pond. May be 2 other wells on-site. See the closure report.

[redacted]

- nature trail 150' from pond & lagoons. But it is OFF-Site. It is not used as a play area. It is a supervised nature walk.

- Butternut Creek is a Fishery according to clay smith.

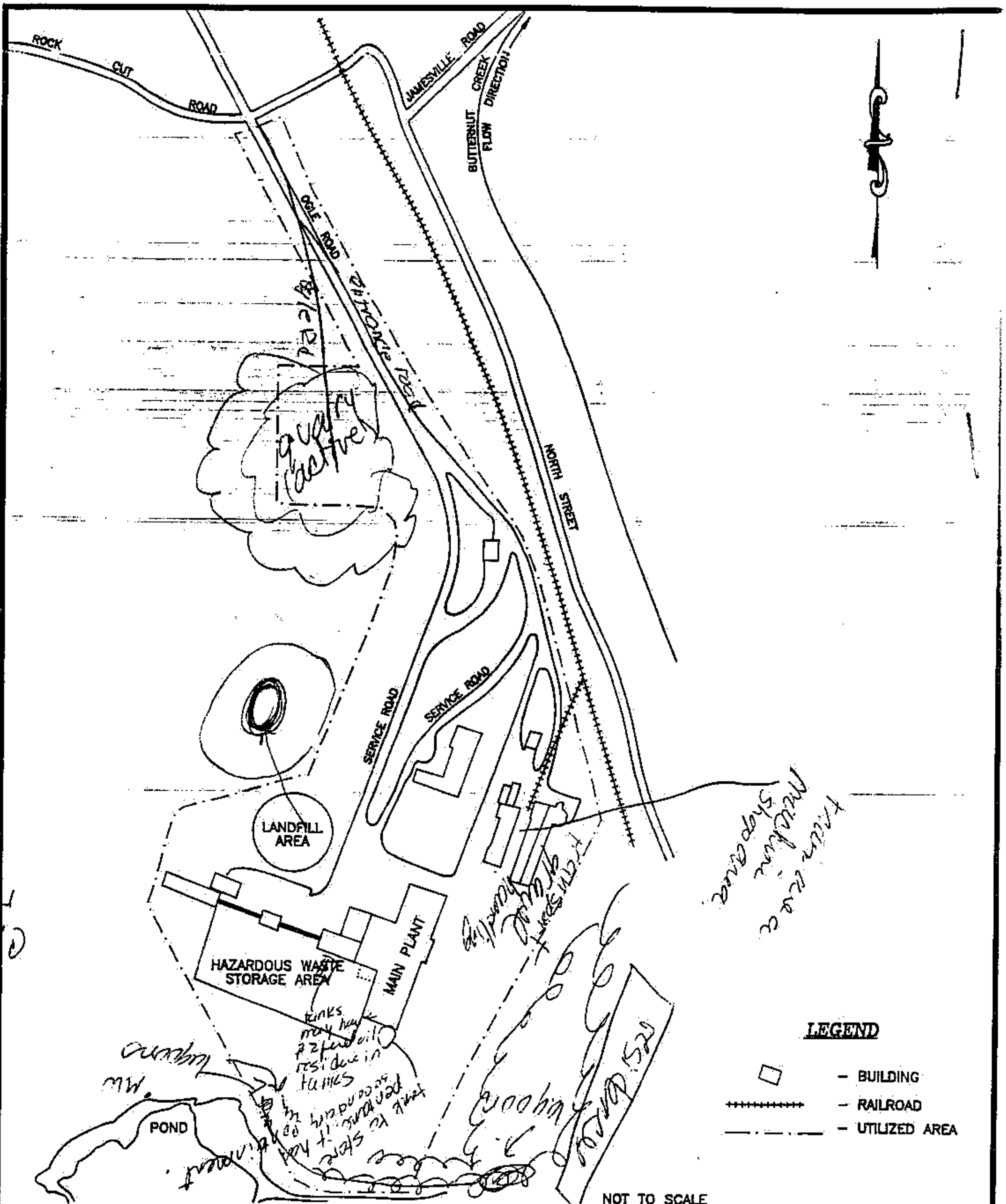
- Butternut Creek is the only local stream.

- Clay Smith says water level 50-60' BGS. and the Unconsolidated Glacial till has very high percolation rate.

- Otisca performed the coal agglomeration late in 1988 or early 1989 and stopped in 1990. (operated approx. 1 yr) The process physically cleaned rock coal using fine grinding and selective agglomeration and produced a coal water slurry product which is used as a fuel

- The closest residence appears to be approx 100' from the lagoon area.

- Otisca did not use any hazardous waste in their agglomeration process.



PROJECT NAME: ALPHA PORTLAND CEMENT SCREENING SITE INSPECTION

JAMESVILLE, NEW YORK

CLIENT NAME: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SITE MAP

DATE: 08/06/93

FIGURE #: 2

REVISION #: 0000 DATE: 08/08/93

FILE NAME: ALPHA-2.DWG DRAWN BY: J. DREEN

Photograph log

9:25 P1 Looking S-W at the cement manufacturing bldg. Looking across the former quarry and buried truck location

930 P2 The former alpha portland cement facility

935 P3 Two empty tanks formerly used by alpha Portland Cement. Tanks of unknown former content

936 P4 cement manufacturing building, looking N/W from behind the building

945 P5 The transformer area looking N

947 P6 Otisco's pentane tank with secondary containment located in the rear of the cement manuf. bldg.

950 P7 Looking west at the on-site ~~[illegible]~~ pond

955 P8 on-site pond

957 P9 on site pond

1005 p10 outfall pipe from manufact. bldg floor drains to the lagoons

1008 p11 The eastern lagoon

1013 p12 The western lagoon

1018 p13 Outlet pipe from floor drains

1023 p14 looking s/w over the alpha site at an elementary school approx. 300' away

1025 p15 on-site pond

1028 p16 eastern lagoon

1035 p17 manufacturing bldg

1036 p18 manufacturing bldg

1040 p19 machine shop area looking south

1042 p20 machine shop area looking s/w

1050 p21 general crush stone quarry

1051 p22 General crush stone quarry

REFERENCE NO. 13

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NEW YORK 10278

Ed Knyfd
NUS Corporation
1090 King Georges Post Road
Suite 1103
Edison, NJ 08837

Dear Mr. Knyfd:

As you requested during our telephone conversation on December 11, 1990, enclosed is a copy of New York State's Wellhead Protection Plan. The plan was approved by EPA in September of 1990.

Please note page 20 of the plan. It gives a summary of baseline wellhead protection area delineations.

If you need further assistance, you may contact me at 212-264-4124.

Sincerely,

Maureen Krudner

Maureen Krudner, Geologist
Ground Water Management Section

PROPOSED
NEW YORK STATE
WELLHEAD PROTECTION PROGRAM

SUBMITTAL
TO
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
IN
APPLICATION FOR IMPLEMENTATION FUNDS

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
ALBANY, NY

MAY 1990

feet upgradient of public wells in the Upper Glacial Aquifer.

Watershed Rules and Regulations are promulgated by the NYS Department of Health upon initiation by local water purveyors. These include delineations of protection management zones for public water supply wells. The WRR delineations do not conflict with the wellhead protection area delineation policies proposed in this submittal.

The NYS Solid Waste Management Program, in 6 NYCRR Part 360, has defined "public water supply wellhead area" as the surface and subsurface area between a public water supply well or wellfield and the 99% theoretical maximum extent of the stabilized cone of depression of that well or wellfield considering all flow system boundaries and seasonal fluctuations. New landfills are banned in these areas, in addition to all primary and principal aquifers in the Upstate area. Special provisions are defined in law for Long Island siting. As with the Watershed Rules and Regulations, there is no conflict in terminology between the Part 360 public water supply wellhead area and the overall wellhead protection area proposed in this submittal. The overall protection area includes, and is larger than, the Part 360 wellhead itself. For landfill siting, Part 360 regulations will prevail. Part 360 determinations are made only for proposed landfill siting cases.

Other setback requirements have been utilized in various state or local management programs. When used, such as for pesticides (e.g., aldicarb) or septic tanks, the setbacks apply to all wells, public or private. As with the other targeting approaches, such setbacks do not conflict with the proposed wellhead protection area policies.

Well Construction Specifications

Direct protection of the wellhead itself is achieved through adoption of construction specifications and standards. These are administered by the New York State Department of Health and follow the "Recommended Standards for Water Works" (NYS Health Department Bulletin #42, 1982). They apply to public water supply wells.

3.2.2 Wellhead Protection Area Delineation Objectives

The USEPA guidance for development of wellhead protection programs (Guidance for Applicants for State Wellhead Protection Program Assistance Funds under the Safe Drinking Water Act, EPA 440/6-87-011) contains the expectation that proposed programs will be designed to provide protection from three types of threats: direct introduction of contaminants in the immediate well area, microbial contaminants, and chemical contaminants. The first is dealt with through well construction and completion standards to be applied at the wellhead itself. The second is managed by delineating a zone to keep potential sources sufficiently distant from the well to allow die-off of the microorganisms. Establishing a minimum distance by measurement or by time-of-travel is the most common procedure for delineating areas for protection against microbial contamination.

To achieve protection against chemical contamination, EPA suggests three delineation approaches: delineation of wellfield management areas, contamination attenuation zones, or remedial action zones. Since chemicals can travel long distances, all or part of the recharge area for a well becomes the zone to be delineated for protection efforts.

The overall goals of New York State's delineation approach are essentially a combination of the wellfield management and remedial action zone goals described by EPA.

Wellfield management is used to define areas where heightened levels of protection will be emphasized. A number of different zones may be delineated for a single water supply to provide different levels of management. The management options may range from selected land use prohibitions to specialized design specifications, enhanced facility inspections, or increased monitoring and education.

The remedial action area approach excludes high risk activities from a specifically defined zone but still allows them in more distant recharge areas. This may be refined by varying exclusions in different zones according to risk or the importance of the activity. The remedial action area concept is best applied to new or changing land uses, whereas wellfield management may be applied to existing or new land uses.

The contamination attenuation zone approach described by EPA is difficult to strictly apply due to limited capabilities to accurately predict chemical migration and persistence. In addition, the New York State groundwater standards apply to all fresh groundwaters, reducing the utility of an attenuation zone approach.

3.2.3. Delineation Policy

The underlying objective of delineation is to use different degrees of management to control risks to water supplies. The significant diversity in geological conditions, aquifer use, and in local government capabilities across New York State indicates that the approach to delineation can not be uniform and rigid for all locations.

The ideal technical goal of wellhead delineation is to have sufficient knowledge of the hydrogeology of each public water supply well or wellfield to allow precise determination of the catchment area along with accurate times-of-travel for the entire flow system. Such information is not uniformly available across the state. New information will become available unevenly as funding from various local, state and federal sources is applied to specific priority areas.

In this setting, the New York State Wellhead Protection Program proposes general recognition of high-yielding aquifers (both confined and unconfined) as the fundamental wellhead protection area units. As described in Section 3.2.4., this policy recognizes that more targeted delineations will be necessary on Long Island because it is entirely an aquifer. Also, bedrock aquifers are not adequately characterized now to allow this approach; however, most of the major, high-yielding aquifers in New York are in unconsolidated deposits. Within the wellhead protection area, delineation of an area designated as the remedial action area is proposed, as described in Sectin 3.2.5.

This policy is intended to reinforce public and management program recognition of the need to protect high-yielding aquifers. It takes advantage of considerable past and ongoing work on aquifer mapping and delineation and will permit further progress in communities which have already delineated aquifer boundaries and protection areas. These communities may directly proceed to management implementation or may utilize available funds on more advanced hydrogeologic evaluations within the WHPA, depending on local needs and goals.

Within this framework, utilization of alternative delineation approaches (such as time-of-travel) is allowed and encouraged. In most cases, such alternative approaches would be applied to subdividing the WHPA within the unconsolidated aquifer boundaries for applying different levels of management. The WHPA itself would remain the area defined by aquifer boundaries. In some cases, such as for bedrock aquifers, the alternative approaches may be used to redefine the WHPA itself. The Department of Environmental Conservation will be responsible for providing guidance for such alternative approaches.

3.2.4. Wellhead Protection Area Delineations

The wellhead protection area delineation approach is summarized in Table 3.1. It recognizes that the aquifer system on Long Island and bedrock aquifers in Upstate New York must be treated differently than the unconsolidated aquifers in Upstate. The unconsolidated aquifer boundaries for the wellhead protection areas are those delineated on a series of maps titled

TABLE 3.1.
WELLHEAD PROTECTION AREA
DELINEATION SUMMARY

Geographic Region	Aquifer Area	Wellhead Protection Area Baseline Delineation
Long Island	Magothy & Lloyd Aquifers	Deep Flow Recharge Area
	Glacial Aquifer	Simplified Variable Shape: 1,500 ft. radius upgradient 500 ft. radius downgradient
Upstate	Unconsolidated Aquifers	Aquifer Boundaries (land surface)
	Bedrock Aquifers	Fixed Radius: 1,500 ft. radius

"Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York" by the U.S. Geological Survey. Specifically, these maps, distributed for sale by the U.S. Geological Survey, are as follows:

1. Bugliosi, E.F., et al., 1988. Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York - Lower Hudson Sheet. Water Resources Investigations Report 87-4274. U.S. Department of the Interior, Geological Survey, Albany, NY.

2. Bugliosi, E.F., et al., 1988. Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York - Hudson Mohawk Sheet. Water Resources Investigations Report 87-4275, U.S. Department of the Interior, Geological Survey, Albany, NY.

3. Bugliosi, E.F., et al., 1988. Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York - Adirondack Sheet. Water Resources Investigations Report 87-4276, U.S. Department of the Interior, Geological Survey, Albany, NY.

4. Miller, T.S., 1988. Unconsolidated Aquifers in Upstate New York - Finger Lakes Sheet. Water Resources Investigations Report 87-4122, U.S. Department of the Interior, Geological Survey, Albany, NY.

5. Miller, T.S., 1988. Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York - Niagara Sheet. Water Resources Investigations Report 88-4076. U.S. Department of the Interior, Geological Survey, Albany, NY.

The boundaries illustrated on these maps serve as the total wellhead protection areas for public water supplies utilizing those aquifers. In certain cases, more detailed aquifer boundary maps or determinations for primary or principal aquifers (subsets of the full range of unconsolidated aquifers) have been or will be made by the U.S. Geological Survey or NYS Department of Environmental Conservation. These more detailed boundary determinations will generally supersede boundaries illustrated on the above referenced maps as "revised" delineations of wellhead protection areas.

Both unconfined and confined unconsolidated aquifers are included on these maps and both are included in this definition of the overall wellhead protection area.

For all public water supplies utilizing groundwater, the overall wellhead protection area (WHPA) delineation will be subdivided into two parts. The innermost zone is referred to as the Remedial Action Area. The remainder of the WHPA is referred to as the Wellfield Management Area. The terminology is derived from the EPA guidance referenced earlier. Depending on local management objectives for groundwater protection, local hydrogeology, and data availability and resource availability, the Wellfield Management Area may be further subdivided. This further subdivision of the Wellfield Management Area would be considered a refinement of the "baseline" delineation. Methodologies, criteria and thresholds used for such revisions are flexible. Approaches proposed by local water purveyors will be evaluated and approved or disapproved upon submittal to the New York State Department of Environmental Conservation.

The term "baseline" delineation, as used in this submittal, is intended to represent the initial WHPA delineation advocated by the Department of Environmental Conservation. The delineation may be directly utilized in implementing management activities for groundwater protection. However, if site-specific conditions suggest that alternative delineations are appropriate (including the further subdivision of the Wellfield Management Area already cited), those delineations may be accepted by the Department of Environmental Conservation. The evolution of improved delineation techniques, the growing availability of hydrogeologic information, and the longer-term enhancements of groundwater protection programs may lead to a redefinition of the baseline delineations by the Department of Environmental Conservation.

These baseline delineations apply to public water supply wells. Applicants for new public water supply wells may be required to perform alternative site-specific delineations according to conditions stipulated through the Water Supply Permit Program (refer to Chapter 7).

The proposed WHPA delineations are described according to the following geographic and hydrogeologic settings. They are also summarized in Table 3.1.

- Unconsolidated Aquifers - Upstate New York

1. WHPA Definition:

The boundaries of wellhead protection areas for public water supplies in unconsolidated aquifers in Upstate New York are the land surface boundaries of the aquifers as illustrated on the five-aquifer sheet maps for Upstate published and distributed by the U.S. Geological Survey (see earlier reference). These boundaries may be revised in accordance with more detailed primary and principal aquifer maps and boundary determinations as approved by the Department of Environmental Conservation. The maps provide definition for both unconfined and confined aquifers. Revisions of these boundaries may be made, pending approval by the Department of Environmental Conservation.

2. Rationale:

The delineations proposed above are hydrogeologically-based and are consistent with the policies and goals of the Upstate Groundwater Management Program already adopted and certified by the Governor of New York as an element of the New York State Water Quality Management Plan.

3. Mapping and Case Studies:

Mapping of these areas is already completed and published. Case studies are not considered appropriate, as the maps have been reviewed and approved by the U.S. Geological Survey and the Department of Environmental Conservation as part of the publication process.

4. Public Water Supply Significance:

The large majority of public water supplies using groundwater, particularly for municipal and community systems, are located in unconsolidated aquifers. It is expected that a significant proportion of additional future supplies will also tap these systems.

- Bedrock Aquifers - Upstate New York

1. WHPA Definition:

The baseline boundaries of wellhead protection areas for public water supplies in bedrock aquifers are fixed radius areas with a radius of 1,500 feet from the wellhead. Revisions based on site-specific information are desirable, with the goals being to identify and delineate principal recharge areas. Revisions may be developed, pending approval by the Department of Environmental Conservation.

2. Rationale:

The fixed radius approach for the initial WHPA is not based on estimated times-of-travel or drawdown. It provides a substantial increase in protection over more commonly existing protection zones (typically 100 feet or 200 feet). The principal rationale is that the baseline delineation gives a basis for immediate action on wellfield management without requiring expensive site-specific delineations. Revisions based on local conditions are encouraged, particularly for municipal community systems, of which there are relatively few in the State. The geographic targeting benefits of uniformly delineating substantially larger fixed radius areas for all bedrock wells are very questionable. Many of the bedrock public water supply wells are among the approximately 10,000 non-community public wells (e.g., isolated public buildings, roadside rest areas, etc.). There will be little geographic targeting advantage for groundwater protection programs if

REFERENCE NO. 15

Keith A. Schimel, Ph.D., P.E.

330 Apple St.
Syracuse, NY 13204

(315) 425-7741

November 5, 1986

Mr. Joseph P. Galloway
NYSDEC
Region #7 - Binghampton Sub Office
c/o Flood Control Maint. Center
R.D. #1 (Route 11)
Kirkwood, NY 13795

RE: Alpha Site Visit Meeting Notes

Dear Joe:

My apologies for not getting these site visit notes to you sooner. It is important to keep track of topics discussed, concerns raised, information transfered and tasks specified or intended as a result of site inspections. I hope this recap will help you in your review process.

On October 7, 1986, Mr. Mike McPeck of the region #7 office in Liverpool NY, contacted me and requested a site visit on Wednesday, October 22, 1986. He expressed interest concerning the discovery of a buried tanker at the site and how the cleanup, if any, was progressing. In addition, he expressed an interest in "clearing-up" Alpha's Part A Application and Closure Plan situation. Subsequently, we agreed to meet with the owner's, Otisca Industries, at the site on October 22, 1986 as requested.

On October 22, 1986, in attendance was Mr. Mike McPeck from the Region #7 Liverpool Office, yourself, myself, Mr. George Hietzman from the NYSDEC Albany RCRA group, Mr. Clay Smith, President of Otisca Industries, Dr. Doug Keller, Vice President of Otisca Industries and Mr. Roy Parrott, representing the Renshaw Bay General Contractors, who are doing the site cleanup work for Otisca Industries.

The tanker excavation, site B, was inspected first. The tanker is located in a deep open pit in the former gravel pit north of the main plant. The tanker had been buried and covered by Clinker dust which provides a very basic (pH) soil medium. I explained that the tanker contents had been removed using standard cleanup procedures by Renshaw Bay. Review of composite soil samples taken from around and under what is left of the tanker shell show that a few priority pollutants are within analytical detectable limits. However, the very low levels are well within the cleanup levels stipulated by you in your October 9. 1985 letter to Milton Cooper of the Alpha Portland Cement Company. I believe these guidelines originated with John Rankin of NYSDEC in Albany. **Although Otisca provides good security at the site, the open tanker pit is an imminent hazard.** The Alpha site is located in a rural residential area. Any unauthorized intrusion onto the premises, especially in the tanker excavation area could be very dangerous. Because of the location of the excavation, normal barrier type security measures would be ineffectual. Consequently, Otisca industries requested that NYSDEC grant permission to recover (fill in) the tanker excavation area. If possible could you give us a response on this matter.

Next we inspected the former Waste Storage Site, Area A. I explained that the soils investigation and analysis shows that the source of contamination (volatile hydrocarbons) was at the surface in a two to three inch lens. The hydrocarbon lens is somewhat impervious and the soils immediately underlying the lens have a significant adsorption capacity. Hence, a high extinction and low downward mobility as shown in the OB&G data, TVH= 0.7% at surface and TVH < 30 ppm at three feet. I explained that the only reasonable way to cleanup this area was to remove the source, the two to three inch surface lens. George wanted to know if discussions with former Alpha employees had revealed if any tanks or drums had been buried in the former waste storage area. I replied, no. He then asked if we had done a magnetometer of this area to verify this. I replied that since former Alpha employees had denied knowledge of any burial in this area by Dick Greene or Alpha and the fact that the area had been riddled with ten sampling pits and five sampling bore holes without detecting any buried foreign objects, we felt that an additional magnetometer survey was unnecessary.

Next we moved down to the piezometer (observation well) located next to the spring fed pond. I explained the results of our hydrogeological investigation conducted by Dr. Siegel. The pond is a groundwater mound and the underlying soils are saturated to the water table. This significantly alters the groundwater flow direction in the immediate area, changing the predominately easterly flow direction toward Butternut Creek typical of most the site to a northeasterly flow for area A. George wanted to know how we knew this. I replied that the water level in the piezometer was greater than a foot below the elevation of the surface of the pond. The piezometer is located only 10 feet north of the ponds northern edge. Hence flow must be away from the pond since the pond is a mound fed by springs.

Next Clay Smith gave the group a tour of the Otisca demonstration plant, which is currently being constructed at the site, and answered all questions about coal storage and the cleanliness of the coal water slurry (Otisca-t process) product.

In closing, I gave Mike a copy of the compiled Galson Analytical results and Otisca's Closure Work Plan for the Alpha site. Another copy of the Closure Work Plan was given to George for inspection by the Albany RCRA compliance group. Mike mentioned that the site would require some groundwater monitoring, observation wells installed as a part of closure. I replied that I would like to discuss the location of these wells with NYSDEC before installation because of the unusual local hydrogeology of the site. At this point **Otisca reiterrated their desire to cover over the tanker excavation area for security reasons and their desire for at least a preliminary indication from NYSDEC on this matter.**

Joe, I hope this will be of some help in your review of the Alpha situation. Please give me a "weather report" on the tanker excavation situation. If I can be of any further assistance, please feel free to contact me. Your cooperation in this matter is greatly appreciated.

Sincerely,

Keith A. Schimel

CC: Mr. Clay Smith
Mr. Doug Keller
Mr. Mike McPeck
Mr. George Hietzman

REFERENCE NO. 16

WESTON
MANAGERS DESIGNERS/CONSULTANTS

PROJECT NOTE

Gretchen Chapman
Originator

TO: File
DATE: 11/8/93

FROM: Gretchen Chapman
W.O. NO.: 04200-016-081-0019

SUBJECT: residences within 200 feet

NOTES:

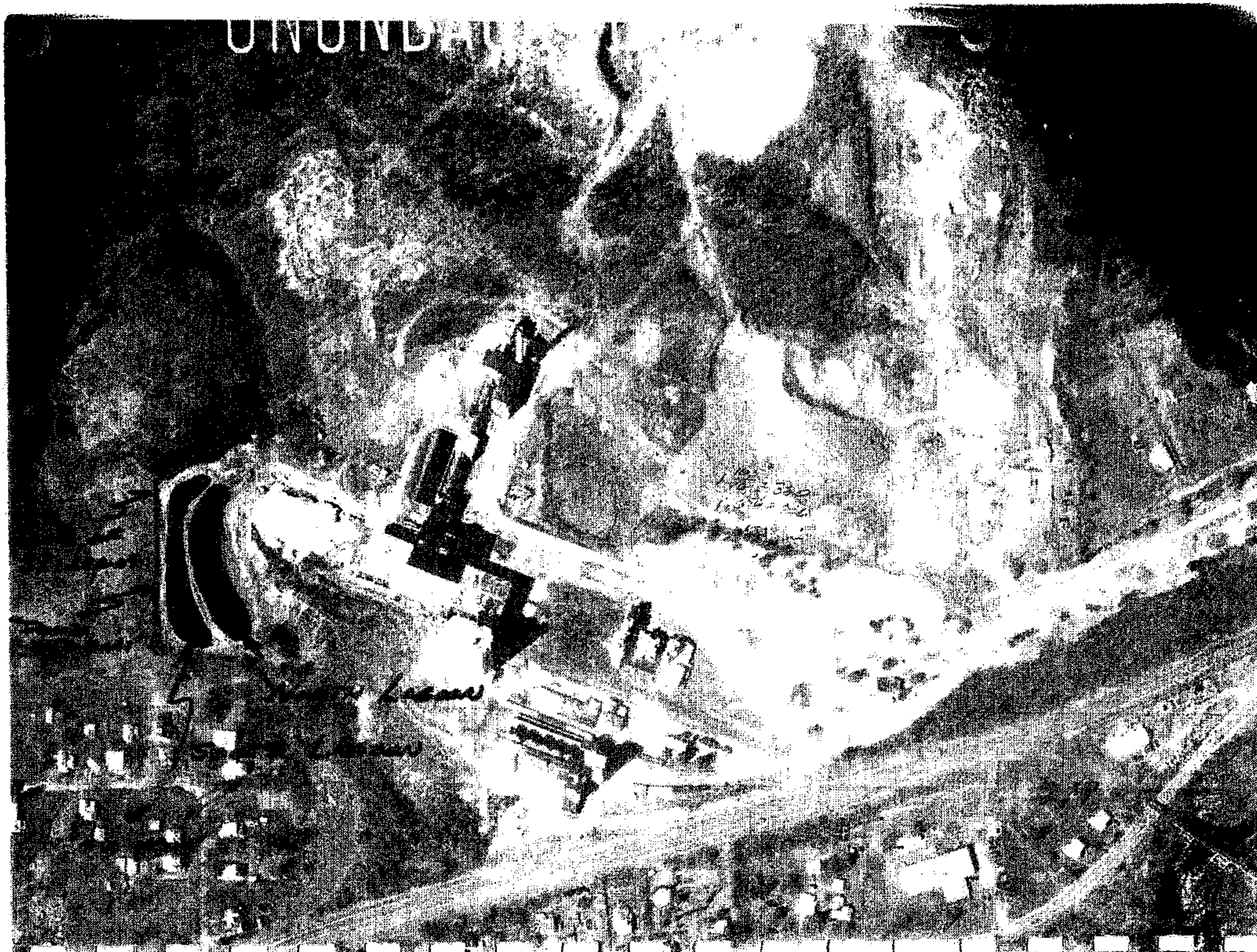
Based on an aerial photograph received by Weston on October 28, 1993, there are ≈ 7 homes within 200' of ~~the site~~ sources areas.

7 homes (100 - 6.8)% occupied x 2.55 persons / occupied home ≈ 17 residences

rr/RUDKO/PROJECTN.OTE

1990 Census Population and Group Quarter Counts, Vacancy Status and Persons Per Occupied Housing Units
For
New York State Minor Civil Divisions by County and Places.

Area Name	Total Population	Total Group Quarters Population	Insitutional Group Quarters Population	Percent Total Group Quarters Population	Total Housing Units	Total Vacant Housing Units	Percent Vacant Housing Units	Persons Per Occupied Housing Units
Remsen town	1,739	0	0	0.00	909	286	31.46	2.79
Remsen village (pt.)	496	0	0	0.00	202	17	8.42	2.68
Rome city	44,350	4,235	2,836	9.55	16,661	907	5.44	2.55
Sangerfield town	2,460	117	92	4.76	924	70	7.58	2.74
Waterville village (pt.)	1,434	117	92	8.16	550	40	7.27	2.58
Sherrill city	2,864	11	11	0.38	1,126	24	2.13	2.59
Steuben town	1,006	0	0	0.00	367	36	9.81	3.04
Trenton town	4,682	24	24	0.51	1,842	145	7.87	2.74
Barneveld village	272	0	0	0.00	112	8	7.14	2.62
Holland Patent village	411	0	0	0.00	188	16	8.51	2.39
Prospect village	312	0	0	0.00	124	7	5.65	2.67
Remsen village (pt.)	22	0	0	0.00	5	0	0.00	4.40
Utica city	68,637	3,087	1,717	4.50	31,127	2,769	8.90	2.31
Vernon town	5,338	58	37	1.09	2,104	118	5.61	2.66
Oneida Castle village	671	0	0	0.00	284	10	3.52	2.45
Vernon village	1,274	33	12	2.59	535	32	5.98	2.47
Verona town	6,460	0	0	0.00	2,515	275	10.93	2.88
Vienna town	5,564	0	0	0.00	2,690	811	30.15	2.96
Sylvan Beach village	1,119	0	0	0.00	750	333	44.40	2.68
Western town	2,057	0	0	0.00	795	57	7.17	2.79
Westmoreland town	5,737	70	0	1.22	2,017	79	3.92	2.92
Whitestown town	18,985	449	437	2.37	7,649	293	3.83	2.52
New York Mills village (pt.)	1,601	0	0	0.00	794	47	5.92	2.14
Oriskany village	1,450	81	81	5.59	574	52	9.06	2.62
Whitesboro village	4,195	0	0	0.00	1,892	79	4.18	2.31
Yorkville village	2,972	12	0	0.40	1,295	57	4.40	2.39
Onondaga County	468,973	15,961	5,859	3.40	190,878	12,980	6.80	2.55
Camillus town	23,625	19	0	0.08	9,192	275	2.99	2.65
Camillus village	1,150	10	0	0.87	503	20	3.98	2.36
Fairmount CDP (pt.)	10,922	0	0	0.00	4,296	116	2.70	2.61
Cicero town	25,560	0	0	0.00	9,453	439	4.64	2.84
Brewerton CDP (pt.)	2,127	0	0	0.00	871	62	7.12	2.63
Bridgeport CDP (pt.)	1,651	0	0	0.00	570	14	2.46	2.97
North Syracuse village (pt.)	2,061	0	0	0.00	837	36	4.30	2.57
Clay town	59,749	185	159	0.31	22,187	1,092	4.92	2.82
North Syracuse village (pt.)	5,302	21	0	0.40	2,241	63	2.81	2.42
De Witt town	25,148	1,427	79	5.67	10,246	517	5.05	2.44
De Witt CDP	8,244	1,366	32	16.57	2,885	111	3.85	2.48
East Syracuse village	3,343	0	0	0.00	1,489	70	4.70	2.36
Lyncourt CDP (pt.)	518	0	0	0.00	216	5	2.31	2.45
Lyndon CDP (pt.)	2,737	0	0	0.00	1,060	62	5.85	2.74
Elbridge town	6,192	0	0	0.00	2,322	94	4.05	2.78
Elbridge village	1,219	0	0	0.00	461	14	3.04	2.73
Jordan village	1,325	0	0	0.00	510	24	4.71	2.73
Fabius town	1,760	0	0	0.00	693	81	11.69	2.88
Fabius village	310	0	0	0.00	132	8	6.06	2.50
Geddes town	17,677	252	252	1.43	7,164	275	3.84	2.53
Fairmount CDP (pt.)	1,344	0	0	0.00	488	5	1.02	2.78
Solvay village	6,717	0	0	0.00	3,115	204	6.55	2.31
Westvale CDP	5,952	252	252	4.23	2,209	31	1.40	2.62
Lafayette town	5,105	101	88	1.98	1,825	101	5.53	2.90
Lysander town	16,346	10	0	0.06	6,233	394	6.32	2.80
Baldwinsville village (pt.)	4,134	10	0	0.24	1,611	99	6.15	2.73
Manlius town	30,656	304	294	0.99	12,136	655	5.40	2.64
Fayetteville village	4,248	0	0	0.00	1,840	68	3.70	2.40
Lyndon CDP (pt.)	1,856	76	76	4.09	751	48	6.39	2.53
Manlius village	4,764	38	28	0.80	2,027	141	6.96	2.51
Minoa village	3,745	85	85	2.27	1,320	36	2.73	2.85
Marcellus town	6,465	4	4	0.06	2,467	156	6.32	2.80
Marcellus village	1,840	0	0	0.00	814	61	7.49	2.44
Onondaga Reservation	771	0	0	0.00	221	0	0.00	3.49
Onondaga town	18,396	714	714	3.88	6,800	243	3.57	2.70
Otisco town	2,255	1	0	0.04	1,058	278	26.28	2.89
Pompey town	5,317	0	0	0.00	1,936	109	5.63	2.91
Salina town	35,145	83	74	0.24	14,680	514	3.50	2.48



REFERENCE NO. 17

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-0001

Henry G. Williams
Commissioner

JUN 11 1987

Mr. Keith Schimel
330 Apple Street
Syracuse, NY 13204

Dear Mr. Schimel:

Re: Closure of Facility EPA I.D. NYD002225878

This letter is to inform you that upon review of our records, the applicable regulatory requirements in conjunction with closure of the above-referenced facility have been met and, hereby, approval of the closure plan and public notice of April 22, 1987 is granted.

Please note that this approval in no way precludes your responsibility to submit closure certification to this office as noted in the closure plan. It is deemed that closure of the referenced facility is not complete until such certification is received by this office.

If you have any questions regarding this notice, please contact me at (518) 457-3274.

Sincerely,

George W Heitzman

George Heitzman
Assistant Sanitary Engineer
Permit Section
Bureau of Hazardous Waste Operations
Division of Solid and Hazardous Waste

cc: L. Gross - Regional Solid Waste Engineer, Region 7

REFERENCE NO. 18

JUL 7 1983

508 Sycamore Terrace
Dewitt, New York 13214
June 30, 1983

United States Environmental Protection Agency
Permits Administration Branch
Room 432
26 Federal Plaza
New York, New York 10278

Re: Alpha Portland Cement Company
No. NYD 002225878

Dear Sirs:

On behalf of my client, Alpha Portland Cement Company, at at the suggestion of the New York State Department of Environmental Conservation (DEC), please be advised that my client's facility at Jamesville, New York is closed, and in fact, has been closed since 1980. I am writing to you to request that that name be removed from your inventory of TSD sites.

This facility was originally listed as a disposal site due to the intention of the company in utilizing waste oils as a substitute fuel in it's cement kiln. At the time of application to you, an experimental program was being conducted for the company by Haz-O-Waste Corporation, under the watchful eye of DEC. All material that was brought onto the site was under the care, custody and control of Haz-O-Waste. Despite this situation, when the plant was closed, significant waste remained on site. Contractual differences with Haz-O-Waste prompted that company to walk away from the site and leave all the waste material. Alpha, at the request of DEC, arranged to have the site cleaned out of the waste material this past year by West Central Environmental Corporation. I enclose herein the copy of the work reports, lab analysis, manifests, work orders and a cost memo to me from the subsidiary corporation of Alpha Portland Industries (the parent of Alpha Portland Cement Company), Energy and Resource Recovery Corporation. The information enclosed explains the process and the steps taken to clean the site.

DEC has already been out to the site to inspect the property, and most recently wrote back to me relative to its inspection, and its review of the material that I have enclosed herein to you. A copy of that letter, which is dated June 3, 1983, I enclose herein as well. As a follow up to that June 3, 1983 letter, I have been in contact with the DEC and have advised them as per their request, that my client would be most willing to allow an inspection, via sub-surface sampling of the soils at the site, to determine clean-up efforts. The DEC has previously indicated to me that the testing program that they envision wanting to do with the site may take some time to schedule, in light of restraints on the availability of monies for such efforts. I enclose herein a copy of my reply to the DEC of its June 3, 1983 letter for your records.

I am hopeful that the material that I have provided herein will be sufficient for you to correct your records relative to listing this facility as a TSD facility on your current inventory. If you are in need of any additional information or have to forward any information onto me, please feel free to write to me at the above-referenced address, or in the alternative to contact me by telephone at Area Code (315) 423-5362.

Very truly yours,

Neil M. Gingold

Neil M. Gingold, Esquire

cc: Mr. Walter J. Hinckley
Energy and Resourse Recovery Corporation

Charles J. Branagh, PE
Senior Sanitary Engineer
Solid Waste Management Division

File:
Alpha Portland
Cement Onon Co
Refuse Disposal

RECEIVED
AUG 1 1983
DEPT. ENVIRONMENTAL
CONSERVATION, SYRACUSE

AUG 10 1983

Neil M. Gingold, Esquire
508 Sycamore Terrace
Dewitt, New York 13214

Re: Residual Storage Tank (Previously Alpha Portland Cement Company)
EPA I.D. Number NYD002225878

Dear Mr. Gingold:

This is in reference to your letter of June 30, 1983 concerning Residual Fuel Storage Tank's Jamesville, New York facility. Specifically, you requested that Residual Fuel Storage Tank's facility be removed from our inventory of hazardous waste treatment, storage and disposal sites because it is closed.

As you must be aware, 40 CFR Part 265 Subpart G of the U.S. Environmental Protection Agency's (EPA) hazardous waste regulations promulgated under the Resource Conservation and Recovery Act (RCRA), designates the requirements that must be adhered to for closure of hazardous waste treatment, storage and disposal facilities. Included under 40 CFR Part 265 Subpart G is the requirement that "The owner or operator must submit his closure plan to the Regional Administrator at least 180 days before the date he expects to begin closure..." Evidenced by the information included in your June 30, 1983 letter, this requirement had not been met for the Residual Fuel Storage Tank facility.

A closure plan in compliance with 40 CFR Part 265 Subpart G for the Residual Fuel Storage Tank facility must be submitted to EPA by August 26, 1983.

Enclosed for your reference is a copy of "A Guide for Preparing RCRA Storage Permit Application" and applicable sections of "Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage and Disposal (TSD) Facilities under RCRA, Subtitle C, Section 3004." Although these documents are in preliminary form, they contain useful guidance for preparing closure plans.

Please be advised that this letter in no way precludes the initiation by EPA of enforcement actions against Residual Fuel Storage Tank for violations of 40 CFR Part 265 Subpart G.

Should you have any questions about this letter or should you wish to discuss this matter further, please contact Catherine Massimino of my staff at (212) 264-1317.

Sincerely yours,

Ernest A. Regna
Chief
Solid Waste Branch

Enclosures

cc: Steve Lackey
DEC, Region 7 (w/encls.)

bcc: Charles J. Branagh, DEC, Region 7
Bruce Adler
Richard A. Baker
Catherine Massimino

Charlie

RECEIVED
AUG 15 1983
DEPT. ENVIRONMENTAL CONSERVATION, SYRACUSE

AUG 10 1983

Neil M. Gingold, Esquire
508 Sycamore Terrace
Dewitt, New York 13214

Re: Residual Storage Tank (Previously Alpha Portland Cement Company)
EPA I.D. Number NYD082225378

Dear Mr. Gingold:

This is in reference to your letter of June 30, 1983 concerning Residual Fuel Storage Tank's Jamesville, New York facility. Specifically, you requested that Residual Fuel Storage Tank's facility be removed from our inventory of hazardous waste treatment, storage and disposal sites because it is closed.

As you must be aware, 40 CFR Part 265 Subpart G of the U.S. Environmental Protection Agency's (EPA) hazardous waste regulations promulgated under the Resource Conservation and Recovery Act (RCRA), designates the requirements that must be adhered to for closure of hazardous waste treatment, storage and disposal facilities. Included under 40 CFR Part 265 Subpart G is the requirement that "The owner or operator must submit his closure plan to the Regional Administrator at least 180 days before the date he expects to begin closure..." Evidenced by the information included in your June 30, 1983 letter, this requirement had not been met for the Residual Fuel Storage Tank facility.

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Should you have any questions about this letter or should you wish to discuss this matter further, please contact Catherine Massimino of my staff at (212) 264-1317.

Sincerely yours,

Ernest A. Regna
Chief
Solid Waste Branch

Enclosures

cc: Steve Lackey
DEC, Region 7 (w/encls.)

REFERENCE NO. 19

CCI3N

New York State Department of Environmental Conservation

Wildlife Resources Center
Information Services
700 Troy-Schenectady Road
Latham, New York 12110-2400

Thomas C. Jorling
Commissioner

AUG 2 1993

July 28, 1993

Christian S. Agnew
Roy F. Weston, Inc.
Raritan Plaza 1, 4th floor
Raritan Center
Edison, New Jersey 08837-3616

Dear Mr. Agnew:

We have reviewed the New York Natural Heritage Program files with respect to your recent request for biological information concerning two hazardous waste sites, one in Jamesville, Onondaga County; and one in Walton, Delaware County, New York State.

Enclosed is a computer printout covering the area you requested to be reviewed by our staff. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

Our files are continually growing as new habitats and occurrences of rare species and communities are discovered. In most cases, site-specific or comprehensive surveys for plant and animal occurrences have not been conducted. For these reasons, we can only provide data which have been assembled from our files. We cannot provide a definitive statement on the presence or absence of species, habitats or natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

This response applies only to known occurrences of rare animals, plants and natural communities and/or significant wildlife habitats. You should contact our regional office, Division of Regulatory Affairs, at the address enclosed for information regarding any regulated areas or permits that may be required (e.g., regulated wetlands) under State Law.

If this proposed project is still active one year from now we recommend that you contact us again so that we can update this response.

Sincerely,

Burrell Buffington

Burrell Buffington
NY Natural Heritage Program

Encs.
cc: Reg. 4, and 7, Wildlife Mgrs.
Reg. 4, and 7, Fisheries Mgr.

0027N

WESTON
MANAGERS DESIGNERS/CONSULTANTS

PROJECT NOTE

Gretchen Chapman
Originator

TO: File

DATE: 11/5/93

FROM: Gretchen Chapman

W.O. NO.: 04200-016-081-0019

SUBJECT: Sensitive Environments

NOTES: The following summarizes the NYSDEC Natural Heritage Program biological information:

	total # of species w/in 15 miles downstream ~~or 4 mile radius~~
NYS Threatened species (NYSTS)	0
NYS Endangered " (NYSES)	~~4~~ 3
Federal Threatened " (FTS)	~~13~~ 5
Federal Endangered " (FES)	2

Distance	Sensitive Environ.	No.
0-1/4	NYSTS	0
1/4-1/2	FTS	1
1/2-1	FTS NYSES	7 1
1-2	NYSES FES FTS	1 2 2
2-3	NYSES FTS	2 2
3-4	FTS	1

and 1 significant habitat 2.2 miles from site

REFERENCE NO. 20

WESTON
MANAGERS DESIGNERS/CONSULTANTS

PROJECT NOTE

Gretchen Chapman
Originator

TO: File DATE: 9/28/93

FROM: Gretchen Chapman W.O. NO.: 04200-016-081-0019

SUBJECT: alpha-4 mile water supply; fisheries

NOTES: On 7/15/93 I spoke to Rick March in his office, (Public Health Engineer) Onondaga Co. Health Dept., Syracuse, NY (315)469-6955. He reviewed the alph Four Mile Vicinity Map with me and indicated which areas were supplied by public water, and which by private wells. None of the public supply comes from within 4 miles of the site, Syracuse is public supply from Skineatlis Lake + Lake Ontario. Manlius is also public supply. The following summarizes their information:

0-1/4 mile 0 wells

1/4-1/2 mile 0 wells

1/2-1 mile 0 wells

1-2 miles 36 homes + Cliffside mobile (270 people) + Blacks Breezy Acres (54 people)

WESTON
MANAGERS DESIGNERS/CONSULTANTS

PROJECT NOTE

G Chapman
Originator

TO: File

DATE: 9/28/93

FROM: Gretchen Chapman

W.O. NO.:

SUBJECT: water supply

NOTES: 2-3 miles 195 homes

3-4 miles 204 homes

(Refer to Private Wells Four Mile Vicinity map)

% housing vacant = 5.05 % (=94.95 % occupied)

persons/occupied house = 2.44

People served by groundwater

0-1/4 mile	0	people
1/4-1/2 mile	0	"
1/2-1 mile	0	"
1-2 miles	407	"
2-3 miles	452	"
3-4 miles	473	"

Fisheries

Butternut Creek, Cedar Bay, Limestone Creek and Old Erie Canal are fisheries

New York State Atlas of Community Water System Sources 1982

YORK STATE
RTMENT OF HEALTH

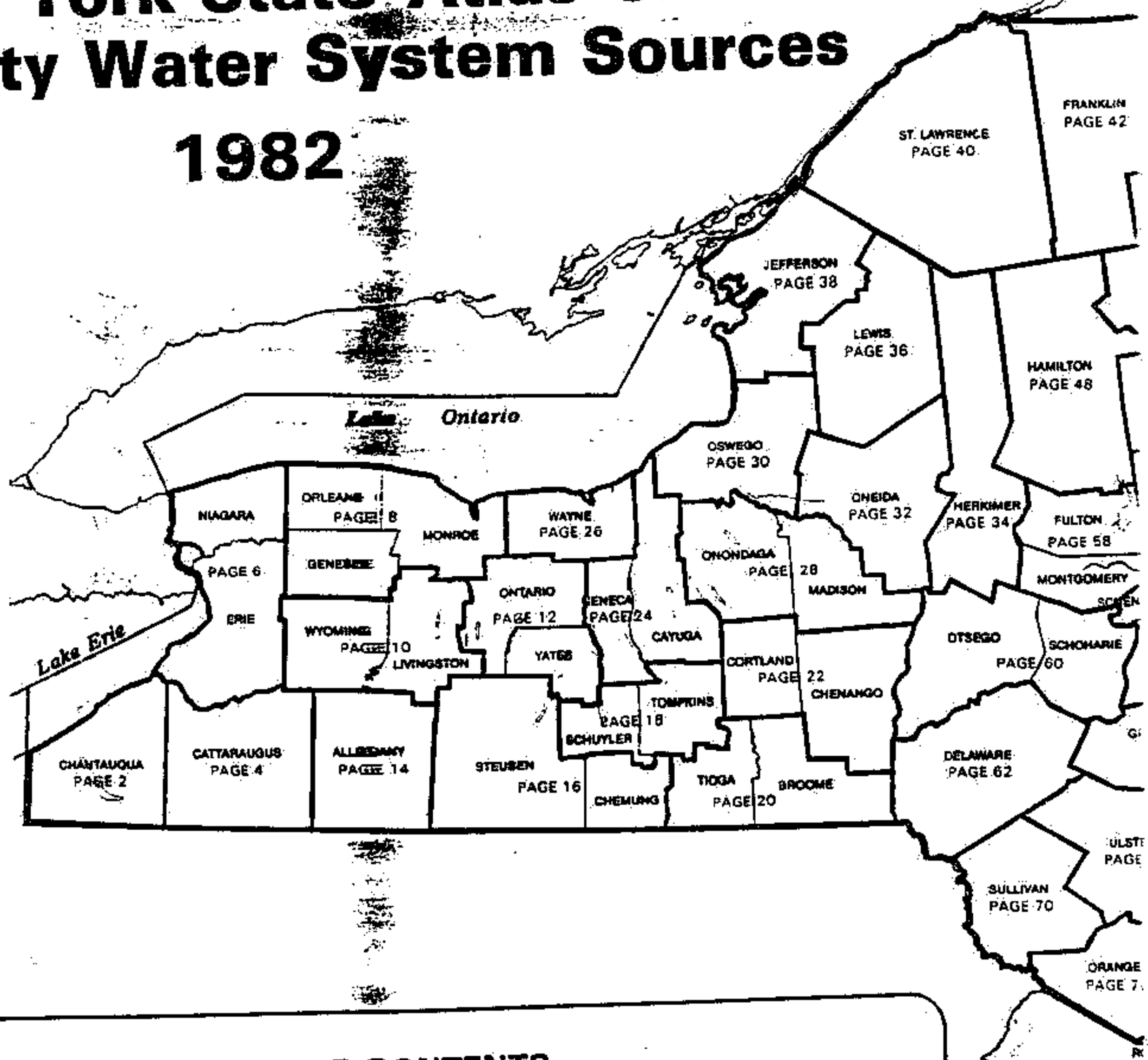


TABLE OF CONTENTS

FOREWARD

EXPLANATION OF SYMBOLS

Suface water intakes are designated on the county maps by a triangle (▲) accompanied by the corresponding water supply number.

Groundwater sources are designated by a dot (•) followed by the supply number. Multiple wells separated by less than 1000' and supplying the same water system are shown with one dot. Springs and infiltration galleries are shown as groundwater sources unless the local health unit has designated it a surface source. Therefore, springs and infiltration galleries are listed as wells (springs) or wells (infiltration galleries).

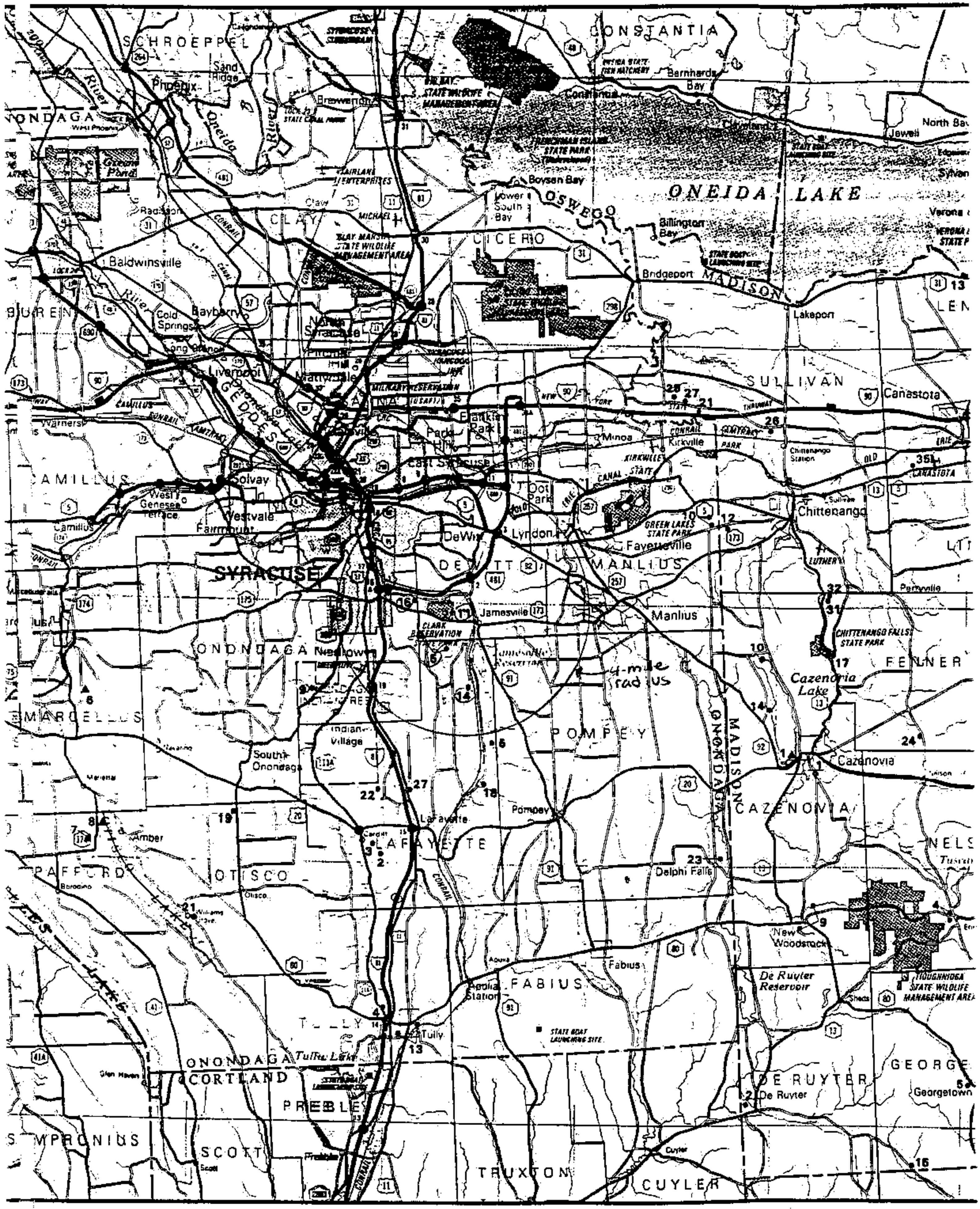
If a Community Water System has source(s) located outside the county, these sources are shown in the county list and show in parentheses the system number, county and page number. Conversely, when a county contains source(s) which supply community water systems located outside the county, the name of the system is also shown in that county's list of sources.

ONONDAGA COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Baldwinsville Village	6500	Wells
2	Cardiff, Haynes Spring	35	Wells (Spring)
3	Cardiff, Tooke Spring	100	Wells (Spring)
4	East Side Spring	52	Wells (Springs)
5	East Syracuse Village	3900	Wells, East Syracuse Reservoir (Springs)
6	Marcellus Village	1870	Rockwell Spring
	Metropolitan Water Board (See No 5 Oswego Co, Page 30)	NA	
7	Mountain Glen Water Company Inc.	250	Wells (Spring)
8	Onondaga County Water Authority	130000	Otisco Lake
9	Onondaga Indian Reservation	750	Wells (Springs)
10	Skyridge Community Inc.	50	Wells
11	Southwood Jamesville Water District	NA	Wells
12	Syracuse City	170105	Skaneateles Lake
13	Tully Village	1065	Wells
Non-Municipal Community			
14	Black's Breezy Acres	54	Wells
15	Champion Home Communities	288	Wells
16	Cliffside Mobile Homes	270	Wells
17	Edgewood Trailer Park	36	Wells
18	Green Valley Mobile Manor	129	Wells
19	Lords Hill Apartments	126	Wells
20	Mobile Manor Mobile Home Park	66	Wells
21	Otisco Lake Drive-Inn & Trailer Park	15	Wells
22	Parc Du Bois	120	Wells
23	Pleasant Valley Mobile Court	222	Wells
24	Rolling Wheels	300	Wells
25	Smith Trailer Park	60	Wells
26	Williams Trailer Park	36	Wells
27	Willowwood Apartments	128	Wells

DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

...OF COMMUNITY WATER SYSTEM SOURCES-1982



3 SCALE NEW YORK STATE MAP © 1980 BY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION.

SCALE 1:250,000

5 0 5 MILES

1990 Census Population and Group Quarter Counts, Vacancy Status and Persons Per Occupied Housing Units
For
New York State Minor Civil Divisions by County and Places.

Area Name	Total Population	Total Group Quarters Population	Insitutional Group Quarters Population	Percent Total Group Quarters Population	Total Housing Units	Total Vacant Housing Units	Percent Vacant Housing Units	Persons Per Occupied Housing Units
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Oneida Castle village	671	0	0	0.00	284	10	3.52	2.45
Vernon village	1,274	33	12	2.59	535	32	5.98	2.47
Verona town	6,460	0	0	0.00	2,515	275	10.93	2.88
Vienna town	5,564	0	0	0.00	2,690	811	30.15	2.96
Sylvan Beach village	1,119	0	0	0.00	750	333	44.40	2.68
Western town	2,057	0	0	0.00	795	57	7.17	2.79
Westmoreland town	5,737	70	0	1.22	2,017	79	3.92	2.92
Whitestown town	18,985	449	437	2.37	7,649	293	3.83	2.52
New York Mills village (pt.)	1,601	0	0	0.00	794	47	5.92	2.14
Oriskany village	1,450	81	81	5.59	574	52	9.06	2.62
Whitesboro village	4,195	0	0	0.00	1,892	79	4.18	2.31
Yorkville village	2,972	12	0	0.40	1,295	57	4.40	2.39
Onondaga County	468,973	15,961	5,859	3.40	190,878	12,980	6.80	2.55
Camillus town	23,625	19	0	0.08	9,192	275	2.99	2.65
Camillus village	1,150	10	0	0.87	503	20	3.98	2.36
Fairmount CDP (pt.)	10,922	0	0	0.00	4,296	116	2.70	2.61
Cicero town	25,560	0	0	0.00	9,453	439	4.64	2.84
Brewerton CDP (pt.)	2,127	0	0	0.00	871	62	7.12	2.63
Bridgeport CDP (pt.)	1,651	0	0	0.00	570	14	2.46	2.97
North Syracuse village (pt.)	2,061	0	0	0.00	837	36	4.30	2.57
Clay town	59,749	185	159	0.31	22,187	1,092	4.92	2.82
North Syracuse village (pt.)	5,302	21	0	0.40	2,241	63	2.81	2.42
De Witt town	25,148	1,427	79	5.67	10,246	517	5.05	2.44
De Witt CDP	8,244	1,366	32	16.57	2,885	111	3.85	2.48
East Syracuse village	3,343	0	0	0.00	1,489	70	4.70	2.36
Lyncourt CDP (pt.)	518	0	0	0.00	216	5	2.31	2.45
Lyndon CDP (pt.)	2,737	0	0	0.00	1,060	62	5.85	2.74
Elbridge town	6,192	0	0	0.00	2,322	94	4.05	2.78
Elbridge village	1,219	0	0	0.00	461	14	3.04	2.73
Jordan village	1,325	0	0	0.00	510	24	4.71	2.73
Fabius town	1,760	0	0	0.00	693	81	11.69	2.88
Fabius village	310	0	0	0.00	132	8	6.06	2.50
Geddes town	17,677	252	252	1.43	7,164	275	3.84	2.53
Fairmount CDP (pt.)	1,344	0	0	0.00	488	5	1.02	2.78
Solvay village	6,717	0	0	0.00	3,115	206	6.55	2.31
Westvale CDP	5,952	252	252	4.23	2,209	31	1.40	2.62
LaFayette town	5,105	101	88	1.98	1,825	101	5.53	2.90
Lysander town	16,346	10	0	0.06	6,233	394	6.32	2.80
Baldwinsville village (pt.)	4,134	10	0	0.24	1,611	99	6.15	2.73
Manlius town	30,656	304	294	0.99	12,136	655	5.40	2.64
Fayetteville village	4,248	0	0	0.00	1,840	68	3.70	2.40
Lyndon CDP (pt.)	1,856	76	76	4.09	751	48	6.39	2.53
Manlius village	4,764	38	28	0.80	2,027	141	6.96	2.51
Minoa village	3,745	85	85	2.27	1,320	36	2.73	2.85
Marcellus town	6,465	4	4	0.06	2,467	156	6.32	2.80
Marcellus village	1,840	0	0	0.00	814	61	7.49	2.44
Onondaga Reservation	771	0	0	0.00	221	0	0.00	3.49
Onondaga town	18,396	714	714	3.88	6,800	243	3.57	2.70
Otisco town	2,255	1	0	0.04	1,058	278	26.28	2.89
Pompey town	5,317	0	0	0.00	1,936	109	5.63	2.91
Salina town	35,145	83	74	0.24	14,680	514	3.50	2.48

00701

WESTON

H. Chapman
Originator

PHONE CONVERSATION RECORD

Conversation with:

Name Rick March

Company Onondaga Co Health Dept

Address

Phone 315-469-6955

Subject groundwater/surface water

Date 9 / 28 / 93

Time 10:00 AM/PM

☒ Originator Placed Call

☐ Originator Received Call

W.O. NO. 04200016081 0009

Notes:

- He knows groundwater is used for private ~~municipal~~ drinking source but is not sure if used for commercial or irrigation uses

- There are no drinking water intakes in Butternut Creek Cedar Bay or old Erie Canal (15 miles downstream of alpha)

- Butternut Creek is a fishery. He believes Cedar Bay and old Erie Canal are fisheries ~~but~~ but is not positive. Limestone Creek is a fishery

- East Syracuse village serves approximately 3900 people from surface water from Pulyer (? spelling) Rd and Keabler Springs off the Jamesville Reservoir. Ray Dam is no longer in use

- The Southwood Jamesville is on public water supply. They do not use the wells near the Clark reservation anymore. They do not get their water from w/in 4 miles

☐ File

☐ Tickle File ____ / ____ / ____

☐ Follow-Up By:

☐ Copy/Route To:

Follow-Up-Action:

Originator's Initials

00227

WESTON

G Chapman
Originator

PHONE CONVERSATION RECORD

Conversation with:

Name Joan

Company Green Lake State Park

Address

Phone 315-637-6111

Subject fisheries

Date 9 / 29 / 93

Time 12:00 AM/PM

☒ Originator Placed Call

☐ Originator Received Call

W.O. NO.

Notes: People fish in old Erie Canal and Cedar Bay. She does not know if people fish in Limestone Creek

☐ **File**

☐ **Tickle File** / /

☐ **Follow-Up By:**

☐ **Copy/Route To:**

Follow-Up-Action:

Originator's Initials

RFW 110-4-83

REFERENCE NO. 21

4200-16-AB0U

Otisca Industries, Ltd.

501 Butternut Street
Syracuse, New York, 13208
Phone: 315-475-5543, FAX: 315-475-5546

October 22, 1993

Weston
Raritan Plaza 1
4th Floor, Raritan Center
Edison, NJ 08837-3616

Attention: Gretchen Chapman, EIT, Assistant Engineer 1

Reference: • EPA Contract Number 68-W9-002
• Alpha Portland Cement Plant Site, Jamesville, New York, I.D.# NYD002225878

Dear Ms. Chapman,

Attached is a copy of an aerial photograph of the site.

The approximate sample points are noted on the photograph for "end of sluceway", and "downstream". I can not determine the exact location of the lagoon samples, except that they were taken from the lagoons.

I estimate the North lagoon to have a surface area of approximately 168,000 square feet.

I estimate the South lagoon to have a surface area of 186,000 square feet.

I cannot correlate the numerical lagoon tagging with compass tagging.

Sorry this took so long but as time allowed I did a lot of searching through Otisca's records, and was unable to find documentation fixing the lagoon tagging or showing exact sample locations.

It is important to note that this sampling and analytical work was performed at Otisca's expense, before Otisca purchased to property, so we were looking for trouble that might effect our decision to purchase the property. Even so I am disappointed that we and our contractor, Galson, did not keep better records.

Very truly yours,
Otisca Industries, Ltd.

Clay D. Smith
President

Enclose: Copy, as noted, of aerial photograph.

REFERENCE NO. 23

REFERENCE NO. 25

New York State Department of Environmental Conservation
Division of Regulatory Affairs
PO Box 5170
Cortland, NY 13045
(607) 753-3095

Thomas C. Jorling
Commissioner

July 14, 1992

James Malvasi
MAXIM Construction Services Corp.
5974 Fisher Road
PO Box 6465
East Syracuse, NY 13057

RE: PROJECT NAME: Sovereign Mining; NYS MINE FILE NO. 7063-30-0626;
Application #7-3126-00122/00001-1; Town of DeWitt, County of Onondaga

Dear Mr. Malvasi:

Enclosed is the permit which authorizes you to operate the above-referenced mine. The permit must be publicly displayed at the mine and must at all times be visible, legible, and protected from the elements. The conditions must also be posted with the mining permit in a location accessible to public view either at the mine or office location.

This permit consists of two parts. Part One consists of the enclosed permit certificate. Part Two consists of the application, plans and specifications, and other documents on file with the Department including such terms and conditions imposed. As the permittee, you are responsible for maintaining a copy of the documents constituting Part Two available at your local office for use by Department personnel.

The permit expires on August 1, 1994. The permit may be renewed if an acceptable application is submitted sufficiently prior to that date. A renewal application involving no changes to the original plans should be submitted at least 30 days prior to the expiration of the permit. An application involving any changes to the above plans may be treated as a new application and may require a detailed environmental review, and should be submitted well in advance of the expiration date. If you decide to discontinue operation, a termination notice should be filed 60 days prior to the scheduled temporary or permanent cessation of mining.

If this permit is destroyed, lost or mutilated, contact this office so that a certified copy may be issued.

Sincerely yours,

Robert A. Torba
Regional Permit Administrator

RAT:jwc

cc: Joe Moskiewicz, Region 7 ✓
Division of Mineral Resources, Albany
Supervisor James Fisher
Robert H. Snyder, Jr.
ECO Servadio
Forest Ranger Pizon
Samuel Nappi, Sovereign Mining
DRA File

95-20-6 (10/90)—25c

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PERMIT

Under the Environmental Conservation Law (ECL)

DEC PERMIT NUMBER: 7-3126-00122/00001-1

FACILITY/PROGRAM NUMBER(s): 7063-30-0626

EFFECTIVE DATE: June 18, 1992

EXPIRATION DATE: August 1, 1994

TYPE OF PERMIT (Check All Applicable Boxes)

☐ New ☐ Renewal ☒ Modification Transfer ☐ Permit to Construct ☐ Permit to Operate

- ☐ Article 15, Title 5: Protection of Water
- ☐ Article 15, Title 15: Water Supply
- ☐ Article 15, Title 15: Water Transport
- ☐ Article 15, Title 15: Long Island Wells
- ☐ Article 15, Title 27: Wild, Scenic and Recreational Rivers
- ☐ 6NYCRR 608: Water Quality Certification
- ☐ Article 17, Titles 7, 8: SPDES
- ☐ Article 19: Air Pollution Control
- X Article 23, Title 27: Mined Land Reclamation
- ☐ Article 24: Freshwater Wetlands
- ☐ Article 25: Tidal Wetlands
- ☐ Article 27, Title 7; 6NYCRR 360: Solid Waste Management
- ☐ Article 27, Title 9; 6NYCRR 373: Hazardous Waste Management
- ☐ Article 34: Coastal Erosion Management
- ☐ Article 36: Floodplain Management
- ☐ Articles 1, 3, 17, 19, 27, 37; 6NYCRR 380: Radiation Control
- ☐ Other:

PERMIT ISSUED TO: MAXIM Construction Services Corp.

TELEPHONE NUMBER: ( )

ADDRESS OF PERMITTEE: 5974 Fisher Road, P. O. Box 6465, East Syracuse, NY 13057

CONTACT PERSON FOR PERMITTED WORK: James Malvasi

TELEPHONE NUMBER: ( )

NAME AND ADDRESS OF PROJECT/FACILITY: Sovereign Mining

LOCATION OF PROJECT/FACILITY: south side of Rock Cut Road near its intersection with Jamesville Road.

COUNTY	TOWN/CITY/VILLAGE	WATERCOURSE/WETLAND NO.	NYTM COORDINATES
Onondaga	DeWitt		E: N:4

DESCRIPTION OF AUTHORIZED ACTIVITY

This permit authorizes mining activity on 33 acres including the extraction of minerals from a maximum of 29 acres during the permit term, within a(n) 33 acre life of mine facility, on a(n) 126 acre parcel of land owned by the Jamesville Holding Corporation and Samuel Nappi. Mineral processing is authorized.

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, the General Conditions specified **(See Reverse Side)** and any Special Conditions included as part of this permit.

PERMIT ADMINISTRATOR: Robert A. Torba

ADDRESS: PO Box 5170, Cortland, NY 13045

AUTHORIZED SIGNATURE: Robert A. Torba

DATE: July 14, 1992

Page 1 of 5

GENERAL CONDITIONS

Inspections

1. The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71-0301 and SAPA 401(3). A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

Permit Changes and Renewals

2. The Department reserves the right to modify, suspend or revoke this permit when:
   a) the scope of the permitted activity is exceeded or a violation of any condition of the permit or provisions of the ECL and pertinent regulations is found;
   b) the permit was obtained by misrepresentation or failure to disclose relevant facts;
   c) new material information is discovered; or
   d) environmental conditions, relevant technology, or applicable law or regulation have materially changed since the permit was issued.
3. The permittee must submit a separate written application to the Department for renewal, modification or transfer of this permit. Such application must include any forms, fees or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing.
4. The permittee must submit a renewal application at least:
   a) 180 days before expiration of permits for State Pollutant Discharge Elimination System (SPDES), Hazardous Waste Management Facilities (HWMF), major Air Pollution Control (APC) and Solid Waste Management Facilities (SWMF); and
   b) 30 days before expiration of all other permit types.
5. Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

Other Legal Obligations of Permittee

6. The permittee has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature and by whomever suffered, arising out of the project described in this permit and has agreed to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from this project.
7. This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.
8. The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required for this project.

ADDITIONAL GENERAL CONDITIONS FOR ARTICLE 23, Title 27 (Mined Land Reclamation)

9. Any required reclamation bond or other surety, in an amount determined by the Department, shall be maintained in full force and effect during the mining operation. Such a bond or other surety shall not be terminated until the reclamation of the mined area is approved by the Department in writing.

10. The permittee shall not deviate or depart from the approved mined land use plan without approval by the Department of an alteration or modification thereto.

11. If the permittee decides to discontinue operation, a termination notice must be filed 60 days prior to the scheduled temporary or permanent cessation of mining.

12.* The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when notification is provided, be it written or verbal, at least 24 hours prior to such inspection.

13. If any archaeological or structural remains are encountered during excavation, the permittee must immediately cease, or cause to cease, all work in the area of the remains and notify the NYSDEC Regional Office. Work shall not resume until written permission to do so has been received from the Department.

14. [redacted]

15. The enclosed permit and permit sign must be conspicuously posted in a publicly accessible location at the project site. They must be visible, legible and protected from the elements at all times.

16. All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or his agent as part of the permit application.

Such approved plans were prepared by Paul Sheneman and Northeast Geological Services through 5/20/92

SPECIAL CONDITIONS

12.* (a) The permittee shall allow Department personnel access to enter and inspect any property or premises covered by a permit at all reasonable times during normal business hours on normal business days, and after reasonable notification to the permittee and proper identification as Department employees, for the purpose of conducting inspections or investigations in the regular course of their duties pursuant to the Environmental Conservation Law, notwithstanding signs or other notices purporting to limit access to the property.

(b) The permittee expressly agrees that the Department, including its employees, agents, and representatives shall have access at all reasonable times during normal business hours on normal business days to mine records relative to mining and subsequent reclamation of the affected land for the purpose of ascertaining compliance with Title 27 (New York State Mined Land Reclamation Law), the permit or Subchapter D of 6NYCRR.

17. The permittee shall confine fugitive dust and flying particles to the permit area. Disturbed areas shall be kept to a minimum to reduce sources of dust. The permittee shall control fugitive dust from haulageways and roadways through watering or use of calcium chloride. Oil shall not be used to control dust without prior written approval from the Department. Off-site effects from smoke or odors caused by mining or processing shall be minimized.

18. The permittee shall ensure that all trucks are loaded in conformance with Vehicle and Traffic Law Section 380-a(1). Open trucks or trailers utilized for the transportation of minerals shall be equipped with a cover, tarpaulin or other device which completely closes in the opening of the truck while in operation, unless the load is arranged so that no mineral can fall from or blow out of such truck.

19. The permittee shall provide permanent markers such as stakes, posts or other device acceptable to the Department which outline and identify the permit area. Such markers shall be maintained for the duration of the permit term.

SPECIAL CONDITIONS

For Article 23 (Mined Land Reclamation)

20. The permittee shall provide vegetation, earth mounds or other means to reduce overall visibility of the mine site, equipment storage and processing areas. At all times the mine site is to be kept neat. Earthen berms of sufficient height to block the line of sight to adjacent dwellings shall be installed.

21. The permittee shall ensure that processing equipment has valid air certificates before use.

22. No petroleum products, fuels or lubricants shall be stored in the mine site in any excavated area. Proposed storage areas shall be depicted on the plan map. Equipment fuelage shall be controlled to prevent spillage. The permittee shall retain the Department's Spill Response number (1-800-457-7362) for immediate access in the permittee's office, and at the mine site and shall notify the Department's Spill Response office of any spill as required by law. The permittee shall retain sufficient plastic sheeting upon which to store and with which to cover any soils contaminated by a spill while awaiting the Department's response to the spillnotification. No long-term equipment maintenance shall be conducted at the site. Long term maintenance does not include routine fueling, oil changes or necessary on-site repairs.

23. The permittee shall cease work in any areas where suspected hazardous waste materials are discovered and report such finding to Charles Branagh, Division of Hazardous Waste Remediation, NYS Dept. of Environmental Conservation, 615 Erie Boulevard West, Syracuse, NY 13204-2400, (315) 426-7551.

24. A 150' setback shall be maintained west and south of the ROW of Ogle Road.

25. All banks shall have a slope of 2.0 horizontal to 1.0 vertical.

26. Mining activity, mineral extraction, trucking activity and removal of materials or products from the mine site shall be limited to sunrise to sunset (daylight hours).

SPECIAL CONDITIONS

For Article 23 (Mined Land Reclamation)

27. Equipment operation and maintenance:

   a. All equipment to be used in mining and mineral processing shall be maintained in proper operating conditions.

   b. All factory installed or added environmental controls and suppressors and mufflers must be utilized at all times.

   c. Mining equipment shall be operated in a manner so as to reasonably minimize noise levels during operating hours.

   d. Truck traffic shall be limited to a maximum of thirty (30) truck trips per hour.

   e. The build-up of debris, including soil, sand and gravel, on the paved road surface connecting the pit entrance with Ogle Road will be prevented by regular cleaning to prevent fugitive dust from exiting the property.

28. Mining activity in Area #1 shall be controlled so that sand and gravel excavation and processing remains separated from off-site soil and solid waste previously disposed of in Area #1. Off-site soils and solid waste must remain in Area #1 and the importation of additional materials is prohibited.

95-19-5 (2/89)—10c

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR PERMIT TRANSFER

(In Accordance with Uniform Procedures, Part 621.13)

Please read ALL instructions on back before completing this application. Please TYPE or PRINT clearly in ink.

PART 1—TRANSFEREE (NEW OWNER/OPERATOR/LESSEE) COMPLETES:

1. LIST PERMIT NUMBER(S) AND THEIR EFFECTIVE AND EXPIRATION DATES.
N.Y.S.D.E.C. M.L.F.#7063-30-0626

2. NAME OF TRANSFEREE: MAXIM Construction Services Corp.
TELEPHONE NUMBER: (315) 432-9324
STREET: 5974 Fisher Road
CITY: East Syracuse STATE: NY ZIP CODE: 13057

3. TRANSFEREE IS A/AN: ☒ Owner ☒ Operator ☐ Lessee

4. NAME OF FACILITY/PROJECT: Sovereign Sand & Gravel
STREET: Rock Cut Road
CITY: Jamesville STATE: NY ZIP CODE: 13078
COUNTY: Onondaga TOWN: Jamesville

5. HAS WORK BEGUN ON THE PROJECT?
☒ Yes ☐ No If no, proposed starting date: ________ Approximate completion date: ________
If there will be any modifications to the current operation, the transferee must attach a statement specifying the details.

6. CERTIFICATION: This certifies that the transferee is the current owner/operator/lessee of the named facility, has a copy of the permit, understands and will comply with all conditions in the referenced permit. Facility operations/project scope/discharges/emissions will remain the same. Further, I hereby affirm that under penalty of perjury that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.
Signature and Title: Barbara Slate, Pres. Date: 4/27/92

PART 2—TRANSFEROR (FORMER OWNER/OPERATOR/LESSEE) COMPLETES:

1. NAME OF TRANSFEROR: Sovereign Sand & Gravel
TELEPHONE NUMBER: (315) 469-7704
STREET: Rock Cut Road
CITY: Jamesville STATE: NY ZIP CODE: 13078

2. NAME OF FACILITY/PROJECT, IF DIFFERENT FROM NAME IN PART 1:

3. CERTIFICATION: This certifies that the facility referenced in Part 1 of this form is/was transferred to the party identified as the new transferee (owner/operator/lessee) on 4-27-92 (date).
Signature and Title: Samuel Vaga Pres. Date: 4-27-92

PART 3—PERMIT TRANSFER VALIDATION SECTION—DEPARTMENT OF ENVIRONMENTAL CONSERVATION COMPLETES:

☒ Transfer of permit approved. Transferee subject to conditions of permit, without exception.

☐ Transfer of permit approved, with the following modifications: ☐ See attached revised permit page(s) ________

☐ New application required. Please complete the enclosed permit application and return it to the undersigned Regional Permit Administrator, Division of Regulatory Affairs, at the appropriate office of the Department (see map on reverse).

Signature ________ Date ________
Regional Permit Administrator

REFERENCE NO. 26

United States Environmental Protection Agency
Office of Solid Waste and Emergency Response
Publication 9345.1-03FS
October 1991

EPA

The Revised Hazard Ranking System: Evaluating Sites After Waste Removals

Office of Emergency and Remedial Response
Hazardous Site Evaluation Division, OS-230
Quick Reference Fact Sheet

The U.S. Environmental Protection Agency (EPA) has revised the Hazard Ranking System (HRS) in response to the Superfund Amendments and Reauthorization Act of 1986 (SARA). The HRS is the primary mechanism for placing sites on the National Priorities List (NPL). Under the original HRS promulgated under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), a site was scored based on conditions that existed prior to any removal actions. Under the revised HRS, waste removals may be considered under certain circumstances. The term "waste removal", as used in this fact sheet, refers to the physical removal from the site of hazardous substances or wastes containing hazardous substances. The waste removal policy is designed to provide an incentive for rapid response actions by potentially responsible parties (PRPs), reducing risks to the public and the environment and allowing for more timely and cost-effective cleanups.

This fact sheet provides information for EPA Regional staff, States, and PRPs. It defines the concept of "qualifying removal," explains how to score sites where qualifying removals have been conducted, and discusses some of the management implications of the removal policy. In addition, this fact sheet provides examples of how to score sites where removals have occurred.

WHEN TO CONSIDER A REMOVAL

In the preamble to the HRS final rule (54 FR 51567, December 14, 1990), EPA established three requirements that must be met for the results of a removal to be considered in scoring a site for the NPL (Figure 1). This fact sheet pertains only to removal actions that meet all three requirements, that is, "qualifying removals." Procedures for evaluating sites where other types of response actions have occurred are being developed.

Removal of Waste

The first requirement is that all waste subject to the removal must be physically removed from the site. This requirement ensures that removals do not simply move the waste and its associated risks to another portion of the same site. A removal action (or removal) conducted by Superfund's emergency response program does not necessarily involve physical removal of wastes from the site.

FIGURE 1
Requirements for Considering Removal Actions

- The removal action must physically remove waste from the site.
- The removal action must have occurred prior to the cutoff date applicable to the site (see Figure 2).
- The removed waste must be disposed or destroyed at a facility permitted under RCRA or TSCA or by the NRC.

For example, Superfund removal actions, as defined in CERCLA section 101(23), may include stabilizing or containing waste on-site through engineering controls or limiting exposure potential by erecting fences or providing alternate water supplies. These types of actions do not constitute a qualifying removal for HRS purposes.

A qualifying removal for HRS purposes does not have to remove all the waste at a site or even all the waste in a particular source. Partial removal of waste from a site (meeting all three requirements) will be considered in scoring the site; however, a complete removal generally results in the maximum score reduction.

Timing

The second requirement is that the removal must have occurred prior to the cutoff date applicable to the site. The HRS preamble states that EPA will only consider removals conducted prior to the site inspection (SI). Because of differences in site assessment activities for different types of sites (e.g., EPA-lead, State-lead, Federal facilities), criteria for determining the appropriate cutoff date under this rule differ among sites.

Non-Federal Facility Sites. An SI for non-Federal facility sites begins with development of a workplan, which often includes the sampling strategy for the site. EPA believes that it would disrupt SIs to consider the results of removal actions conducted after this point because to do so could require revising sampling plans, resampling, or rescoring the site. Therefore, the SI cutoff date generally is the date that development of a workplan for the SI begins or whatever date is analogous to workplan development (Figure 2). If no such date is available (i.e., no workplan or analogous event), the cutoff date is the earliest documented date for Superfund SI activities at the site. For example, this date may include, but is not limited to, the date when a Superfund SI report, collating previously collected analytical data, is drafted. The cutoff date is not based on the date of a State or PRP site investigation conducted independently of CERCLA/SARA; the cutoff is based on the date these data are collated for Superfund SI purposes. Consult *Guidance for Performing Site Inspections Under CERCLA* (in preparation) for additional information.

Federal Facility Sites. Federal facility sites undergo a different site assessment process than private sites. Assessments and evaluations of Federal facility sites are expected to be conducted within 18 months of placement on the Federal

FIGURE 2
Determining Cutoff Date

Non-Federal Facility Sites: Date that development of workplan for first SI began or analogous date, such as:

- SI start date in CERCLIS;
- Date of technical directive document or memorandum (TDD or TDM) issued for work assignment to develop SI workplan; or
- Date of an SI reconnaissance to develop SI workplan.

If no such date is available, the cutoff date is the earliest documented date of Superfund SI activities at the site.

Federal Facility Sites: 18 months after placement on Federal facilities docket.

facilities docket. Therefore, the cutoff date for Federal facility sites is 18 months after the site is placed on the Federal facilities docket.

Sites with Multiple SIs. For sites with more than one SI, the cutoff date for most sites will be keyed to the first SI; however, the Agency may establish a later cutoff date under certain circumstances:

- If a second SI implementing a completely new sampling strategy is conducted, the Agency may consider basing the cutoff date on workplan development for the second SI. Considering removals in these cases is not likely to unduly disrupt the site assessment process.
- For sites where the first SI was conducted more than 4 years prior to HRS scoring, the Agency may consider, on a case-by-case basis, changing the cutoff date to a later date. (CERCLA Section 116, added by SARA, mandates that EPA conduct site assessment work within 4 years.)

However, the transition to the revised HRS may mean that some site evaluations will exceed 4 years because sites will require follow-up sampling. Follow-up sampling will not be used to determine a new cutoff date even if more than 4 years have elapsed since the first cutoff date because the bulk of sampling generally will have been conducted previously.

Proper Destruction or Disposal

The third requirement for a qualifying removal is that all waste removed must be disposed or destroyed at a facility permitted under the Resource Conservation and Recovery Act (RCRA) or the Toxic Substance Control Act (TSCA) or by the Nuclear Regulatory Commission (NRC). This requirement encourages proper disposal of the removed wastes and discourages simply moving waste and associated hazards to another location.

SCORING HAZARDOUS WASTE QUANTITY

Hazardous waste quantity (HWQ) is scored as follows for sites where waste has been removed:

- Do not count the amount of waste removed in any qualifying removal when scoring HWQ. (Certain minimum HWQ factor values may apply, however.)
- Score HWQ as if the waste was not removed for all non-qualifying removals.

For partial qualifying removals, the scorer generally may subtract the amount of waste removed from the total amount of waste deposited in a source, if the same tier can be used for scoring. That is, the total (pre-removal) and removed HWQs must be determined using the same HWQ tier. For example, if HWQ for a source is scored using Tier B (hazardous wastestream quantity), but only Tier C (volume) of the removed waste is known, the HWQ for the removed waste cannot be subtracted from the HWQ for the entire source. If both the source and removed waste are scored using Tier C, HWQ for the removed waste can be subtracted. In addition, where HWQ is estimated as the once-filled volume and the total volume of waste deposited is known to be many times this volume (e.g., surface impoundments), the amount of waste removed cannot be subtracted.

The accuracy of scoring sites with qualifying removals depends on being able to determine with reasonable confidence the quantity of hazardous substances remaining in sources at the site and the quantity already released into the environment. Consequently, minimum factor values (MFV) for HWQ apply in the absence of sufficient information to adequately determine the quantity remaining and the quantity released. Figure 3 explains how to determine appropriate minimum HWQ factor values for migration pathways (i.e., ground water, surface water, and air pathways).

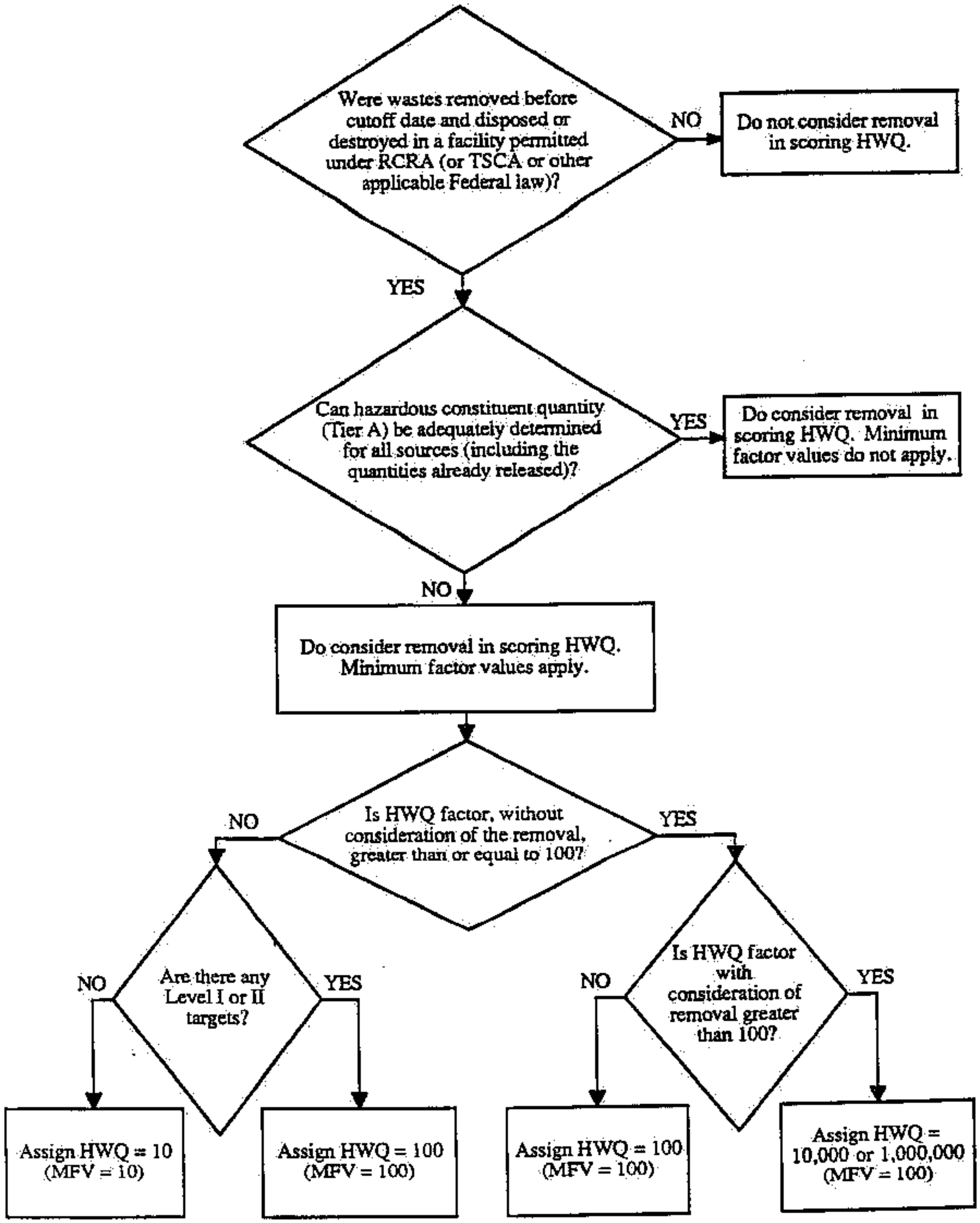
HWQ for Migration Pathways

Tier A (hazardous constituent quantity) of the HWQ evaluation involves determining the quantity of CERCLA hazardous substances remaining in the sources and in releases to the environment. To score HWQ completely using Tier A, the total mass of all CERCLA hazardous substances in all sources and in releases from the sources to the environment for that pathway must be known or estimated with reasonable confidence. If Tier B (hazardous wastestream quantity), C (volume), or D (area) is evaluated for any source for the pathway, the HWQ factor value for that migration pathway is subject to minimum values.

For migration pathways, a pathway-specific minimum factor value applies to all sites where hazardous constituent quantity cannot be adequately determined. At sites where no qualifying removal has taken place and there are no Level I or II targets in a given pathway, the HWQ factor for that pathway is subject to a minimum value of 10; if there are Level I or II targets, the minimum value is 100. At sites where a qualifying removal has occurred, the minimum HWQ factor value for a given migration pathway depends on several considerations:

- If a target in that migration pathway is subject to Level I or II concentrations, the minimum HWQ factor value for that pathway is 100.
- If no targets in that migration pathway are subject to Level I or Level II concentrations, then:
  - -- If the HWQ factor value would be 100 or greater without considering the removal, then the minimum HWQ factor value for that pathway is 100.

FIGURE 3
Determining Minimum Factor Values (MFV) for Hazardous Waste Quantity (HWQ) at Sites with Removals (Migration Pathways Only)



Note: Minimum HWQ factor values are pathway-specific.

If the HWQ factor value would be less than 100 without considering the removal, then the minimum HWQ factor value for that pathway is 10.

The minimum HWQ factor value of 10 (i.e., final bullet above) ensures that a site will not receive a higher score simply because a removal has been conducted. Under no circumstances will a party be penalized for conducting a qualifying removal.

HWQ for Soil Exposure Pathway

HWQ is evaluated differently for the soil exposure pathway than for the migration pathways. In the soil exposure pathway, HWQ is always based on conditions at the time of the SI. Only the first 2 feet of areas of observed contamination plus tanks, drums, and other container sources are included in evaluating HWQ. The HWQ factor is subject to a minimum value of 10 (if hazardous constituent quantity cannot be adequately determined), regardless of whether there has been a qualifying removal. Section 5.1.2.2 of the HRS rule provides further information on evaluating HWQ for the soil exposure pathway.

DETERMINING QUANTITY OF HAZARDOUS SUBSTANCES REMAINING

EPA's removal policy is meant to encourage the PRP conducting the removal to determine the quantity of CERCLA hazardous substances remaining in sources at the site and the full extent of the associated releases to the environment. If a release to the environment has occurred or is suspected, the PRP must determine with reasonable confidence the total quantity of all CERCLA hazardous substances in releases to all media to receive the maximum reduction in score (i.e., to avoid use of the minimum factor value). This requires determining HWQ for all sources completely using Tier A (Figure 4). As discussed previously, if the total mass of all CERCLA hazardous substances in all sources and in releases to the environment (or in areas of observed contamination for the soil exposure pathway) cannot be adequately determined for a pathway, the HWQ factor for that pathway is subject to minimum values.

At sites where surface soils or wastes have been removed, Regions are encouraged to collect a reasonable number of additional soil and/or

FIGURE 4
Adequately Determining Hazardous Constituent Quantity

Hazardous constituent quantity can be calculated for a source using the following equation:

$$HCQ = \sum_{i=1}^{n} C_i \times D_m \times V_s$$

where:

HCQ = hazardous constituent quantity for source S (mass)
C_i = average concentration of constituent i (mass/mass)
n = total number of CERCLA hazardous substances
D_m = density of source medium (mass/volume)
V_s = volume of source S (volume)

To use this equation to adequately determine hazardous constituent quantity for a source:

- the equation must be applied to each medium;
- the volume of the source must be known with reasonable confidence;
- representative values for the average concentration of each hazardous substance deposited in the source must be known; and
- there must be no release from the source.

The key to using concentration data to estimate hazardous constituent quantity is determining a representative value for the average concentration of each hazardous substance in the source or portion of the source. This can be very difficult for sources where the distribution of hazardous substances shows high spatial or temporal variability. In addition, if a release from the source has occurred, then the total mass of all hazardous substances released to the environment must also be adequately determined.

Hazardous constituent quantity also can be adequately determined if complete data are available on the quantity of hazardous substances deposited (e.g., manifest data). The procedure described above does not apply to RCRA wastes or radionuclides.

subsurface samples to verify the PRP's evaluation of hazardous constituent quantity for the remaining waste. SIs are not intended to address the full extent of contamination at sites; therefore, EPA generally will rely on PRPs to quantify the extent of releases to all media, so that they can receive the maximum possible reduction in HWQ factor value. If subsequent Regional sampling reveals that HWQ is greater than that estimated by the PRP during the removal, the HWQ factor value is calculated based on these new data.

SCORING OTHER FACTORS

For the migration pathways, a number of factors other than HWQ can be affected by the removal of waste and, in some cases, are scored to reflect a qualifying removal (Figure 5).

Likelihood of Release Factors

The results of a qualifying removal may be taken into account in scoring several factors in the likelihood of release factor category for the source subject to the removal. These factors include:

- observed release (or observed contamination);
- containment; and
- source type.

An observed release to one of the migration pathways documented before or after a qualifying removal can be used to score likelihood of release. That is, a qualifying removal does not negate the fact that the source already has released to the environment. However, areas of observed contamination in the soil exposure pathway are intended to reflect continuing risks at the site. Therefore, soil exposure pathway factors should be documented by sampling that represents conditions at the time of the SI.

Changes in source containment should be considered only when:

- the change results from a qualifying removal;
- no observed release of a hazardous substance associated with that source is established for a given pathway; and
- the containment factor value for the affected source is equal to 0 for that pathway after the removal.

FIGURE 5
Scoring Other Factors

Changes in factors other than HWQ should be considered in scoring a migration pathway only if:

- The change in that factor was a direct result of a qualifying removal;
- No observed release of a hazardous substance associated with the source is established for that pathway; and
- The removal completely eliminated a source (and its associated releases) or resulted in a containment factor value of 0 for that source in that pathway.

If changes in containment result in a lower -- but non-zero -- containment factor value, then that source is assigned a containment factor that does not reflect the changes that resulted from the qualifying removal. Similarly, changes in source type that result in a non-zero source type factor value are not considered in scoring. Changes that result in a source type factor value of 0 are considered.

Substance-specific Factors

Some substance-specific HRS factors can be affected if a qualifying removal completely eliminates a hazardous substance from a pathway (i.e., all sources of that hazardous substance are completely removed or have containment factor values of 0 and there is no observed release or observed contamination of that substance). These factors include:

- toxicity;
- mobility;
- persistence;
- bioaccumulation potential; and
- gas migration potential.

None of these factors can be based on a hazardous substance that was completely eliminated from a pathway by a qualifying removal. Such a removal must include all sources of that hazardous substance, and no releases of that substance to the environment may have occurred. EPA generally will be unable to obtain such information and will rely on PRPs to produce these data. If a portion of a source is eliminated in a qualifying removal, the remaining portion of that source is assumed to contain the same hazardous substances as the removed portion, unless the PRP can document otherwise (e.g., provide analytical results or manifest data that convincingly demonstrate a given hazardous substance is not present in the remaining portion of the source). For the soil exposure pathway, toxicity should be based only on hazardous substances meeting the criteria for observed contamination at the time of the SI.

Targets Factors

Site-specific target distance limits or distance rings in migration pathways may change if a qualifying removal eliminates a source or changes a source in such a way that it is not available to a pathway (i.e., containment factor value of 0).

For a <u>migration</u> pathway:

- If an observed release (or observed contamination) is associated with a source, include that source when measuring target distances, regardless of whether a qualifying removal has occurred or whether the containment factor value is 0.

- If a source is completely eliminated or the characteristics of the source are changed such that the source's containment factor value for a given pathway is 0, <u>and</u> no observed release of a hazardous substance associated with that source to that pathway has occurred, <u>do not</u> include that source in measuring target distances for that pathway.

- If the characteristics of a source are changed, but that source is still available to a given pathway (i.e., non-zero containment factor value), then include that source when measuring target distances for that pathway.

For the <u>soil exposure</u> pathway:

- If all or part of an area of observed contamination is removed, <u>do not</u> include the removed area when determining the target distance limits.

EPA generally will not be able to document the complete removal of a source within the normal SI field sampling. EPA will rely on PRPs to provide the additional information that is needed to document complete removal of a source.

MANAGEMENT IMPLICATIONS

Site managers should be aware of the changes in site scores that may occur under the waste removal policy and understand the need to document releases at removal sites. In addition, EPA's removal and site assessment programs must coordinate at sites where the removal program is considering taking action.

Changes in Site Scores

The waste removal policy is intended to provide an incentive for timely and thorough removals by potentially lowering the HRS score for sites where a qualifying removal is conducted. This score lowering may be major or minor, depending on the characteristics of the site and the extent of the removal action:

- Because the HWQ factor values are grouped in two-order-of-magnitude ranges (100, 10,000 and 1,000,000), large changes in the HWQ factor value may occur for two types of sites: (1) sites where very large quantities of waste have been removed and (2) sites where the HWQ factor prior to removal was slightly above the lower boundary of a HWQ range.

- Likelihood of release could be affected for migration pathways where no observed release has been detected <u>and</u> a source is completely eliminated from a pathway by a qualifying removal (or is changed such that the containment factor value now equals 0).

- Large changes in target factor values could occur if surface soil contamination is removed from areas occupied by resident individuals or if source elimination significantly changes the targets evaluated.

Documenting Releases

At sites where the PRP claims to have completely eliminated a source (including any associated releases), the PRP must confirm this claim through adequate sampling. A source will be evaluated on the basis of SI sampling unless the PRP can produce additional information that documents complete removal. Furthermore, if Regions believe that hazardous constituent quantity for the remaining source and its releases is not adequately determined, the minimum HWQ factor values for removal sites apply. At sites where a PRP has calculated hazardous constituent quantity for a source, Regions are encouraged to conduct sampling, to the extent practicable, to verify this information.

QUESTIONS AND ANSWERS

Q. How are multiple removals at the same site treated?

A. The number of individual removals does not matter as long as each removal considered in scoring is a qualifying removal. All qualifying removals should be considered and all non-qualifying removals should not be considered when calculating the HRS score.

Q. Whose removals are considered?

A. The waste removal policy applies to all sites, regardless of the identity of the party conducting the removal. EPA, State, and PRP removals are subject to the same requirements under the HRS removal policy.

Q. Does the waste removal policy apply to Federal facility sites?

A. Yes. The only difference in applying the removal policy to Federal facilities is the difference in determining the cutoff date.

Q. Are SIs conducted by States under cooperative agreements considered EPA SIs for the purposes of the HRS removal policy?

A. Yes.

Q. If a qualifying removal eliminates the only drums in a group for which data concerning the contents are available, how should substance-specific factors be scored for this source?

A. In the absence of information to the contrary, Regions may assume that the remaining portion of a source contains the same hazardous substances as the removed portion. If a PRP can produce convincing evidence that the hazardous substances in the removed portion of a source are not present in the remaining portion, these substances should not be used to score any substance-specific factors for that source. Regions should not, however, assume that hazardous substances present in one source (e.g., a group of drums) are present in a different source (e.g., a landfill) without supporting information.

Q. Prior to the cutoff date for a site, the PRP removed all of the waste from a pile and transferred it to an on-site containment system that would be assigned a containment factor of 0 for all pathways. Should the pile still be considered a source in scoring the site?

A. Yes. The pile should be considered when scoring this site. This response action did not physically remove waste from the site; therefore, it is not a qualifying removal.

Q. A site had an SI three years ago, but a number of additional samples were taken subsequently to support HRS scoring. Which investigation should be used to assign the cutoff date?

A. Because the overall sampling strategy is developed in the first SI, the cutoff date is based on the first SI.

Q. What if the cutoff date falls in the middle of a waste removal that was conducted over an extended period of time?

A. Those wastes that were removed prior to the cutoff date (in compliance with all three requirements) are not considered in scoring the site.

Q. Can a removal assessment conducted by the EPA removal program be used to determine the cutoff date?

A. No. SIs conducted under the aegis of Superfund's site assessment program are used to determine the cutoff date for qualifying removals.

FIGURE 6 – EXAMPLES

Example 1

A site has a large landfill as its only source. The top 4 feet of the landfill were excavated and replaced with uncontaminated soil that is now heavily vegetated. The excavated materials were removed from the site and were properly disposed prior to the cutoff date. An observed release to ground water was established prior to the removal using data from an on-site monitoring well.

Qualification: This is a qualifying removal because it meets all three requirements. Consider the removal in scoring the source.

HWQ: Do not consider the quantity of excavated materials in scoring HWQ. Because it is unlikely that the total mass of all CERCLA hazardous substances in the landfill and releases to environmental media will be known or estimated with reasonable confidence, this site is likely to be subject to a minimum HWQ factor value of either 10 or 100. Calculate the HWQ factor value considering and not considering the removed materials to determine the appropriate minimum value. If the landfill is scored using Tier C (volume), then subtract the removed 4 feet from the total volume of the waste. If the landfill is scored using Tier D (area), then the removal will not change the HWQ factor value.

Other Factors: Soil Exposure. Because this pathway is concerned with potential direct exposures to surface sources and the top 2 feet of soil only, replacing the top 4 feet of contaminated material with clean soil has eliminated the soil exposure pathway for this site. Unless contamination can be found in the top two feet of soil at this site, the soil exposure pathway receives a score of 0.

Air. The changes made in conjunction with the removal result in a containment factor of zero for the air pathway; therefore, the landfill is no longer considered a source for the air pathway and is not considered in any air pathway calculation (e.g., HWQ, target distance). Because the landfill is the only source at this site, the air pathway would receive a score of 0, unless an observed release to air was documented prior to the removal.

Ground Water. The observed release to ground water can still be used to score likelihood of release. Do not consider the effects of the removal in scoring factors other than HWQ for the ground water pathway.

Surface Water. The changes made in conjunction with the removal do not result in a containment factor of 0 for surface water. Do not take the effects of the removal into account in scoring factors other than HWQ for the surface water pathway.

Example 2

One of the sources at a site is a waste pile. The wastes in this pile were transferred to drums that currently are stored on-site while plans for their disposition are made. The cutoff date is the date the work assignment for development of the SI workplan was issued (1/15/89); this response action took place on 9/5/89.

Qualification: This is not a qualifying removal. First, this response action did not physically remove wastes from the site. Second, the response action took place after the cutoff date for qualifying removals. Do not consider the removal in scoring the source.

FIGURE 6 -- EXAMPLES (concluded)

Example 3

One of the sources at a site is a group of approximately 20 drums. All were removed and properly treated and disposed off-site prior to the cutoff date. These drums appeared to be intact when removed, and extensive environmental monitoring conducted by the PRP has not demonstrated a release in the area of the drums.

Qualification: This is a qualifying removal because it meets all three requirements. Consider the removal in scoring the source.

HWQ: Do not include the quantity of waste in the removed drums in scoring HWQ. If the Region is convinced that no release to the environment has occurred and if all other sources at the site can be scored completely using Tier A, no minimum HWQ value applies.

Other Factors: If the Region is convinced that the data indicate no release to the environment occurred, do not include the removed drums as a source for any pathway. Do not use the area where the drums were located to determine target distance limits. Do not use hazardous substances that were present only in the removed drums and not in any other sources to score any substance-specific factors.

Example 4

One of the sources at a site is a waste pile containing hazardous substances. Prior to the cutoff date, the waste pile was removed and the contents were properly disposed off-site. The SI indicated that the surface and subsurface soil around the area where the pile was located contains elevated levels of arsenic and chromium, hazardous substances known to be present in the removed wastes.

Qualification: This is a qualifying removal because it meets all three requirements. Consider the removal in scoring the source.

HWQ: Do not include the hazardous substances in the waste pile in scoring HWQ. Unless all sources and releases at this site can be scored completely using Tier A, this site will be subject to a minimum HWQ factor value of either 10 or 100. Calculate the HWQ factor value both considering and not considering the removed materials to determine the appropriate minimum value (i.e., the site should not receive a higher score because of the removal).

Other Factors: This qualifying removal did not reduce the containment factor for this source to 0 for any of the migration pathways. Therefore, do not consider changes related to this source that could affect scoring of other HRS factors (e.g., containment, targets factors) in scoring these factors other than HWQ.

Score the soil exposure pathway using the areas of observed contamination documented at the SI.

NOTICE

The information set forth in this document is intended solely for the guidance of Government personnel. It is not intended, nor can it be relied upon, to create any rights enforceable by any party in litigation with the United States. EPA may decide to follow the guidance provided in this fact sheet, or to act at variance with the guidance, based on an analysis of specific site circumstances. The Agency also reserves the right to change this guidance at any time without public notice.

REFERENCE NO. 27

WESTON

H Chapman
Originator

PHONE CONVERSATION RECORD

Conversation with:

Name Clay Smith

Company Otisca

Address Syracuse

Phone 315-475-5543

Subject ownership

Date 9 / 30 / 93

Time 2:00 AM/PM

☐ Originator Placed Call

☑ Originator Received Call

W.O. NO.

Notes:

Getty Oil held the mortgage for Otisca. They foreclosed on Otisca on 9/8/93. Therefore they are the current owners.

He will send me a sample location map & lagoon areas after obtaining approval from Getty.

Doug Bauguss
Getty Oil Company
125 Jeriko Turnpike
Jeriko, New York 11753
516-338-1225
FAX: 516-338-6062

Getty owned Alpha Portland

☐ File

☐ Tickle File / /

☐ Follow-Up By:

☐ Copy/Route To:

Follow-Up-Action:

Originator's Initials

REFERENCE NO. 28

Water Resources Data New York Water Year 1992

Volume 3. Western New York

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NY-92-3
Prepared in cooperation with the State of New York
and with other agencies

04245200 BUTTERNUT CREEK NEAR JAMESVILLE, NY

LOCATION.--Lat 42°56'02", long 76°03'44", Onondaga County, Hydrologic Unit 04140202, on left bank 15 ft downstream from bridge on Walberger Road, 125 ft downstream from tributary from Stebbins Gulf, 2.2 mi upstream from Jamesville Reservoir, and 4.0 mi south of Jamesville.

DRAINAGE AREA.--32.2 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1955-58. July 1958 to current year.

REVISED RECORDS.--WSP 2112: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 717.93 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges (ice effect), which are fair. Several measurements of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 550 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Mar. 27	unknown	*744	*7.66	July 31	0900	650	7.53

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	7.3	26	34	28	61	157	62	196	13	203	22
2	10	7.4	23	30	e28	53	130	94	115	12	103	19
3	9.2	7.2	71	39	28	48	110	176	66	17	77	27
4	8.8	7.1	55	88	28	48	101	94	51	25	70	27
5	7.8	6.9	38	119	e27	61	89	77	45	30	62	20
6	14	7.2	33	71	27	75	79	72	43	26	52	18
7	12	7.3	35	54	26	93	81	66	76	17	46	18
8	9.5	7.6	61	44	25	108	96	61	95	15	44	17
9	8.7	7.0	64	44	24	99	83	59	53	45	47	16
10	9.3	6.8	48	52	e24	96	79	54	42	21	41	30
11	11	22	39	40	25	135	118	50	37	17	41	38
12	10	19	35	39	24	88	158	46	34	15	35	22
13	9.5	19	35	40	e23	76	96	43	31	75	35	18
14	9.0	18	35	82	e22	e70	82	41	29	32	42	17
15	12	18	34	64	e25	e65	73	39	27	185	37	16
16	40	20	28	e50	e80	e60	115	43	25	90	36	15
17	18	16	27	e42	55	e55	201	37	24	54	33	14
18	13	13	e26	e40	48	e50	131	51	22	84	37	14
19	13	12	e25	e38	129	e48	123	41	24	97	31	79
20	12	12	e24	e36	119	e46	98	33	28	48	26	31
21	10	17	e24	e36	76	e44	85	31	25	53	24	23
22	9.7	18	28	e36	62	e42	81	28	27	42	22	39
23	9.3	28	28	e50	76	e44	72	27	24	261	21	50
24	8.7	31	27	e75	68	e42	75	30	24	161	19	29
25	8.5	28	24	44	65	e44	113	30	22	90	19	24
26	8.5	21	22	38	66	e120	111	27	19	77	18	42
27	8.7	19	23	37	58	e400	87	32	18	67	21	46
28	11	18	21	37	60	e350	72	31	17	54	30	41
29	7.9	36	46	34	69	e300	65	26	15	73	89	30
30	7.3	32	79	32	---	e260	61	24	14	66	32	28
31	7.5	---	44	32	---	e160	---	129	---	329	25	---
TOTAL	341.5	488.8	1128	1497	1415	3241	3022	1654	1268	2191	1418	830
MEAN	11.0	16.3	36.4	48.3	48.8	105	101	53.4	42.3	70.7	45.7	27.7
MAX	40	36	79	119	129	400	201	176	196	329	203	79
MIN	7.3	6.8	21	30	22	42	61	24	14	12	18	14
CFSM	.34	.51	1.13	1.50	1.52	3.25	3.13	1.66	1.31	2.19	1.42	.86
IN.	.39	.56	1.30	1.73	1.63	3.74	3.49	1.91	1.46	2.53	1.64	.96

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1992, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.7	44.8	56.6	53.1	68.8	102	103	52.8	32.9	21.0	13.7	17.5
MAX	138	124	145	127	191	198	176	106	200	71.6	45.7	66.6
(WY)	1978	1973	1973	1979	1976	1977	1983	1990	1972	1974	1992	1975
MIN	5.30	7.49	11.1	13.5	18.5	37.2	48.3	23.1	11.6	5.89	4.84	3.85
(WY)	1965	1965	1961	1961	1963	1983	1981	1987	1964	1964	1965	1964

SUMMARY STATISTICS	FOR 1991 CALENDAR YEAR		FOR 1992 WATER YEAR		WATER YEARS 1958 - 1992	
ANNUAL TOTAL	13964.6		18494.3			
ANNUAL MEAN	38.3		50.5		49.5	
HIGHEST ANNUAL MEAN					82.6	1976
LOWEST ANNUAL MEAN					24.2	1965
HIGHEST DAILY MEAN	255	Mar 4	400	Mar 27	1260	Oct 28 1981
LOWEST DAILY MEAN	5.4	Aug 2	6.8	Nov 10	3.0	Sep 27 1959
ANNUAL SEVEN-DAY MINIMUM	5.9	Jul 27	7.1	Nov 4	3.4	Sep 17 1964
INSTANTANEOUS PEAK FLOW			744	Mar 27	2820	Jul 3 1974
INSTANTANEOUS PEAK STAGE			7.66	Mar 27	8.46	Oct 28 1981
INSTANTANEOUS LOW FLOW			3.8	Nov 10	2.0	Sep 27 1959
ANNUAL RUNOFF (CFSM)	1.19		1.57		1.54	
ANNUAL RUNOFF (INCHES)	16.13		21.37		20.88	
10 PERCENT EXCEEDS	80		96		103	
50 PERCENT EXCEEDS	25		36		31	
90 PERCENT EXCEEDS	7.1		12		7.6	

Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1992 maximum Date	Gage height (ft)	Dis-charge (ft^3/s)	Period of record maximum Date	Gage height (ft)	Dis-charge (ft^3/s)
STREAMS TRIBUTARY TO LAKE ONTARIO--Continued								
Limestone Creek at Fayetteville, NY (04245000)	Lat 43°01'48", long 76°00'49", Onondaga County, Hydrologic Unit 04140202, on left bank, 100 ft downstream from bridge on Genesee Street at Fayetteville, and 8 mi upstream from mouth. Drainage area is 85.5 mi².	1940-86‡, 1987-92	3-27-92	4.32	1,260	10-28-81	10.14	7,490
Scriba Creek near Constantia, NY (04245840)	Lat 43°15'35" long 76°00'11", Oswego County, Hydrologic Unit 04140202, on right bank, 8 ft upstream from road to Ingersol Road, and about 0.8 mi north of village of Constantia. Drainage area is 38.4 mi².	1966-68‡, 1969, 1971-92	4-12-92	5.57	670	9-26-75	7.33	1,310
Catfish Creek at New Haven, NY (04249050)	Lat 43°29'00", long 76°19'34", Oswego County, Hydrologic Unit 04140102, at bridge on State Highway 104B, at New Haven, and 1.4 mi upstream from mouth. Drainage area is 31.7 mi².	1962-66, 1968-92	1-14-92	5.30	509	3-18-73	7.85	1,560

Discharge measurements made at miscellaneous sites during water year 1992

Stream	Tributary to	Location	Drainage area (mi²)	Measured previously (water years)	Measurements Date	Discharge (ft^3/s)
SUSQUEHANNA RIVER BASIN						
01497842 Susquehanna River	Atlantic Ocean	Lat 42°29'06", long 74°59'21", Otsego County, Hydrologic Unit 02050101, at bridge on Town Road, 0.5 mi southwest of Colliersville.	471	--	4- 9-92 6-10-92	741 388
*01502632 Susquehanna River	Atlantic Ocean	Lat 42°17'29", long 75°28'36", Chenango County, Hydrologic Unit 02050101, on right bank at the downstream side of bridge on State Highway 206 over the Susquehanna River, at Bainbridge.	1,610	1970-71, 1987-91	4-15-92	3,580
*01502731 Susquehanna River	Atlantic Ocean	Lat 42°04'28", long 75°38'17", Broome County, Hydrologic Unit 02050101, on right bank at the downstream side of the bridge on County Highway 315 over the Susquehanna River, at Windsor.	1,820	1987-91	5- 5-92	7,190
*01507000 Chenango River	Susquehanna River	Lat 42°19'28", long 75°46'18", Chenango County, Hydrologic Unit 02050102, on left bank 1,700 ft downstream from bridge on State Highway 206, at Greene, and 0.6 mi downstream from Birdsall Creek.	593	1937-70‡, 1971-79, 1982-83, 1986, 1988-91	5- 5-92	2,030

‡ Operated as a continuous-record gaging station.
* Also a crest-stage partial-record station.

REFERENCE NO. 29

FROST ASSOCIATES

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(203) 767-7644 Fax (203) 767-7069

Sep 24, 1993

To: Jan Holderness
Roy F. Weston Inc
4th Floor Raritan Plaza
Edison, New Jersey 08837-3616

Fr: Bob Frost
Frost Associates
P.O. Box 495
Essex, Conn 06426

Tel: (203) 767-1254
Fax: (203) 767-7069

Sub: Alpha Portland Cement
Jamesville, Onondaga County, NY

CERCLIS: NYD002225878

Job: 04200-016-081-0019-02

Site Longitude: 76-04-43 76.078613
Site Latitude : 42-59-51 42.997501

The CENTRACTS report below identifies the population, households, and private water wells of each Block Group that lies within, or partially within, the 4, 3, 2, 1, .5, and .25, mile "rings" of the latitude and longitude coordinates above. CENTRACTS may have up to ten radii of any length. 1000 block groups, and 15000 block group sides.

CENTRACTS uses the 1990 Block Group population and Block Group house count data found in the Census Bureau's 1990 STF-1A files. The sources of water supply data are from the Bureau's 1990 STF-3A files. The boundary line coordinates of the Block Groups were extracted from the Census Bureau's 1990 TIGER/Line Files.

CENTRACTS reports are created with programs written by Frost Associates, P.O. Box 495, Essex, Conn. The code was written using Microsoft's Quick-Basic Ver. 4.5.

Latitude and Longitude coordinates identifying a site are entered in degrees and decimal degrees. One or more county files holding Block Group boundary lines are selected for use by CENTRACTS by determining whether the site coordinates fall within the minimum and maximum Lat\Lon coordinates of each county in the state.

Each Block Group line segment has Lat\Lon coordinates representing the "From" and "To" ends of that line. All coordinates from the selected county files are read and converted from degrees, decimal degrees to X\Y miles from the site location. Each line segment is then examined whether it lies within or partially within the maximum ring from the site.

The unique Block Group ID numbers of each line segment that lie within the maximum ring are retained. All Block Group boundary lines matching the Block Group numbers are then extracted from the respective county files to obtain all sides of the in cluded Block Groups. Boundary records are then sorted in adjacent side order to determine the shape and area of each Block Group polygon.

A method to solve for the area of a polygon is to take one-half the sum of the pro ducts obtained by multiplying each X-coordinate by the difference between the adja cent Y-coordinates. For a polygon with coordinates at adjacent angles A, B, C, D, and

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E. The formula can be expressed:

$$Area = 1/2\{Xa(Ye-Yb)+ Xb(Ya-Yb)+ Xc(Yb-Yd)+ Xd(Yc-Ye)+ Xe(Yd-Ya)\}$$

For each ring, the selected Block Groups will be inside, outside, or intersected by the ring. When a polygon is intersected, the partial Block Group area within that ring is calculated using the method described below.

When a ring intersects a Block Group, the intersect points are solved and plotted at the points where the ring enters and exits the shape. The chord line, a line within the circle connecting the intersect points is determined. This chord line is used to calculate the segment area, the half moon shape between the chord line and the ring, and the sub-polygon created by the chord line and the Block Group boundaries that lie outside the ring.

The segment area is subtracted from the sub-polygon area to determine the area of the sub-polygon outside the ring. The area outside the ring is then subtracted from the area of the entire polygon to arrive at the inside area. This inside area is then divided by the tract's total area to determine the percentage of area within the ring. This process is repeated for each block group that is intersected by one of the rings. The total area, partial area, and percentage of partial area of those block groups within, or partially within a ring, are held in memory for the report.

On occasion, the algorithm described above is unable to determine the area of the partial area. Within the report program is a "Paint" routine which allows an enclosed shape to be highlighted. Another routine calculates the percentage of highlighted screen pixels to the pixels within the polygon. A manual entry is allowed. Both the "paint" method and manual entry method over ride the calculated method.

CENTRACTS lists, starting on page 4, all Block Groups in State, County, Census Tract, and Block Group ID order that lie within, or partially within, the maximum ring. Each Block Group is identified by a City or Town name and by the Block Group's State, County, Tract and Block Group ID number. Following is the Block Group's 1990 populu tion and house count extracted from the Census Bureau's 1990 STF-1A files.

The next four columns display water source data from the 1990 STF-3A files. The first column is "Units with Public system or private company source of water", followed by "Units with individual well, Drilled, source of water"; "Units with individual well, Dug, source of water" and "Units with Other source of water".

For each ring, CENTRACTS then shows the Block Groups that are within that ring, the Block Group's total area in square miles, the partial area of the Block Group within that ring, and the partial percentage within the ring. The areas of the included Block Group and the partial areas are then totaled.

The last section tallies the demographic data within each ring. The percentage of area for each Block Group is multiplied times the census data for that Block Group and totaled for all Block Group's within the ring. Ring totals are then determined by subtracting the three mile data from the four mile, the two mile from the three mile, one from the two, etc... Population on private wells is calculated using the formula: ((Drilled + Dug Wells) / Households) * Population

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================== Site Data =================

Population:	71890.91
Households:	28438.82
Drilled Wells:	78.52
Dug Wells:	620.42
Other Water Sources:	53.35

============= Partial (RING) data ==============

---- Within Ring: 4 Mile(s) and 3 Mile(s) ----

Population:	50276.46
Households:	18578.93
Drilled Wells:	37.56
Dug Wells:	324.80
Other Wells:	20.29

** Population On Private Wells: 980.58

---- Within Ring: 3 Mile(s) and 2 Mile(s) ----

Population:	17528.30
Households:	8130.12
Drilled Wells:	27.87
Dug Wells:	205.84
Other Wells:	9.11

** Population On Private Wells: 503.87

---- Within Ring: 2 Mile(s) and 1 Mile(s) ----

Population:	3127.73
Households:	1311.62
Drilled Wells:	13.09
Dug Wells:	80.18
Other Wells:	11.76

** Population On Private Wells: 222.42

---- Within Ring: 1 Mile(s) and .5 Mile(s) ----

Population:	703.82
Households:	310.90
Drilled Wells:	0.00
Dug Wells:	7.55
Other Wells:	7.98

** Population On Private Wells: 17.10

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---- Within Ring: .5 Mile(s) and .25 Mile(s) ----

Population:	187.26
Households:	78.80
Drilled Wells:	0.00
Dug Wells:	1.59
Other Wells:	2.90

** Population On Private Wells: 3.78

---- Within Ring: .25 Mile(s) and 0 Mile(s) ----

Population:	67.34
Households:	28.46
Drilled Wells:	0.00
Dug Wells:	0.45
Other Wells:	1.31

** Population On Private Wells: 1.07

** Total Population On Private Wells: 1728.81

REFERENCE NO. 30

WESTON

0003T

H. Chapman
Originator

PHONE CONVERSATION RECORD

Conversation with:

Name Les Monastary

Company Onondaga Co Planning Board

Address Syracuse, NY

Phone 315-435-2611

Subject Flood plain

Date 6/3/93

Time 2:30 AM/PM (PM)

☒ Originator Placed Call

☐ Originator Received Call

W.O. NO. 04200-016-081-019-02

Notes:

Alpha Portland Cement on Rock Cut Road, Jamesville is zone C - not in a flood zone

Community # 360973
Panel No: 0015 B
Dated 2/1/79

☐ **File**

☐ **Tickle File** / /

☐ **Follow-Up By:**

☐ **Copy/Route To:**

Follow-Up-Action:

Originator's Initials

RFW 110-4-83

REFERENCE NO. 31

WESTON

Al Chapman
Originator

PHONE CONVERSATION RECORD

Conversation with:
Name Lloyd Wagner
Company U.S. Geological Survey
Address Albany

Phone

Subject Flow rates

Date 9/30/93
Time 10 35 AM/PM

☐ Originator Placed Call
☒ Originator Received Call
W.O. NO.

Notes:
Lloyd Wagner says they have no information on Flow rates in Cedar Bay or old Erie Canal. He estimates them to be dead water based on obervations of the USGS maps.

☐ **File**
☐ **Tickle File** / /
☐ **Follow-Up By:**
☐ **Copy/Route To:**

Follow-Up-Action:

Originator's Initials

RFW 110-4-83

REFERENCE NO. 32

WESTON

0025

Gretchen Chapman
Originator

PHONE CONVERSATION RECORD

Conversation with:

Name

Company Dewitt Tax Assessor

Address

Phone 315 446-0973

Subject block/lot of alpha

Date 9/24/93

Time 10:20 AM/PM

☒ Originator Placed Call

☐ Originator Received Call

W.O. NO.

Notes:

083-01-07 block/lot

owned by Jamesville Holding Corporation

☐ File

☐ Tickle File ___/___/___

☐ Follow-Up By:

☐ Copy/Route To:

Follow-Up-Action:

Originator's Initials

RFW 110-4-83